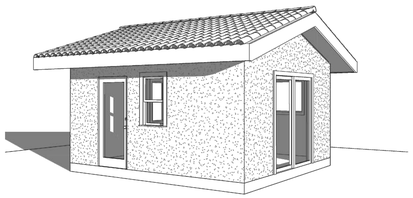
encinitas pradu studio

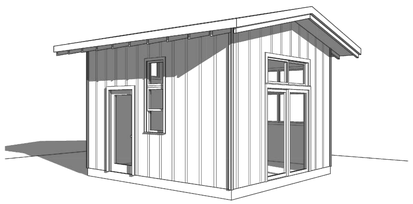
CONTACT SDG&E REGARDING ELECTRIC SERVICE TO THIS DETACHED ADU.
ANY EXISTING SERVICE UPGRADE OR NEW SERVICE FOR THE ADU
WILL REQUIRE A SEPARATE PERMIT FROM THE CITY OF ENCINITAS.

New PRADU requirements beginning July 1, 2024. See last page for reference.

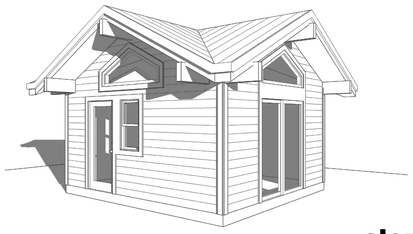
a



b



c



construction codes:

2022	CALIFORNIA	BUILDING CODE	TITLE 24	PART 2, V. 1&2
2022	CALIFORNIA	RESIDENTIAL CODE	TITLE 24	PART 2.5
2022	CALIFORNIA	ELECTRICAL CODE	TITLE 24	PART 3
2022	CALIFORNIA	MECHANICAL CODE	TITLE 24	PART 4
2022	CALIFORNIA	PLUMBING CODE	TITLE 24	PART 5
2022	CALIFORNIA	ENERGY CODE	TITLE 24	PART 6
2022	CALIFORNIA	FIRE CODE	TITLE 24	PART 9
2022	CALIFORNIA	GREEN BUILDING CODE	TITLE 24	PART 11

PROJECT SHALL COMPLY WITH THE 2022 CALIFORNIA BUILDING CODE WHICH ADOPTS:
2021 IRC, 2021 UMC, 2021 UPC & 2020 NEC.

vicinity map:

SITE ADDRESS =

COMMUNITY =

NOT TO SCALE

slope analysis:

1. IF THE SITE IS IN THE SPECIAL STUDY OVERLAY WITH NATURAL STEEP SLOPES (25% IN GRADIENT OR STEEPER) ARE PRESENT ON SITE, PROVIDE A SLOPE ANALYSIS AS PER EMC 30.34.030.A&B AND SHOW ANY REQUIRED FUEL MODIFICATION BUFFERS OVERLAID ON THE SITE PLAN.

required for plan check submittal and permits:

ITEM	√	COMPLETED OR ACKNOWLEDGED
SHEET a0.0	☐	PROJECT DATA SHEET INFORMATION FILLED OUT
SHEET a0.1	☐	CHECKLIST SHEET INFORMATION FILLED OUT
SHEET a0.3	☐	CAL GREEN CHECKLIST FILLED OUT
SHEET a0.4	☐	SITE PLAN DRAWN & NOTED PER SITE PLAN INFORMATION CHECKLIST AND SAMPLE SITE PLAN DIAGRAM
SHEET a0.5	☐	AVERAGE LOT SLOPE DIAGRAM DRAFTED & NOTED WITH TABLE FILLED OUT
SHEET a2.0	☐	ELECTRIC UTILITY TABLE FILLED OUT & ADU ELECTRICAL PANEL LOAD CALCULATION REVISED IF MODIFIED
T24 SHEETS	☐	UPDATED REPORT WITH PROJECT OWNER & LOCATION IF NEEDED
SEPARATE PERMIT	☐	COASTAL PERMIT (IF APPLICABLE)
SEPARATE PERMIT	☐	CONTACT SDG&E PROJECT PLANNING FOR WORK ORDER, GET CITY PERMIT FOR ELECTRICAL UPGRADE (IF APPLICABLE)
DEFERRED SUBMITTAL	☐	PHOTOVOLTAIC PERMIT OR EXISTING PV SYSTEM REPORT, SEE DEFERRED SUBMITTAL TABLE ON THIS SHEET
DEFERRED SUBMITTAL	☐	FIRE SPRINKLER PERMIT (IF APPLICABLE), SEE FIRE SPRINKLER CHECKLIST ON SHEET a0.1
BY OWNER	☐	SOIL REPORT FOR ADU OVER 500 SF WITH FOUNDATION DESIGN REVIEW APPROVAL LETTER
BY OWNER	☐	PROPERTY GRANT DEED WITH LEGAL DESCRIPTION
BY OWNER	☐	RESIDENTIAL BUILDING RECORD FROM COUNTY ASSESSOR
BY OWNER	☐	AGENCY LETTER IF OWNER IS USING AGENT FOR PLAN CHECK & PERMIT PROCESSING
CITY FORM	☐	BUILDING PERMIT CALCULATIONS - BUILDING SQUARE FOOTAGE
CITY FORM	☐	CONSTRUCTION & DEMO WASTE MANAGEMENT PLAN
CITY FORM	☐	STORMWATER INTAKE FORM & STANDARD SWQMP
CITY FORM	☐	LOCAL GREEN BUILDING ORDINANCE CHECKLIST
CITY FORM	☐	BUILDING ACKNOWLEDGMENT OWNER-BUILDER
CITY FORM	☐	HOUSING DEVELOPMENT TRACKING FORM
CITY FORM	☐	ADU COVENANT PROVIDED BY PROJECT PLANNER NOTARIZED AND OWNER CHECK PROVIDED FOR COUNTY RECORDER
CITY FORM	☐	WATER DISTRICT SIGN OFF
CITY FORM	☐	SEWER DISTRICT OR COUNTY HEALTH SEPTIC SIGN OFF
CITY FORM	☐	SCHOOL DISTRICT(S) SIGN OFF IF ADU IS 500 SF OR GREATER

energy requirement notes:

1. CONNECTION TO A PHOTOVOLTAIC SOLAR SYSTEM IS REQUIRED FOR THIS PROJECT. SOLAR SYSTEM IS A DEFERRED SUBMITTAL.
2. REQUIRED SPECIAL FEATURES:
   - WHOLE HOUSE FAN
   - EXPOSED SLAB FLOOR IN CONDITIONED ZONE
   - VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION (VERIFICATION DETAILS FROM VCHP STAFF REPORT, APPENDIX B, AND RA3)
   - NORTHWEST ENERGY EFFICIENCY ALLIANCE (NEEA) RATED HEAT PUMP WATER HEATER; SPECIFIC BRAND/MODEL, OR EQUAL,MUST BE INSTALLED
3. HERS FEATURE SUMMARY

BUILDING LEVEL VERIFICATIONS:
- INDOOR AIR QUALITY VENTILATION
- KITCHEN RANGE HOOD
- WHOLE HOUSE FAN AIRFLOW AND FAN EFFICACY

COOLING SYSTEM VERIFICATIONS:
- VERIFIED SEER/SEER2
- VERIFIED REFRIGERANT CHARGE
- AIRFLOW IN HABITABLE ROOMS(SC3.1.4.1.7)

HEATING SYSTEM VERIFICATIONS:
- VERIFIED HSPF (C ELEV ONLY)
- VERIFIED HEAT PUMP RATED HEATING CAPACITY
- WALL MOUNTED THERMOSTAT IN ZONES GREATER THAN 150 SF(SC3.4.5)
- DUCTLESS INDOOR UNITS LOCATED ENTIRELY IN CONDITIONED SPACE (SC3.1.4.1.8)

HVAC DISTRIBUTION SYSTEM VERIFICATIONS:
- NONE

DOMESTIC HOT WATER SYSTEM VERIFICATIONS:
- NONE

deferred submittals:

1. A PHOTOVOLTAIC SYSTEM MEETING THE MINIMUM QUALIFICATION REQUIREMENTS AS SPECIFIED IN JOINT APPENDIX JA11, WITH ANNUAL ELECTRICAL OUTPUT EQUAL TO OR GREATER THAN THE DWELLING'S ANNUAL ELECTRICAL USAGE AS DETERMINED BY EQUATION 150.1-C IS REQUIRED. ES SECTION 150.1(C)14.
2. SUBMITTED DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE, WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

solar system notes:

1. A PHOTOVOLTAIC (PV) SOLAR SYSTEM IS REQUIRED AND A SEPARATE PERMIT WILL BE REQUIRED. THE SYSTEM MUST BE INSTALLED, OPERATIONAL AND HAVE FINAL APPROVAL PRIOR TO FINAL BUILDING INSPECTION AND APPROVAL FOR THE ADU.
2. ADDITIONAL INFORMATION ABOUT THE PV SOLAR SYSTEM IS PROVIDED AT THE UTILITY PLAN ON SHEET a2.0 AND AT THE T-24 ENERGY REQUIREMENT SHEETS.

parking:

REQUIRED VEHICLE SPACES FOR EXISTING RESIDENCE	=	SPACES
REQUIRED VEHICLE SPACES FOR ADU	=	SPACES
REQUIRED SPACES ON SITE	=	TOTAL REQUIRED SPACES
PROVIDED ENCLOSED SPACES PROVIDED FOR EXISTING RESIDENCE	=	SPACES
PROVIDED UNENCLOSED SPACES PROVIDED FOR EXISTING RESIDENCE	=	SPACES
PROVIDED ENCLOSED SPACES PROVIDED FOR ADU	=	SPACES
PROVIDED UNENCLOSED SPACES PROVIDED FOR ADU	=	SPACES
VEHICLE SPACES PROVIDED ON SITE	=	TOTAL PROVIDED SPACES

conditions of use:

1. THE PERMITTEE AND OWNER OF THE PROPERTY THAT IS THE SUBJECT OF THESE PLANS AGREES TO AND DOES BY UTILIZING THESE PLANS AND BY SUBMITTING THEM TO THE CITY OF ENCINITAS FOR PERMITTING DOES HEREBY RELEASE, HOLD HARMLESS AND AGREE TO INDEMNIFY AND DEFEND THE CITY OF ENCINITAS AND THE ARCHITECT, INCLUDING WITHOUT LIMITATION, ALL EMPLOYEES, OFFICERS, COUNCILMEMBERS, COMMISSIONERS, AND AGENTS AND/OR CONSULTANTS OF THE FOREGOING WHO PREPARED THESE CONSTRUCTION DOCUMENTS, AND EACH OF THEM, FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS, TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS. THE OWNER AND THE PERMITTEE, AND EACH OF THEM ACKNOWLEDGE AGREEING TO THIS COVENANT, IS A CONDITION PRECEDENT TO BEING ABLE TO UTILIZE THESE PLANS, AND, THAT WITHOUT THIS HOLD HARMLESS AND RELEASE, WOULD NOT BE ABLE BE ABLE TO UTILIZE THESE PLANS. FURTHER, OWNER AND PERMITTEE ACKNOWLEDGES THAT THE OWNER/PERMITTEE HAS BEEN ADVISED TO SEEK THE SERVICES OF ANY AND ALL CONSULTANTS, THEY CHOOSE, TO REVIEW THESE PLANS PRIOR TO USING THEM, TO SEEK ADVICE ON THE SUITABLY OF THESE PLANS FOR THEIR USE FOR THE INTENDED USE BY THE OWNER/PERMITTEE. THE INDEMNITY DOES NOT INCLUDE ANY LIABILITY ARISING OUT OF THE SOLE NEGLIGENCE OR WILLFUL MISCONDUCT OF THE PARTIES BEING INDEMNIFIED.
2. BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

scope of work:

PROJECT DESCRIPTION	=	ONE STORY DETACHED STUDIO ACCESSORY DWELLING UNIT (ADU)
PLAN CHECK NUMBER	=	BLDR-_____-YEAR

area calculations:

LOT AREAS			
GROSS LOT AREA	=		SF
NET LOT AREA	=		SF
(DEDUCTIONS PER CHAP 30.04)	=	(	SF)
BUILDING AREAS			
PROPOSED			
PROPOSED ADU	=	224	SF
EXISTING			
EXISTING RESIDENCE BASEMENT	=		SF
EXISTING RESIDENCE FIRST FLOOR	=		SF
EXISTING RESIDENCE SECOND FLOOR	=		SF
TOTAL EXISTING RESIDENCE	=		SF
EXISTING GARAGE ATTACHED	=		SF
EXISTING GARAGE DETACHED	=		SF
EXISTING ACCESSORY STRUCTURE	=		SF
FAR (FLOOR AREA RATIO)			
BULK FLOOR AREA (AS APPLIED TO FAR)			
FIRST FLOOR LIVING AREA	=		SF
SECOND FLOOR LIVING AREA	=		SF
GARAGE AREA EXCEEDING 400 SF	=		SF
ADU LIVING AREA	=		SF
ADU DEDUCTION	=	(	SF - NTE 800 SF)
ACCESSORY STRUCTURE TOTAL SF	=		SF
OUTDOOR COVERED AREAS	=		SF - IF QUALIFY AS FAR
TOTAL BULK FLOOR AREA	=		SF
ALLOWED FAR			
FAR ALLOWED	=	.	
FAR ALLOWED x GROSS LOT AREA	=		SF
PROPOSED FAR (TOTAL BULK FLOOR AREA / GROSS LOT AREA)	=		SF
FAR PROPOSED	=	.	
LOT COVERAGE (LC)			
ALLOWED LOT COVERAGE (BY ZONE)	=		%
TOTAL STRUCTURE FOOTPRINT AREA	=	SF(	EXISTING + PROPOSED)
CANTILEVERED FLOOR AREA ABOVE	=		SF
ADU DEDUCTION	=	(	SF - NTE 800 SF)
LC SF / NET LOT AREA	=	.	x 100 = %
PROPOSED LOT COVERAGE	=		%

agencies:

MUNICIPAL JURISDICTION	=	CITY OF ENCINITAS
ELEMENTARY SCHOOL DISTRICT	=	CARDIFF OR ENCINITAS
HIGH SCHOOL DISTRICT	=	SDUHSD
SEWER DISTRICT	=	CARDIFF, ENCINITAS OR LEUCADIA
WATER DISTRICT	=	SAN DIEGUITO OR OLIVENHAIN
FIRE DEPARTMENT	=	ENCINITAS

sheet index:

SHEET #	SHEET TITLE
a0.0	PROJECT DATA
a0.1	CHECKLIST + SCHEDULE
a0.1F	VERY HIGH FIRE HAZARD SEVERITY ZONE
a0.2	GENERAL SPECIFICATIONS
a0.3	CAL GREEN CHECKLIST
a0.4	SITE PLAN + NOTES
a0.5	AVERAGE LOT SLOPE DIAGRAM
a1.0	FLOOR PLANS
a2.0	UTILITY PLAN
a3.0	ROOF PLANS
a4.0	A ELEVATIONS + SECTIONS
a4.1	B ELEVATIONS + SECTIONS
a4.2	C ELEVATIONS + SECTIONS
s0.0	STRUCTURAL NOTES
s1.0	FOUNDATION PLANS
s2.0	ROOF FRAMING PLANS
s2.1	REVERSE ROOF FRAMING PLANS
d0.0	DETAILS
d0.1	DETAILS
d0.2	DETAILS
d0.3	DETAILS
d0.4	DETAILS
T-01 to T-04	STUDIO A ENERGY REQUIREMENTS
T-01 to T-04	STUDIO B ENERGY REQUIREMENTS
T-01 to T-04	STUDIO C ENERGY REQUIREMENTS
T-05	HVAC SYSTEM SUMMARIES

project data:

SITE ADDRESS (EXISTING RESIDENCE)	=	
SITE ADDRESS (PROPOSED ADU)	=	
PROPERTY OWNER (LEGAL)	=	
PROPERTY OWNER PHONE	=	
PROPERTY OWNER EMAIL	=	
PROPERTY OWNER ADDRESS	=	
APN	=	
LEGAL DESCRIPTION	=	
GENERAL PLAN DESIGNATION	=	RESIDENTIAL _____
ZONE	=	R-____
ZONE OVERLAYS	=	
OCCUPANCY	=	R-3
CONSTRUCTION TYPE	=	V-B
ORIGINAL CONSTRUCTION YEAR	=	
EXISTING USE	=	____SINGLE OR ____MULTI FAMILY
PROPOSED USE	=	ACCESSORY DWELLING UNIT (ADU)
FIRE SPRINKLERS	=	SEE SELECTION ON SHEET a0.1
AVERAGE LOT SLOPE	=	____ % (FROM TABLE ON SHEET a0.5)
SLOPE ANALYSIS	=	SEE NOTE ON THIS SHEET

setback, height & story

SETBACKS	FRONT	INTERIOR SIDE	EXTERIOR SIDE	REAR
REQUIRED - STANDARD	FT	FT	FT	FT
EXISTING RESIDENCE	FT	FT	FT	FT
EXISTING ACCESSORY STRUCTURE	FT	FT	FT	FT
REQUIRED - ADU	FT	FT	FT	FT
PROPOSED - ADU	FT	FT	FT	FT

