CITY STANDARD ACCESSORY DWELLING UNIT
ADU: 498 SQUARE

CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

Release Date: 03/22/2024 Release #: A

DEVELOPMENT STANDARDS

EXISTING LOT COVERAGE: ________
[1]PROPOSED LOT COVERAGE: ________
MAX. LOT COVERAGE: ________
EXISTING FLOOR AREA RATIO: ________
[1]PROPOSED FLOOR AREA RATIO: ________
MAX. FLOOR AREA RATIO: ________
PROPOSED BUILDING HEIGHT: ________
NO. OF STORIES: ________
DETACHED MAX SIZE: 1,200 SF
HEIGHT LIMIT: 16'-0"
[2]ADU SETBACKS: 4'
[3]ADU TO PDU MIN. DISTANCE: 10'
ADDITIONAL PARKING REQUIREMENT PER CVMC 19.58.022(C)(7): ☐ YES ☐ NO

THE DISTANCE OF THE PROPOSED DETACHED ADU FROM THE TOP AND BOTTOM OF THE SLOPE SHALL MEET CRC SECTION R403.1.7 (SEE SITE PLAN NOTES ON SHEET G101).

1 **SEE CALCULATIONS ON SHEET A011.**
2 **ADU'S LOCATED BETWEEN 3 FEET AND 5 FEET OF THE PROPERTY LINES SHALL REQUIRE FIRE RATED EAVES AND WALLS PER DETAILS LOCATED IN THIS SET.**
3 **EXISTING PRIMARY DWELLING UNIT (PDU)**

UTILITY DATA

EXISTING MAIN SERVICE PANEL BREAKER SIZE: ________
EXISTING MAIN SERVICE PANEL BUS RATING: ________
PROPOSED SUB PANEL ON ADU BREAKER SIZE: 150A
PROPOSED SUB PANEL ON ADU BUS RATING: 150A BUS RATING
CIRCUIT BREAKER ON MAIN SERVICE PANEL FEEDING THE ADU: 150A
EXISTING WATER METER SIZE: _____
EXISTING WATER METER LATERAL SIZE: _____
WATER METER UPGRADE REQUIRED: _____

* **CONTACT LOCAL UTILITY COMPANIES REGARDING GAS AND ELECTRIC SERVICES TO THIS DETACHED ADU.**
** **SEE ELECTRICAL SERVICE SELECTION REQUIREMENTS ON SHEET G102.**

ZONING SETBACKS

ZONING: ________
FRONT YARD: ________
SIDE YARDS: ________
SIDE STREET YARDS: ________
REAR YARD: ________
BETWEEN BUILDINGS: ________

DESIGN TEAM

OWNER
CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

DESIGNER
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LEGAL

EXISTING ADDRESS: ________________
ADU ADDRESS: ________________
ASSESSOR'S PARCEL NUMBER: ________________
JURISDICTION: CITY OF CHULA VISTA
LEGAL DESCRIPTION: ________________
LOT AREA (ACRES): ________________
LOT AREA (SQ. FT.): ________________

BUILDING DATA

BUILDING OCCUPANCY GROUP: R-3
CONSTRUCTION TYPE: TYPE V-B
*FIRE ZONING (CHECK ONE): ______(N/A) ______(VHFSZ)

EXISTING BUILDING USE: SINGLE FAMILY DWELLING
EXISTING BUILDING AREA: __________SQ. FT.
EXISTING GARAGE AREA: __________SQ. FT.
EXISTING BUILDING YEAR BUILT: ______
EXISTING BUILDING SPRINKLERED (YES/NO): ______

PROPOSED BUILDING USE: DETACHED ADU
PROPOSED BUILDING AREA: 498 SF
PROPOSED BUILDING HEIGHT: 12'-5"
PROPOSED BUILDING SPRINKLERED (YES/NO): ______

NUMBER OF STORIES: 1

*** WHEN LOCATED IN THE VHFHSZ, VHFSZ NOTES ON SHEET G102 AND DETAILS 1 THROUGH 3 ON SHEET A500; 1 THROUGH 6 AND 12 ON SHEET A510; 1 THROUGH 6 AND 12 ON SHEET A520; 1 THROUGH 6 AND 12 ON SHEET A530 ARE APPLICABLE TO THIS PROJECT.**

VICINITY MAP

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ARCHITECTURE

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A	G201	CODE COMPLIANCE NOTES
A	G300	CAL-GREEN REQUIREMENTS
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A	E100	ELECTRICAL PLAN - 1 BEDROOM
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STRUCTURAL

REV.	SHEET #	DRAWING TITLE
A	S1	STRUCTURAL PLANS
A	SD1	STRUCTURAL DETAILS
A	SN1	STRUCTURAL NOTES

PLUMBING FIXTURE SCHEDULE

FIXTURES	EXISTING QTY	NEW QTY	TOTAL FIXTURES	MAX WATER CONSUMPTION (CPC TABLE M102.1)	UNIT WSFU (CPC 610.3)	WSFU
BATHTUB OR COMBINATION BATH/SHOWER	0	0	0	5.5	4.0	**0.0**
CLOTHES WASHER	0	1	1	3.5	4.0	**4.0**
DISHWASHER, DOMESTIC	0	1	1	1.3	1.5	**1.5**
HOSE BIB (USE HIGHEST GPM OF INDOOR WATER FIXTURE)	0	1	1	3.5	2.5	**2.5**
HOSE BIB, EACH ADDITIONAL	0	0	0		1.0	**0.0**
LAVATORY 1.2 GPM (CPC 407.2.2)	0	1	1	1.5	1.0	**1.0**
SHOWER, PER HEAD 1.8 GPM (CPC 408.2.1)	0	1	1	1.8	2.0	**2.0**
SINKS (KITCHEN) 1.8 GPM (CPC 420.2.1)	0	1	1	2.2	1.5	**1.5**
WATER CLOSET 1.28 GPF (CPC 411.2.1)	0	1	1	3	2.5	**2.5**
TOTAL WSFU						15.0

APPLICABLE CODES AND REGULATIONS

THIS PROJECT SHALL COMPLY WITH THE FOLLOWING BUILDING CODES AND ANY OTHER APPLICABLE REGULATIONS:

1. 2022 CALIFORNIA RESIDENTIAL CODE (CRC) AND/OR 2022 CALIFORNIA BUILDING CODE (CBC) AS APPLICABLE
2. 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN)
3. 2022 CALIFORNIA ELECTRICAL CODE (CEC)
4. 2022 CALIFORNIA MECHANICAL CODE (CMC)
5. 2022 CALIFORNIA PLUMBING CODE (CPC)
6. 2022 CALIFORNIA FIRE CODE (CFC)
7. 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS (CBEES) SECTION R106.1.

CONTACT THE CITY OF CHULA VISTA FOR DEVELOPMENT STANDARDS, ZONING SETBACKS, & LOT INFORMATION.

GENERAL NOTES

1. COMPLIANCE WITH THE DOCUMENTATION REQUIREMENTS OF THE 2022 ENERGY EFFICIENCY STANDARDS IS NECESSARY FOR THIS PROJECT. REGISTERED, SIGNED, AND DATED COPIES OF THE APPROPRIATE CF1R, CF2R, AND CF3R FORMS SHALL BE MADE AVAILABLE AT NECESSARY INTERVALS FOR BUILDING INSPECTOR REVIEW. FINAL COMPLETED FORMS WILL BE AVAILABLE FOR THE BUILDING OWNER.
2. PRIOR TO FINAL INSPECTION THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST PROVIDE TO THE BUILDING DEPARTMENT OFFICIAL WRITTEN VERIFICATION THAT ALL APPLICABLE PROVISIONS FROM THE GREEN BUILDING STANDARDS CODE HAVE BEEN IMPLEMENTED AS PART OF THE CONSTRUCTION. CGC 102.3.
3. REFER TO PLUMBING SPEC SHEETS FOR ADDITIONAL INFORMATION.
4. REFER TO CABINET DRAWINGS AND APPLIANCES PACKAGES.
5. REFER TO TRUSS PACKAGE AND CALCS FOR ROOF FRAMING.
6. ALL DIMENSIONS ARE TO FACE OF STUD OR EDGE OF CONCRETE UNLESS NOTED OTHERWISE.
7. IF SEWER PUMP REQUIRED, INSTALLATION SHALL CONFIRM TO SECTIONS 710.1-710.13 OF THE CALIFORNIA PLUMBING CODE AND ALL OTHER RELEVANT SECTIONS OF THE CPC.
8. THE APPLICANT UNDERSTANDS THAT IF THE BUILDING INSPECTOR OBSERVES OR SUSPECTS THAT FILL MATERIALS AND/OR EXPANSIVE SOILS ARE PRESENT IN THE BUILDING AREA, A GEOTECHNICAL REPORT PREPARED BY A REGISTERED DESIGN PROFESSIONAL MAY BE REQUIRED.
9. FIELD INSPECTION OF THIS PERMIT WILL NOT BE "FINALIZED" UNTIL A COMPLETE PHOTOVOLTAIC SYSTEM IS INSTALLED, INSPECTED, AND APPROVED.

DEFERRED SUBMITTALS

1. FIRE SPRINKLERS (IF APPLICABLE)

***PLANS FOR THE DESIGN AND INSTALLATION OF THE FIRE SPRINKLER SYSTEM(S) ARE A DEFERRED SUBMITTAL AND SHALL BE SUBMITTED AND APPROVED, PRIOR TO ANY INSTALLATION WORK, TO CVFD FIRE PREVENTION DIVISION LOCATED AT (276 FOURTH AVE, BLDG. C (619) 691-5029**

***SUBMITTALS REQUIRED FOR THIS PROJECT (IF PRIMARY RESIDENCE IS ALREADY PROTECTED BY FIRE SPRINKLERS):**
FIRE SPRINKLER - NFPA 13D OR CRC

SCOPE OF WORK

CONSTRUCTION OF A NEW DETACHED 1-STORY ACCESSORY DWELLING UNIT 498 SF (1-BEDROOM / 1-BATH).

IMPERVIOUS AREA:
EXISTING: ______SF
PROPOSED: ______SF
TOTAL IMPERVIOUS AREA: ______SF
DISTURBED AREA: ______SF

EARTHWORK QUANTITIES:
CUT: ________
FILL: ________
IMPORT: ________
EXPORT: ________
AREA TO BE GRADED: ________

HERS FEATURE SUMMARY

PER CF1R FORM (TITLE 24)

- QUALITY INSULATION INSTALLATION (QII)
- INDOOR AIR QUALITY VENTILATION
- KITCHEN RANGE HOOD
- VERIFIED HEAT PUMP RATED HEATING CAPACITY

REQUIRED SPECIAL FEATURES

PER CF1R FORM (TITLE 24)

- PV EXCEPTION 2: NO PV REQUIRED WHEN MINIMUM PV SIZE (SECTION 150.1(C)14) < 1.8 kWDC (0 kW)
- INSULATION BELOW ROOF DECK
- NORTHWEST ENERGY EFFICIENCY ALLIANCE (NEEA) RATED HEAT PUMP WATER HEATER; SPECIFIC BRAND / MODEL, OR EQUIVALENT, MUST BE INSTALLED

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DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

TITLE SHEET

G100

22040

ELECTRICAL PLAN NOTES:

1. SDGE HAS SPECIFIC REQUIREMENTS ABOUT THE NUMBER OF MAIN ELECTRICAL SERVICE PANELS (HOW MANY ELECTRICAL DROPS) ALLOWED ON THE SAME LOT, WHICH IS DIFFERENT FROM THE REQUIREMENTS OF THE CITY OF CHULA VISTA AND CALIFORNIA ELECTRICAL CODE.
2. SDGE MAY REQUIRE ALL NEW ADU(S)/JADU(S) TO BE PLACED ON A SEPARATE ELECTRIC METER.
3. IT IS THE RESPONSIBILITY OF THE PROJECT DESIGNER TO CONTACT SDGE FOR THE REQUIREMENTS FOR SETTING UP THE NEW ELECTRICAL UTILITIES TO ALL NEW ADU(S)/JADU(S).
4. REFER TO THE CURRENT SDGE SERVICE STANDARDS AND GUIDE TO ENSURE THAT PROJECT COMPLIES WITH THEIR REQUIREMENTS.

SITE PLAN NOTES:

1. THE PLACEMENT OF BUILDINGS AND STRUCTURES ON OR ADJACENT TO SLOPES STEEPER THAN 1 UNIT VERTICAL IN 3 UNITS HORIZONTAL (33.3-PERCENT SLOPE) SHALL CONFORM TO SECTIONS R403.1.7.1 THROUGH R403.1.7.4.

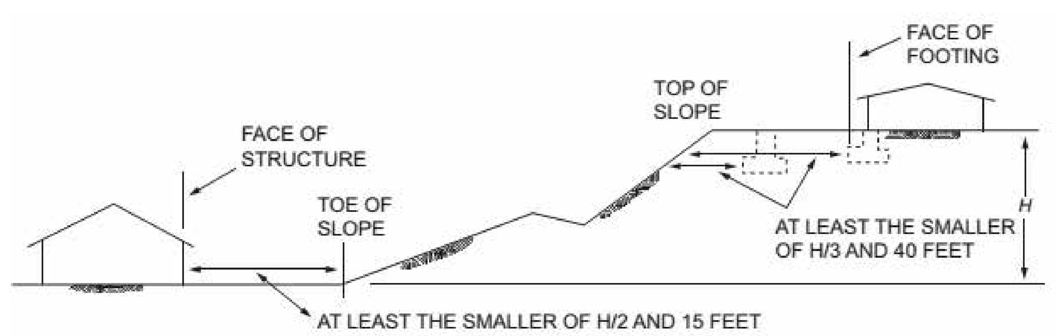


FIG. R403.1.7.1. FOUNDATION CLEARANCE FROM SLOPES

FLOOR PLAN NOTES:

1. DURING CONSTRUCTION, AT LEAST ONE EXTINGUISHER SHALL BE PROVIDED ON EACH FLOOR LEVEL AT EACH STAIRWAY, IN ALL STORAGE CONSTRUCTION SHEDS, IN LOCATIONS WHERE FLAMMABLE OR COMBUSTIBLE LIQUIDS ARE STORED OR USED, AND WHERE OTHER SPECIAL HAZARDS ARE PRESENT PER CFC 3315.1
2. DUMPSTERS AND TRASH CONTAINERS EXCEEDING 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM OR LOCATED IN A TYPE 1 OR IIA STRUCTURE SEPARATED BY 10 FEET FROM OTHER STRUCTURES.
3. CONTAINERS LARGER THAN 1 CUBIC YARD SHALL BE OF NON- OR LIMITED-COMBUSTIBLE MATERIALS OR SIMILARLY PROTECTED OR SEPARATED.
4. OPEN FLAMES, FIRE, AND BURNING ON ALL PREMISES IS PROHIBITED EXCEPT AS SPECIFICALLY PERMITTED BY CFC 308.
5. NEWLY CONSTRUCTED DWELLING UNITS INCLUDING DETACHED ADUs ARE REQUIRED TO COMPLY WITH AGING-IN-PLACE REQUIREMENTS IN ACCORDANCE WITH CRC R327.1 ADDRESS THE FOLLOWING:
   A. AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH THIS SECTION.
      1. SPECIFY THE REINFORCEMENT TO BE SOLID LUMBER AND NOT LESS THAN 2X8.
      2. DIMENSION THE REINFORCEMENT SHALL BE LOCATED BETWEEN 32 - 39 ¼ INCHES ABOVE THE FINISHED FLOOR.
      3. SPECIFY THE WATER CLOSET REINFORCEMENT TO BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ONE SIDE WALL AND THE BACK WALL.(1) WHERE THE WATER CLOSET IS NOT LOCATED ADJACENT TO THE SIDE WALL, GRAB BAR REINFORCEMENT FOR A GROUND-MOUNTED INSTALLATION IS ACCEPTABLE.
      4. SPECIFY THE SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED.
      5. BATHTUB AND COMBINATION BATHTUB/SHOWER REINFORCEMENT SHALL BE CONTINUOUS ON EACH END OF THE BATHTUB AND THE BACK WALL. ADDITIONALLY, BACK WALL REINFORCEMENT FOR A LOWER GRAB BAR SHALL BE PROVIDED WITH THE BOTTOM EDGE LOCATED NO MORE THAN 6 INCHES ABOVE THE BATHTUB RIM.
   B. ELECTRICAL RECEPTACLE OUTLETS, SWITCHES AND CONTROLS INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48 INCHES MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15 INCHES MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR.
   C. SPECIFY DOORBELL CONTROLS TO BE NOT EXCEED 48 INCHES ABOVE EXTERIOR FLOOR, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY.

ENERGY STORAGE SYSTEM (ESS) NOTES:

ALL NEW RESIDENTIAL UNITS ARE REQUIRED TO BE ENERGY STORAGE SYSTEM (ESS) READY. PROVIDE THE FOLLOWING ON
THE PLANS PER CEC 150.0(S):

1. AT LEAST ONE OF THE FOLLOWING SHALL BE PROVIDED:
   A. ESS READY INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED-UP CAPACITY OF 60 AMPS AND A MINIMUM OF FOUR ESS-SUPPLIED BRANCH CIRCUITS, OR
2. A DEDICATED RACEWAY FROM THE MAIN SERVICE TO A PANELBOARD (SUBPANEL) THAT SUPPLIES THE BRANCH CIRCUITS IN SECTION 150.0(S)(2). ALL BRANCH CIRCUITS ARE PERMITTED TO BE SUPPLIED BY THE MAIN SERVICE PANEL PRIOR TO THE INSTALLATION OF AN ESS. THE TRADE SIZE OF THE RACEWAY SHALL BE NOT LESS THAN 1 INCH. THE PANELBOARD THAT SUPPLIES THE BRANCH CIRCUITS (SUBPANEL) MUST BE LABELED "SUBPANEL SHALL INCLUDE ALL BACKED UP LOAD CIRCUITS."
3. A MINIMUM OF FOUR BRANCH CIRCUITS SHALL BE IDENTIFIED AND HAVE THEIR SOURCE OF SUPPLY COLLOCATED AT A SINGLE PANELBOARD SUITABLE TO BE SUPPLIED BY THE ESS. AT LEAST ONE CIRCUIT SHALL SUPPLY THE REFRIGERATOR, ONE LIGHTING CIRCUIT SHALL BE LOCATED NEAR THE PRIMARY EGRESS AND AT LEAST ONE CIRCUIT SHALL SUPPLY A SLEEPING ROOM RECEPTACLE OUTLET.
4. THE MAIN PANELBOARD SHALL HAVE A MINIMUM BUSBAR RATING OF 225 AMPS.
5. SUFFICIENT SPACE SHALL BE RESERVED TO ALLOW FUTURE INSTALLATION OF A SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH WITHIN 3 FEET OF THE MAIN PANELBOARD. RACEWAYS SHALL BE INSTALLED BETWEEN THE PANELBOARD AND THE SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH LOCATION TO ALLOW THE CONNECTION OF BACKUP POWER SOURCE.

PLUMBING & MECHANICAL NOTES

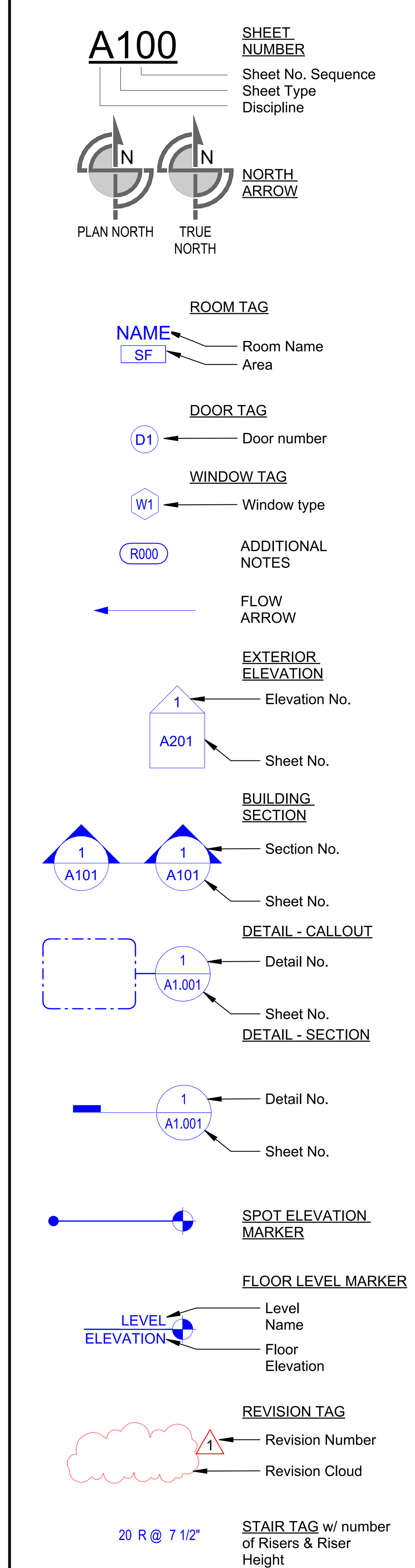
1. A PLUMBING FIXTURE CERTIFICATION MUST BE COMPLETED AND SIGNED BY EITHER A LICENSED GENERAL CONTRACTOR, A PLUMBING CONTRACTOR, OR THE BUILDING OWNER CERTIFYING THE FLOW RATE OF THE FIXTURES INSTALLED. A COPY OF THE CERTIFICATION CAN BE OBTAINED FROM THE DEVELOPMENT SERVICES DEPARTMENT.
2. ALL PLUMBING FIXTURES AND FITTINGS WILL BE WATER CONSERVING.
3. PERMANENT VACUUM BREAKERS SHALL BE INCLUDED WITH ALL NEW HOSE BIBS.
4. PER CPC, 402.5, 30" CLEAR WIDTH REQUIRED FOR THE WATER CLOSET COMPARTMENT AND MINIMUM 24" CLEARANCE REQUIRED IN FRONT OF THE WATER CLOSET.
5. PLUMBING FIXTURES (WATER CLOSETS AND URINALS) AND FITTINGS (FAUCETS AND SHOWERHEADS) SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE (CPC).
6. ALL NEW RESIDENTIAL BUILDINGS (SINGLE FAMILY, DUPLEXES, OR TOWNHOMES) SHALL BE CONSTRUCTED TO INCLUDE WASTE PIPING TO DISCHARGE GRAY WATER FROM CLOTHES WASHERS TO A PLACE WHERE IT MAY BE USED FOR OUTDOOR IRRIGATION, IN COMPLIANCE WITH SECTION 1602 OF THE CALIFORNIA PLUMBING CODE.
7. OUTDOOR SHOWER DRAINS AND SINKS ARE NOT PERMITTED TO CONNECT TO THE PUBLIC SEWER SYSTEM UNLESS EQUIPPED WITH AN APPROVED COVER. HOT AND COLD WATER CONNECTIONS ALLOWED.
8. THE CONTROL VALVES IN SHOWERS, TUB/SHOWERS, BATHTUBS, AND BIDETS MUST BE PRESSURE BALANCED OR THERMOSTATIC MIXING VALVES. CPC 408, 409, 410.
9. MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL COMPLY WITH THE FOLLOWING:
   A. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
   B. UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM, FANS MUST BE CONTROLLED BY A HUMIDISTAT WHICH SHALL BE READILY ACCESSIBLE. HUMIDISTAT CONTROLS SHALL BE CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF 50 TO 80 PERCENT.
10. FOR WATER HEATER, ADDRESS THE FOLLOWING:
   A. PROVIDE T & P RELIEF VALVE AND SHOW TERMINATION POINT.
   B. PROVIDE PLATFORM FOR THE WATER HEATER.
   C. PROVIDE SEISMIC STRAPPING FOR THE WATER HEATER PER CPC 507.2.
      a. STRAPPING SHALL BE AT POINTS WITHIN THE UPPER ONE THIRD AND LOWER ONE-THIRD OF THE WATER HEATER.
      b. AT THE LOWER POINT, A MINIMUM DISTANCE OF FOUR INCHES SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAPPING.
11. HEAT PUMP WATER HEATER SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
12. HEAT PUMP WATER HEATER AND WATER LINES SHALL BE PROTECTED FROM FREEZING TEMPERATURES AND NOT INSTALLED IN OUTDOOR UNPROTECTED AREAS.
13. VERIFY WATER HEATER IS RATED FOR EXTERIOR INSTALLATION.
14. WATER HEATER USING GAS OR PROPANE WATER HEATER TO SERVE INDIVIDUAL DWELLING UNITS SHALL INCLUDE THE FOLLOWING PER CENERGYC 150.0(N):
   A. A DEDICATED 240 VOLT BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITHIN 3 FEET FROM THE WATER HEATER AND ACCESSIBLE TO THE WATER WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT CONDUCTORS SHALL BE RATED AT 30 AMPS MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY." ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE.
   B. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE WATER HEATER INSTALLATION. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE."
15. 150.0(U) ELECTRIC COOKTOP READY. SYSTEMS USING GAS OR PROPANE COOKTOP TO SERVE INDIVIDUAL DWELLING UNITS SHALL INCLUDE THE FOLLOWING:
   A. A DEDICATED 240 VOLT BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITHIN 3 FEET FROM THE COOKTOP AND ACCESSIBLE TO THE COOKTOP WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT CONDUCTORS SHALL BE RATED AT 50 AMPS MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY."
   B. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE ELECTRIC COOKTOP INSTALLATION. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE."
16. 150.0(V) ELECTRIC CLOTHES DRYER READY. CLOTHES DRYER LOCATIONS WITH GAS OR PROPANE PLUMBING TO SERVE INDIVIDUAL DWELLING UNITS SHALL INCLUDE THE FOLLOWING:
   A. A DEDICATED 240 VOLT BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITHIN 3 FEET FROM THE CLOTHES DRYER LOCATION AND ACCESSIBLE TO THE CLOTHES DRYER LOCATION WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT CONDUCTORS SHALL BE RATED AT 30 AMPS MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY."
   B. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE ELECTRIC CLOTHES DRYER INSTALLATION. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE."
17. 150.0(T)SYSTEMS USING GAS OR PROPANE FURNACE TO SERVE INDIVIDUAL DWELLING UNITS SHALL INCLUDE THE FOLLOWING:
   A. A DEDICATED 240 VOLT BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITHIN 3 FEET FROM THE FURNACE AND ACCESSIBLE TO THE FURNACE WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT CONDUCTORS SHALL BE RATED AT 30 AMPS MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY." ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE.
   B. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE HEAT PUMP SPACE HEATER INSTALLATION. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE."

ABBREVIATIONS

A/C	AIR CONDITIONING	LAV	LAVATORY
AC	AIR CURTAIN	L	LOUVER
AFF	ABOVE FINISHED FLOOR		
ALUM	ALUMINUM	MAX	MAXIMUM
ARCH	ARCHITECTURAL	MECH	MECHANICAL
		MTL	METAL
B	BOLLARD	MFR	MANUFACTURER
BLDG	BUILDING	MIN	MINIMUM
BLK'G	BLOCKING	MWO	MICROWAVE OVEN
BTW	BETWEEN		
		N/A	NOT APPLICABLE
CAB	CABINET	(N)	NEW
CA	COMPRESSED AIR	NIC	NOT IN CONTRACT
℄	CENTER LINE	NTS	NOT TO SCALE
CLG	CEILING		
CLO.	CLOSET	OC	ON CENTER
CLR	CLEAR	o/	OVER
CMU	CONCRETE MASONRY UNIT		
CO	CLEAN OUT (PLUMBING)	P.LAM	PLASTIC LAMINATE
CONC	CONCRETE	PLYWD	PLYWOOD
CONST.	CONSTRUCTION	PTW	PRESSURE TREATED WOOD
CONT.	CONTINUOUS	⅊	PROPERTY LINE
CONTR	CONTRACTOR		
CORR	CORRIDOR	REFR.	REFRIGERATOR
		REQ'D	REQUIRED
D	DRYER	RD	ROOF DRAIN
DS	DOWNSPOUT	RDO	ROOF DRAIN OVERFLOW
DSN	DOWNSPOUT NOZZLE	RE:	REFER TO
DV	DRYER VENT	RO	ROUGH OPENING
DW	DISHWASHER		
		S/A	SUPPLY AIR
(E)	EXISTING	SIM	SIMILAR
EP	ELECTRICAL PANEL DRAWINGS	SLD	SLOT DRAIN
EQ	EQUAL	SOD	SCUPPER OVERFLOW DRAIN
EQUIP	EQUIPMENT	SRD	SCUPPER ROOF DRAIN
		SUSP	SUSPENDED
FIN	FINISHED	STL	STEEL
FO	FINISHED OPENING		
FOC	FACE OF CONCRETE	T	THERMOSTAT
FOF	FACE OF FINISH	TD	TRENCH DRAIN
FOM	FACE OF MASONRY	TEL	TELEPHONE
FOS	FACE OF STUD	TYP	TYPICAL
FURR	FURRED, FURRING	T.O.	TOP OF...
		T.O.D	TOP OF DRAIN
GA	GAUGE		
GB	GRAB BAR	UNO	UNLESS NOTED OTHERWISE
GWB	GYPSUM WALL BOARD		
GYP.BD.	GYPSUM BOARD	VIF	VERIFY IN FIELD
GALV.	GALVANIZED		
		W	WASHER
HB	HOSE BIB	W/	WITH
HDWR	HARDWARE	W/O	WITHOUT
HM	HOLLOW METAL	WD	WOOD
HPW DWGS.	HOT WATER - SEE PLUMBING	WH	WATER HEATER
HVAC	HEATING, VENTILATING, & AIR CONDITIONING		

SYMBOLS LEGEND

SEE DISCIPLINE SHEETS FOR DISCIPLINE SPECIFIC SYMBOLS



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GENERAL NOTES

G101

22040

WASTE WATER:

✓ SELECTION

- [ ] SEWER
- [ ] SEPTIC*

SEPTIC OPTION NOTES:

1. PROVIDE PLAN SHEETS ADDRESSING SEPTIC OPTION INFORMATION.
2. IN ADDITION TO APPROVAL FROM BUILDING & SAFETY, APPROVAL IS REQUIRED FROM THE SAN DEIGO COUNTY HEALTH DEPARTMENT. PROVIDE DOCUMENTATION SHOWING SEPTIC SYSTEM WAS REVIEWED AND APPROVED BY THE COUNTY HEALTH DEPARTMENT.
3. DESIGN AND LOCATION OF PROPOSED SEPTIC SYSTEM SHALL BE PROVIDED ON SITE PLAN IN ACCORDANCE WITH CPC APPENDIX H. ALL ELEMENTS INCLUDING DISPOSAL FIELD SIZING BASED ON PERCOLATION RATE SHALL BE SHOWN.
   1. ON THE SITE PLAN, DIMENSION THE SEPTIC TANK AND DISPOSAL FIELD/SEEPAGE PIT FROM THE BUILDINGS, LOT LINES, TREES, ETC. ENSURE THE LOCATION OF THE SEWAGE DISPOSAL SYSTEM IS IN COMPLIANCE WITH CPC TABLE H 101.8.
   2. PROVIDE THE CAPACITY OF THE SEPTIC TANK PER CPC H 201.0.
   3. PROVIDE THE DESIGN FOR THE DISPOSAL FIELD AND SEEPAGE PITS PER CPC H 301.0.

METHANE AREA:

✓ SELECTION

PROPOSED ACCESSORY DWELLING UNIT IN METHANE AREA

- [ ] YES
- [ ] NO

PHOTOVOLTAIC (PV) SOLAR SYSTEM SIZE REQUIREMENT:

✓ SELECTION (PER T24 CALCULATIONS PG. 2)

NUMBER OF BEDROOMS:	FOUNDATION TYPE:	CLIMATE ZONE 7	CLIMATE ZONE 10
1	SLAB-ON-GRADE	[ ] *	[ ] *
1	RAISED FLOOR	[ ] *	[ ] *

* PV EXCEPTION 2: NO PV REQUIRED WHEN MINIMUM PV SIZE (SECTION 150.1(C)14) < 1.8 kWDC (0 kW)

SOILS REQUIREMENT:

✓ SELECTION

- [ ] SOILS REPORT IS PROVIDED.
- [ ] SOIL REPORT WAIVER IS REQUESTED; IF CHECKED THEN A LETTER FROM A LICENSESD PROFESSIONAL ENGINEER MUST BE PROVIDED TO CERTIFY THAT THERE IS NO FILL. SUCH LETTER TO BE IMPRINTED ON THE PLANS.

WILDLAND-URBAN INTERFACE (WUI):

✓ SELECTION

- [ ] YES
- [ ] NO

1. EAVES SHALL BE ENCLOSED PER THE CRITERIA LISTED IN CRC R337.7.5. SHOW ON APPLICABLE DETAILS.
2. EXTERIOR WALLS SHALL BE IGNITION RESISTANT OR NON-COMBUSTIBLE. PROVIDE DETAILS AND INFORMATION FOR THE SIDING TO DEMONSTRATE COMPLIANCE. CRC R337.7.3
3. THE SCREENS COVERING VENTS SHALL HAVE A MAXIMUM MESH OF 1/8" AND SHALL BE OF CORROSION-RESISTANT METAL. CRC R337.6.2
4. VENTS SHALL NOT BE INSTALLED ON THE UNDERSIDE OF EAVES. CRC R337.6.3
5. PROVIDE ONE LAYER OF ROOF UNDERLAYMENT OF MINIMUM 72-POUND MINERAL-SURFACED NON-PERFORATED CAP SHEET COMPLYING WITH ASTM D 3909. CRC 337.5.2
6. ROOF GUTTERS SHALL BE SCREENED TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS. CRC R337.5.4.

DEFENSIBLE SPACE ZONES

ZONE 0 - EMBER-RESISTANT ZONE

EXTENDS 5 FEET FROM BUILDINGS, STRUCTURES, DECKS, ETC.

THE EMBER-RESISTANT ZONE IS CURRENTLY NOT REQUIRED BY LAW, BUT SCIENCE HAS PROVEN IT TO BE THE MOST IMPORTANT OF ALL THE DEFENSIBLE SPACE ZONES. THIS ZONE INCLUDES THE AREA UNDER AND AROUND ALL ATTACHED DECKS, AND REQUIRES THE MOST STRINGENT WILDFIRE FUEL REDUCTION. THE EMBER-RESISTANT ZONE IN DESIGNED TO KEEP FIRE OR EMBERS FROM IGNITING MATERIALS THAT CAN SPREAD THE FIRE TO YOUR HOME. THE FOLLOWING PROVIDES GUIDANCE FOR THIS ZONE, WICH MAY CHANGE BASED ON THE REGULATION DEVELOPED BY THE BOARD OF FORESTRY AND FIRE PROTECTION.

- USE HARDSCAPE LIKE GRAVEL, PAVERS, CONCRETE AND OTHER NONCOMBUSTIBLE MULCH MATERIALS. NO COMBUSTIBLE BARK OR MULCH.
- REMOVE ALL DEAD AND DYING WEEDS, GRASS, PLANTS SHRUBS, TREES, BRANCHES AND VEGETATIVE DEBRIS (LEAVES, NEEDLES, CONES, BARK, ETC.); CHECK YOUR ROOFS, GUTTERS. DECKS, PORCHES, STAIRWAYS, ETC.
- REMOVE ALL BRANCHES WITHIN 10 FEET OF ANY CHIMNEY OR STOVEPIPE OUTLET.
- LIMIT PLANTS IN THIS AREA TO LOW GROWING, NONWOODY, PROPERLY WATERED AND MAINTAINED PLANTS.
- LIMIT COMBUSTIBLE ITEMS (OUTDOOR FURNITURE, PLANTERS, ETC.) ON TOP OF DECKS.
- RELOCATE FIREWOOD AND LUMBER TO ZONE 2.
- REPLACE COMBUSTIBLE FENCING, GATES, AND ARBORS ATTACH TO THE HOME WITH NONCOMBUSTIBLE ALTERNATIVES.
- CONSIDER RELOCATING GARBAGE AND RECYCLING CONTAINERS OUTSIDE THIS ZONE.
- CONSIDER RELOCATING BOATS, RV'S, VEHICLES AND OTHER COMBUSTIBLE ITEMS OUTSIDE THIS ZONE.

ZONE 1 - LEAN, CLEAN AND GREEN ZONE

EXTENDS 30 FEET FROM BUILDINGS, STRUCTURES, DECKS, ETC. OR TO YOUR PROPERTY LINE, WHICHEVER IS CLOSER.

- REMOVE ALL DEAD PLANTS, GRASS AND WEEDS (VEGETATION).
- REMOVE DEAD OR DRY LEAVES AND PINE NEEDLES FROM YOUR YARD, ROOF AND RAIN GUTTERS.
- REMOVE BRANCHES THAT HANG OVER YOUR ROOF AND KEEP DEAD BRANCHES 10 FEET AWAY FROM YOUR CHIMNEY.
- TRIM TREES REGULARLY TO KEEP BRANCHES A MINIMUM OF 10 FEET FROM OTHER TREES.
- RELOCATE WOOD PILES TO ZONE 2.
- REMOVE OR PRUNE FLAMMABLE PLANTS AND SHRUBS NEAR WINDOWS.
- REMOVE VEGETATION AND ITEMS THAT COULD CATCH FIRE FROM AROUND AND UNDER DECKS, BALCONIES AND STAIRS.
- CREATE A SEPARATION BETWEEN TREES, SHRUBS AND ITEMS THAT COULD CATCH FIRE, SUCH AS PATIO FURNITURE, WOOD PILES, SWING SETS, ETC.

ZONE 2 - REDUCE FUEL ZONE

EXTENDS FROM 30 FEET TO 100 FEET OUT FROM BUILDINGS, STRUCTURES, DECKS, ETC. OR TO YOUR PROPERTY LINE, WHICHEVER IS CLOSER.

- CUT OR MOW ANNUAL GRASS DOWN TO A MAXIMUM HEIGHT OF 4 INCHES.
- CREATE HORIZONTAL SPACE BETWEEN SHRUBS AND TREES. (SEE DIAGRAM)
- CREATE VERTICAL SPACE BETWEEN GRASS, SHRUBS AND TREES. (SEE DIAGRAM)
- REMOVE FALLEN LEAVES, NEEDLES, TWIGS, BARK, CONES, AND SMALL BRANCHES. HOWEVER, THEY MAY BE PERMITTED TO A DEPTH OF 3 INCHES.
- ALL EXPOSED WOOD PILES MUST HAVE A MINIMUM OF 10 FEET OF CLEARANCE, DOWN TO BARE MINERAL SOIL, IN ALL DIRECTIONS.

FIRE SPRINKLERS:

✓ SELECTION

EXISTING PRIMARY DWELLING UNIT

- [ ] YES
- [ ] NO

REQUIRED AT PROPOSED ACCESSORY DWELLING UNIT

- [ ] YES
- [ ] NO

VERY HIGH FIRE SEVERITY ZONE:

✓ SELECTION

- [ ] *YES
- [ ] NO

1. ALL EXTERIOR GLAZED DOOR ASSEMBLIES SHALL BE MULTI-PANE WITH A MINIMUM OF ONE TEMPERED PANE AND COMPLY WITH SECTION CRC R337.8.2.1
2. ALL EXTERIOR DOORS SHALL BE 20-MINUTES FIRE RATED AND COMPLY WITH SECTION CRC R337.8.3
3. ALL EXTERIOR WINDOW ASSEMBLIES SHALL COMPLY WITH SECTION CRC R337.8.2.1
4. ROOF GUTTERS SHALL BE PROVIDED WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER. ALL ROOF GUTTERS AND DOWNSPOUTS SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS PER CRC R337.5.4; SDMC 149.0327(E) (1).
5. DRIP EDGE FLASHING USED AT THE FREE EDGES OF ROOFING MATERIALS SHALL BE NON-COMBUSTIBLE PER SDMC 149.0327(E) (2).
6. VALLEY FLASHINGS SHOULD BE NOT LESS THAN 0.019-INCH (NO. 26 GALVANIZED SHEET GAGE) CORROSION-RESISTANT METAL INSTALLED OVER A MINIMUM 36-INCH-WIDE UNDERLAYMENT CONSISTING OF ONE LAYER OF NO. 72 ASTM CAP SHEET RUNNING THE FULL LENGTH OF THE VALLEY PER CRC R337.5.3.
7. CHIMNEYS, FLUES OR STOVEPIPES ATTACHED TO ANY FIREPLACE, STOVE, BARBEQUE OR OTHER SOLID OR LIQUID FUEL BURNING EQUIPMENT OR DEVICE SHALL BE EQUIPPED WITH AN APPROVES SPARK ARRESTOR PER SDMC 149.0327(H).
8. TURBINE ATTIC VENTS SHALL BE EQUIPPED TO ALLOW ONE-WAY DIRECTION ROTATION ONLY AND SHALL NOT FREE SPIN IN BOTH DIRECTIONS PER SDMC 145.0706(D).
9. ATTIC VENTS SHOULD BE PROTECTED BY NONCOMBUSTIBLE, CORROSION RESISTANT MESH AND MEETS ALL THE FOLLOWING REQUIREMENTS (PER CRC R337.6.2; SDMC 149.0327(F).1):
   A. INDIVIDUAL VENT OPENINGS SHALL NOT EXCEED 144 SQUARE INCHES.
   B. THE DIMENSIONS OF THE OPENINGS SHALL BE A MINIMUM OF 1/16-INCH AND SHALL NOT EXCEED 1/8-INCH.

*SEE DETAILS:
1/A500, 2/A500, 3/A500;
1/A510; 2/A510, 3/A510, 4/A510, 5/A510, 6/A510, 12/A510.
1/A520; 2/A520, 3/A520, 4/A520, 5/A520, 6/A520, 12/A520.
1/A530; 2/A530, 3/A530, 4/A530, 5/A530, 6/A530, 12/A530.

WATER METER:

✓ SELECTION

- [ ] UPGRADE METER
- [ ] EXISTING METER TO REMAIN
- [ ] NEW METER

ELECTRICAL SERVICE:

✓ SELECTION

- [ ] UPGRADE SERVICE
- [ ] EXISTING SERVICE TO REMAIN
- [ ] NEW SERVICE

*IF THE EXISTING MSP IS NOT 200A WITH 225A BUS RATING, A NEW SERVICE PANEL FOR THE EXISTING SFR OR THE PROPOSED ADU SHALL BE PROVIDED TO COMPLY WITH ESS READY REQUIREMENT.

CLIMATE ZONE:

✓ SELECTION

- [ ] CLIMATE ZONE 7 (ZIP CODES: 91910, 91911, 91913, 91915)
- [ ] CLIMATE ZONE 10 (ZIP CODE: 91914)

ADU FLOOR PLAN:

✓ SELECTION

- [ ] STANDARD 1-BEDROOM PLAN

MISC. AVAILABLE OPTIONS:

✓ SELECTION(S)

- [ ] 5' PENINSULA (SEE 1/A102)
- [ ] 6'-0" x 6'-8" SLIDING GLASS DOOR (SEE 2/A102)
- [ ] ENLARGED BEDROOM & BATH DOOR (SEE 3/A102)
- [ ] SKYLIGHTS (SEE 1/A121)

FOUNDATION TYPE:

✓ SELECTION

- [ ] STANDARD SOIL, SLAB ON GRADE (SEE S1 / S2)
- [ ] STANDARD SOIL, RAISED FLOOR FOUNDATION* (SEE S1 / S2)

* PROVIDE 18" X 24" MIN. UNDERFLOOR ACCESS, CLEARANCE, AND VENTILATION. UNDER-FLOOR VENTILATION SHALL BE NOT LESS THAN 1/150 OF UNDER FLOOR AREA. (1209.1, R408.2, R408.4) REFER TO DETAIL 8 AND 9/ SHEET A500.

EXTERIOR WALL MATERIAL:

✓ SELECTION

- [ ] ELEVATION A - STUCCO
- [ ] ELEVATION B - LAP SIDING
- [ ] ELEVATION C - BOARD & BATTEN SIDING

ROOF MATERIAL:

✓ SELECTION

- [ ] ROOF TYPE 1 - ASPHALT SHINGLE - CLASS 'A'*
- [ ] ROOF TYPE 2 - CEMENT FLAT TILE - CLASS 'A'**
- [ ] ROOF TYPE 3 - CONCRETE S-TILE - CLASS 'A'***

* 242 HIGHLANDER NEX AR BY MALARKEY ROOFING; ICC: ESR-3150; OR SIMILAR. (SEE DETAILS 1/A500, 4/A500, 1/A510, 4/A510, 1/A520, 4/A520, 1/A530, 4/A530)
** LOW PROFILE 'BEL AIR' CONCRETE ROOF TILE BY EAGLE ROOFING; IAPMO ER-1900; OR SIMILAR. (SEE DETAILS 2/A500, 5/A500, 2/A510, 5/A510, 2/A520, 5/A520, 2/A530, 5/A530)
*** HIGH PROFILE 'CAPISTRANO' CONCRETE S-TILE ROOF BY EAGLE ROOFING; IAPMO ER-1900; OR SIMILAR. (SEE DETAILS 3/A500, 6/A500, 3/A510, 6/A510, 3/A520, 6/A520, 3/A530, 6/A530).

DETAIL GROUP:

✓ SELECTION

- [ ] A1: DETAIL SHEET A510
- [ ] A2: DETAIL SHEET A510
- [ ] A3: DETAIL SHEET A510
- [ ] B1: DETAIL SHEET A520
- [ ] B2: DETAIL SHEET A520
- [ ] B3: DETAIL SHEET A520
- [ ] C1: DETAIL SHEET A530
- [ ] C2: DETAIL SHEET A530
- [ ] C3: DETAIL SHEET A530

DETAIL GROUP DESIGNATOR:

A1

ROOF MATERIAL TYPE
EXTERIOR WALL MATERIAL TYPE

DETAIL GROUP DESIGNATOR

DETAIL TYPE

1 A1 - ROOF EAVE - SHINGLE W/ STUCCO
SCALE: 1 1/2" : 1'-0"

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DESIGNER:
LUIS CALDERON
SnapADU

SIGNATURE

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A	03/22/2024		LAC	

CHECKLIST

G102

22040

Autodesk Docs://22040_City of Chula Vista/22040_City of Chula Vista_498 Square_V2_CD_RVT22.rvt

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CODE COMPLIANCE NOTES

EXCERPTS FROM THE 2022 CALIFORNIA RESIDENTIAL CODE

CHAPTER 3 - BUILDING PLANNING

R302 FIRE-RESISTANT CONSTRUCTION

R301 **R302.1 EXTERIOR WALLS**
CONSTRUCTION, PROJECTIONS, OPENINGS AND PENETRATIONS OF EXTERIOR WALLS OF DWELLINGS AND ACCESSORY BUILDINGS SHALL COMPLY WITH TABLE R302.1(1); OR DWELLINGS AND ACCESSORY BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION R313 SHALL COMPLY WITH TABLE R302.1(2).

R302 **R302.5 DWELLING-GARAGE OPENING AND PENETRATION PROTECTION**
OPENINGS AND PENETRATIONS THROUGH THE WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE IN ACCORDANCE WITH SECTIONS R302.5.1 THROUGH R302.5.3.

R303 **R302.6 DWELLING/GARAGE AND/OR CARPORT FIRE SEPARATION**
THE GARAGE AND/OR CARPORT SHALL BE SEPARATED AS REQUIRED BY TABLE R302.6. OPENINGS IN GARAGE WALLS SHALL COMPLY WITH SECTION R302.5. ATTACHMENT OF GYPSUM BOARD SHALL COMPLY WITH TABLE R702.3.5. THE WALL SEPARATION PROVISIONS OF TABLE R302.6 SHALL NOT APPLY TO GARAGE WALLS THAT ARE PERPENDICULAR TO THE ADJACENT DWELLING UNIT WALL. A SEPARATION IS NOT REQUIRED BETWEEN THE DWELLING UNIT AND A CARPORT, PROVIDED THE CARPORT IS ENTIRELY OPEN ON TWO OR MORE SIDES AND THERE ARE NOT ENCLOSED AREAS ABOVE.

R304 **R302.7 UNDER-STAIR PROTECTION**
ENCLOSED SPACE UNDER STAIRS THAT IS ACCESSED BY A DOOR OR ACCESS PANEL SHALL HAVE WALLS, UNDER-STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2-INCH (12.7 MM) GYPSUM BOARD.

R305 **R302.11 FIREBLOCKING**
IN COMBUSTIBLE CONSTRUCTION, FIREBLOCKING SHALL BE PROVIDED TO CUT OFF BOTH VERTICAL AND HORIZONTAL CONCEALED DRAFT OPENINGS AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE.

FIREBLOCKING SHALL BE PROVIDED IN WOOD-FRAMED CONSTRUCTION IN THE FOLLOWING LOCATIONS:

1. IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS, AS FOLLOWS:
   - 1.1. VERTICALLY AT THE CEILING AND FLOOR LEVELS.
   - 1.2. HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET (3048 MM).
2. AT INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS.
3. IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH SECTION R302.7.
4. AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE REQUIRED TO MEET THE ASTM E136 REQUIREMENTS.
5. FOR THE FIREBLOCKING OF CHIMNEYS AND FIREPLACES, SEE SECTION R1003.19.
6. FIREBLOCKING OF CORNICES OF A TWO-FAMILY DWELLING IS REQUIRED AT THE LINE OF DWELLING UNIT SEPARATION.

R303 LIGHT, VENTILATION AND HEATING

R306 **R303.1 HABITABLE ROOMS**
HABITABLE ROOMS SHALL HAVE AN AGGREGATE GLAZING AREA OF NOT LESS THAN 8 PERCENT OF THE FLOOR AREA OF SUCH ROOMS. NATURAL VENTILATION SHALL BE THROUGH WINDOWS, SKYLIGHTS, DOORS, LOUVERS OR OTHER APPROVED OPENINGS TO THE OUTDOOR AIR. SUCH OPENINGS SHALL BE PROVIDED WITH READY ACCESS OR SHALL OTHERWISE BE READILY CONTROLLABLE BY THE BUILDING OCCUPANTS. THE OPENABLE AREA TO THE OUTDOORS SHALL BE NOT LESS THAN 4 PERCENT OF THE FLOOR AREA BEING VENTILATED.

R307 **R303.2 ADJOINING ROOMS**
FOR THE PURPOSE OF DETERMINING LIGHT AND VENTILATION REQUIREMENTS, ROOMS SHALL BE CONSIDERED TO BE A PORTION OF AN ADJOINING ROOM WHERE NOT LESS THAN ONE-HALF OF THE AREA OF THE COMMON WALL IS OPEN AND UNOBSTRUCTED AND PROVIDES AN OPENING OF NOT LESS THAN ONE-TENTH OF THE FLOOR AREA OF THE INTERIOR ROOM AND NOT LESS THAN 25 SQUARE FEET (2.3 M2).

R307 TOILET, BATH AND SHOWER SPACES

R308 **R307.2 BATHTUB AND SHOWER SPACES**
BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND IN SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6 FEET (1829 MM) ABOVE THE FLOOR.

R308 GLAZING

R309 **R308.1 IDENTIFICATION**
EXCEPT AS INDICATED IN SECTION R308.1.1 EACH PANE OF GLAZING INSTALLED IN HAZARDOUS LOCATIONS AS DEFINED IN SECTION R308.4 SHALL BE PROVIDED WITH A MANUFACTURER'S DESIGNATION SPECIFYING WHO APPLIED THE DESIGNATION, THE TYPE OF GLASS AND THE SAFETY GLAZING STANDARD WITH WHICH IT COMPLIES, AND THAT IS VISIBLE IN THE FINAL INSTALLATION. THE DESIGNATION SHALL BE ACID ETCHED, SANDBLASTED, CERAMIC-FIRED, LASER ETCHED, EMBOSSED, OR BE OF A TYPE THAT ONCE APPLIED CANNOT BE REMOVED WITHOUT BEING DESTROYED. A LABEL SHALL BE PERMITTED IN LIEU OF THE MANUFACTURER'S DESIGNATION.

R310 **R308.4 HAZARDOUS LOCATIONS**
THE LOCATIONS SPECIFIED IN SECTIONS R308.4.1 THROUGH R308.4.7 SHALL BE CONSIDERED TO BE SPECIFIC HAZARDOUS LOCATIONS FOR THE PURPOSES OF GLAZING.

R310 EMERGENCY ESCAPE AND RESCUE OPENINGS

R311 **R310.2.1 MINIMUM SIZE**
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET (0.530 M2).

R312 **R310.2.2 MINIMUM DIMENSIONS**
THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES (610 MM). THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES (508 MM). THE NET CLEAR OPENING DIMENSIONS SHALL BE THE RESULT OF NORMAL OPERATION OF THE OPENING.

R313 **R310.2.3 WINDOW SILL HEIGHT**
WHERE A WINDOW IS PROVIDED AS THE EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES (1118 MM) MEASURED FROM THE FLOOR.

R314 **R310.4 AREA WELLS**
AN EMERGENCY ESCAPE AND RESCUE OPENING WHERE THE BOTTOM OF THE CLEAR OPENING IS BELOW THE ADJACENT GRADE SHALL BE PROVIDED WITH AN AREA WELL IN ACCORDANCE WITH SECTIONS R310.4.1 THROUGH R310.4.4.

R311 MEANS OF EGRESS

R315 **R311.3 FLOORS AND LANDINGS AT EXTERIOR DOORS**
THERE SHALL BE A LANDING OR FLOOR ON EACH SIDE OF EACH EXTERIOR DOOR. THE WIDTH OF EACH LANDING SHALL BE NOT LESS THAN THE DOOR SERVED. LANDINGS SHALL HAVE A DIMENSION OF NOT LESS THAN 36 INCHES (914 MM) MEASURED IN THE DIRECTION OF TRAVEL. THE SLOPE AT EXTERIOR LANDINGS SHALL NOT EXCEED 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2 PERCENT).

R316 **R311.3.1 FLOOR ELEVATIONS AT THE REQUIRED EGRESS DOORS**
LANDINGS OR FINISHED FLOORS AT THE REQUIRED EGRESS DOOR SHALL BE NOT MORE THAN 1 1/2 INCHES (38 MM) LOWER THAN THE TOP OF THE THRESHOLD.

EXCEPTION: THE LANDING OR FLOOR ON THE EXTERIOR SIDE SHALL BE NOT MORE THAN 7 3/4 INCHES (196 MM) BELOW THE TOP OF THE THRESHOLD PROVIDED THAT THE DOOR DOES NOT SWING OVER THE LANDING OR FLOOR.

WHERE EXTERIOR LANDINGS OR FLOORS SERVING THE REQUIRED EGRESS DOOR ARE NOT AT GRADE, THEY SHALL BE PROVIDED WITH ACCESS TO GRADE BY MEANS OF A RAMP IN ACCORDANCE WITH SECTION R311.8 OR A STAIRWAY IN ACCORDANCE WITH SECTION R311.7.

CHAPTER 3 - BUILDING PLANNING (CON'T)

R314 SMOKE ALARMS

R317 **R314.3 LOCATION**
SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:

1. IN EACH SLEEPING ROOM.
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
3. ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS AND NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LEVELS, A SMOKE ALARM INSTALLED ON THE UPPER LEVEL SHALL SUFFICE FOR THE ADJACENT LOWER LEVEL PROVIDED THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL.
4. SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3 FEET (914 MM) HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY THIS SECTION.
5. IN THE HALLWAY AND IN THE ROOM OPEN TO THE HALLWAY INDWELLING UNITS WHERE THE CEILING HEIGHT OF A ROOM OPEN TO A HALLWAY SERVING BEDROOMS EXCEEDS THAT OF THE HALLWAY BY 24 INCHES (610 MM) OR MORE.

R315 CARBON MONOXIDE ALARMS

R318 **R315.3 LOCATION**
CARBON MONOXIDE ALARMS IN DWELLING UNITS SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS IN THE FOLLOWING LOCATIONS:

1. OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
2. ON EVERY OCCUPIABLE LEVEL OF A DWELLING UNIT, INCLUDING BASEMENTS.
3. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

R316 FOAM PLASTIC

R319 **R316.4 THERMAL BARRIER**
UNLESS OTHERWISE ALLOWED IN SECTION R316.5, FOAM PLASTIC SHALL BE SEPARATED FROM THE INTERIOR OF A BUILDING BY AN APPROVED THERMAL BARRIER OF NOT LESS THAN 1/2-INCH (12.7 MM) GYPSUM WALLBOARD, 23/32-INCH (18.2 MM) WOOD STRUCTURAL PANEL OR A MATERIAL THAT IS TESTED IN ACCORDANCE WITH AND MEETS THE ACCEPTANCE CRITERIA OF BOTH THE TEMPERATURE TRANSMISSION FIRE TEST AND THE INTEGRITY FIRE TEST OF NFPA 275.

R318 PROTECTION AGAINST SUBTERRANEAN TERMITES

R320 **R318.4 FOAM PLASTIC PROTECTION**
IN AREAS WHERE THE PROBABILITY OF TERMITE INFESTATION IS "VERY HEAVY" AS INDICATED IN FIGURE R318.4, EXTRUDED AND EXPANDED POLYSTYRENE, POLYISOCYANURATE AND OTHER FOAM PLASTICS SHALL NOT BE INSTALLED ON THE EXTERIOR FACE OR UNDER INTERIOR OR EXTERIOR FOUNDATION WALLS OR SLAB FOUNDATIONS LOCATED BELOW GRADE. THE CLEARANCE BETWEEN FOAM PLASTICS INSTALLED ABOVE GRADE AND EXPOSED EARTH SHALL BE NOT LESS THAN 6 INCHES (152 MM).
EXCEPTIONS: BUILDINGS WHERE THE STRUCTURAL MEMBERS OF WALLS, FLOORS, CEILINGS AND ROOFS ARE ENTIRELY OF NONCOMBUSTIBLE MATERIALS OR PRESSURE-PRESERVATIVE-TREATED WOOD.
WHERE IN ADDITION TO THE REQUIREMENTS OF SECTION R318.1, AN APPROVED METHOD OF PROTECTING THE FOAM PLASTIC AND STRUCTURE FROM SUBTERRANEAN TERMITE DAMAGE IS USED.
ON THE INTERIOR SIDE OF BASEMENT WALLS.

CHAPTER 4 - FOUNDATIONS

R401 GENERAL

R401 **R401.3 DRAINAGE**
SURFACE DRAINAGE SHALL BE DIVERTED TO A STORM SEWER CONVEYANCE OR OTHER APPROVED POINT OF COLLECTION THAT DOES NOT CREATE A HAZARD. LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL NOT FEWER THAN 6 INCHES (152 MM) WITHIN THE FIRST 10 FEET.

* SURFACE WATER MUST BE MOVING AWAY FROM THE BUILDING AND ADJACENT PROPERTIES AND TOWARDS THE PUBLIC WAY.

EXCEPTION: WHERE LOT LINES, WALLS, SLOPES OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES (152 MM) OF FALL WITHIN 10 FEET (3048 MM), DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. IMPERVIOUS SURFACES WITHIN 10 FEET (3048 MM) OF THE BUILDING FOUNDATION SHALL BE SLOPED NOT LESS THAN 2 PERCENT AWAY FROM THE BUILDING.

CHAPTER 7 - WALL COVERING

R702 INTERIOR COVERING

R701 **R702.3.7 WATER-RESISTANT GYPSUM BACKING BOARD**
GYPSUM BOARD USED AS THE BASE OR BACKER FOR ADHESIVE APPLICATION OF CERAMIC TILE OR OTHER REQUIRED NONABSORBENT FINISH MATERIAL SHALL CONFORM TO ASTM C1178, C1278 OR C1396. USE OF WATER-RESISTANT GYPSUM BACKING BOARD SHALL BE PERMITTED ON CEILINGS. WATER-RESISTANT GYPSUM BOARD SHALL NOT BE INSTALLED OVER A CLASS I OR II VAPOR RETARDER IN A SHOWER OR TUB COMPARTMENT. CUT OR EXPOSED EDGES, INCLUDING THOSE AT WALL INTERSECTIONS, SHALL BE SEALED AS RECOMMENDED BY THE MANUFACTURER.

R702 **R702.4.2 BACKER BOARDS**
MATERIALS USED AS BACKERS FOR WALL TILE IN TUB AND SHOWER AREAS AND WALL PANELS IN SHOWER AREAS SHALL BE OF MATERIALS LISTED IN TABLE R702.4.2, AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

R703 EXTERIOR COVERING

R703 **R703.4 FLASHING**
APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED SHINGLE-FASHION IN A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. SELF-ADHERED MEMBRANES USED AS FLASHING SHALL COMPLY WITH AAMA 711. FLUID-APPLIED MEMBRANES USED AS FLASHING IN EXTERIOR WALLS SHALL COMPLY WITH AAMA 714. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH. APPROVED CORROSION-RESISTANT FLASHINGS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:

1. EXTERIOR WINDOW AND DOOR OPENINGS. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER-RESISTIVE BARRIER COMPLYING WITH SECTION 703.2 FOR SUBSEQUENT DRAINAGE. MECHANICALLY ATTACHED FLEXIBLE FLASHINGS SHALL COMPLY WITH AAMA 712. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL BE INSTALLED IN ACCORDANCE WITH ONE OR MORE OF THE FOLLOWING:
   - 1.1. THE FENESTRATION MANUFACTURER'S INSTALLATION AND FLASHING INSTRUCTIONS, OR FOR APPLICATIONS NOT ADDRESSED IN THE FENESTRATION MANUFACTURER'S INSTRUCTIONS, IN ACCORDANCE WITH THE FLASHING MANUFACTURER'S INSTRUCTIONS. WHERE FLASHING INSTRUCTIONS OR DETAILS ARE NOT PROVIDED, PAN FLASHING SHALL BE INSTALLED AT THE SILL OF EXTERIOR WINDOW AND DOOR OPENINGS. PAN FLASHING SHALL BE SEALED OR SLOPED IN SUCH A MANNER AS TO DIRECT WATER TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER-RESISTIVE BARRIER FOR SUBSEQUENT DRAINAGE. OPENINGS USING PAN FLASHING SHALL INCORPORATE FLASHING OR PROTECTION AT THE HEAD AND SIDES.
   - 1.2. IN ACCORDANCE WITH THE FLASHING DESIGN OR METHOD OF A REGISTERED DESIGN PROFESSIONAL.
   - 1.3. IN ACCORDANCE WITH OTHER APPROVED METHODS.
2. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
3. UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
4. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
5. WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD-FRAME CONSTRUCTION.
6. AT WALL AND ROOF INTERSECTIONS.
7. AT BUILT-IN GUTTERS.

R704 **R703.7.2.1 WEEP SCREEDS**
A MINIMUM 0.019-INCH (0.5 MM) (NO. 26 GALVANIZED SHEET GAGE), CORROSION-RESISTANT WEEP SCREED OR PLASTIC WEEP SCREED, WITH A MINIMUM VERTICAL ATTACHMENT FLANGE OF 31/2 INCHES (89 MM), SHALL BE PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE ON EXTERIOR STUD WALLS IN ACCORDANCE WITH ASTM C926. THE WEEP SCREED SHALL BE PLACED NOT LESS THAN 4 INCHES (102 MM) ABOVE THE EARTH OR 2 INCHES (51 MM) ABOVE PAVED AREAS AND SHALL BE OF A TYPE THAT WILL ALLOW TRAPPED WATER TO DRAIN TO THE EXTERIOR OF THE BUILDING. THE WEATHER-RESISTANT BARRIER SHALL LAP THE ATTACHMENT FLANGE. THE EXTERIOR LATH SHALL COVER AND TERMINATE ON THE ATTACHMENT FLANGE OF THE WEEP SCREED.

CHAPTER 7 - WALL COVERING (CON'T)

R705 **R703.10.1 PANEL SIDING**
FIBER-CEMENT PANELS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C1186, TYPE A, MINIMUM GRADE II OR ISO 8336, CATEGORY A, MINIMUM CLASS 2. PANELS SHALL BE INSTALLED WITH THE LONG DIMENSION EITHER PARALLEL OR PERPENDICULAR TO FRAMING. VERTICAL AND HORIZONTAL JOINTS SHALL OCCUR OVER FRAMING MEMBERS AND SHALL BE PROTECTED WITH CAULKING, OR WITH BATTENS OR FLASHING, OR BE VERTICAL OR HORIZONTAL SHIPLAP, OR OTHERWISE DESIGNED TO COMPLY WITH SECTION R703.1. PANEL SIDING SHALL BE INSTALLED WITH FASTENERS IN ACCORDANCE WITH TABLE R703.3(1) OR THE APPROVED MANUFACTURER'S INSTRUCTIONS.

R706 **R703.10.2 LAP SIDING**
FIBER-CEMENT LAP SIDING HAVING A MAXIMUM WIDTH OF 12 INCHES (305 MM) SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C1186, TYPE A, MINIMUM GRADE II OR ISO 8336, CATEGORY A, MINIMUM CLASS 2. LAP SIDING SHALL BE LAPPED A MINIMUM OF 11/4 INCHES (32 MM) AND LAP SIDING NOT HAVING TONGUE-AND-GROOVE END JOINTS SHALL HAVE THE ENDS PROTECTED WITH CAULKING, COVERED WITH AN H-SECTION JOINT COVER, LOCATED OVER A STRIP OF FLASHING, OR SHALL BE DESIGNED TO COMPLY WITH SECTION R703.1. LAP SIDING COURSES SHALL BE INSTALLED WITH THE FASTENER HEADS EXPOSED OR CONCEALED, IN ACCORDANCE WITH TABLE R703.3(1) OR APPROVED MANUFACTURER'S INSTRUCTIONS.

CHAPTER 8 - ROOF-CEILING CONSTRUCTION

R806 ROOF VENTILATION

R801 **R806.2 MINIMUM VENT AREA**
THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE.

EXCEPTION: THE MINIMUM NET FREE VENTILATION AREA SHALL BE 1/300 OF THE VENTED SPACE PROVIDED BOTH OF THE FOLLOWING CONDITIONS ARE MET:

1. IN CLIMATE ZONES 6, 7 AND 8, A CLASS I OR II VAPOR RETARDER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING.
2. NOT LESS THAN 40 PERCENT AND NOT MORE THAN 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE ATTIC OR RAFTER SPACE. UPPER VENTILATORS SHALL BE LOCATED NOT MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE, MEASURED VERTICALLY. THE BALANCE OF THE REQUIRED VENTILATION PROVIDED SHALL BE LOCATED IN THE BOTTOM ONE-THIRD OF THE ATTIC SPACE. WHERE THE LOCATION OF WALL OR ROOF FRAMING MEMBERS CONFLICTS WITH THE INSTALLATION OF UPPER VENTILATORS, INSTALLATION MORE THAN 3 FEET (914 MM) BELOW THE RIDGE OR HIGHEST POINT OF THE SPACE SHALL BE PERMITTED.

R802 **R807.1 ATTIC ACCESS**
BUILDINGS WITH COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING TO ATTIC AREAS THAT HAVE A VERTICAL HEIGHT OF 30 INCHES (762 MM) OR GREATER OVER AN AREA OF NOT LESS THAN 30 SQUARE FEET (2.8 M2). THE VERTICAL HEIGHT SHALL BE MEASURED FROM THE TOP OF THE CEILING FRAMING MEMBERS TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS.

THE ROUGH-FRAMED OPENING SHALL BE NOT LESS THAN 22 INCHES BY 30 INCHES (559 MM BY 762 MM) AND SHALL BE LOCATED IN A HALLWAY OR OTHER LOCATION WITH READY ACCESS. WHERE LOCATED IN A WALL, THE OPENING SHALL BE NOT LESS THAN 22 INCHES WIDE BY 30 INCHES HIGH (559 MM WIDE BY 762 MM HIGH). WHERE THE ACCESS IS LOCATED IN A CEILING, MINIMUM UNOBSTRUCTED HEADROOM IN THE ATTIC SPACE SHALL BE 30 INCHES (762 MM) AT SOME POINT ABOVE THE ACCESS MEASURED VERTICALLY FROM THE BOTTOM OF CEILING FRAMING MEMBERS. SEE THE CALIFORNIA MECHANICAL CODE FOR ACCESS REQUIREMENTS WHERE MECHANICAL EQUIPMENT IS LOCATED IN ATTICS.

EXCERPTS FROM THE 2022 CALIFORNIA MECHANICAL CODE

CHAPTER 3 - GENERAL REGULATIONS

M304.0 ACCESSIBILITY FOR SERVICE

M301 **304.4 APPLIANCES IN ATTICS AND UNDER-FLOOR SPACES**
AN ATTIC OR UNDER-FLOOR SPACE IN WHICH AN APPLIANCE IS INSTALLED SHALL BE ACCESSIBLE THROUGH AN OPENING AND PASSAGEWAY NOT LESS THAN THE LARGEST COMPONENT OF THE APPLIANCE, AND NOT LESS THAN 22 INCHES BY 30 INCHES (559 MM BY 762 MM).

M302 **M304.4.1 LENGTH OF PASSAGEWAY**
WHERE THE HEIGHT OF THE PASSAGEWAY IS LESS THAN 6 FEET (1829 MM), THE DISTANCE FROM THE PASSAGEWAY ACCESS TO THE APPLIANCE SHALL NOT EXCEED 20 FEET (6096 MM) MEASURED ALONG THE CENTERLINE OF THE PASSAGEWAY. [NFPA 54:9.5.1.1]

M303 **M304.4.2 WIDTH OF PASSAGEWAY**
THE PASSAGEWAY SHALL BE UNOBSTRUCTED AND SHALL HAVE SOLID FLOORING NOT LESS THAN 24 INCHES (610 MM) WIDE FROM THE ENTRANCE OPENING TO THE APPLIANCE. [NFPA 54:9.5.1.2]

M304 **M304.4.3 WORK PLATFORM**
A LEVEL WORKING PLATFORM NOT LESS THAN 30 INCHES BY 30 INCHES (762 MM BY 762 MM) SHALL BE PROVIDED IN FRONT OF THE SERVICE SIDE OF THE APPLIANCE. [NFPA 54:9.5.2]

EXCEPTION: A WORKING PLATFORM NEED NOT BE PROVIDED WHERE THE FURNACE IS CAPABLE OF BEING SERVICED FROM THE REQUIRED ACCESS OPENING. THE FURNACE SERVICE SIDE SHALL NOT EXCEED 12 INCHES (305 MM) FROM THE ACCESS OPENING.

M305 **M304.4.4 LIGHTING AND CONVENIENCE OUTLET**
A PERMANENT 120V RECEPTACLE OUTLET AND A LIGHTING FIXTURE SHALL BE INSTALLED NEAR THE APPLIANCE. THE SWITCH CONTROLLING THE LIGHTING FIXTURE SHALL BE LOCATED AT THE ENTRANCE TO THE PASSAGEWAY. [NFPA 54:9.5.3]

CHAPTER 5 - EXHAUST SYSTEMS

M504.0 ENVIRONMENTAL AIR DUCTS

M501 **M504.4 CLOTHES DRYERS**
A CLOTHES DRYER EXHAUST DUCT SHALL NOT BE CONNECTED TO A VENT CONNECTOR, GAS VENT, CHIMNEY, AND SHALL NOT TERMINATE INTO A CRAWL SPACE, ATTIC, OR OTHER CONCEALED SPACE. EXHAUST DUCTS SHALL NOT BE ASSEMBLED WITH SCREWS OR OTHER FASTENING MEANS THAT EXTEND INTO THE DUCT AND THAT ARE CAPABLE OF CATCHING LINT, AND THAT REDUCE THE EFFICIENCY OF THE EXHAUST SYSTEM. EXHAUST DUCTS SHALL BE CONSTRUCTED OF RIGID METALLIC MATERIAL. TRANSITION DUCTS USED TO CONNECT THE DRYER TO THE EXHAUST DUCT SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 2158A, OR INSTALLED IN ACCORDANCE WITH THE CLOTHES DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS. CLOTHES DRYER EXHAUST DUCTS SHALL TERMINATE TO THE OUTSIDE OF THE BUILDING IN ACCORDANCE WITH SECTION 502.2.1 AND SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER. SCREENS SHALL NOT BE INSTALLED AT THE DUCT TERMINATION. DEVICES, SUCH AS FIRE OR SMOKE DAMPERS THAT WILL OBSTRUCT THE FLOW OF THE EXHAUST SHALL NOT BE USED. WHERE JOINING OF DUCTS, THE MALE END SHALL BE INSERTED IN THE DIRECTION OF AIRFLOW.

M502 **M504.4.1 PROVISIONS FOR MAKEUP AIR**
MAKEUP AIR SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING:

1. MAKEUP AIR SHALL BE PROVIDED FOR TYPE 1 CLOTHES DRYERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. [NFPA 54:10.4.3.1] WHERE A CLOSET IS DESIGNED FOR THE INSTALLATION OF A CLOTHES DRYER, AN OPENING OF NOT LESS THAN 100 SQUARE INCHES (0.065 M2) FOR MAKEUP AIR SHALL BE PROVIDED IN THE DOOR OR BY OTHER APPROVED MEANS.
2. PROVISION FOR MAKEUP AIR SHALL BE PROVIDED FOR TYPE 2 CLOTHES DRYERS, WITH A FREE AREA OF NOT LESS THAN 1 SQUARE INCH (0.0006 M2) FOR EACH 1000 BRITISH THERMAL UNITS PER HOUR (BTU/H) (0.293 KW) TOTAL INPUT RATING OF THE DRYER(S) INSTALLED. [NFPA 54:10.4.3.2]

M503 **M504.4.2 DOMESTIC CLOTHES DRYERS**
WHERE A COMPARTMENT OR SPACE FOR A TYPE 1 CLOTHES DRYER IS PROVIDED, NOT LESS THAN A 4 INCH DIAMETER (102 MM) EXHAUST DUCT OF APPROVED MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 504.0.

TYPE 1 CLOTHES DRYER EXHAUST DUCTS SHALL BE OF RIGID METAL AND SHALL HAVE SMOOTH INTERIOR SURFACES. THE DIAMETER SHALL BE NOT LESS THAN 4 INCHES NOMINAL (100 MM), AND THE THICKNESS SHALL BE NOT LESS THAN 0.016 OF AN INCH (0.406 MM).

CHAPTER 5 - EXHAUST SYSTEMS (CON'T)

M504 **M504.4.2.1 LENGTH LIMITATION**
UNLESS OTHERWISE PERMITTED OR REQUIRED BY THE DRYER MANUFACTURER'S INSTRUCTIONS AND APPROVED BY THE AUTHORITY HAVING JURISDICTION, DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14 FEET (4267 MM), INCLUDING TWO 90 DEGREE (1.57 RAD) ELBOWS. A LENGTH OF 2 FEET (610 MM) SHALL BE DEDUCTED FOR EACH 90 DEGREE (1.57 RAD) ELBOW IN EXCESS OF TWO.

EXCEPTION: WHERE AN EXHAUST DUCT POWER VENTILATOR, IN ACCORDANCE WITH SECTION 504.4.2.3, IS USED, THE MAXIMUM LENGTH OF THE DRYER EXHAUST DUCT SHALL BE PERMITTED TO BE IN ACCORDANCE WITH THE DRYER EXHAUST DUCT POWER VENTILATOR MANUFACTURER'S INSTALLATION INSTRUCTIONS.

CHAPTER 11 - REFRIGERATION

M1105.0 GENERAL REQUIREMENTS

M1101 **M1105.2 SUPPORTS AND ANCHORAGE**
SUPPORTS AND ANCHORAGE FOR REFRIGERATION EQUIPMENT AND PIPING SHALL BE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AS OCCUPANCY CATEGORY H (HAZARDOUS FACILITIES). SUPPORTS SHALL BE MADE OF NONCOMBUSTIBLE MATERIALS.

EXCEPTIONS:
EQUIPMENT CONTAINING GROUP A1 REFRIGERANTS SHALL BE PERMITTED TO BE SUPPORTED BY THE SAME MATERIALS PERMITTED FOR THE BUILDING TYPE.
THE USE OF APPROVED VIBRATION ISOLATORS SPECIFICALLY DESIGNED FOR THE NORMAL, WIND, AND SEISMIC LOADS ENCOUNTERED, SHALL BE PERMITTED.

A COMPRESSOR OR PORTION OF A CONDENSING UNIT SUPPORTED FROM THE GROUND SHALL REST ON A CONCRETE OR OTHER APPROVED BASE EXTENDING NOT LESS THAN 3 INCHES (76 MM) ABOVE THE ADJOINING GROUND LEVEL.

M1102 **M1105.11 REFRIGERANT PORT PROTECTION**
AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.

EXCEPTION: REFRIGERANT PORTS IN SECURE LOCATIONS PROTECTED BY WALLS OR FENCING AND REQUIRING KEY ACCESS.