HEIGHT		
EXISTING RESIDENCE	=	FT
EXISTING ACCESSORY STRUCTURE	=	FT
PROPOSED ADU	=	FT
STORY		
EXISTING RESIDENCE	=	
EXISTING ACCESSORY STRUCTURE	=	
PROPOSED ADU	=	1

grading:

CUT	=	YD^3
FILL	=	YD^3
IMPORT	=	YD^3
EXPORT	=	YD^3
OVEREXCAVATION & RECOMPACTION	=	YD^3
MAXIMUM CUT HEIGHT	=	FT
MAXIMUM FILL HEIGHT	=	FT

landscape area:

EXISTING LANDSCAPE SITE AREA	=	SF, %
PROPOSED LANDSCAPE SITE AREA	=	SF, %
NON LANDSCAPE SITE AREA	=	SF, %
TOTAL SITE AREA	=	SF, 100%

impervious surfaces:

EXISTING IMPERVIOUS SITE AREA	=	SF, %
PROPOSED IMPERVIOUS SITE AREA	=	SF, %
NON IMPERVIOUS SITE AREA	=	SF, %
TOTAL SITE AREA	=	SF, 100%
CHANGE (+/-) IMPERVIOUS SITE AREA	=	SF, %

project team:

ARCHITECT

partners ARCHITECTURE

FIRM	DZN PARTNERS
ADDRESS	682 2ND ST
CITY, STATE, ZIP	ENCINITAS, CA 92024
PHONE	(760) 753-2464
EMAIL	B.SMITH@DZNPARTNERS.COM
CONTACT	BART SMITH, AIA LEED AP

ENERGY CONSULTANT

beartechnologys.com

FIRM	BEAR TECHNOLOGYS CONSULTANTING, INC
ADDRESS	3431 DON ARTURO DR
CITY, STATE, ZIP	CARLSBAD, CA 92010
PHONE	(760) 635-2327
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CONTACT	WAYNE SEWARD

ENGINEER

PCSD ENGINEERING CORPORATION

FIRM	PCSD ENGINEERING
ADDRESS	3529 COASTVIEW COURT
CITY, STATE, ZIP	CARLSBAD, CA 92010
PHONE	(760) 207-1885
EMAIL	PAUL.PCSD@GMAIL.COM
CONTACT	PAUL CHRISTENSON