EXCERPTS FROM THE 2022 CALIFORNIA PLUMBING CODE

CHAPTER 4 - PLUMBING FIXTURES AND FIXTURE FITTINGS

P407.0 LAVATORIES

P401 **P407.2.2 RESIDENTIAL LAVATORY FAUCETS**
[HCD 1] THE MAXIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT EXCEED 1.2 GALLONS (4.54 L) PER MINUTE AT 60 PSI. THE MINIMUM FLOW RATE OF RESIDENTIAL LAVATORY FAUCETS SHALL NOT BE LESS THAN 0.8 GALLONS (3.03 L) PER MINUTE AT 20 PSI.

P408.0 SHOWERS

P402 **P408.2 WATER CONSUMPTION**
SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GPM AT 80 PSI (6.81 L/M AT 552 KPA). [HCD 1] RESIDENTIAL SHOWERHEADS SHALL COMPLY WITH DIVISION 4.3 OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN).

P403 **P408.2.1 SINGLE SHOWERHEAD**
[BSC-CG, DSA-SS & DSA-SS/CC] SHOWERHEADS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS (6.81 L) PER MINUTE AT 80 PSI. SHOWERHEADS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR SHOWERHEADS IN COMPLIANCE WITH CHAPTER 5, DIVISION 5.3. OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE (CAL GREEN).

P404 **P408.3 INDIVIDUAL SHOWER AND TUB-SHOWER COMBINATION CONTROL VALVES**
SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION PRESSURE BALANCE/THERMOSTATIC MIXING VALVE TYPE THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION FOR THE RATED FLOW RATE OF THE INSTALLED SHOWERHEAD. THESE VALVES SHALL BE INSTALLED AT THE POINT OF USE AND COMPLY WITH ASSE 1016/ASME A112.1016/CSA B125.16 OR ASME A112.18.1/CSA B125.1.

GANG SHOWERS, WHERE SUPPLIED WITH A SINGLE TEMPERATURE-CONTROLLED WATER SUPPLY PIPE, SHALL BE CONTROLLED BY A MIXING VALVE THAT COMPLIES WITH ASSE 1069. HANDLE POSITION STOPS SHALL BE PROVIDED ON SUCH VALVES AND SHALL BE ADJUSTED PER THE MANUFACTURER'S INSTRUCTIONS TO DELIVER MAXIMUM MIXED WATER SETTING OF 120°F (49°C). WATER HEATER THERMOSTATS SHALL NOT BE CONSIDERED A SUITABLE CONTROL FOR MEETING THIS PROVISION.

P405 **P408.6 SHOWER COMPARTMENTS**
SHOWER COMPARTMENTS, REGARDLESS OF SHAPE, SHALL HAVE A MINIMUM FINISHED INTERIOR OF 1024 SQUARE INCHES (0.6606 M2) AND SHALL ALSO BE CAPABLE OF ENCOMPASSING A 30 INCH (762 MM) CIRCLE. THE MINIMUM REQUIRED AREA AND DIMENSIONS SHALL BE MEASURED AT A HEIGHT EQUAL TO THE TOP OF THE THRESHOLD AND A POINT TANGENT TO ITS CENTERLINE. THE AREA AND DIMENSIONS SHALL BE MAINTAINED TO A POINT OF NOT LESS THAN 70 INCHES (1778 MM) ABOVE THE SHOWER DRAIN OUTLET WITH NO PROTRUSIONS OTHER THAN THE FIXTURE VALVE OR VALVES, SHOWERHEADS, SOAP DISHES, SHELVES, AND SAFETY GRAB BARS, OR RAILS. FOLD-DOWN SEATS IN ACCESSIBLE SHOWER STALLS SHALL BE PERMITTED TO PROTRUDE INTO THE 30 INCH (762 MM) CIRCLE.

EXCEPTIONS:
SHOWERS THAT ARE DESIGNED TO BE IN ACCORDANCE WITH CHAPTER 11A OF THE CALIFORNIA BUILDING CODE.
THE MINIMUM REQUIRED AREA AND DIMENSION SHALL NOT APPLY FOR A SHOWER RECEPTOR HAVING OVERALL DIMENSIONS OF NOT LESS THAN 30 INCHES (762 MM) IN WIDTH AND 60 INCHES (1524 MM) IN LENGTH.

P411.0 WATER CLOSETS

P406 **P411.2 WATER CONSUMPTION**
THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS (4.8 L) PER FLUSH WHEN TESTED IN ACCORDANCE WITH ASME A112.19.2/CSA B45.1.

P420.0 SINKS

P407 **P420.2.1 KITCHEN FAUCETS**
[BSC-CG, DSA-SS & DSA-SS/CC] KITCHEN FAUCETS SHALL HAVE A MAXIMUM FLOW RATE OF NOT MORE THAN 1.8 GALLONS (6.81 L) PER MINUTE AT 60 PSI. KITCHEN FAUCETS MAY TEMPORARILY INCREASE THE FLOW ABOVE THE MAXIMUM RATE, BUT NOT TO EXCEED 2.2 GALLONS (8.3 L) PER MINUTE AT 60 PSI, AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GALLONS (6.81 L) PER MINUTE AT 60 PSI IN COMPLIANCE WITH CHAPTER 5, DIVISION 5.3 OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN).

CHAPTER 6 - WATER SUPPLY AND DISTRIBUTION

P603.0 CROSS CONNECTION CONTROL

P601 **603.5.7 OUTLETS WITH HOSE ATTACHMENTS**
POTABLE WATER OUTLETS WITH HOSE ATTACHMENTS, OTHER THAN WATER HEATER DRAINS, BOILER DRAINS, AND CLOTHES WASHER CONNECTIONS, SHALL BE PROTECTED BY A NONREMOVABLE HOSE BIBB-TYPE BACKFLOW PREVENTER, A NONREMOVABLE HOSE BIBB-TYPE VACUUM BREAKER, OR BY AN ATMOSPHERIC VACUUM BREAKER INSTALLED NOT LESS THAN 6 INCHES (152 MM) ABOVE THE HIGHEST POINT OF USAGE LOCATED ON THE DISCHARGE SIDE OF THE LAST VALVE. IN CLIMATES WHERE FREEZING TEMPERATURES OCCUR, A LISTED SELF-DRAINING FROST-PROOF HOSE BIBB WITH AN INTEGRAL BACKFLOW PREVENTER OR VACUUM BREAKER SHALL BE USED.

P604 MATERIALS

P602 **604.1 PIPE, TUBE, AND FITTINGS**
PIPE, TUBE, FITTINGS, SOLVENT CEMENT, THREAD SEALANTS, SOLDERS, AND FLUX USED IN POTABLE WATER SYSTEMS INTENDED TO SUPPLY DRINKING WATER SHALL COMPLY WITH NSF 61. WHERE FITTINGS AND VALVES ARE MODE FROM COPPER ALLOYS CONTAINING MORE THAN 15 PERCENT ZINC BY WEIGHT AND ARE USED IN PLASTIC PIPING SYSTEMS, THEY SHALL BE RESISTANT TO DEZINCIFICATION AND STRESS CORROSION CRACKING IN COMPLIANCE WITH NSF14.
MATERIALS USED IN THE WATER SUPPLY SYSTEM, EXCEPT VALVES AND SIMILAR DEVICES, SHALL BE OF LIKE MATERIAL, EXCEPT WHERE OTHERWISE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
MATERIALS FOR BUILDING WATER PIPING AND BUILDING SUPPLY PIPING SHALL COMPLY WITH THE APPLICABLE STANDARDS REFERENCED IN TABLE 604.1

CHAPTER 6 - WATER SUPPLY AND DISTRIBUTION (CON'T)

608.0 WATER PRESSURE, PRESSURE REGULATORS, PRESSURE RELIEF VALVES, AND VACUUM RELIEF VALVES

P603 **608.3 EXPANSION TANKS, AND COMBINATION TEMPERATURE AND PRESSURE-RELIEF VALVES**
A WATER SYSTEM PROVIDED WITH A CHECK VALVE, BACKFLOW PREVENTER, OR OTHER NORMALLY CLOSED DEVICE THAT PREVENTS DISSIPATION OF BUILDING PRESSURE BACK INTO THE WATER MAIN, INDEPENDENT OF THE TYPE OF WATER HEATER USED, SHALL BE PROVIDED WITH AN APPROVED, LISTED, AND ADEQUATELY SIZED EXPANSION TANK OR OTHER APPROVED DEVICE HAVING A SIMILAR FUNCTION TO CONTROL THERMAL EXPANSION. SUCH EXPANSION TANK OR OTHER APPROVED DEVICE SHALL BE INSTALLED ON THE BUILDING SIDE OF THE CHECK VALVE, BACKFLOW PREVENTER, OR OTHER DEVICE AND SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

A WATER SYSTEM CONTAINING STORAGE WATER HEATING EQUIPMENT SHALL BE PROVIDED WITH AN APPROVED, LISTED, ADEQUATELY SIZED COMBINATION TEMPERATURE AND PRESSURE-RELIEF VALVE, EXCEPT FOR LISTED NONSTORAGE INSTANTANEOUS HEATERS HAVING AN INSIDE DIAMETER OF NOT MORE THAN 3 INCHES (80 MM). EACH SUCH APPROVED COMBINATION TEMPERATURE AND PRESSURE-RELIEF VALVE SHALL BE INSTALLED ON THE WATER-HEATING DEVICE IN AN APPROVED LOCATION BASED ON ITS LISTING REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. EACH SUCH COMBINATION TEMPERATURE AND PRESSURE-RELIEF VALVE SHALL BE PROVIDED WITH A DRAIN IN ACCORDANCE WITH SECTION 608.5.

P604 **608.4 PRESSURE RELIEF VALVES**
EACH PRESSURE RELIEF VALVE SHALL BE AN APPROVED AUTOMATIC TYPE WITH DRAIN, AND EACH SUCH RELIEF VALVE SHALL BE SET AT A PRESSURE OF NOT MORE THAN 150 PSI (1034 KPA). NO SHUTOFF VALVE SHALL BE INSTALLED BETWEEN THE RELIEF VALVE AND THE SYSTEM.

P605 **608.5 DISCHARGE PIPING**
THE DISCHARGE PIPING SERVING A TEMPERATURE RELIEF VALVE, PRESSURE RELIEF VALVE, OR COMBINATION OF BOTH SHALL HAVE NO VALVES, OBSTRUCTIONS, OR MEANS OF ISOLATION AND BE PROVIDED WITH THE FOLLOWING:

1. EQUAL TO THE SIZE OF THE VALVE OUTLET AND SHALL DISCHARGE FULL SIZE TO THE FLOOD LEVEL OF THE AREA RECEIVING THE DISCHARGE AND POINTING DOWN.
2. MATERIALS SHALL BE RATED AT NOT LESS THAN THE OPERATING TEMPERATURE OF THE SYSTEM AND APPROVED FOR SUCH USE OR SHALL COMPLY WITH ASME A112.4.1.
3. DISCHARGE PIPE SHALL DISCHARGE INDEPENDENTLY BY GRAVITY THROUGH AN AIR GAP INTO THE DRAINAGE SYSTEM OR OUTSIDE OF THE BUILDING WITH THE END OF THE PIPE NOT EXCEEDING 2 FEET (610 MM) AND NOT LESS THAN 6 INCHES (152 MM) ABOVE THE GROUND AND POINTING DOWNWARDS.
4. DISCHARGE IN SUCH A MANNER THAT DOES NOT CAUSE PERSONAL INJURY OR STRUCTURAL DAMAGE.
5. NO PART OF SUCH DISCHARGE PIPE SHALL BE TRAPPED OR SUBJECT TO FREEZING.
6. THE TERMINAL END OF THE PIPE SHALL NOT BE THREADED.
7. DISCHARGE FROM A RELIEF VALVE INTO A WATER HEATER PAN SHALL BE PROHIBITED.

610.0 SIZE OF POTABLE WATER PIPING

P606 **610.1 SIZE**
THE SIZE OF EACH WATER METER AND EACH POTABLE WATER SUPPLY PIPE FROM THE METER OR OTHER SOURCE OF SUPPLY TO THE FIXTURE SUPPLY BRANCHES, RISERS, FIXTURES, CONNECTIONS, OUTLETS, OR OTHER USES SHALL BE BASED ON THE TOTAL DEMAND AND SHALL BE DETERMINED ACCORDING TO THE METHODS AND PROCEDURES OUTLINED IN THIS SECTION. WATER PIPING SYSTEMS SHALL BE DESIGNED TO ENSURE THAT THE MAXIMUM VELOCITIES ALLOWED BY THE CODE AND THE APPLICABLE STANDARD ARE NOT EXCEEDED.

P607 **610.4 SIZING WATER SUPPLY AND DISTRIBUTION SYSTEMS**
SYSTEMS WITHIN THE RANGE OF TABLE 610.4 SHALL BE PERMITTED TO BE SIZED FROM THAT TABLE OR BY THE METHOD IN ACCORDANCE WITH SECTION 610.5. LISTED PARALLEL WATER DISTRIBUTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTING, BUT AT NO TIME SHALL A PORTION OF THE SYSTEM EXCEED THE MAXIMUM VELOCITIES ALLOWED BY THE CODE.

CHAPTER 7 - SANITARY DRAINAGE

703.0 SIZE OF DRAINAGE PIPING

P701 **703.1 MINIMUM SIZE**
THE MINIMUM SIZES OF VERTICAL, HORIZONTAL, OR BOTH DRAINAGE PIPING SHALL BE DETERMINED FROM THE TOTAL OF FIXTURE UNITS CONNECTED THERETO, AND ADDITIONALLY, IN THE CASE OF VERTICAL DRAINAGE PIPES, IN ACCORDANCE WITH THEIR LENGTH.

P702 **703.2 MAXIMUM NUMBER OF FIXTURE UNITS**
TABLE 703.2 SHOWS THE MAXIMUM NUMBER OF FIXTURE UNITS ALLOWED ON A VERTICAL OR HORIZONTAL DRAINAGE PIPE, BUILDING DRAIN, OR BUILDING SEWER OF A GIVEN SIZE; THE MAXIMUM NUMBER OF FIXTURE UNITS ALLOWED ON A BRANCH INTERVAL OF A GIVEN SIZE; AND THE MAXIMUM LENGTH (IN FEET AND METERS) OF A VERTICAL DRAINAGE PIPE OF A GIVEN SIZE.

710.0 DRAINAGE OF FIXTURES LOCATED BELOW THE NEXT UPSTREAM MANHOLE OR BELOW THE MAIN SEWER LEVEL

P703 **710.1 BACKFLOW PROTECTION**
FIXTURES INSTALLED ON A FLOOR LEVEL THAT IS LOWER THAN THE NEXT UPSTREAM MANHOLE COVER OF THE PUBLIC, OR PRIVATE SEWER SHALL BE PROTECTED FROM BACKFLOW OF SEWAGE BY INSTALLING AN APPROVED TYPE OF BACKWATER VALVE. FIXTURES ON SUCH FLOOR LEVEL THAT ARE NOT BELOW THE NEXT UPSTREAM MANHOLE COVER SHALL NOT BE REQUIRED TO BE PROTECTED BY A BACKWATER VALVE. FIXTURES ON FLOOR LEVELS ABOVE SUCH ELEVATION SHALL NOT DISCHARGE THROUGH THE BACKWATER VALVE. CLEANOUTS FOR DRAINS THAT PASS THROUGH A BACKWATER VALVE SHALL BE CLEARLY IDENTIFIED WITH A PERMANENT LABEL STATING "BACKWATER VALVE DOWNSTREAM".

P704 **710.2 SEWAGE DISCHARGE**
DRAINAGE PIPING SERVING FIXTURES THAT ARE LOCATED BELOW THE CROWN LEVEL OF THE MAIN SEWER SHALL DISCHARGE INTO AN APPROVED WATERTIGHT SUMP OR RECEIVING TANK, SO LOCATED AS TO RECEIVE THE SEWAGE OR WASTES BY GRAVITY. FROM SUCH SUMP OR RECEIVING TANK, THE SEWAGE OR OTHER LIQUID WASTES SHALL BE LIFTED AND DISCHARGED INTO THE BUILDING DRAIN OR BUILDING SEWER BY APPROVED EJECTORS, PUMPS, OR OTHER EQUALLY EFFICIENT APPROVED MECHANICAL DEVICES.

P705 **710.3 SEWAGE EJECTOR AND PUMPS**
A SEWAGE EJECTOR OR SEWAGE PUMP RECEIVING THE DISCHARGE OF WATER CLOSETS OR URINALS:
SHALL HAVE A DISCHARGE CAPACITY OF NOT LESS THAN 20 GPM (1.26 L/S). IN SINGLE DWELLING UNITS, THE EJECTOR OR PUMP SHALL BE CAPABLE OF PASSING AN 11/2 INCH (38 MM) DIAMETER SOLID BALL, AND THE DISCHARGE PIPING OF EACH EJECTOR OR PUMP SHALL HAVE A BACKWATER VALVE AND GATE VALVE, AND BE NOT LESS THAN 2 INCHES (50 MM) IN DIAMETER. IN OTHER THAN SINGLE-DWELLING UNITS, THE EJECTOR OR PUMP SHALL BE CAPABLE OF PASSING A 2 INCH (51 MM) DIAMETER SOLID BALL, AND THE DISCHARGE PIPING OF EACH EJECTOR OR PUMP SHALL HAVE A BACKWATER VALVE AND GATE VALVE, AND BE NOT LESS THAN 3 INCHES (80 MM) IN DIAMETER. HCD 1 & HCD 2 THE MINIMUM SIZE OF ANY PUMP OR ANY DISCHARGE PIPE FROM A SUMP HAVING A WATER CLOSET CONNECTED THERETO SHALL BE NOT LESS THAN 2 NCHES (50 MM).

P706 **710.4 DISCHARGE LINE**
THE DISCHARGE LINE FROM SUCH EJECTOR, PUMP, OR ANOTHER MECHANICAL DEVICE SHALL BE OF APPROVED PRESSURE RATED MATERIAL AND BE PROVIDED WITH AN ACCESSIBLE BACKWATER OR SWING CHECK VALVE AND GATE OR BALL VALVE. WHERE THE GRAVITY DRAINAGE LINE TO WHICH SUCH DISCHARGE LINE CONNECTS IS HORIZONTAL, THE METHOD OF CONNECTION SHALL BE FROM THE TOP THROUGH A WYE BRANCH FITTING. THE GATE OR BALL VALVE SHALL BE LOCATED ON THE DISCHARGE SIDE OF THE BACKWATER OR CHECK VALVE.
GATE OR BALL VALVES, WHERE INSTALLED IN DRAINAGE PIPING, SHALL BE FULLWAY TYPE WITH WORKING PARTS OF CORROSION-RESISTANT METAL. SIZES 4 INCHES (100 MM) OR MORE IN DIAMETER SHALL HAVE CAST-IRON BODIES AND SIZES LESS THAN 4 INCHES (100 MM), CAST-IRON OR COPPER ALLOY BODIES.

P707 **710.5 SIZE OF BUILDING DRAINS AND SEWERS**
BUILDING DRAINS OR BUILDING SEWERS RECEIVING A DISCHARGE FROM A PUMP OR EJECTOR SHALL BE ADEQUATELY SIZED TO PREVENT OVERLOADING. TWO FIXTURE UNITS SHALL BE ALLOWED FOR EACH GALLON PER MINUTE (L/S)OF FLOW.

CHAPTER 7 - SANITARY DRAINAGE (CON'T)

P708 **710.5 SIZE OF BUILDING DRAINS AND SEWERS**
BUILDING DRAINS OR BUILDING SEWERS RECEIVING A DISCHARGE FROM A PUMP OR EJECTOR SHALL BE ADEQUATELY SIZED TO PREVENT OVERLOADING. TWO FIXTURE UNITS SHALL BE ALLOWED FOR EACH GALLON PER MINUTE (L/S)OF FLOW.

P709 **710.6 BACKWATER VALVES**
BACKWATER VALVES, GATE VALVES, FULLWAY BALL VALVES,UNIONS,MOTORS, COMPRESSORS,AIR TANKS,AND OTHER MECHANICAL DEVICES REQUIRED BY THIS SECTION SHALL BE LOCATED WHERE THEY WILL BE ACCESSIBLE FOR INSPECTION AND REPAIR AND, UNLESS CONTINUOUSLY EXPOSED, SHALL BE ENCLOSED IN A MASONRY PIT FITTED WITH AN ADEQUATELY SIZED REMOVABLE COVER. BACKWATER VALVES SHALL COMPLY WITH ASME A112.14.1, AND HAVE BODIES OF CAST-IRON, PLASTIC, COPPER ALLOY, OR OTHER APPROVED MATERIALS; SHALL HAVE NONCORROSIVE BEARINGS, SEATS, AND SELF ALIGNING DISCS; AND SHALL BE CONSTRUCTED TO ENSURE A POSITIVE MECHANICAL SEAL. SUCH BACKWATER VALVES SHALL REMAIN OPEN DURING PERIODS OF LOW FLOWS TO AVOID SCREENING OF SOLIDS AND SHALL NOT RESTRICT CAPACITIES OR CAUSE EXCESSIVE TURBULENCE DURING PEAK LOADS. UNLESS OTHERWISE LISTED, VALVE ACCESS COVERS SHALL BE BOLTED TYPE WITH GASKET, AND EACH VALVE SHALL BEAR THE MANUFACTURER'S NAME CAST INTO THE BODY AND THE COVER.

P710 **710.7 DRAINAGE AND VENTING SYSTEMS**
THE DRAINAGE AND VENTING SYSTEMS, IN CONNECTION WITH FIXTURES,PUMPS, RECEIVING TANKS, AND MECHANICAL WASTE-LIFTING DEVICES SHALL BE INSTALLED UNDER THE SAME REQUIREMENTS AS PROVIDED FOR IN THIS CODE FOR GRAVITY SYSTEMS.

P711 **710.8 SUMP AND RECEIVING TANK CONSTRUCTION**
SUMPS AND RECEIVING TANKS SHALL BE WATERTIGHT AND SHALL BE CONSTRUCTED OF CONCRETE, METAL, OR OTHER APPROVED MATERIALS. WHERE CONSTRUCTED OF POURED CONCRETE, THE WALLS AND BOTTOM SHALL BE ADEQUATELY REINFORCED AND DESIGNED TO RECOGNIZED ACCEPTABLE STANDARDS. METAL SUMPS OR TANKS SHALL BE OF SUCH THICKNESS AS TO SERVE THEIR INTENDED PURPOSE AND SHALL BE TREATED INTERNALLY AND EXTERNALLY TO RESIST CORROSION.

P712 **710.9 ALARM**
SUCH SUMPS AND RECEIVING TANKS SHALL BE AUTOMATICALLY DISCHARGED AND, WHEREIN A "PUBLIC USE" OCCUPANCY, SHALL BE PROVIDED WITH DUAL PUMPS OR EJECTORS ARRANGED TO FUNCTION ALTERNATELY IN NORMAL USE AND INDEPENDENTLY IN CASE OF OVERLOAD OR MECHANICAL FAILURE. THE PUMPS SHALL HAVE AN AUDIO AND VISUAL ALARM, READILY ACCESSIBLE, THAT SIGNALS PUMP FAILURE OR AN OVERLOAD CONDITION. THE LOWEST INLET SHALL HAVE A CLEARANCE OF NOT LESS THAN 2 INCHES (51 MM) FROM THE HIGH-WATER OR "STARTING" LEVEL OF THE SUMP.

P713 **710.10 SUMP AND RECEIVING TANK COVERS AND VENTS**
SUMPS AND RECEIVING TANKS SHALL BE PROVIDED WITH SUBSTANTIAL COVERS HAVING A BOLT-AND-GASKET-TYPE MANHOLE OR EQUIVALENT OPENING TO PERMIT ACCESS FOR INSPECTION, REPAIRS, AND CLEANING. THE TOP SHALL BE PROVIDED WITH A VENT PIPE THAT SHALL EXTEND SEPARATELY THROUGH THE ROOF OR, WHERE PERMITTED, BE COMBINED WITH OTHER VENT PIPES. SUCH VENT SHALL BE LARGE ENOUGH TO MAINTAIN ATMOSPHERIC PRESSURE WITHIN THE SUMP UNDER NORMAL OPERATING CONDITIONS AND, IN NO CASE, SHALL BE LESS IN SIZE THAN THAT REQUIRED BY TABLE 703.2 FOR THE NUMBER AND TYPE OF FIXTURES DISCHARGING INTO THE SUMP, NOR LESS THAN 11/2 INCHES IN DIAMETER. WHERE THE PRECEDING REQUIREMENTS ARE MET AND THE VENT, FTER LEAVING THE SUMP, IS COMBINED WITH VENTS FROM FIXTURES ISCHARGING INTO THE SUMP, THE SIZE OF THE COMBINED VENT NEED NOT EXCEED THAT REQUIRED FOR THE TOTAL NUMBER OF FIXTURES DISCHARGING NTO THE SUMP. NO VENT FROM AN AIR-OPERATING SEWAGE EJECTOR SHALL COMBINE WITH OTHER VENTS.

P714 **710.11 AIR TANKS**
AIR TANKS SHALL BE SO PROPORTIONED AS TO BE OF EQUAL CUBICAL CAPACITY TO THE EJECTORS CONNECTED IN ADDITION TO THAT IN WHICH THERE SHALL BE MAINTAINED AN AIR PRESSURE OF NOT LESS THAN 2 POUNDS PER FOOT (LB/FT) (3 KG/M) OF HEIGHT THE SEWAGE IS TO BE RAISED. NO WATER-OPERATED EJECTORS SHALL BE PERMITTED.

P715 **710.12 GRINDER PUMP EJECTOR**
GRINDER PUMPS SHALL BE PERMITTED TO BE USED.

P716 **710.12.1 DISCHARGE PIPING**
THE DISCHARGE PIPING SHALL BE SIZED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SHALL BE NOT LESS THAN 11/4 INCHES (32 MM) IN DIAMETER. A CHECK VALVE AND FULLWAY-TYPE SHUTOFF VALVE SHALL BE LOCATED ON THE DISCHARGE LINE.

P717 **710.13 MACERATING TOILET SYSTEMS AND PUMPED WASTE SYSTEMS**
FIXTURES SHALL BE PERMITTED TO DISCHARGE TO A MACERATING TOILET SYSTEM, OR PUMPED WASTE SYSTEM SHALL BE PERMITTED AS AN ALTERNATE TO A SEWAGE PUMP SYSTEM WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION. SUCH SYSTEMS SHALL COMPLY WITH ASME A112.3.4/CSA B45.9 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

P718 **710.13.1 SUMPS**
THE SUMP SHALL BE WATERTIGHT AND GAS TIGHT.

P719 **710.13.2 DISCHARGE PIPING**
THE DISCHARGE PIPING SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SHALL BE NOT LESS THAN 3/4 OF AN INCH (20 MM) IN DIAMETER. THE DEVELOPED LENGTH OF THE DISCHARGE PIPING SHALL NOT EXCEED THE MANUFACTURER'S INSTRUCTIONS. A CHECK VALVE AND FULLWAY-TYPE SHUTOFF VALVE SHALL BE LOCATED WITHIN THE DISCHARGE LINE OR INTERNALLY WITHIN THE DEVICE.

P720 **710.13.3 VENTING**
THE PLUMBING FIXTURES THAT DISCHARGE INTO THE MACERATING DEVICE SHALL BE VENTED IN ACCORDANCE WITH THIS CODE. THE SUMP SHALL BE VENTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND SUCH VENT SHALL BE PERMITTED TO CONNECT TO THE FIXTURE VENTING.

P721 **715.1 MATERIALS**
THE BUILDING SEWER, BEGINNING 2 FEET (610 MM) FROM A BUILDING OR STRUCTURE, SHALL BE OF SUCH MATERIALS AS PRESCRIBED IN THIS CODE.

CHAPTER 8 - INDIRECT WASTES

P807.0 APPLIANCES

P801 **807.3 DOMESTIC DISHWASHING MACHINE**
NO DOMESTIC DISHWASHING MACHINE SHALL BE DIRECTLY CONNECTED TO A DRAINAGE SYSTEM OR FOOD WASTE DISPOSER WITHOUT THE USE OF AN APPROVED DISHWASHER AIR GAP FITTING ON THE DISCHARGE SIDE OF THE DISHWASHING MACHINE. LISTED AIR GAPS SHALL BE INSTALLED WITH THE FLOOD-LEVEL (FL) MARKING AT OR ABOVE THE FLOOD LEVEL OF THE SINK OR DRAINBOARD, WHICHEVER IS HIGHER.

CHAPTER 9 - VENTS

P906.0 VENT TERMINATION

P901 **906.2 CLEARANCE**
EACH VENT SHALL TERMINATE NOT LESS THAN 10 FEET (3048 MM) FROM, OR NOT LESS THAN 3 FEET (914 MM) ABOVE, AN OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, OR NOT LESS THAN 3 FEET (914 MM) IN EVERY DIRECTION FROM A LOT LINE, ALLEY AND STREET EXCEPTED.

CHAPTER 12 - FUEL GAS PIPING

1208.0 GAS PIPING SYSTEM DESIGN, MATERIALS AND COMPONENTS

P1201 **1208.4 SIZING OF GAS PIPING SYSTEMS**
GAS PIPING SYSTEMS SHALL BE OF SUCH SIZE AND SO INSTALLED AS TO PROVIDE A SUPPLY GAS SUFFICIENT TO MEET THE MAXIMUM DEMAND AND SUPPLY GAS TO EACH APPLIANCE INLET AT NOT LESS THAN THE MINIMUM SUPPLY PRESSURE REQUIRED BY THE APPLIANCE. [NFPA 54:5.4.1]

P1202 **1208.6 ACCEPTABLE PIPING MATERIALS AND JOINING METHODS**
MATERIALS USED FOR PIPING SYSTEMS SHALL EITHER COMPLY WITH THE REQUIREMENTS OF THIS CHAPTER OR BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. [NFPA 54:5.6.1.1]

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CODE COMPLIANCE NOTES

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CODE COMPLIANCE NOTES

EXCERPTS FROM THE 2022 CALIFORNIA RESIDENTIAL CODE

TABLE R302.1(1)
EXTERIOR WALLS: DWELLINGS AND ACCESSORY BUILDINGS WITHOUT AUTO RESIDENTIAL FIRE SPRINKLER PROTECTION

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
WALLS	FIRE-RESISTANCE RATED	1 HOUR-TESTED IN ACCORDANCE WITH ASTM E119, UL 263 OR SECTION 703.3 OF THE CALIFORNIA BUILDING CODE WITH EXPOSURE FROM BOTH SIDES	0 FEET
	NOT FIRE-RESISTANCE RATED	0 HOURS	≥ 5 FEET
PROJECTIONS	NOT ALLOWED	NA	< 2 FEET
	FIRE-RESISTANCE RATED	1 HOUR ON THE UNDERSIDE, OR HEAVY TIMBER, OR FIRE-RETARDANT-TREATED WOOD [A,B]	≥ 2 FEET < 5 FEET
	NOT FIRE-RESISTANCE RATED	0 HOURS	≥ 5 FEET
OPENINGS IN WALLS	NOT ALLOWED	NA	< 3 FEET
	25% MAXIMUM OF WALL AREA	0 HOURS	3 FEET
	UNLIMITED	0 HOURS	5 FEET
PENETRATIONS	ALL	COMPLY WITH SECTION R302.4	< 3 FEET
		NONE REQUIRED	3 FEET

FOR SI: 1 FOOT = 304.8 MM.

NA = NOT APPLICABLE.

A. THE FIRE-RESISTANCE RATING SHALL BE PERMITTED TO BE REDUCED TO 0 HOURS ON THE UNDERSIDE OF THE EAVE OVERHANG IF FIREBLOCKING IS PROVIDED FROM THE WALL TOP PLATE TO THE UNDERSIDE OF THE ROOF SHEATHING.

B. THE FIRE-RESISTANCE RATING SHALL BE PERMITTED TO BE REDUCED TO 0 HOURS ON THE UNDERSIDE OF THE RAKE OVERHANG WHERE GABLE VENT OPENINGS ARE NOT INSTALLED.

EXCERPTS FROM THE 2022 CALIFORNIA PLUMBING CODE

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

METER AND STREET SERVICE (inches)	BUILDING SUPPLY AND BRANCHES (inches)	MAXIMUM ALLOWABLE LENGTH (feet)														
		40	60	80	100	150	200	250	300	400	500	600	700	800	900	1000
PRESSURE RANGE - 30 to 45 psi[1]																
3/4	1/2[2]	6	5	4	3	2	1	1	1	0	0	0	0	0	0	0
3/4	3/4	16	16	14	12	9	6	5	5	4	4	3	2	2	2	1
3/4	1	29	25	23	21	17	15	13	12	10	8	6	6	6	6	6
1	1	36	31	27	25	20	17	15	13	12	10	8	6	6	6	6
3/4	1 1/4	36	33	31	28	24	23	21	19	17	16	13	12	12	11	11
1	1 1/4	54	47	42	38	32	28	25	23	19	17	14	12	12	11	11
1 1/2	1 1/4	78	68	57	48	38	32	28	25	21	18	15	12	12	11	11
1	1 1/2	85	84	79	65	56	48	43	38	32	28	26	22	21	20	20
1 1/2	1 1/2	150	124	105	91	70	57	49	45	36	31	26	23	21	20	20
2	1 1/2	151	129	129	110	80	64	53	46	38	32	27	23	21	20	20
1	2	85	85	85	85	85	85	82	80	66	61	57	52	49	46	43
1 1/2	2	220	205	190	176	155	138	127	120	104	85	70	61	57	54	51
2	2	370	327	292	265	217	185	164	147	124	96	70	61	57	54	51
2	2 1/2	445	418	390	370	330	300	280	265	240	220	198	175	158	143	133
PRESSURE RANGE - 46 to 60 psi[1]																
3/4	1/2[2]	7	7	6	5	4	3	2	2	1	1	1	0	0	0	0
3/4	3/4	20	20	19	17	14	11	9	8	6	5	4	4	3	3	3
3/4	1	39	39	36	33	28	23	21	19	17	14	12	10	9	8	8
1	1	39	39	39	36	30	25	23	20	18	15	12	10	9	8	8
3/4	1 1/4	39	39	39	39	39	39	34	32	27	25	22	19	19	17	16
1	1 1/4	78	78	76	67	52	44	39	36	30	27	24	20	19	17	16
1 1/2	1 1/4	78	78	78	78	66	52	44	39	33	29	24	20	19	17	16
1	1 1/2	85	85	85	85	85	85	80	67	55	49	41	37	34	32	30
1 1/2	1 1/2	151	151	151	151	128	105	90	78	62	52	42	38	35	32	30
2	1 1/2	151	151	151	151	150	117	98	84	67	55	42	38	35	32	30
1	2	85	85	85	85	85	85	85	85	85	85	85	85	85	83	80
1 1/2	2	370	370	340	318	272	240	220	198	170	150	135	123	110	102	94
2	2	370	370	370	370	368	318	280	250	205	165	142	123	110	102	94
2	2 1/2	654	640	610	580	535	500	470	440	400	365	335	315	285	267	250
PRESSURE RANGE - Over 60 psi[1]																
3/4	1/2[2]	7	7	7	6	5	4	3	3	2	1	1	1	1	1	0
3/4	3/4	20	20	20	20	17	13	11	10	8	7	6	6	5	4	4
3/4	1	39	39	39	39	35	30	27	24	21	17	14	13	12	12	11
1	1	39	39	39	39	38	32	29	26	22	18	14	13	12	12	11
3/4	1 1/4	39	39	39	39	39	39	39	39	34	28	26	25	23	22	21
1	1 1/4	78	78	78	78	74	62	53	47	39	31	26	25	23	22	21
1 1/2	1 1/4	78	78	78	78	78•	74	65	54	43	34	26	25	23	22	21
1	1 1/2	85	85	85	85	85	85	85	85	81	64	51	48	46	43	40
1 1/2	1 1/2	151	151	151	151	151	151	130	113	88	73	51	51	46	43	40
2	1 1/2	151	151	151	151	151	151	142	122	98	82	64	51	46	43	40
1	2	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
1 1/2	2	370	370	370	370	360	335	305	282	244	212	187	172	153	141	129
2	2	370	370	370	370	370	370	370	340	288	245	204	172	153	141	129
2	2 1/2	654	654	654	654	654	650	610	570	510	460	430	404	380	356	329

FOR SI UNITS: 1 INCH = 25 MM, 1 FOOT = 304.8 MM, 1 POUND-FORCE PER SQUARE INCH = 6.8947 KPA
NOTES:
1. AVAILABLE STATIC PRESSURE AFTER HEAD LOSS.
2. BUILDING SUPPLY, NOT LESS THAN 3/4 OF AN INCH (20 MM) NOMINAL SIZE.

TABLE 703.2
MAXIMUM UNIT LOADING AND MAXIMUM LENGTH OF DRAINAGE AND VENT PIPING

SIZE OF PIPE (inches)	**1 1/4**	**1 1/2**	**2**	**3**	**4**	**5**	**6**	**8**	**10**	**12**
Maximum Units										
Drainage Piping[1]										
Vertical	1	2[2]	16[3]	48[4]	256	600	1380	3600	5600	8400
Horizontal	1	1	8[3]	35[4]	216[5]	428[5]	720[5]	2640[5]	4680[5]	8200[5]
Maximum Length										
Drainage Piping										
Vertical, (feet)	45	65	85	212	300	390	510	750	—	—
Horizontal (unlimited)										
Vent Piping										
Horizontal and Vertical[6]										
Maximum Units	1	8[3]	24	84	256	600	1380	3600	—	—
Maximum Lengths, (feet)	45	60	120	212	300	390	510	750		

FOR SI UNITS: 1 INCH = 25 MM, 1 FOOT = 304.8 MM
NOTES:
1. EXCLUDING TRAP ARM.
2. EXCEPT FOR SINKS, URINALS, AND DISHWASHERS - EXCEEDING 1 FIXTURE UNIT.
3. EXCEPT FOR SIX-UNIT TRAPS OR WATER CLOSETS.
4. NOT TO EXCEED FIVE WATER CLOSETS OR FIVE SIX-UNIT TRAPS.
5. BASED ON 1/4 INCH PER FOOT (20.8 MM/M) SLOPE. FOR 1/8 OF AN INCH PER FOOT (10.4 MM/M) SLOPE, MULTIPLY HORIZONTAL FIXTURE UNITS BY A FACTOR OF 0.8.
6. THE DIAMETER OF AN INDIVIDUAL VENT SHALL BE NOT LESS THAN 11/4 INCHES (32 MM) NOR LESS THAN ONE-HALF THE DIAMETER OF THE DRAIN TO WHICH IT IS CONNECTED. FIXTURE UNIT LOAD VALUES FOR DRAINAGE AND VENT PIPING SHALL BE COMPUTED FROM TABLE 702.1 AND TABLE 702.2. NOT TO EXCEED ONE-THIRD OF THE TOTAL PERMITTED LENGTH OF A VENT SHALL BE PERMITTED TO BE INSTALLED IN A HORIZONTAL POSITION. WHERE VENTS ARE INCREASED ONE PIPE SIZE FOR THEIR ENTIRE LENGTH, THE MAXIMUM LENGTH LIMITATIONS SPECIFIED IN THIS TABLE DO NOT APPLY. THIS TABLE IS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 901.3.
7. UP TO 8 PUBLIC LAVATORIES ARE PERMITTED TO BE INSTALLED ON A 1 1/2 INCH (40 MM) VERTICAL BRANCH OR HORIZONTAL SANITARY BRANCH SLOPED AT 1/4 INCH PER FOOT (20.8 MM/M).

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AIA California

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

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

Y | N/A | RESPON. PARTY

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

Exceptions:

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

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

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

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

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.
When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

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

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

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

Exceptions:

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

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

Notes:

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

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

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

Exception: Areas of parking facilities served by parking lifts.

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

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

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

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

Notes:

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

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

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

Exception: Areas of parking facilities served by parking lifts.

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

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

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

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

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

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

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

Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.

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

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

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

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

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

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

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

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

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

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

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

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

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

Notes:

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

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

DIVISION 4.2 ENERGY EFFICIENCY

4.201 GENERAL

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

4.303 INDOOR WATER USE

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

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

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

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

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

4.303.1.3 Showerheads.

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

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

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

4.303.1.4 Faucets.

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

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

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

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

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

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

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

TABLE H-2

STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY 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.

S
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DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

CAL-GREEN REQUIREMENTS

3/24/2024 7:24:05 AM
Autodesk Docs://22040_City of Chula Vista/22040_City of Chula Vista_498 Square_V2_CD_RVT22.rvt

AIA California

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 2 (January 2023)

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

Y | N/A | RESPON. PARTY

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 O^3/g ROC).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

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

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

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

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

4.503 FIREPLACES

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

4.504 POLLUTANT CONTROL

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

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

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

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

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

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

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

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

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

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

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

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

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

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

TABLE 4.504.2 - SEALANT VOC LIMIT

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

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

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

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

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

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

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

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

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

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

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

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

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

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

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

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

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

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

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

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

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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CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

CAL-GREEN REQUIREMENTS

GENERAL INFORMATION

01	Project Name	2306-22-0336 Chula-Vista ADU -- 498 Square -- Standard 1BR SOG			
02	Run Title	Title 24 Analysis			
03	Project Location	276 4th Avenue			
04	City	Chula Vista	05	Standards Version	2022
06	Zip code	91910	07	Software Version	EnergyPro 9.1
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	All orientations
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	498	19	Glazing Percentage (%)	14.76%
20	ADU Bedroom Count	n/a			

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**

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	44.3	40.5	57.3			
Proposed Design						
North Facing	43.3	36.6	55.1	1	3.9	2.2
East Facing	42.9	33.8	53.7	1.4	6.7	3.6
South Facing	42.9	35	54.3	1.4	5.5	3
West Facing	42.4	33.6	53.6	1.9	6.9	3.7
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 0.00 kWdc
- Proposed PV Capacity Scaling: North (0.00 kWdc) East (0.00 kWdc) South (0.00 kWdc) West (0.00 kWdc)

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.1	0.47	1.56	11.57	-1.46	-11.1
Space Cooling	2.13	43.11	1.5	34.72	0.63	8.39
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.67	37.47	2.36	26.52	1.31	10.95
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**6.36**	**85.9**	**5.88**	**77.66**	**0.48**	**8.24**
Space Heating	0.1	0.47	1.59	11.62	-1.49	-11.15
Space Cooling	2.13	43.11	1.26	28.61	0.87	14.5
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.67	37.47	2.36	26.58	1.31	10.89
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**6.36**	**85.9**	**5.67**	**71.66**	**0.69**	**14.24**

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.1	0.47	1.39	9.94	-1.29	-9.47
Space Cooling	2.13	43.11	1.45	33.03	0.68	10.08
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.67	37.47	2.35	26.42	1.32	11.05
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**6.36**	**85.9**	**5.65**	**74.24**	**0.71**	**11.66**
Space Heating	0.1	0.47	1.2	8.72	-1.1	-8.25
Space Cooling	2.13	43.11	1.36	31.39	0.77	11.72
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.67	37.47	2.34	26.43	1.33	11.04
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**6.36**	**85.9**	**5.36**	**71.39**	**1**	**14.51**

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
North Facing				
Gross EUI[1]	32.05	30.55	1.5	4.68
Net EUI[2]	32.05	30.55	1.5	4.68
East Facing				
Gross EUI[1]	32.05	30.09	1.96	6.12
Net EUI[2]	32.05	30.09	1.96	6.12
South Facing				
Gross EUI[1]	32.05	30.44	1.61	5.02
Net EUI[2]	32.05	30.44	1.61	5.02
West Facing				
Gross EUI[1]	32.05	29.96	2.09	6.52
Net EUI[2]	32.05	29.96	2.09	6.52

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

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 (%)
0		Standard (14-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a	

REQUIRED SPECIAL FEATURES

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

- PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)
- Insulation below roof deck
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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 buildng tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
2306-22-0336 Chula-Vista ADU -- 498 Square -- Standard 1BR SOG	498	1	1	1	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
New ADU	Conditioned	New HVAC1	498	8	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
New Front Wall	New ADU	R-21 w/R-5 Wall	0	Front	181	32	90
New Left Wall	New ADU	R-21 w/R-5 Wall	90	Left	192	13.5	90
New Back Wall	New ADU	R-21 w/R-5 Wall	180	Back	166	0	90
New Right Wall	New ADU	R-21 w/R-5 Wall	270	Right	192	48	90
New Roof Attic	New ADU	R-38 w/R-19 B.R.D.	n/a	n/a	498	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 New ADU	Attic RoofNew ADU	Ventilated	4.5	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 (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W5	Window	New Front Wall	Front	0			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W4	Window	New Left Wall	Left	90			1	10.5	0.3	NFRC	0.23	NFRC	Bug Screen
Window W3	Window	New Left Wall	Left	90			1	3	0.3	NFRC	0.23	NFRC	Bug Screen

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 (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W2	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen
Window W1	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Front Door D1	New Front Wall	20	0.2

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
New Slab-on-Grade	New ADU	498	0.1	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-21 w/R-5 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / 5	0.048	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-5 Sheathing Exterior Finish: Synthetic Stucco

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
Attic RoofNew ADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 w/R-19 B.R.D.	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	AOSmith	AOSmithHPTU50	Outside	New ADU	New ADU

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CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

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WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
New HVAC1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2	EER / EER / CEER			
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF2	7.5	36000	24000	EER2SEER2	14.3	11.7	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/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	Yes	Yes

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	30	0.35	Exhaust	No	n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Kenneth Ponce	Documentation Author Signature: Kenneth Ponce
Company: So Cal Title 24	Signature Date: 06/27/2023
Address: 8659 Red Oak Street, Suite I	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Rancho Cucamonga, CA 91730	Phone: 909-257-7547

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: Mike Moore	Responsible Designer Signature: Mike Moore
Company: Snap ADU	Date Signed: 06/27/2023
Address: PO Box 2685	License:
City/State/Zip: Carlsbad, CA 92018	Phone: (760) 259-1985

Digitally signed by California Home Energy Efficiency Rating Services (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.

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GENERAL INFORMATION

01	Project Name	2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR SOG			
02	Run Title	Title 24 Analysis			
03	Project Location	276 4th Avenue			
04	City	Chula Vista	05	Standards Version	2022
06	Zip code	91910	07	Software Version	EnergyPro 9.2
08	Climate Zone	7	09	Front Orientation (deg/ Cardinal)	All orientations
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	498	19	Glazing Percentage (%)	14.76%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

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**

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	46.2	48.8	64.4			
Proposed Design						
North Facing	43.8	34.9	58.5	2.4	13.9	5.9
East Facing	43.4	32.6	57.6	2.8	16.2	6.8
South Facing	43.5	34.1	58.3	2.7	14.7	6.1
West Facing	43.3	32.9	57.8	2.9	15.9	6.6
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 0.00 kWdc
- Proposed PV Capacity Scaling: North (0.00 kWdc) East (0.00 kWdc) South (0.00 kWdc) West (0.00 kWdc)

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.02	0.13	0.45	3.53	-0.43	-3.4
Space Cooling	1.31	24.69	0.5	10.67	0.81	14.02
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.11	36.53	2.41	28.21	0.7	8.32
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**4.9**	**66.3**	**3.82**	**47.36**	**1.08**	**18.94**
Space Heating	0.02	0.13	0.45	3.44	-0.43	-3.31
Space Cooling	1.31	24.69	0.3	7.58	1.01	17.11
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.11	36.53	2.42	28.31	0.69	8.22
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**4.9**	**66.3**	**3.63**	**44.28**	**1.27**	**22.02**

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.02	0.13	0.34	2.53	-0.32	-2.4
Space Cooling	1.31	24.69	0.47	10.71	0.84	13.98
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.11	36.53	2.4	28.12	0.71	8.41
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**4.9**	**66.3**	**3.67**	**46.31**	**1.23**	**19.99**
Space Heating	0.02	0.13	0.26	1.94	-0.24	-1.81
Space Cooling	1.31	24.69	0.41	9.71	0.9	14.98
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.11	36.53	2.39	28.1	0.72	8.43
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**4.9**	**66.3**	**3.52**	**44.7**	**1.38**	**21.6**

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
North Facing				
Gross EUI[1]	30.02	27.92	2.1	7
Net EUI[2]	30.02	27.92	2.1	7
East Facing				
Gross EUI[1]	30.02	27.65	2.37	7.89
Net EUI[2]	30.02	27.65	2.37	7.89
South Facing				
Gross EUI[1]	30.02	27.82	2.2	7.33
Net EUI[2]	30.02	27.82	2.2	7.33
West Facing				
Gross EUI[1]	30.02	27.63	2.39	7.96
Net EUI[2]	30.02	27.63	2.39	7.96

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED PV SYSTEMS

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 (%)
0		Standard (14-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a	

REQUIRED SPECIAL FEATURES

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

- PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR SOG	498	1	1	1	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
New ADU	Conditioned	New HVAC1	498	8	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
New Front Wall	New ADU	R-21 Wall	0	Front	181	32	90
New Left Wall	New ADU	R-21 Wall	90	Left	192	13.5	90
New Back Wall	New ADU	R-21 Wall	180	Back	166	0	90
New Right Wall	New ADU	R-21 Wall	270	Right	192	48	90
New Roof Attic	New ADU	R-30 Roof Attic	n/a	n/a	498	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 New ADU	Attic RoofNew ADU	Ventilated	4.5	0.1	0.85	Yes	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 (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W5	Window	New Front Wall	Front	0			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W4	Window	New Left Wall	Left	90			1	10.5	0.3	NFRC	0.23	NFRC	Bug Screen
Window W3	Window	New Left Wall	Left	90			1	3	0.3	NFRC	0.23	NFRC	Bug Screen
Window W2	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen
Window W1	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Front Door D1	New Front Wall	20	0.2

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
New Slab-on-Grade	New ADU	498	0.1	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-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
Attic RoofNew ADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
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	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTU 50 120 (50 gal)	Outside	New ADU	New ADU

WATER HEATING - HERS VERIFICATION

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

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SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	**System Type**	**Heating Unit Name**	**Heating Equipment Count**	**Cooling Unit Name**	**Cooling Equipment Count**	**Fan Name**	**Distribution Name**	**Required Thermostat Type**
New HVAC1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				**Cooling**					
Name	**System Type**	**Number of Units**	**Heating Efficiency Type**	**HSPF/HSPF2/COP**	**Cap 47**	**Cap 17**	**Cooling Efficiency Type**	**SEER/SEER2**	**EER/EER2/CEER**	**Zonally Controlled**	**Compressor Type**	**HERS Verification**
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF2	7.5	36000	24000	EER2SEER2	14.3	11.7	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/EER2**	**Verified SEER/SEER2**	**Verified Refrigerant Charge**	**Verified HSPF/HSPF2**	**Verified Heating Cap 47**	**Verified Heating Cap 17**
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	Yes	Yes

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	**Airflow (CFM)**	**Fan Efficacy (W/CFM)**	**IAQ Fan Type**	**Includes Heat/Energy Recovery?**	**IAQ Recovery Effectiveness - SRE/ASRE**	**Includes Fault Indicator Display?**	**HERS Verification**	**Status**
SFam IAQVentRpt	30	0.35	Exhaust	No	n/a / n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Kenneth Ponce	Documentation Author Signature: Kenneth Ponce
Company: So Cal Title 24	Signature Date: 11/01/2023
Address: 8659 Red Oak Street, Suite I	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Rancho Cucamonga, CA 91730	Phone: 909-257-7547

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Responsible Designer Name: Mike Moore	Responsible Designer Signature: Mike Moore
Company: Snap ADU	Date Signed: 11/01/2023
Address: PO Box 2685	License:
City/State/Zip: Carlsbad, CA 92018	Phone: (760) 259-1985

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DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

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22040

GENERAL INFORMATION

01	Project Name	2306-22-0336 Chula-Vista ADU -- 498 Square -- Standard 1BR RF			
02	Run Title	Title 24 Analysis			
03	Project Location	276 4th Avenue			
04	City	Chula Vista	05	Standards Version	2022
06	Zip code	91910	07	Software Version	EnergyPro 9.1
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	All orientations
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	498	19	Glazing Percentage (%)	14.76%
20	ADU Bedroom Count	n/a			

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

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	44.9	42	57.7			
Proposed Design						
North Facing	43.4	37.4	55.1	1.5	4.6	2.6
East Facing	43	34.7	53.6	1.9	7.3	4.1
South Facing	43	36	54.3	1.9	6	3.4
West Facing	42.6	34.8	53.7	2.3	7.2	4
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 0.00 kWdc
- Proposed PV Capacity Scaling: North (0.00 kWdc) East (0.00 kWdc) South (0.00 kWdc) West (0.00 kWdc)

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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CA Building Energy Efficiency Standards - 2022 Residential Compliance Report Version: 2022.0.000 Schema Version: rev 20220901 Report Generated: 2023-06-27 13:13:09

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.27	1.19	1.52	11.3	-1.25	-10.11
Space Cooling	2.6	50.56	1.89	41.29	0.71	9.27
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.66	37.47	2.35	26.39	1.31	11.08
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**6.99**	**94.07**	**6.22**	**83.83**	**0.77**	**10.24**
Space Heating	0.27	1.19	1.56	11.43	-1.29	-10.24
Space Cooling	2.6	50.56	1.65	34.89	0.95	15.67
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.66	37.47	2.35	26.44	1.31	11.03
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**6.99**	**94.07**	**6.02**	**77.61**	**0.97**	**16.46**

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.27	1.19	1.37	9.85	-1.1	-8.66
Space Cooling	2.6	50.56	1.84	39.56	0.76	11
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.66	37.47	2.34	26.3	1.32	11.17
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**6.99**	**94.07**	**6.01**	**80.56**	**0.98**	**13.51**
Space Heating	0.27	1.19	1.2	8.79	-0.93	-7.6
Space Cooling	2.6	50.56	1.77	37.99	0.83	12.57
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	3.66	37.47	2.33	26.29	1.33	11.18
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**6.99**	**94.07**	**5.76**	**77.92**	**1.23**	**16.15**

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
North Facing				
Gross EUI[1]	33.14	31.26	1.88	5.67
Net EUI[2]	33.14	31.26	1.88	5.67
East Facing				
Gross EUI[1]	33.14	30.75	2.39	7.21
Net EUI[2]	33.14	30.75	2.39	7.21
South Facing				
Gross EUI[1]	33.14	31.2	1.94	5.85
Net EUI[2]	33.14	31.2	1.94	5.85
West Facing				
Gross EUI[1]	33.14	30.72	2.42	7.3
Net EUI[2]	33.14	30.72	2.42	7.3

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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REQUIRED PV SYSTEMS

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 (%)
0		Standard (14-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a	

REQUIRED SPECIAL FEATURES

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

- PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)
- Insulation below roof deck
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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 buildng tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
2306-22-0336 Chula-Vista ADU -- 498 Square -- Standard 1BR RF	498	1	1	1	0	1

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
New ADU	Conditioned	New HVAC1	498	8	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
New Front Wall	New ADU	R-21 w/R-5 Wall	0	Front	181	32	90
New Left Wall	New ADU	R-21 w/R-5 Wall	90	Left	192	13.5	90
New Back Wall	New ADU	R-21 w/R-5 Wall	180	Back	166	0	90
New Right Wall	New ADU	R-21 w/R-5 Wall	270	Right	192	48	90
New Roof Attic	New ADU	R-38 w/R-19 B.R.D.	n/a	n/a	498	n/a	n/a
New Raised Floor	New ADU	R-19 Floor Crawlspace	n/a	n/a	498	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 New ADU	Attic RoofNew ADU	Ventilated	4.5	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 (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W5	Window	New Front Wall	Front	0			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W4	Window	New Left Wall	Left	90			1	10.5	0.3	NFRC	0.23	NFRC	Bug Screen
Window W3	Window	New Left Wall	Left	90			1	3	0.3	NFRC	0.23	NFRC	Bug Screen

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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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 (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W2	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen
Window W1	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Front Door D1	New Front Wall	20	0.2

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-21 w/R-5 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / 5	0.048	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-5 Sheathing Exterior Finish: Synthetic Stucco
Attic RoofNew ADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.046	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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CA Building Energy Efficiency Standards - 2022 Residential Compliance Report Version: 2022.0.000 Schema Version: rev 20220901 Report Generated: 2023-06-27 13:13:09

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-38 w/R-19 B.R.D.	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	AOSmith	AOSmithHPTU50	Outside	New ADU	New ADU

Registration Number: 423-P010110931A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 13:47 HERS Provider: CHEERS
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SNAPADU DESIGN HOUSE
YUCCA ROAD
OCEANSIDE, CA 92054
760-259-2476
INFO@SNAPADU.COM
WWW.SNAPADU.COM

ADU: 498 SQUARE
CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

TITLE 24 - RF - CZ10

G410

22040

WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
New HVAC1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2	EER / EER / CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF2	7.5	36000	24000	EER2SEER2	14.3	11.7	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/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	Yes	Yes

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	30	0.35	Exhaust	No	n/a	No	Yes	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Kenneth Ponce	Documentation Author Signature: Kenneth Ponce
Company: So Cal Title 24	Signature Date: 06/27/2023
Address: 8659 Red Oak Street, Suite I	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Rancho Cucamonga, CA 91730	Phone: 909-257-7547

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: Mike Moore	Responsible Designer Signature: Mike Moore
Company: Snap ADU	Date Signed: 06/27/2023
Address: PO Box 2685	License:
City/State/Zip: Carlsbad, CA 92018	Phone: (760) 259-1985

Digitally signed by California Home Energy Efficiency Rating Services (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.

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DESIGNER:
LUIS CALDERON
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RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

TITLE 24 - RF - CZ10

G411

22040

3/24/2024 7:24:18 AM
Autodesk Docs://22040_City of Chula Vista/22040_City of Chula Vista_498 Square_V2_CD_RVT22.rvt

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

Project Name: 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF **Calculation Date/Time:** 2023-10-31T14:17:25-07:00 (Page 1 of 11)

Calculation Description: Title 24 Analysis **Input File Name:** 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF.ribd22x

GENERAL INFORMATION

01	Project Name	2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF			
02	Run Title	Title 24 Analysis			
03	Project Location	276 4th Avenue			
04	City	Chula Vista	05	Standards Version	2022
06	Zip code	91910	07	Software Version	EnergyPro 9.2
08	Climate Zone	7	09	Front Orientation (deg/ Cardinal)	All orientations
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft^2)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft^2)	n/a	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	498	19	Glazing Percentage (%)	14.76%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit:	No

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 - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

Project Name: 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF **Calculation Date/Time:** 2023-10-31T14:17:25-07:00 (Page 2 of 11)

Calculation Description: Title 24 Analysis **Input File Name:** 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF.ribd22x

ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)	Source Energy (EDR1)	Efficiency[1] EDR (EDR2efficiency)	Total[2] EDR (EDR2total)
Standard Design	46.6	50.1	64.5			
Proposed Design						
North Facing	43.9	36.2	58.5	2.7	13.9	6
East Facing	43.5	34.5	57.8	3.1	15.6	6.7
South Facing	43.7	35.9	58.4	2.9	14.2	6.1
West Facing	43.5	35	58.1	3.1	15.1	6.4
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment
[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
[3]Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 0.00 kWdc
- Proposed PV Capacity Scaling: North (0.00 kWdc) East (0.00 kWdc) South (0.00 kWdc) West (0.00 kWdc)

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

Project Name: 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF **Calculation Date/Time:** 2023-10-31T14:17:25-07:00 (Page 3 of 11)

Calculation Description: Title 24 Analysis **Input File Name:** 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF.ribd22x

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) ($kBtu/ft^2$ -yr)	Standard Design TDV Energy (EDR2) ($kTDV/ft^2$ -yr)	Proposed Design Source Energy (EDR1) ($kBtu/ft^2$ -yr)	Proposed Design TDV Energy (EDR2) ($kTDV/ft^2$ -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.02	0.13	0.39	3.06	-0.37	-2.93
Space Cooling	1.74	31.19	0.84	16.44	0.9	14.75
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.1	36.29	2.39	28	0.71	8.29
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**5.32**	**72.56**	**4.08**	**52.45**	**1.24**	**20.11**
Space Heating	0.02	0.13	0.39	2.99	-0.37	-2.86
Space Cooling	1.74	31.19	0.67	13.91	1.07	17.28
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.1	36.29	2.4	28.09	0.7	8.2
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**5.32**	**72.56**	**3.92**	**49.94**	**1.4**	**22.62**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

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ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) ($kBtu/ft^2$ -yr)	Standard Design TDV Energy (EDR2) ($kTDV/ft^2$ -yr)	Proposed Design Source Energy (EDR1) ($kBtu/ft^2$ -yr)	Proposed Design TDV Energy (EDR2) ($kTDV/ft^2$ -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.02	0.13	0.3	2.26	-0.28	-2.13
Space Cooling	1.74	31.19	0.82	16.95	0.92	14.24
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.1	36.29	2.39	27.93	0.71	8.36
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**5.32**	**72.56**	**3.97**	**52.09**	**1.35**	**20.47**
Space Heating	0.02	0.13	0.24	1.85	-0.22	-1.72
Space Cooling	1.74	31.19	0.78	16.07	0.96	15.12
IAQ Ventilation	0.46	4.95	0.46	4.95	0	0
Water Heating	3.1	36.29	2.38	27.88	0.72	8.41
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**5.32**	**72.56**	**3.86**	**50.75**	**1.46**	**21.81**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

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ENERGY USE INTENSITY

	Standard Design ($kBtu/ft^2$ - yr)	Proposed Design ($kBtu/ft^2$ - yr)	Compliance Margin ($kBtu/ft^2$ - yr)	Margin Percentage
North Facing				
Gross EUI[1]	30.83	28.37	2.46	7.98
Net EUI[2]	30.83	28.37	2.46	7.98
East Facing				
Gross EUI[1]	30.83	28.09	2.74	8.89
Net EUI[2]	30.83	28.09	2.74	8.89
South Facing				
Gross EUI[1]	30.83	28.36	2.47	8.01
Net EUI[2]	30.83	28.36	2.47	8.01
West Facing				
Gross EUI[1]	30.83	28.15	2.68	8.69
Net EUI[2]	30.83	28.15	2.68	8.69

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

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REQUIRED PV SYSTEMS

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 (%)
0		Standard (14-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a	

REQUIRED SPECIAL FEATURES

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

- PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft^2)	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF	498	1	1	1	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
New ADU	Conditioned	New HVAC1	498	8	DHW Sys 1	New

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OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)
New Front Wall	New ADU	R-21 Wall	0	Front	181	32	90
New Left Wall	New ADU	R-21 Wall	90	Left	192	13.5	90
New Back Wall	New ADU	R-21 Wall	180	Back	166	0	90
New Right Wall	New ADU	R-21 Wall	270	Right	192	48	90
New Roof Attic	New ADU	R-30 Roof Attic	n/a	n/a	498	n/a	n/a
New Raised Floor	New ADU	R-19 Floor Crawlspace	n/a	n/a	498	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 New ADU	Attic RoofNew ADU	Ventilated	4.5	0.1	0.85	Yes	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 (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W5	Window	New Front Wall	Front	0			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W4	Window	New Left Wall	Left	90			1	10.5	0.3	NFRC	0.23	NFRC	Bug Screen
Window W3	Window	New Left Wall	Left	90			1	3	0.3	NFRC	0.23	NFRC	Bug Screen
Window W2	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen
Window W1	Window	New Right Wall	Right	270			1	24	0.3	NFRC	0.23	NFRC	Bug Screen

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OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Front Door D1	New Front Wall	20	0.2

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-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
Attic RoofNew ADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.046	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10
R-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	05
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50	CFM50
Required	Not Required	N/A	n/a	n/a

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WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source
DHW Heater 1	1	50	A. O. Smith	HPTU 50 120 (50 gal)	Outside	New ADU	New ADU

WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
New HVAC1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

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CITY OF CHULA VISTA
276 FOURTH AVENUE
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DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

	RELEASED FOR...	DATE	BY	APP.
A	RELEASE	03/22/2024	LAC	

TITLE 24 - RF - CZ7

G412

22040

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01E

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HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
			Heating				Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER	Zonally Controlled	Compressor Type	HERS Verification
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF2	7.5	36000	24000	EER2SEER2	14.3	11.7	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/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	Yes	Yes

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	30	0.35	Exhaust	No	n/a / n/a	No	Yes	

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Input File Name: 2310-22-0616 Chula-Vista ADU -- 498 Square -- Standard 1BR RF.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Kenneth Ponce	Documentation Author Signature: Kenneth Ponce
Company: So Cal Title 24	Signature Date: 11/01/2023
Address: 8659 Red Oak Street, Suite I	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Rancho Cucamonga, CA 91730	Phone: 909-257-7547

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: Mike Moore	Responsible Designer Signature: Mike Moore
Company: Snap ADU	Date Signed: 11/01/2023
Address: PO Box 2685	License:
City/State/Zip: Carlsbad, CA 92018	Phone: (760) 259-1985

Digitally signed by California Home Energy Efficiency Rating Services (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.

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DESIGNER:
LUIS CALDERON
SnapADU

SIGNATURE

RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

TITLE 24 - RF - CZ7

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2022 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information.
(04/2022)

Building Envelope:

§ 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):	**Roof Deck, Ceiling and Rafter Roof Insulation.** Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. 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 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 0.45; or area-weighted average U-factor of all fenestration must not exceed 0.45. *

Fireplaces, Decorative Gas Appliances, and Gas Log:

§ 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:

§ 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-N. *
§ 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)3:	**Insulation.** Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
§ 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.

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary

§ 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.
§ 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:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment` maintenance, and wind as required by §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 designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 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:

§ 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 CMC §§ 601.0-605.0 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 R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation. 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 UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", If mastic or tape is used. Building cavities, air handler support platforms, 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 these spaces must not be compressed. *
§ 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 due tosunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner cores of flex ducts must have a non-porous layer or air barrier 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 Reference Residential Appendix RA3.1.
§ 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. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevents air from bypassing the filter. *

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2022 Single-Family Residential Mandatory Requirements Summary

§ 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. *

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)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed andcontrolled per §150.0(o)1Biii&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses .** 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 specified in § 150.0(o)1Ci-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii,enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Giii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H&I:	**Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.** The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by §150.0(o)1C.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; 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:

§ 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, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.
§ 150.0(k)1B:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(k)1D:	**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)1E:	**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 shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 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). *

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2022 Single-Family Residential Mandatory Requirements Summary

§ 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)2A:	**Accessible Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	**Multiple Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k).
§ 150.0(k)2C:	**Mandatory Requirements.** Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	**Energy Management Control Systems.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(k)2K:	**Independent controls.** Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control) or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

Solar Readiness:

§ 110.10(a)1:	**Single-family Residences.** Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b)-(e).
§110.10(b)1A:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single-family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. *
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must have an azimuth between 90-300° of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment. *
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

Electric and Energy Storage Ready:

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2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(s)	**Energy Storage System (ESS) Ready.** All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS supplied branch circuits, *or* a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s); at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS, with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source.
§ 150.0(t)	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u)	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v)	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

*Exceptions may apply.

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SFR MANDATORY MEASURES

G420

22040

BMP SITE LEGEND

	(E) CONCRETE, IMPERVIOUS SURFACE
	(E) PAVERS, IMPERVIOUS SURFACE
	(E) LANDSCAPE, PERVIOUS SURFACE
	IMPERVIOUS AREA
	EXISTING DWELLING, IMPERVIOUS SURFACE
	PROPERTY LINE
DRAINAGE	APPROXIMATE DIRECTION OF LOT DRAINAGE
	(N) DOWNSPOUT
	APPROXIMATE DRAINAGE FROM STRUCTURES
	(E) 6' - 0" PERIMETER FENCING
	COUNTOUR LINE

SOURCE CONTROL BMPS
Chapter 4 and Appendix E BMP Design Manual

4.2.1	PREVENTION OF ILLICIT DISCHARGES INTO THE MS4
4.2.2	STORM DRAIN STENCILING OR SIGNAGE
4.2.3	PROTECT OUTDOOR MATERIALS STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL
4.2.4	PROTECT MATERIALS STORED IN OUTDOOR WORK AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL
4.2.5	PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL
4.2.6	ADDITIONAL BMPS BASED ON POTENTIAL SOURCES OF RUNOFF POLLUTANTS (MUST ANSWER FOR EACH SOURCE LISTED BELOW)
SC-A	ONSITE STORM DRAIN INLETS
SC-D1	NEED FOR FUTURE INDOOR & STRUCTURAL PEST CONTROL
SC-D2	LANDSCAPE / OUTDOOR PESTICIDE USE
SC-E	POOLS, SPAS, PONDS, DECORATIVE FOUNTAINS, AND OTHER WATER FEATURES
SC-G	REFUSE AREAS
SC-N	FIRE SPRINKLER TEST WATER
SC-O	MISCELLANEOUS DRAIN OR WASH WATER
SC-P	PLAZAS, SIDEWALKS, AND PARKING LOTS

SITE DESIGN BMPS
Chapter 4 and Appendix E BMP Design Manual

4.3.1	MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES
4.3.2	CONSERVE NATURAL AREAS, SOILS, AND VEGETATION
4.3.3	MINIMIZE IMPERVIOUS AREA
4.3.4	MINIMIZE SOIL COMPACTION
4.3.5	IMPERVIOUS AREA DISPERSION
4.3.6	RUNOFF COLLECTION
4.3.7	LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES
4.3.8	HARVESTING AND USING PRECIPITATION

CONSTRUCTION BMP STANDARDS
Chapter 4 and Appendix K BMP Design Manual

WM-1	MATERIAL DELIVERY & STORAGE AREA	MS
WM-4	SPILL PREVENTION AND CONTROL	
WM-5	SOLID WASTE MANAGEMENT	SWM
WM-8	CONCRETE WASTE MANAGEMENT	CWM
WM-9	SANITARY WASTE MANAGEMENT	SS
SC-5	FIBER ROLLS BARRIER	FR FR
SC-7	STREET SWEEPING AND VACUUMING	
SC-B	PROVIDE SPLASH BLOCKS FOR STORMWATER DISPERSAL AT RAINWATER LEADERS	

CONSTRUCTION BMP GENERAL NOTES

PRIOR TO ANY SOIL DISTURBANCE, TEMPORARY SEDIMENT CONTROLS SHALL BE INSTALLED BY THE CONTRACTOR OR QUALIFIED PERSON(S) AS INDICATED BELOW:

1. ALL REQUIREMENTS OF THE CITY STORM WATER STANDARDS MUST BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING/IMPROVEMENTS CONSISTENT WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND/OR WATER POLLUTION CONTROL PLAN (WPCP) FOR CONSTRUCTION LEVEL BMPS AND, IF APPLICABLE, THE STORM WATER QUALITY MANAGEMENT PLAN (SWQMP) FOR POST-CONSTRUCTION BMPS.
2. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL STORM DRAIN INLET PROTECTION. INLET PROTECTION IN THE PUBLIC RIGHT-OF-WAY MUST BE TEMPORARILY REMOVED PRIOR TO A RAIN EVENT TO ENSURE NO FLOODING OCCURS AND REINSTALLED AFTER RAIN IS OVER.
3. ALL CONSTRUCTION BMPS SHALL BE INSTALLED AND PROPERLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
4. THE CONTRACTOR SHALL ONLY GRADE, INCLUDING CLEARING AND GRUBBING, AREAS FOR WHICH THE CONTRACTOR OR QUALIFIED CONTACT PERSON CAN PROVIDE EROSION AND SEDIMENT CONTROL MEASURES.
5. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB-CONTRACTORS AND SUPPLIERS ARE AWARE OF ALL STORM WATER BMPS AND IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED SWPPP/WPCP WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS, CIVIL PENALTIES, AND/OR TOP WORK NOTICES.
6. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL BE RESPONSIBLE FOR CLEANUP OF ALL SILT, DEBRIS, AND MUD ON AFFECTED AND ADJACENT STREET(S) AND WITHIN STORM DRAIN SYSTEM DUE TO CONSTRUCTION VEHICLES/EQUIPMENT AND CONSTRUCTION ACTIVITY AT THE END OF EACH WORK DAY.
7. THE CONTRACTOR SHALL PROTECT NEW AND EXISTING STORM WATER CONVEYANCE SYSTEMS FROM SEDIMENTATION, CONCRETE RINSE, OR OTHER CONSTRUCTION-RELATED DEBRIS AND DISCHARGES WITH THE APPROPRIATE BMPS THAT ARE ACCEPTABLE TO THE CITY RESIDENT ENGINEER AND AS INDICATED IN THE WPPP/WPCP
8. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CLEAR DEBRIS, SILT, AND MUD FROM ALL DITCHES AND SWALES PRIOR TO AND WITHIN 3 BUSINESS DAYS AFTER EACH RAIN EVENT OR PRIOR TO THE NEXT RAIN EVENT, WHICHEVER IS SOONER.
9. IF A NON-STORM WATER DISCHARGE LEAVES THE SITE, THE CONTRACTOR SHALL IMMEDIATELY STOP THE ACTIVITY AND REPAIR THE DAMAGES. THE CONTRACTOR SHALL NOTIFY THE CITY RESIDENT ENGINEER OF THE DISCHARGE, PRIOR TO RESUMING CONSTRUCTION ACTIVITY. ANY AND ALL WASTE MATERIAL, SEDIMENT, AND DEBRIS FROM EACH NON-STORM WATER DISCHARGE SHALL BE REMOVED FROM THE STORM DRAIN CONVEYANCE SYSTEM AND PROPERLY DISPOSED OF BY THE CONTRACTOR.
10. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES. ALL NECESSARY MATERIALS SHALL BE STOCKPILED ONSITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID DEPLOYMENT OF CONSTRUCTION BMPS WHEN RAIN IS IMMINENT.
11. THE CONTRACTOR SHALL RESTORE AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPS TO WORKING ORDER YEAR ROUND.
12. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DUE TO UNFORESEEN CIRCUMSTANCES TO PREVENT NON-STORM WATER AND SEDIMENT-LADEN DISCHARGES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.
14. ALL EROSION AND SEDIMENT CONTROL MEASURES PROVIDED PER THE APPROVED SWPPP/WPCP SHALL BE INSTALLED AND MAINTAINED. ALL EROSION AND SEDIMENT CONTROLS FOR INTERIM CONDITIONS SHALL BE PROPERLY DOCUMENTED AND INSTALLED TO THE SATISFACTION OF THE CITY RESIDENT ENGINEER.
15. AS NECESSARY, THE CITY RESIDENT ENGINEER SHALL SCHEDULE MEETINGS FOR THE PROJECT TEAM (GENERAL CONTRACTOR, QUALIFIED CONTACT PERSON, EROSION CONTROL SUBCONTRACTOR IF ANY, ENGINEER OF WORK, OWNER/DEVELOPER, AND THE CITY RESIDENT ENGINEER) TO EVALUATE THE ADEQUACY OF THE EROSION AND SEDIMENT CONTROL MEASURES AND OTHER BMPS RELATIVE TO ANTICIPATED CONSTRUCTION ACTIVITIES.
16. THE CONTRACTOR OR QUALIFIED CONTACT PERSON SHALL CONDUCT VISUAL INSPECTIONS AND MAINTAIN ALL BMPS DAILY AND AS NEEDED. VISUAL INSPECTIONS AND MAINTENANCE OF ALL BMPS SHALL BE CONDUCTED BEFORE, DURING, AND AFTER EVERY RAIN EVENT AND EVERY 24 HOURS DURING ANY PROLONGED RAIN EVENT. THE CONTRACTOR SHALL MAINTAIN AND REPAIR ALL BMPS AS SOON AS POSSIBLE AS SAFETY ALLOWS.
17. CONSTRUCTION ENTRANCE AND EXIT AREA. TEMPORARY CONSTRUCTION ENTRANCE AND EXITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CASQA FACT SHEET TC-1OR CALTRANS FACT SHEET TC-01 TO PREVENT TRACKING OF SEDIMENT AND OTHER POTENTIAL POLLUTANTS ONTO PAVED SURFACES AND TRAVELED WAYS. WIDTH SHALL BE 10 ' OR THE MINIMUM NECESSARY TO ACCOMMODATE VEHICLES AND EQUIPMENT WITHOUT BYPASSING THE ENTRANCE. (a) NON-STORM WATER DISCHARGES SHALL BE EFFECTIVELY MANAGED PER THE SAN DIEGO MUNICIPAL CODE CHAPTER 4, ARTICLE 3, DIVISION 3 “STORM WATER MANAGEMENT AND DISCHARGE CONTROL ”.
18. SURFACE WATER WILL DRAIN AWAY FROM BUILDING AND SHOW DRAINAGE PATTERN. THE GRADE SHALL FALL A MINIMUM OF 6 ” WITHIN THE FIRST 10 FEET. SECTION R401.3
    A. EXCEPTION: WHERE LOT LINES, WALLS, SLOPES OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES OF FALL WITHIN 10 FEET,DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED NOT LESS THAN 2 PERCENT AWAY FROM THE BUILDING
19. ALL NEW ROOF DOWNSPOUTS SHALL BE DISCONNECTED AND DIRECTED TO PERVIOUS AREAS.

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BMP SITE PLAN

C100

22040

KEYNOTES:

KEYNOTE	DESCRIPTION

EXISTING SITE PLAN LEGEND

(E) STRUCTURES

(E) NATIVE LANDSCAPING

(E) ASPHALT

(E) PAVERS

PROPERTY LINE

TO BE REMOVED

SETBACK LINE

EASEMENT LINE

STREET CENTERLINE

(E) WATER LINE

(E) ELECTRICAL LINE

(E) NATURAL GAS LINE

(E) SEWAGE LINE

COUNTOUR LINE

(E) PERIMETER FENCING

GENERAL NOTES

1. THIS PROJECT PROPOSES NO WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
2. ALL DRAINAGE FROM IMPERVIOUS AREAS & DOWNSPOUTS TO BE ROUTED TO LANDSCAPE AREAS & PLANTER BOXES.
3. A BOUNDARY SURVEY OR A BUILDING VERIFICATION SURVEY, TO DETERMINE EXACT LOCATION OF PROPERTY LINES, INCLUDING THE RELATION OF THOSE LINES TO THE ADU LOCATION IS REQUIRED AS PART OF THIS PLAN SET. WITHOUT CONDUCTING A BOUNDARY SURVEY IT IS NOT POSSIBLE TO PERFORM E A BUILDING VERIFICATION SURVEY FROM A LICENSE PROFESSIONAL LAND SURVEYOR.

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EXISTING SITE PLAN

A010

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ENERGY EFFICIENCY HERS VERIFICATION
PER CF1R FORM (TITLE 24)

- QUALITY INSULATION INSTALLATION (QII)
- INDOOR AIR QUALITY VENTILATION
- KITCHEN RANGE HOOD
- VERIFIED HEAT PUMP RATED HEATING CAPACITY

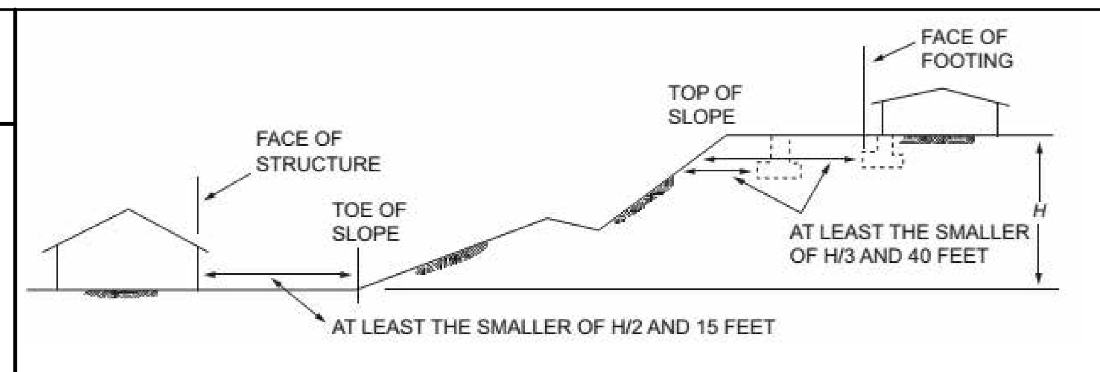

FIG. R403.1.7.1. FOUNDATION CLEARANCE FROM SLOPES

REQUIRED SPECIAL FEATURES
PER CF1R FORM (TITLE 24)

- PV EXCEPTION 2: NO PV REQUIRED WHEN MINIMUM PV SIZE (SECTION 150.1(C)14) < 1.8 kWDC (0 kW)
- INSULATION BELOW ROOF DECK
- NORTHWEST ENERGY EFFICIENCY ALLIANCE (NEEA) RATED HEAT PUMP WATER HEATER; SPECIFIC BRAND / MODEL, OR EQUIVALENT, MUST BE INSTALLED

LOT COVERAGE

LOT AREA: ____
EXISTING BUILDING & STRUCTURE LOT AREA:
PRIMARY DWELLING UNIT (PDU): ____
GARAGE: ____
OTHER STRUCTURES: ____
TOTAL COVERED LOT AREA: ____
EXISTING LOT COVERAGE (%): ____
PROPOSED BUILDING AREA ADDITION:
ACCESSORY DWELLING UNIT (ADU): ____
[2] ADU AREA DEDUCTION: ____
TOTAL AREA: ____
PROPOSED LOT COVERAGE ADDITION: ____
[1,2] NEW LOT COVERAGE: (EXISTING + PROPOSED LOT COVERAGE ADDITION) ____
[1] MAXIMUM LOT COVERAGE ALLOWED: ____

EXISTING BUILDING & STRUCTURE FLOOR AREA:
PRIMARY DWELLING UNIT (PDU): ____
GARAGE: ____
OTHER STRUCTURES: ____
TOTAL BUILDING AREA: ____
EXISTING FLOOR AREA RATIO: ____
PROPOSED BUILDING AREA ADDITION:
ACCESSORY DWELLING UNIT (ADU): ____
[2] ADU DEDUCTION AREA: ____
TOTAL AREA: ____
PROPOSED FLOOR AREA ADDITION: ____
[1] NEW FLOOR AREA RATIO: (EXISTING + PROPOSED FLOOR AREA RATIO) ____
[1] MAXIMUM FLOOR AREA RATIO ALLOWED: ____

1 REFER TO CITY OF CHULA VISTA MUNICIPAL CODE, TITLE 19.
2 ADU FLOOR AREA AND LOT COVERAGE DEDUCTION OF UP TO 800 SF PER CVMC 19.58.022.

LID HANDBOOK NOTES

LOW IMPACT DEVELOPMENT (LID) HANDBOOK APPLICABLE SECTIONS AND MEASURES TO THE PROPOSED WORK:

2.2. SITE PLANNING;
2.2.4. MINIMIZE SOIL COMPACTION;
2.2.5. DRAIN RUNOFF FROM IMPERVIOUS SURFACES TO PERVIOUS AREAS.

ADDITIONAL NOTES

1. AN ELECTRONICALLY SIGNED AND REGISTERED INSTALLATION CERTIFICATE(S) (CF2R) POSTED BY THE INSTALLING CONTRACTOR SHALL BE SUBMITTED TO THE FIELD INSPECTOR DURING CONSTRUCTION AT THE BUILDING SITE. A REGISTERED CF2R WILL HAVE A UNIQUE 21-DIGIT REGISTRATION NUMBER FOLLOWED BY FOUR ZEROS LOCATED AT THE BOTTOM OF EACH PAGE. THE FIRST 12 DIGITS OF THE NUMBER WILL MATCH THE REGISTRATION NUMBER OF THE ASSOCIATED CF1R. CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL FORMS CF2R IS REVIEWED AND APPROVED.
2. AN ELECTRONICALLY SIGNED AND REGISTERED CERTIFICATE(S) OF FIELD VERIFICATION AND DIAGNOSTIC TESTING (CF3R) SHALL BE POSTED AT THE BUILDING SIGNED AND REGISTERED CERTIFICATE(S) OF FIELD VERIFICATION AND DIAGNOSTIC TESTING (CF3R) SHALL BE POSTED AT THE BUILDING SITE BY A CERTIFIED HERS RATER. A REGISTERED CF3R WILL HAVE A UNIQUE 25-DIGIT REGISTRATION NUMBER LOCATED AT THE BOTTOM OF EACH PAGE. THE FIRST 20 DIGITS OF THE NUMBER WILL MATCH THE REGISTRATION NUMBER OF THE ASSOCIATED CF2R. CERTIFICATE OF OCCUPANCY WILL NOT BE ISSUED UNTIL CF3R IS REVIEWED AND APPROVED.

EARTHWORK QUANTITIES

CUT QUANTITY: _ _CYD
FILL QUANTITY: _ _CYD
IMPORT / EXPORT: _ _CYD
MAX CUT DEPTH: _ _CYD
MAX FILL DEPTH: _ _CYD

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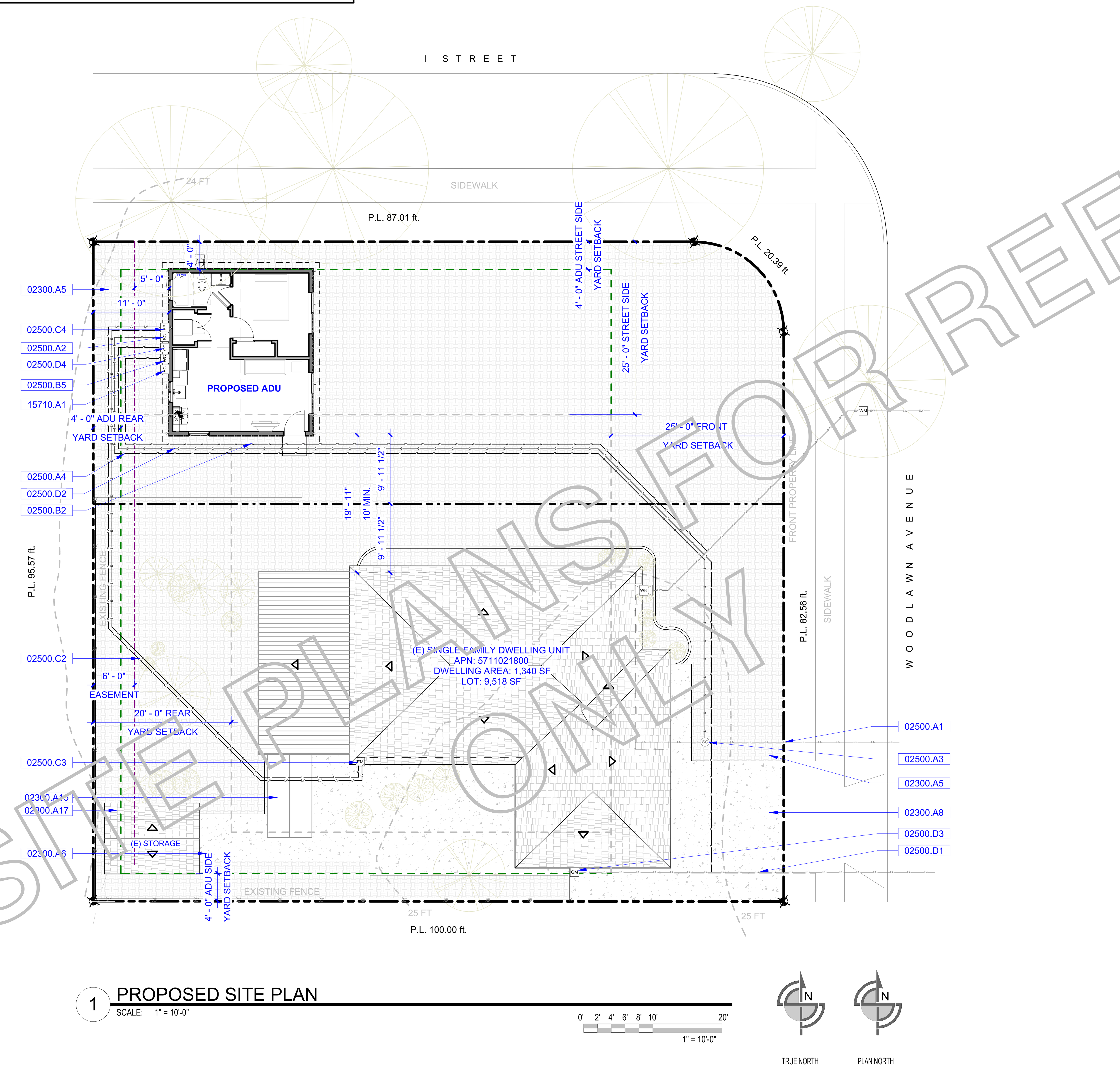

1 PROPOSED SITE PLAN
SCALE: 1" = 10'-0"

KEYNOTES:

KEYNOTE	DESCRIPTION
02300.A5	(E) LAWN
02300.A6	(E) PATHWALK (CONCRETE)
02300.A8	(E) DRIVEWAY (CONCRETE)
02300.A15	(E) EXISTING TENT
02300.A17	(E) EXISTING STORAGE
02500.A1	(E) SEWAGE LINE
02500.A2	(N) SEWER POINT OF CONNECTION
02500.A3	(E) SANITARY CLEANOUT
02500.A4	(N) SEWAGE LINE, SIZING PER CPC TABLE 703.2
02500.B2	(N) WATER LINE, SIZING PER CPC TABLE 610.4
02500.B5	(N) WATER POINT OF CONNECTION WITH SHUT OFF VALVE
02500.C2	(N) ELECTRICAL LINE
02500.C3	(E) ELECTRIC METER & PANEL; SEE REQUIREMENTS PER ELECTRICAL SERVICE SELECTION ON SHEET G102
02500.C4	(N) 150AMP ELECTRICAL SUB-PANEL WITH LOCAL DISCONNECT. WIRE SIZES / QUANTITY FEEDING SUB-PANEL FROM MAIN ELECTRICAL PANEL (3)#1 & (1)#6 CU IN 1-1/2" CONDUIT.
02500.D1	(E) NATURAL GAS LINE
02500.D2	(N) NATURAL GAS LINE, SIZING PER TABLE CPC 1215.0
02500.D3	(E) GAS METER
02500.D4	(N) GAS CONNECTION
15710.A1	A/C CONDENSER 'GOODMAN' 36,000 BTU/H PER T24 REPORT

PROPOSED SITE PLAN LEGEND

(E) STRUCTURES
(E) NATIVE LANDSCAPING
(E) ASPHALT
(E) PAVERS

PROPERTY LINE
IMAGINARY PROPERTY LINE
SETBACK LINE
EASEMENT LINE
STREET CENTERLINE
(E) WATER LINE
(E) ELECTRICAL LINE
(E) NATURAL GAS LINE
(E) SEWAGE LINE
(N) WATER LINE
(N) ELECTRICAL LINE
(N) LOW VOLTAGE CONDUIT
(N) NATURAL GAS LINE
(N) SEWAGE LINE
COUNTOUR LINE
(E) PERIMETER FENCING

	SIZE (INCH)	MATERIAL	BURIAL DEPTH (INCH)
WATER LINE:			
SEWAGE LINE:			
ELECTRICAL LINE:			
GAS LINE:			

GAS LINE LENGTH FROM (E) GAS METER (FT): ________FT

GENERAL NOTES

1. THIS PROJECT PROPOSES NO WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
2. ALL DRAINAGE FROM IMPERVIOUS AREAS & DOWNSPOUTS TO BE ROUTED TO LANDSCAPE AREAS & PLANTER BOXES.
3. FINISHED GRADING SHALL SLOPE AWAY FROM THE PERIMETER OF THE BUILDING TOWARD THE PAD SWALE THAT GOES AROUND THE BUILDING AT A SLOPE OF TWO PERCENT FOR A MINIMUM OF FIVE FEET. THIS REQUIREMENTS SHALL ALSO APPLY TO ALL FLATWORK AND LANDSCAPED AREAS ADJACENT TO THE STRUCTURE.
4. STABILIZATION OF ALL DISTURBED AREAS, BY MEANS OF COMPLETED LANDSCAPING, MULCHING, OR OTHER CITY APPROVED METHOD, IS REQUIRED PRIOR TO GRANT OF OCCUPANCY.
5. SEPARATE (DETACHED BUILDING WITH A SEPARATE FOUNDATION AND SLAB) ADU REQUIRES A SEPARATE GROUND ELECTRODE SYSTEM PER CEC 250.32.
6. ADU MAY HAVE A SEPARATE UTILITY SERVICE INSTALLED, OR SUB FED VIA EXISTING SERVICE WITH ADEQUATE CAPACITY. ADU'S REQUIRE ELECTRICAL LOAD CALCULATIONS PER CEC 220.83 TO JUSTIFY EXISTING ELECTRICAL SERVICE SIZE IS ADEQUATE.
7. LANDSCAPE IRRIGATION WATER USE SHALL HAVE WEATHER OR SOIL-BASED CONTROLLERS. CGC SECTION 4.304.1.
8. A MINIMUM OF 65% OF CONSTRUCTION WASTE IS TO BE RECYCLED. CGC SECTION 4.408.1.
9. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN, PER CGC SECTION 4.408.2.
10. OPERATION AND MAINTENANCE MANUAL. THE BUILDER IS TO PROVIDE AN OPERATION MANUAL (CONTAINING INFORMATION FOR MAINTAINING APPLIANCES, ETC.) FOR THE OWNER AT THE TIME OF FINAL INSPECTION. CGC SECTION 4.410.1.
11. POLLUTANT CONTROL. DURING CONSTRUCTION, ENDS OF DUCT OPENINGS ARE TO BE SEALED, AND MECHANICAL EQUIPMENT IS TO BE COVERED. CGC SECTION 4.504.1.
12. POLLUTANT CONTROL. VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 4.504.3 AND TABLES 4.504.1, 4.504.2, 4.504.3 AND 4.504.5 FOR: ADHESIVES, PAINTS AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC SECTION 4.504.2.
13. INTERIOR MOISTURE CONTROL. CONCRETE SLABS WILL BE PROVIDED WITH A CAPILLARY BREAK. CGC SECTION 4.505.2.1.
14. INTERIOR MOISTURE CONTROL. THE MOISTURE CONTENT OF WOOD SHALL NOT EXCEED 19% BEFORE IT IS ENCLOSED IN CONSTRUCTION. THE MOISTURE CONTENT NEEDS TO BE CERTIFIED BY ONE OF 3 METHODS SPECIFIED. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHOULD NOT BE USED IN CONSTRUCTION. THE MOISTURE CONTENT MUST BE DETERMINED BY THE CONTRACTOR BY ONE OF THE METHODS LISTED IN CGC SECTION 4.505.3.
15. INDOOR AIR QUALITY. BATHROOM FANS SHALL BE ENERGY STAR RATED, VENTED DIRECTLY TO THE OUTSIDE AND CONTROLLED BY A HUMIDISTAT. CGC 4.506.1.
16. CONTRACTOR TO FIELD VERIFY UTILITY ROUTES AND REQUIREMENT OF SEWAGE PUMP. ROUTES MAY DIFFER BASED ON FIELD CONDITIONS AT START OF CONSTRUCTION.
17. A BOUNDARY SURVEY OR A BUILDING VERIFICATION SURVEY, TO DETERMINE EXACT LOCATION OF PROPERTY LINES, INCLUDING THE RELATION OF THOSE LINES TO THE ADU LOCATION IS REQUIRED AS PART OF THIS PLAN SET. WITHOUT CONDUCTING A BOUNDARY SURVEY IT IS NOT POSSIBLE TO PERFORM E A BUILDING VERIFICATION SURVEY FROM A LICENSE PROFESSIONAL LAND SURVEYOR.
18. SEE ADDITIONAL SITE PLAN NOTES ON SHEET G101.

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DESIGNER:
LUIS CALDERON
SnapADU
SIGNATURE

RELEASE	DATE	BY	APP.	RELEASED FOR...
A	03/22/2024		LAC	

PROPOSED SITE PLAN

A011

22040

DOOR SCHEDULE

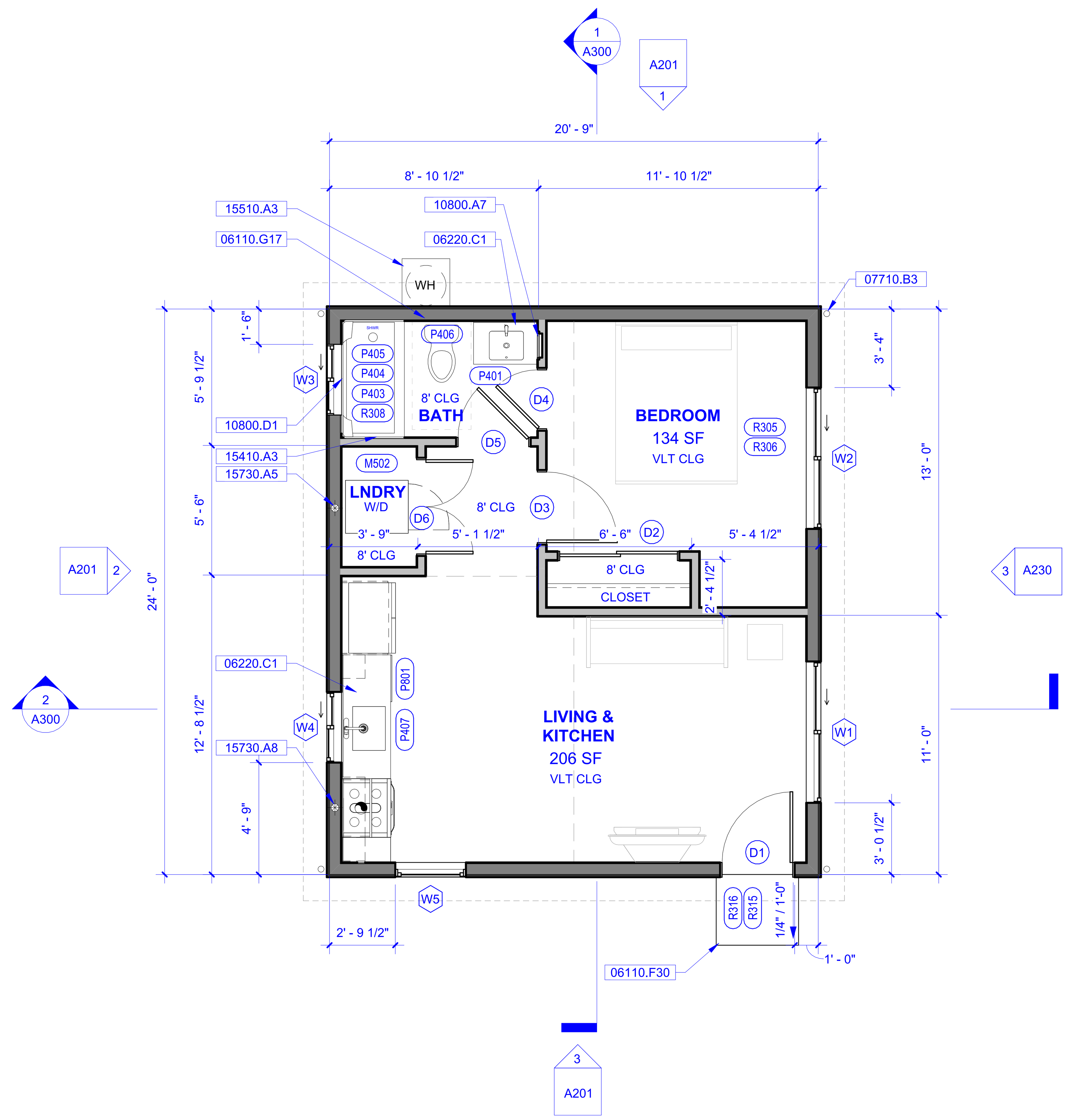
MARK	WIDTH	HEIGHT	R.O. WIDTH	R.O. HEIGHT	TYPE	COMMENTS
D1	3' - 0"	6' - 8"	3' - 2"	6' - 10 1/2"	EXTERIOR DOOR	
D2	5' - 0"	6' - 8"			INTERIOR BYPASS SLIDING DOOR	
D3	3' - 0"	6' - 8"	3' - 2"	6' - 10"	INTERIOR SINGLE PANEL DOOR	
D4	2' - 6"	6' - 8"	2' - 8"	6' - 10"	INTERIOR SINGLE PANEL DOOR	
D5	3' - 0"	6' - 8"	3' - 2"	6' - 10"	INTERIOR SINGLE PANEL DOOR	
D6	4' - 0"	6' - 8"	4' - 2 1/2"	6' - 10"	INTERIOR DOUBLE PANEL DOOR	100 SQ. IN. MIN. AIR TRANSFER GRILLE ABOVE DOOR

WINDOW SCHEDULE

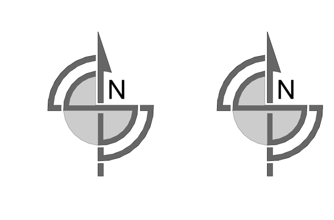
MARK	WIDTH	HEIGHT	R.O. WIDTH	R.O. HEIGHT	SILL HEIGHT	HEADER HEIGHT	TYPE	COMMENTS
W1	6' - 0"	4' - 0"	6' - 0 1/2"	4' - 0 1/2"	3' - 0"	7' - 0"	SLIDING WINDOW	TEMPERED
W2	6' - 0"	4' - 0"	6' - 0 1/2"	4' - 0 1/2"	3' - 0"	7' - 0"	SLIDING WINDOW	
W3	3' - 0"	1' - 0"	3' - 0 1/2"	1' - 0 1/2"	6' - 9"	7' - 9"	SLIDING WINDOW	
W4	3' - 0"	3' - 6"	3' - 0 1/2"	3' - 6 1/2"	3' - 6"	7' - 0"	SLIDING WINDOW	
W5	3' - 0"	4' - 0"	3' - 0 1/2"	4' - 0 1/2"	3' - 0"	7' - 0"	SINGLE HUNG WINDOW	

DOOR & WINDOW NOTES

1. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING.
2. DOOR SWING DIRECTION PER PLAN.
3. DIMENSIONS DO NOT INCLUDE DOOR FRAME, U.N.O.
4. PROVIDE SUITABLE ISOLATOR BETWEEN DIS-SIMILAR METALS (I.E. ALUMINUM & STEEL).
5. ALL GLAZING IN DOORS SHALL BE TEMPERED.
6. ALL WINDOWS (U.N.O.) SHALL BE GLAZED PER TITLE 24 REQUIREMENTS.
7. ALL MANUFACTURERED WINDOWS SHALL HAVE A LABEL ATTACHED CERTIFIED BY THE NATIONAL FENESTRATION RATING COUNCIL (NFRC) AND SHOWING COMPLIANCE WITH THE TITLE 24 ENERGY REPORT.
8. ALL WINDOWS SHOULD HAVE A MAX U-FACTOR OF .30, A MAXIMUM SHGC OF .23.
9. PROVIDE TEMPERED GLASS ("TEMP") AT WINDOWS WITHIN A 24-INCH ARCH OF A DOOR JAMB, AND AT GLAZING UNITS ABOVE THE SHOWER OR BATHTUB, IN SAUNAS OR STEAM ROOMS WHERE THE SILL IS WITHIN 60 INCHES MEASURED VERTICALLY FROM THE WET STANDING SURFACE.
10. TEMPERED GLASS AT THE FOLLOWING LOCATIONS REQUIRING SAFETY GLAZING:
    A. GLAZING IN SWINGING, SLIDING, AND BI-FOLD DOORS (CRC R308.4.1).
    B. GLAZING WITHIN 60 INCHES - VERTICALLY AND HORIZONTALLY - OF SHOWERS, BATHTUBS, HOT TUBS, SWIMMING POOLS, AND SAUNAS (CRC R308.4.5).
11. PER CBC SECTION 708A.2, EXTERIOR WINDOWS, EXTERIOR GLAZED SHALL COMPLY WITH THE FOLLOWING:
    A. MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING, AND WHERE ANY GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN INTERLOCK AREA, AND BE CERTIFIED TO AAMA/WDMA/CSA 101/I.S.2/A440.
12. PER CBC SECTION 708A.3, EXTERIOR DOORS SHALL BE CONSTRUCTED WITH A NON-COMBUSTIBLE CLADDING MATERIAL OR BE CONSTRUCTED WITH A SOLID CORE, STILES/RAILS NO LESS THAN 1-3/8" THICK, AND PANELS NO LESS THAN 1-1/4" THICK, EXCEPT FOR THE XTERIOR PERIMETER OF THE PANEL THAT SHALL BE PERMITTED TO TAPER TO THE TONGUE NO LESS THAT 3/8" THICK.
13. PER CBC SECTION 708A.2, GLAZED DOORS TO BE CONSTRUCTED WITH MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE CONFORMING TO SECTION 2406.
14. SKYLIGHTS SHALL BE TESTED BY AN APPROVED INDEPENDENT LABORATORY, AND BEAR A LABEL IDENTIFYING MANUFACTURER, PERFORMANCE GRADE RATING AND APPROVED INSPECTION AGENCY TO INDICATE COMPLIANCE WITH THE REQUIREMENTS OF AAMA/WDMA/CSA 101/I.S.2/A440.



1 STANDARD 1-BEDROOM FLOOR PLAN
SCALE: 1/4" = 1'-0"



KEYNOTES:

KEYNOTE	DESCRIPTION
06110.F30	WOOD STOOP EXTERIOR DOOR LANDING
06110.G17	2X8 MIN. SOLID REINFORCEMENT LOCATED BETWEEN 32" AND 39 1/4" AFF. SEE SHEETS G101 AND A501 FOR MORE INFORMATION ABOUT AGING-IN-PLACE DESIGN
06220.C1	MILLWORK SHOWN FOR REFERENCE ONLY, SEE SHOP DRAWINGS
07710.B3	DOWNSPOUT
10800.A7	PROVIDE 14 1/4" x 25 1/4" R.O. FRAMING FOR MEDICINE CABINET. NO ELECTRICAL WIRING WITHIN FRAMING FOR MEDICINE CABINET PERMITTED
10800.D1	PROVIDE FRAMING FOR 16"x12" NICHE. BOTTOM OF NICHE TO BE 60" ABOVE SLAB AND CENTERED ALONG WALL
15410.A3	SHOWER HEAD AND CONTROLS
15510.A3	APPLICANT/OWNER TO PROVIDE CUT SHEET FOR WATER HEATER TO MEET MINIMUM REQUIREMENTS OF TITLE 24 CALCULATIONS
15730.A5	4" DRYER VENT, SEE SHEET G200 CODE EXCERPTS CHAPTER 5: EXHAUST SYSTEMS FOR MORE INFORMATION
15730.A8	HOOD EXHAUST FAN ABOVE ELECTRIC RANGE 160 CFM OR 65% CE MIN. (GAS RANGE 280 CFM OR 85% CE MIN.); 2022 BEES TABLE 150.0-G

FLOOR PLAN LEGEND:

- EXTERIOR 2X6 WOOD STUDS @ 16" O.C.
- INTERIOR 2X6 WOOD STUDS @ 16" O.C.
- INTERIOR 2X4 WOOD STUDS @ 16" O.C.
- OVERHEAD LINES
- VAULTED CEILING
- 8' CLG — 8' FLAT CEILING
- VLT CLG — VAULTED CEILING

WALL OPENING SCHEDULE:

	WALL AREA (SF)	DOOR OPENING AREA (SF)	WINDOW OPENING AREA (SF)	TOTAL OPENING AREA (SF)	% OPENING AREA
NORTH	167.73	-	-	-	0%
SOUTH	167.73	21.38	12.00	33.38	19.90%
EAST	194.34	-	48.00	48.00	24.70%
WEST	194.34	-	13.50	13.50	6.95%

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DESIGNER:
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SnapADU
SIGNATURE

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A	03/22/2024		LAC	

STANDARD 1-BEDROOM FLOOR PLAN

A100

22040

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FLOOR PLAN OPTIONS - DOOR SCHEDULE

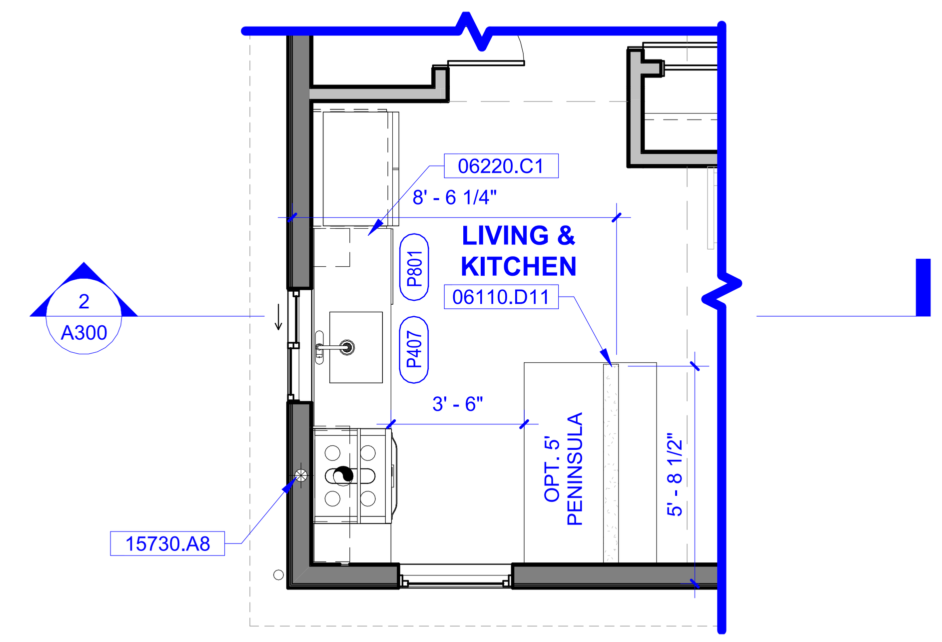
MARK	WIDTH	HEIGHT	R.O. WIDTH	R.O. HEIGHT	TYPE	COMMENTS
D7	6' - 0"	6' - 8"	6' - 2"	6' - 10"	EXTERIOR SLIDING GLASS DOOR	TEMPERED
D8	3' - 0"	6' - 8"	3' - 2"	6' - 10"	INTERIOR SINGLE PANEL DOOR	
D9	3' - 0"	6' - 8"	3' - 2"	6' - 10"	INTERIOR SINGLE PANEL DOOR	
D10	3' - 0"	6' - 8"	3' - 2"	6' - 10"	INTERIOR SINGLE PANEL DOOR	
D11	3' - 6"	6' - 8"	3' - 8 1/2"	3' - 8"	INTERIOR DOUBLE PANEL DOOR	100 SQ. IN. MIN. AIR TRANSFER GRILLE ABOVE DOOR

FLOOR PLAN OPTIONS - WINDOW SCHEDULE

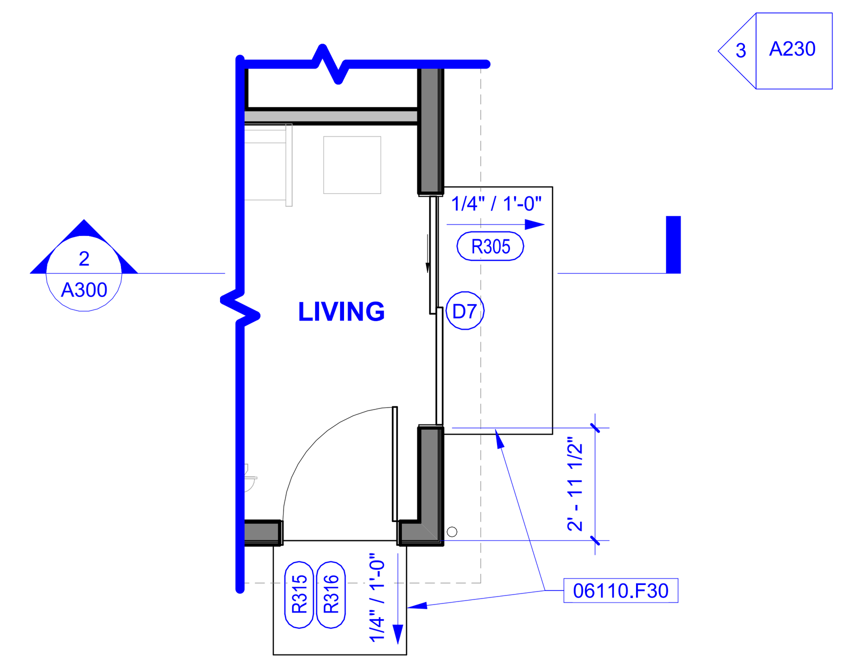
MARK	WIDTH	HEIGHT	R.O. WIDTH	R.O. HEIGHT	SILL HEIGHT	HEADER HEIGHT	TYPE	COMMENTS

DOOR & WINDOW NOTES

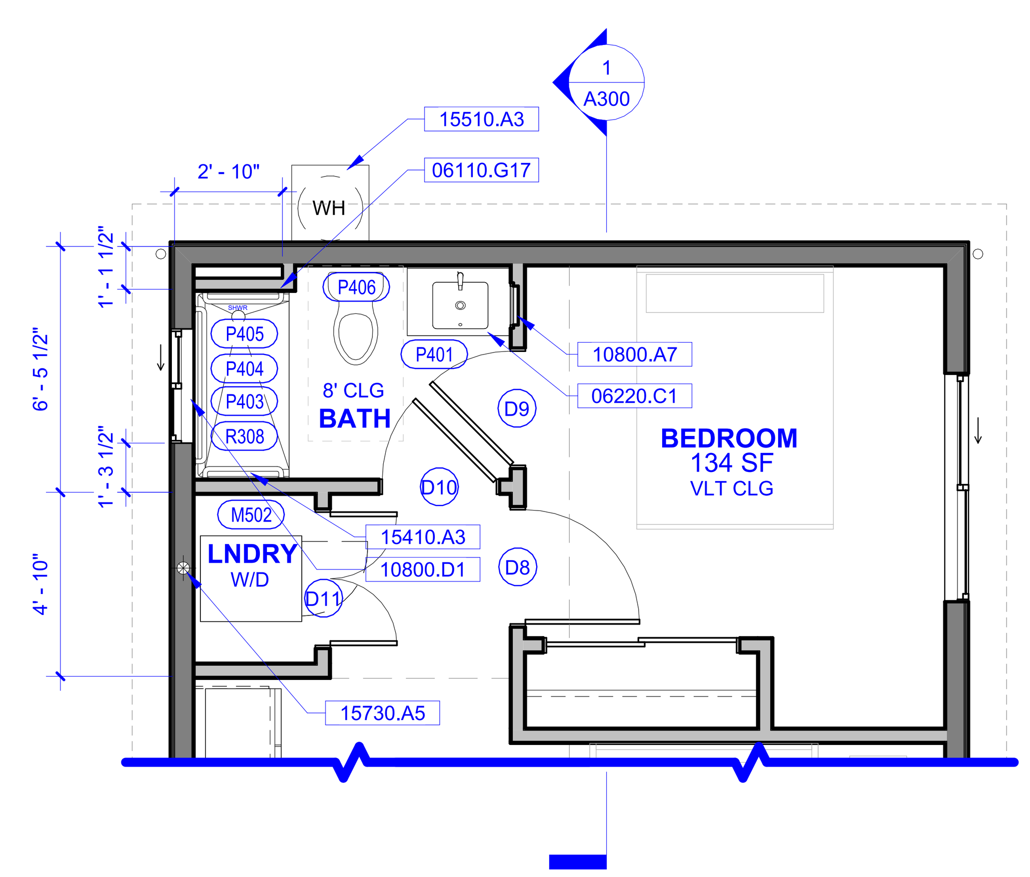
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING.
2. DOOR SWING DIRECTION PER PLAN.
3. DIMENSIONS DO NOT INCLUDE DOOR FRAME, U.N.O.
4. PROVIDE SUITABLE ISOLATOR BETWEEN DIS-SIMILAR METALS (I.E. ALUMINUM & STEEL).
5. ALL GLAZING IN DOORS SHALL BE TEMPERED.
6. ALL WINDOWS (U.N.O.) SHALL BE GLAZED PER TITLE 24 REQUIREMENTS.
7. ALL MANUFACTURERED WINDOWS SHALL HAVE A LABEL ATTACHED CERTIFIED BY THE NATIONAL FENESTRATION RATING COUNCIL (NFRC) AND SHOWING COMPLIANCE WITH THE TITLE 24 ENERGY REPORT.
8. ALL WINDOWS SHOULD HAVE A MAX U-FACTOR OF .30, A MAXIMUM SHGC OF .23.
9. PROVIDE TEMPERED GLASS ("TEMP") AT WINDOWS WITHIN A 24-INCH ARCH OF A DOOR JAMB, AND AT GLAZING UNITS ABOVE THE SHOWER OR BATHTUB, IN SAUNAS OR STEAM ROOMS WHERE THE SILL IS WITHIN 60 INCHES MEASURED VERTICALLY FROM THE WET STANDING SURFACE.
10. TEMPERED GLASS AT THE FOLLOWING LOCATIONS REQUIRING SAFETY GLAZING:
    A. GLAZING IN SWINGING, SLIDING, AND BI-FOLD DOORS (CRC R308.4.1).
    B. GLAZING WITHIN 60 INCHES - VERTICALLY AND HORIZONTALLY - OF SHOWERS, BATHTUBS, HOT TUBS, SWIMMING POOLS, AND SAUNAS (CRC R308.4.5).
11. PER CBC SECTION 708A.2, EXTERIOR WINDOWS, EXTERIOR GLAZED SHALL COMPLY WITH THE FOLLOWING:
    A. MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING, AND WHERE ANY GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN INTERLOCK AREA, AND BE CERTIFIED TO AAMA/WDMA/CSA 101/I.S.2/A440.
12. PER CBC SECTION 708A.3, EXTERIOR DOORS SHALL BE CONSTRUCTED WITH A NON-COMBUSTIBLE CLADDING MATERIAL OR BE CONSTRUCTED WITH A SOLID CORE, STILES/RAILS NO LESS THAN 1-3/8" THICK, AND PANELS NO LESS THAN 1-1/4" THICK, EXCEPT FOR THE XTERIOR PERIMETER OF THE PANEL THAT SHALL BE PERMITTED TO TAPER TO THE TONGUE NO LESS THAT 3/8" THICK.
13. PER CBC SECTION 708A.2, GLAZED DOORS TO BE CONSTRUCTED WITH MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE CONFORMING TO SECTION 2406.
14. SKYLIGHTS SHALL BE TESTED BY AN APPROVED INDEPENDENT LABORATORY, AND BEAR A LABEL IDENTIFYING MANUFACTURER, PERFORMANCE GRADE RATING AND APPROVED INSPECTION AGENCY TO INDICATE COMPLIANCE WITH THE REQUIREMENTS OF AAMA/WDMA/CSA 101/I.S.2/A440.



1 5' PENINSULA OPTION
SCALE: 1/4" = 1'-0"



2 6'-0" x 6'-8" SLIDING GLASS DOOR OPTION
SCALE: 1/4" = 1'-0"



3 ENLARGED BEDROOM & BATH DOOR OPTION
SCALE: 1/4" = 1'-0"

KEYNOTES:

KEYNOTE	DESCRIPTION
06110.D11	34" TALL 2X4 PONY WALL
06110.F30	WOOD STOOP EXTERIOR DOOR LANDING
06110.G17	2X8 MIN. SOLID REINFORCEMENT LOCATED BETWEEN 32" AND 39 1/4" AFF. SEE SHEETS G101 AND A501 FOR MORE INFORMATION ABOUT AGING-IN-PLACE DESIGN
06220.C1	MILLWORK SHOWN FOR REFERENCE ONLY, SEE SHOP DRAWINGS
10800.A7	PROVIDE 14 1/4" x 25 1/4" R.O. FRAMING FOR MEDICINE CABINET. NO ELECTRICAL WIRING WITHIN FRAMING FOR MEDICINE CABINET PERMITTED
10800.D1	PROVIDE FRAMING FOR 16"x12" NICHE. BOTTOM OF NICHE TO BE 60" ABOVE SLAB AND CENTERED ALONG WALL
15410.A3	SHOWER HEAD AND CONTROLS
15510.A3	APPLICANT/OWNER TO PROVIDE CUT SHEET FOR WATER HEATER TO MEET MINIMUM REQUIREMENTS OF TITLE 24 CALCULATIONS
15730.A5	4" DRYER VENT, SEE SHEET G200 CODE EXCERPTS CHAPTER 5: EXHAUST SYSTEMS FOR MORE INFORMATION
15730.A8	HOOD EXHAUST FAN ABOVE ELECTRIC RANGE 160 CFM OR 65% CE MIN. (GAS RANGE 280 CFM OR 85% CE MIN.); 2022 BEES TABLE 150.0-G

FLOOR PLAN LEGEND:

- EXTERIOR 2X6 WOOD STUDS @ 16" O.C.
- INTERIOR 2X6 WOOD STUDS @ 16" O.C.
- INTERIOR 2X4 WOOD STUDS @ 16" O.C.
- OVERHEAD LINES
- VAULTED CEILING
- 8' CLG — 8' FLAT CEILING
- VLT CLG — VAULTED CEILING

WALL OPENING SCHEDULE:

	WALL AREA (SF)	DOOR OPENING AREA (SF)	WINDOW OPENING AREA (SF)	TOTAL OPENING AREA (SF)	% OPENING AREA
NORTH	167.73	-	-	-	0%
SOUTH	167.73	21.38	12.00	33.38	19.90%
EAST	194.34	*40.00	24.00	64.00	32.93%
WEST	194.34	-	13.50	13.50	6.95%

*OPENING AREA PER 6' - 0" X 6' -8" SLIDING GLASS DOOR OPTION

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CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CA 91910

DESIGNER:
LUIS CALDERON
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FLOOR PLAN - OPTIONS

A102

22040

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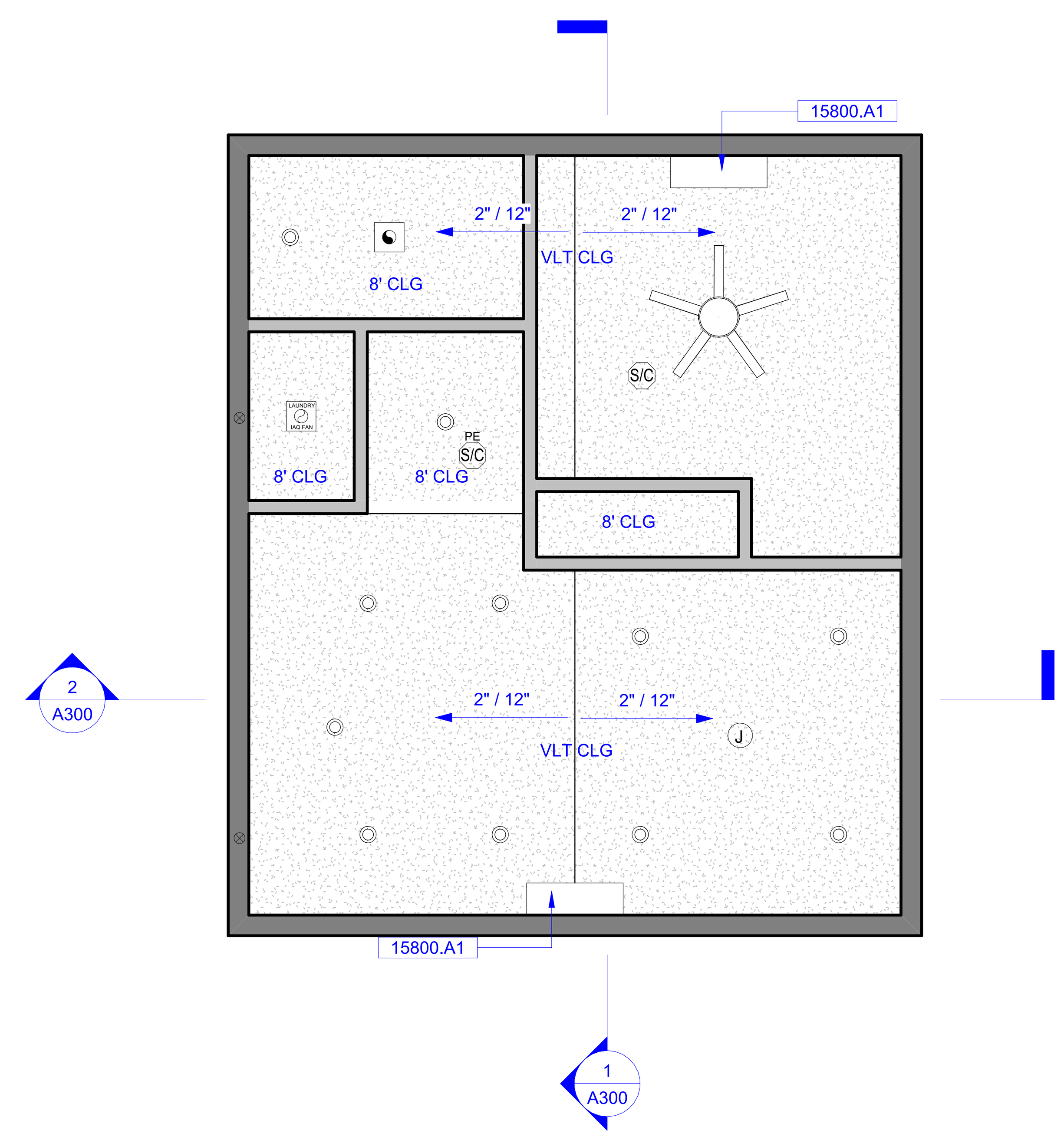

1 STANDARD 1-BEDROOM CEILING PLAN

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

0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

TRUE NORTH

PLAN NORTH

KEYNOTES:

KEYNOTE	DESCRIPTION
15800.A1	MINI SPLIT SYSTEM; APPLICANT/OWNER TO PROVIDE CUT SHEET TO MEET MINIMUM REQUIREMENTS OF TITLE 24 CALCULATIONS

REFLECTED CEILING PLAN LEGEND

	DRYWALL CEILING
J	JUNCTION BOX
S/C	SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP
S/C PE	PHOTOELECTRIC SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP
	RECESSED LIGHT
	MICROWAVE-HOOD EXHAUST FAN COMBO 160 CFM MIN (IF GAS RANGE 280 CFM MIN. TO BE PROVIDED)
	EXHAUST VENT FAN - INTERMITENT 50 CFM MIN / CONTINUOUS 20 CFM MIN
	EXHAUST VENT FAN SHALL BE USED TO MEET THE REQUIREMENTS FOR INDOOR AIR QUALITY (IAQ) PER T24 REPORT
	LAUNDRY EXHAUST VENT FAN SHALL BE USED TO MEET THE REQUIREMENTS FOR INDOOR AIR QUALITY (IAQ) PER T24 REPORT
	CEILING FAN WITH LIGHT
SLOPE	DIRECTION OF CEILING SLOPE
8' CLG	8' FLAT CEILING
VLT CLG	VAULTED CEILING

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REFLECTED CEILING PLAN - 1 BEDROOM

A110

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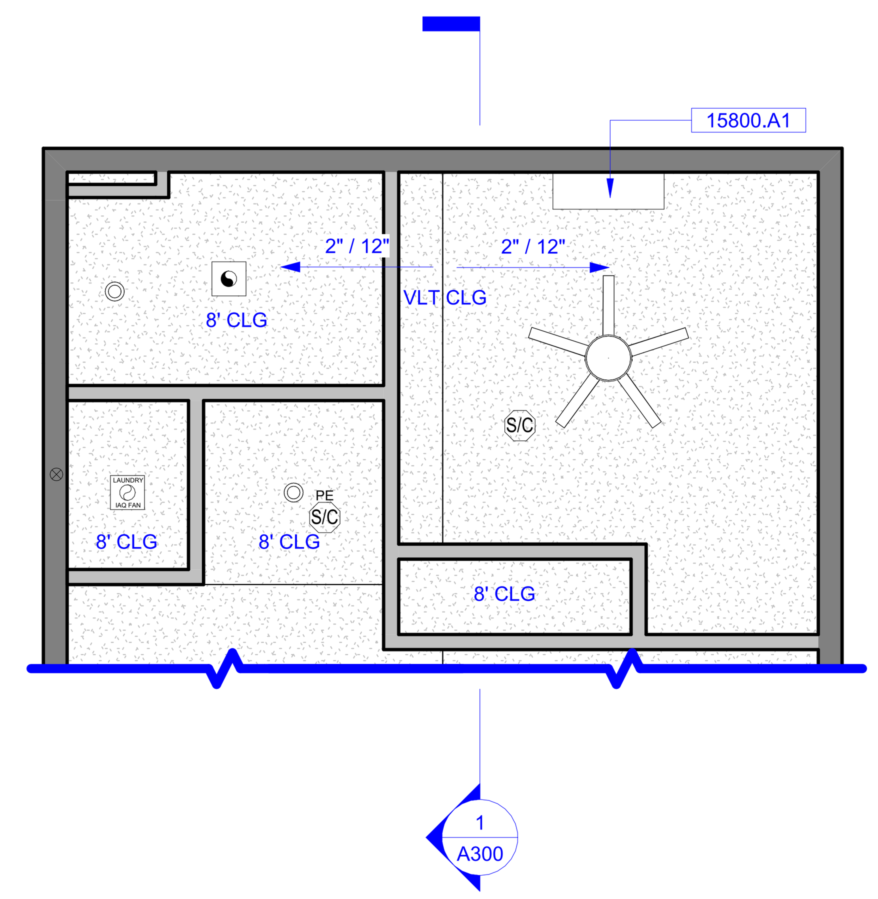
KEYNOTES:

KEYNOTE	DESCRIPTION
15800.A1	MINI SPLIT SYSTEM; APPLICANT/OWNER TO PROVIDE CUT SHEET TO MEET MINIMUM REQUIREMENTS OF TITLE 24 CALCULATIONS



1 ELARGED BEDROOM & BATH DOOR OPTION AT STANDARD 1-BEDROOM REFLECTED CEILING PLAN

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

REFLECTED CEILING PLAN LEGEND

DRYWALL CEILING

JUNCTION BOX

SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP

PHOTOELECTRIC SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP

RECESSED LIGHT

MICROWAVE-HOOD EXHAUST FAN COMBO 160 CFM MIN (IF GAS RANGE 280 CFM MIN. TO BE PROVIDED)

EXHAUST VENT FAN - INTERMITENT 50 CFM MIN / CONTINUOUS 20 CFM MIN

EXHAUST VENT FAN SHALL BE USED TO MEET THE REQUIREMENTS FOR INDOOR AIR QUALITY (IAQ) PER T24 REPORT

LAUNDRY EXHAUST VENT FAN SHALL BE USED TO MEET THE REQUIREMENTS FOR INDOOR AIR QUALITY (IAQ) PER T24 REPORT

CEILING FAN WITH LIGHT

SLOPE — DIRECTION OF CEILING SLOPE

8' CLG — 8' FLAT CEILING

VLT CLG — VAULTED CEILING

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REFLECTED CEILING PLAN - OPTIONS

A111

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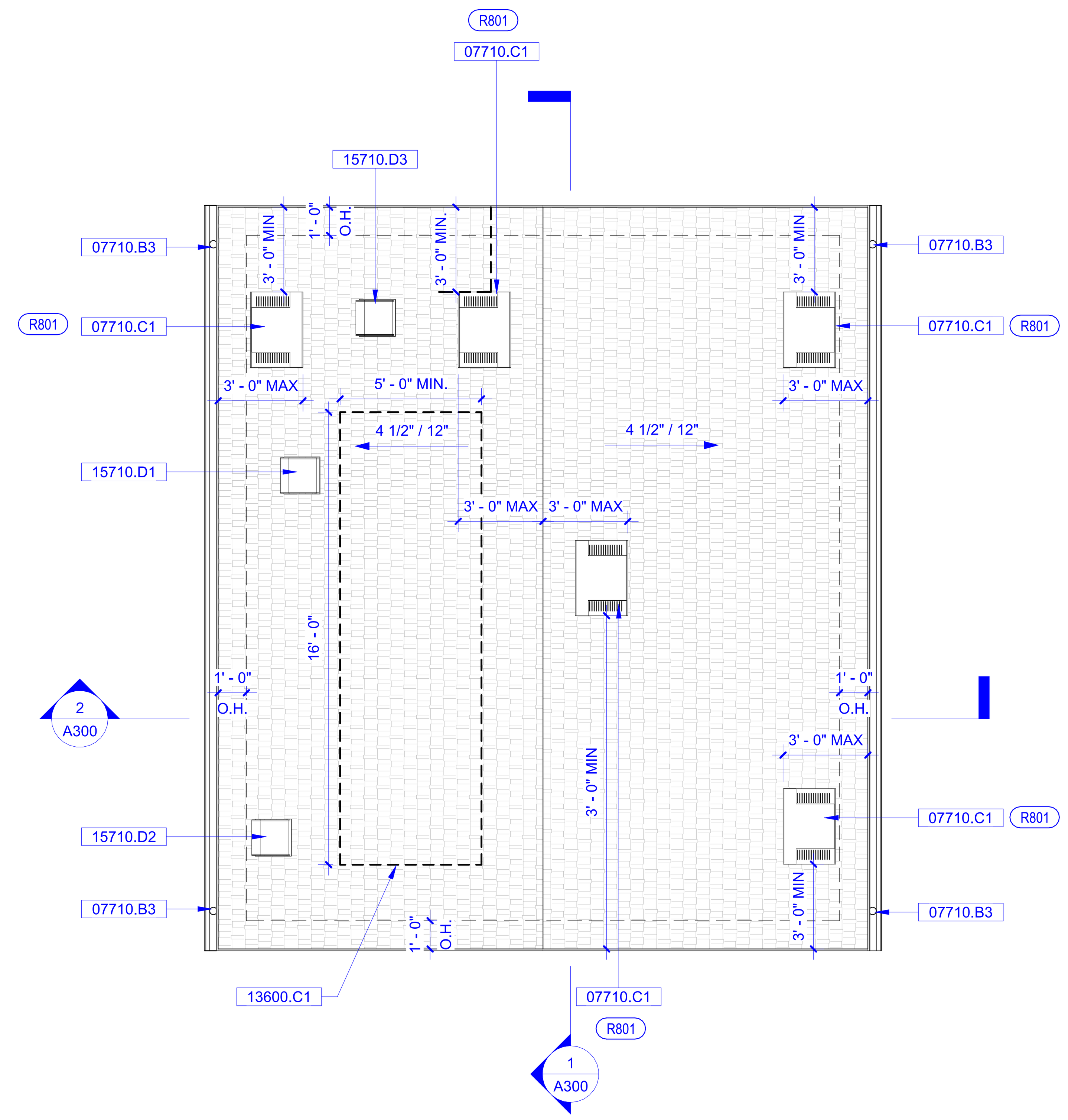

1 STANDARD 1-BEDROOM ROOF PLAN

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

0' 1' 2' 3' 4' 8'

1/4" = 1'-0"

TRUE NORTH

PLAN NORTH

KEYNOTES:

KEYNOTE	DESCRIPTION
07710.B3	DOWNSPOUT
07710.C1	O'HAGIN STANDARD LOW PROFILE ATTIC VENTS, 0.68 SF NFVA
13600.C1	SOLAR ZONE FOR PV SYSTEM (SEE G102 CHECKLIST FOR SIZING PER T24 CALCULATIONS). SOLAR ZONE LOCATION MIGHT VARY PER SITE CONDITIONS
15710.D1	DRYER EXHAUST ROOF EXHAUST VENT
15710.D2	RANGE HOOD ROOF EXHAUST VENT
15710.D3	BATH EXHAUST FAN ROOF VENT

ROOF PLAN LEGEND

ROOFING PER CHECKLIST SELECTION ON SHEET G102

WALL LINE BELOW

SOLAR ZONE OUTLINE (CEC 110.10(B)1A)

SLOPE — DIRECTION OF DRAINAGE

ROOF VENT

EXHAUST ROOF JACK VENT

SOLAR PV PANEL

ROOF NOTES:

1. ROOF MATERIAL PER CHECKLIST SELECTION ON SHEET G102.
   A. ROOF TYPE 1 - 242 HIGHLANDER NEX AR ASPHALT SHINGLE, MANUFACTURED BY MALARKEY ROOFING PRODUCTS; ICC APPROVAL: ESR-3150, UL RATING 2218; OR EQUAL APPROVED.
      a. SEE DETAILS: 1/A500, 4/A500, 1/A510, 4/A510, 1/A520, 4/A520, 1/A530, 4/A530.
   B. ROOF TYPE 2 - LOW PROFILE 'BEL AIR' CONCRETE ROOF TILE BY EAGLE ROOFING; IAPMO ER-1900; OR EQUAL APPROVED.
      a. SEE DETAILS 2/A500, 5/A500, 2/A510, 5/A510, 2/A520, 5/A520, 2/A530, 5/A530.
   C. ROOF TYPE 3 - HIGH PROFILE 'CAPISTRANO' CONCRETE S-TILE ROOF BY EAGLE ROOFING; IAPMO ER-1900; OR EQUAL APPROVED.
      a. SEE DETAILS 3/A500, 6/A500, 3/A510, 6/A510, 3/A520, 6/A520, 3/A530, 6/A530.
   D. OTHER ROOF TYPE MODEL:
      a. MAKE:
      b. MODEL:
      c. ICC ESR NUMBER:
2. ROOF UNDERLAYMENT SHALL BE DOUBLE NEX POLYMER MODIFIED FIBERGLASS UNDERLAYMENT ON ROOF SLOPES EQUAL OR LESS TO 4:12 PER P905.1.1(2); ICC APPROVAL: ESR-1561; OR EQUAL APPROVED.
3. ROOF GUTTERS SHALL BE PROVIDED WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER. (CBC 92.1.705A.4)
4. ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC.) SHALL RESIST THE INTRUSION OF FLAMES AND EMBERS. (CBC 92.1.706A.1)
5. VENTILATION OPENING FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDERFLOOR VENTILATION OPENINGS, AND VENT OPENINGS IN EXTERIOR WALLS AND EXTERIOR DOORS SHALL BE LISTED TO ASTM E 2886 AND COMPLY WITH ALL OF THE FOLLOWING: (CBC 92.1.706A.2, CBC 92.1.707A5)
   A. THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER ENTRUSION TEST.
   B. THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME INTRUSION TEST.
   C. THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662 DEGREES FAHRENHEIT (350 DEGREES CEILIUS)
6. EXHAUST DUCT TERMINATION IS AS FOLLOWS PER CMC 502.2:
   A. 3 FEET FROM A PROPERTY LINE,
   B. 10 FEET FROM A FORCED AIR INLET, AND
   C. 3 FEET FROM OPENINGS INTO THE BUILDING.
7. EXHAUST DUCT SHALL NOT DISCHARGE ONTO A PUBLIC WAY. CMC 502.2
8. UNLESS OTHERWISE PERMITTED OR REQUIRED BY THE DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND APPROVED BY THE CITY, DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF FOURTEEN FEET, INCLUDING TWO 90-DEGREE ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO. CMC 504.4.2.

ROOF VENT CALCULATION

CLASS-1 VAPOR BARREIR PROVIDED ON WINTER-WARM-SIDE: NO

TOTAL ROOF VENT AREA REQUIRED: ROOF AREA / 150 SF

CALCULATIONS:

DESCRIPTION	AREA	REQ. ROOF VENT
ATTIC AREA	498 SF	3.32 SF

TOTAL NET FREE VENTILATION AREA (NFVA) PROVIDE:

O'HAGIN CONC.TILE LOW PROF.VENT NFVA = 98.75 SQ.IN.=0.68 SF./V.
3.32 SF. / 0.68 SF./VENT = 4.88 5 VENTS WILL BE PROVIDED AS FOLLOWS:

2 EXHAUST VENTS WITHIN 3 FT. BELOW THE RIDGE HIGHEST POINT
& 3 INTAKE VENTS AT THE BOTTOM THIRD OF THE ATTIC SPACE

TOTAL VENT AREA = 5 VENTS X 0.68 SF./VENT = 3.40 SF.
TOTAL PROVIDE = 3.40 SF > 3.32 SF REQ. ROOF VENT.

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DESIGNER:
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ROOF PLAN - 1 BEDROOM

A120

22040

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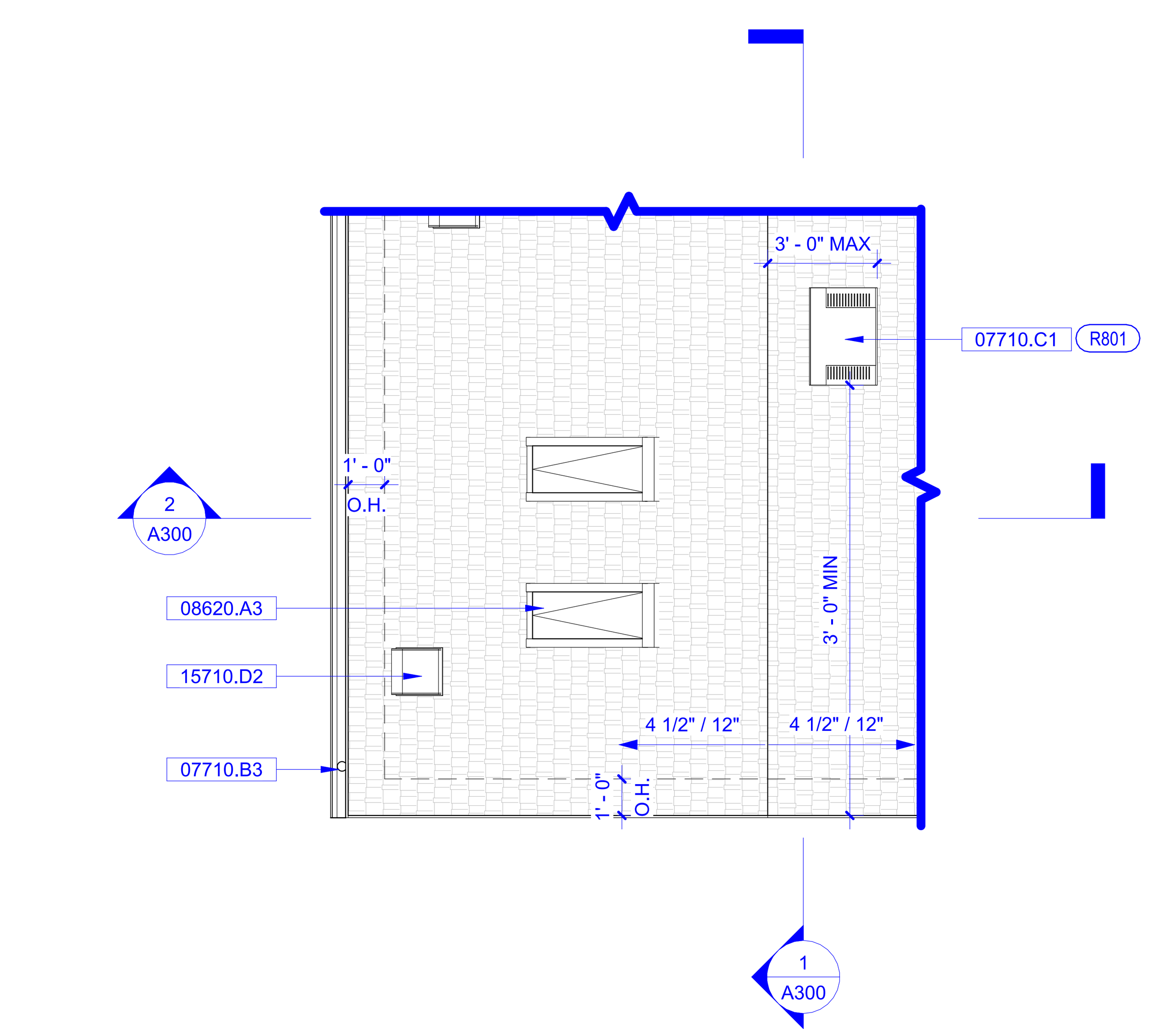

1 SKYLIGHTS OPTION ROOF PLAN

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

KEYNOTES:

KEYNOTE	DESCRIPTION
07710.B3	DOWNSPOUT
07710.C1	O'HAGIN STANDARD LOW PROFILE ATTIC VENTS, 0.68 SF NFVA
08620.A3	2X4 SKYLIGHT (APPLICANT/OWNER TO PROVIDE CUT SHEET FOR SKYLIGHT TO MEET REQUIREMENTS OF FIRE ZONING AND TITLE 24 CALCULATIONS)
15710.D1	DRYER EXHAUST ROOF EXHAUST VENT
15710.D2	RANGE HOOD ROOF EXHAUST VENT
15710.D3	BATH EXHAUST FAN ROOF VENT

ROOF PLAN LEGEND

ROOFING PER CHECKLIST SELECTION ON SHEET G102

WALL LINE BELOW

SOLAR ZONE OUTLINE (CEC 110.10(B)1A)

SLOPE — DIRECTION OF DRAINAGE

ROOF VENT

EXHAUST ROOF JACK VENT

SOLAR PV PANEL

ROOF SKYLIGHT:

MANUFACTURER: ______________

MODEL: ______________

ICC ESR: ______________

ROOF NOTES:

1. ROOF MATERIAL PER CHECKLIST SELECTION ON SHEET G102.
   A. ROOF TYPE 1 - 242 HIGHLANDER NEX AR ASPHALT SHINGLE, MANUFACTURED BY MALARKEY ROOFING PRODUCTS; ICC APPROVAL: ESR-3150, UL RATING 2218; OR EQUAL APPROVED.
      a. SEE DETAILS: 1/A500, 4/A500, 1/A510, 4/A510, 1/A520, 4/A520, 1/A530, 4/A530.
   B. ROOF TYPE 2 - LOW PROFILE 'BEL AIR' CONCRETE ROOF TILE BY EAGLE ROOFING; IAPMO ER-1900; OR EQUAL APPROVED.
      a. SEE DETAILS 2/A500, 5/A500, 2/A510, 5/A510, 2/A520, 5/A520, 2/A530, 5/A530.
   C. ROOF TYPE 3 - HIGH PROFILE 'CAPISTRANO' CONCRETE S-TILE ROOF BY EAGLE ROOFING; IAPMO ER-1900; OR EQUAL APPROVED.
      a. SEE DETAILS 3/A500, 6/A500, 3/A510, 6/A510, 3/A520, 6/A520, 3/A530, 6/A530.
   D. OTHER ROOF TYPE MODEL:
      a. MAKE:
      b. MODEL:
      c. ICC ESR NUMBER:
2. ROOF UNDERLAYMENT SHALL BE DOUBLE NEX POLYMER MODIFIED FIBERGLASS UNDERLAYMENT ON ROOF SLOPES EQUAL OR LESS TO 4:12 PER P905.1.1(2); ICC APPROVAL: ESR-1561; OR EQUAL APPROVED.
3. ROOF GUTTERS SHALL BE PROVIDED WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN THE GUTTER. (CBC 92.1.705A.4)
4. ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC.) SHALL RESIST THE INTRUSION OF FLAMES AND EMBERS. (CBC 92.1.706A.1)
5. VENTILATION OPENING FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDERFLOOR VENTILATION OPENINGS, AND VENT OPENINGS IN EXTERIOR WALLS AND EXTERIOR DOORS SHALL BE LISTED TO ASTM E 2886 AND COMPLY WITH ALL OF THE FOLLOWING: (CBC 92.1.706A.2, CBC 92.1.707A5)
   A. THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER ENTRUSION TEST.
   B. THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME INTRUSION TEST.
   C. THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662 DEGREES FAHRENHEIT (350 DEGREES CEILIUS)
6. EXHAUST DUCT TERMINATION IS AS FOLLOWS PER CMC 502.2:
   A. 3 FEET FROM A PROPERTY LINE,
   B. 10 FEET FROM A FORCED AIR INLET, AND
   C. 3 FEET FROM OPENINGS INTO THE BUILDING.
7. EXHAUST DUCT SHALL NOT DISCHARGE ONTO A PUBLIC WAY. CMC 502.2
8. UNLESS OTHERWISE PERMITTED OR REQUIRED BY THE DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND APPROVED BY THE CITY, DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF FOURTEEN FEET, INCLUDING TWO 90-DEGREE ELBOWS. TWO FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO. CMC 504.4.2.

ROOF VENT CALCULATION

CLASS-1 VAPOR BARREIR PROVIDED ON WINTER-WARM-SIDE: NO

TOTAL ROOF VENT AREA REQUIRED: ROOF AREA / 150 SF

CALCULATIONS:

DESCRIPTION	AREA	REQ. ROOF VENT
ATTIC AREA	498 SF	3.32 SF

TOTAL NET FREE VENTILATION AREA (NFVA) PROVIDE:

O'HAGIN CONC.TILE LOW PROF.VENT NFVA = 98.75 SQ.IN.=0.68 SF./V.
3.32 SF. / 0.68 SF./VENT = 4.88 5 VENTS WILL BE PROVIDED AS FOLLOWS:

2 EXHAUST VENTS WITHIN 3 FT. BELOW THE RIDGE HIGHEST POINT
& 3 INTAKE VENTS AT THE BOTTOM THIRD OF THE ATTIC SPACE

TOTAL VENT AREA = 5 VENTS X 0.68 SF./VENT = 3.40 SF.
TOTAL PROVIDE = 3.40 SF > 3.32 SF REQ. ROOF VENT.