PREPARER SIGNATURE

FOR CITY STAMPS

BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

DZN PARTNERS
682 SECOND ST
ENCINITAS, CA
(760) 753 2464
DZNPARTNERS.COM

STUDIO PRADU

CITY: ENCINITAS

2023.03-08
2023.05-22

JOB: 202241R

PROJECT DATA

a0.0

FOR USE IN THE CITY OF ENCINITAS

a b b r e v i a t i o n s

&	AND	EP	ELECTRICAL PANEL	PCC	PRECAST CONCRETE
@	AT	EQ	EQUAL	PKT	POCKET
°	DEGREES	EQUIP	EQUIPMENT	PL	PLATE
Ø	DIAMETER	EW	EACH WAY	P/L	PROPERTY LINE
%	PERCENT	EXP	EXPANSION	PLS	PLASTER
d	PENNY (NAIL SIZE)	EXST	EXISTING	PLY	PLYWOOD
#	POUND OR NUMBER	EXT	EXTERIOR	PNL	PANEL
(E)	EXISTING	FA	FIRE ALARM	PR	PAIR
(N)	NEW	FAB	FABRICATE	PRE	PREFABRICATED
(NR)	NEW REPLACEMENT	FAU	FORCED AIR UNIT	PT	PRESSURE TREATED
AA	ATTIC ACCESS	FD	FLOOR DRAIN	PTR	PARTNER
AB	ANCHOR BOLT	FDN	FOUNDATION	PV	PRESSURE VALVE
AC	ASPHALT CONCRETE	FE	FIRE EXSTINGUISHER	PVC	POLYVINYL CHLORIDE
A-C	ALTERNATING CURRENT	FF	FINISH FLOOR	R	RISER, RIDGE OR RADIUS
A/C	AIR CONDITIONING	FG	FINISH GRADE	RA	RETURN AIR
ACOUS	ACOUSTICAL	FIN	FINISH	RB	REINFORCING BAR
ACT	ACOUSTICAL CEILING TILE	FJ	FLOOR JOIST	RBR	RUBBER
AD	AREA DRAIN	FL	FLOURESCENT	RCP	REFLECTED CEILING PLAN
ADA	AMERICAN DISABILITY ACT	FLR	FLOOR	RD	ROOF DRAIN
AFO	ARCHED FRAMED OPENING	FLSH	FLASHING	REF	REFRIGERATOR
AGGR	AGGREGATE	FN	FIELD NAILING	REG	REGISTER
AGO	ARCH GYPSUM BOARD OPENING	FO	FRAMED OPENING	REINF	REINFORCE
AHS	ALUMINUM HORIZONTAL SLIDING	FP	FIREPLACE	REQD	REQUIRED
AL	ALUMINUM	FR	FIRE RATED	REV	REVISION
ALM	ALARM	FRMG	FRAMING	RI	RIGID INSULATION
ALT	ALTERNATE	FT	FOOT/FEET	RM	ROOM
AMP	AMPERE	FTG	FOOTING	RO	ROUGH OPENING
APN	ASSESSORS PARCEL NUMBER	FXD	FIXED	RR	ROOF RAFTER
ARCH	ARCHITECT	FYSB	FRONT YARD SETBACK	R/S	RESAWN
AS	ALUMINUM SLIDING	GA	GAUGE	RYSB	REAR YARD SETBACK
ASPH	ASPHALT	GAL	GALLON	S	SOUTH
AVE	AVENUE	GALV	GALVANIZED	SA	SUPPLY AIR
AVS	ALUMINUM VERTICAL SLIDING	GB	GYPSUM BOARD	SBO	SELECTION BY OWNER
AWG	AWNING	GFI	GROUND FORCE INTERRUPT	SC	SOLID CORE
B	BOTTOM	GI	GALVANIZED IRON	SDG	SIDING
BBQ	BARBEQUE	GL	GLASS	SEC	SECTION
BD	BOARD	GLB	GLU-LAM BEAM	SF	SQUARE FEET
BFD	BIFOLDING DOOR	GO	GYPSUM BOARD OPENING	SFD	SINGLE FAMILY DWELLING
BI	BUILT IN	GR	GRADE	SH	SINGLE HUNG OR SHELF
BJ	BALCONY JOIST	GWB	GYPSUM WALL BOARD	SHR	SHEAR
BLDG	BUILDING	GYP	GYPSUM	SHT	SHEET
BLK	BLOCK	H	HIP	SHTG	SHEATHING
BLKG	BLOCKING	HB	HOSE BIBB	SIM	SIMILAR
BM	BEAM	HC	HOLLOW CORE	SP	SHEAR PANEL
BN	BOUNDARY NAIL	H/C	HANDICAPPED	S & P	SHELF AND POLE
BOT	BOTTOM	HD	HEAD	SPEC	SPECIFICATIONS
BPD	BYPASS DOOR	HDR	HEADER	SQ	SQUARE
BRG	BEARING	HDWR	HARDWARE	SS	STAINLESS STEEL
BRK	BRICK	HF	HARDY FRAME	SSW	STEEL STRONG WALL
BSMT	BASEMENT	HI	HIGH	SSYSB	STREET SIDEYARD SETBACK
BTU	BRITISH THERMAL UNIT	HM	HOLLOW METAL	ST	STAIR
BW	BOTH WAYS	HOR	HORIZONTAL	STL	STEEL
CAB	CABINET	HP	HEAT PUMP	STP	STRAP
CB	CATCH BASIN	HPR	HOPPER	STR	STRUCTURAL
CEM	CEMENT	HR	HOUR	STRG	STORAGE
CER	CERAMIC	HT	HEIGHT	SUSP	SUSPENDED
CI	CAST IRON	HTR	HEATER	SWU	SOFT WATER UNIT
CIP	CAST IN PLACE	HW	HOT WATER	SYSB	SIDE YARD SETBACK
CJ	CEILING JOIST / CONTROL JOINT	INSUL	INSULATION	T	TREAD OR TOP
CL	CENTERLINE	IN	INCH	TB	THROUGH BOLT
CLG	CEILING	INT	INTERIOR	T & B	TOP AND BOTTOM
CLKG	CAULKING	JST	JOIST	TC	TRASH COMPACTOR
CLO	CLOSET	JT	JOINT	TELE	TELEPHONE
CLR	CLEAR	KIT	KITCHEN	TEMP	TEMPORARY
CMN	COMMON	L	LINEN	TG	TEMPERED GLASS
CMU	CONCRETE MASONRY UNIT	LAM	LAMINATE	T & G	TONGUE AND GROOVE
CO	CLEANOUT	LAT	LATERAL	THK	THICK
COL	COLUMN	LAV	LAVATORY	TME	TO MATCH EXISTING
CONC	CONCRETE	LDG	LANDING	TP	TOP PLATE
CONT	CONTINUOUS	LG	LONG	TV	TELEVISION
CONTR	CONTRACTOR	LR	LARGE	TYP	TYPICAL
CP	CEMENT PLASTER	LS	LAZY SUSAN	TWH	TANKLESS WATER HEATER
CPT	CARPET	LSW	LAG SCREW	U/	UNDER
CSMT	CASEMENT	LT	LAUNDRY TUB	U/C	UNDER COUNTER
CTR	CENTER	LGT	LIGHT	UNO	UNLESS NOTED OTHERWISE
CW	COLD WATER VALVE	MAX	MAXIMUM	UON	UNLESS OTHERWISE NOTED
CY	CUBIC YARD	MB	MACHINE BOLT	V	VALLEY OR VALVE
DBL	DOUBLE	MBPD	MIRROR BYPASS DOOR	VAC	VACUUM
DEMO	DEMOLITION	MC	MEDICINE CABINET	VER	VERTICAL
DF	DOUGLAS FIR	MDL	MODEL	VHS	VINYL HORIZONTAL SLIDER
DG	DUAL GLAZED	MECH	MECHANICAL	VIF	VERIFY IN FIELD
DH	DOUBLE HUNG	MEMB	MEMBRANE	VOL	VOLUME
DIA	DIAMETER	MFR	MANUFACTURER	VTR	VENT TO ROOF
DIM	DIMENSION	MIN	MINIMUM	VVS	VINYL VERTICAL SLIDER
DJ	DECK JOIST	MISC	MISCELLANEOUS	W	WEST
DN	DOWN	MS	MACHINE SCREW	W/	WITH
DP	DEEP	MTL	METAL	W/O	WITHOUT
DR	DOOR	MW	MICROWAVE OVEN	WC	WATER CLOSET
DS	DOWNSPOUT	N	NORTH	WD	WOOD
DTP	DOUBLE TOP PLATE	N/A	NOT APPLICABLE	WDW	WINDOW
DV	DRYER VENT	NAT	NATURAL	WDWR	WARMING DRAWER
DW	DISHWASHER	NAP	NOT A PART	WH	WATER HEATER
DZN	DESIGN	NIC	NOT IN CONTRACT	WHS	WOOD HORIZONTAL SLIDER
E	EAST	NO	NUMBER	WI	WROUGHT IRON
EA	EACH	NOM	NOMINAL	WIC	WALK IN CLOSET
EGR	EXISTING GRADE	NTS	NOT TO SCALE	WMH	WALL MOUNTED HEATER
EJ	EXPANSION JOINT	O/	OVER	WP	WATERPROOF
ELEC	ELECTRIC	OC	ON CENTER	WS	WOOD SCREW
ELEV	ELEVATOR OR ELEVATION	OAE	OR APPROVED EQUAL	WSW	WOOD STRONG WALL
EM	ELECTRIC METER	OH	OVERHANG	WVS	WOOD VERTICAL SLIDER
EMER	EMERGENCY	OPG	OPENING	WWM	WELDED WIRE MESH
EN	EDGE NAIL	OZ	OUNCE	YD	YARD
ENCL	ENCLOSURE	P	POLE		

door schedule - elevation a (d)