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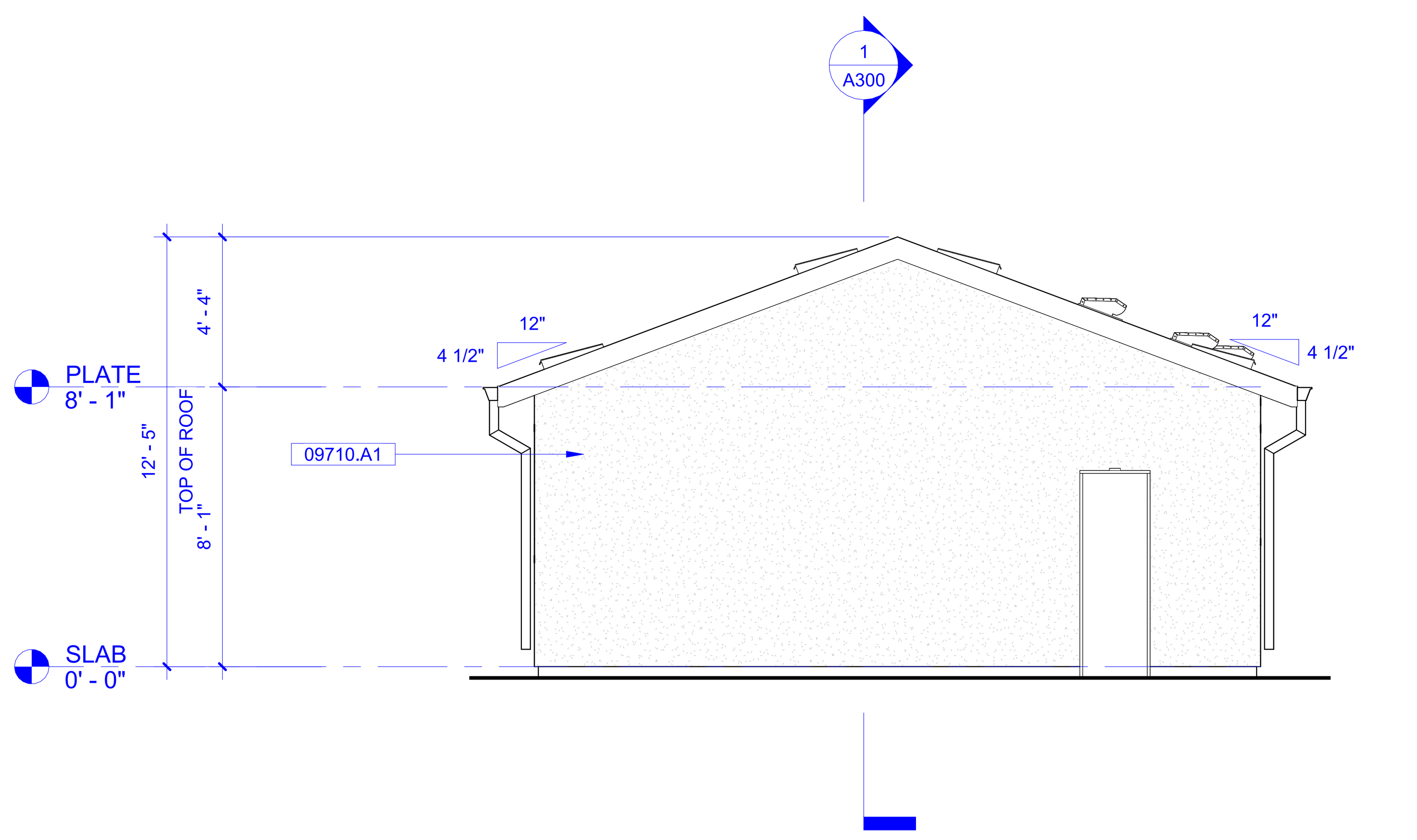
ROOF PLAN - OPTIONS

A121

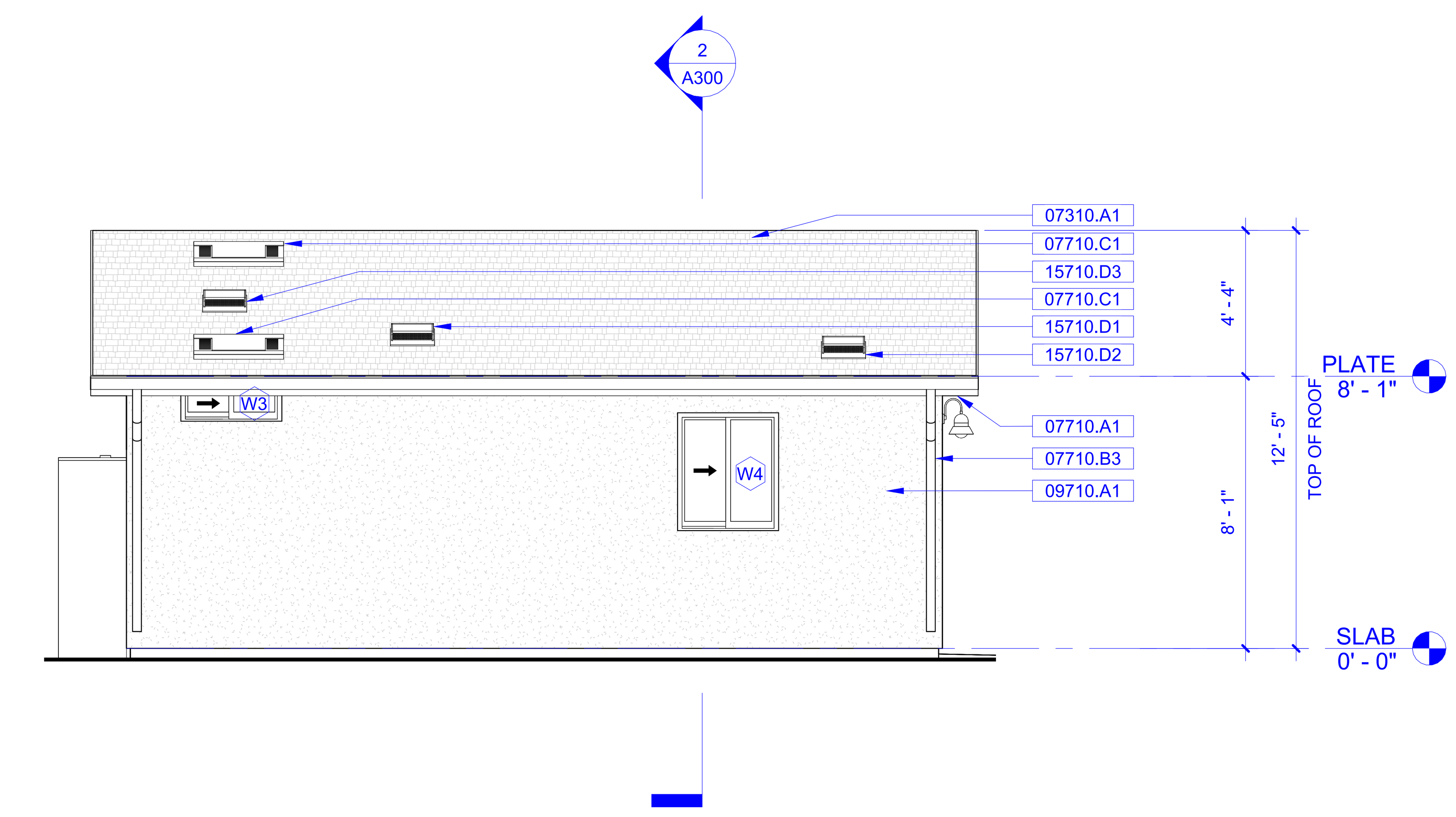
22040

KEYNOTES:

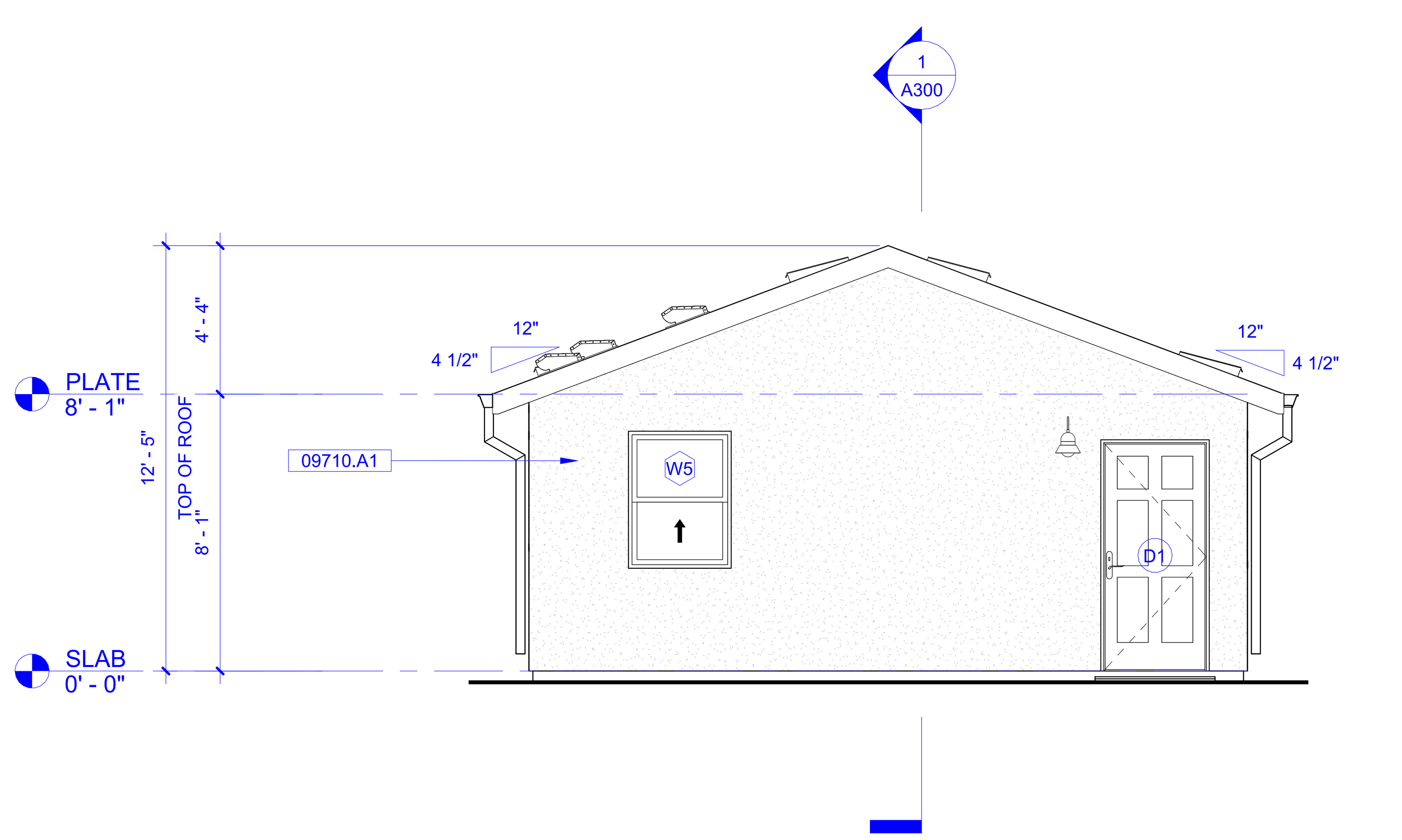
KEYNOTE	DESCRIPTION
07310.A1	ROOFING MATERIAL PER CHECKLIST ON SHEET G102
07710.A1	GUTTER
07710.B3	DOWNSPOUT
07710.C1	O'HAGIN STANDARD LOW PROFILE ATTIC VENTS, 0.68 SF NFVA
09710.A1	STUCCO FINISH, COLOR TBD
15710.D1	DRYER EXHAUST ROOF EXHAUST VENT
15710.D2	RANGE HOOD ROOF EXHAUST VENT
15710.D3	BATH EXHAUST FAN ROOF VENT



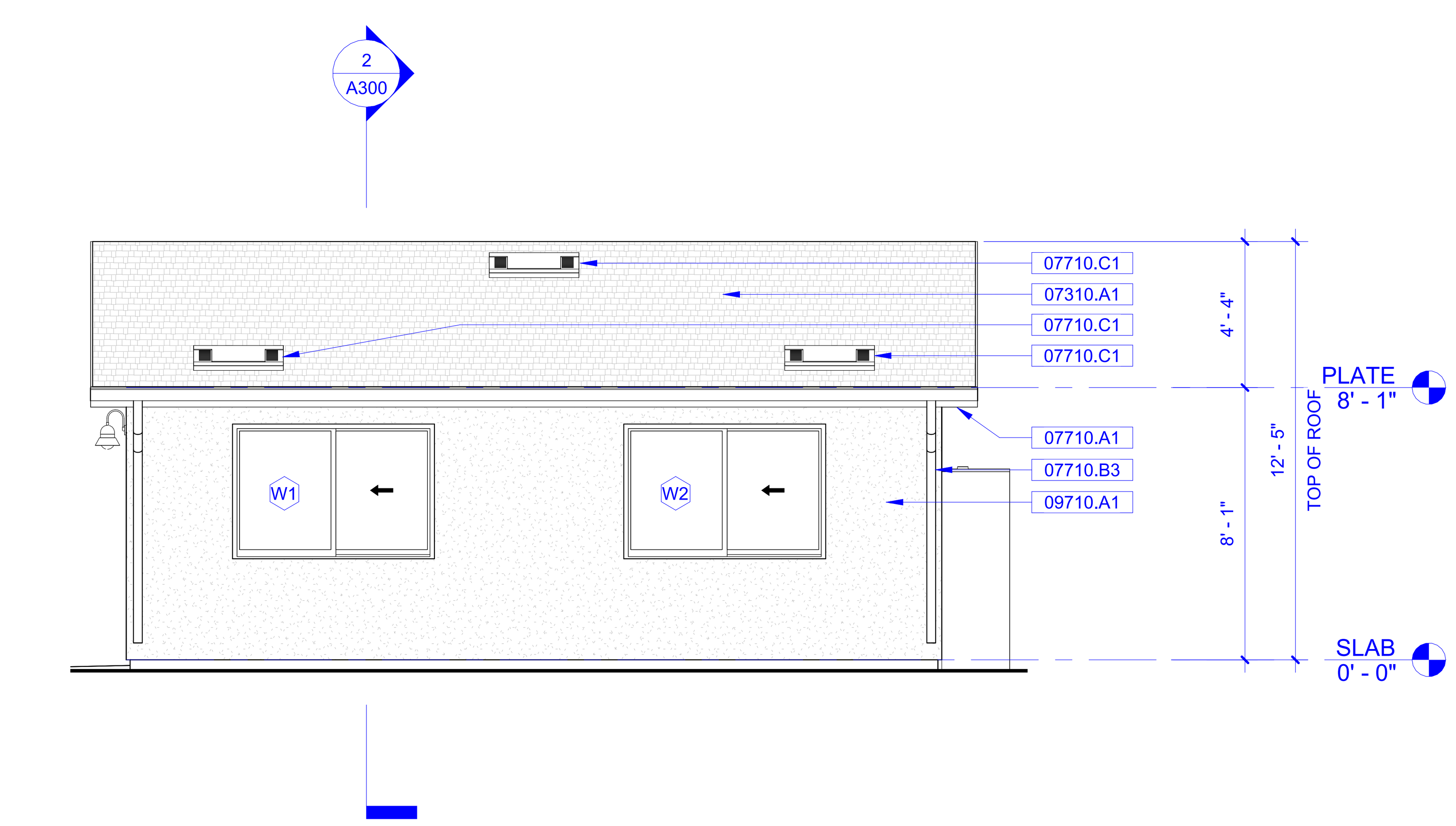
1 NORTH ELEVATION - STUCCO
SCALE: 1/4" = 1'-0"



2 WEST ELEVATION - STUCCO
SCALE: 1/4" = 1'-0"



3 SOUTH ELEVATION - STUCCO
SCALE: 1/4" = 1'-0"



4 EAST ELEVATION - STUCCO
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THE EXTERIOR ROOFING, TRIM, WALLS, WINDOWS, AND COLOR PALETTE OF THE ADU SHALL INCORPORATE THE SAME FEATURES AS THE MAIN DWELLING UNIT.
2. THE TYPE, LOCATION, AND SIZE OF THE BUILDING ADDRESS IDENTIFICATION MUST BE CLEARLY VISIBLE AND LEGIBLE FROM THE ADJACENT PUBLIC WAY OR STREET. ADDRESS LETTERS/NUMBERS SHALL BE MINIMUM 4 INCHES HIGH, WITH A MINIMUM STROKE WIDTH OF 1/2 INCH, AND SHALL CONTRAST WITH THEIR BACKGROUND. CRC R319.1.

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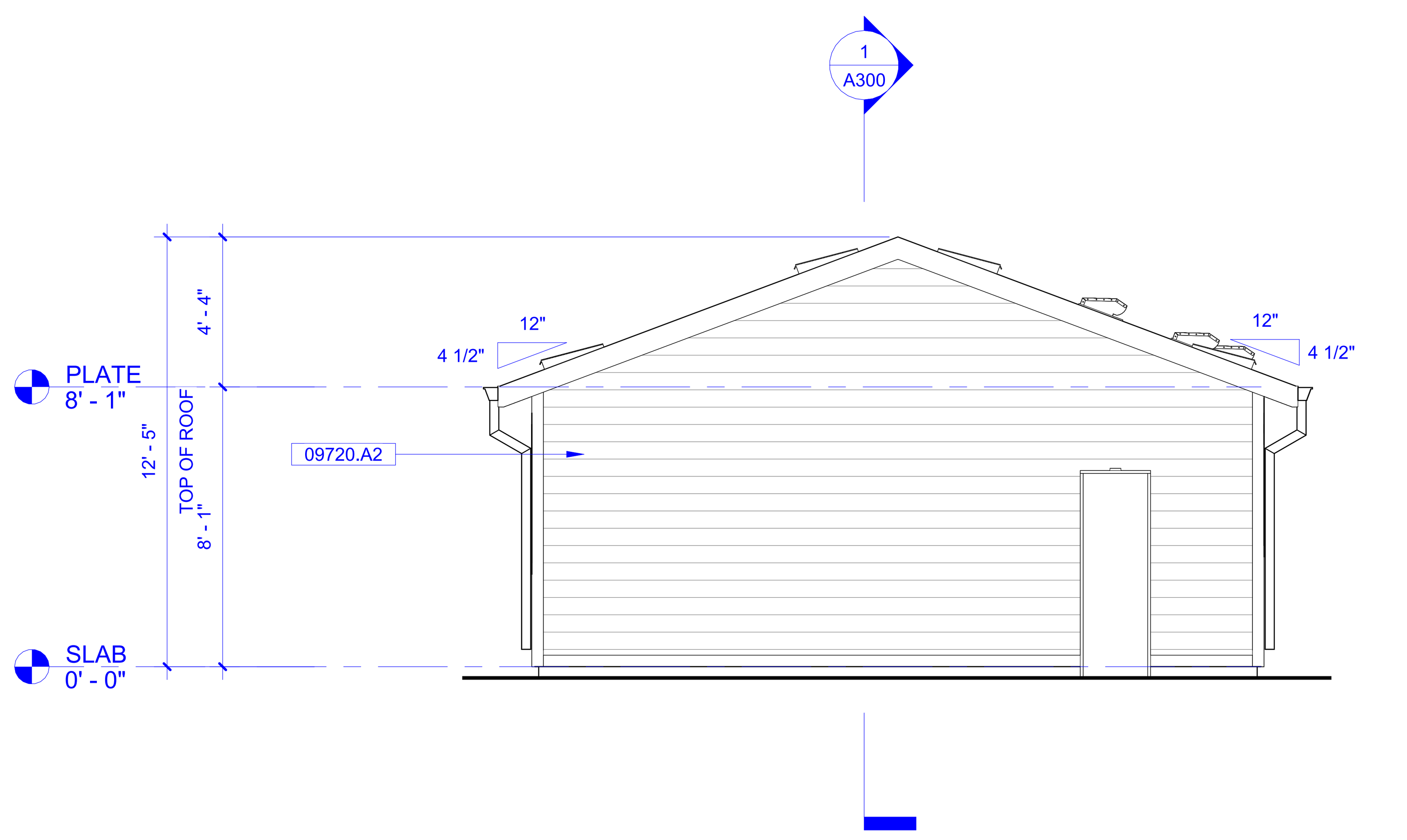
ELEVATIONS A - STUCCO

A201

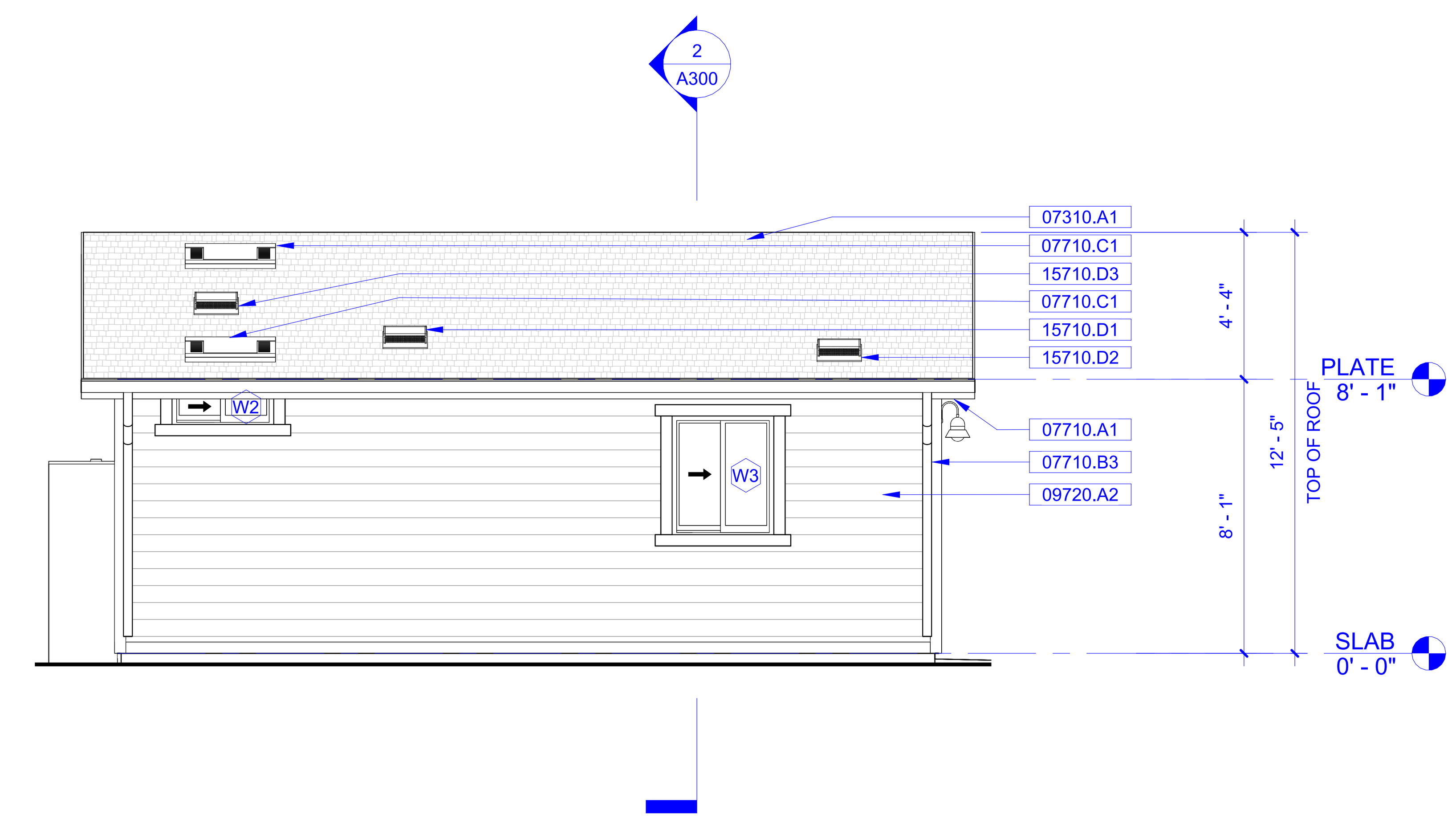
22040

KEYNOTES:

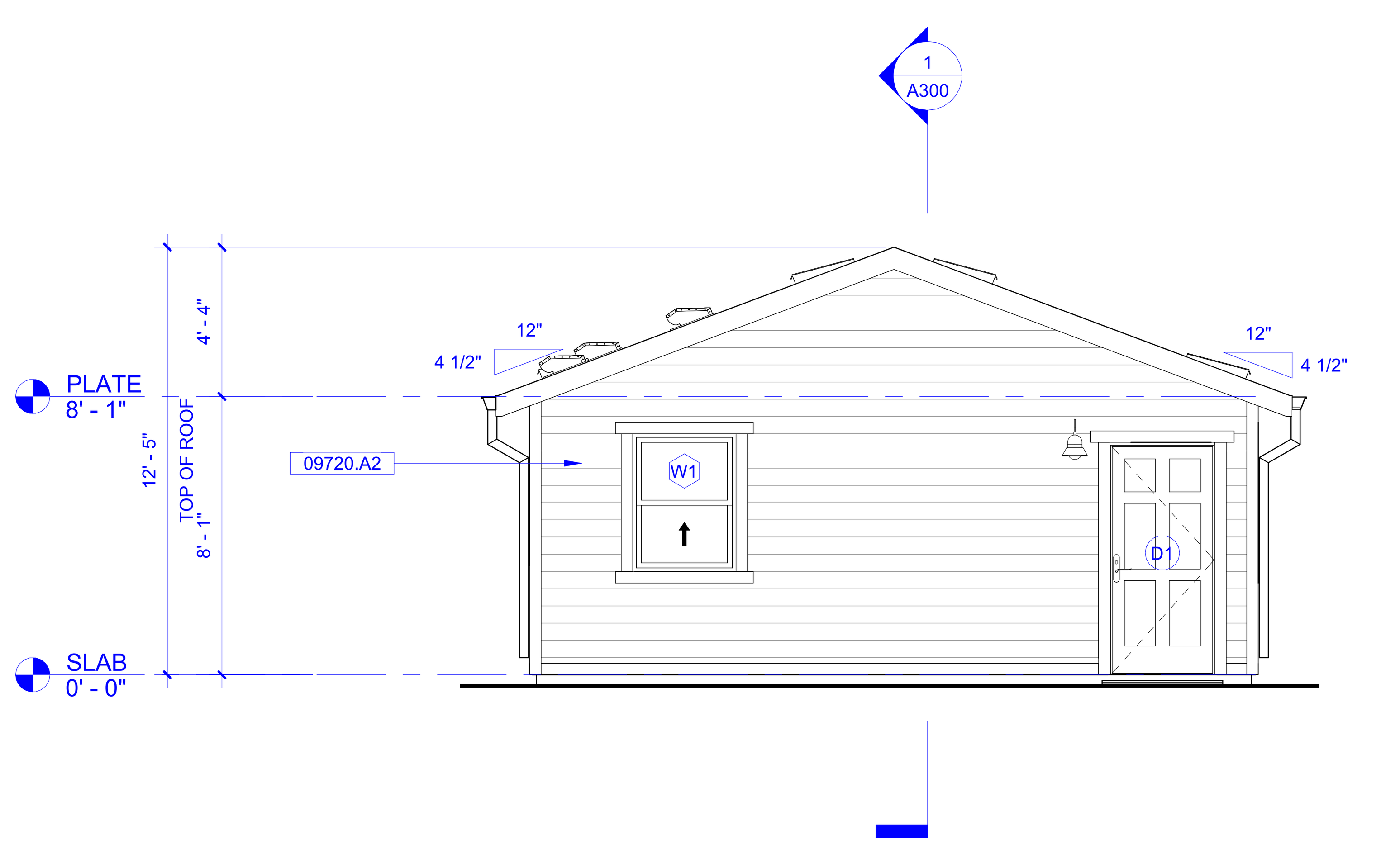
KEYNOTE	DESCRIPTION
07310.A1	ROOFING MATERIAL PER CHECKLIST ON SHEET G102
07710.A1	GUTTER
07710.B3	DOWNSPOUT
07710.C1	O'HAGIN STANDARD LOW PROFILE ATTIC VENTS, 0.68 SF NFVA
09720.A2	FIBER CEMENT WALL LAP SIDING 'HARDIEPLANK' ESR-2290 OR SIMILAR, COLOR TBD TO MATCH MAIN RESIDENCE
15710.D1	DRYER EXHAUST ROOF EXHAUST VENT
15710.D2	RANGE HOOD ROOF EXHAUST VENT
15710.D3	BATH EXHAUST FAN ROOF VENT



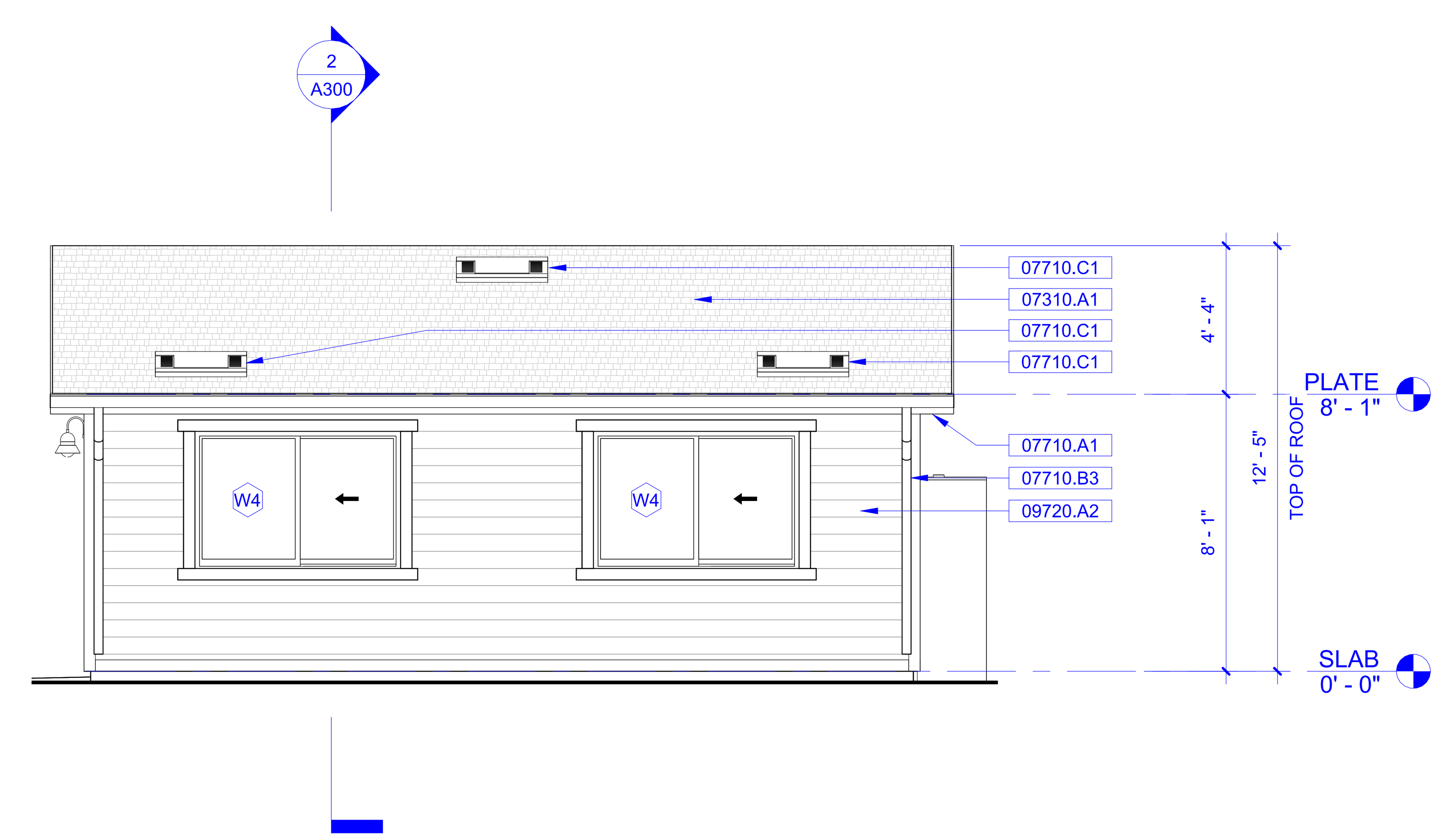
1 NORTH ELEVATION - LAP SIDING
SCALE: 1/4" = 1'-0"



2 WEST ELEVATION - LAP SIDING
SCALE: 1/4" = 1'-0"



3 SOUTH ELEVATION - LAP SIDING
SCALE: 1/4" = 1'-0"



4 EAST ELEVATION - LAP SIDING
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THE EXTERIOR ROOFING, TRIM, WALLS, WINDOWS, AND COLOR PALETTE OF THE ADU SHALL INCORPORATE THE SAME FEATURES AS THE MAIN DWELLING UNIT.
2. THE TYPE, LOCATION, AND SIZE OF THE BUILDING ADDRESS IDENTIFICATION MUST BE CLEARLY VISIBLE AND LEGIBLE FROM THE ADJACENT PUBLIC WAY OR STREET. ADDRESS LETTERS/NUMBERS SHALL BE MINIMUM 4 INCHES HIGH, WITH A MINIMUM STROKE WIDTH OF 1/2 INCH, AND SHALL CONTRAST WITH THEIR BACKGROUND. CRC R319.1.

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SIGNATURE

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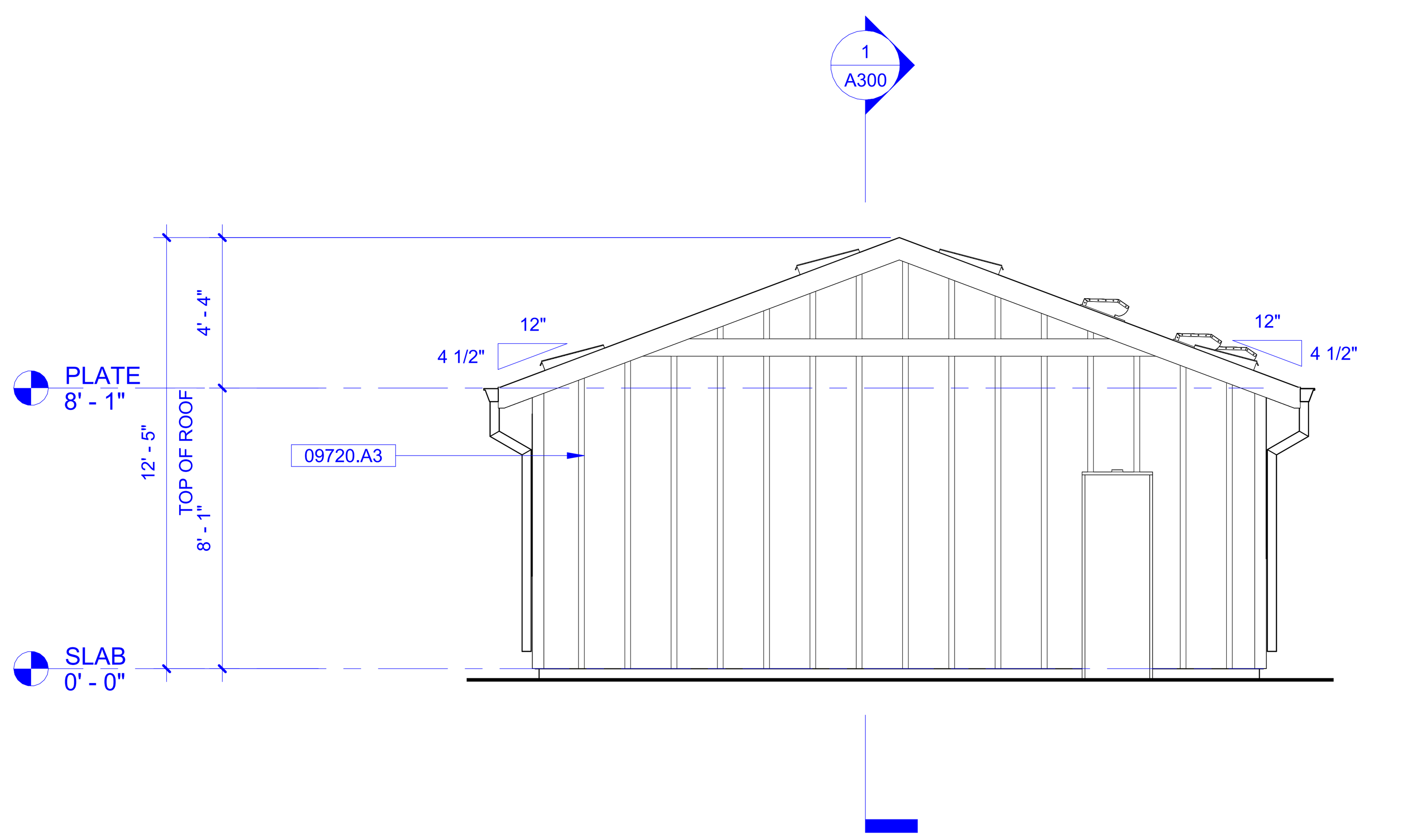
ELEVATIONS B - LAP SIDING

A211

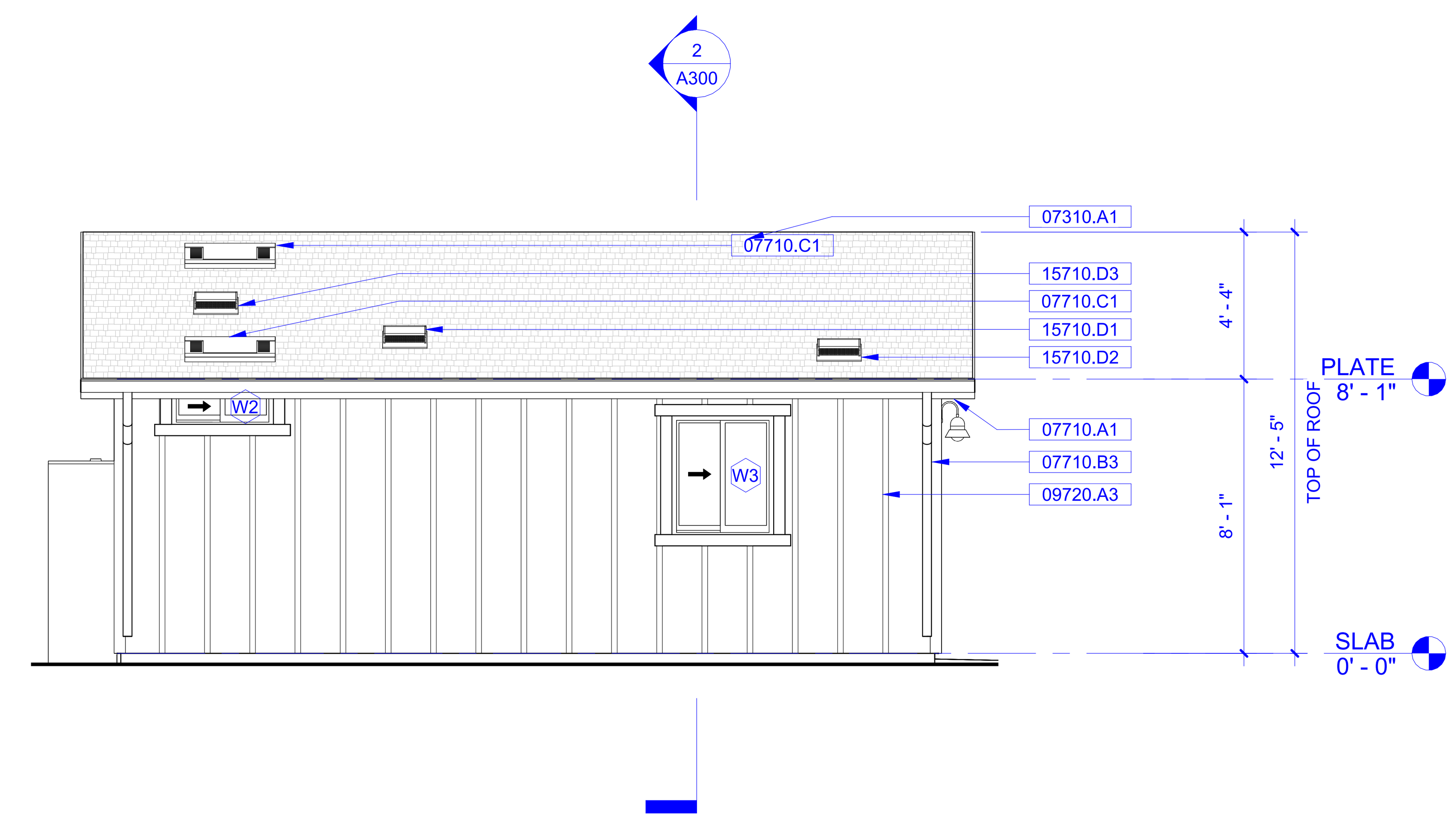
22040

KEYNOTES:

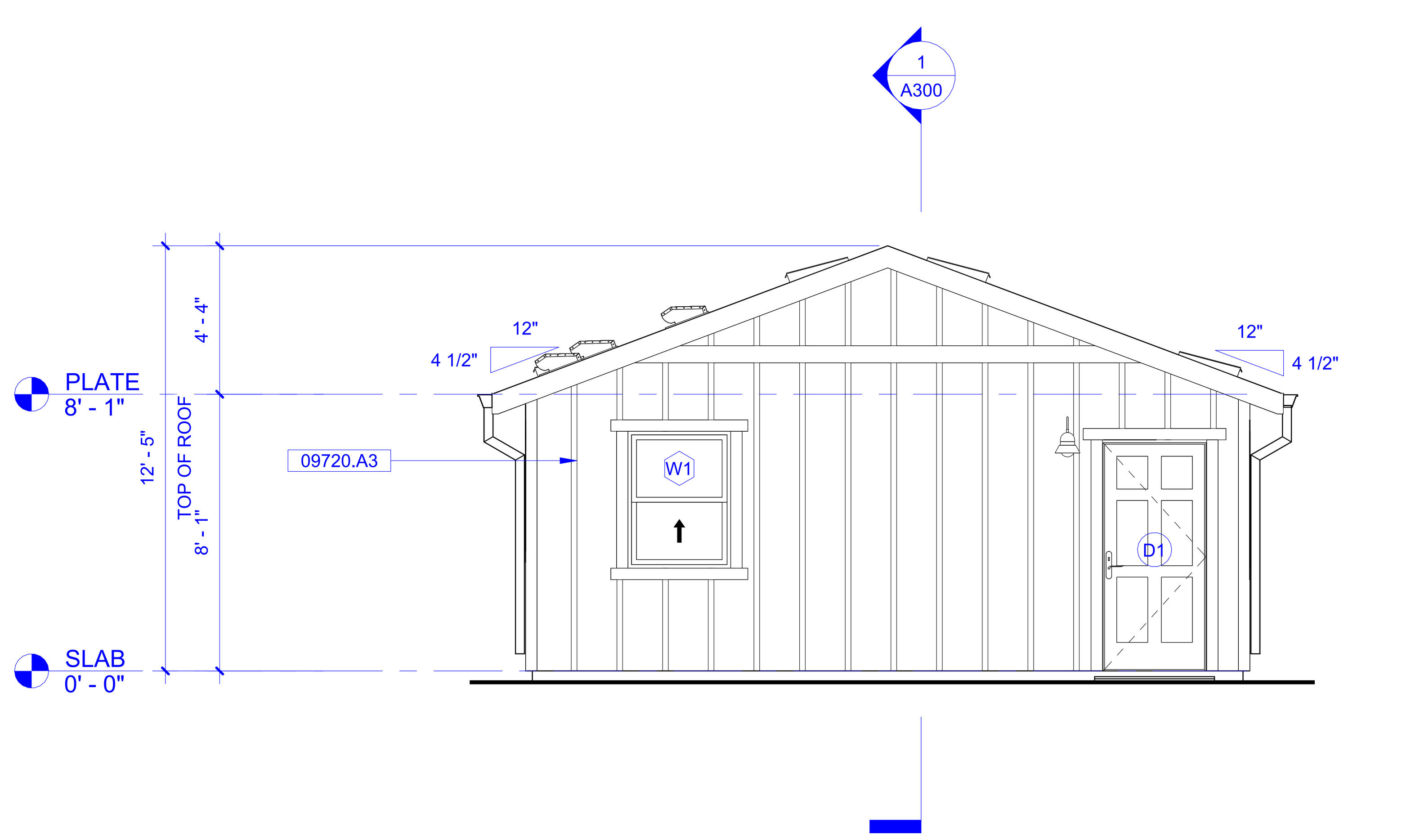
KEYNOTE	DESCRIPTION
07310.A1	ROOFING MATERIAL PER CHECKLIST ON SHEET G102
07710.A1	GUTTER
07710.B3	DOWNSPOUT
07710.C1	O'HAGIN STANDARD LOW PROFILE ATTIC VENTS, 0.68 SF NFVA
09720.A3	FIBER CEMENT WALL VERTICAL B&B SIDING 'HARDIEPANEL' ESR-1844 OR SIMILAR, COLOR TBD TO MATCH MAIN RESIDENCE
15710.D1	DRYER EXHAUST ROOF EXHAUST VENT
15710.D2	RANGE HOOD ROOF EXHAUST VENT
15710.D3	BATH EXHAUST FAN ROOF VENT



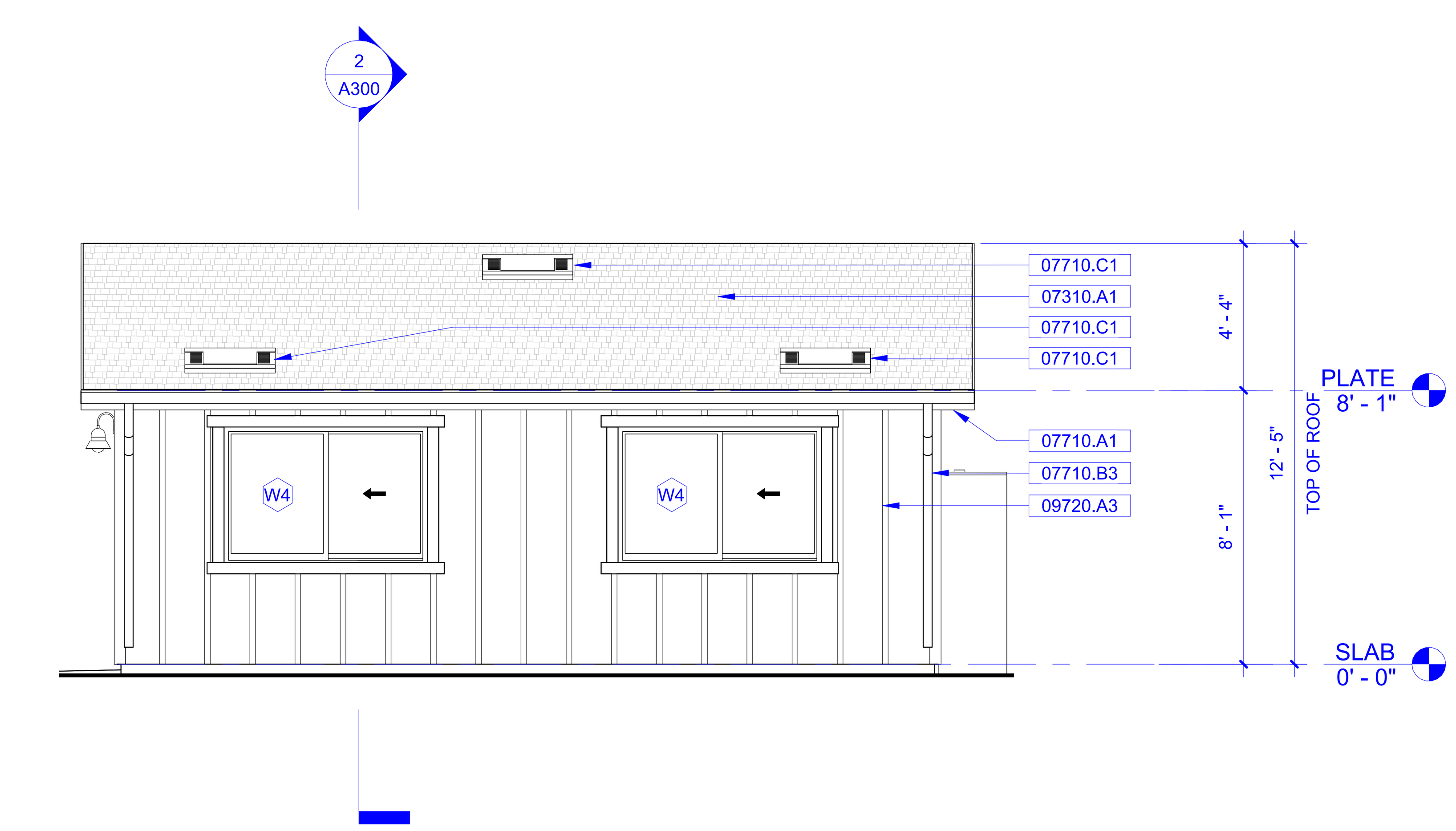
1 NORTH ELEVATION - B&B SIDING
SCALE: 1/4" = 1'-0"



2 WEST ELEVATION - B&B SIDING
SCALE: 1/4" = 1'-0"



3 SOUTH ELEVATION - B&B SIDING
SCALE: 1/4" = 1'-0"



4 EAST ELEVATION - B&B SIDING
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THE EXTERIOR ROOFING, TRIM, WALLS, WINDOWS, AND COLOR PALETTE OF THE ADU SHALL INCORPORATE THE SAME FEATURES AS THE MAIN DWELLING UNIT.
2. THE TYPE, LOCATION, AND SIZE OF THE BUILDING ADDRESS IDENTIFICATION MUST BE CLEARLY VISIBLE AND LEGIBLE FROM THE ADJACENT PUBLIC WAY OR STREET. ADDRESS LETTERS/NUMBERS SHALL BE MINIMUM 4 INCHES HIGH, WITH A MINIMUM STROKE WIDTH OF 1/2 INCH, AND SHALL CONTRAST WITH THEIR BACKGROUND. CRC R319.1.

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ELEVATIONS C - BOARD & BATTEN

A221

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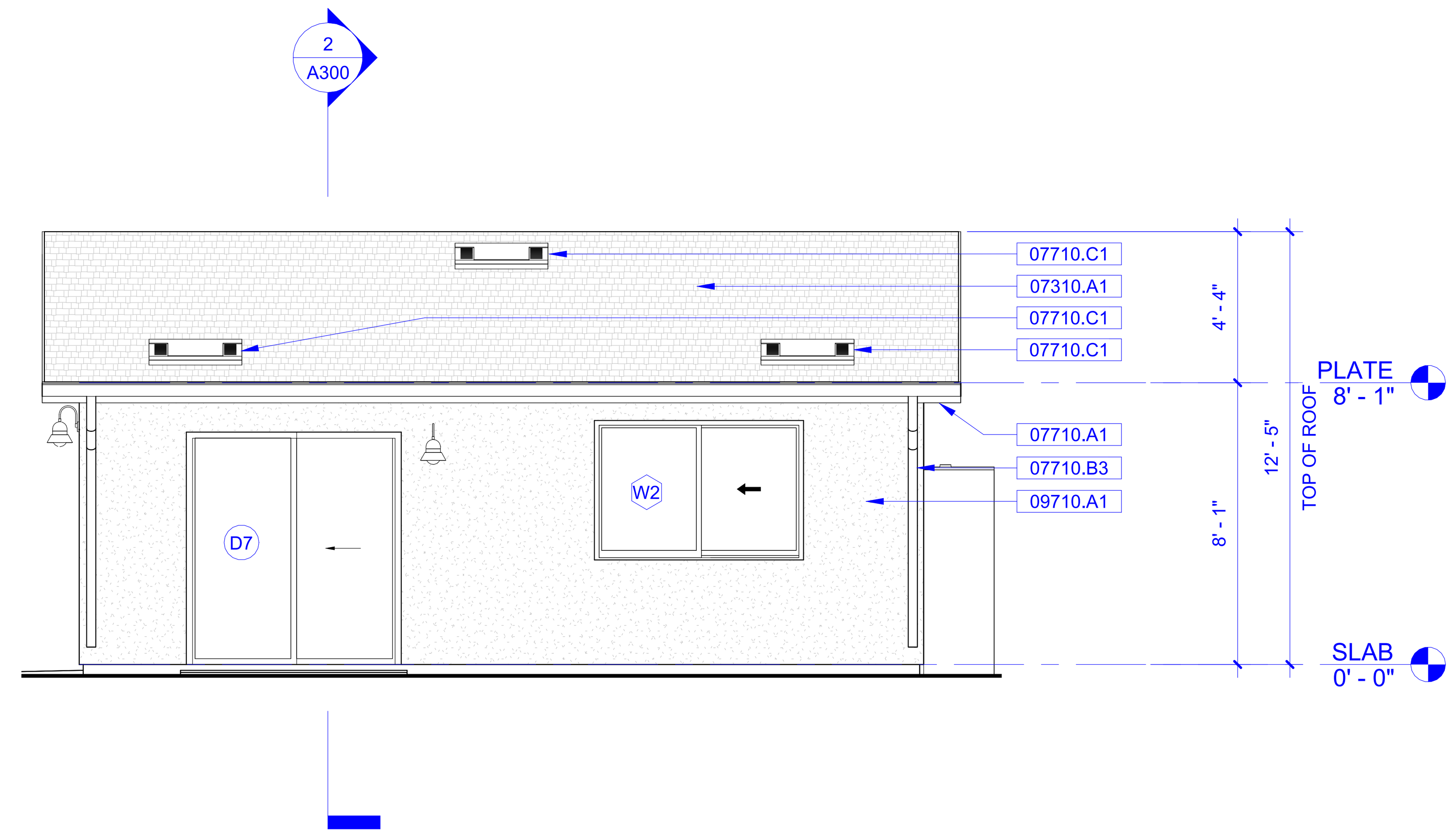
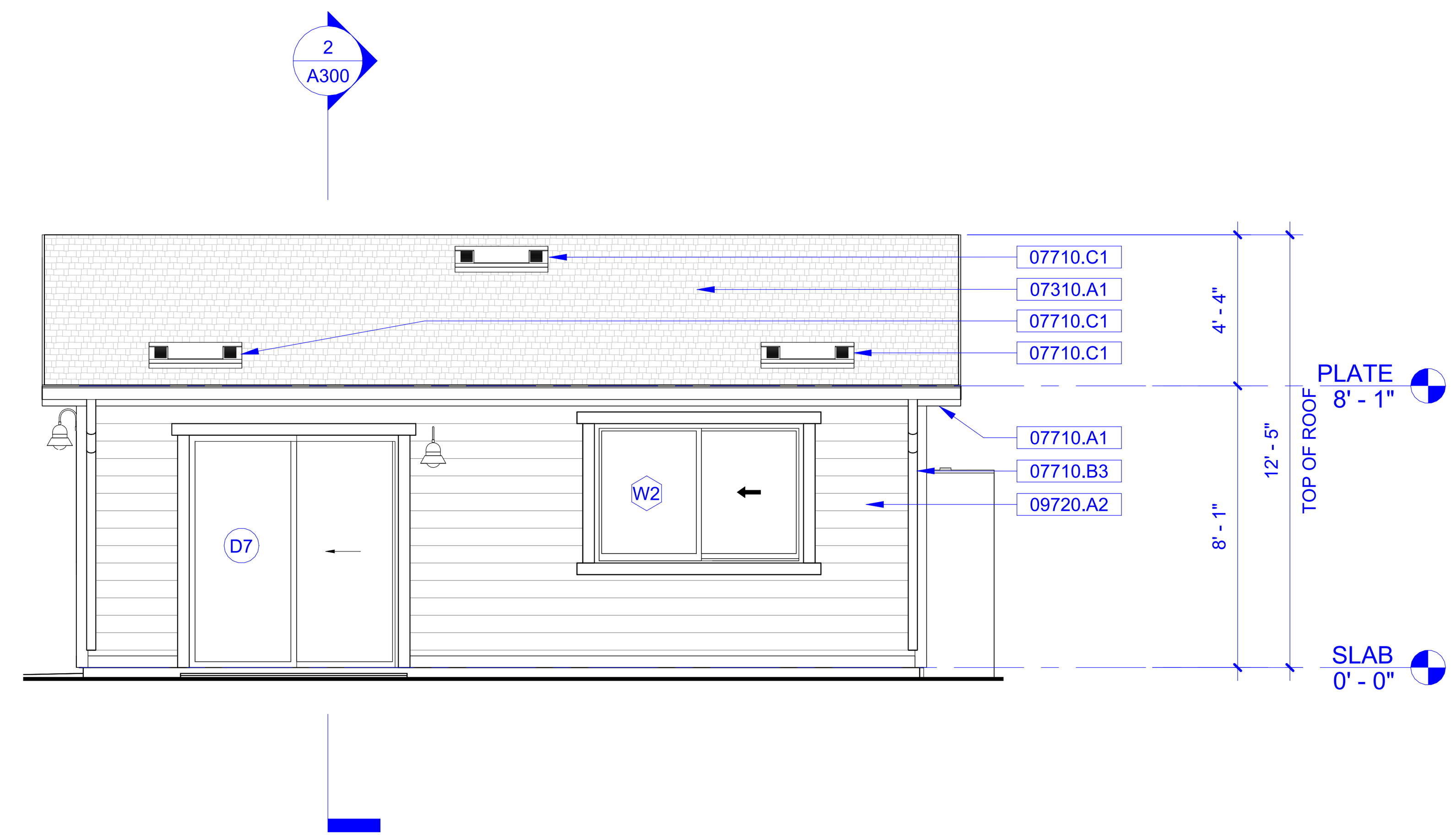


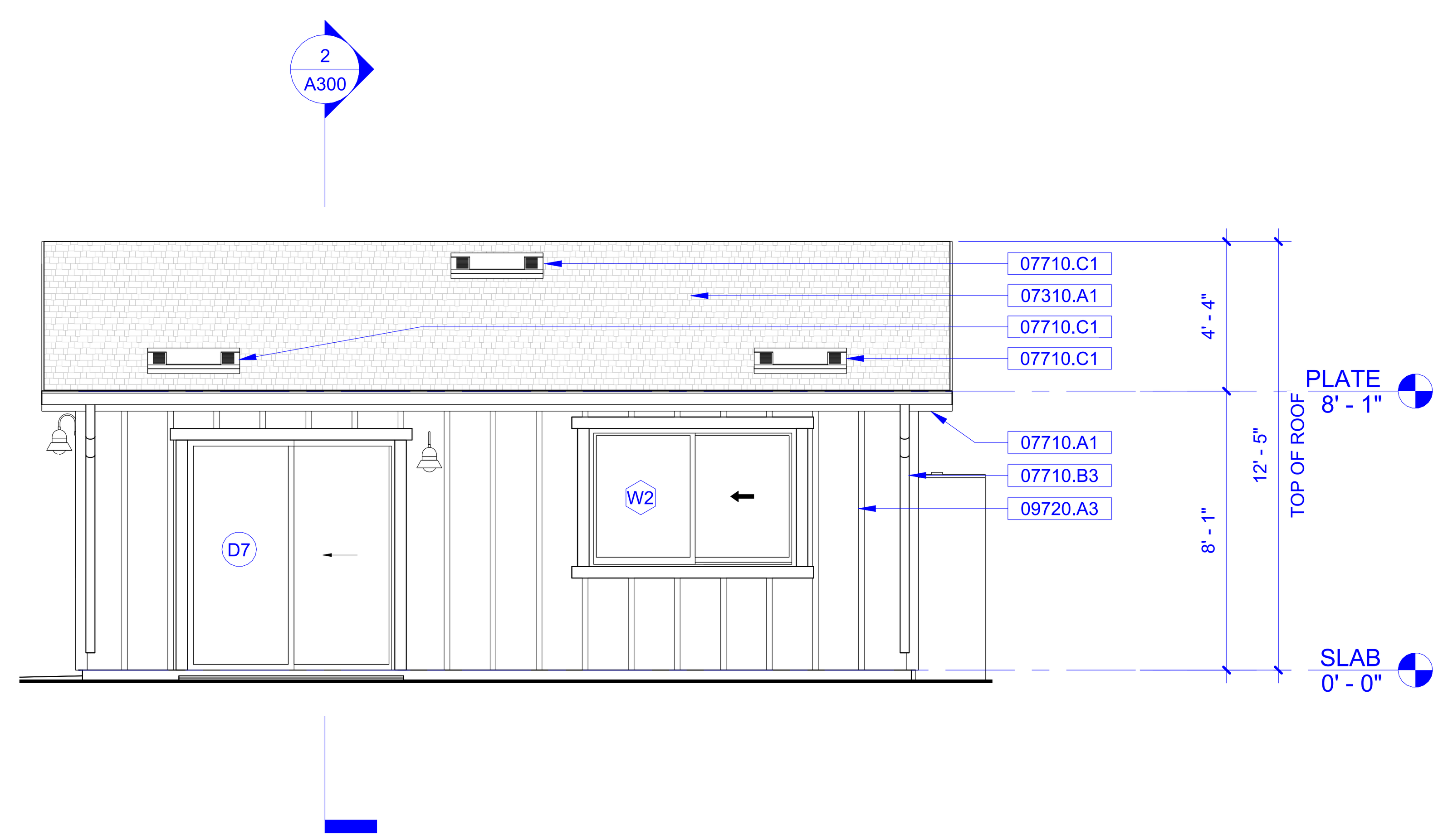
1 EAST ELEVATION - STUCCO - 6068 SGD

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



2 EAST ELEVATION - LAP SIDING - 6068 SGD

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



3 EAST ELEVATION - B&B SIDING - 6068 SGD

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

KEYNOTES:

KEYNOTE	DESCRIPTION
07310.A1	ROOFING MATERIAL PER CHECKLIST ON SHEET G102
07710.A1	GUTTER
07710.B3	DOWNSPOUT
07710.C1	O'HAGIN STANDARD LOW PROFILE ATTIC VENTS, 0.68 SF NFVA
09720.A3	FIBER CEMENT WALL VERTICAL B&B SIDING 'HARDIEPANEL' ESR-1844 OR SIMILAR, COLOR TBD TO MATCH MAIN RESIDENCE

GENERAL NOTES

1. THE EXTERIOR ROOFING, TRIM, WALLS, WINDOWS, AND COLOR PALETTE OF THE ADU SHALL INCORPORATE THE SAME FEATURES AS THE MAIN DWELLING UNIT.
2. THE TYPE, LOCATION, AND SIZE OF THE BUILDING ADDRESS IDENTIFICATION MUST BE CLEARLY VISIBLE AND LEGIBLE FROM THE ADJACENT PUBLIC WAY OR STREET. ADDRESS LETTERS/NUMBERS SHALL BE MINIMUM 4 INCHES HIGH, WITH A MINIMUM STROKE WIDTH OF 1/2 INCH, AND SHALL CONTRAST WITH THEIR BACKGROUND. CRC R319.1.

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ELEVATION - OPTIONS

A230

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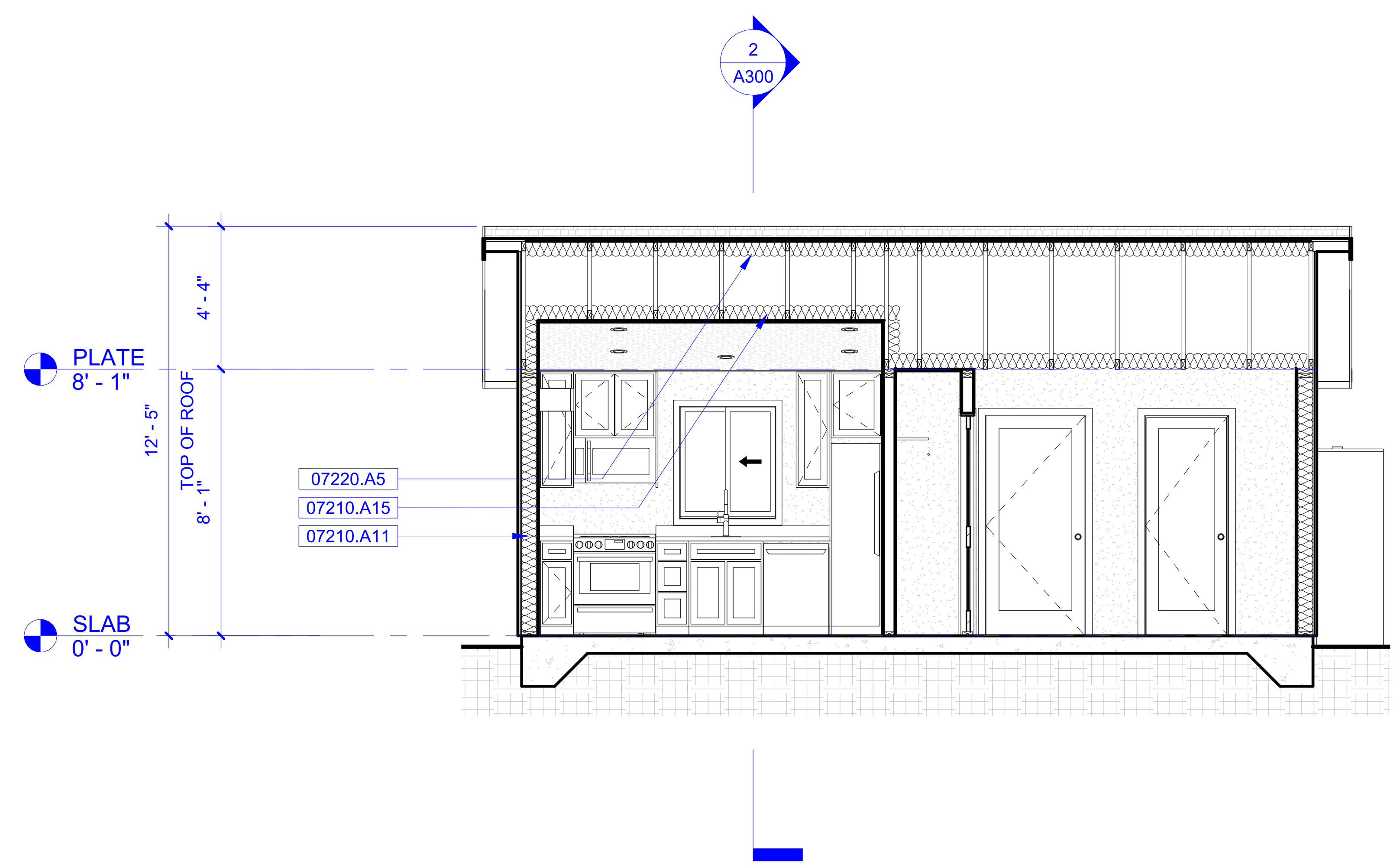
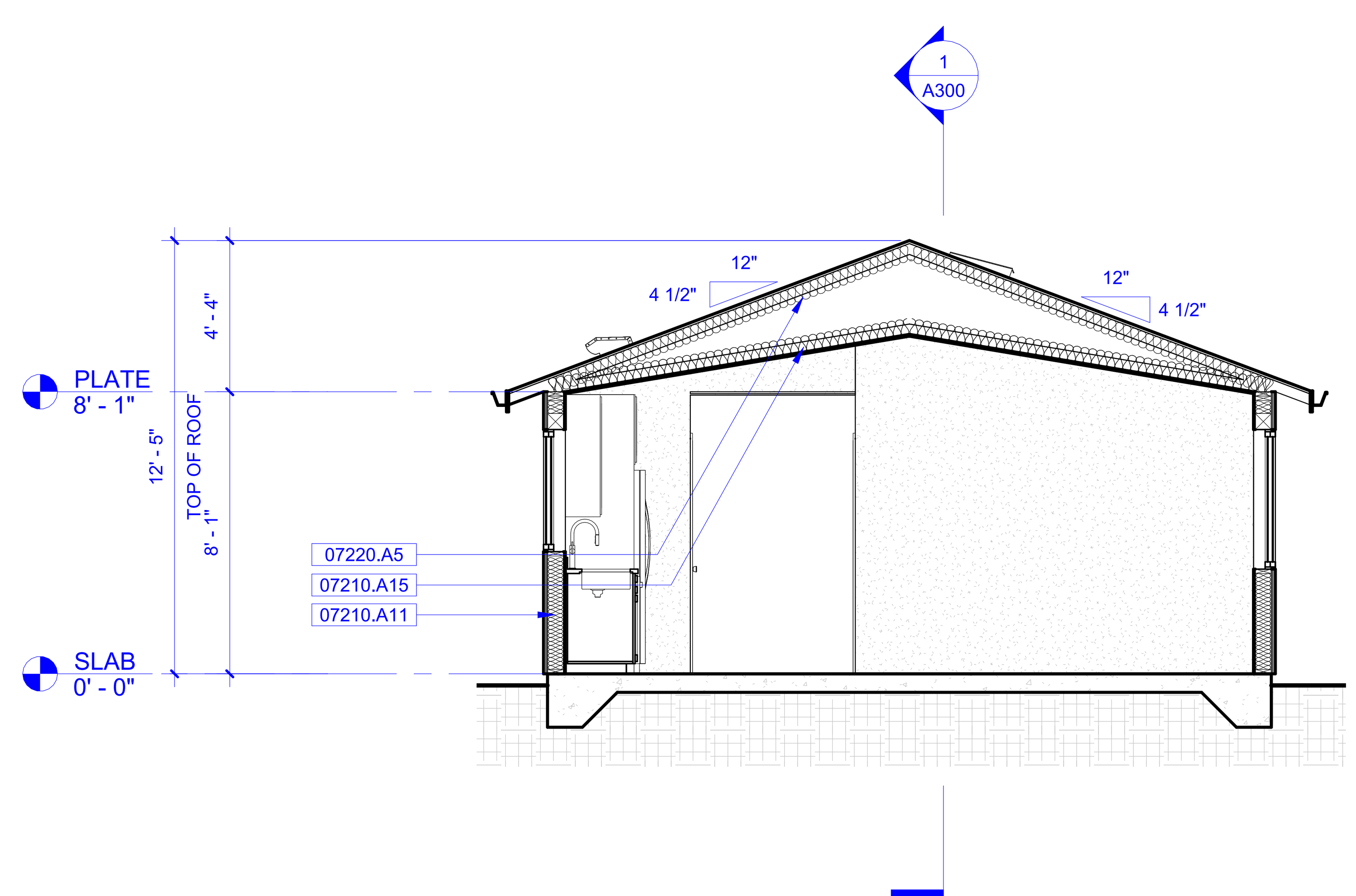
KEYNOTES:

KEYNOTE	DESCRIPTION
07210.A11	WALL BATT INSULATION PER TITLE 24 CALCULATIONS
07210.A15	CEILING BATT INSULATION PER TITLE 24 CALCULATIONS
07220.A5	BATT INSULATION BELOW ROOF DECK PER TITLE 24 CALCULATIONS



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



2 SECTION 2
SCALE: 1/4" = 1'-0"

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BUILDING SECTIONS

A300

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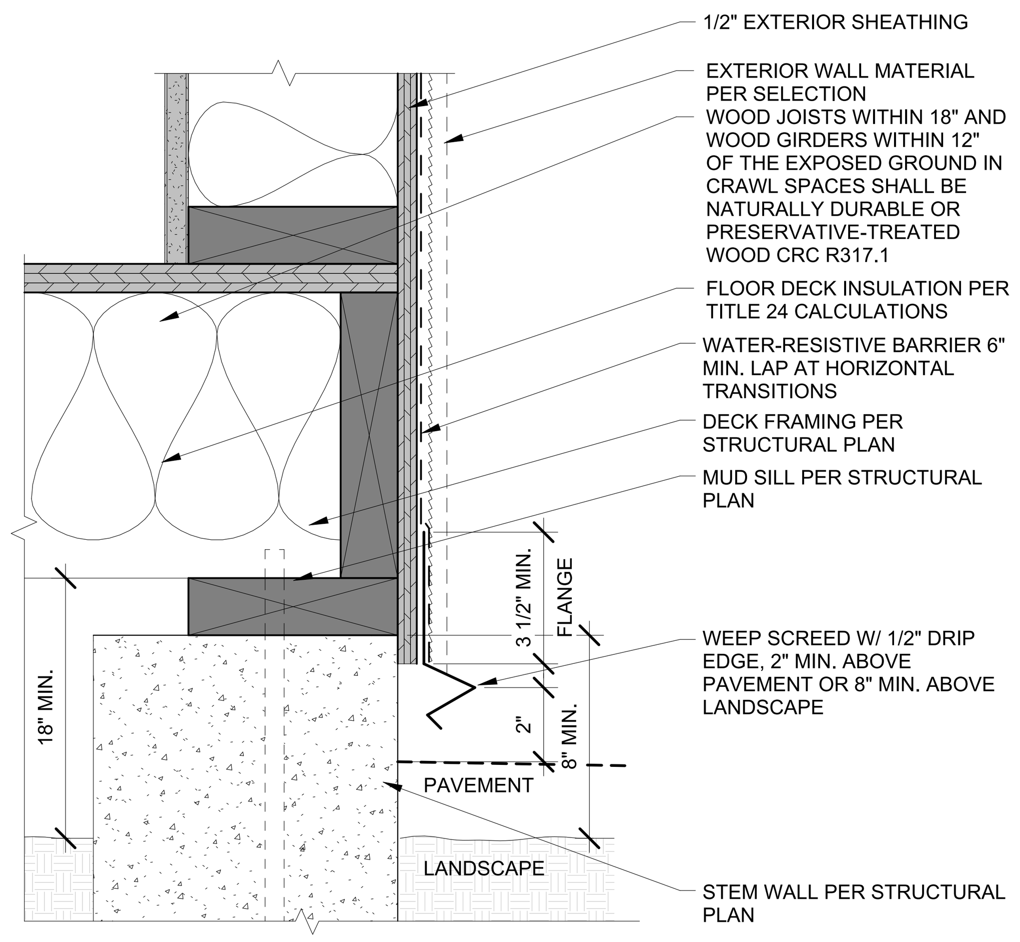
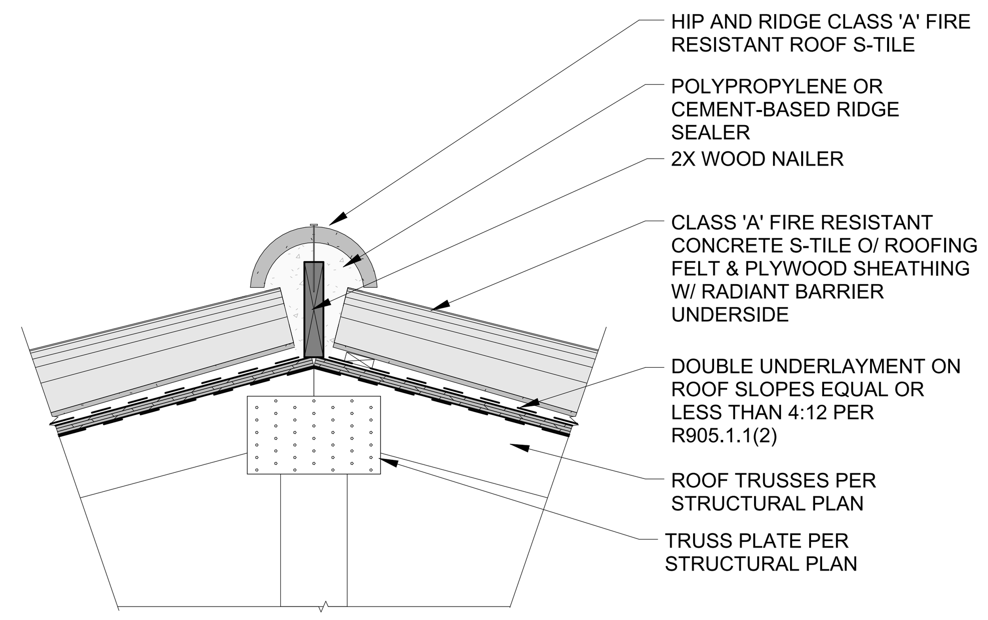
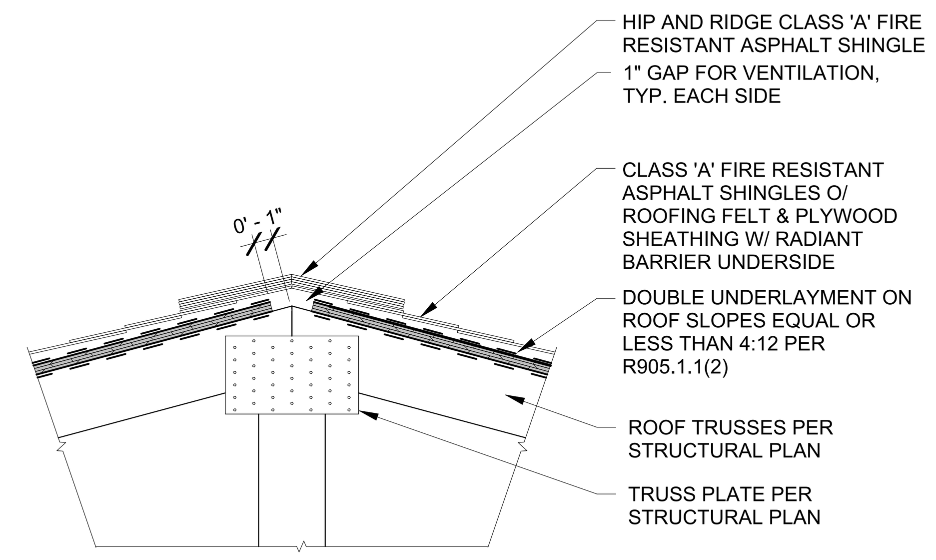


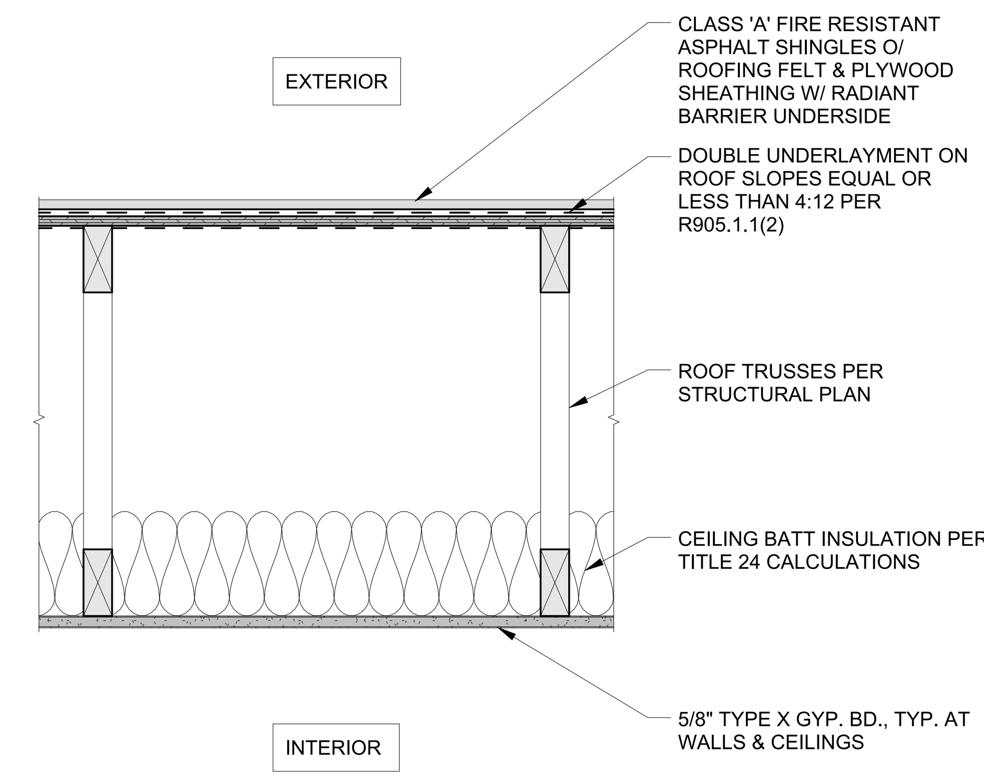
9 RAISED FLOOR FOUNDATION
SCALE: 3" = 1'-0"



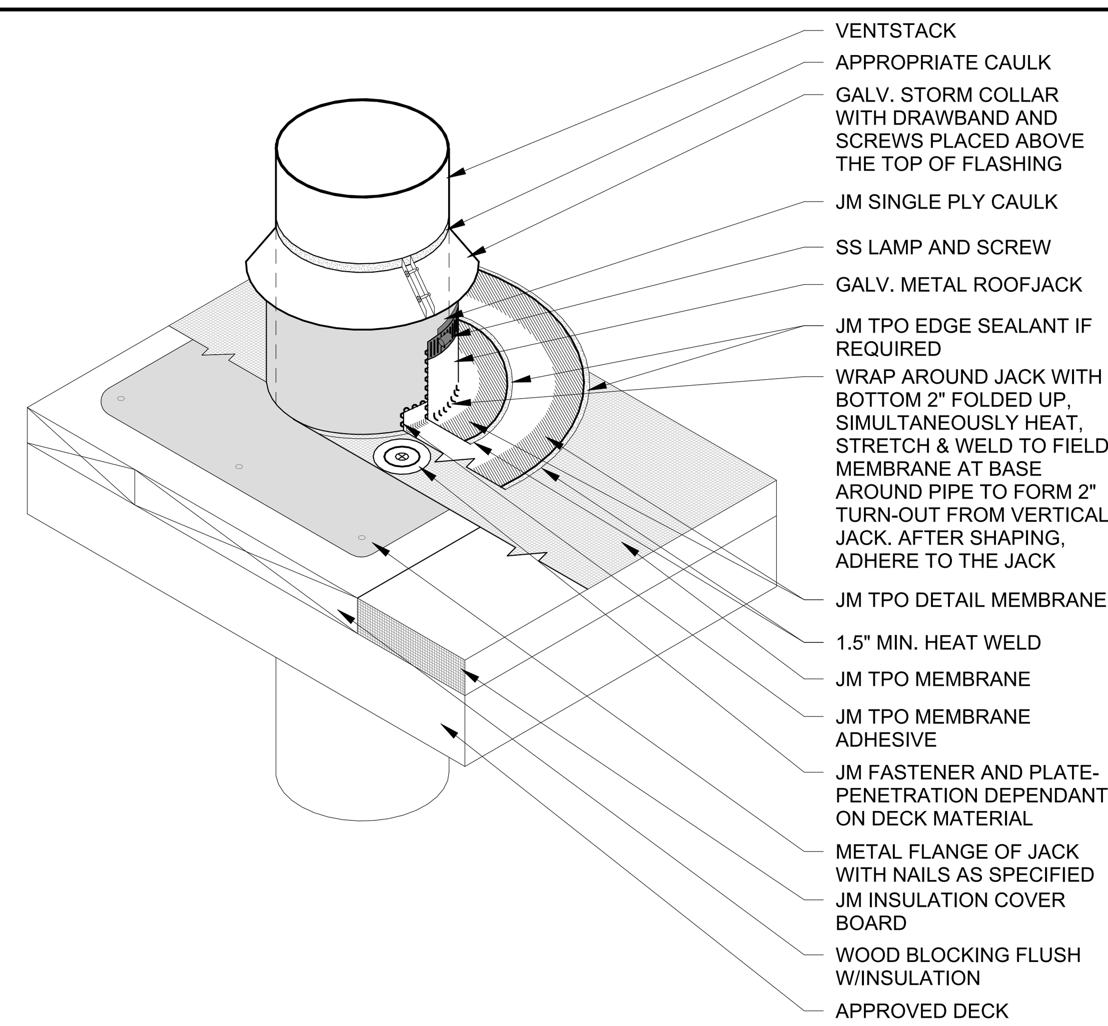
6 ROOF RIDGE W/ KING POST - S-TILE
SCALE: 1 1/2" = 1'-0"



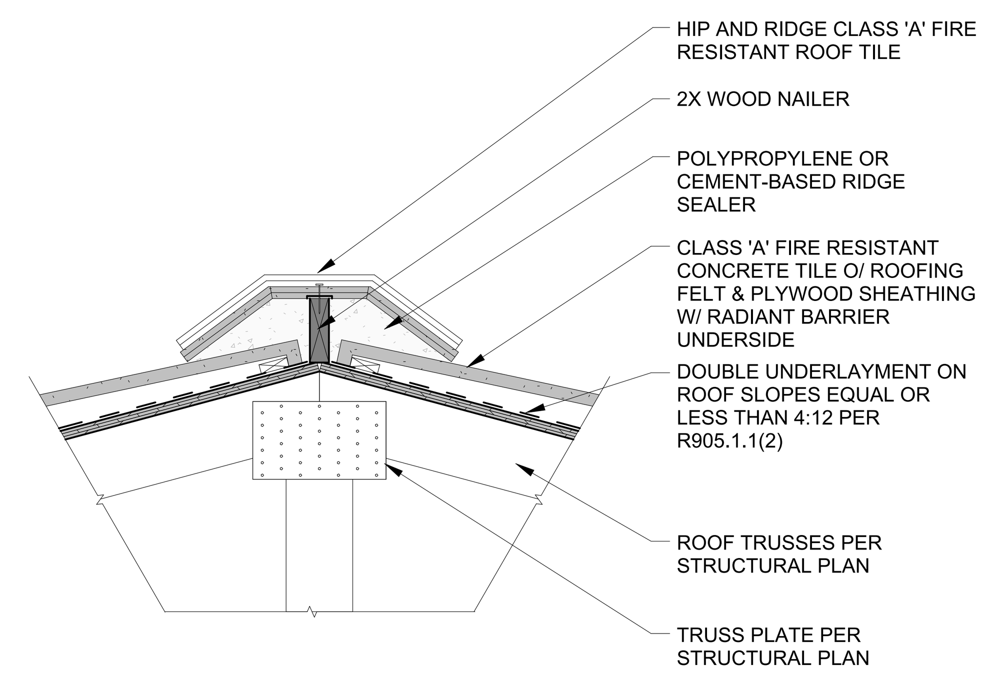
4 ROOF RIDGE W/ KING POST - SHINGLE
SCALE: 1 1/2" = 1'-0"



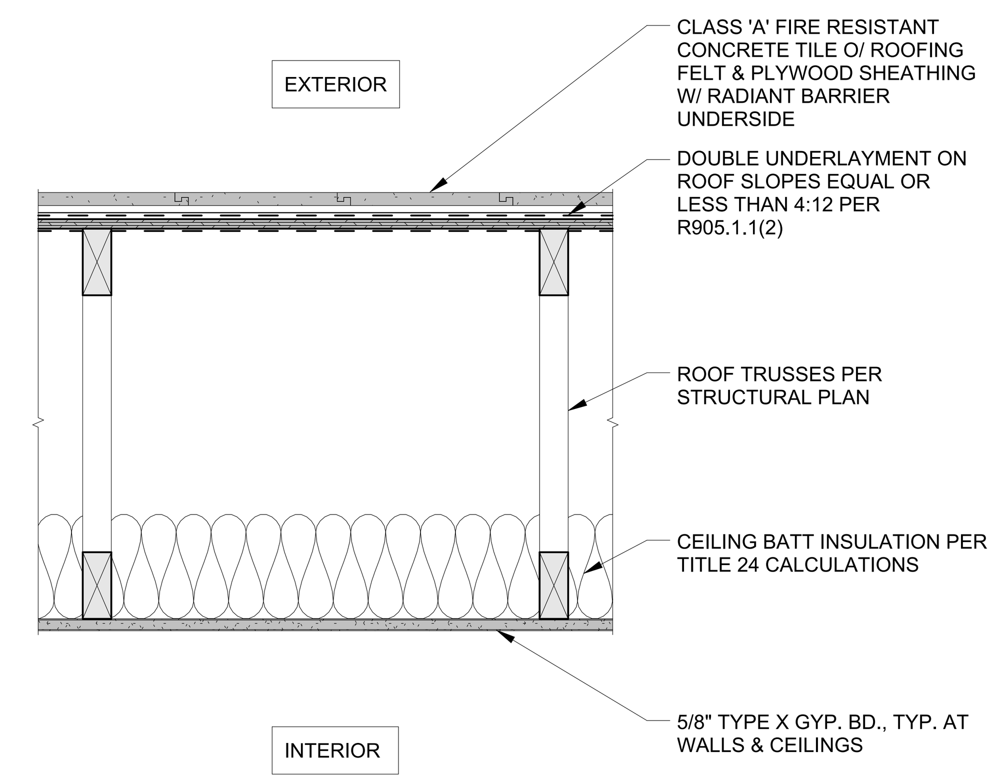
1 1- 1-HR CLASS 'A' ROOF DETAIL - SHINGLE
SCALE: 1 1/2" = 1'-0"



7 ROOF VENTILATION DETAIL
SCALE: N.T.S.



5 ROOF RIDGE W/ KING POST - CEMENT
SCALE: 1 1/2" = 1'-0"

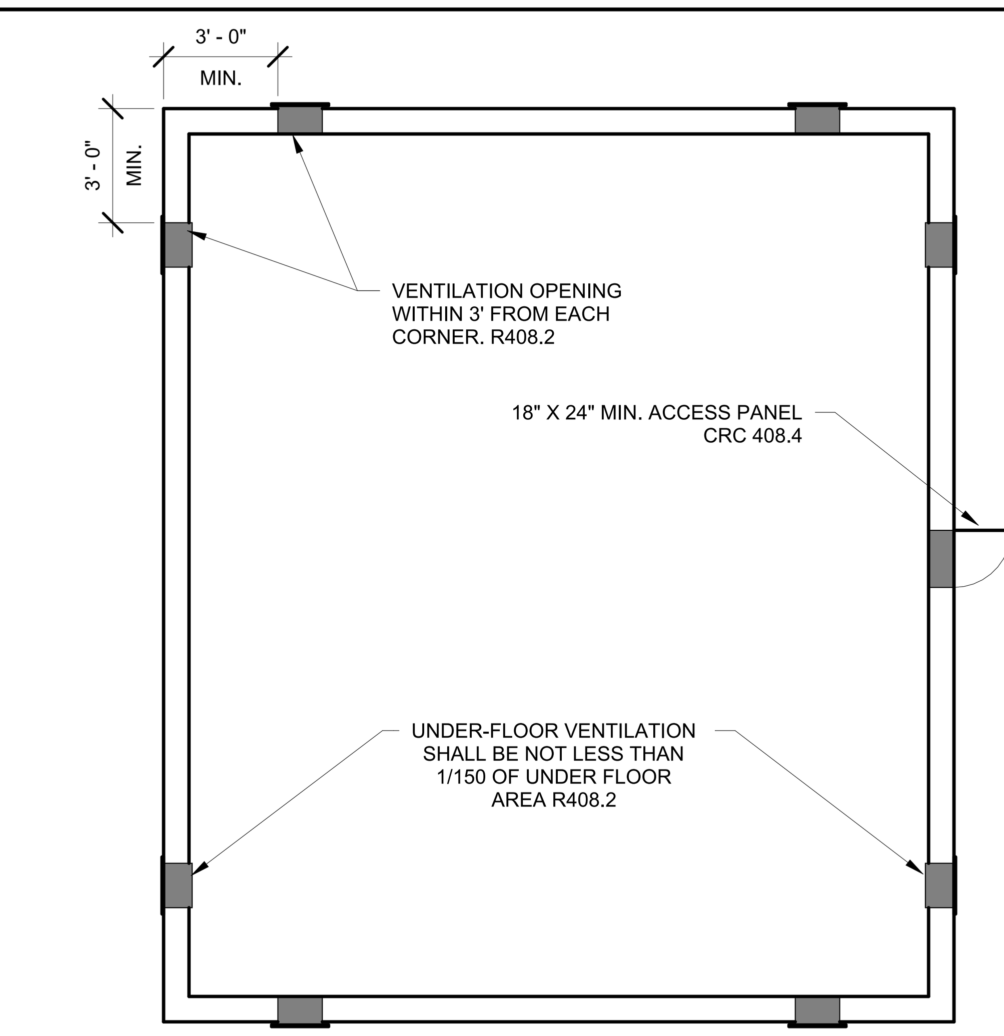


2 2 - 1-HR CLASS 'A' ROOF DETAIL - CEMENT
SCALE: 1 1/2" = 1'-0"

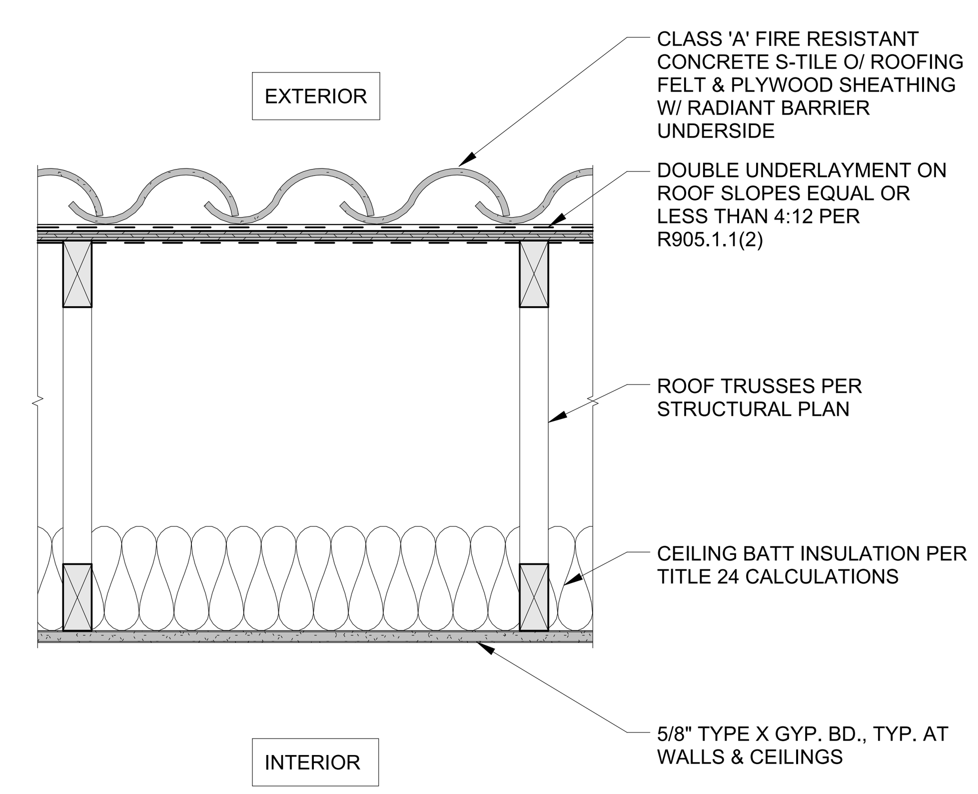
FOUNDATION VENT CALCULATIONS:

NET FREE VENTED AREA CALC.	CRAWL SPACE AREA		REQUIRED NFVA
CRAWL SPACE AREA / 150 SF	498 SF		3.32 SF
CRAWL SPACE VENT NFVA	REQUIRED NFVA / CRAWLSPACE VENT NFVA	REQUIRED VENTS	NFVA TO BE PROVIDED
VULCAN FOUNDATION VENT MODEL VFS814S OR EQUAL. (NFVA = 62 SQ.IN. = 0.43 SF)	7.72 SF	8	3.44 SF

*** FOUNDATION VENTS AND ACCESS PANEL LOCATION MIGHT VARY ACCORDING TO SITE CONDITIONS.**



8 FOUNDATION VENT CALCULATIONS



3 3 - 1-HR CLASS 'A' ROOF DETAIL - S-TILE
SCALE: 1 1/2" = 1'-0"

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GENERIC ROOF & MISC. DETAILS

A500

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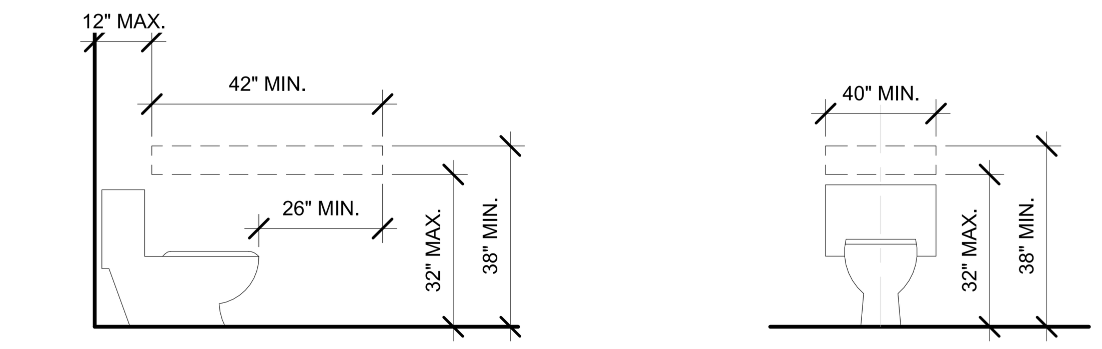
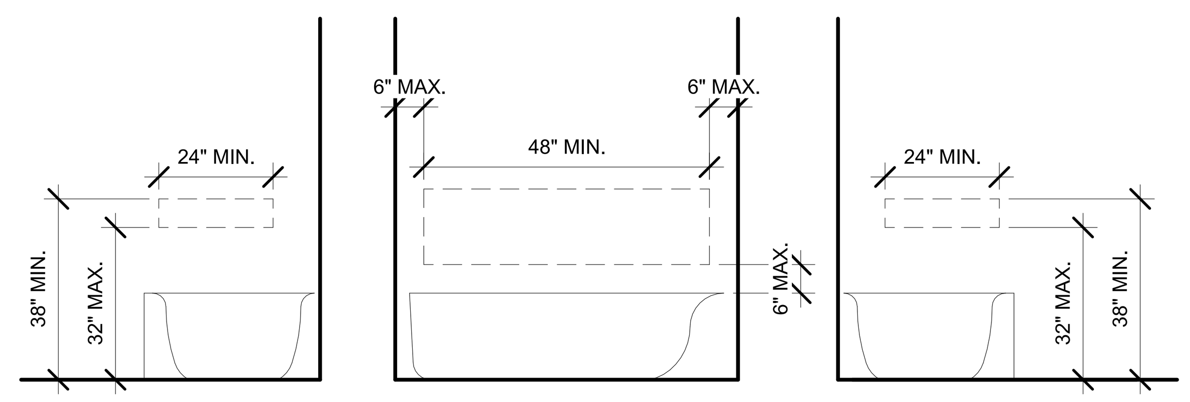
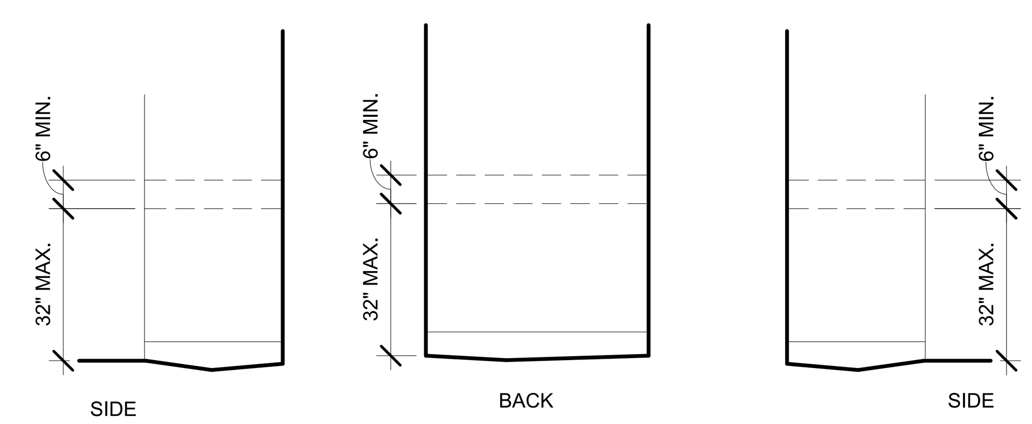


(A) GRAB BAR REINFORCEMENT FOR ADAPTABLE WATER CLOSETS



(B) GRAB BAR REINFORCEMENT FOR ADAPTABLE BATHTUBS



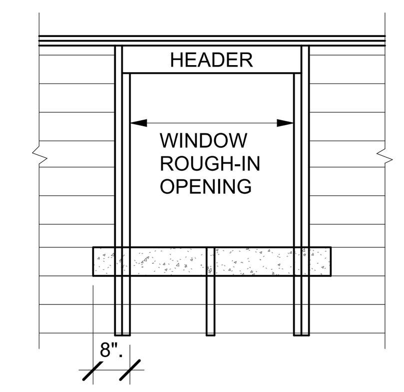
(C) GRAB BAR REINFORCEMENT FOR ADAPTABLE SHOWERS

NOTE:

AREAS OUTLINED IN DASHED LINES REPRESENT LOCATION FOR FUTURE INSTALLATION OF GRAB BARS.

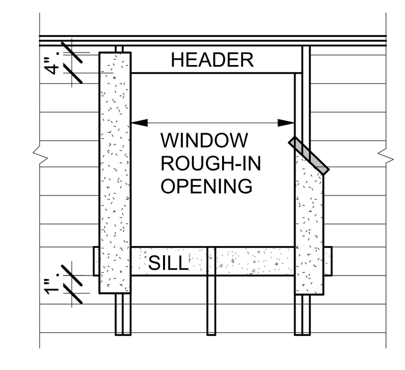
6 GRAB BAR REINFORCEMENT FOR AGING-IN-PLACE REQUIREMENTS

STEP 1



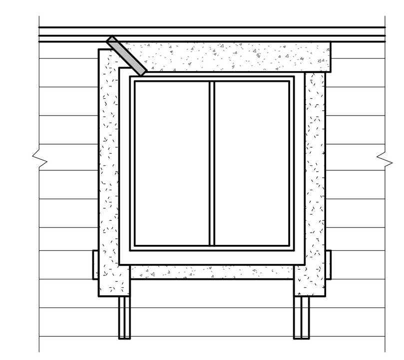
ATTACH SILL STRIP WITH TOP EDGE LEVEL WITH ROUGH SILL- EXTEND BEYOND EDGE OF ROUGH OPENING AT LEAST 8". SECURE FLASHING MATERIAL WITH GALVANIZED NAILS OR POWER-DRIVEN STAPLES.

STEP 2



ATTACH JAMB STRIPS WITH SIDE EDGE EVEN WITH ROUGH-JAMB FRAMING. START STRIP 1" BELOW LOWER EDGE OF SILL STRIP AND EXTEND 4" ABOVE LOWER EDGE OF LINTEL.

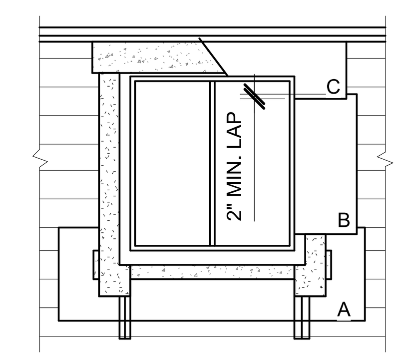
STEP 3



INSTALL WINDOW INTO ROUGH OPENING WITH SILL AND JAMB FLANGES OVER PREVIOUSLY INSTALLED FLASHING. ATTACH HEAD FLASHING OVER THE WINDOW FLANGE.

INSTALL 18" WIDE STRIP OF WIRE MESH REINFORCING AT CORNERS OF ALL WINDOWS, DOORS & RE-ENTRANT CORNERS, TYPICAL.

STEP 4



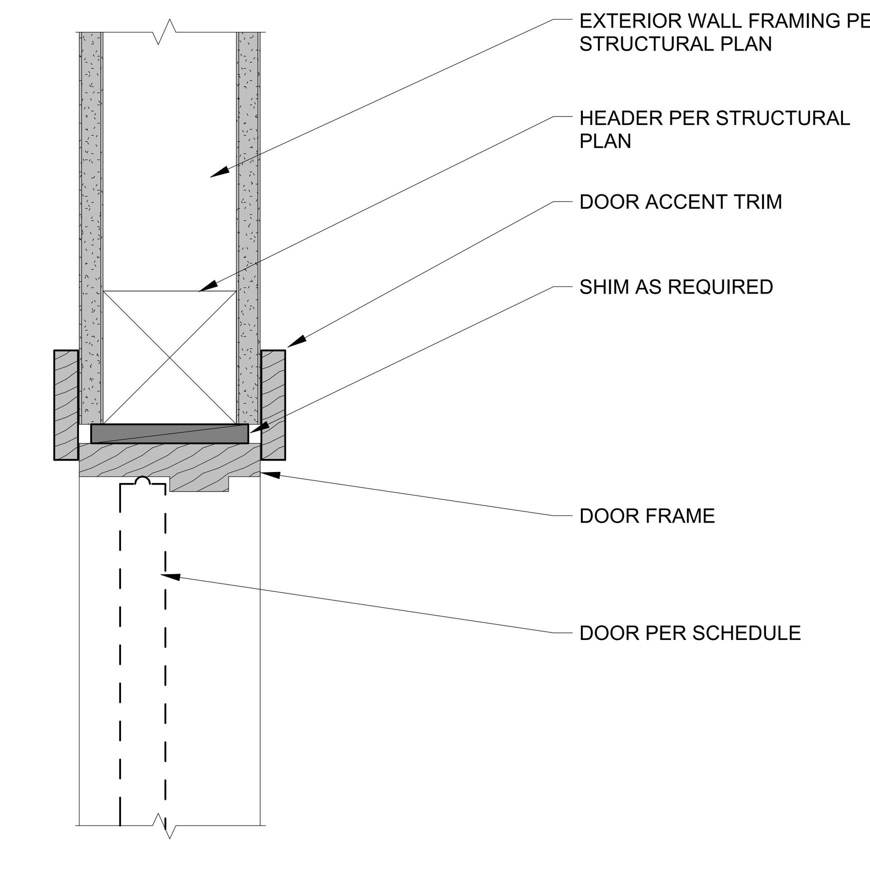
COMMENCING AT THE BOTTOM (SILL PLATE) OF THE WALL LAY BUILDING PAPER UNDER SILL STRIP. (A)

NOTE: CUT ANY EXCESS BUILDING PAPER THAT MAY EXTEND ABOVE THE SILL FLANGE LINE ON EACH SIDE OF THE OPENING (SHOWN AS SHORT DASHED LINES).

DO NOT SPLICE BUILDING PAPER HORIZONTALLY SO THAT THE PAPER WILL LAP OVER THE JAMB STRIPS. INSTALL SUCCESSIVE LINES OF BUILDING PAPER (B,C,D, ETC.) OVER JAMB AND HEAD FLANGES, LAPPING EACH COURSE.

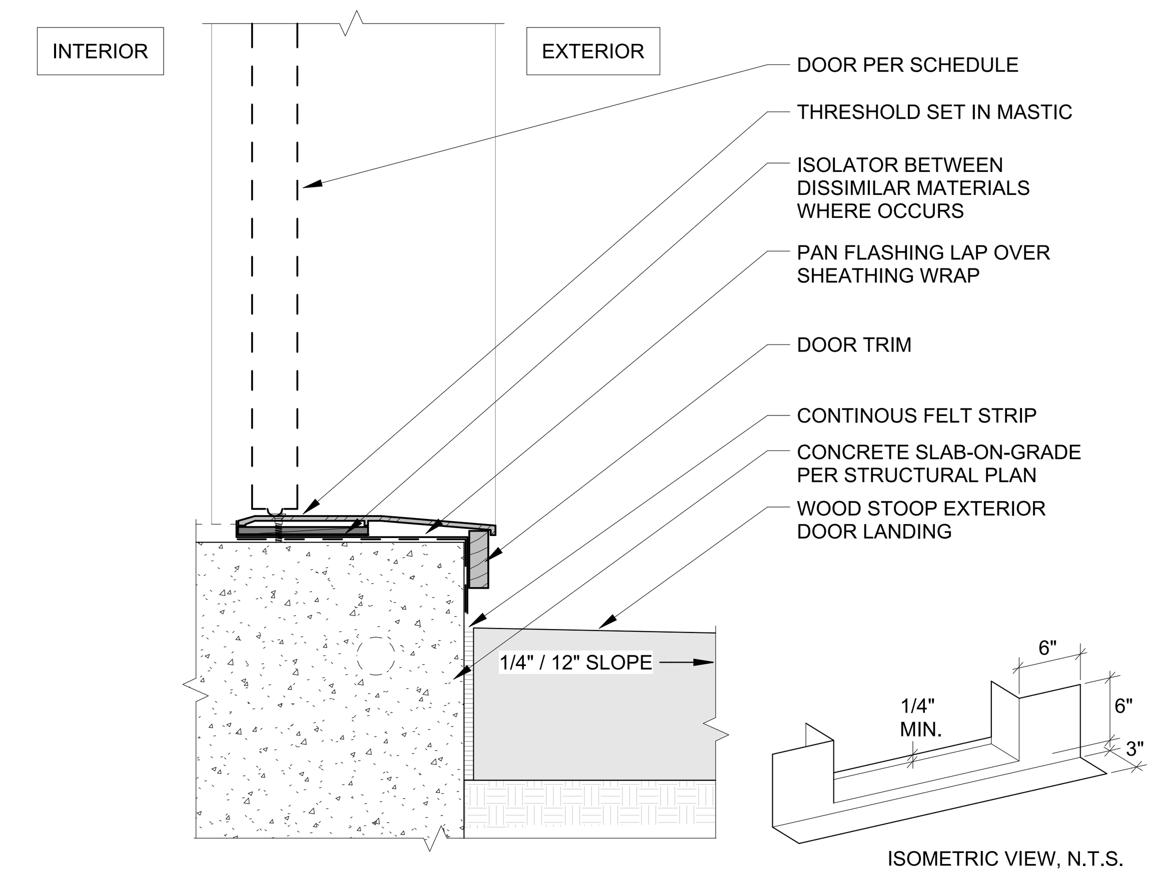
1. LINE-WIRE WHEN USED AS BACKING TO SUPPORT BULIDLING PAPER BENEATH WIRE LATH (NETTING) FOR PORTLAND CEMENT (STUCCO), SHALL BE INSTALLED, AS FOLLOWS:
   A. WIRE GAUGE, SPACING AND ATTACHMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATIONS.
   B. PERIPHERAL FLASHING AT ALL EDGES OF WALL OPENINGS MUST COVER THE WIRE BACKING.
   C. NO ATTACHMENT DEVICES NOR THE WIRE BACKING SHALL COVER OR PENETRATE THE FLASHING MATERIAL.
2. WINDOW FLASHING SHALL BE 'MOISTOP' MINIMUM 12" WIDE (UNLESS OTHERWISE DETAILED).
3. PROVIDE SEALANT AROUND WINDOW (VERIFY WITH WINDOW MANUFACTURER ANY CONFLICT TO BE CONFIRMED WITH ARCHITECT PRIOR TO INSTALLATION.
4. AT WINDOW HEAD, JAMBS AND SILL, ALL FASTENERS ARE TO BE NAILED THROUGH THE WINDOW FIN NO CLOSER THAN 3 INCHES TO CORNERS, AND NO MORE THAN 10 INCHES FROM CORNERS, NAIL SHALL BE NO MORE THAN 16 INCHES ON CENTER.

4 WINDOW - TYPICAL FLASHING



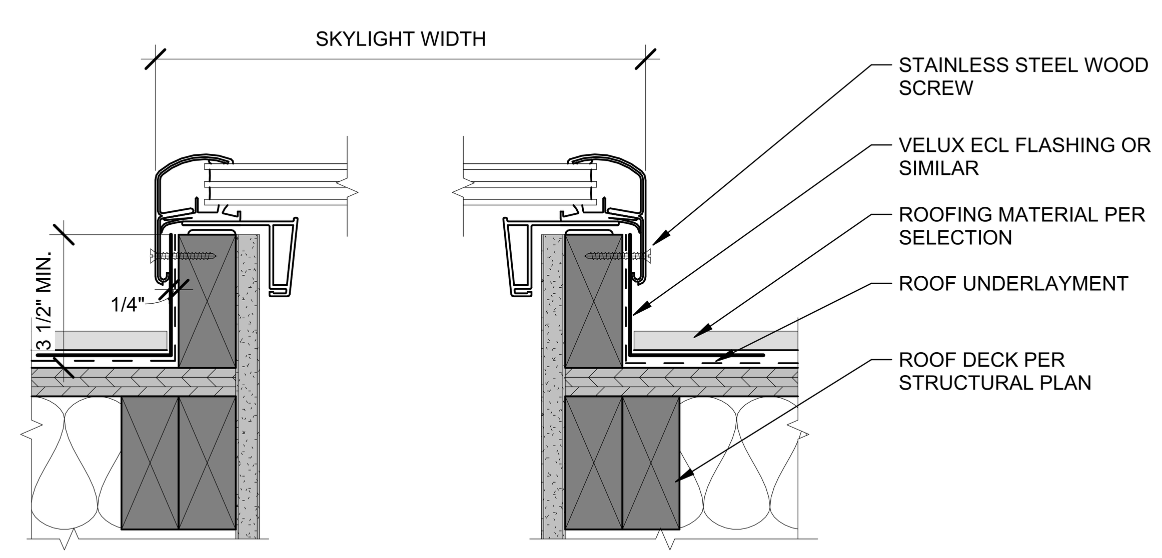
1 DOOR - INTERIOR HEAD (JAMB SIM.)

SCALE: 3" = 1'-0"



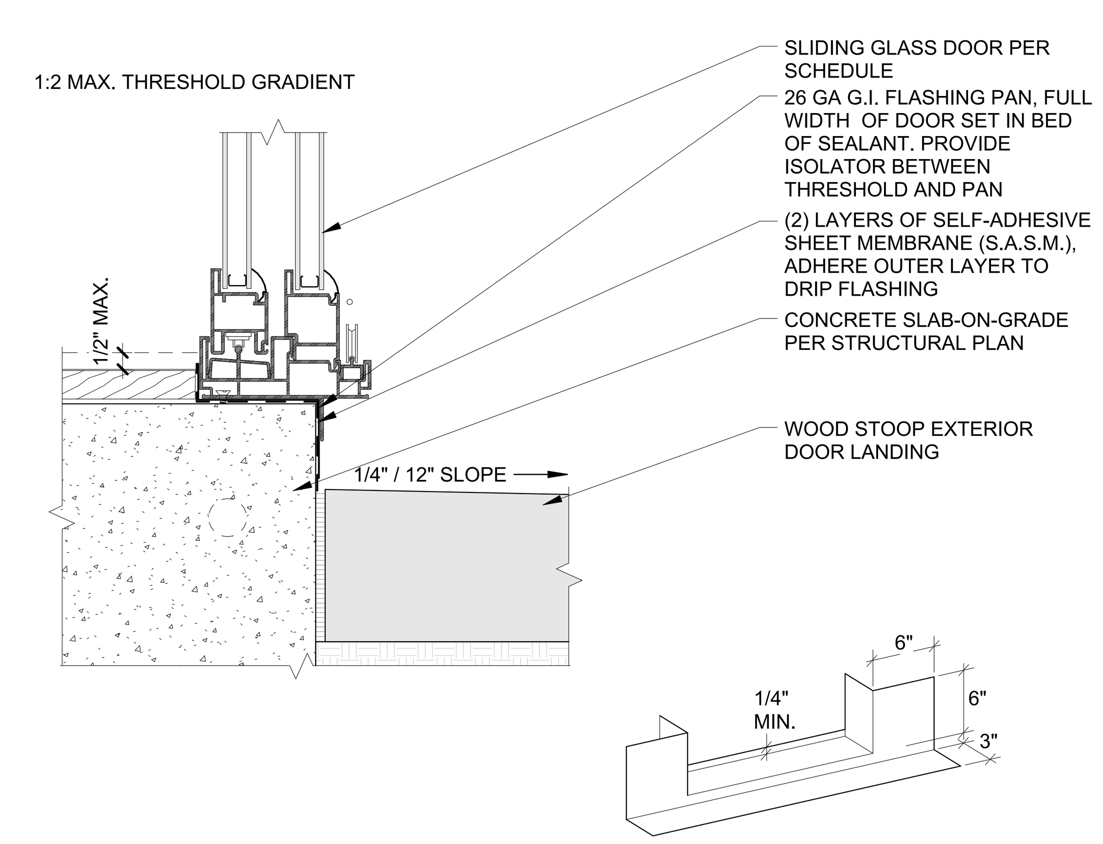
2 DOOR - EXTERIOR DOOR THRESHOLD

SCALE: 3" = 1'-0"



5 SKYLIGHT SECTION

SCALE: 3" = 1'-0"



3 DOOR - SLIDING GLASS DOOR THRESHOLD

SCALE: 3" = 1'-0"

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GENERIC DOOR, WINDOW & MISC. DETAILS

A501

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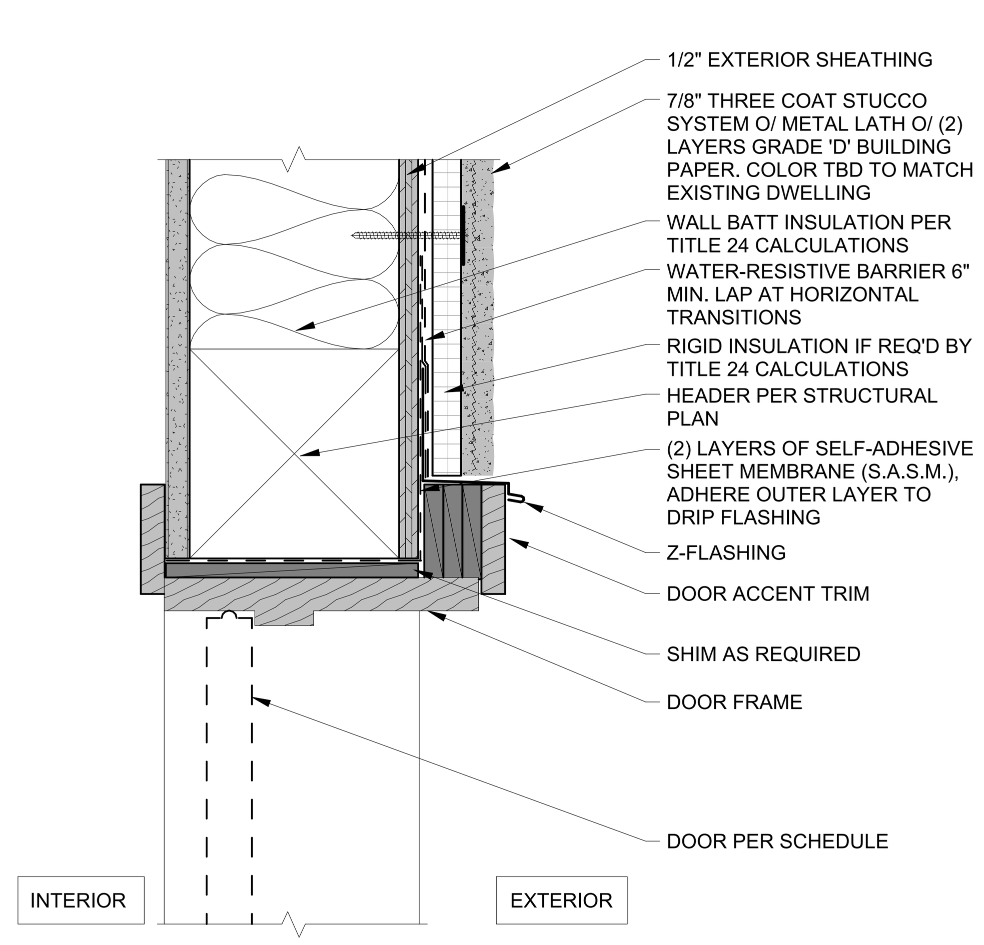
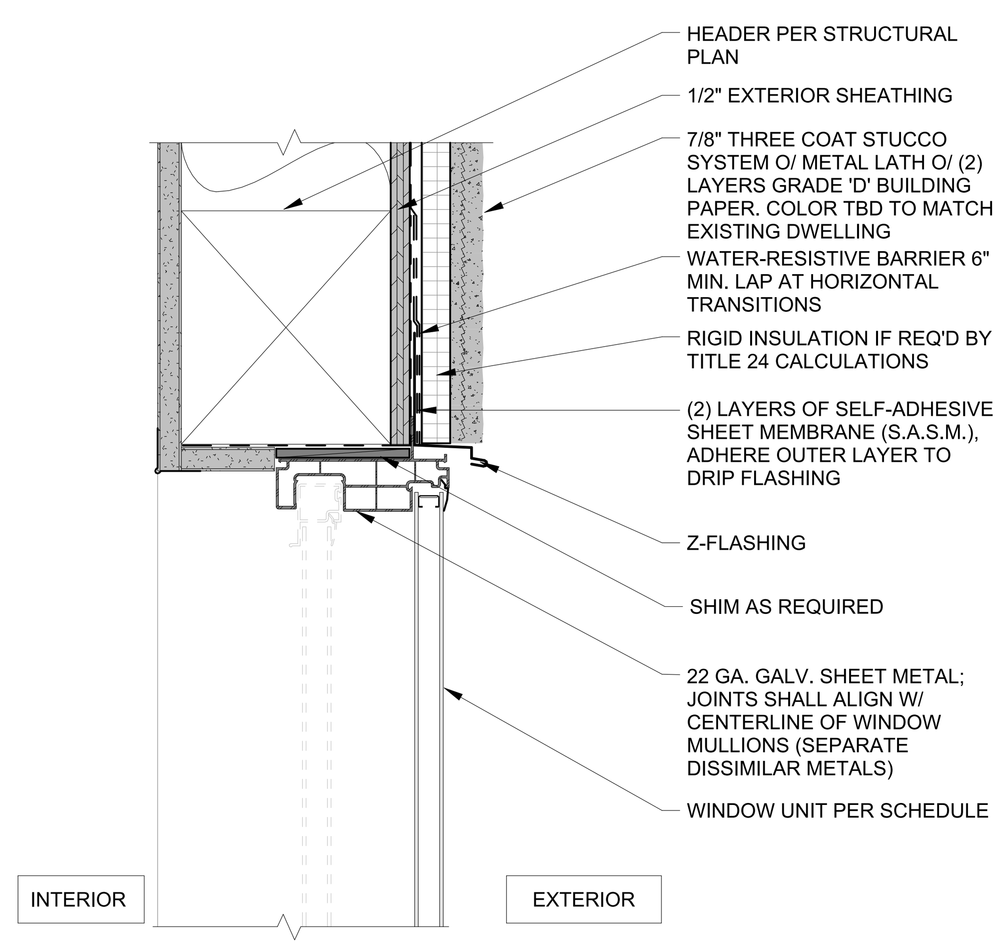
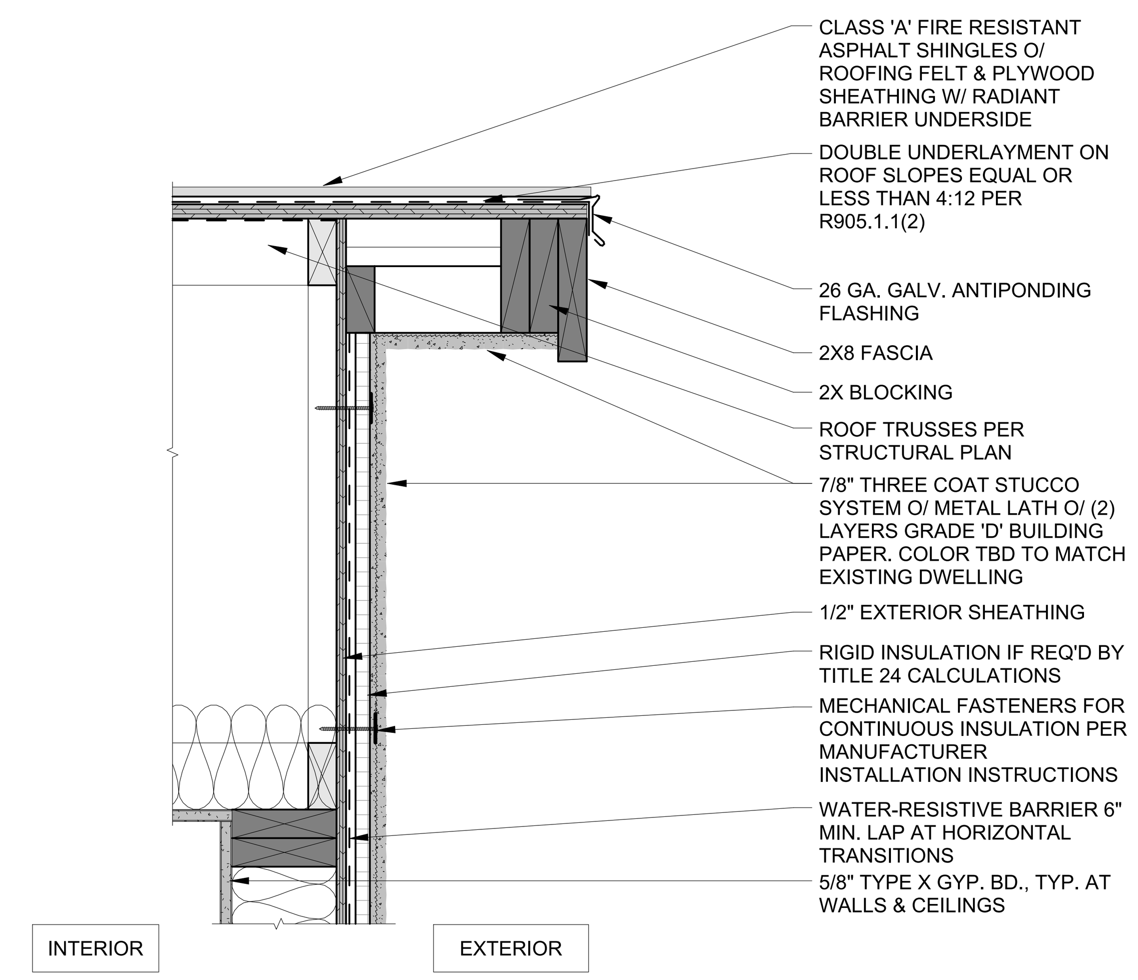


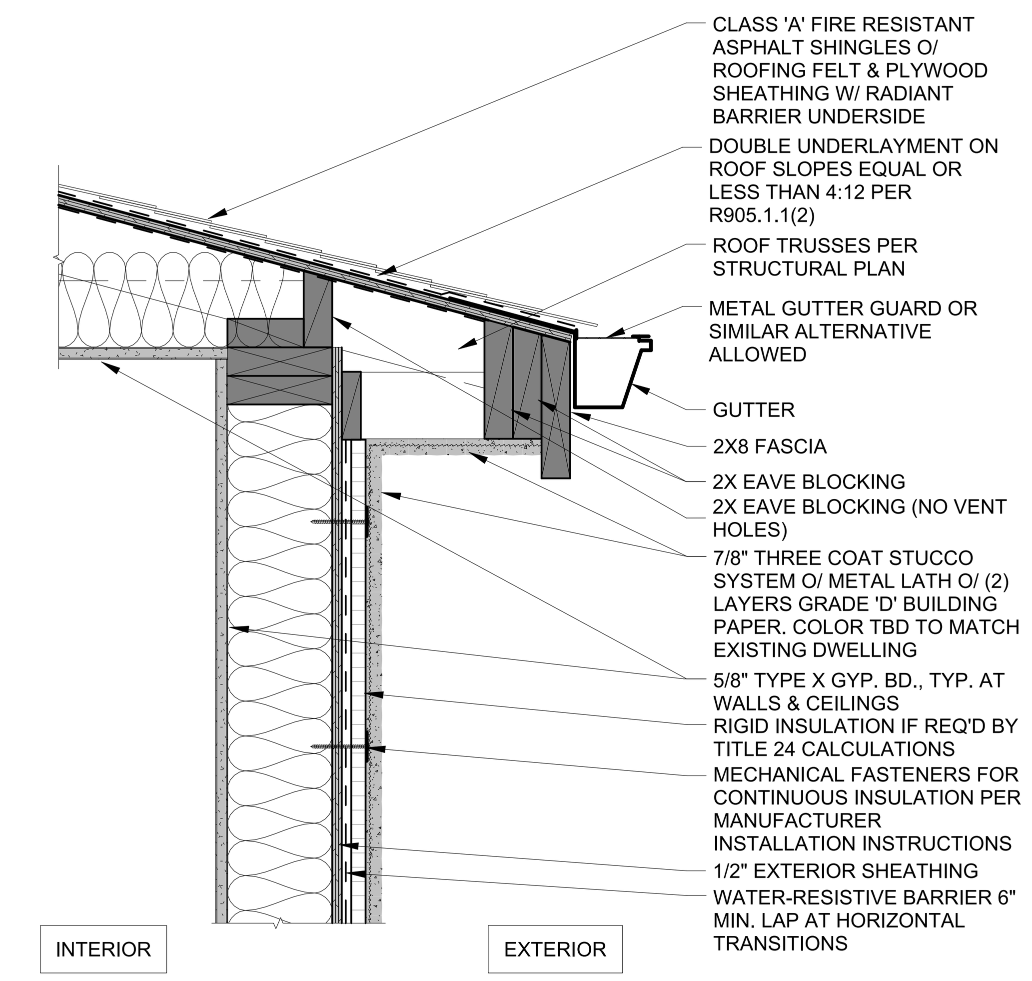
10 DOOR - EXTERIOR HEAD @ STUCCO W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



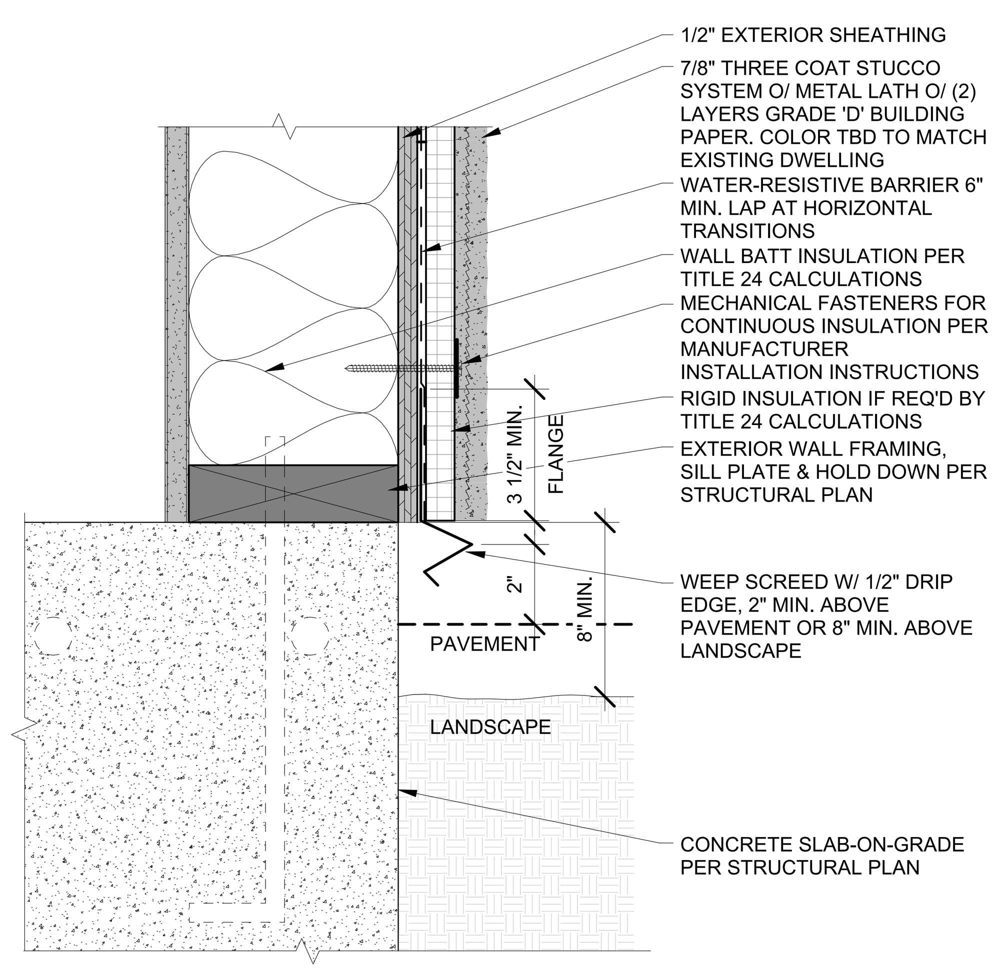
7 WINDOW - EXTERIOR HEAD @ STUCCO W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



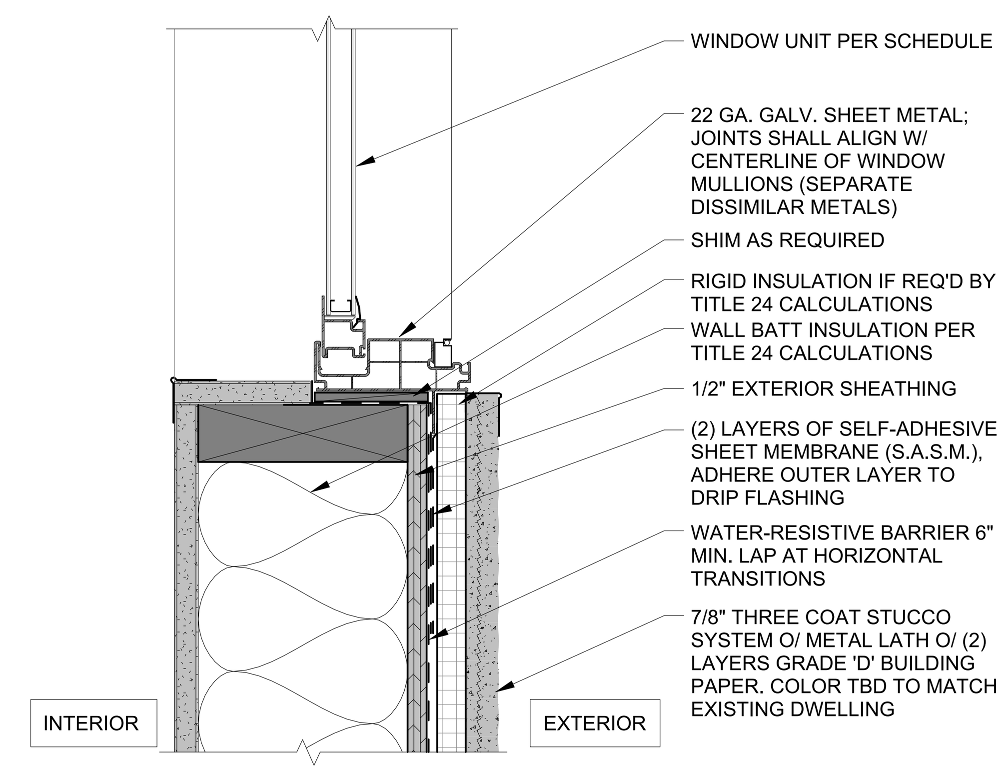
4 A1 - ROOF RAKE - SHINGLE PROTECTED W/ CONT. INSULATION AND STUCCO
SCALE: 1 1/2" = 1'-0"



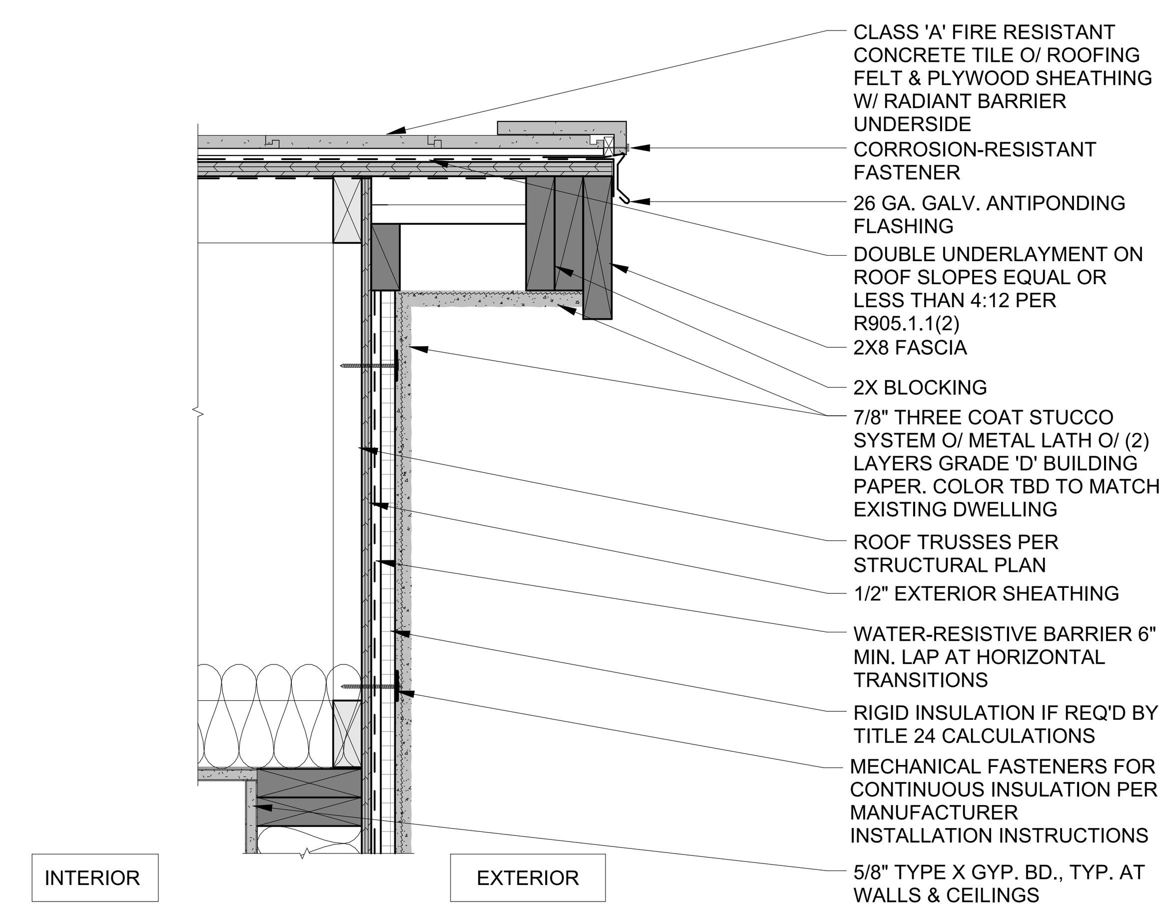
1 A1 - ROOF EAVE - SHINGLE PROTECTED W/ CONT. INSULATION AND STUCCO
SCALE: 1 1/2" = 1'-0"



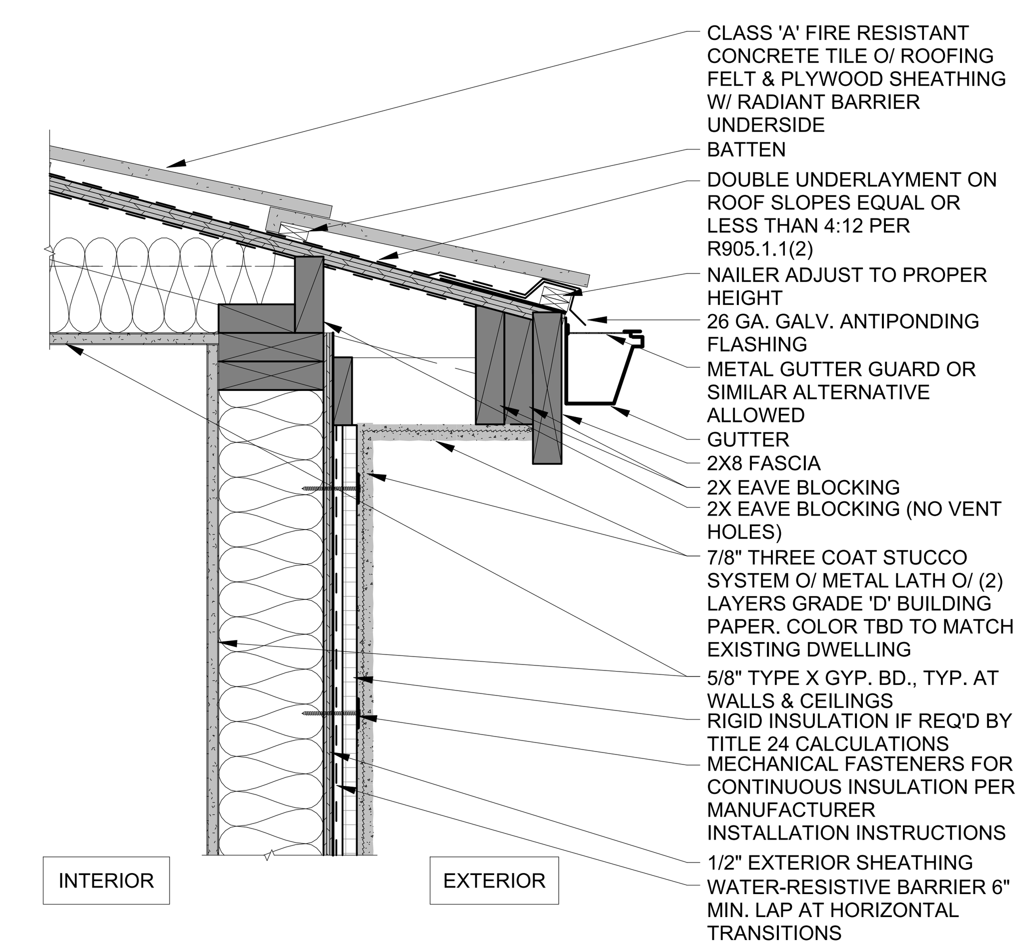
11 WALL - EXTERIOR STUCCO SCREED W/ CONT. INSULATION
SCALE: 3" = 1'-0"



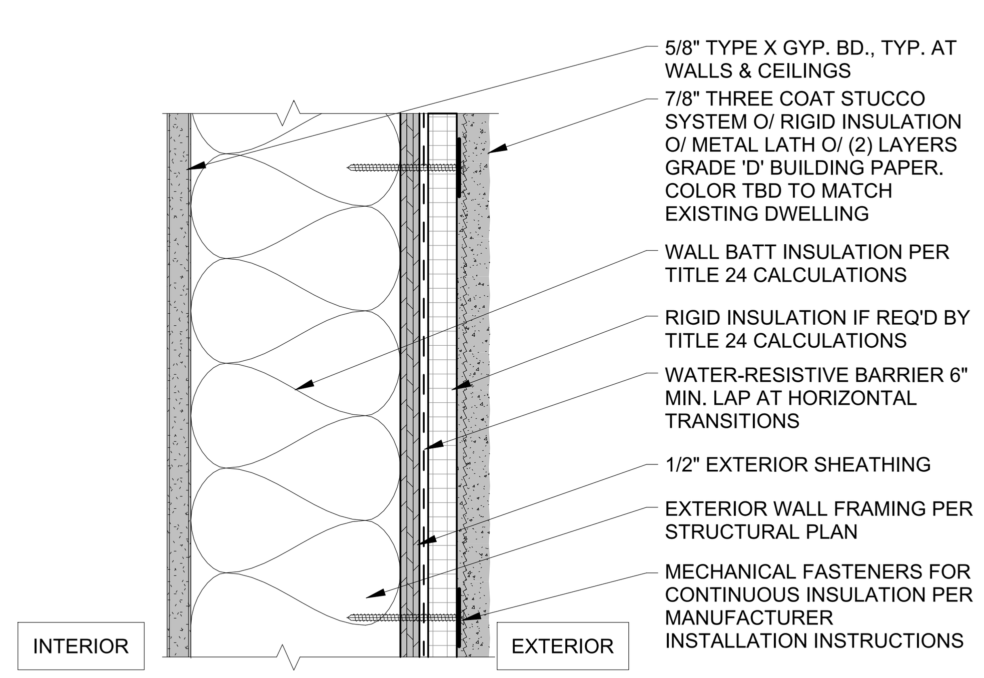
8 WINDOW - EXTERIOR SILL @ STUCCO W/ CONT. INSULATION
SCALE: 3" = 1'-0"



5 A2 - ROOF RAKE - CEMENT PROTECTED W/ CONT. INSULATION AND STUCCO
SCALE: 1 1/2" = 1'-0"



2 A2 - ROOF EAVE - CEMENT PROTECTED W/ CONT. INSULATION AND STUCCO
SCALE: 1 1/2" = 1'-0"

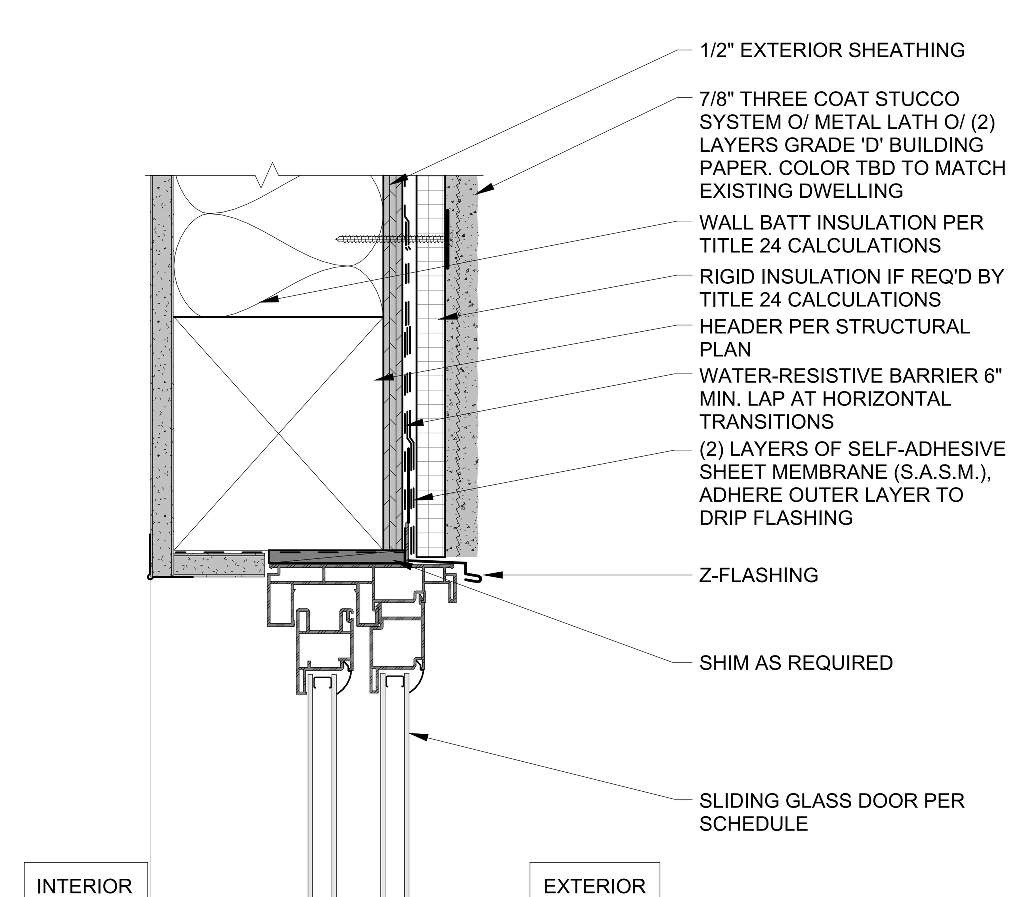


2022 CBC TABLE 721.1(2) ITEM # 15-1.13	2" × 6" WOOD STUDS AT 16" WITH DOUBLE TOP PLATES, SINGLE BOTTOM PLATE; INTERIOR AND EXTERIOR SIDES COVERED WITH 5/8" TYPE X GYPSUM WALLBOARD, 4' WIDE, APPLIED VERTICALLY WITH ALL JOINTS OVER FRAMING OR BLOCKING AND FASTENED WITH 21/4" TYPE S DRYWALL SCREWS, SPACED 12" ON CENTER. R-19 MINERAL FIBER INSULATION INSTALLED IN STUD CAVITY

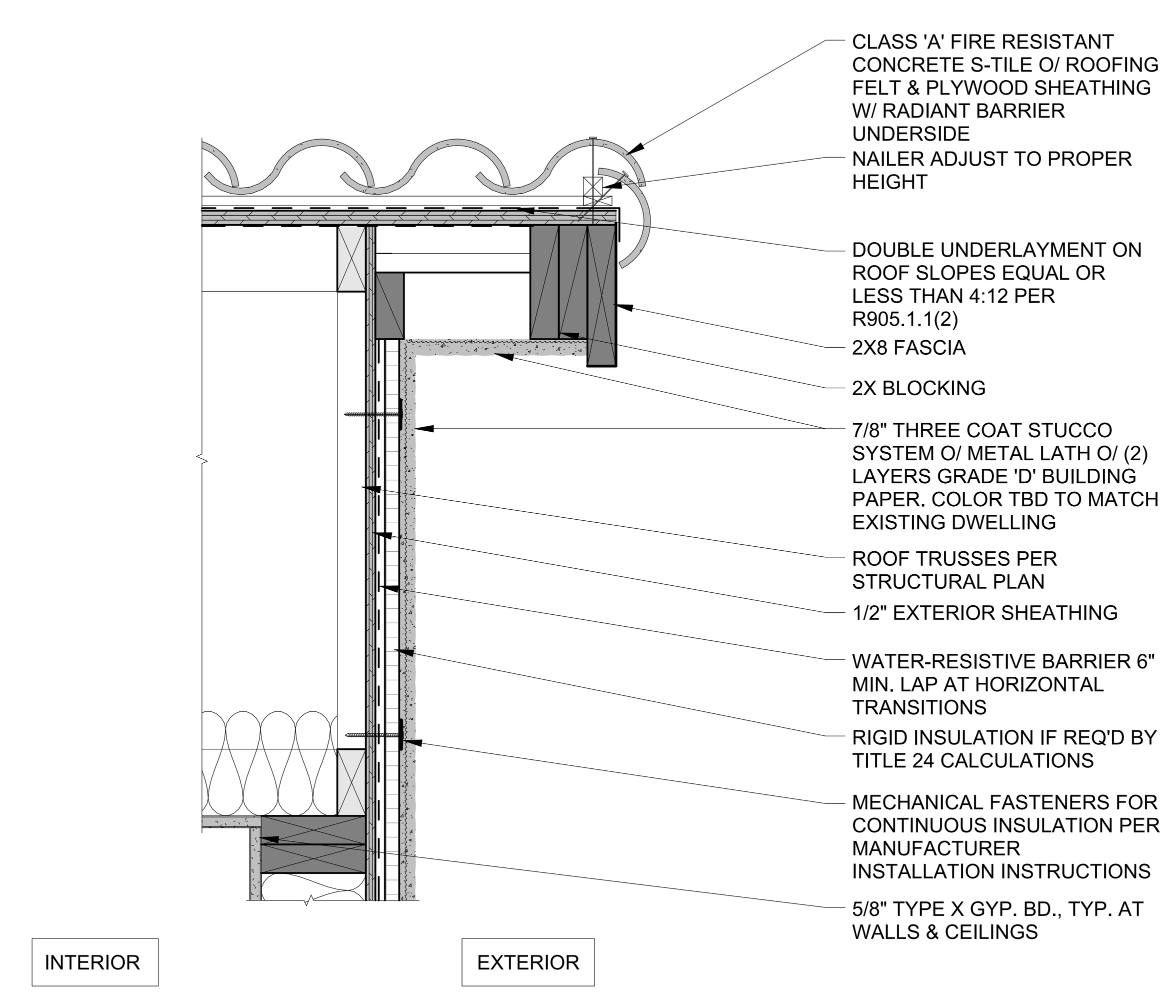
NOTES:

- ADDITION OF PLYWOOD SHEATHING TO THIS ASSEMBLY DOES NOT LESSEN FIRE RESISTANCE.