DOOR #	WIDTH	HEIGHT	THICK	TYPE	OPERATION	CORE OR GLAZING	MATERIAL	FRAME	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	3'-0"	6-8"	1-3/4"	FRENCH	SWING	DG, TG	WOOD	WOOD	OPTIONAL	0.58	0.65	1	ENTRY
2	6'-0"	6-8"	1-3/4"	FRENCH	SLIDING	DG, TG	VINYL	VINYL	YES	0.58	0.65	1	
3	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	PRIVACY
4	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	

window schedule - elevation a (w)

WINDOW #	WIDTH	HEIGHT	TYPE	MATERIAL	GLAZING	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	2'-0"	3-6"	VERTICAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	
2	2'-0"	4'-0"	VERTICAL SLIDER	VINYL	DG	YES	0.58	0.65	1	OPAQUE
3	6'-0"	3'-0"	HORIZONTAL SLIDER	VINYL	DG	YES	0.58	0.65	1	

door schedule - elevation b (d)

DOOR #	WIDTH	HEIGHT	THICK	TYPE	OPERATION	CORE OR GLAZING	MATERIAL	FRAME	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	3'-0"	6-8"	1-3/4"	FRENCH	SWING	DG, TG	WOOD	WOOD	OPTIONAL	0.58	0.65	1	ENTRY
2	6'-0"	6-8"	1-3/4"	FRENCH	SLIDING	DG, TG	VINYL	VINYL	YES	0.58	0.65	1	
3	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	PRIVACY
4	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	

window schedule - elevation b (w)

WINDOW #	WIDTH	HEIGHT	TYPE	MATERIAL	GLAZING	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	2'-0"	3-6"	VERTICAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	
2	2'-0"	4'-0"	VERTICAL SLIDER	VINYL	DG	YES	0.58	0.65	1	OPAQUE
3	6'-0"	3'-0"	HORIZONTAL SLIDER	VINYL	DG	YES	0.58	0.65	1	
4	6'-0"	2'-0"	FIXED	VINYL	DG	NO	0.58	0.67	2	TRANSOM OVER DOOR 2 & WINDOW 3
5	2'-0"	2'-0"	FIXED	VINYL	DG	NO	0.58	0.67	1	TRANSOM OVER WDW 1
6	2'-0"	2'-0"	AWNING	VINYL	DG	YES	0.58	0.65	1	STORAGE LOFT

door schedule - elevation c (d)

DOOR #	WIDTH	HEIGHT	THICK	TYPE	OPERATION	CORE OR GLAZING	MATERIAL	FRAME	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	3'-0"	6-8"	1-3/4"	FRENCH	SWING	DG, TG	WOOD	WOOD	OPTIONAL	0.58	0.65	1	ENTRY
2	6'-0"	6-8"	1-3/4"	FRENCH	SLIDING	DG, TG	VINYL	VINYL	YES	0.58	0.65	1	
3	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	PRIVACY
4	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	

window schedule - elevation c (w)

WINDOW #	WIDTH	HEIGHT	TYPE	MATERIAL	GLAZING	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	2'-0"	3-6"	VERTICAL SLIDER	VINYL	DG, TG	YES	0.58			
2	2'-0"	4'-0"	VERTICAL SLIDER	VINYL	DG	YES	0.58	0.65	1	OPAQUE
3	3'-0"	5'-0"	VERTICAL SLIDER	VINYL	DG	YES	0.58	0.65	1	
4	6'-0"	2'-6"	FIXED	VINYL	DG	NO	0.58	0.67	4	HIGH PENTAGON TRANSOM EACH SIDE

appliance schedule - studio 0 (a)

APPLIANCE	OPERATION	MANUFACTURER	MODEL	QUANTITY	NOTES
SPLIT SYSTEM HEAT PUMP	ELECTRICITY	PANASONIC	CU-XE, CS-XE -15WKUA	1	OR EQUAL
HEAT PUMP TANK WATER HEATER	ELECTRICITY	RHEEM	PROPH40 T2 RH375-SO	1	OR EQUAL
REFRIGERATOR	ELECTRICITY	BY OWNER	BY OWNER	1	30" WIDE, COUNTER DEPTH
RANGE	ELECTRICITY	BY OWNER	BY OWNER	1	30" WIDE
MICROWAVE HOOD	ELECTRICITY	BY OWNER	BY OWNER	1	30" WIDE
GARBAGE DISPOSAL	ELECTRICITY	BY OWNER	BY OWNER	1	AIR SWITCH

fixture schedule - studio 0 (f)

FIXTURE	LOCATION	MANUFACTURER	MODEL	QUANTITY	NOTES
SINK	KITCHEN	BY OWNER	BY OWNER	1	
SINK FAUCET	KITCHEN	BY OWNER	BY OWNER	1	
LAVATORY	BATH	BY OWNER	BY OWNER	1	
LAVATORY FAUCET	BATH	BY OWNER	BY OWNER	1	
TOILET	BATH	BY OWNER	BY OWNER	1	
BATHTUB	BATH	BY OWNER	BY OWNER	1	30"x60" CAST IRON, OR EQUAL
BATH FILLER + SHOWER HEAD	BATH	BY OWNER	BY OWNER	1	

material schedule - studio 0 (m)