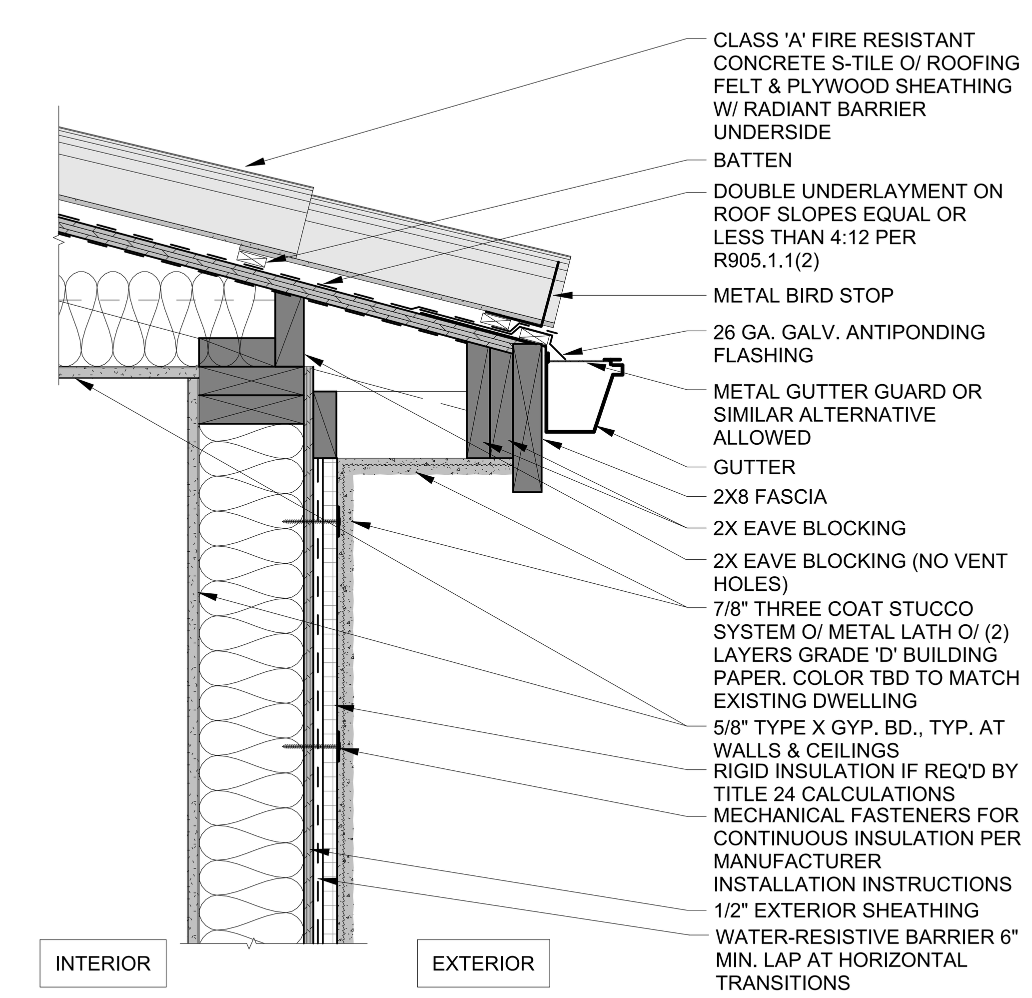
12 A - WALL - EXTERIOR 1-HOUR RATED - STUCCO W/ CONT. INSULATION
SCALE: 3" = 1'-0"



9 DOOR - SLIDING GLASS DOOR HEAD @ STUCCO W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



6 A3 - ROOF RAKE - S-TILE PROTECTED W/ CONT. INSULATION AND STUCCO
SCALE: 1 1/2" = 1'-0"



3 A3 - ROOF EAVE - S-TILE PROTECTED W/ CONT. INSULATION AND STUCCO
SCALE: 1 1/2" = 1'-0"

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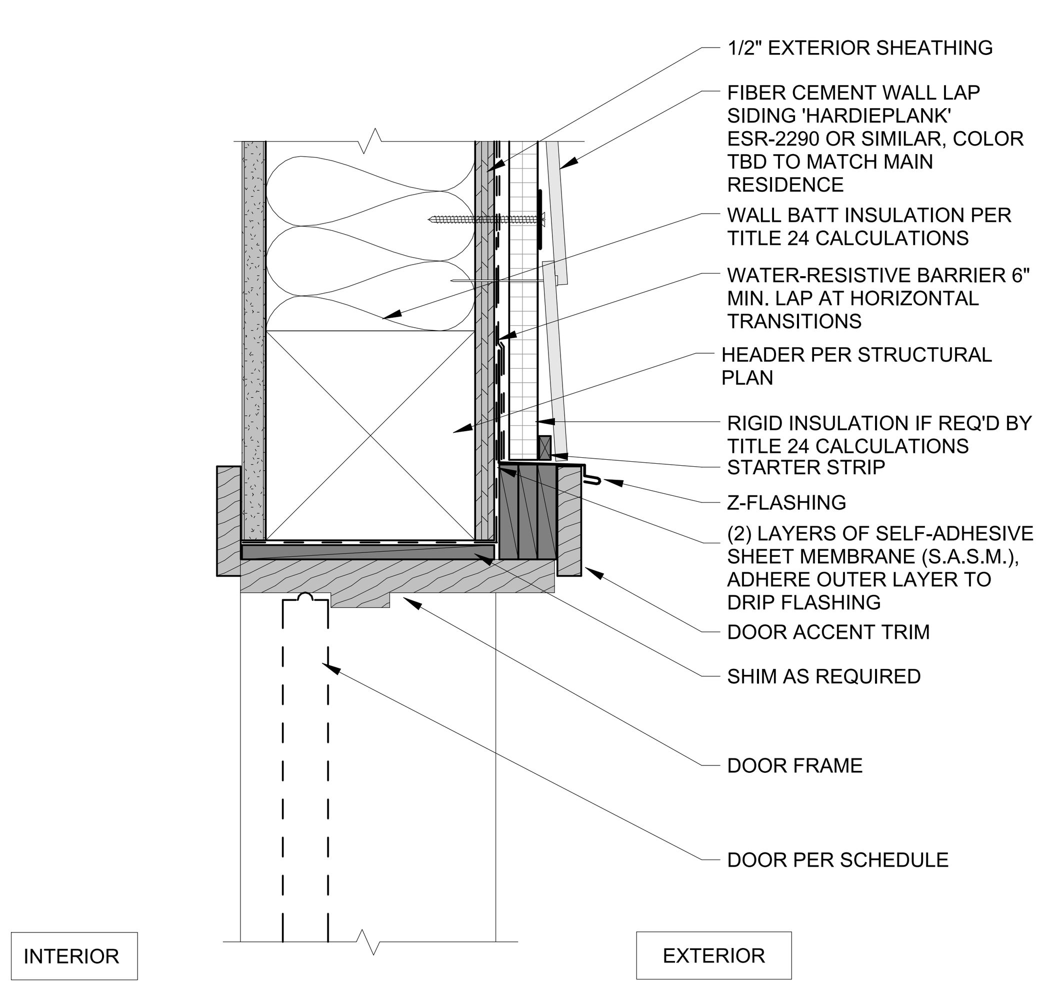
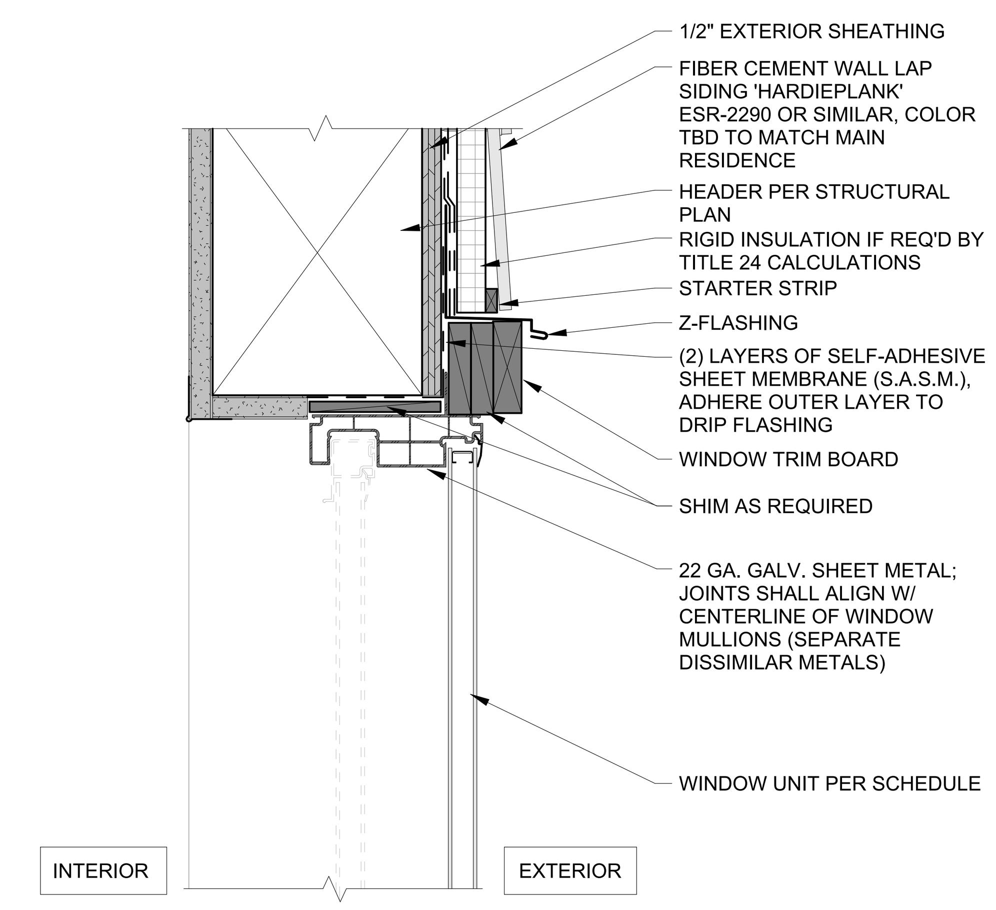
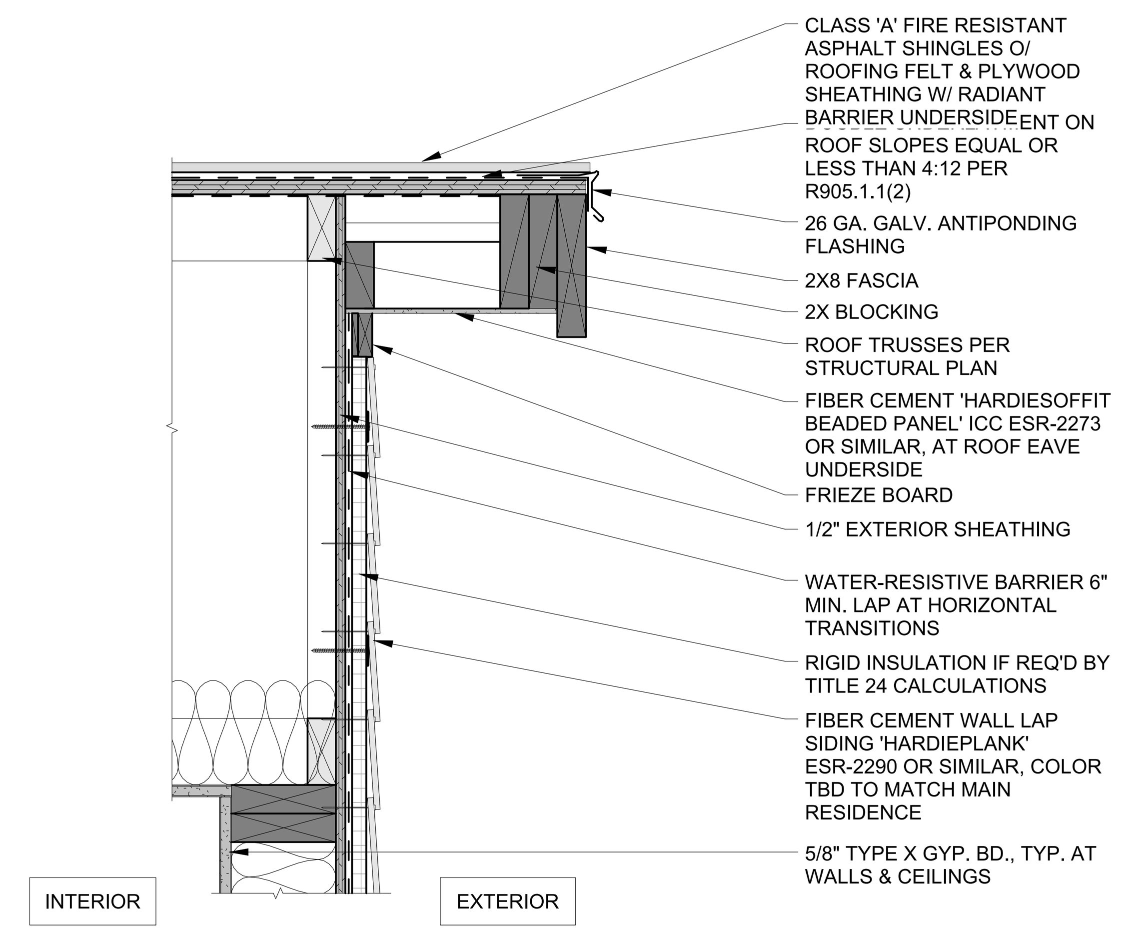


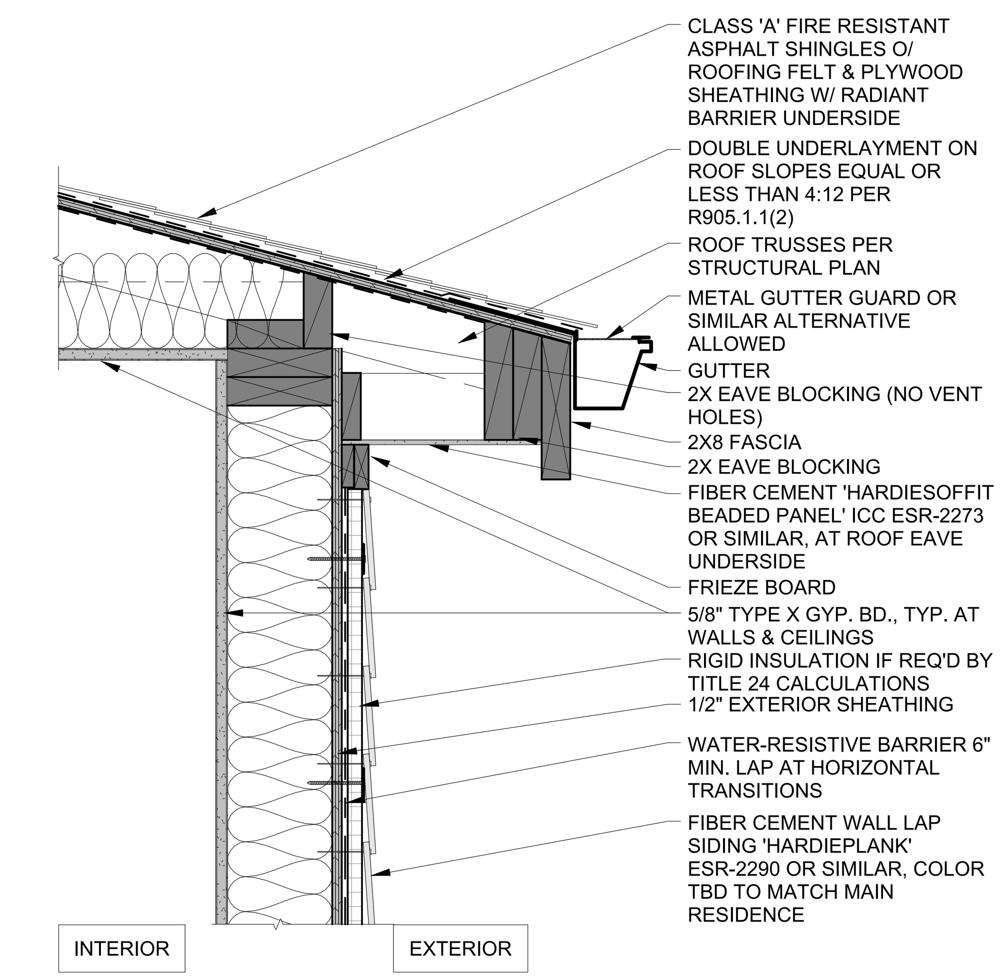
10 DOOR - EXTERIOR HEAD @ SIDING W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



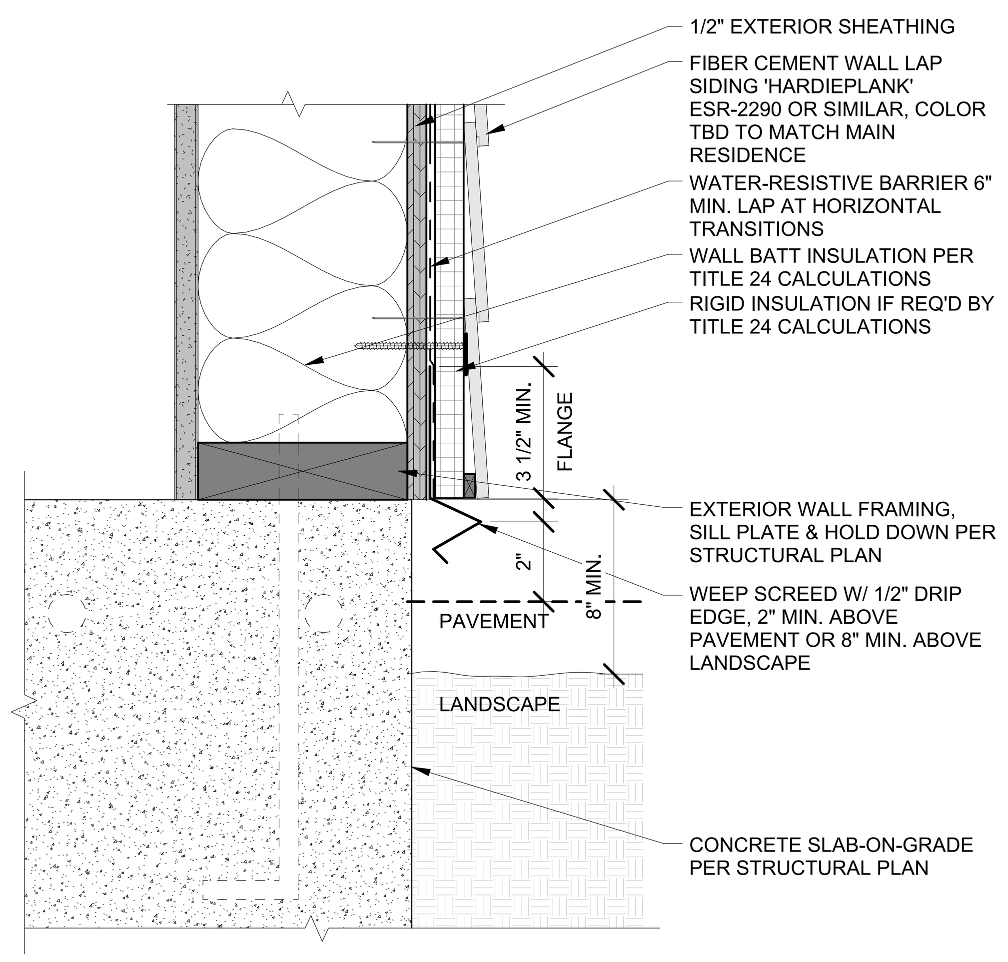
7 WINDOW - EXTERIOR HEAD @ SIDING W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



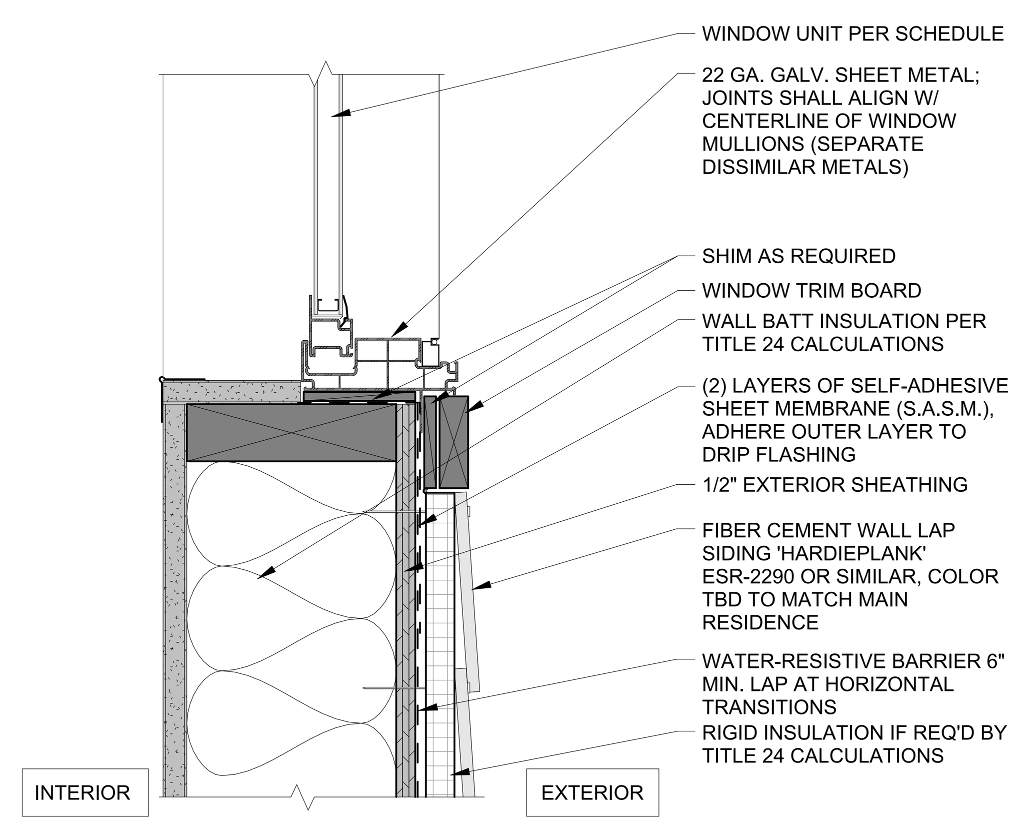
4 B1 - ROOF RAKE - SHINGLE PROTECTED W/ CONT. INSULATION AND SIDING
SCALE: 1 1/2" = 1'-0"



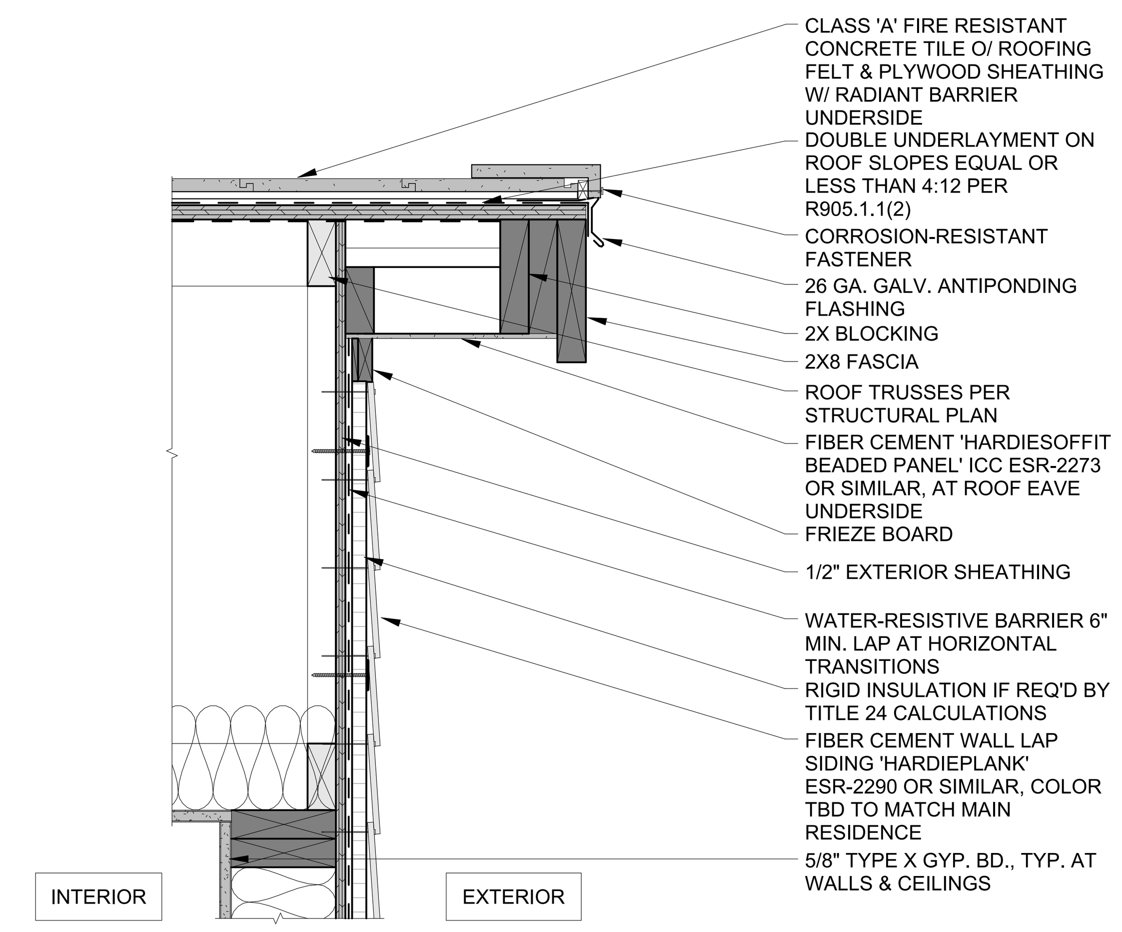
1 B1 - ROOF EAVE - SHINGLE PROTECTED W/ CONT. INSULATION AND SIDING
SCALE: 1 1/2" = 1'-0"



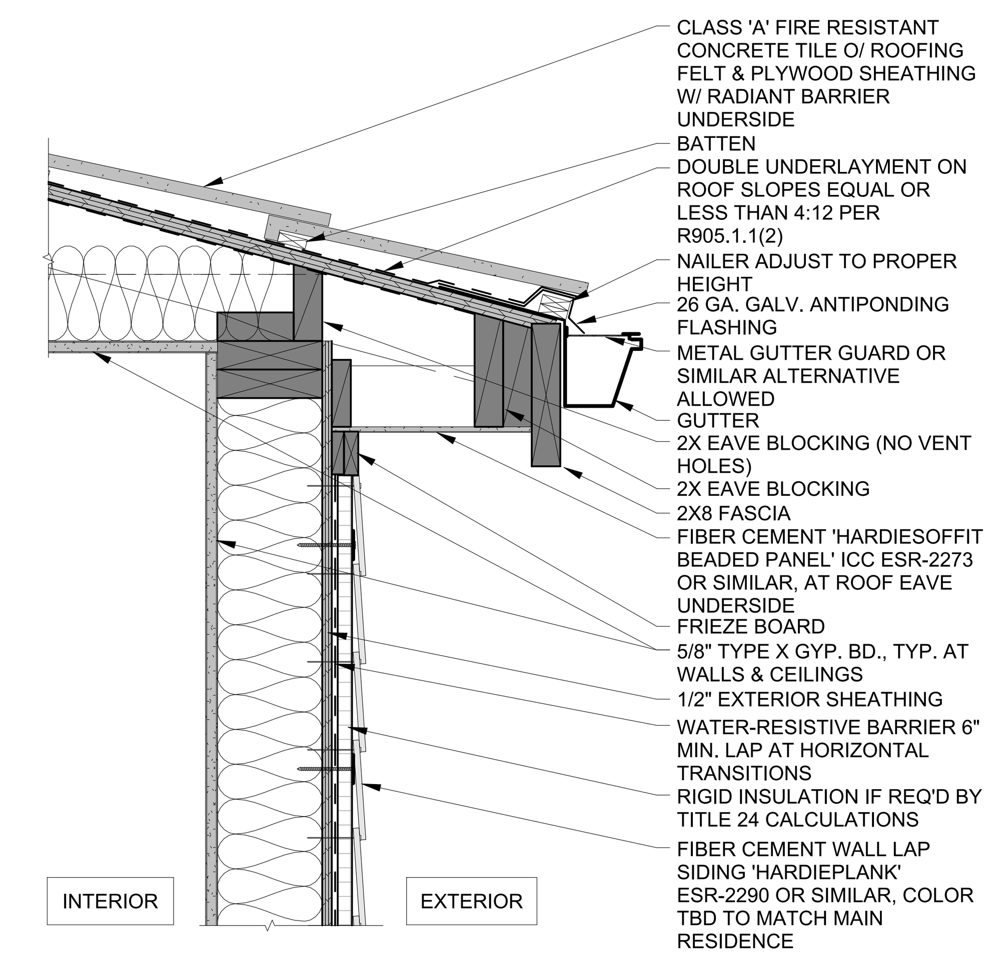
11 WALL - EXTERIOR SIDING SCREED W/ CONT. INSULATION
SCALE: 3" = 1'-0"



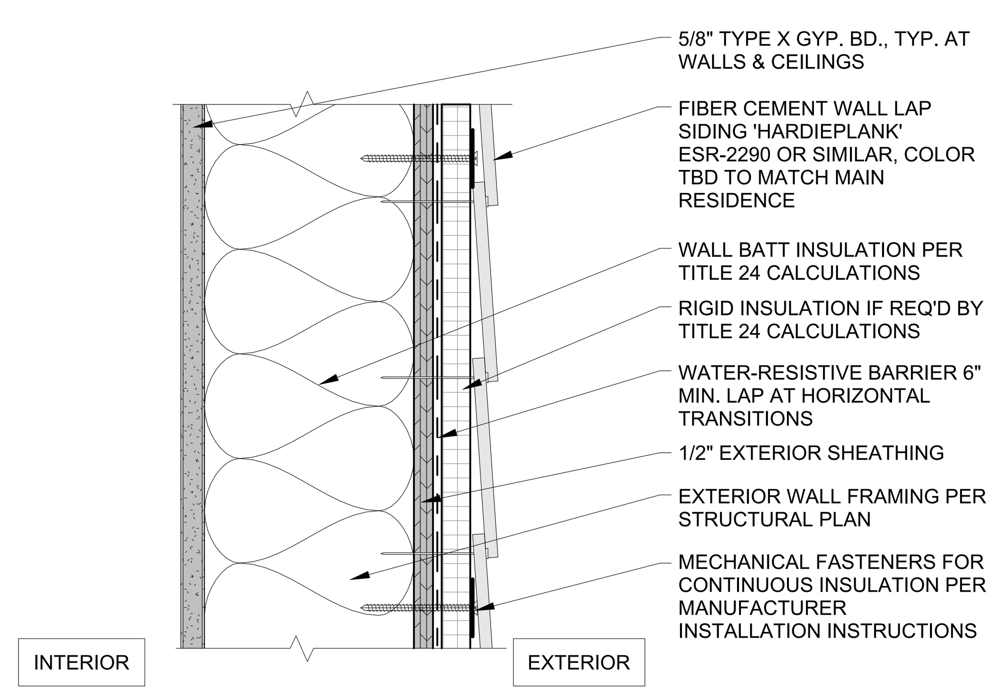
8 WINDOW - EXTERIOR SILL @ SIDING W/ CONT. INSULATION
SCALE: 3" = 1'-0"



5 B2 - ROOF RAKE - CEMENT PROTECTED W/ CONT. INSULATION AND SIDING
SCALE: 1 1/2" = 1'-0"



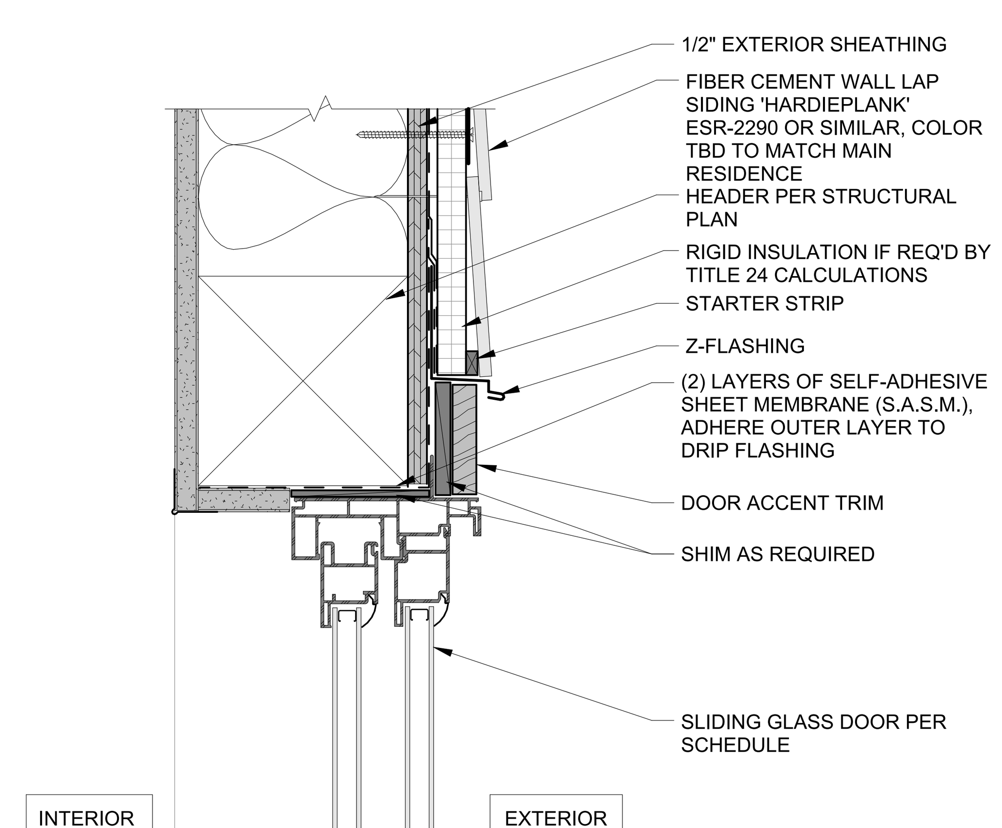
2 B2 - ROOF EAVE - CEMENT PROTECTED W/ CONT. INSULATION AND SIDING
SCALE: 1 1/2" = 1'-0"



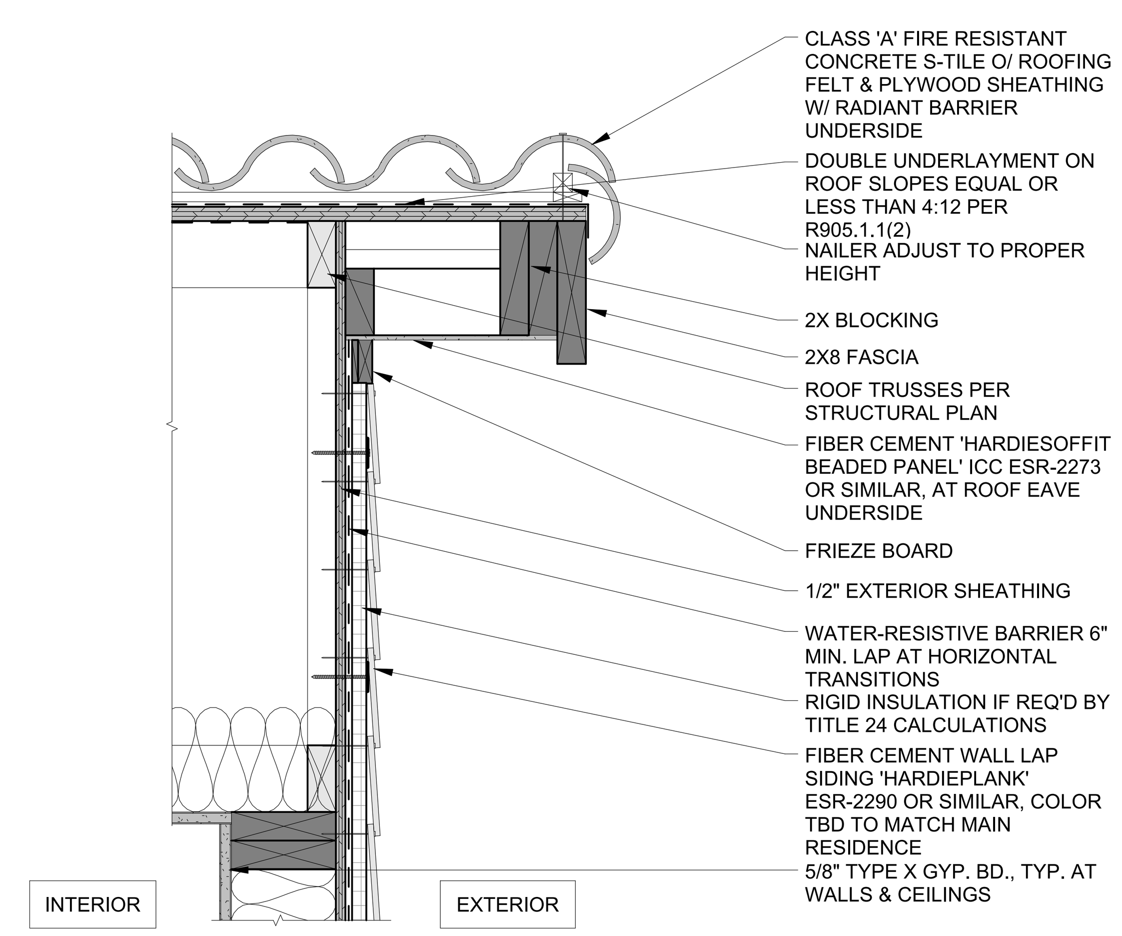
NOTES:

- ADDITION OF PLYWOOD SHEATHING TO THIS ASSEMBLY DOES NOT LESSEN FIRE RESISTANCE.
- 1-HR FIRE RATING IS ACHIEVED PER ICC ESR-2290. JAMES HARDIE BUILDING PRODUCTS, INC.

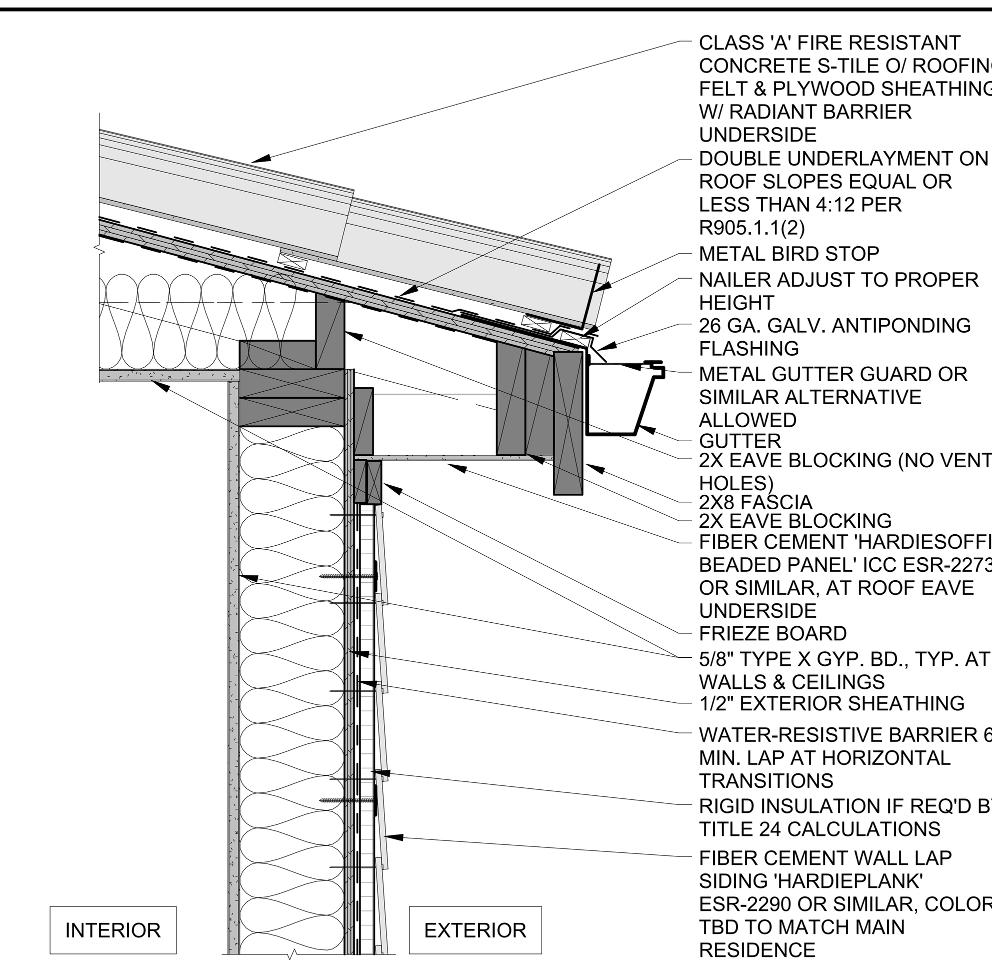
12 B - WALL - EXTERIOR 1-HOUR RATED SIDING W/ CONT. INSULATION
SCALE: 3" = 1'-0"



9 DOOR - SLIDING GLASS DOOR HEAD @ SIDING W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



6 B3 - ROOF RAKE - S-TILE PROTECTED W/ CONT. INSULATION AND SIDING
SCALE: 1 1/2" = 1'-0"



3 B3 - ROOF EAVE - S-TILE PROTECTED W/ CONT. INSULATION AND SIDING
SCALE: 1 1/2" = 1'-0"

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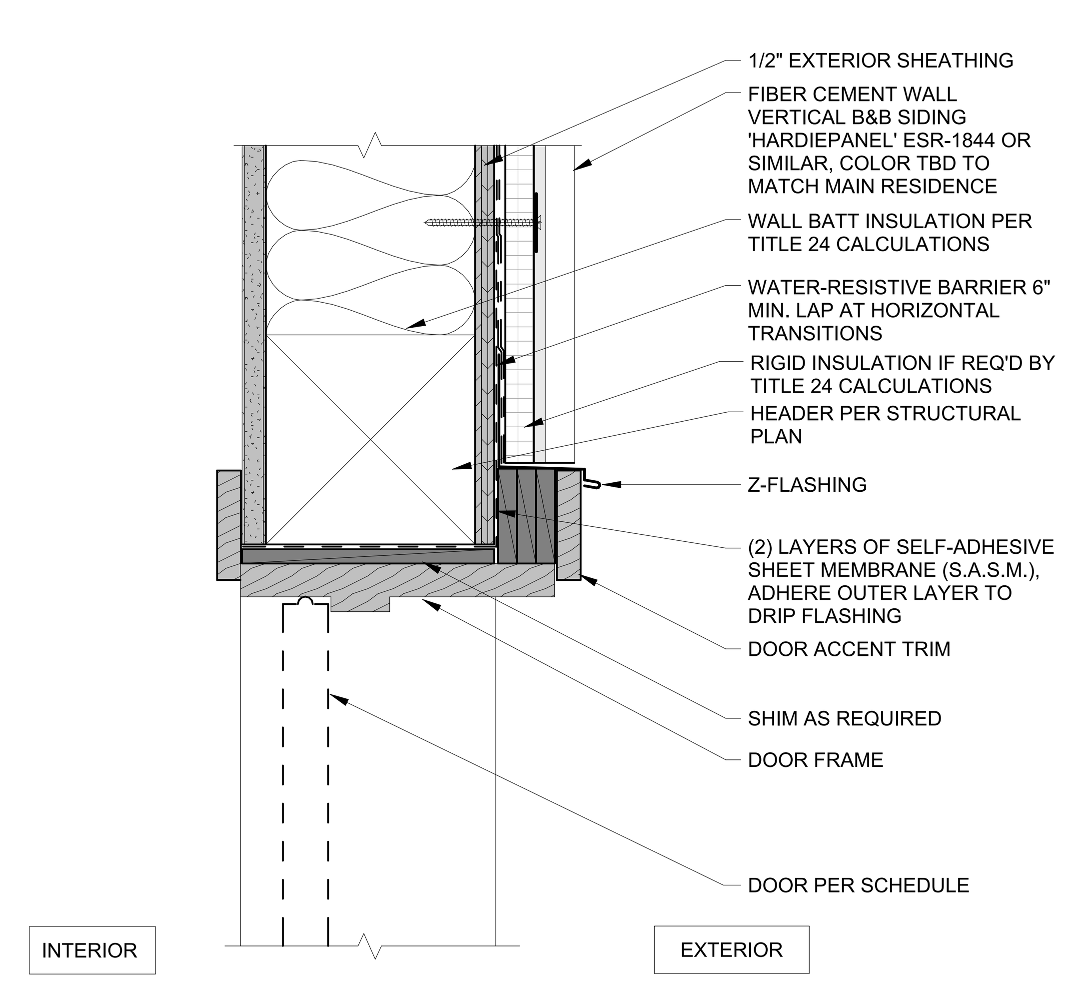
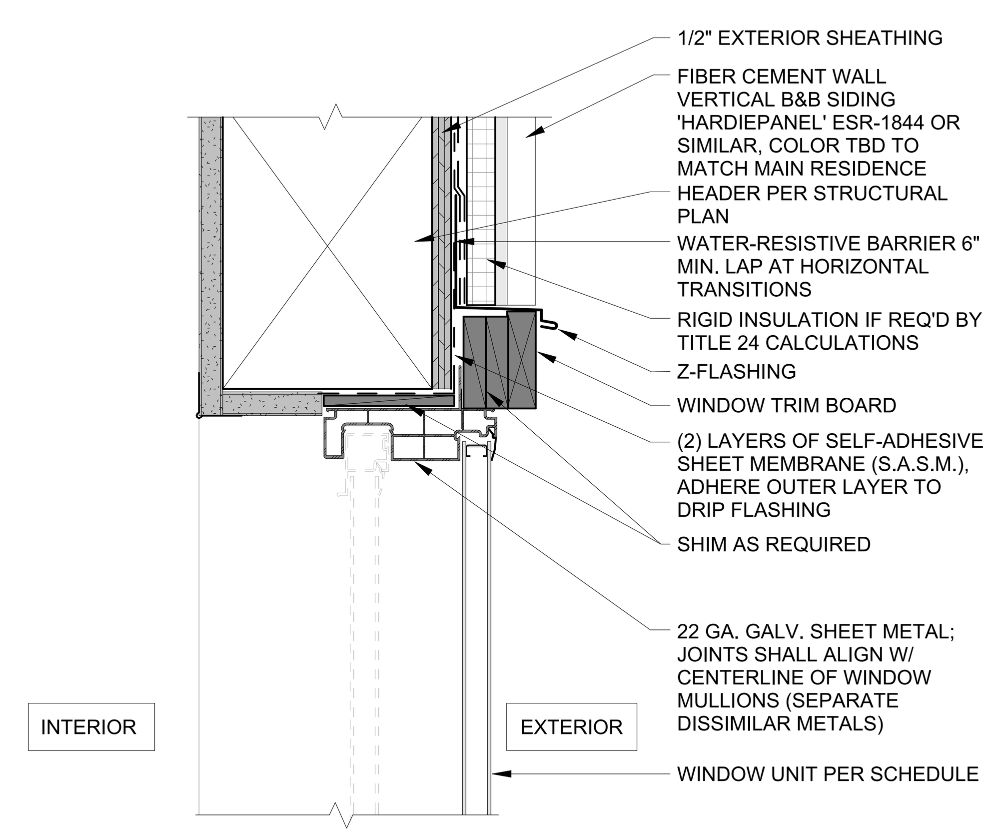
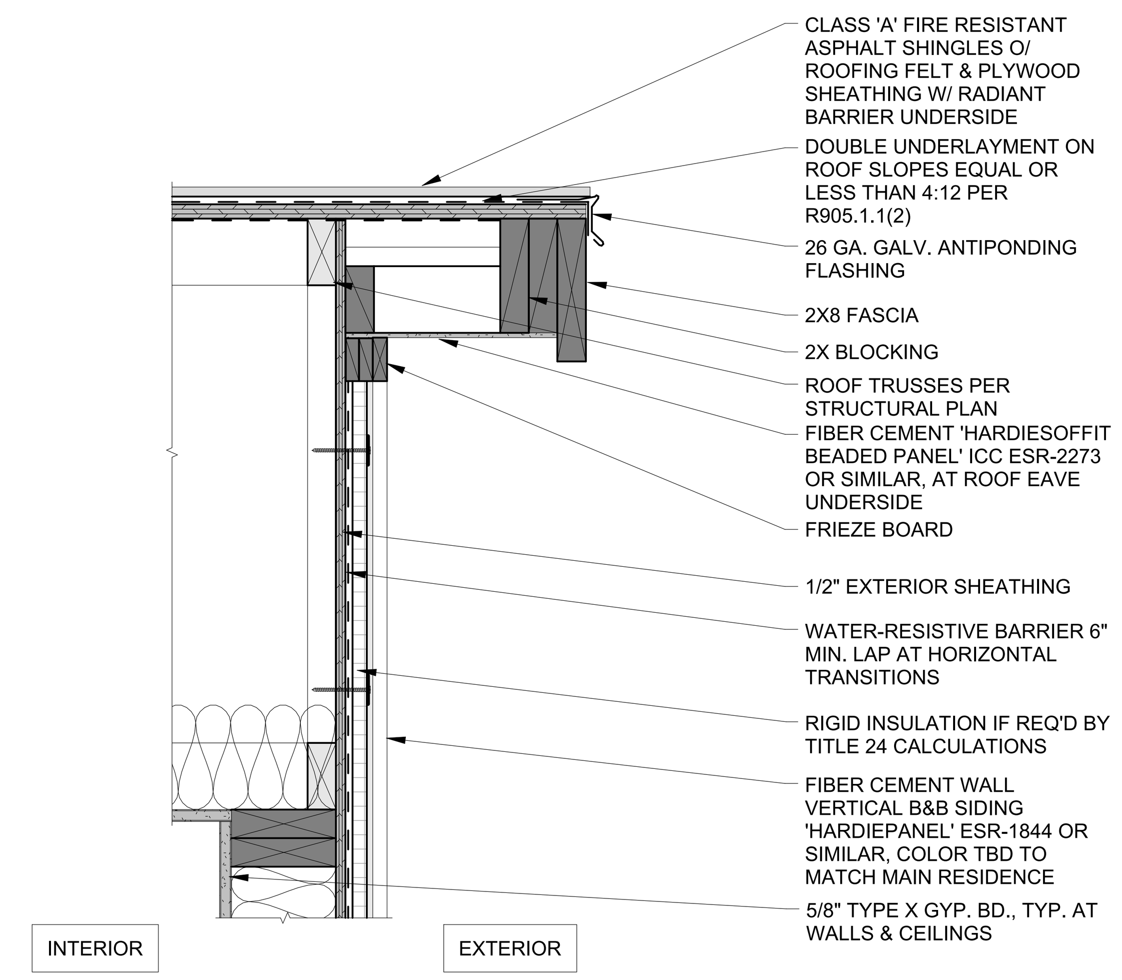


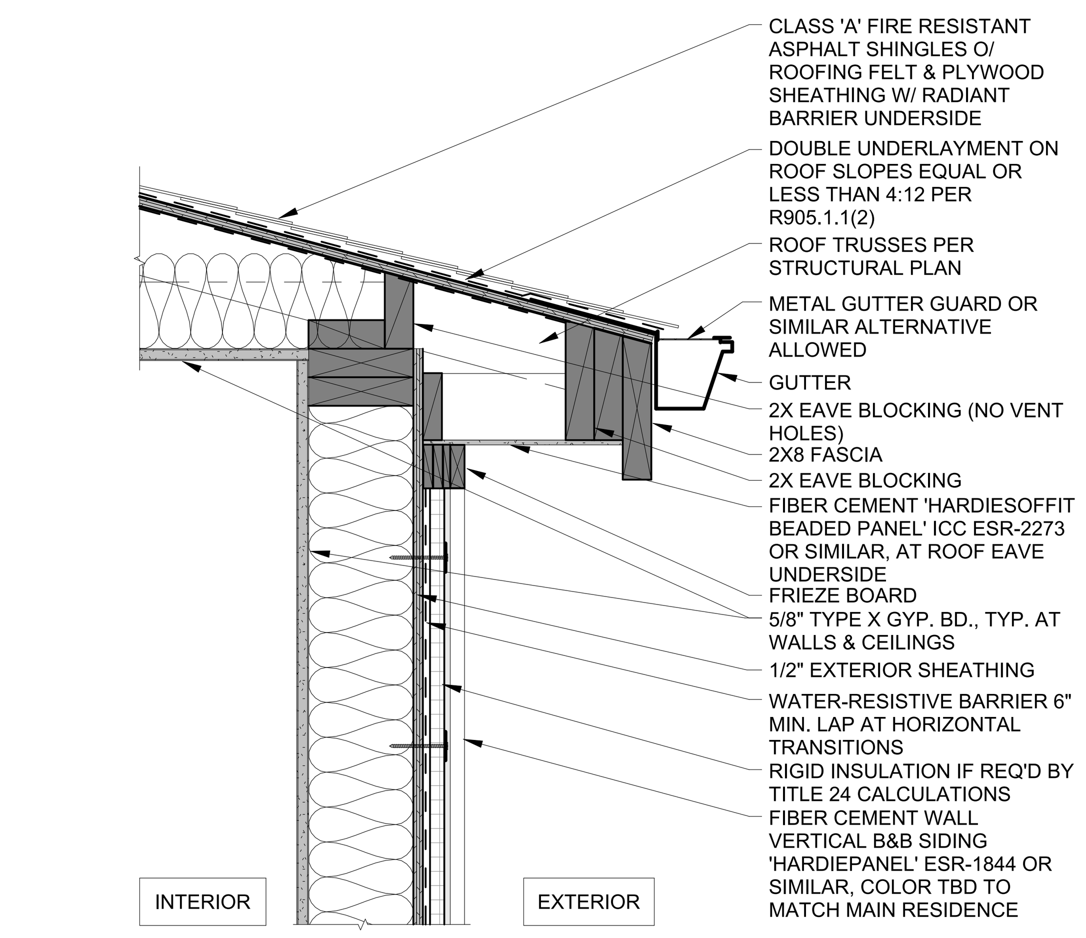
10 DOOR - EXTERIOR HEAD @ B&B W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



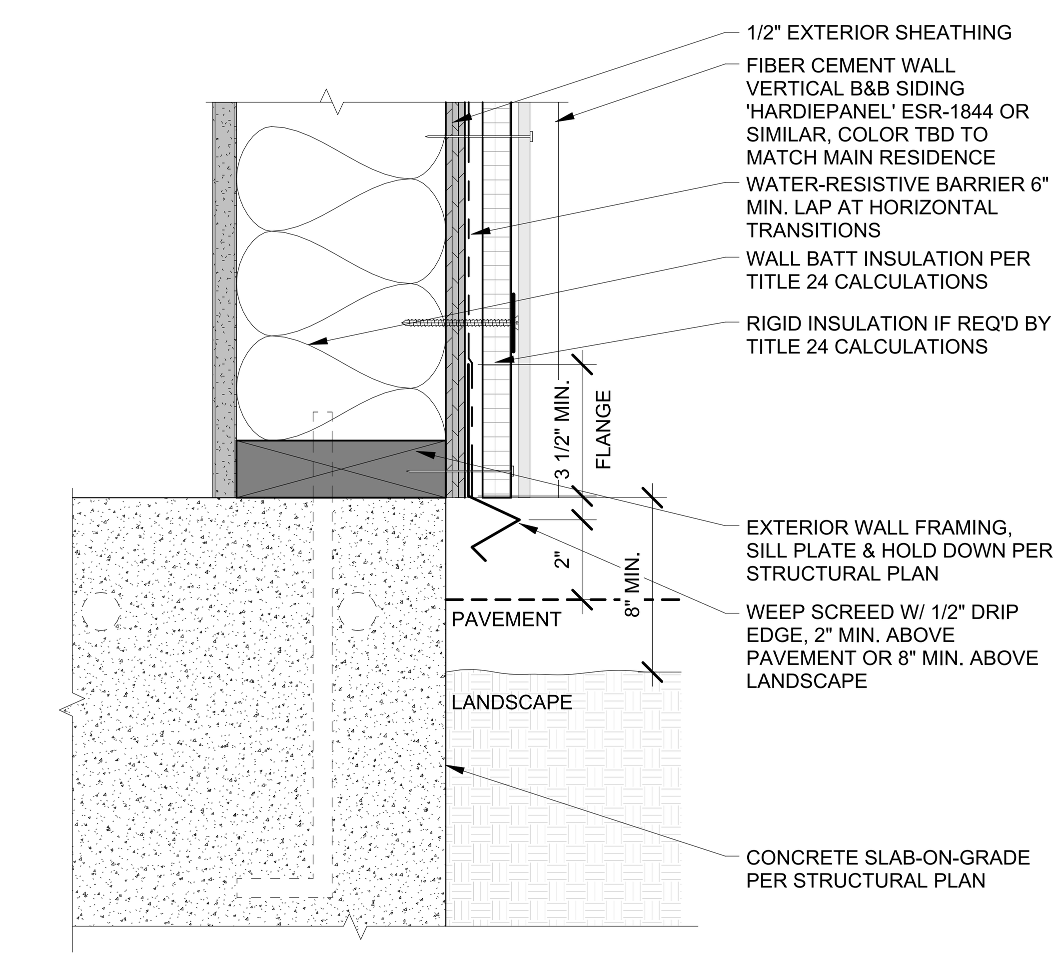
7 WINDOW - EXTERIOR HEAD @ B&B W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



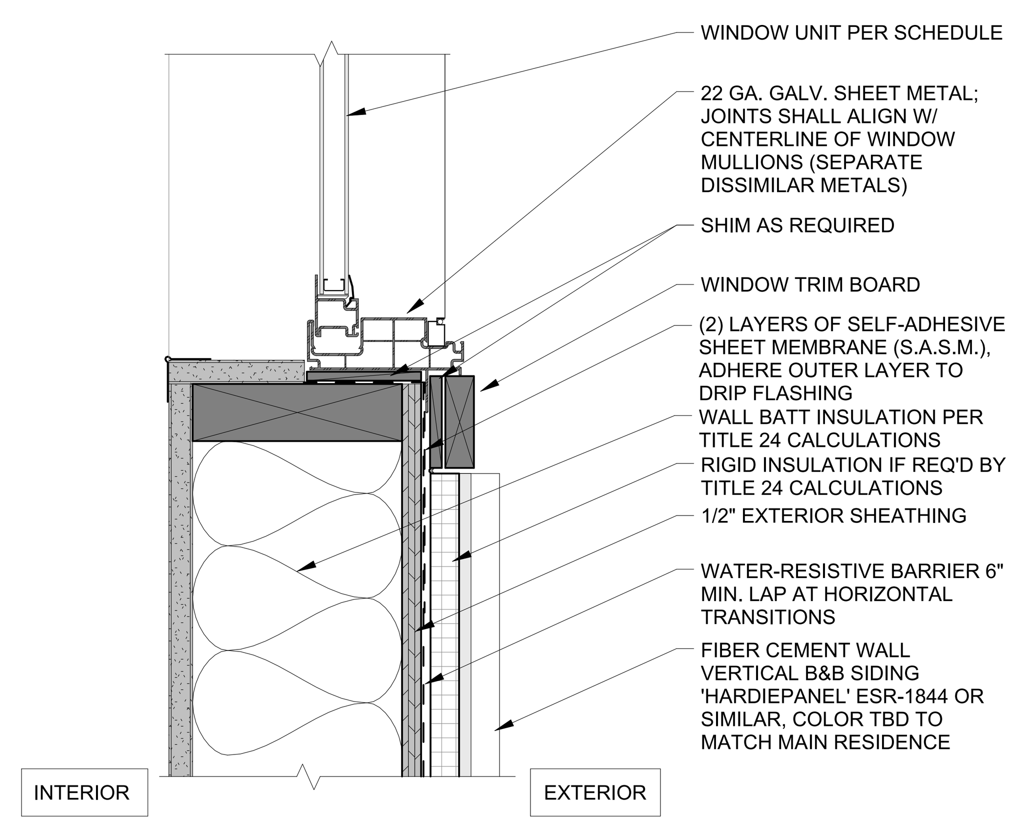
4 C1 - ROOF RAKE - SHINGLE PROTECTED W/ CONT. INSULATION AND B&B
SCALE: 1 1/2" = 1'-0"



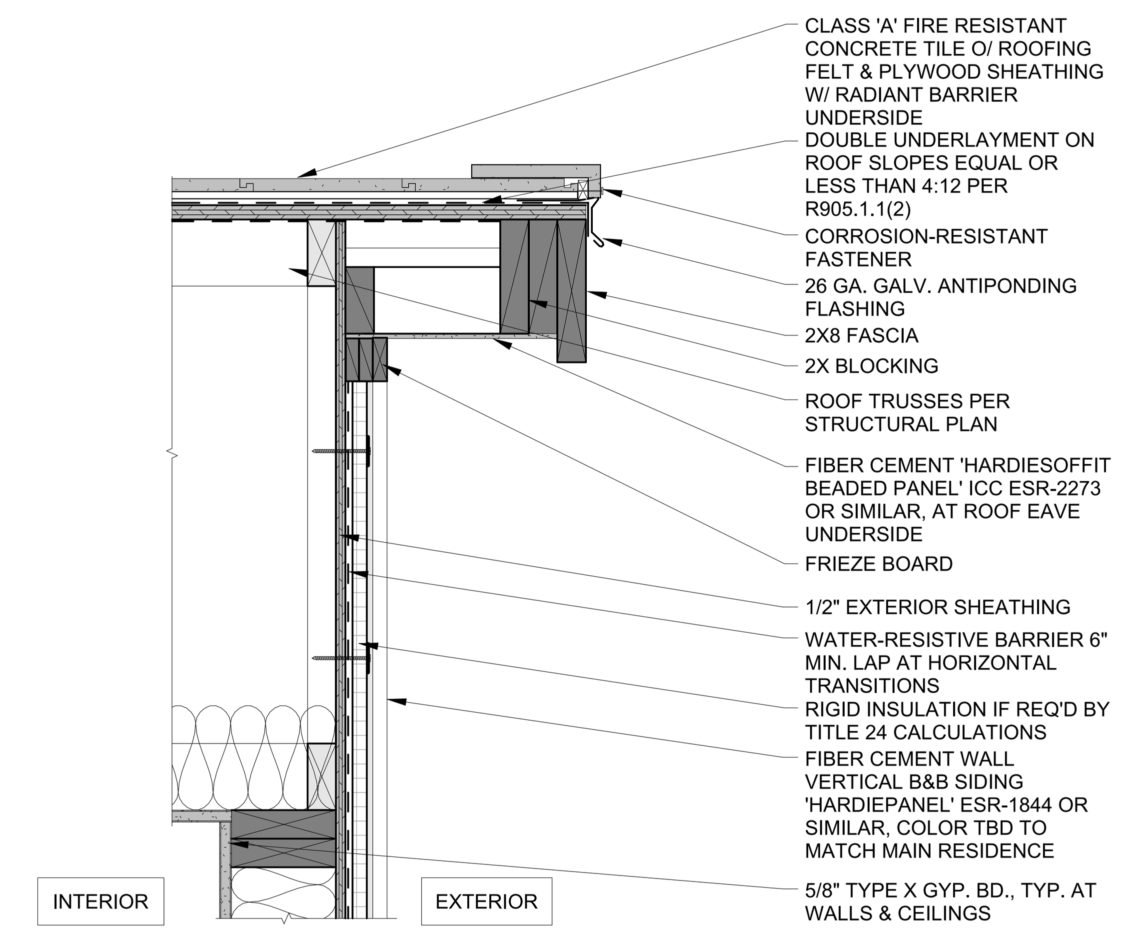
1 C1 - ROOF EAVE - SHINGLE PROTECTED W/ CONT. INSULATION AND B&B
SCALE: 1 1/2" = 1'-0"



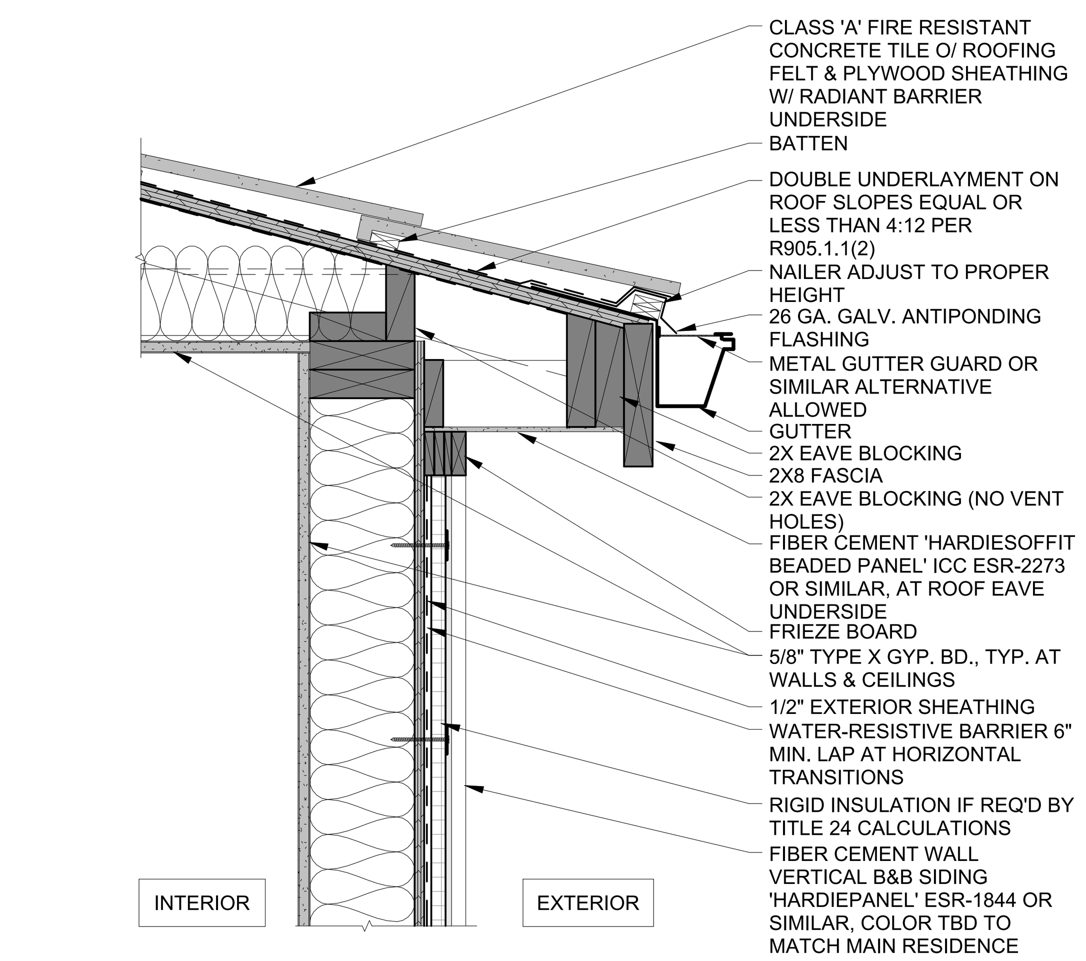
11 WALL - EXTERIOR B&B SCREED W/ CONT. INSULATION
SCALE: 3" = 1'-0"



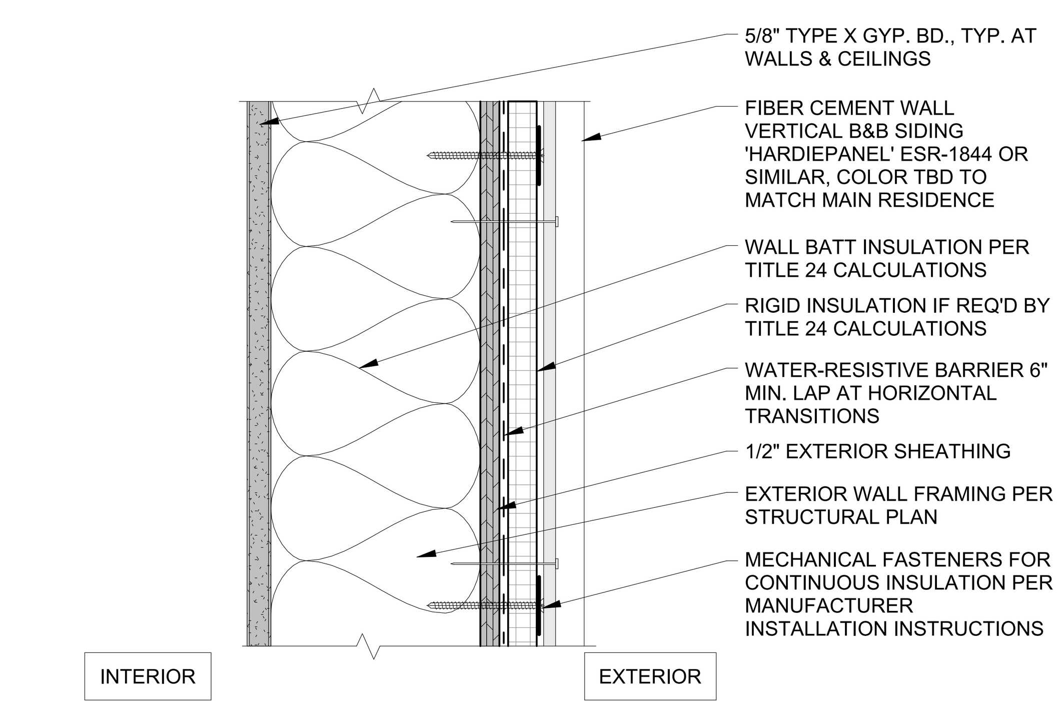
8 WINDOW - EXTERIOR SILL @ B&B W/ CONT. INSULATION
SCALE: 3" = 1'-0"



5 C2 - ROOF RAKE - CEMENT PROTECTED W/ CONT. INSULATION AND B&B
SCALE: 1 1/2" = 1'-0"



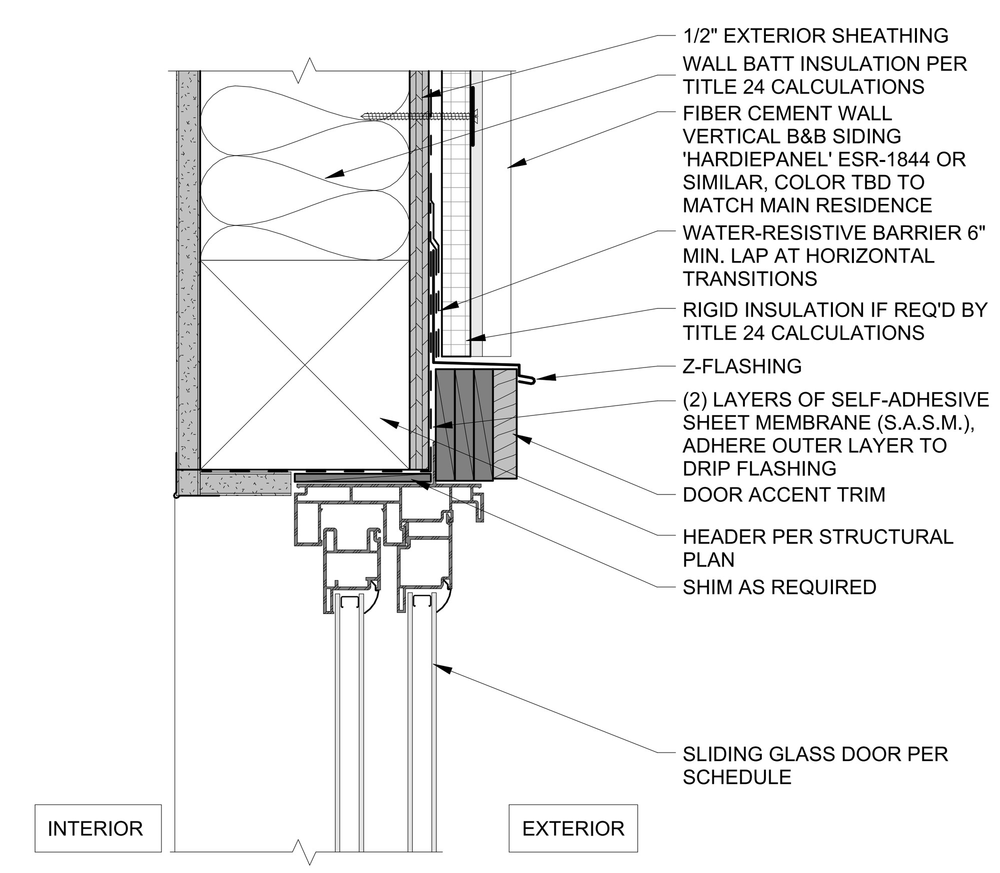
2 C2 - ROOF EAVE - CEMENT PROTECTED W/ CONT. INSULATION AND B&B
SCALE: 1 1/2" = 1'-0"



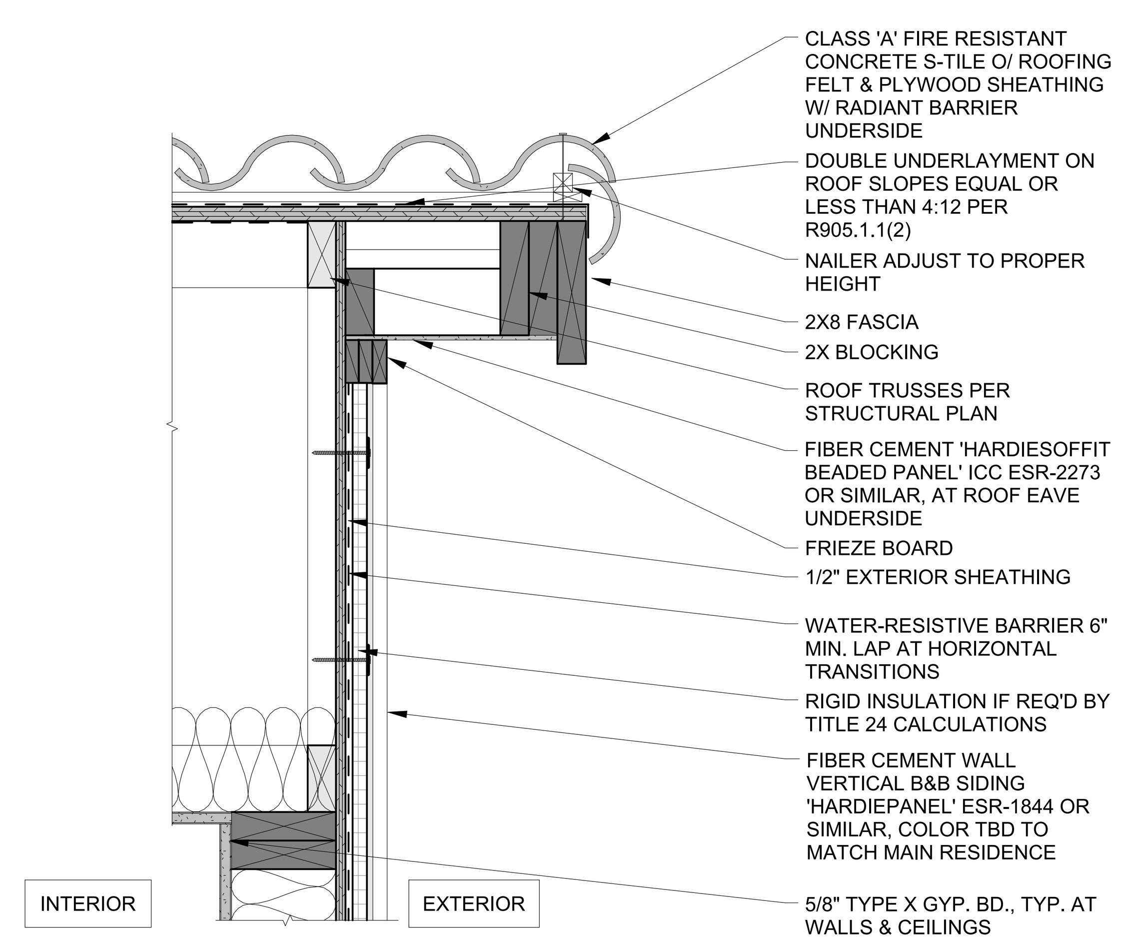
NOTES:

- ADDITION OF PLYWOOD SHEATHING TO THIS ASSEMBLY DOES NOT LESSEN FIRE RESISTANCE.
- 1-HR FIRE RATING IS ACHIEVED PER ICC ESR-1844. JAMES HARDIE BUILDING PRODUCTS, INC.