LOCATION	FLOOR	BASE	CASE	COUNTER	CABINET	WALL	CEILING	NOTES
GREAT ROOM	1	4	4	3	2	1	5	OR EQUAL
BATH	2	2	4	4	1	2	2	OR EQUAL
	1-CONCRETE	1-NONE	1-NONE	1-CONCRETE	1-PAINTED	1-FLAT PAINT	1-FLAT PAINT	
	2-TILE	2-TILE	2-TILE	2-TILE	WOOD	O/ GB	O/ GB	
	3-VINYL	3-VINYL	3-VINYL	3-STONE	2-STAINED	2-SEMIGLOSS	2-SEMIGLOSS	
	4-CARPET	4-P. WOOD	4-P. WOOD	4-GLASS	WOOD	PAINT O/ GB	PAINT O/ GB	
	5-WOOD	5-S. WOOD	5-S. WOOD	5-WOOD	3-METAL	5-WOOD	5-T&G WOOD	

fire sprinklers:

√ EXISTING OR PROPOSED RESIDENCE

☐ NO

☐ YES

fire sprinklers:

√ REQUIRED AT PROPOSED ADU

☐ NO

☐ YES

fire sprinkler notes:

1. IF FIRE SPRINKLERS ARE REQUIRED AT THE ADU THAN THESE NOTES APPLY.
2. AUTOMATIC FIRE SPRINKLER SYSTEM - AN AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE INSTALLED AS PER N.F.P.A. 13D, THE MOST CURRENT EDITION SHALL BE USED AND THE ENCINITAS FIRE DEPARTMENT POLICIES/ORDINANCES. DETAILED SPRINKLER PLANS SHALL BE SUBMITTED TO THE FIRE PREVENTION BUREAU AND APPROVED PRIOR TO INSTALLATION. PLANS AND INSTALLATION MUST BE BY A C16 LICENSED SPRINKLER CONTRACTOR.
3. **SECTION 903.2 GROUP R** AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3 SHALL BE PROVIDED THROUGHOUT ALL BUILDINGS WITH A GROUP R FIRE AREA. THIS INCLUDES SINGLE FAMILY DWELLINGS, MULTI-FAMILY DWELLINGS AND ALL RESIDENTIAL CARE FACILITIES REGARDLESS OF OCCUPANT LOAD.
4. **SECTION 903.2.01** ADDITION AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH 903.3 MAY BE REQUIRED TO BE INSTALLED THROUGHOUT STRUCTURE WHEN THE ADDITION IS MORE THAN 50% OF THE EXISTING BUILDING OR WHEN THE ALTERED BUILDING WILL EXCEED FIRE FLOW OF 1,500 GALLONS PER MINUTE AS CALCULATED PER SECTION 507.3. THE FIRE CODE OFFICIAL MAY REQUIRE AN AUTOMATIC SPRINKLER SYSTEM BE INSTALLED IN BUILDINGS WHERE NO WATER MAIN EXISTS TO PROVIDE THE REQUIRED FIRE FLOW OR WHERE A SPECIAL HAZARD EXISTS SUCH AS: POOR ACCESS ROADS, GRADE, BLUFFS AND CANYONS, HAZARDOUS BRUSH AND RESPONSE TIMES GREATER THAN 5 MINUTES BY A FIRE DEPARTMENT.
5. **SECTION 903.3.01** REMODELS OR RECONSTRUCTION AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3 MAY BE REQUIRED IF THE SCOPE OF WORK INCLUDES SIGNIFICANT MODIFICATION TO THE INTERIOR AND/OR ROOF OF THE BUILDING, AND THE COST OF THE INSTALLATION DOES NOT EXCEED 15 PERCENT OF THE VALUATION OF THE REMODEL.
6. LOCATION AND SIZE OF WATER SERVICE UNDERGROUND SHALL BE INSTALLED AS SHOWN ON APPROVED FIRE SPRINKLER PLANS. A MINIMUM 1 INCH WATER SHALL BE INSTALLED.
7. A FIRE UNDERGROUND FLUSH CERTIFICATION SHALL BE REQUIRED AT FINAL INSPECTION.
8. A HYDRO INSPECTION OF THE FIRE SPRINKLER SYSTEM IS REQUIRED PRIOR TO FRAME INSPECTION. ONLY THE NEW PIPING SHALL BE TESTED.

waste water:

√ SELECTION

☐ SEWER

☐ SEPTIC (REQUIRES SAN DIEGO COUNTY HEALTH APPROVAL)

DISTANCE TO CONNECTION = _____FEET

onsite parking:

√ REQUIRED

☐ NONE

☐ ONE PARKING SPACE

very high fire severity zone:

√ SELECTION

☐ NO

☐ YES

1. IF THE PROPERTY THAT WILL CONTAIN THE ADU IS IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE SEE NOTES BELOW & ON SHEET a0.1F
2. THE ADU SHALL COMPLY WITH CHAPTER 7A OF THE CURRENT CALIFORNIA BUILDING CODE.
3. STRUCTURES IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE SHALL PROVIDE & MAINTAIN A FUEL MODIFICATION ZONE. FUEL MODIFICATION ZONES: THE APPLICANT SHALL PROVIDE & MAINTAIN FIRE/FUEL BREAKS TO THE SATISFACTION OF THE ENCINITAS FIRE DEPARTMENT. FIRE/FUEL BREAKS SIZE (MINIMUM 100 FEET FROM STRUCTURE) & COMPOSITION SHALL BE DETERMINED BY THE FIRE DEPARTMENT & SHOWN ON THE IMPROVEMENT/GRADING PLANS, FINAL MAP & BUILDING PLANS.

schedule notes:

1. ALL GLAZING IN DOORS SHALL BE TEMPERED.
2. SEE ELEVATIONS FOR 'TG' AT WINDOWS THAT REQUIRE TEMPERED GLAZING.
3. IF THE PROPERTY THAT WILL CONTAIN THE ADU IS IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE SEE NOTES AND SCHEDULES ON SHEET a0.1F CONCERNING DOOR & WINDOW CONSTRUCTION AND TEMPERED GLAZING.
4. SEE ELEVATIONS FOR WINDOW OPERATION DIRECTION & LOCATION OF MUNTINS.
5. SEE FLOOR PLANS FOR DOOR SWING DIRECTION.
6. ALL GLAZED OPENINGS SHALL MEET THE REQUIREMENTS OF THE CBC T24 SHEETS PROVIDED IN THE PLANS.
7. VINYL WINDOWS AND EXTERIOR VINYL DOOR FRAMES & SASH WILL BE COMPRISED OF VINYL MATERIAL WITH WELDED CORNERS & METAL REINFORCEMENT IN THE INTERLOCK AREA.