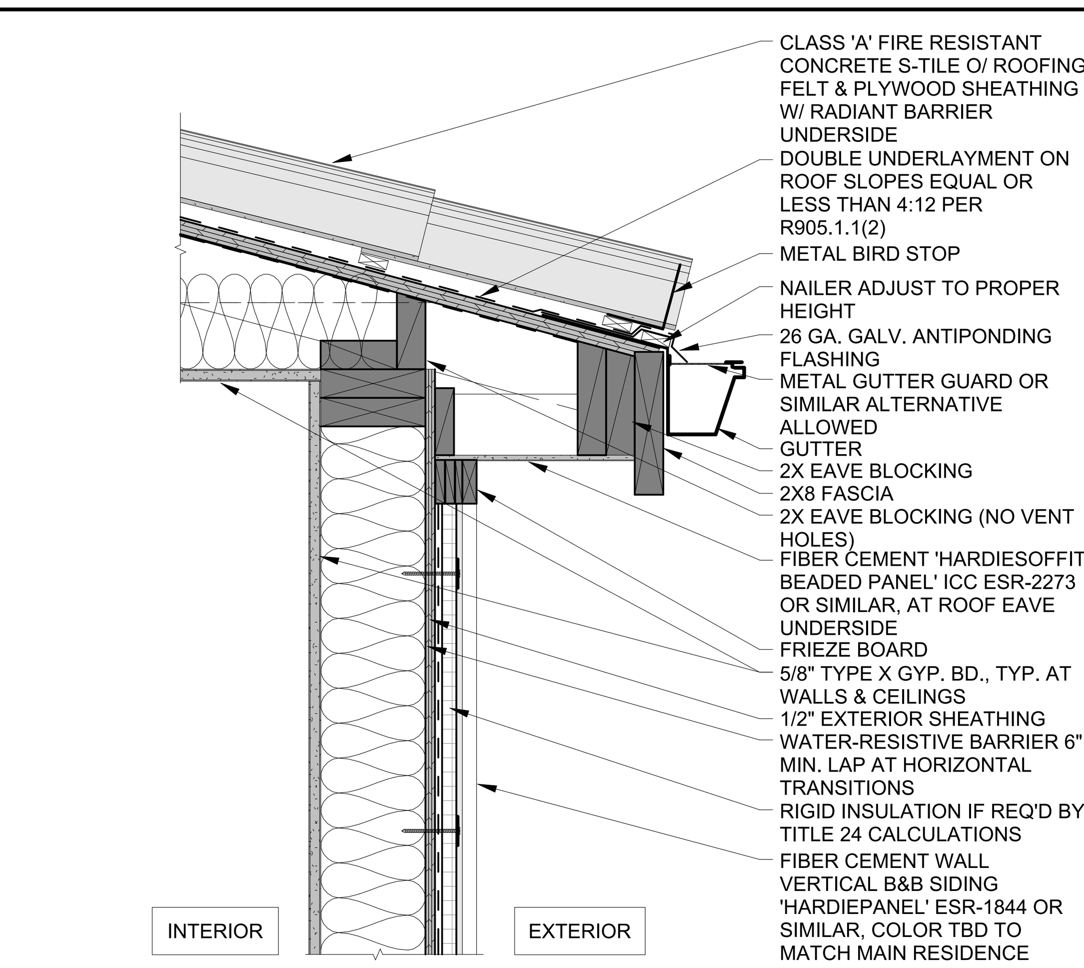
12 C - WALL - EXTERIOR 1-HOUR RATED B&B W/ CONT. INSULATION
SCALE: 3" = 1'-0"



9 DOOR - SLIDING GLASS DOOR HEAD @ B&B W/ CONT. INSULATION (JAMB SIM.)
SCALE: 3" = 1'-0"



6 C3 - ROOF RAKE - S-TILE PROTECTED W/ CONT. INSULATION AND B&B
SCALE: 1 1/2" = 1'-0"



3 C3 - ROOF EAVE - S-TILE PROTECTED W/ CONT. INSULATION AND B&B
SCALE: 1 1/2" = 1'-0"

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BOARD & BATTEN DETAILS

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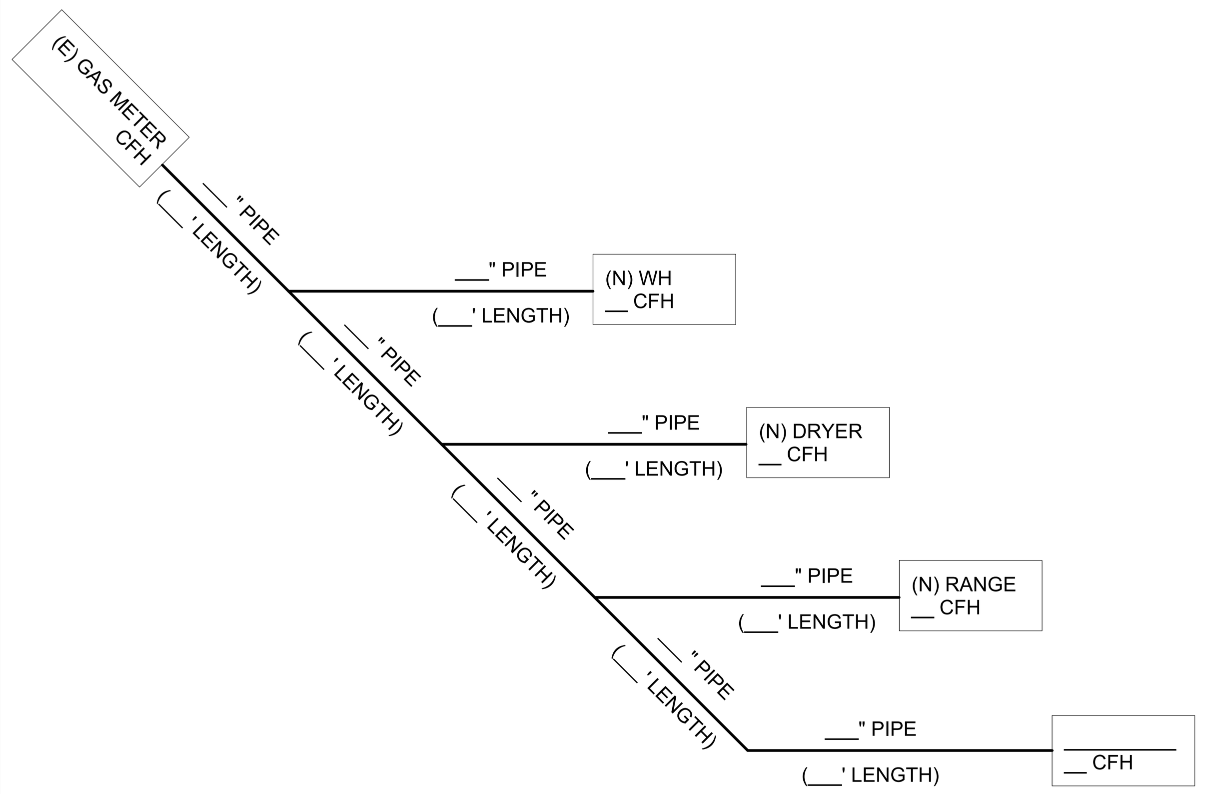


GAS CALCULATIONS

APPLIANCE	INPUT			TOTAL INPUT
	QTY	BTU/H[1]	CFH	CFH

NOTES:

[1] APPROXIMATE GAS INPUT TYPICAL APPLIANCES PER CPC 2022 TABLE 1208.4.1

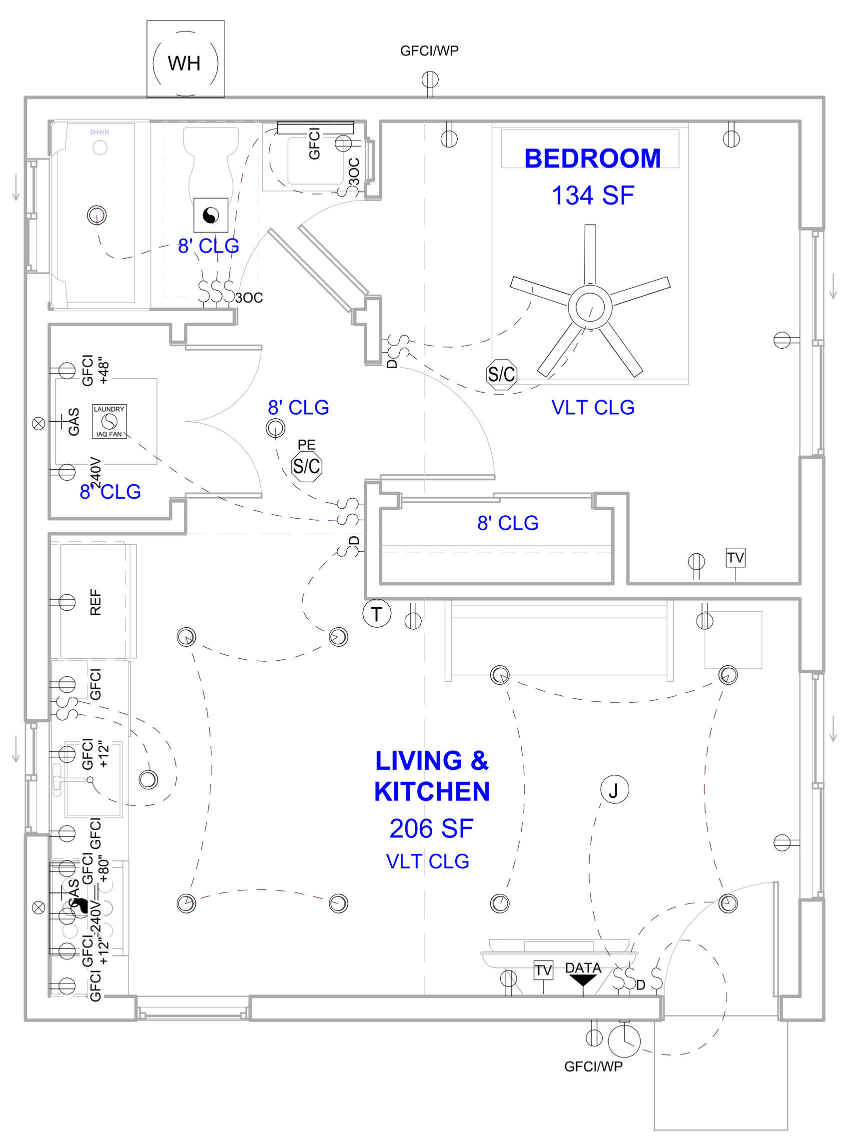
PIPE SIZING
SCHEDULE 40 METALLIC PIPE

PIPE SYSTEM TOTAL LENGTH (FT):__________

PIPE SECTION	APPLIANCES SUPPLIED	PIPE SECTION TOTAL CFH	PIPE DIAM. SIZE[1]
1			
2			
3			
4			
5			
6			
7			

NOTES:

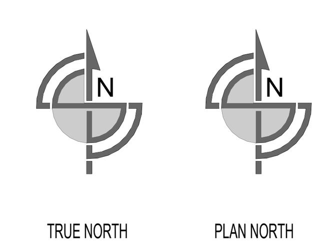
[1] NATURAL GAS PIPE SIZING PER CPC 2022 TABLE 1215.2(1)



1 STANDARD 1-BEDROOM ELECTRICAL PLAN

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

0' 1' 2' 3' 4' 8'
1/4" = 1'-0"



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KEYNOTES

KEYNOTE	DESCRIPTION
15800.A1	MINI SPLIT SYSTEM; APPLICANT/OWNER TO PROVIDE CUT SHEET TO MEET MINIMUM REQUIREMENTS OF TITLE 24 CALCULATIONS

ELECTRICAL FLOOR PLAN LEGEND

- SINGLE POLE SWITCH
- THREE-WAY SWITCH
- OCCUPANCY SENSOR SWITCH
- DIMMER SWITCH
- DUPLEX RECEPTACLE OUTLET
- INDICATES OUTLET HEIGHT ABOVE FINISH FLOOR
- GROUND FAULT CIRCUIT INTERRUPTER DUPLEX OUTLET
- INDICATES 240V
- INDICATES WEATHER PROOF
- PHOTOELECTRIC SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP
- SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP
- JUNCTION BOX
- THERMOSTAT
- (1) OUTLET AND BRUSH PLATE BOX @ +12" AND @ +60"
- COAX CABLE
- EXHAUST VENT FAN - INTERMITENT 50 CFM MIN / CONTINUOUS 20 CFM MIN
- EXHAUST VENT FAN SHALL BE USED TO MEET THE REQUIREMENTS FOR INDOOR AIR QUALITY (IAQ) PER T24 REPORT
- MICROWAVE-HOOD EXHAUST FAN COMBO 160 CFM MIN (IF GAS RANGE 280 CFM MIN. TO BE PROVIDED)
- GAS POINT OF CONNECTION W/ SHUT OFF VALVE
- WATER CONNECTION
- HOSE BIB
- RECESSED CAN LIGHT
- EXTERIOR WALL MOUNTED LIGHT
- VANITY SCONCE LIGHT
- ELECTRIC HEAT PUMP WATER HEATER IN OUTDOOR ENCLOSURE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
- POWER AND DISCONNECT FOR A/C CONDENSER
- AC — A/C CONDENSER
- MS — EVAPORATOR
- CEILING FAN WITH LIGHT

MECHANICAL NOTES:

EXHAUST FAN NOTES

1. KITCHENS REQUIRE EXHAUST FANS WITH A MINIMUM 160 CFM (280 CFM IF GAS RANGE) DUCTED TO THE EXTERIOR. DETAIL COMPLIANCE BY INCLUDING A COMPLYING EXHAUST FAN OR A DUCTED RANGE HOOD TO THE EXTERIOR.
2. BATHROOMS REQUIRE EXHAUST FANS (MINIMUM 50 CFM) TO BE DUCTED TO THE EXTERIOR. A BATHROOM IS DEFINED "AS A ROOM WITH A BATHTUB, SHOWER, OR SPA OR SOME SIMILAR SOURCE OF MOISTURE".
3. RESIDENTIAL BATHROOM EXHAUST FANS SHALL BE ENERGY STAR RATED AND SHALL BE CONTROL BY A HUMIDISTAT CAPABLE OF AN ADJUSTMENT BETWEEN 50 AND 80% HUMIDITY. CALGREEN 4.506.1. EXCEPTION: CONTROL BY A HUMIDISTAT IS NOT REQUIRED IF THE BATHROOM EXHAUST FAN IS ALSO THE DWELLING WHOLE HOUSE VENTILATION.

INDOOR AIR QUALITY NOTES:

1. PROPOSED DWELLING UNIT FOLLOW THE **EXHAUST-ONLY APPROACH** TO COMPLY INDOOR AIR QUALITY (IAQ)REQUIREMENTS
   A. MANDATORY (CBEES 150.0(O), ASHRAE STANDARD 62.2):
      EXCEPTION: ADDITIONS 1000 S.F. OR LESS AND ALTERATIONS:
      - A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINATION THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE-BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION.
      - HERS VERIFICATION REQUIRED TO CONFIRM WHOLE-BUILDING VENTILATION AIRFLOW.
      - AN INTERMITTENTLY OR CONTINUOUSLY OPERATING LOCAL MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH A BATHTUB, SHOWER, OR SIMILAR MOISTURE SOURSE AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION. INTERMITTENT LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 20 CFM IN BATHROOMS AND 5 AIR CHANGES PER HOUR IN KITCHENS BASED ON KITCHEN VOLUME.

INDOOR AIR QUALITY NOTES:

ASHRAE STANDARD 62.2 EQUATION 4.1(a)

THE WHOLE-BUILDING EXHAUST FAN SHALL PROVIDE A MINIMUM VENTILATION RATE ACCORDING TO EQUATION 4.1(A) BELOW:

Qfan = 0.03Afloor + 7.5 (Nbr +1)

WHERE:

Qfan =	FAN FLOW RATE (CFM)
Afloor =	CONDITIONED FLOOR AREA (S.F.)
Nbr =	NUMBER OF BEDROOM, NOT LESS THAN ONE

CALCUALTIONS:

Qfan =	0.03(498) + 7.5 (1 + 1)
Qfan =	14.94 + 15
=	29.94 CFM (50 CFM MIN.)

IAQ FAN SHALL PROVIDE 50 CFM PER T-24 REPORT

LISTED WHOLE-HOUSE FAN NOT REQUIRED

EXHAUST FAN MODEL: S&P PCD110-PREMIUM CHOICE WITH DC MOTOR; 4" DUCT SONE RATING RANGE: 0.7 - 1.2; 6" DUCT SONE RATING RANGE: 0.3 - 1.1

ELECTRICAL NOTES:

POWER NOTES

1. ALL ELECTRICAL WORK SHALL BE DESIGN PER 2022 CALIFORNIA ELECTRICAL CODE, 2022 NATIONAL ELECTRICAL CODE, AND 2022 BUILDING ENERGY EFFICIENCY STANDARDS.
2. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
3. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.
4. ALL THE CONDUCTOR'S SPECIFIED IN THE PANEL SCHEDULES ARE GROUNDED SEPARATELY.
5. PURCHASE RTU WITH FACTORY INSTALLED DISCONNECT. COORDINATE PROPER RATING OF DISCONNECT WITH MANUFACTURER.
6. INSTALL WEATHERPROOF (WP), GFI PROTECTED, WEATHER RESISTANT RECEPTACLE OUTLETS ON THE ROOFTOP AND WITHIN 25 FT OF HEATING/AIR CONDITIONING AND IDENTIFIED AND LISTED AS "EXTRA DUTY" PER ARTICLE 406.9 (B)(1) & 406.4(D)(6)
7. ALL WORK PERFORMED SHALL COMPLY WITH ALL STATE AND LOCAL ALL ELECTRICAL CODES.
8. ALL BRANCH CIRCUIT BREAKERS SHALL BE 10,000 AIC RATING, UNLESS NOTED OTHERWISE.
9. ALL THE HVAC UNITS ARE EQUIPPED WITH FACTORY INSTALLED DISCONNECT SWITCH UNLESS NOTIFIED OTHERWISE. COORDINATE WITH MANUFACTURE BEFORE INSTALLATION AND IN THE ABSENCE OF DISCONNECT SWITCH PROVIDE REQUIRED DISCONNECT AS PER NEC 430.104 AND 430.110.
10. THE BATHROOM CIRCUITING SHALL BE EITHER A 20-AMP. CIRCUIT DEDICATED TO EACH BATHROOM, OR AT LEAST ONE 20 AMP. CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS PER CEC 210.11(C)(3).
11. ALL ELECTRICAL DEVICES INSTALLED IN DWELLINGS SHALL BE PROVIDED WITH ARC-FAULT PROTECTION OUTLETS (NOT JUST RECEPTACLES) LOCATED IN ROOMS DESCRIBED IN NEC 210.12(A): KITCHENS, LAUNDRY AREAS, FAMILY, LIVING, BEDROOMS, DINING, HALLS, ETC. CEC ARCTICLE 210 & 406.
12. ALL 120-VOLT, SINGLE-PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, SUNROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, AND SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREA SHALL BE PROTECTED BY ANY OF THE MEANS DESCRIBED IN 210.12(A)(1) THROUGH (6).
13. INSTALL A MINIMUM OF 2 SMALL APPLIANCE BRANCH CIRCUITS WITHIN THE KITCHEN AND DINING AREAS PER CEC 210.11(C)(1) & 210.52(B).
14. ALL OUTLETS IN KITCHEN AND BATHROOMS SHALL BE GFCI PER CEC 210.8.
15. ALL RECEPTACLES INSTALLED IN THE DWELLING SHOULD BE TAMPER RESISTANT PER ARTICLE 210.52 & 550.13.
16. PER CEC 210.11(C)(3), BATHROOM CIRCUITING SHALL BE EITHER:
    A. A 20 AMP CIRCUIT DEDICATED TO EACH BATHROOM,
       OR
    B. AT LEAST ONE 20 AMP CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS.
17. ELECTRICAL RECEPTACLE OUTLETS SWITCHES AND CONTROLS (INCLUDING CONTROLS FOR HEATING, VENTILATION AND AIR CONDITIONING) INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48 INCHES (1219.2 MM) MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15 INCHES (381 MM) MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR. R327.1.2.
18. DOORBELL BUTTONS OR CONTROLS, WHEN INSTALLED, SHALL NOT EXCEED 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. WHERE DOORBELL BUTTONS INTEGRATED WITH OTHER FEATURES ARE REQUIRED TO BE INSTALLED ABOVE 48 INCHES (1219.2 MM) ABOVE THE EXTERIOR FLOOR OR LANDING, A STANDARD DOORBELL BUTTON OR CONTROL SHALL ALSO BE PROVIDED AT A HEIGHT NOT EXCEEDING 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON OR CONTROL. R327.1.4.
19. SURGE PROTECTION REQUIREMENTS:
    A. ALL SERVICES SUPPLYING DWELLING UNITS SHALL BE PROVIDED WITH A SURGE-PROTECTIVE DEVICE (SPD).
    B. LOCATION - THE SPD SHALL BE AN INTEGRAL PART OF THE SERVICE EQUIP-MENT OR SHALL BE LOCATED IMMEDIATELY ADJACENT THERETO.
    C. EXCEPTION: THE SPD SHALL NOT BE REQUIRED TO BE IN THE SERVICE EQUIPMENT AS REQUIRED IN.
    D. IF LOCATED AT EACH NEXT LEVEL DISTRIBUTION EQUIPMENT DOWN-STREAM TOWARD THE LOAD.
    E. TYPE - THE SPD SHALL BE A TYPE 1 OR TYPE 2 SPD.

LIGHTING NOTES

1. PROVIDE LIGHTING CONTROL WITH CONTINUOUS DIMMING IN ALL AREAS. PROVIDE REQUIRED DRIVERS AND DIMMER SWITCHES FOR CONTINUOUS DIMMING USING 0-10 VOLT DIMMING.
2. LIGHTING SHALL PROVIDE NOT LESS THAN 215 LUX (20 FOOTCANDLES) AS MEASURED 30" ABOVE FLOOR.
3. IF APPLICABLE, SPECIFY THAT THE EXHAUST FANS TO BE ON A SEPARATE SWITCH FROM LIGHTS PER CENC 150.0(K)2B.
4. ALL INSTALLED LUMINAIRES SHALL BE HIGH-EFFICACY IN ACCORDANCE WITH ES TABLE 150.0-A.
   A. LUMINARIES MUST HAVE A LABEL CERTIFIED FOR AIRTIGHT CONSTRUCTION.
   B. LIGHT SOURCES THAT ARE NOT MARKED "JA8-2019-E" SHALL NOT BE INSTALLED IN ENCLOSED LUMINARIES. ES 150.0(K)
5. BATHROOMS, GARAGE, LAUNDRY ROOMS, AND UTILITY ROOM LIGHTING TO HAVE ONE LUMINAIRE CONTROLLED BY A VACANCY OR OCCUPANCY SENSOR PROVIDING AUTOMATIC-OFF FUNCTIONALITY PER CENC SECTION 150.0(K)2I. IF AN OCCUPANT SENSOR IS INSTALLED, IT SHALL BE INITIALLY CONFIGURED TO MANUAL-ON OPERATION USING THE MANUAL CONTROL REQUIRED UNDER SECTION 150.0(K)2C.
6. ALL OTHER LUMINAIRES THAT CONTAIN LIGHT SOURCES THAT MEET REFERENCE JOINT APPENDIX JA8 REQUIREMENTS ARE TO BE CONTROLLED BY A VACANCY/OCCUPANCY SENSOR OR DIMMER PER CENC SECTION 150.0(K)2J. NOTE THAT CLOSETS WITH AN AREA LESS THAN 70 FT2 AND HALLWAY LIGHTING ARE EXEMPT FROM THIS REQUIREMENT.
7. RECESSED CAN LIGHT FIXTURES SHALL BE IC LISTED, AIR-TIGHT LABELED, AND NOT BE EQUIPPED WITH A STANDARDS MEDIUM BASE SCREW SHELL LAMP HOLDER. ES 150.0(K)
8. SFD OUTDOOR LIGHTING FIXTURES THAT ARE ATTACHED TO A BUILDING ARE REQUIRED TO BE HIGH EFFICACY, BE MANUALLY ON/OFF SWITCH CONTROLLED, AND HAVE BOTH MOTION SENSOR AND PHOTOCELL CONTROL. SEE ES 150.0(K) 3 FOR ADDITIONAL CONTROL OPTIONS.

SDGE NOTES:

1. SDGE HAS SPECIFIC REQUIREMENTS ABOUT THE NUMBER OF MAIN ELECTRICAL SERVICE PANELS (HOW MANY ELECTRICAL DROPS) ALLOWED ON THE SAME LOT, WHICH IS DIFFERENT FROM THE REQUIREMENTS OF THE CITY OF CHULA VISTA AND CALIFORNIA ELECTRICAL CODE.
2. SDGE MAY REQUIRE ALL NEW ADU(S)/JADU(S) TO BE PLACED ON A SEPARATE ELECTRIC METER.
3. IT IS THE RESPONSIBILITY OF THE PROJECT DESIGNER TO CONTACT SDGE FOR THE REQUIREMENTS FOR SETTING UP THE NEW ELECTRICAL UTILITIES TO ALL NEW ADU(S)/JADU(S).
4. REFER TO THE CURRENT SDGE SERVICE STANDARDS AND GUIDE TO ENSURE THAT PROJECT COMPLIES WITH THEIR REQUIREMENTS.

SMOKE & CARBON MONOXIDE NOTES:

SMOKE & CARBON MONOXIDE ALARM NOTES

1. SMOKE ALARMS SHALL BE INTERCONNECTED PER CRC R314.4.
2. SMOKE ALARMS SHALL BE HARD-WIRED WITH BATTERY BACK-UP PER CRC R314.6 IN THE FOLLOWING LOCATIONS ON FLOOR PLANS OR UTILITY PLANS (CRC R314.3):
   A. OUTSIDE EACH SEPARATE SLEEPING AREA IN IMMEDIATE VICINITY OF BEDROOMS
   B. ON EACH STORY OF DWELLING
   C. IN ANY BEDROOM WITH A FUEL-BURNING APPLIANCE LOCATED WITHIN THAT BEDROOM OR ITS ATTACHED BATHROOM
3. CARBON MONOXIDE DETECTOR SHALL BE INTERCONNECTED PER CRC R314.1.7 AND HARD-WIRED WITH BATTERY BACK-UP PER CRC R315.5 - IN TH THE FOLLOWING LOCATIONS ON FLOOR PLANS OR UTILITY PLANS IN DWELLING UNITS WITH FUEL-BURNING APPLIANCES, FIREPLACE, OR AN ATTACHED GARAGE COMMUNICATING WITH THE DWELLING UNIT (CRC R315):
   A. OUTSIDE EACH SEPARATE SLEEPING AREA IN IMMEDIATE VICINITY OF BEDROOMS
   B. ON EACH STORY OF DWELLING
   C. IN ANY BEDROOM WITH A FUEL-BURNING APPLIANCE LOCATED WITHIN THAT BEDROOM OR ITS ATTACHED BATHROOM.

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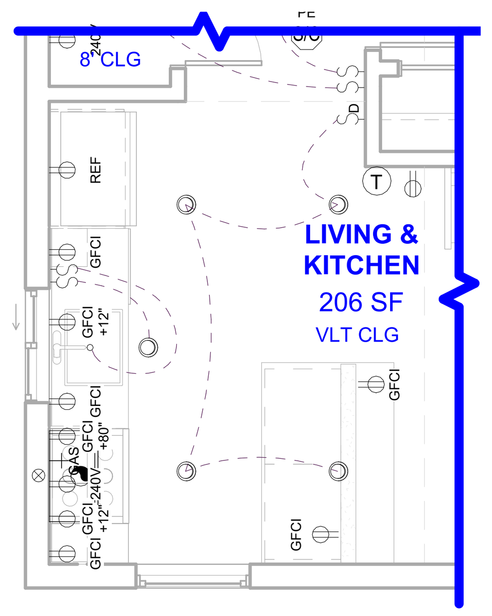
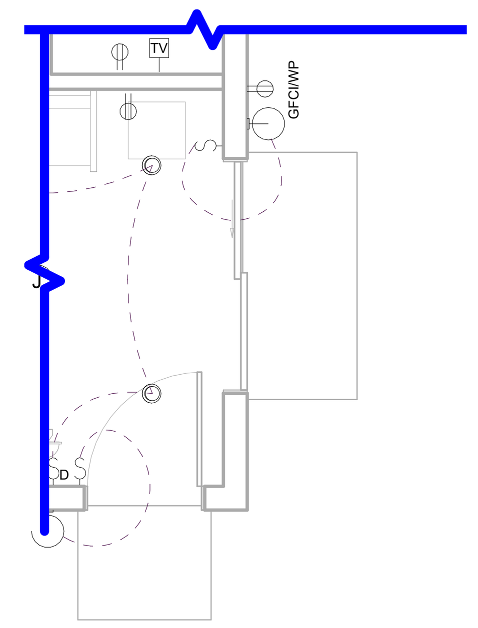
ELECTRICAL PLAN - 1 BEDROOM

E100

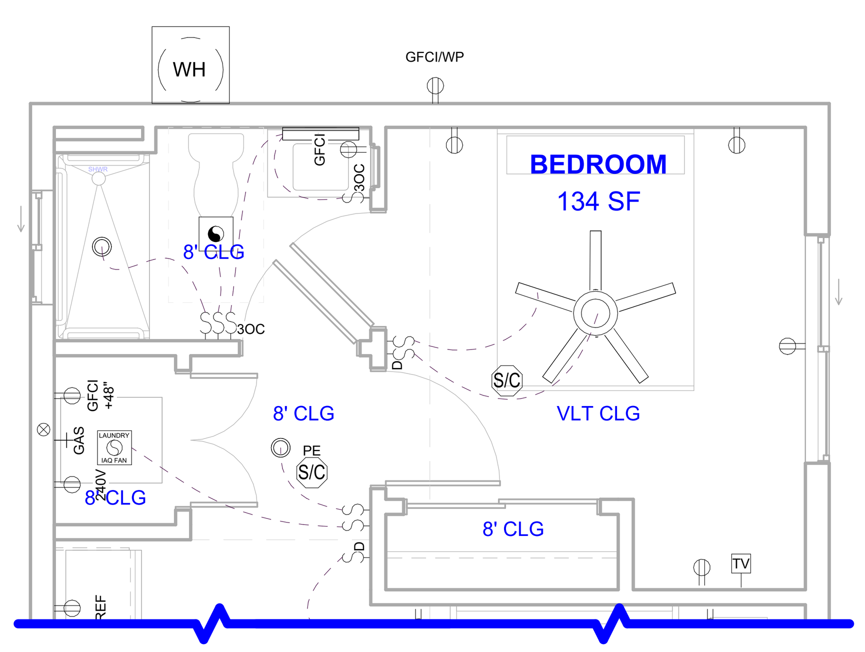
22040



1 5' PENINSULA OPTION ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



2 6'-0" x 6'-8" SLIDING GLASS DOOR OPTION ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



3 ENLARGED BEDROOM & BATH DOOR OPTION ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

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KEYNOTES

KEYNOTE	DESCRIPTION

ELECTRICAL FLOOR PLAN LEGEND

SYMBOL	DESCRIPTION
	SINGLE POLE SWITCH
$3	THREE-WAY SWITCH
$OC	OCCUPANCY SENSOR SWITCH
$D	DIMMER SWITCH
	DUPLEX RECEPTACLE OUTLET
+12"	INDICATES OUTLET HEIGHT ABOVE FINISH FLOOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER DUPLEX OUTLET
240V	INDICATES 240V
WP	INDICATES WEATHER PROOF
S/C PE	PHOTOELECTRIC SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP
S/C	SMOKE / CARBON MONOXIDE DETECTOR HARDWIRED W/ BATTERY BACKUP
J	JUNCTION BOX
T	THERMOSTAT
TV	(1) OUTLET AND BRUSH PLATE BOX @ +12" AND @ +60"
DATA	COAX CABLE
	EXHAUST VENT FAN - INTERMITENT 50 CFM MIN / CONTINUOUS 20 CFM MIN
LAUNDRY IAQ FAN	EXHAUST VENT FAN SHALL BE USED TO MEET THE REQUIREMENTS FOR INDOOR AIR QUALITY (IAQ) PER T24 REPORT
	MICROWAVE-HOOD EXHAUST FAN COMBO 160 CFM MIN (IF GAS RANGE 280 CFM MIN. TO BE PROVIDED)
	GAS POINT OF CONNECTION W/ SHUT OFF VALVE
	WATER CONNECTION
HB	HOSE BIB
	RECESSED CAN LIGHT
	EXTERIOR WALL MOUNTED LIGHT
	VANITY SCONCE LIGHT
WH	ELECTRIC HEAT PUMP WATER HEATER IN OUTDOOR ENCLOSURE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
	POWER AND DISCONNECT FOR A/C CONDENSER
AC	A/C CONDENSER
MS	EVAPORATOR
	CEILING FAN WITH LIGHT

MECHANICAL NOTES:

EXHAUST FAN NOTES

1. KITCHENS REQUIRE EXHAUST FANS WITH A MINIMUM 160 CFM (280 CFM IF GAS RANGE) DUCTED TO THE EXTERIOR. DETAIL COMPLIANCE BY INCLUDING A COMPLYING EXHAUST FAN OR A DUCTED RANGE HOOD TO THE EXTERIOR.
2. BATHROOMS REQUIRE EXHAUST FANS (MINIMUM 50 CFM) TO BE DUCTED TO THE EXTERIOR. A BATHROOM IS DEFINED “AS A ROOM WITH A BATHTUB, SHOWER, OR SPA OR SOME SIMILAR SOURCE OF MOISTURE”.
3. RESIDENTIAL BATHROOM EXHAUST FANS SHALL BE ENERGY STAR RATED AND SHALL BE CONTROL BY A HUMIDISTAT CAPABLE OF AN ADJUSTMENT BETWEEN 50 AND 80% HUMIDITY. CALGREEN 4.506.1. EXCEPTION: CONTROL BY A HUMIDISTAT IS NOT REQUIRED IF THE BATHROOM EXHAUST FAN IS ALSO THE DWELLING WHOLE HOUSE VENTILATION.

INDOOR AIR QUALITY NOTES:

1. PROPOSED DWELLING UNIT FOLLOW THE **EXHAUST-ONLY APPROACH** TO COMPLY INDOOR AIR QUALITY (IAQ)REQUIREMENTS
   A. MANDATORY (CBEES 150.0(O), ASHRAE STANDARD 62.2):
   EXCEPTION: ADDITIONS 1000 S.F. OR LESS AND ALTERATIONS:
   - A MECHANICAL EXHAUST VENTILATION SYSTEM, SUPPLY VENTILATION SYSTEM, OR COMBINATION THEREOF SHALL BE INSTALLED FOR EACH DWELLING UNIT TO PROVIDE WHOLE-BUILDING VENTILATION WITH OUTDOOR AIR IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION.
   - HERS VERIFICATION REQUIRED TO CONFIRM WHOLE-BUILDING VENTILATION AIRFLOW.
   - AN INTERMITTENTLY OR CONTINUOUSLY OPERATING LOCAL MECHANICAL EXHAUST VENTILATION SYSTEM SHALL BE INSTALLED IN EACH BATHROOM WITH A BATHTUB, SHOWER, OR SIMILAR MOISTURE SOURSE AND IN EACH KITCHEN IN COMPLIANCE WITH ASHRAE STANDARD 62.2 AS ADOPTED BY THE CALIFORNIA ENERGY COMMISSION. INTERMITTENT LOCAL EXHAUST VENTILATION AIRFLOW RATES SHALL BE 20 CFM IN BATHROOMS AND 5 AIR CHANGES PER HOUR IN KITCHENS BASED ON KITCHEN VOLUME.

INDOOR AIR QUALITY NOTES:

ASHRAE STANDARD 62.2 EQUATION 4.1(a)	
THE WHOLE-BUILDING EXHAUST FAN SHALL PROVIDE A MINIMUM VENTILATION RATE ACCORDING TO EQUATION 4.1(A) BELOW:	
Qfan = 0.03Afloor + 7.5 (Nbr +1)	
WHERE:	
Qfan =	FAN FLOW RATE (CFM)
Afloor =	CONDITIONED FLOOR AREA (S.F.)
Nbr =	NUMBER OF BEDROOM, NOT LESS THAN ONE
CALCUALTIONS:	
Qfan =	0.03(498) + 7.5 (1 + 1)
Qfan =	14.94 + 15
=	29.94 CFM (50 CFM MIN.)
IAQ FAN SHALL PROVIDE 50 CFM PER T-24 REPORT	
LISTED WHOLE-HOUSE FAN NOT REQUIRED	
EXHAUST FAN MODEL: S&P PCD110-PREMIUM CHOICE WITH DC MOTOR; 4" DUCT SONE RATING RANGE: 0.7 - 1.2; 6" DUCT SONE RATING RANGE: 0.3 - 1.1	

ELECTRICAL NOTES:

POWER NOTES

1. ALL ELECTRICAL WORK SHALL BE DESIGN PER 2022 CALIFORNIA ELECTRICAL CODE, 2022 NATIONAL ELECTRICAL CODE, AND 2022 BUILDING ENERGY EFFICIENCY STANDARDS.
2. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
3. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.
4. ALL THE CONDUCTOR'S SPECIFIED IN THE PANEL SCHEDULES ARE GROUNDED SEPARATELY.
5. PURCHASE RTU WITH FACTORY INSTALLED DISCONNECT. COORDINATE PROPER RATING OF DISCONNECT WITH MANUFACTURER.
6. INSTALL WEATHERPROOF (WP), GFI PROTECTED, WEATHER RESISTANT RECEPTACLE OUTLETS ON THE ROOFTOP AND WITHIN 25 FT OF HEATING/AIR CONDITIONING AND IDENTIFIED AND LISTED AS "EXTRA DUTY" PER ARTICLE 406.9 (B)(1) & 406.4(D)(6)
7. ALL WORK PERFORMED SHALL COMPLY WITH ALL STATE AND LOCAL ALL ELECTRICAL CODES.
8. ALL BRANCH CIRCUIT BREAKERS SHALL BE 10,000 AIC RATING, UNLESS NOTED OTHERWISE.
9. ALL THE HVAC UNITS ARE EQUIPPED WITH FACTORY INSTALLED DISCONNECT SWITCH UNLESS NOTIFIED OTHERWISE. COORDINATE WITH MANUFACTURE BEFORE INSTALLATION AND IN THE ABSENCE OF DISCONNECT SWITCH PROVIDE REQUIRED DISCONNECT AS PER NEC 430.104 AND 430.110.
10. THE BATHROOM CIRCUITING SHALL BE EITHER A 20-AMP. CIRCUIT DEDICATED TO EACH BATHROOM, OR AT LEAST ONE 20 AMP. CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS PER CEC 210.11(C)(3).
11. ALL ELECTRICAL DEVICES INSTALLED IN DWELLINGS SHALL BE PROVIDED WITH ARC-FAULT PROTECTION OUTLETS (NOT JUST RECEPTACLES) LOCATED IN ROOMS DESCRIBED IN NEC 210.12(A): KITCHENS, LAUNDRY AREAS, FAMILY, LIVING, BEDROOMS, DINING, HALLS, ETC. CEC ARCTICLE 210 & 406.
12. ALL 120-VOLT, SINGLE-PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, SUNROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, AND SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREA SHALL BE PROTECTED BY ANY OF THE MEANS DESCRIBED IN 210.12(A)(1) THROUGH (6).
13. INSTALL A MINIMUM OF 2 SMALL APPLIANCE BRANCH CIRCUITS WITHIN THE KITCHEN AND DINING AREAS PER CEC 210.11(C)(1) & 210.52(B).
14. ALL OUTLETS IN KITCHEN AND BATHROOMS SHALL BE GFCI PER CEC 210.8.
15. ALL RECEPTACLES INSTALLED IN THE DWELLING SHOULD BE TAMPER RESISTANT PER ARTICLE 210.52 & 550.13.
16. PER CEC 210.11(C)(3), BATHROOM CIRCUITING SHALL BE EITHER:
    A. A 20 AMP CIRCUIT DEDICATED TO EACH BATHROOM,
    OR
    B. AT LEAST ONE 20 AMP CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS.
17. ELECTRICAL RECEPTACLE OUTLETS SWITCHES AND CONTROLS (INCLUDING CONTROLS FOR HEATING, VENTILATION AND AIR CONDITIONING) INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48 INCHES (1219.2 MM) MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15 INCHES (381 MM) MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR. R327.1.2.
18. DOORBELL BUTTONS OR CONTROLS, WHEN INSTALLED, SHALL NOT EXCEED 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. WHERE DOORBELL BUTTONS INTEGRATED WITH OTHER FEATURES ARE REQUIRED TO BE INSTALLED ABOVE 48 INCHES (1219.2 MM) MEASURED FROM THE EXTERIOR FLOOR OR LANDING, A STANDARD DOORBELL BUTTON OR CONTROL SHALL ALSO BE PROVIDED AT A HEIGHT NOT EXCEEDING 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON OR CONTROL. R327.1.4.
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    E. TYPE - THE SPD SHALL BE A TYPE 1 OR TYPE 2 SPD.

LIGHTING NOTES

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3. IF APPLICABLE, SPECIFY THAT THE EXHAUST FANS TO BE ON A SEPARATE SWITCH FROM LIGHTS PER CENC 150.0(K)2B.
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4. REFER TO THE CURRENT SDGE SERVICE STANDARDS AND GUIDE TO ENSURE THAT PROJECT COMPLIES WITH THEIR REQUIREMENTS.

SMOKE & CARBON MONOXIDE NOTES:

SMOKE & CARBON MONOXIDE ALARM NOTES

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2. SMOKE ALARMS SHALL BE HARD-WIRED WITH BATTERY BACK-UP PER CRC R314.6 IN THE FOLLOWING LOCATIONS ON FLOOR PLANS OR UTILITY PLANS (CRC R314.3):
   A. OUTSIDE EACH SEPARATE SLEEPING AREA IN IMMEDIATE VICINITY OF BEDOOMS
   B. ON EACH STORY OF DWELLING
   C. IN ANY BEDROOM WITH A FUEL-BURNING APPLIANCE LOCATED WITHIN THAT BEDROOM OR ITS ATTACHED BATHROOM
3. CARBON MONOXIDE DETECTOR SHALL BE INTERCONNECTED PER CRC R315.1.7 AND HARD-WIRED WITH BATTERY BACK-UP PER CRC R315.5 - IN TH THE FOLLOWING LOCATIONS ON FLOOR PLANS OR UTILITY PLANS IN DWELLING UNITS WITH FUEL-BURNING APPLIANCES, FIREPLACE, OR AN ATTACHED GARAGE COMMUNICATING WITH THE DWELLING UNIT (CRC R315):
   A. OUTSIDE EACH SEPARATE SLEEPING AREA IN IMMEDIATE VICINITY OF BEDROOMS
   B. ON EACH STORY OF DWELLING
   C. IN ANY BEDROOM WITH A FUEL-BURNING APPLIANCE LOCATED WITHIN THAT BEDROOM OR ITS ATTACHED BATHROOM.

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ELECTRICAL PLAN - OPTIONS

E101

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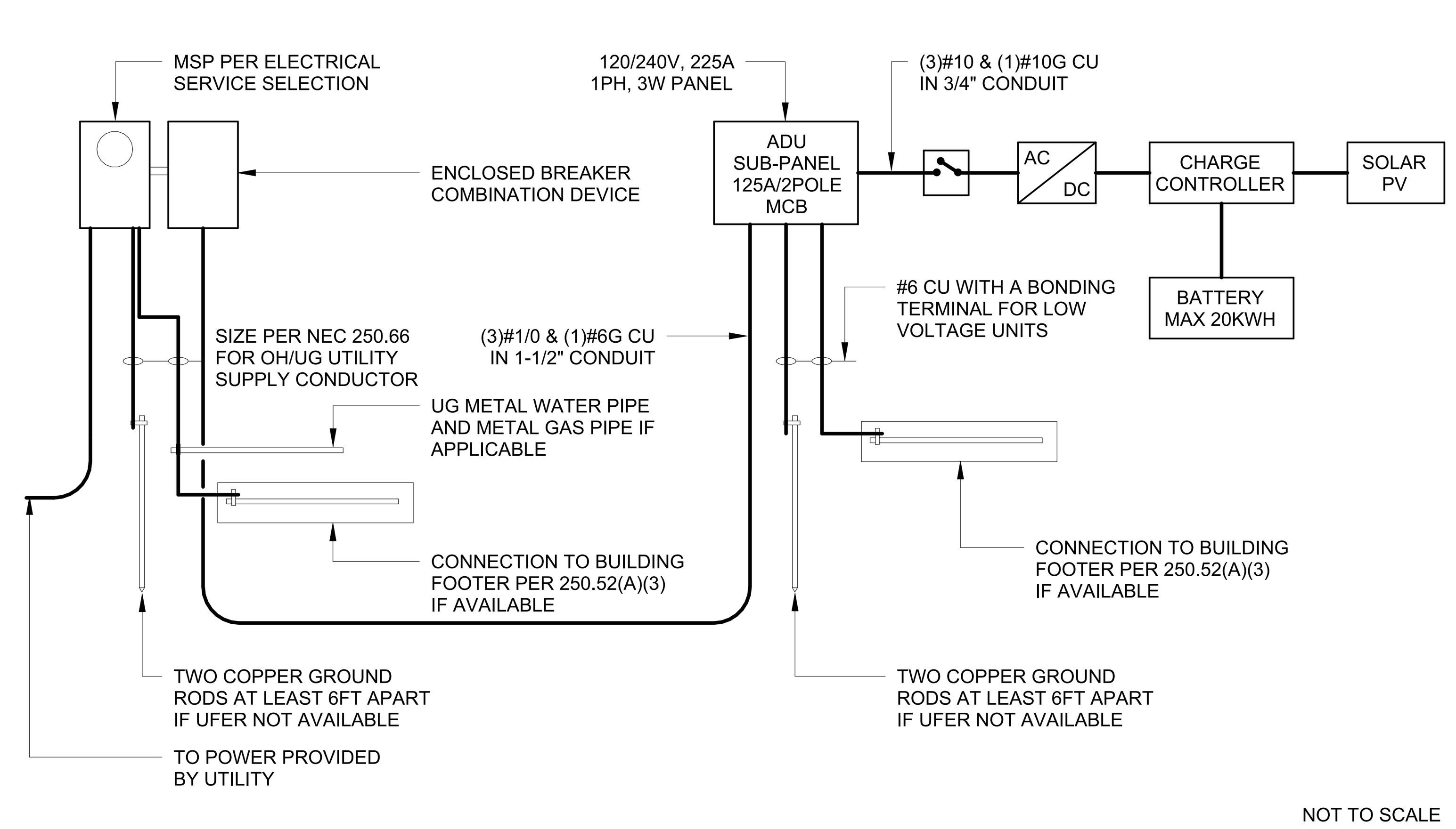
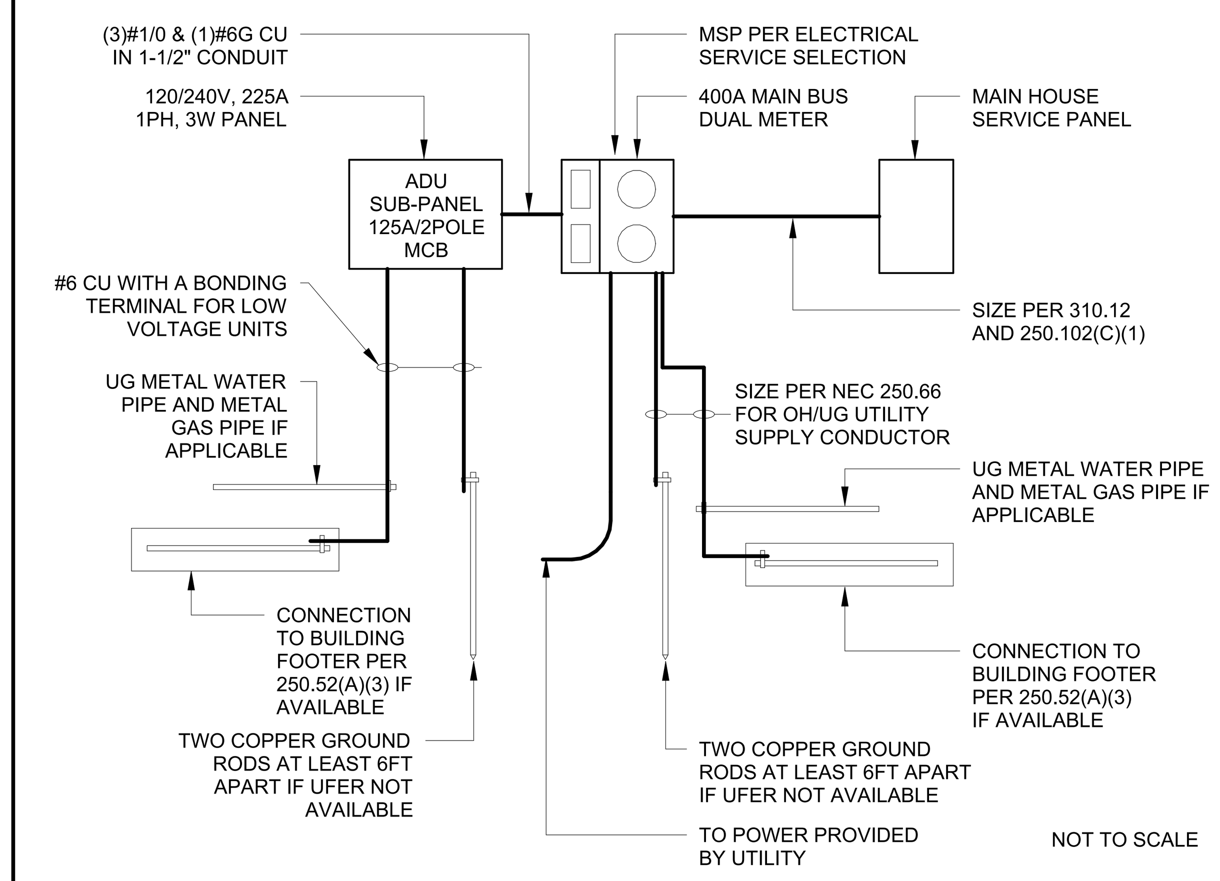
ELECTRICAL RISER DIAGRAM SIDE BY SIDE W/ SOLAR



ELECTRICAL RISER DIAGRAM DUAL METER WO/ SOLAR



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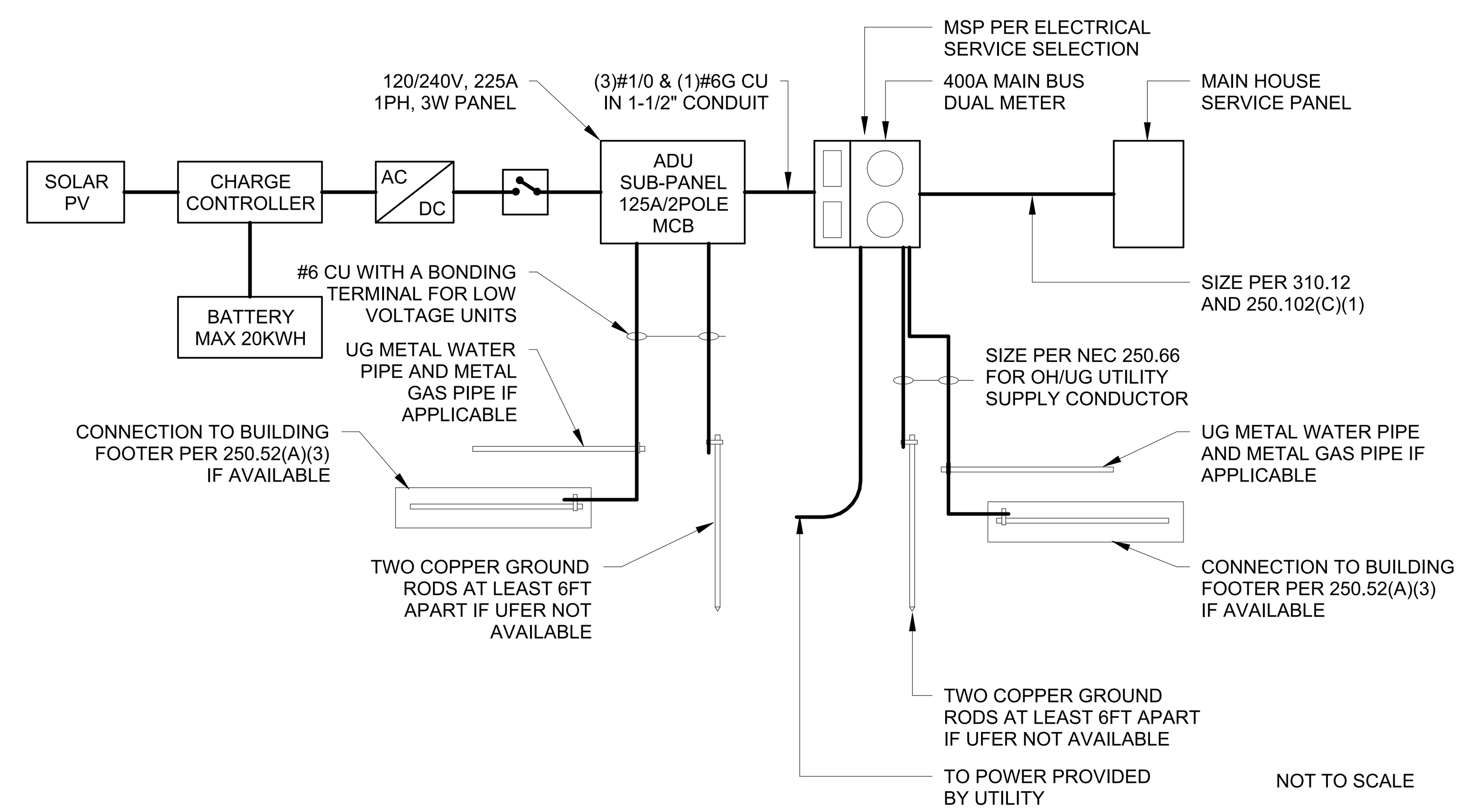
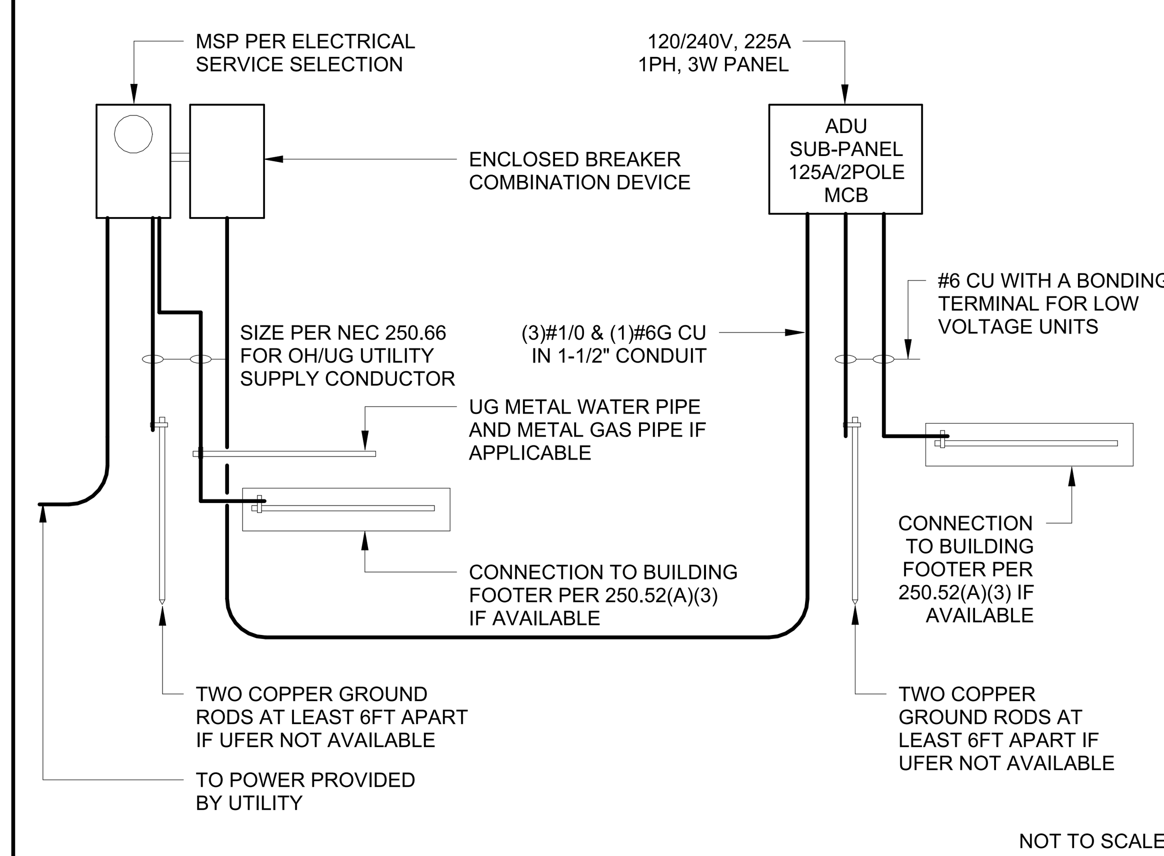


ELECTRICAL RISER DIAGRAM SIDE BY SIDE WO/ SOLAR



ESS PANEL SCHEDULE

ESS PANEL - 20/40 CKT 225A BUS 60A MLO 120/240V 1PH 3W OUTDOOR

CKT #	C/B	LOAD	CKT #	C/B	LOAD
1			2		
3			4		
5			6		
7			8		
9			10		
11			12		
13			14		
15			16		
17			18		
19			20		

ELECTRICAL PANEL SCHEDULE

SUBPANEL - 30/60 CKT 225A BUS 100A MLO 120/240V 1PH 3W OUTDOOR

CKT #	C/B	LOAD	CKT #	C/B	LOAD
1			2		
3			4		
5			6		
7			8		
9			10		
11			12		
13			14		
15			16		
17			18		
19			20		
21			22		
23			24		
25			26		
27			28		
29			30		

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ELECTRIC RISER DIAGRAM & PANEL SCHEDULE

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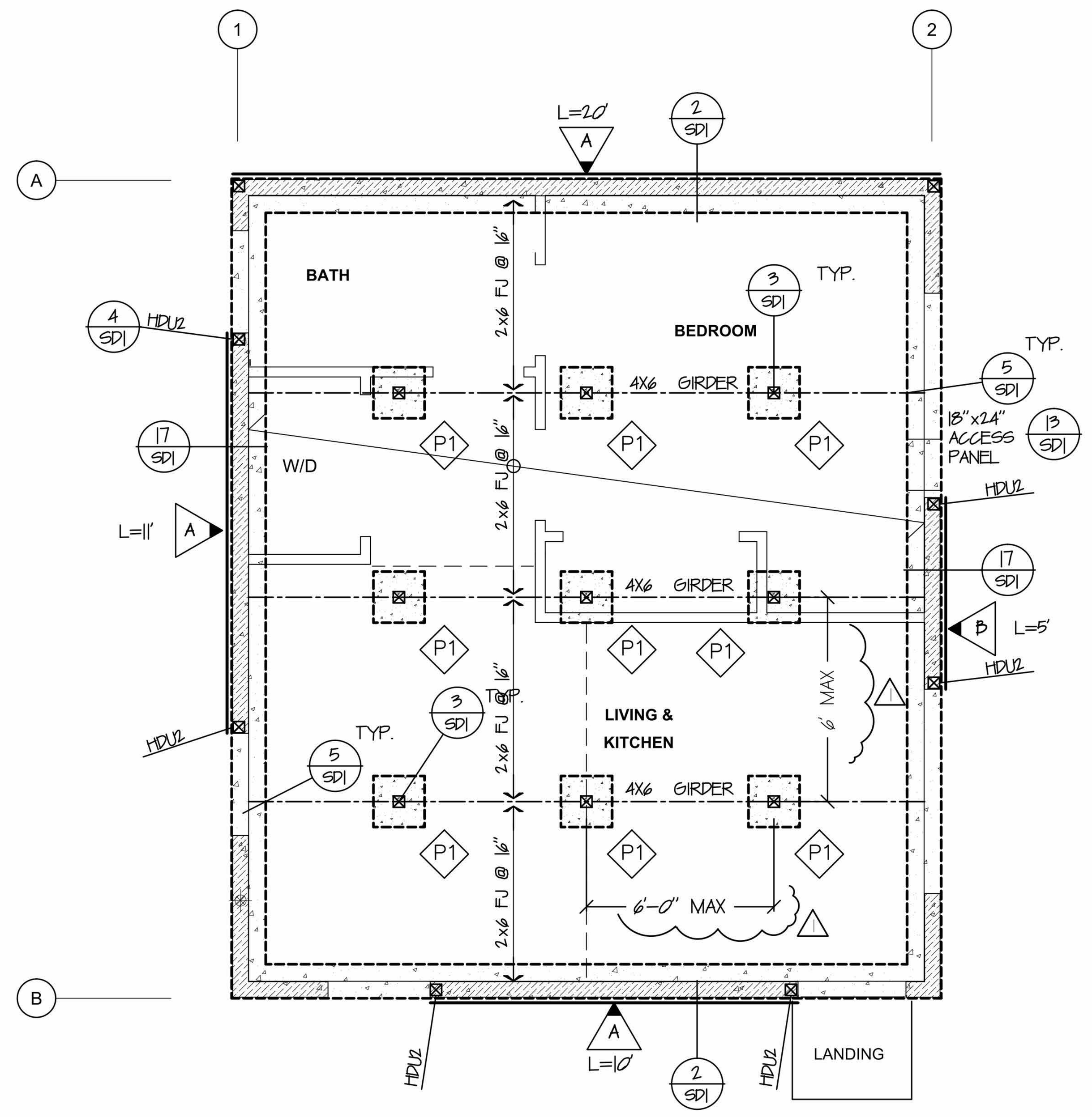
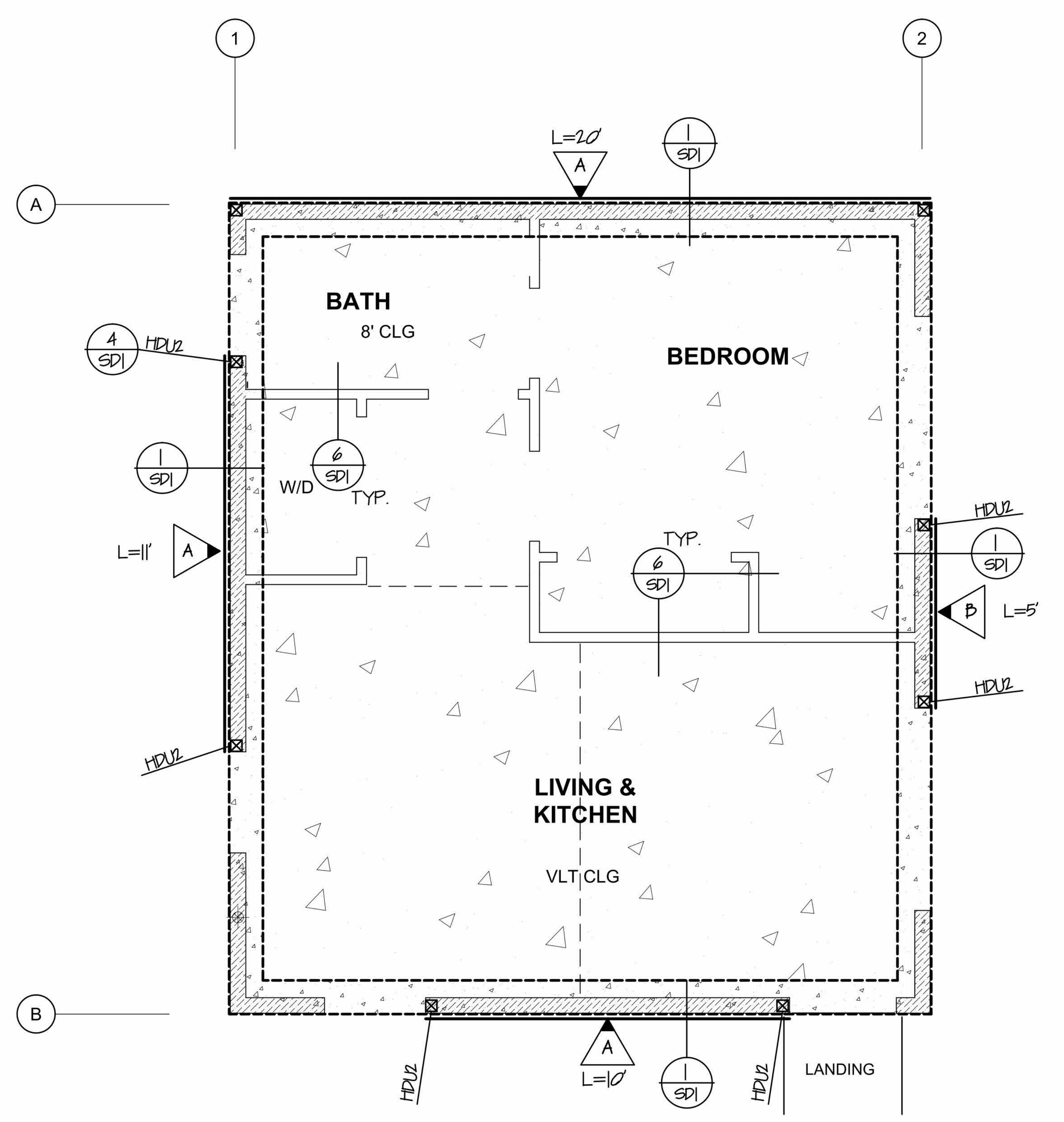


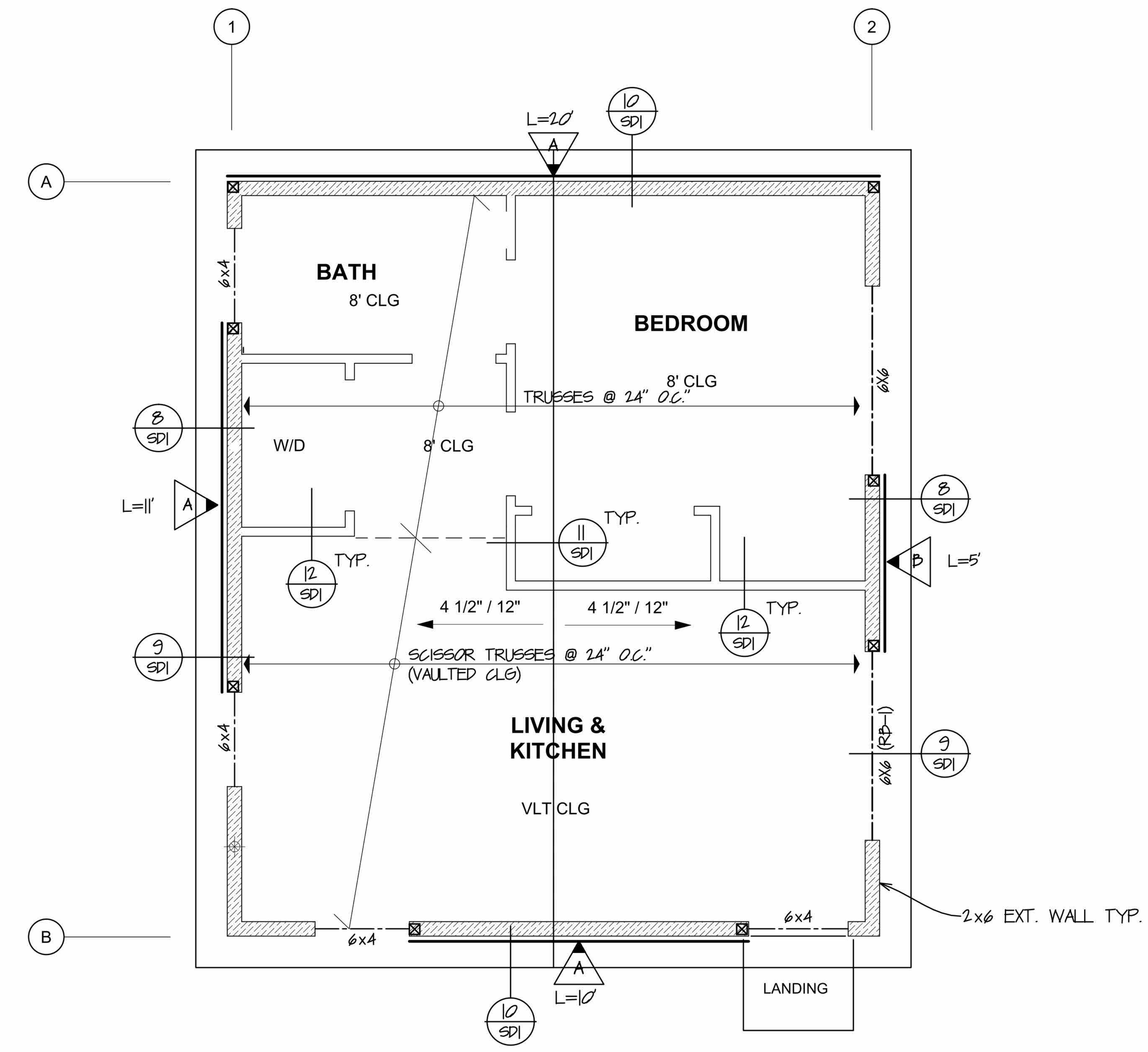
RIASED FOUNDATION PLAN

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



FOUNDATION PLAN

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



USE 2x6 STUDS @ 16" oc
AT ALL EXTERIOR WALLS

WALLS AND ROOF FRAMING PLAN

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

THE STRUCTURE(S) WILL BE LOCATED ENTIRELY ON UNDISTURBED NATIVE SOIL.

AS A CALIFORNIA LICENSED ENGINEER/ARCHITECT, I HAVE CLASSIFIED THE NON-EXPANSIVE NATURAL GROUND MATERIALS AS TYPE V PER TABLE R404.4.1 OF THE 2022 CALIFORNIA RESIDENTIAL CODE AND ASSIGNED A LOAD BEARING PRESSURE OF 1500 PSF FOR DESIGN OF FOUNDATIONS RELATED TO THIS PROJECT.

THE UNDERSIGNED ACKNOWLEDGES BY THEIR SIGNATURE BELOW THAT THE PRESUMPTIVE LOAD BEARING VALUE OF 1500 PSF IS ALLOWED FOR FOUNDATION DESIGN WHERE THE FOUNDATIONS ARE EMBEDDED IN NON-EXPANSIVE NATURAL GROUND. THE UNDERSIGNED UNDERSTANDS THAT IF THE BUILDING INSPECTOR SUSPECTS FILL, EXPANSIVE SOILS, OR ANY GEOLOGIC INSTABILITY BASED UPON OBSERVATION OF THE FOUNDATION EXCAVATION, A SOILS OR GEOLOGICAL REPORT, AND RESUBMITTAL OF THE PLANS TO PLAN CHECK TO VERIFY THAT THE REPORT RECOMMENDATIONS HAVE BEEN INCORPORATED, MAY BE REQUIRED.

SIGNATURE: ______________________________ OWNER/LICENSED ENGINEER OR ARCHITECT

SOILS

FRAMING NOTES

ROOF DIAPHRAGM

15/32" APA RATED SHEATHING (MIN.), EXPOSURE 1, 24/0 MAX. SPAN RATING, w/ 8d COMMON NAILS @ 6"o.c. AT BOUNDARY & PANEL EDGE NAILING (E.N.), AND 12" o.c. AT INTERMEDIATE FRAMING MEMBERS

FLOOR DIAPHRAGM

23/32" APA STURD-I-FLOOR, EXPOSURE 1, TONGUE AND GROOVE, w/ 10d COMMON NAILS @ 6" o.c. AT BOUNDARY & PANEL EDGE NAILING (E.N.), AND 12" o.c. AT INTERMEDIATE FRAMING MEMBERS

FRAMING

1) ALL (2) 2x ROOF & FLOOR FRAMING TO HAVE MIN. 16d AT 12" O.C. T&B, STAGGERED

2) ALL (3) 2x FRAMING TO HAVE MIN. 1/2" DIAMETER BOLTS AT 18" O.C. T&B, STAGGERED

3) 2x SOLID BLOCKING REQUIRED AT POINTS OF SUPPORT FOR ALL HORIZONTAL FRAMING MEMBERS. IN ADDITION, ALL 2x10 AND LARGER MEMBERS SHALL HAVE SOLID FULL DEPTH BLOCKING OR BRIDGING AT MAX. 8'-0" o.c.

4) ALL WOOD POSTS AT UPPER FLOORS TO CONTINUE TO BEAM OR FOUNDATION

5) UNLESS DETAILED OTHERWISE, ALL RIDGE / HIP / VALLEY CONNECTIONS TO HAVE A SIMPSON A35 CONNECTOR AT EACH CORNER WITH A 2x KICKER TO BEARING WALL

7) AT ROOF-TO-WALL FRAMING, PROVIDE A35 FRAMING ANCHORS PER SHEARWALL SCHEDULE OR AT MAX. 48" O.C. FROM PLATES TO RAFTERS AND RAFTER BLOCKING AROUND PERIMETER OF BUILDING AND AT DRAG LINES AS INDICATED ON PLANS (SEE PLANS WHERE OTHER REQUIREMENTS MAY OCCUR)

8) AT FIRST FLOOR AND SUBTERRANEAN LEVEL PROVIDE A35'S PER SHEARWALL SCHEDULE OR AT 32" O.C. MAX. FROM PLATES TO FLOOR JOISTS AND BLOCKING AROUND PERIMETER OF BUILDING AND AT DRAG LINES AS INDICATED ON PLANS (SEE PLANS WHERE OTHER REQUIREMENTS MAY OCCUR)

9) PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL WALLS, U.N.O.

10) WHEN SHEAR WALLS ARE SUPPORTED BY WOOD JOISTS THAT ARE PERPENDICULAR TO THE SHEAR WALL, ATTACH SOLID 4x BLOCKING UNDER SHEAR WALLS BETWEEN JOISTS. PROVIDE 2x SOLID BLOCKING UNDER NON-SHEAR WALLS PERPENDICULAR TO FLOOR JOISTS. SEE PLANS AND DETAILS FOR ANY ADDITIONAL REQUIREMENTS.

11) ATTACH MIN. 2x SOLID BLOCKING AND EDGE NAIL THE PERIMETER OF ALL OPENINGS OVER 10" IN WIDTH OR LENGTH IN ALL SHEAR PANELS AND DIAPHRAGMS. SEE DETAILS WHERE OTHER REQUIREMENTS MAY OCCUR.

13) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

STUD SIZE	MAX. HEIGHT
2x4 @ 16" oc	10 FT
2x6 @ 16" oc	12 FT
2x6 @ 8" oc	14 FT
2x8 @ 16" oc	16 FT

LEGEND

⟷	RF TRUSSES @ 24" o.c., U.N.O.
⟶	2x6 F.J. @ 16" o.c., U.N.O.
⊠	4x BM WIDTH POST U.N.O.
□	POST ABOVE
△	PLYWOOD SHEARWALL PER PLAN
—	ST6236 SIMPSON STRAP, U.N.O.
DL	DRAG LINE PER PLAN SEE SHEARWALL NOTES ON SHEET SN1

FOUNDATION NOTES

1) CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS FOR POURED-IN-PLACE CONTINUOUS AND SPREAD FOOTINGS, AND 3000 PSI (SPECIAL INSP. REQ'D) AT 28 DAYS FOR GRADE BEAMS.

2) PORTLAND CEMENT SHALL BE TYPE II PER ASTM C 150. AGGREGRATES SHALL BE PER ASTM C33 WITH MAXIMUM SIZE OF 11/2" FOR FOOTINGS AND 1" FOR ALL OTHER WORK.

3) REINFORCING STEEL SHALL BE ASTM A615, GRADE 60, CLEAN AND RUST FREE. LAPS AT SPLICES AND POUR LINES TO BE 40 BAR DIAMETERS (2'-0" MINIMUM) UNLESS NOTED OTHERWISE ON PLANS.

4) ALL NEW SILL PLATE ANCHOR BOLTS TO BE INSTALLED IN FRESH CONCRETE SHALL BE 5/8" DIAMETER A307 "L" BOLTS SPACED PER PLAN AND SHEARWALL SCHEDULE WITH MINIMUM 7" EMBEDMENT. MAXIMUM ANCHOR BOLT SPACING SHALL BE 4'-0" o.c. ANCHOR BOLTS AT ENDS OF WALL PANELS SHALL BE LOCATED WITHIN 12" AND GREATER THAN 7 BOLT DIAMETERS FROM THE END OF SILL PLATE. THERE SHALL BE A MINIMUM OF TWO ANCHOR BOLTS PER WALL PANEL. (ANCHOR BOLTS TO EXISTING FOOTINGS PER NOTE #8 BELOW). PLATE WASHERS A MINIMUM 3"X3"X0.229" THICK SHALL BE USED ON EACH BOLT. ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

6) IF NO SOILS REPORT IS PROVIDED, ASSUMED ALLOWABLE SOIL BEARING PRESSURE (ASBP) SHALL BE 1500 PSF (PER SOIL SITE CLASS D) & EMBED FOOTINGS A MINIMUM OF 12" INTO COMPETENT SOIL.

7) REINFORCING SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH INTERSECTIONS.

9) CONSTRUCTION JOINTS SHALL BE PREPARED BY WIRE BRUSHING, CLEANING AND BRUSHING IN A PASTE OF NEAT CEMENT MORTAR IMMEDIATELY PRIOR TO POURING. LOCATION OF CONSTRUCTION JOINT SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.

10) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

11) PRIOR TO POURING INTERIOR CONCRETE FLOOR SLABS, ALL SOIL BELOW FLOOR SHALL BE COMPACTED TO REQUIRED 90% DENSITY AND MOISTENED TO A DEPTH NOT LESS THAN 18".

12) DEEPEN NEW FOOTINGS AS NECESSARY TO OBTAIN REQUIRED EMBEDMENT FOR ALL NEW HOLD DOWN BOLTS. ALL HOLD DOWN BOLTS TO HAVE A MINIMUM OF 3" OF CONCRETE COVER TO SOIL @ BOTTOM. ALL HOLDOWN BOLTS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION

13) ALL HOLDOWNS MUST BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.

14) MINIMUM HORIZONTAL DISTANCE FROM BOTTOM LEADING EDGE OF FOOTING TO DAYLIGHT SHALL BE 7'-0"

FOUNDATION LEGEND

═══	(N) 12" WIDE x 24" DEEP FOOTING W/ 2-#4 T. & B.
⌜⌟	(N) CONC. PAD PER PLAN
⊠	4x BM WIDTH POST U.N.O.
□	POST ABOVE
△	SHEARWALL PER PLAN

CONCRETE SLAB

USE 4" THK. CONC. SLAB W/ #3 @ 16" O.C. E.W. @ MID-HIEGHT, O/ 2" SAND, O/ 10 MIL-VAPOR BARRIER (ASTM E96 & E1745), O/ 2" SAND BASE.

CONCRETE PAD SCHEDULE

PAD	SIZE
P1	18" SQ.x24" THK. CONC. PAD W/ 2-#4 E.W.

REVISIONS	BY
1 9-20-23	PLN CHK

PCSD
Paul Christenson San Diego Engineering
Ph 760.207.1885
paul.pcsd@gmail.com

PROJECT:
New Detached ADU
CHULA VISTA, CA

DRAWING:
Accessory Dwelling Unit
Standard 1-Bedroom 498 Sq. Ft. Plan

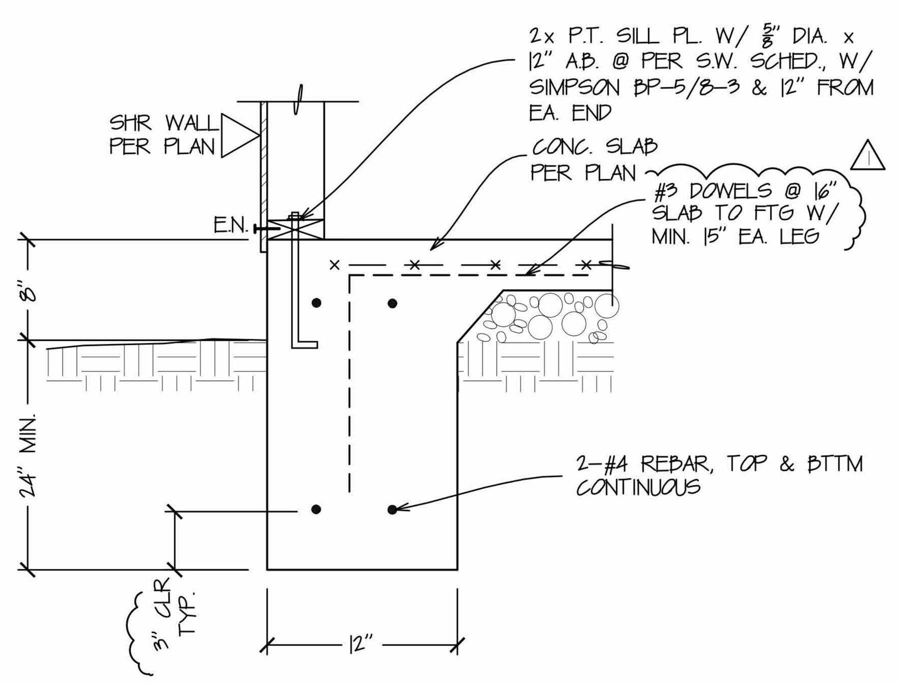
JOB #: 23-269
FILE: CV498-SQ-ADU.dwg
DRAWN: PC
ENGINEER: PC
DATE: 6-26-23
SCALE: 1/4" = 1'-0"

THESE DRAWINGS ARE NOT VALID FOR CONSTRUCTION UNLESS WET STAMPED AND SIGNED BY PCSD ENGINEERING

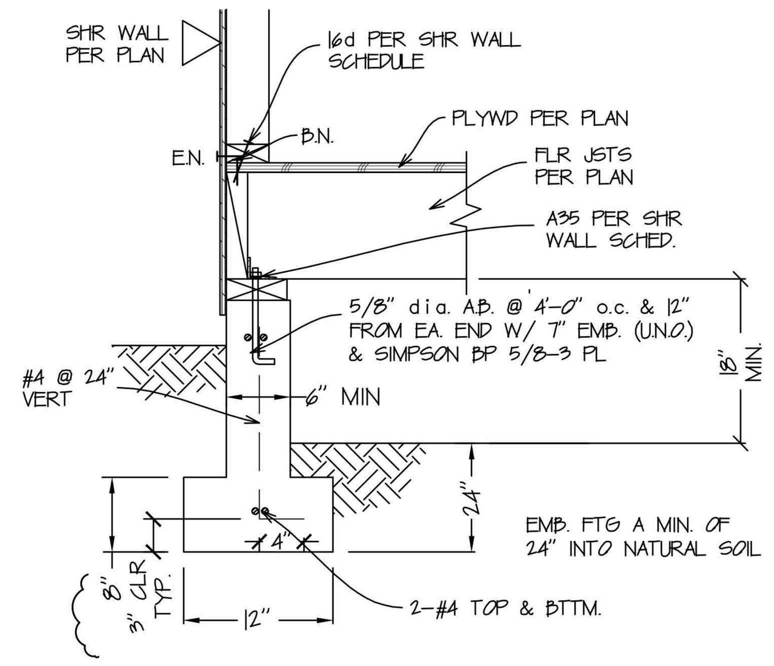
STAMP

REGISTERED PROFESSIONAL ENGINEER
057182
EXP. 12-31-23
CIVIL
STATE OF CALIFORNIA

SHEET
S1
SHEET - OF -



DETAIL 1



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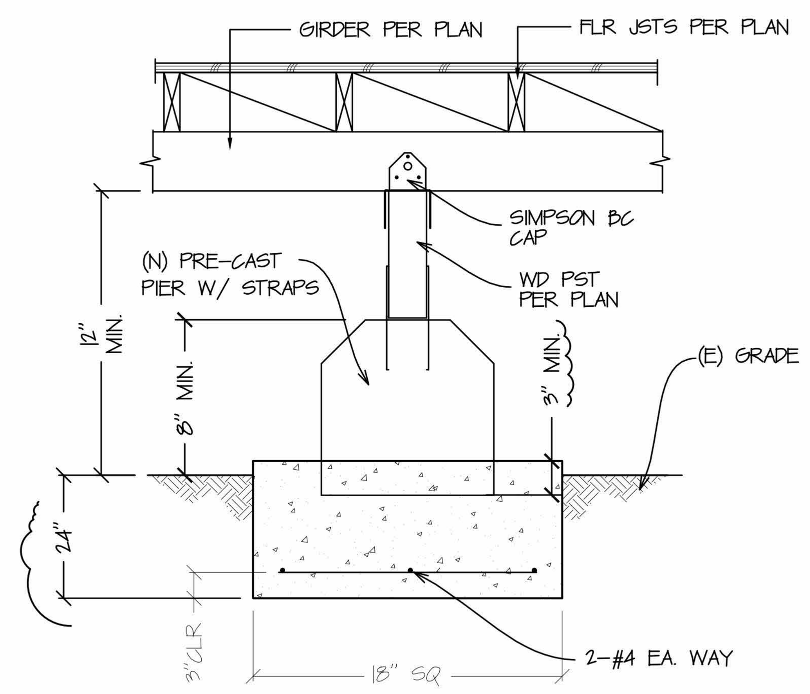
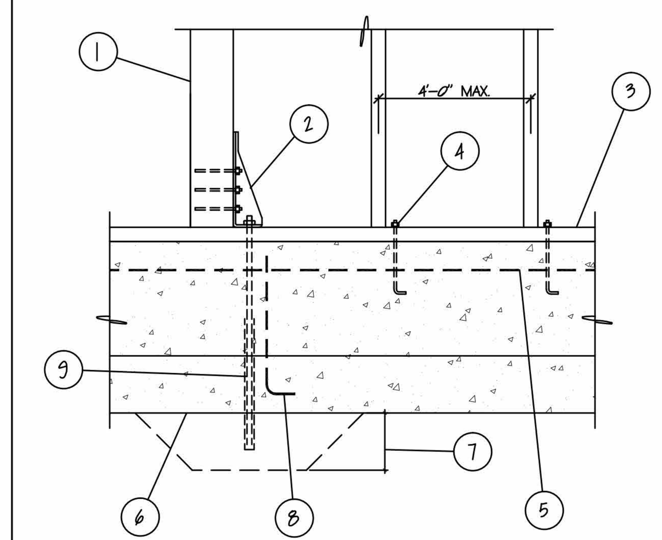


DETAIL 3

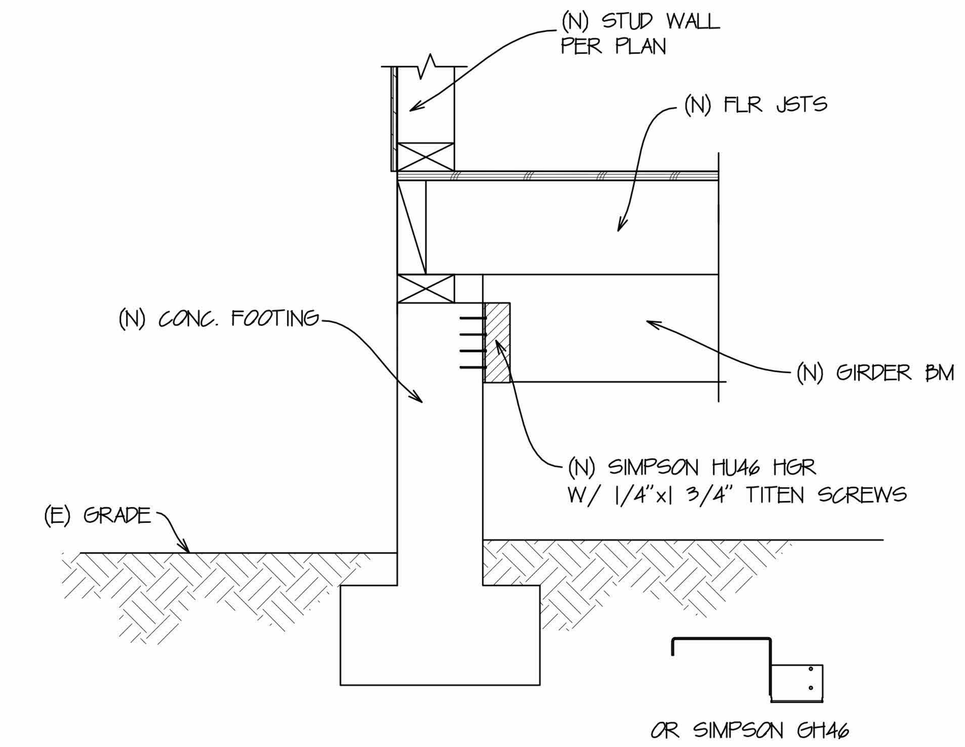
HOLDOWN SCHDULE

HOLDOWN	ANCHOR BOLT	POST SCREWS	MIN. POST SIZE	EMBEDMENT
HDU2	SSTB16	6-SDS 1/4"x2 1/2"	4x	12 5/8"
HDU4	SSTB20	10-SDS 1/4"x2 1/2"	4x	16 5/8"
HDU5	SSTB24	14-SDS 1/4"x2 1/2"	4x	20 5/8"
HDU8	SSTB28	20-SDS 1/4"x2 1/2"	4x	24 7/8"
HDU11	SB1x30	30-SDS 1/4"x2 1/2"	6x	24"
HDU14	PAB8	36-SDS 1/4"x2 1/2"	6x6	11 1/2"
HD19	PAB10	(5) - 1" dia M.B.	6x6	14 1/2"

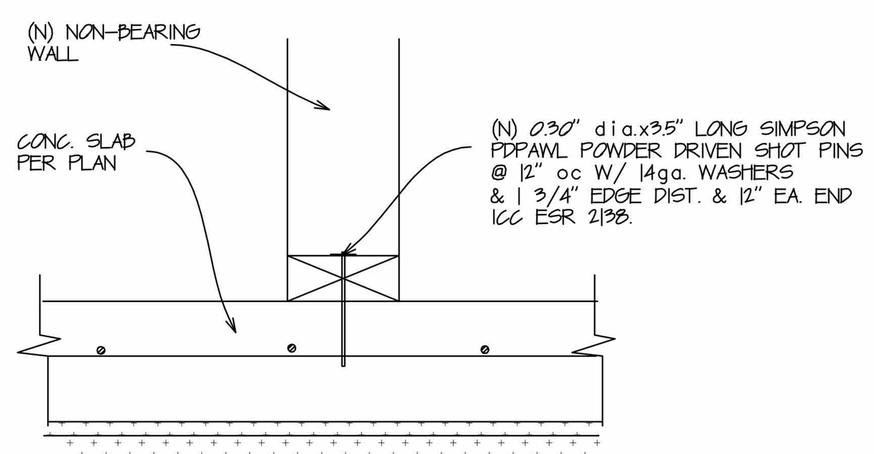


1. 4x/6x POST FACE.
2. HOLDOWN TYPE PER SHEAR WALL SCHEDULE.
3. 2x/3x BOTTOM PLATE.
4. ANCHOR BOLT SIZE AND SPACING PER SHEAR WALL SCHEDULE.
5. CONTINUOUS HORIZONTAL REINFORCING.
6. FOOTING - SEE PLAN.
7. INCREASE FOOTING DEPTH AS REQUIRED FOR FULL EMBEDMENT.
8. (2) #4 VERTICALS TO FOOTING AT EACH HOLDOWN LOCATION.
9. SIMPSON SSTB/PAB ANCHOR ANCHOR TO MATCH HOLDOWN CAPACITY.

DETAIL 4



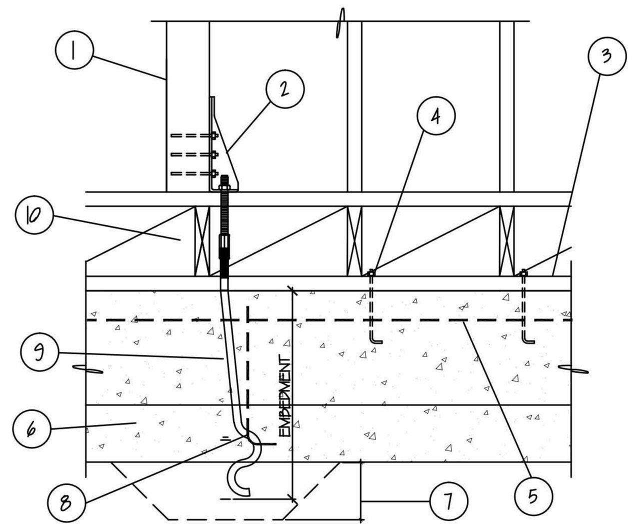
DETAIL 5



DETAIL 6

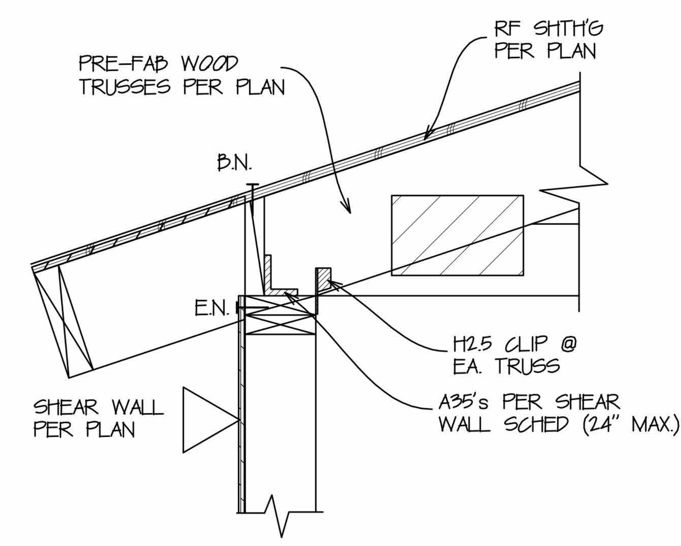
HOLDOWN SCHDULE

HOLDOWN	ANCHOR BOLT	POST SCREWS	MIN. POST SIZE	EMBEDMENT
HDU2	5/8" dia	6-SDS 1/4"x2 1/2"	4x	10"
HDU4	5/8" dia	10-SDS 1/4"x2 1/2"	4x	12"
HDU5	5/8" dia	14-SDS 1/4"x2 1/2"	4x	12"
HDU8	7/8" dia	20-SDS 1/4"x2 1/2"	4x	15"
HDU11	1" dia	30-SDS 1/4"x2 1/2"	6x	18"
HDU14	1 1/4" dia	36-SDS 1/4"x2 1/2"	6x6	20"
HD19	1 1/4" dia	(5) - 1" dia M.B.	6x6	20"

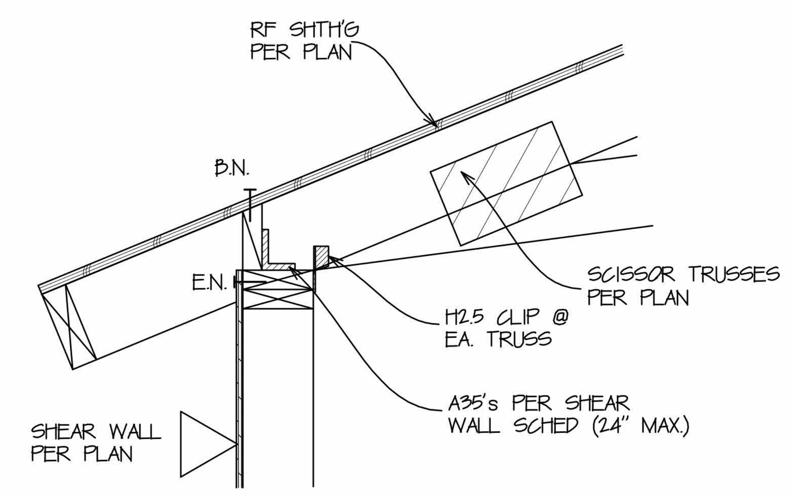


1. 4x/6x POST FACE.
2. HOLDOWN TYPE PER SHEAR WALL SCHEDULE.
3. 2x/3x BOTTOM PLATE.
4. ANCHOR BOLT SIZE AND SPACING PER SHEAR WALL SCHEDULE.
5. CONTINUOUS HORIZONTAL REINFORCING.
6. FOOTING - SEE PLAN.
7. INCREASE FOOTING DEPTH AS REQUIRED FOR FULL EMBEDMENT.
8. (2) #4 VERTICALS TO FOOTING AT EACH HOLDOWN LOCATION.
9. SIMPSON SSTB/PAB ANCHOR ANCHOR TO MATCH HOLDOWN CAPACITY.
10. PROVIDE DBL BLK'G/ RIM JST UNDER HOLD-DOWN

DETAIL 7



DETAIL 8



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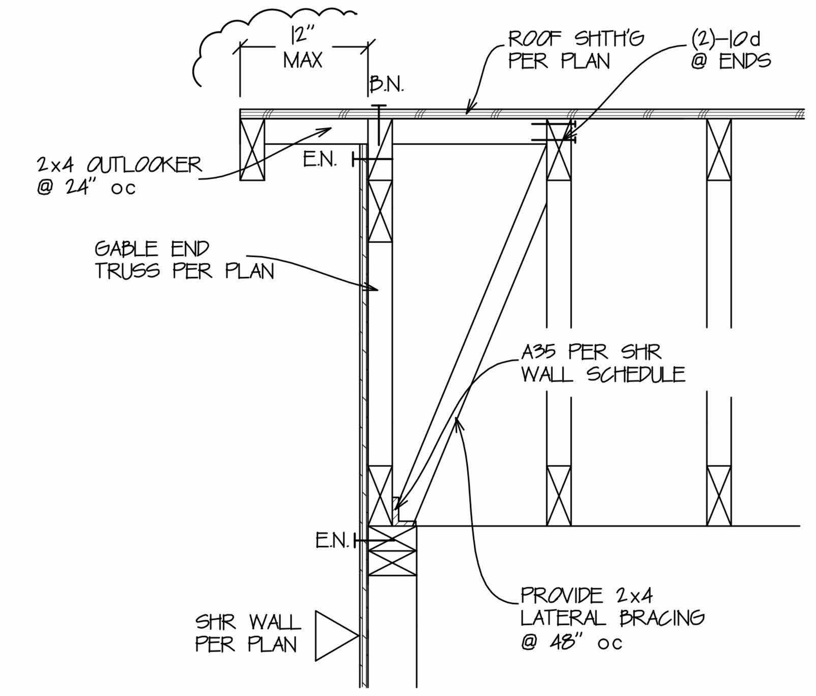

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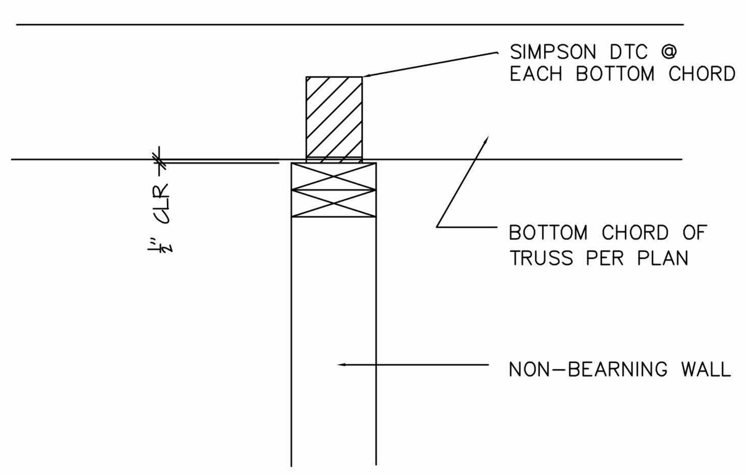

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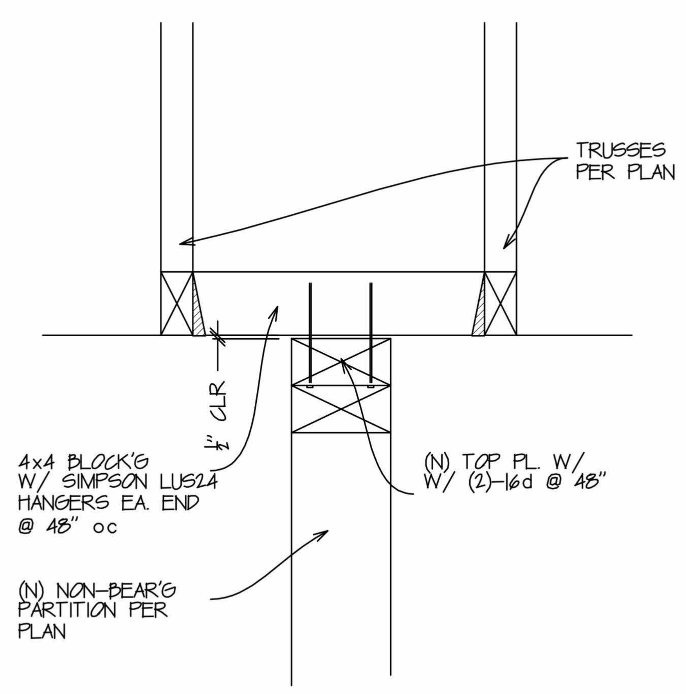

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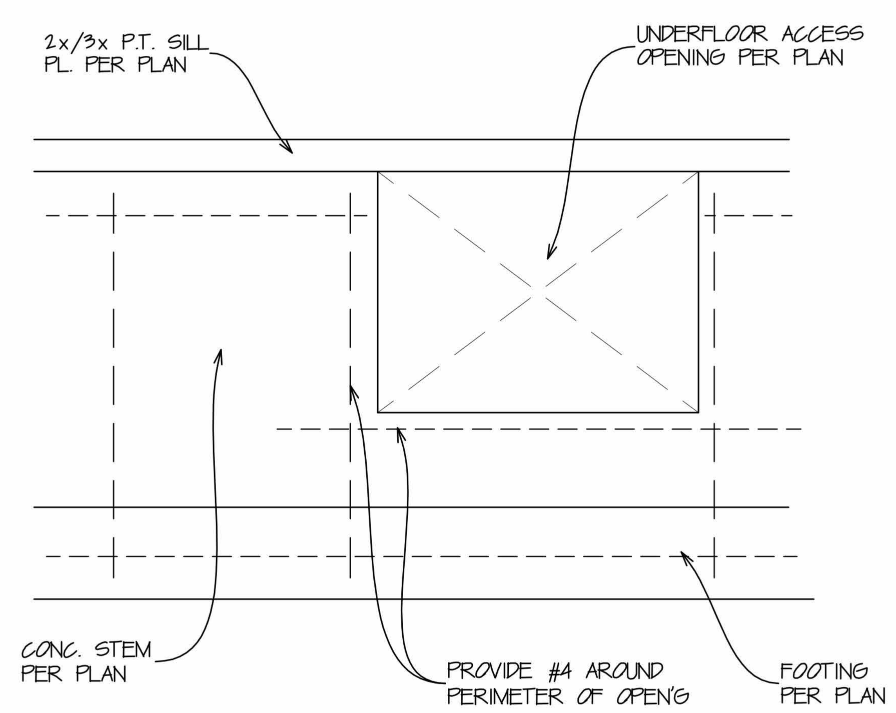
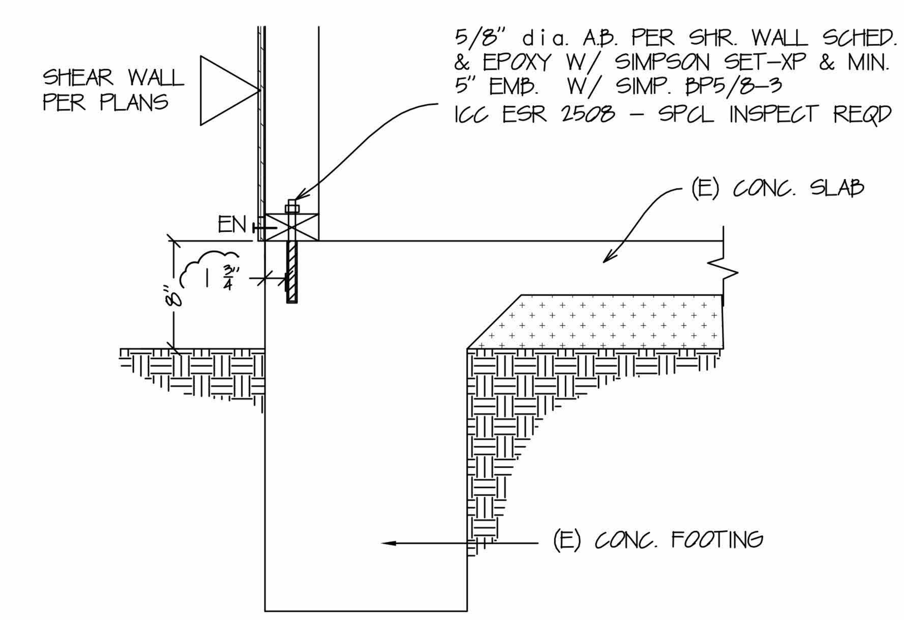


DETAIL 13

DETAIL 14



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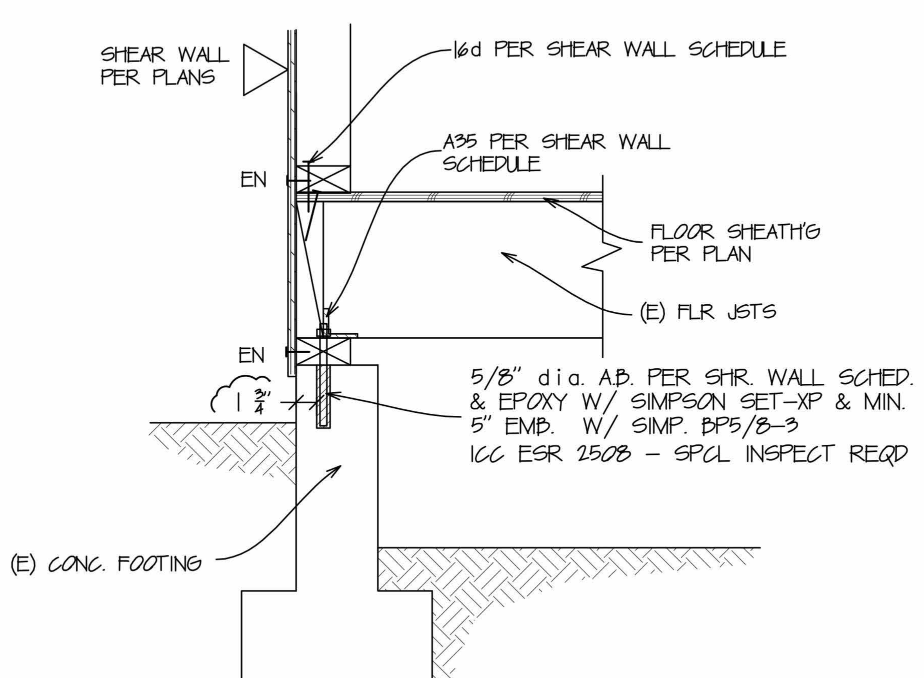
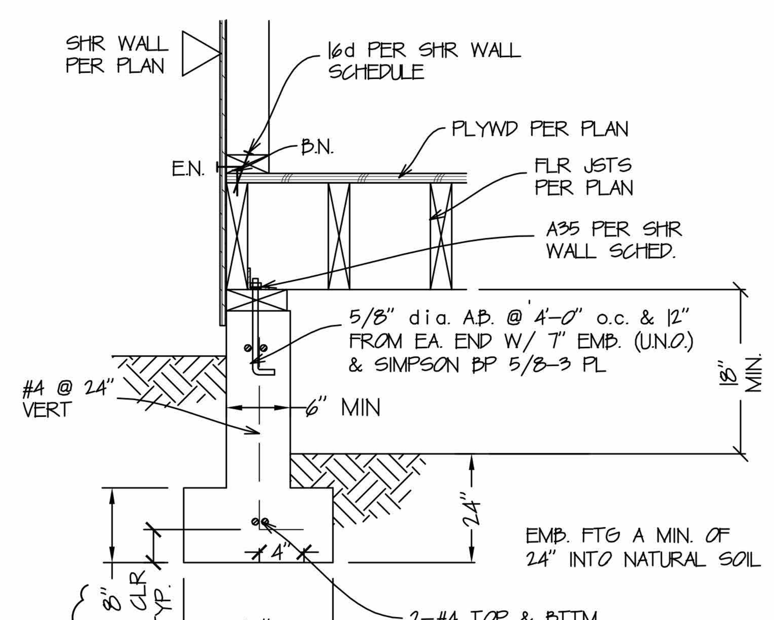


DETAIL 16



DETAIL 17

DETAIL 18

DETAIL 19

DETAIL 20

REVISIONS	BY
1 1-16-23	PLN CHK

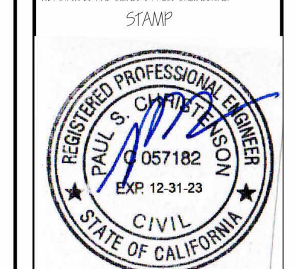
PCSD
Paul Christensen Sun Diego Engineering
Ph: 760.207.1885
paul.pcsd@gmail.com

New Detached ADU
CHULA VISTA, CA

DRAWING: Details

JOB #: 23-269
FILE: CV438-SQ-ADU.dwg
DRAWN: PC
ENGINEER: PC
DATE: 6-26-23
SCALE: 1/2" = 1'-0"

STAMP



SHEET
SD1
SHEET - OF -

GENERAL

1) ALL DESIGN, CONSTRUCTION, AND WORKMANSHIP SHALL CONFORM TO:
2022 EDITION OF THE CALIFORNIA BUILDING CODE (CBC), AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 7-16, 2022 CALIFORNIA MECHANICAL CODE (CMC), 2022 CALIFORNIA PLUMBING CODE, AND ALL LOCAL ORDINANCES AND REQUIREMENTS.

2) THE APPROVED CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.

3) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, SUPERVISION, AND INSTALLATION OF ALL TEMPORARY BRACING AND SHORING SHOULD ENSURE THE SAFETY OF THE WORK. BRACING AND SHORING IS TO BE INSTALLED PER THE LATEST OSHA STANDARDS. ALL BRACING AND/OR SHORING SHALL STAY IN PLACE UNTIL ALL WORK HAS BEEN SUITABLY COMPLETED.

4) THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.

5) DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES ON DRAWINGS. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

6) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THAT ALL APPLICABLE SAFETY LAWS ARE STRICTLY ENFORCED AND TO MAINTAIN A SAFE CONSTRUCTION PROJECT.

7) IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE SUPERVISION OF THE CONSTRUCTION WORK TO ENSURE THAT IT IS BUILT IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE ENGINEER WILL PROVIDE ONLY OBSERVATION OF THE WORK DURING CONSTRUCTION.

8) THE APPROVED SET OF CONSTRUCTION DOCUMENTS, INCLUDING ALL APPROVED REVISIONS, SHALL BE PRESENT AT THE JOB SITE AT ALL TIMES.

9) CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOFS. LOADS SHALL NOT EXCEED THE DESIGN LOADING FOR THE SUPPORTING MEMBERS.

10) NO CHANGES IN THE PLANS WILL BE MADE AND NO EXTRA WORK PERFORMED UNLESS SO APPROVED BY THE OWNER, CIVIL/STRUCTURAL ENGINEER, SOILS ENGINEER/GEOLOGISTS, COUNTY/CITY INSPECTOR AND BUILDING OFFICIALS.

11) A CLAIM FOR EXTRAS WILL BE CONSIDERED IF A CONDITION ARISES WHICH WAS CHANGED BY DESIGN BY OTHERS, UNFORESEEN OR HAS NOT BEEN SHOWN ON THE PLANS. SUCH CLAIMS FOR EXTRAS WILL NOT BE ALLOWED UNLESS THE CONTRACTOR HAS NOTIFIED THE OWNER AND SUPERVISING ENGINEER IN WRITING, INCLUDING AN AGREED-TO REIMBURSEMENT SCHEDULE, PRIOR TO PERFORMING THE EXTRA WORK.

INTENT OF THE DOCUMENTS

IT IS THE INTENT OF THE DRAWINGS AND THE SPECIFICATIONS TO REQUIRE THE COMPLETION OF THE WORK IN A THOROUGH AND WORKMANLIKE MANNER IN EVERY RESPECT.

DESCRIPTION OF WORK

THE CONTRACTOR SHALL FURNISH PERMITS, LICENSES, FEES, MATERIAL, LABOR, TOOLS, PLANT, SUPPLIES, EQUIPMENT, TRANSPORTATION, SUPERINTENDENCE, TEMPORARY CONSTRUCTION OF EVERY NATURE, INSURANCE, TAXES, CONTRIBUTIONS, AND ALL OTHER SERVICES AND FACILITIES, UNLESS SPECIFICALLY EXCEPTED NECESSARY TO COMPLETE THIS PROJECT.

LIABILITY AND COMPENSATION INSURANCE

THE CONTRACTOR SHALL MAINTAIN AT ALL TIMES, FULL AND UNLIMITED WORKMEN'S COMPENSATION INSURANCE IN ACCORDANCE WITH THE LABOR CODE OF THE STATE OF CALIFORNIA, AND SHALL CARRY PUBLIC CONTINGENT LIABILITY OF INSURANCE, IN AMOUNTS SATISFACTORY TO AND IN COMPANIES SELECTED WITH THE CONSENT OF THE OWNER.

PERMITS

THE CONTRACTOR SHALL OBTAIN THE BUILDING PERMIT, AND ALL OTHER CERTIFICATIONS, INSPECTION REPORTS, RELEASES, JURISDICTIONAL SETTLEMENTS, NOTICES, RECEIPTS FOR FEE PAYMENTS, JUDGMENTS, AND SIMILAR DOCUMENTS, CORRESPONDENCE AND RECORDS IN COLLECTION.

SUBCONTRACTOR'S STATUS

EVERY ITEM MENTIONED IN THE SPECIFICATIONS IS INTENDED TO REPRESENT THE QUALITY OF MATERIALS THAT WILL BE DEMANDED. SHOULD THE SUBCONTRACTOR WISH TO SUGGEST ANY SUBSTITUTES THAT HE CONSIDERS EQUAL IN VALUE AND EFFICIENCY WITH THE ONE SPECIFIED, HE SHALL STATE WHAT THE ITEM SUGGESTED IS, AND THE DIFFERENCE IN COST, IF ANY.

IF SUBSTITUTES OF MATERIALS (EQUALLY GOOD) ARE OFFERED AT THE TIME BIDS ARE SUBMITTED, THEY WILL BE CONSIDERED. IN THE EVENT THE OWNER WISHES TO ACCEPT THE SUBSTITUTE, ARRANGEMENTS WILL BE MADE FOR THE CHANGE BEFORE ENTERING INTO A CONTRACT.

IF NO ITEMS ARE SUGGESTED AS A SUBSTITUTE AT THE TIME THE BIDS ARE SUBMITTED, THEN NO DEVIATION WILL BE ALLOWED FROM THE MATERIALS SPECIFIED WITHOUT FIRST SECURING THE APPROVAL OF THE OWNER.

WORKMAN SAFETY-EXCAVATIONS

ALL REGULATIONS OF THE STATE OR FEDERAL OSHA SHOULD BE FOLLOWED BEFORE ALLOWING WORKMEN IN A TRENCH OR OTHER EXCAVATION.

IF EXCAVATIONS ARE TO BE MADE DURING THE RAINY SEASON PARTICULAR CARE SHOULD BE GIVEN TO INSURE THAT BERMS OR OTHER DEVICES PREVENT SURFACE WATER FROM FLOWING OVER THE TOP OF THE EXCAVATION OR PONDING AT THE TOP OF THE EXCAVATIONS.

NO TRENCHES OR EXCAVATIONS SHALL BE 5' OR MORE IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND, OR OBTAIN NECESSARY PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO ISSUANCE OF A BUILDING OR GRADING PERMIT.

WRAP AND PROTECT ALL UTILITY LINES IN WAY OF CONSTRUCTION PER STANDARD CONSTRUCTION PRACTICES

TIMBER

1) ALL TIMBER DESIGN AND CONSTRUCTION SHALL BE PER 2022 CBC CHAPTER 23 AND 2018 NATIONAL DESIGN SPECIFICATION (NDS). ALL SAWN LUMBER SHALL BE GRADED BY EITHER WWPA OR WCLIB.

2) U.N.O., ALL WOOD SILL PLATES AND LEDGERS BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR-LARCH. ANCHOR BOLTS SHALL BE 5/8" DIAMETER SPACED A MAXIMUM 4'-0" o.c. AND WITHIN 12" AND GREATER THAN SEVEN BOLT DIAMETERS FROM: EACH END OF A SILL, FROM A HOLE, OR FROM A NOTCH GREATER THAN 1/3 THE WIDTH OF THE SILL. SEE SHEARWALL SCHEDULE FOR OTHER REQUIREMENTS.

3) ALL WALL BRACING AND MATCHING OF STUDS SHALL CONFORM TO SECTION 2308.9.3 OF THE 2022 CALIFORNIA BUILDING CODE.

4) UNLESS NOTED OTHERWISE ON FRAMING PLANS:

ROOF SHEATHING SHALL BE 15/32" APA-RATED SHEATHING, EXPOSURE 1, MIN. SPAN RATING 24/0, NAILED WITH 8d COMMON @ 6"o.c. EDGES & BOUNDARIES AND 12"o.c AT INTERMEDIATE FRAMING MEMBERS.

FLOOR SHEATHING SHALL BE 23/32" APA-RATED STURD-I-FLOOR, T&G, EXPOSURE 1, MIN. SPAN RATING 20" o.c., NAILED WITH 10d COMMON @ 6"o.c. AT EDGES & BOUNDARIES AND 12"o.c. AT INTERMEDIATE FRAMING MEMBERS

SHEARWALL SHEATHING SHALL BE APA "STRUCTURAL I" RATED, EXPOSURE 1, GROUP 1. NAILING PER SHEARWALL SCHEDULE.

ALL WOOD STRUCTURAL PANEL SHEATHING SHALL BE GRADE MARKED BY APA, T.E.C.O., OR P.T.L. AND SHALL CONFORM TO PS 1-19, PS 2-18, OR PRP-108..

TRASH 'REMOVAL

THE CONTRACTOR SHALL PROMPTLY REMOVE FROM THE BUILDING, LOT, SIDEWALKS, AND STREETS - ALL RUBBISH AND DIRT, AS IT ACCUMULATES, DUE TO THE WORK DONE UNDER THIS CONTRACT.

ALL COMBUSTIBLE DEBRIS SHALL BE REMOVED FROM THE BUILDING ON A DAILY BASIS.

FOUNDATION

1) CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS FOR POURED-IN-PLACE CONTINUOUS AND SPREAD FOOTINGS, AND 3000 PSI (SPECIAL INSP. REQ'D) AT 28 DAYS FOR GRADE BEAMS.

2) PORTLAND CEMENT SHALL BE TYPE II PER ASTM C 150. AGGREGRATES SHALL BE PER ASTM C33 WITH MAXIMUM SIZE OF 11/2" FOR FOOTINGS AND 1" FOR ALL OTHER WORK.

3) REINFORCING STEEL SHALL BE ASTM A615, GRADE 60, CLEAN AND RUST FREE. LAPS AT SPLICES AND POUR LINES TO BE 40 BAR DIAMETERS (2'-0" MINIMUM) UNLESS NOTED OTHERWISE ON PLANS.

4) U.N.O., SLABS ON GRADE SHALL BE 4" THICK WITH #3 BARS @ 16" o.c. EACH WAY WITH 2 INCH COVER AT BOTTOM. 4" CLEAN SAND SHALL BE PLACED BELOW THE SLAB WITH A 10 MIL PLASTIC VAPOR BARRIER PER ASTM E96 & ASTM E1745 PLACED AT MID-HEIGHT. BARS SHALL BE LAPPED 20". SEE SOILS REPORT (IF AVAILABLE) FOR OTHER REQUIREMENTS.

5) ALL NEW SILL PLATE ANCHOR BOLTS TO BE INSTALLED IN FRESH CONCRETE SHALL BE 5/8" DIAMETER A307 "L" BOLTS SPACED PER PLAN AND SHEARWALL SCHEDULE WITH MINIMUM 7" EMBEDMENT. MAXIMUM ANCHOR BOLT SPACING SHALL BE 4'-0" o.c. ANCHOR BOLTS AT ENDS OF WALL PANELS SHALL BE LOCATED WITHIN 12" AND GREATER THAN 7 BOLT DIAMETERS FROM THE END OF SILL PLATE. THERE SHALL BE A MINIMUM OF TWO ANCHOR BOLTS PER WALL PANEL. (ANCHOR BOLTS TO EXISTING FOOTINGS PER NOTE #13 BELOW). PLATE WASHERS A MINIMUM 3"X3"X0.229" THICK SHALL BE USED ON EACH BOLT. ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

6) IF NO SOILS REPORT IS PROVIDED, ASSUMED ALLOWABLE SOIL BEARING PRESSURE (ASBP) SHALL BE 1500 PSF (PER SOIL SITE CLASS D) & EMBED FOOTINGS A MINIMUM OF 24" INTO COMPETENT SOIL.

7) REINFORCEMENT CLEARANCES FOR FOOTINGS AND GRADE BEAMS, (U.N.O.):
A) POURED AGAINST EARTH - 3"
B) FORMED SURFACE - 2"

8) REMOVAL OF FORMS:
A) SUPPORTING VERTICAL SURFACES - 2 DAYS MINIMUM
B) SUPPORTING BEAMS & GIRDERS - 15 DAYS MINIMUM

9) REINFORCING SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH INTERSECTIONS.

13) ALL NEW SILL PLATE ANCHOR BOLTS TO BE INSTALLED INTO EXISTING FOOTINGS SHALL BE SIMPSON TITAN HD ANCHOR (ICC-ES-ESER-1056/LARR# 25560)

14) CONSTRUCTION JOINTS SHALL BE PREPARED BY WIRE BRUSHING, CLEANING AND BRUSHING IN A PASTE OF NEAT CEMENT MORTAR IMMEDIATELY PRIOR TO POURING. LOCATION OF CONSTRUCTION JOINT SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.

15) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

16) PRIOR TO POURING INTERIOR CONCRETE FLOOR SLABS, ALL SOIL BELOW FLOOR SHALL BE COMPACTED TO REQUIRED 90% RELATIVE DENSITY AND MOISTENED TO A DEPTH NOT LESS THAN 18".

17) DEEPEN NEW FOOTINGS AS NECESSARY TO OBTAIN REQUIRED EMBEDMENT FOR ALL NEW HOLD DOWN BOLTS. ALL HOLD DOWN BOLTS TO HAVE A MINIMUM OF 3" OF CONCRETE COVER TO SOIL @ BOTTOM.

FRAMING

ROOF DIAPHRAGM

15/32" APA RATED SHEATHING (MIN.), EXPOSURE 1, 24/0 MAX. SPAN RATING, w/ 8d COMMON NAILS @ 6"o.c. AT BOUNDARY & PANEL EDGE NAILING (E.N.), AND 12" o.c. AT INTERMEDIATE FRAMING MEMBERS

FLOOR DIAPHRAGM

23/32" APA STURD-I-FLOOR, EXPOSURE 1, TONGUE AND GROOVE, w/
10d COMMON NAILS @ 6" o.c. AT BOUNDARY & PANEL EDGE NAILING (E.N.), AND 12" o.c. AT INTERMEDIATE FRAMING MEMBERS

FRAMING

* BUILT-UP WOOD FRAMING MEMBERS MAY NOT BE SUBSTITUTED FOR 4x AND WIDER BEAMS UNLESS NOTED BY ENGINEER
* ALL (2) 2x ROOF & FLOOR FRAMING TO HAVE MIN. 16d AT 12" O.C. T&B, STAGGERED
* ALL (3) 2x FRAMING TO HAVE MIN. 1/2" DIAMETER BOLTS AT 18" O.C. T&B, STAGGERED
* 2x SOLID BLOCKING REQUIRED AT POINTS OF SUPPORT FOR ALL HORIZONTAL FRAMING MEMBERS. IN ADDITION, ALL 2x10 AND LARGER MEMBERS SHALL HAVE SOLID FULL DEPTH BLOCKING OR BRIDGING AT MAX. 8'-0" o.c.
* ALL WOOD POSTS AT UPPER FLOORS TO CONTINUE TO BEAM OR FOUNDATION
* UNLESS DETAILED OTHERWISE, ALL RIDGE / HIP / VALLEY CONNECTIONS TO HAVE A SIMPSON A35 CONNECTOR AT EACH CORNER WITH A 2x KICKER TO BEARING WALL
* AT ROOF-TO-WALL FRAMING, PROVIDE A35 FRAMING ANCHORS PER SHEARWALL SCHEDULE OR AT MAX. 48" O.C. FROM PLATES TO RAFTERS AND RAFTER BLOCKING AROUND PERIMETER OF BUILDING AND AT DRAG LINES AS INDICATED ON PLANS (SEE PLANS WHERE OTHER REQUIREMENTS MAY OCCUR)
* AT FIRST FLOOR AND SUBTERRANEAN LEVEL PROVIDE A35'S PER SHEARWALL SCHEDULE OR AT 32" O.C. MAX. FROM PLATES TO FLOOR JOISTS AND BLOCKING AROUND PERIMETER OF BUILDING AND AT DRAG LINES AS INDICATED ON PLANS (SEE PLANS WHERE OTHER REQUIREMENTS MAY OCCUR)
* PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL WALLS, U.N.O.
* WHEN SHEAR WALLS ARE SUPPORTED BY WOOD JOISTS THAT ARE PERPENDICULAR TO THE SHEAR WALL, ATTACH SOLID 4x BLOCKING UNDER SHEAR WALLS BETWEEN JOISTS. PROVIDE 2x SOLID BLOCKING UNDER NON-SHEAR WALLS PERPENDICULAR TO FLOOR JOISTS. SEE PLANS AND DETAILS FOR ANY
ADDITIONAL REQUIREMENTS.
* ATTACH MIN. 2x SOLID BLOCKING AND EDGE NAIL THE PERIMETER OF ALL OPENINGS OVER 10" IN WIDTH OR LENGTH IN ALL SHEAR PANELS AND DIAPHRAGMS. SEE DETAILS WHERE OTHER REQUIREMENTS MAY OCCUR.
* PROVIDE A MINIMUM 3x4 OR 2x6 @ 16" FOR ALL STUD WALLS SUPPORTING TWO OR THREE FLOORS WITH 10' MAX PLATE HEIGHTS.
* ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

REINFORCING STEEL

ALL PRIMARY REINFORCEMENT SHALL CONFORM TO A.S.T.M. A- 615, GRADE 60 K.S.I. STEEL.

ALL TIES AND STIRRUPS SHALL CONFORM TO A.S.T.M. A-615, GRADE 40 K.S.I. STEEL.

SPLICES OF REINFORCING SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS UNLESS SPECIFIED ON PLANS AND SECURELY WIRED TOGETHER, USING A MINIMUM OF 16 GA. WIRE. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHEREVER POSSIBLE.

TIMBER (CONTINUED)

5) HORIZONTAL WOOD STRUCTURAL PANELS SHALL BE LAID WITH THE LONG DIMENSION AND FACE GRAIN PERPENDICULAR TO THE RAFTERS OR JOISTS, AND THE SHEETS SHALL BE STAGGERED AS SHOWN IN 2022 CBC TABLE 2306.2.2 (CASES 1 AND 3). EACH SHEET SHALL CONTAIN A MINIMUM OF 8 SQUARE FEET AND EXTEND TO 3 SUPPORTS. 1/8" SPACING BETWEEN PANEL ENDS AND EDGES IS REQUIRED. ALL WOOD STRUCTURAL PANEL DIAPHRAGMS SHALL BE REVIEWED BY CONTRACTOR FOR COMPLIANCE WITH NAILING AND PANEL REQUIREMENTS BEFORE FINISH IS APPLIED.

6) U.N.O., ALL 2x ROOF RAFTER AND FLOOR JOIST FRAMING MEMBERS SHALL BE MINIMUM GRADE DOUGLAS FIR-LARCH NO. 2 OR BETTER. ALL BEAMS, HEADERS, AND POSTS SHALL BE MINIMUM DOUGLAS FIR-LARCH NO. 1 OR BETTER. ALL VERTICAL WALL FRAMING MEMBERS SHALL BE DOUGLAS FIR -LARCH NO. 2 OR BETTER.

7) ALL PSL AND LVL ENGINEERED FRAMING MEMBERS SHOWN ON PLANS TO BE 2.2E PARALLAM (E=2200 ksi) AND 1.9E MICROLAM BEAMS (E=1900 ksi), RESPECTIVELY, AS DESCRIBED IN ICC-ES-ESR-1153 & ICC-ES-ESR-1387. ALL WOOD I-JOIST MEMBERS SHOWN ON PLANS TO BE AS DESCRIBED IN ESR-1153.

8) MOISTURE CONTENT OF SAWN LUMBER AT TIME OF INSTALLATION SHALL NOT EXCEED 19%.

9) ALL BOLT HEADS AND NUTS BEARING ON WOOD SHALL HAVE WASHERS. HOLES IN WOOD FOR BOLTS SHALL BE DRILLED MAX. 1/16" LARGER THAN NOMINAL BOLT SIZE.

10) NOTCHING OR DRILLING HOLES IN BEAMS OR JOISTS SHALL BE ONLY AS DETAILED PER ENGINEER AND SHALL COMPLY WITH 2022 CBC SECTION 2308.9.10 & 2308.9.11
11) ALL SAWN LUMBER (2x, 4x, 6x) RAFTERS, FLOOR JOISTS, AND BEAMS SHALL HAVE SOLID WOOD BLOCKING AT ALL POINTS OF SUPPORT. MEMBERS WITH NOMINAL DEPTH 10" OR GREATER SHALL HAVE 2x FULL DEPTH SOLID BLOCKING OR CROSS BRIDGING SPACED AT 8'-0" FOR MAXIMUM.

12) U.N.O., ALL FRAMING CONNECTION HARDWARE SHALL BE AS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY AND SHALL BE REFERENCED AS SHOWN IN THEIR LATEST CATALOG. ALL CONNECTOR NAILS AND BOLTS SHALL BE AS DESIGNATED PER MANUFACTURER. ALTERNATE MANUFACTURER CONNECTOR HARDWARE MAY BE USED PROVIDED ENGINEER'S WRITTEN APPROVAL IS OBTAINED BY CONTRACTOR AND ICC APPROVAL IS PROVIDED.

13) TOP PLATES SHALL LAP LOWER PLATES AT CORNERS, AND BREAKS AT PLATE SHALL BE LAPPED A MINIMUM OF 4'-0", WITH 20-16d NAILS ON EACH SIDE.

14) ALL BEAMS SHALL BE SUPPORTED BY POSTS OR GIRDERS. FOR 4x8 AND SMALLER BEAMS A MINIMUM (2)-2X4 D.F. #2 POST SHALL BE USED, U.N.O. FOR 4x10 AND LARGER BEAMS A MINIMUM 4x4 D.F. #1 POST SHALL BE USED, U.N.O. ALL POSTS SHALL PROVIDE FULL BEARING WIDTH FOR THE BEAM, U.N.O.

15) ALL POSTS SHALL BE CONTINUED BETWEEN FLOORS WITH SOLID FULL WIDTH BLOCKING AND A POST OF EQUAL OR GREATER SIZE BELOW, UNTIL A BEAM OR FOUNDATION IS ENCOUNTERED. ALL POSTS INSIDE WALLS MAY BEAR ON THE SOLE OR SILL PLATE, U.N.O. ISOLATED POSTS SHALL BE SEATED IN POST OR COLUMN BASES PER PLAN.

16) ALL WALLS HIGHER THAN 10'-0" SHALL BE 2x6 OR 3x6 STUDS @ 16" o.c., UNLESS SPECIFICALLY DESIGNED OTHERWISE BY ENGINEER. ALL WALLS CONTAINING MECHANICAL PIPING 2" IN DIAMETER OR LARGER SHALL BE FRAMED WITH 2x6 STUDS @ 16" o.c.

17) CUTTING, NOTCHING, OR BORING HOLES IN STUDS SHALL COMPLY WITH 2022 CBC SECTION 2308.9.10 & 2308.9.11.

18) FRAMING AND NAILING NOT SPECIFICALLY DETAILED ON THE PLANS ARE TO CONFORM TO 2022 CBC TABLE 2304.10.2. COMMON NAILS ARE REQUIRED FOR ALL SHEARWALL, FLOOR AND ROOF DIAPHRAGMS. USE DOUBLE JOISTS UNDER PARALLEL PARTITIONS, U.N.O. DOUBLED HORIZONTAL MEMBERS SHALL BE STITCH-NAILED TOGETHER WITH TWO ROWS OF 16d NAILS @ 12" o.c. STAGGERED, UNLESS OTHERWISE DETAILED. TRIPLED HORIZONTAL MEMBERS SHALL HAVE MIN. 1/2" DIAMETER BOLTS AT 18" O.C. T&B, STAGGERED.

19) ANCHOR BOLTS TO SILL AND SOLE PLATES SHALL HAVE NUTS DRIVEN FLUSH WITH SQUARE PLATE WASHERS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

BOLT DIAMETER	PLATE SIZE
5/8"	0.229" x 3" x 3"
3/4"	5/16" x 3" x 3"
7/8"	5/16" x 3" x 3"
1"	3/8" x 3 1/2" x 3 1/2"

THE ABOVE SCHEDULE ALSO APPLIES TO LAG SCREWS DRIVEN INTO SOLE PLATES FOR RAISED FLOOR AND UPPER STORY CONDITIONS.

20) LAG SCREWS SHALL BE INSTALLED IN PRE-DRILLED HOLES. THE CLEARANCE HOLE FOR THE SHANK PORTION SHALL HAVE THE SAME DIAMETER AND DEPTH AS THE SHANK. THE LEAD HOLE FOR THE THREADED PORTION SHALL HAVE A DIAMETER EQUAL TO 40%-70% OF THE SHANK DIAMETER (FOR ALL DOUG-FIR LARCH MEMBERS). LAG SCREWS ARE TO BE INSTALLED WITH THE TURN OF A WRENCH. DRIVING, AS WITH A HAMMER, IS NOT PERMITTED.

21) MINIMUM NAILING SHALL BE PER TABLE 2304.10.2 OF THE 2022 C.B.C.

22) ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED TIMBER SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION, SUCH AS "ZMAX", HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL.

STRUCTURAL STEEL

1) ALL STRUCTURAL STEEL SHALL CONFORM TO SECTION 2203.1 - 2022 CBC:
W-WIDE FLANGE SHAPES ASTM A992, Fy = 50-65 KSI
PLATES, ANGLES, CHANNELS: ASTM A36, Fy = 36 KSI
HOLLOW TUBE SHAPES: ASTM A500, GRADE B, Fy = 46 KSI
ROUND PIPE SHAPES: ASTM A53, GRADE B, Fy = 35 KSI

2) ALL STRUCTURAL STEEL SHALL BE FABRICATED IN A SHOP APPROVED BY THE LOCAL MUNICIPAL BUILDING DEPARTMENT.

3) STRUCTURAL SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

4) ALL STRUCTURAL STEEL SHALL BE IDENTIFIED PER 2022 CBC. DESIGN OF STEEL MEMBERS SHALL BE PER ASD PROVISIONS IN THE 2022 CBC SECTION 2205.1 & 2205.2.

5) STRUCTURAL STEEL SHALL HAVE A SHOP COAT OF RED-OXIDE PRIMER.

6) AFTER ERECTION, ALL FIELD CONNECTIONS, BOLTS, WELDS, AND ALL ABRADED PLACES ON THE SHOP PAINT SHALL BE TOUCHED UP WITH THE SAME TYPE OF PAINT AS THE SHOP COAT.

7) FIELD AND SHOP WELDING SHALL BE DONE BY A DULY CERTIFIED WELDER USING LOW-HYDROGEN E70-T6 ELECTRODE RODS, UNLESS NOTED OTHERWISE. CONTINUOUS INSPECTION BY A REGISTERED INSPECTOR IS REQUIRED FOR FIELD WELDING. ALL WELDING SHALL BE PER AWS, LATEST EDITION, AND AISC SPECIFICATIONS.

8) BOLTS SHALL BE OF A307 QUALITY WITH WASHERS, UNLESS OTHERWISE SPECIFIED ON PLANS. ANY HIGH STRENGTH A325 OR A490 BOLTS SHALL HAVE SPECIAL INSPECTION, UNLESS NOTED OTHERWISE.

9) STEEL ERECTOR SHALL PROVIDE ALL ERECTION BRACING REQUIRED TO MAINTAIN STRUCTURE PLUMB AND PROPERLY BRACED DURING CONSTRUCTION.

10) ALL STRUCTURAL STEEL SHALL BE DESIGNED BASED UPON THE ALLOWABLE STRESS DESIGN METHOD PER AISC 360.

CONCRETE

1) ALL PHASES OF WORK PERTAINING TO CONCRETE CONSTRUCTION SHALL CONFORM TO 2022 CBC CHAPTER 19 (BASED ON ACI-318, LATEST ADOPTED EDITION) FOR REINFORCED CONCRETE.

2) MINIMUM ULTIMATE COMPRESSIVE CONCRETE STRENGTHS (f'c) SHALL BE:
SLAB ON GRADE . . . . 2500 PSI @ 28 DAYS
STRUCTURAL DECK . . . . 3000 PSI @ 28 DAYS
COLUMNS . . . . 3000 PSI @ 28 DAYS
FOOTINGS . . . . 2500 PSI @ 28 DAYS
CONCRETE/GRADE BEAMS . . . . 3000 PSI @ 28 DAYS
CAISSONS . . . . 3000 PSI @ 28 DAYS

3) CONTINUOUS INSPECTION BY AN APPROVED DEPUTY INSPECTOR IS REQUIRED FOR CAISSONS, GRADE BEAMS, STRUCTURAL SLABS, AND OTHER CONCRETE MEMBERS WHERE DESIGN COMPRESSIVE STRENGTH VALUE EXCEEDS 2500 PSI.

4) CEMENT SHALL BE TYPE II, LOW ALKALI, CONFORMING TO A.S.T.M. C-150.

5) ALL PRIMARY REINFORCEMENT SHALL BE PER ASTM A-615, GRADE 60 ksi STEEL. ALL TIES AND STIRRUPS SHALL CONFORM TO A.S.T.M. A-615, GRADE 40 ksi STEEL.

6) UNLESS NOTED OTHERWISE, SPLICES OF REINFORCING SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS AND SECURELY WIRED TOGETHER, USING A MINIMUM OF 16 GA. WIRE. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHEREVER POSSIBLE. WHERE SPECIFICALLY CALLED OUT, WELDING OF REINFORCING BARS SHALL BE PERFORMED BY A CERTIFIED WELDER USING E90 SERIES ELECTRODES PER AWS, LATEST EDITION.

7) INTERIOR CONCRETE SLABS ON GRADE SHALL HAVE A STEEL TROWEL FINISH. DRIVEWAYS, WALKS, AND GARAGE SLABS SHALL HAVE A BROOM FINISH AND SHALL BE PITCHED TO SHED WATER.

8) PRIOR TO POURING INTERIOR CONCRETE FLOOR SLABS, ALL SOIL BELOW FLOOR SHALL BE COMPACTED TO REQUIRED DENSITY AND MOISTENED TO A DEPTH NOT LESS THAN 18" OR PER SOILS REPORT.

9) CLEAR COVERAGE OF CONCRETE OVER REINFORCING BARS, ANCHOR BOLTS, AND ALL OTHER CONCRETE INSERTS, UNLESS OTHERWISE SPECIFIED, SHALL BE AS FOLLOWS:
POURED AGAINST EARTH . . . . 3" CLEAR
FORMED CONCRETE . . . . 2" CLEAR

10) FORMS FOR CONCRETE SHALL BE LAID OUT AND CONSTRUCTED TO PROVIDE THE SPECIFIED CAMBERS SHOWN ON THE DRAWINGS. DECK CAMBERING SHOWN ON PLANS IS INTENDED TO PROVIDE A LEVEL DECK. ANY SLOPING FOR DRAINAGE SHALL BE ADDED OR SUBTRACTED FROM CAMBERING AS APPROPRIATE. THE DECK THICKNESS SHALL NOT BE REDUCED IN ORDER TO ACHIEVE DECK SLOPES.

11) DRYPACK UNDER BASEPLATES, SILL PLATES, AND WHERE OTHERWISE NOTED ON DRAWINGS SHALL CONSIST OF APPROVED NON-SHRINK HIGH STRENGTH GROUT. WHEN SPACE BETWEEN TWO SURFACES REQUIRES DRYPACK, IT SHALL BE PACKED BY TAMPING OR RAMMING WITH A BAR OR ROD UNTIL THE VOIDS ARE COMPLETELY FILLED.

12) PLACEMENT OF CONCRETE SHALL CONFORM TO A.C.I. LATEST STANDARD AND PROJECT SPECIFICATIONS. WIRE BRUSH OR SANDBLAST ALL CONCRETE SURFACES AGAINST WHICH CONCRETE IS TO BE PLACED.

13) IF COLUMNS AND WALLS ARE PLACED WITH FLOORS, MINIMUM TIME OF TWO HOURS MUST ELAPSE BETWEEN END OF COLUMN OR WALL POUR AND BEGINNING OF FLOOR POUR.

14) PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. COPING IN CONCRETE IS NOT PERMITTED, EXCEPT AS SHOWN. NOTIFY THE PROJECT STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

15) COVER TO BEAM REINFORCEMENT TO BE 2" MINIMUM FORMED CONCRETE & 3" MINIMUM AGAINST EARTH, UNLESS NOTED OTHERWISE.

16) ARCHITECTURAL DRAWINGS TO BE REFERRED TO FOR DECK SLOPES, DRAINAGE, PLUMBING, FRAMING AND ELECTRICAL HARDWARE & ALL DIMENSIONS.

17) REINFORCEMENT CALLED OUT IN DETAILS SHALL BE IN ADDITION TO THAT SHOWN ON PLANS (U.N.O). REINFORCING METHODS SHOWN IN DETAILS SHALL BE USED AS APPLICABLE.

18) WHEN A MONOLITHIC POUR IS NOT POSSIBLE, CONSTRUCTION JOINTS SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER.

19) SHORING SHALL NOT BE REMOVED UNTIL CONCRETE HAS ACHIEVED MINIMUM 28 DAY COMPRESSIVE STRENGTH. FIFTEEN DAYS AFTER CONCRETE POUR IS COMPLETED THE PROJECT STRUCTURAL ENGINEER MAY DETERMINE, BASED ON COMPRESSION TESTS, IF SHORING MAY BE REMOVED.

20) ALL DECK SURFACES EXPOSED TO WEATHER SHALL BE WATERPROOFED. SEE ARCHITECTURAL DOCUMENTS FOR SPECIFICATIONS.

21) CONCRETE SHALL BE THOROUGHLY CONSOLIDATED IN A MANNER THAT WILL ENCASE THE REINFORCEMENT AND INSERTS, FILL THE FORMS, AND PRODUCE A SURFACE OF UNIFORM TEXTURE FREE OF ROCK POCKETS AND EXCESSIVE VOIDS. CONCRETE SHALL BE CONSOLIDATED BY MEANS OF HIGH FREQUENCY INTERNAL VIBRATORS WITHOUT CAUSING WATER OR CEMENT PASTE TO FLUSH TO THE SURFACE. INTERNAL VIBRATOR TYPE, SIZE, AND NUMBER SHALL BE APPROVED BY THE ENGINEER.

22) CONCRETE MIXING COMPANY SHALL PROVIDE TEST RECORDS AND STANDARD DEVIATION PER SECTION 1905 OF 2022 CBC.

SHEAR WALL

1) ONLY COMMON NAILS OR GALVANIZED BOX NAILS SHALL BE PERMITTED FOR REQUIRED NAILING AT VERTICAL SHEAR PANELS AND HORIZONTAL DIAPHRAGMS (ROOF AND FLOOR).

2) ALL SHEARWALLS WITH AN ALLOWABLE SHEAR CAPACITY GREATER THAN 350 plf REQUIRE 3x MEMBERS AT THE FOUNDATION SILL PLATE AND AT ADJACENT PANEL EDGES. A MINIMUM OF 1/2" EDGE DISTANCE FROM THE PANEL EDGE TO THE CENTER OF THE NAIL IS REQUIRED FOR THESE 3x MEMBERS.

3) ALL HOLD DOWN CONNECTORS SHALL BE TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING. BOLT HOLES FOR HOLD DOWN CONNECTION TO POST SHALL BE 1/16" (MAX.) OVERSIZED. INSPECTOR TO VERIFY HOLD DOWN CONNECTIONS.

4) PROVIDE MINIMUM 4x4 POSTS FOR ALL HOLD DOWNS ENDS OF SHEARWALL.

5) APPROVED PLATE WASHERS SHALL BE PROVIDED FOR ALL WOOD STRUCTURAL PANEL SHEAR WALL ANCHOR BOLTS AND FOR ALL HOLD DOWN CONNECTOR BOLTS TO POSTS.

BOLT DIAMETER	PLATE SIZE
5/8"	0.229" x 3" x 3"
3/4"	5/16" x 3" x 3"
7/8"	5/16" x 3" x 3"
1"	3/8" x 3 1/2" x 3 1/2"

DRAG LINE DL

DRAG LINE: SIMPSON ST6236 @ ALL BREAKS AND DIAPHRAGM EDGE NAILING.

@ ROOF: SHEAR WALL TO CONTINUE UP TO ROOF FRAMING, EDGE NAIL, AND INSTALL A35 PER SHEAR WALL SCHEDULE.

@ FLOOR: SHEAR WALL TO CONTINUE UP TO DBL TOP PL. MINIMUM, EDGE NAIL, AND INSTALL A35 PER SHEAR WALL SCHEDULE.

SUMMARY OF SPECIAL INSPECTION

VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	REFERENCE STANDARD	NOTE
SHR WALLS & DIAPHRAMS NAILING 4" oc OR LESS		X	2022 C.B.C. 1701	SEE NOTE 1 BELOW
SIMPSON SET-3G EPOXY	X		ICC-ES ESR-4057	USE PER MANUF. SPECS.

A. THE SPECIAL INSPECTIONS LISTED ARE IN ADDITION TO THE CALLED INSPECTIONS REQUIRED BY SECTION 1700 OF THE CBC, AS AMENDED. SPECIAL INSPECTION IS NOT A SUBSTITUTE FOR INSPECTION BY A CITY INSPECTOR.
B. CONTINUOUS INSPECTION IS ALWAYS REQUIRED DURING THE PERFORMANCE OF THE WORK UNLESS OTHERWISE SPECIFIED. WHEN IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED IN ACCORDANCE WITH THE PROVISIONS OF UBC SECTION 1701.6.1, IT IS THE AGENT'S RESPONSIBILITY TO EMPLOY A SUFF-ICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL THE WORK IS INSPECTED IN ACCORDANCE WITH THOSE PROVISIONS.
C. THE SPECIAL INSPECTORS MUST BE CERTIFIED BY THE CITY OF CHULA VISTA TO PERFORM THE TYPE OF INSPECTION SPECIFIED.

EXCEPTIONS:
1. SOILS INSPECTIONS BY THE SOILS ENGINEER OF RECORD.
2. SMOKE CONTROL SYSTEM, BY THE MECHANICAL ENGINEER OF RECORD.
3. WHEN WAIVED BY THE BUILDING OFFICIAL.

D. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTION AGENCY AT LEAST ONE WORKING DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION.
E. SPECIAL INSPECTED WORK THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE CITY INSPECTOR IS SUBJECT TO REMOVAL OR EXPOSURE.

NOTE 1: CONTACT PCSD AT (858) 509-8505 FOR STRUCTURAL INSPECTION OF WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS, AND HOLDOWNS.

NOTE 2: CONTACT TECHNICAL FIELD SERVICES, INC. CHRIS PINNOW, (760) 497-1264

TABLE 2304.10.2 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' (25mm x 152mm) SUBFLOOR OR LESS TO EACH JOIST, FACE NAIL	2-8d
4. WIDER THAN 1"X6' (25mm x 152mm) SUBFLOOR TO EACH JOIST, FACE NAIL	3-8d
5. 2" (51mm) SUBFLOOR TO JOIST OR GIRDER, BLIND AND FACE NAIL	2-16d
6. SOLE PLATE TO JOIST OR BLOCKING, TYPICAL FACE NAIL	16d AT 16" (406mm) O.C.
SOLE PLATE TO JOIST OR BLOCKING, AT BRACED WALL PANELS	3-16d PER 16" (406mm)
7. TOP PLATE TO STUD, END NAIL	2-16d
8. STUD TO SOLE PLATE	4-8d, TOENAIL OR 12d, END NAIL
9. DOUBLE STUDS, FACE NAIL	16d AT 24" (610mm) O.C.
10. DOUBLE TOP PLATES, TYPICAL FACE NAIL	16d AT 16" (406mm) O.C.
DOUBLE TOP PLATES, LAP SPLICE	8-16d
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3-8d
12. RIM JOIST TO TOP PLATE, TOE NAIL	8d AT 6" (152mm) O.C.
13. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAILS	2-16d
14. CONTINOUS HEADER, TWO PIECES	16d AT 16" (406mm) O.C. ALONG EACH EDGE
15. CEILING JOIST TO PLATE, TOE NAIL	3-8d
16. CONTINOUS HEADER TO STUD, TOE NAIL	4-8d
17. CEILING JOIST, LAPS OVER PARTITIONS, FACE NAIL	3-16d
18. CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
19. RAFTER TO PLATE, TOE NAIL	3-8d
20. 1" (25mm) BRACE TO EACH STUD AND PLATE, FACE NAIL	2-8d
21. 1"x8" (25mm x 203mm) SHEATHING TO EACH BEARING, FACE NAIL	2-8d
22. WIDER THAN 1" x 8" (25mm x 203mm) SHEATHING TO EACH BEARING, FACE NAIL	3-8d
23. BUILT-UP CORNERS STUDS	16d AT 24" (610mm) O.C.
24. BUILT-UP GIRDER AND BEAMS	20d AT 32" (813mm) O.C. AT TOP AND BOTTOM AND STAGGERED 2-20d AT ENDS AND AT EACH SPLICE
25. 2" (51mm) PLANKS	2-16d AT EACH BEARING
26. WOOD STRUCTURAL PANELS AND PARTICLE BOARD: [2]	
SUBFLOOR AND WALL SHEATHING (TO FRAMING):	
1/2" (12.7mm) AND LESS	6d[3]
19/32"-3/4" (15mm-19mm)	8d OR 6d[5]
7/8"-1" (22mm-25mm)	8d[3]
1 1/8"-1 1/4" (29mm-32mm)	10d OR 8d[5]
COMBINATION SUBFLOOR-UNDERLAYMENT (TO FRAMING):	
3/4" (19mm) AND LESS	6d[5]
7/8"-1" (22mm-25mm)	8d[5]
1 1/8"-1 1/4" (29mm-32mm)	10d OR 8d[5]
27. PANEL SIDING (TO FRAMING : [7]	
1/2" (12.7mm) OR LESS	6d[6]
5/8" (16mm)	8d[6]
28. FIREBOARD SHEATHING: [7]	
1/2" (12.7mm)	NO. 11 GA.[8] 6d[4] NO. 16 GA.[9]
25/32" (20mm)	NO. 11 GA.[8] 8d[4] NO. 16 GA.[9]
29. INTERIOR PANELING	
1/4" (6.4mm)	4d[10]
3/8" (9.5mm)	6d[11]

[1] COMMON OR BOX NAILS MAY BE USED EXCEPT WHERE OTHERWISE STATED
[2] NAILS SPACED AT 6" o.c AT EDGES, 12" AT INTERMEDIATE SUPPORTS WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTIONS 2315.3.3 AND 2315.4. NAILS FOR WALL SHEATHING MAY BE COMMON, BOX OR CASING, FOR WALL SHEATHING MAY BE COMMON, BOX OR CASING.
[3] COMMON OR DEFORMED SHANK
[4] COMMON
[5] DEFORMED SHANK
[6] CORROSION-RESISTANT SIDING OR CASING NAILS CONFORMING TO THE REQUIREMENTS OF SECTION 2304.3.
[7] FASTENERS SPACED 3" o.c. AT EXTERIOR EDGES AND 6" o.c. AND INTERMEDIATE SUPPORTS.
[8] CORROSION-RESISTANT ROOFING NAILS WITH 7/16-INCH-DIAMETER HEAD AND 1 1/2-INCH LENGTH FOR 1/2" SHEATHING AND 1 1/2"-INCH LENGTH FOR 25/32-INCH SHEATHING CONFORMING TO THE REQUIREMENTS OF SECTION 2304.3
[9] CORROSION-RESISTANT STAPLES WITH NOMINAL 7/16"-INCH CROWN AND 1 1/8-INCH LENGTH FOR 1/2" SHEATHING AND 1 1/2"-INCH LENGTH FOR 25/32-INCH SHEATHING CONFORMING TO THE REQUIREMENTSOF SECTION 2304.3
[10] PANEL SUPPORTS AT 16" , 20" - IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED). CASING OR FINISH NAILS SPACED 6" ON PANEL EDGES, 12" AT INTERMEDIATE SUPPORTS.
[11] PANEL SUPPORTS AT 24". CASING OR FINISH NAILS SPACED 6" ON PANEL EDGES, 12" (305mm) AT INTERMEDIATE SUPPORTS.

2022 CALIFORNIA BUILDING CODE SHEARWALL SCHEDULE

1-01-20

SHEAR-WALL No.	STRUCT I APA-RATED WOOD STRUCTURAL PANEL THICKNESS	COMMON NAIL SPACING @ BOUNDARIES & EDGES (B.N. & E.N.) FIELD NAILING @ 12" O.C.	ALLOWABLE SHEAR / FT (WOOD STUDS @16" O.C., U.N.O)	SLIDING ANCHOR [4] SYSTEM: 5/8"~ A.B. SPACING [2] 2x SILL V= 1184# 3x SILL V= 1520# O.C.	SLIDING ANCHOR SYSTEM: FRAMING CLIP SPACING V=450# O.C.	SLIDING ANCHOR SYSTEM: 16d COMMON NAIL SPACING [3] OR GALV. BOX 2x SOLE PLATE ONLY: V= 121# O.C.	SLIDING ANCHOR SYSTEM: 1/4" SDS x 6" LONG 3x SOLE PLATE ONLY: V= 537# O.C.
A	15/32"	8d @ 6" o.c	280#/FT.	48"	A35, @ 18"	5"	23"
B [1]	15/32"	8d @ 4" o.c.	430#/FT.	42"	A35, @ 12"	3"	15"
C [1]	15/32"	8d @ 3" o.c.	550#/FT.	32"	A35, @ 9"	2"	12"
D [1]	15/32"	8d @ 2" o.c.	730#/FT.	24"	A35, @ 7"	→	9"
E [1]	15/32"	10d @ 2" o.c.	870#/FT.	20"	A35, @ 6"	→	6"

1. FRAMING AT FOUNDATION SILL PLATES AND ADJOINING PANEL EDGE STUDS SHALL BE A SINGLE 3x NOMINAL MEMBER, AND ALL NAILS SHALL BE STAGGERED WITH 1/2" EDGE DISTANCE. 2x NOMINAL SOLE PLATE MAY BE USED AT RAISED FLOOR AND UPPER LEVELS.
2. SIMPSON BP5/8 BEARING PLATES (LARR 25293), OR OTHER LISTED MAKE, APPROVED BY BUILDING OFFICIAL, SHALL BE USED WITH ALL 5/8"~ ANCHORS. 5/8"~ SIMPSON TITAN HD ANCHORS (ICC-ES-ESER-1056/LARR# 25560) WITH 4\" MIN. EMBEDMENT, MAY BE USED IN LIEU OF 5/8"~ ANCHOR BOLTS AT EXISTING FOOTINGS WITH SAME SPACING PER TABLE ABOVE. SPECIAL INSPECTION REQUIRED FOR ALL EPOXY ANCHOR INSTALLATIONS.
3. ALL SILL NAILING SHALL BE STAGGERED 1/2" MINIMUM. (TYPICAL)
4. WHEN A SHEARWALL IS SPECIFIED ON BOTH SIDES OF WALL, ALL SLIDING ANCHOR CONNECTORS SHALL BE ATTACHED WITH SPACINGS FROM THE TABLE ABOVE TO BE REDUCED BY HALF.

STRUCTURAL DESIGN BASIS

VERTICAL DESIGN

- ROOF DEAD LOAD = 19.0 PSF
- ROOF LIVE LOAD = 20.0 PSF
- ROOF SNOW LOAD = N/A
- FLOOR DEAD LOAD = 15.0 PSF
- FLOOR LIVE LOAD = 40.0 PSF (60.0 PSF - DECKS)

LATERAL DESIGN

SEISMIC:
- SITE CLASS: D
- RISK CATEGORY: II
- Ss = 1.492 S1 = 0.503
- Sds = 1.194 Sd1 = 0
- SEISMIC FORCE RESISTING SYSTEM(S): PLYWD SHEAR WALLS, R=6.5
- Cs = Sds / (R/I) = 0.184 / 1.4 (ASD)
- V = Cs * W (ASD) = 0.131 * W

IMPORTANCE FACTOR, I : 1.0
SEISMIC DESIGN CATEGORY: D
LATITUDE: 32.999
LONITUDE: -117.125

WIND:
- BASIC WIND SPEED = 110 MPH
- OCCUPANCY CATEGORY: II
- HEIGHT & EXPOSURE ADJ. COEFF: 1.0
- TOPOGRAPHIC ADJ. FACTOR: 1.0
- SIMPLIFIED DESIGN WIND PRESSURE: 26.6 PSF (Ps30)
- DESIGN WIND PRESSURE = 16.0 PSF

IMPORTANCE FACTOR = 1.0
WIND EXPOSURE CAT. = B

FOUNDATION DESIGN

- SOIL - TYPE 5 (SITE CLASS D USED FOR LATERAL DESIGN)
- ALLOWABLE SOIL BEARING PRESSURE - 1,500 PSF.
- RETAINING WALLS:
  - RESTRAINED LOAD (EFP) = NA PCF
  - CANTILEVERED LOAD (EFP) = NA PCF (LEVEL)
  - PASSIVE SOIL PRESSURE = NA PCF / 2000 PCF MAX.
  - COEFFICIENT OF FRICTION = NA
- SOILS REPORT BY: NA

REVISIONS	BY
△	

PCSD

PROJECT: New Detached ADU
CHULA VISTA, CA

DRAWING: Structural Notes

JOB #: 23-269
FILE: CV438-SQ-ADU.dwg
DRAWN: PC
ENGINEER: PC
DATE: 6-26-23
SCALE: 1/4" = 1'-0"

STAMP
REGISTERED PROFESSIONAL ENGINEER
No. 057182
EXP 12-31-23
CIVIL
STATE OF CALIFORNIA

SHEET
SN1
SHEET - OF -