studio 0 plan selection:

√ SELECTION

☐ STANDARD PLAN, ELEVATION A

☐ STANDARD PLAN, ELEVATION B

☐ STANDARD PLAN, ELEVATION C

☐ REVERSE PLAN, ELEVATION A

☐ REVERSE PLAN, ELEVATION B

☐ REVERSE PLAN, ELEVATION C

foundation type:

√ SELECTION

☐ STANDARD SOIL, SLAB ON GRADE

☐ EXPANSIVE SOIL, SLAB ON GRADE

☐ STANDARD SOIL, RAISED FLOOR FOUNDATION (ENERGY CALCS AVAILABLE ON REQUEST)

☐ EXPANSIVE SOIL, RAISED FLOOR FOUNDATION (ENERGY CALCS AVAILABLE ON REQUEST)

exterior wall material:

#1	#2	MATERIAL
☐	☐	CEMENT PLASTER SIDING - SAND FINISH OR TME
☐	☐	STONE SIDING
☐	☐	FIBER CEMENT - BOARD & BATT SIDING
☐	☐	FIBER CEMENT - LAP SIDING
☐	☐	FIBER CEMENT - SHINGLE SIDING

window material:

√ **MATERIAL**

☐ VINYL

☐ FIBERGLASS

☐ WOOD

☐ ALUMINUM CLAD WOOD

eave/rake & parapet:

#1	#2	MATERIAL
☐	☐	SINGLE FASCIA - IGNITION RESISTANT
☐	☐	EXPOSED RAFTER - IGNITION RESISTANT
☐	☐	STEPPED DOUBLE FASCIA - IGNITION RESISTANT
☐	☐	HEAVY TIMBER RAFTER TAIL - IGNITION RESISTANT
☐	☐	PARAPET WITH WALL MATERIAL CAP - IGNITION RESISTANT
☐	☐	PARAPET WITH METAL CAP - IGNITION RESISTANT
☐	☐	CORBEL PARAPET WITH METAL CAP - IGNITION RESISTANT

roof material:

#1	#2	MATERIAL
☐	☐	FIBERGLAS ASPHALT SHINGLES - GAF INC - ICC ESR 1475 OR ICC ESR 3267 - OAE
☐	☐	CONCRETE ROOF TILES - EAGLE ROOFING PRODUCTS INC - IAPMO-UES ER 1900 - OAE
☐	☐	STANDING SEAM METAL ROOF - AEP SPAN INC - IAPMO-UES ER 0309 - OAE
☐	☐	TORCH APPLIED MODIFIED BITUMEN ROOFING - GAF INC - UL ER1306-02 - OAE [USE ONLY FOR ROOF PITCH OF 2/12 OR LESS]
☐	☐	CLAY ROOF TILES - REDLAND CLAY TILE INC - IAPMO ER 445 - OAE

stormwater bioretention:

_____SQ. FT. TOTAL NEW &/OR REMOVED & REPLACED IMPERVIOUS SURFACES

☐ IS NOT GREATER THAN 500 SQ. FT. SIZING CALCULATION NOT REQUIRED

☐ IS GREATER THAN 500 SQ. FT. SIZING CALCULATION REQUIRED

SIZING CALCULATION: _____SQ. FT. x 4% = _____SQ. FT. (MIN BMP AREA REQUIRED)

√ **BMP DRAINAGE TYPE**

☐ A - BIORETENTION BASIN - SURFACE FLOW WITH SPILLWAY

☐ B - VEGETATED SWALE

☐ C - SITE DESIGN + LID (LOW IMPACT DEVELOPMENT)

☐ NOT REQUIRED

PREPARER SIGNATURE

FOR CITY STAMPS

BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

DZN PARTNERS
682 SECOND ST
ENCINITAS, CA
(760) 753 2464
DZNPARTNERS.COM

STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

CHECKLIST + SCHEDULE

a0.1

FOR USE IN THE CITY OF ENCINITAS

very high fire hazard severity zone

very high fire hazard severity zone notes:

CBC CHAPTER 7A - MATERIALS & CONSTRUCTION METHODS FOR EXTERIOR WILDFIRE EXPPOSURE

IF THE PROPERTY THAT WILL CONTAIN THE ADU IS IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE THESE NOTES & NOTES ON SHEET a0.1 APPLY.

701A.3 APPLICATION THE JURISDICTION HAS DETERMINED THAT THIS PROJECT IS IN A WILDLAND-URBAN INTERFACE AREA. PLEASE SHOW COMPLIANCE WITH THE FOLLOWING ITEMS FOR NEW BUILDINGS, PER THE 2022 CBC.

EXCEPTIONS

1. GROUP U OCCUPANCY ACCESSORY BUILDINGS OF ANY SIZE LOCATED AT LEAST 50 FEET (15 240 MM) FROM AN APPLICABLE BUILDING ON THE SAME LOT.
2. GROUP U OCCUPANCY AGRICULTURAL BUILDINGS, AS DEFINED IN SECTION 202 OF THIS CODE OF ANY SIZE LOCATED AT LEAST 50 FEET (15 240 MM) FROM AN APPLICABLE BUILDING.
3. GROUP C OCCUPANCY SPECIAL BUILDINGS CONFORMING TO THE LIMITATIONS SPECIFIED IN SECTION 450.4.1.
4. NEW ACCESSORY BUILDINGS AND MISCELLANEOUS STRUCTURES SPECIFIED IN SECTION 710A SHALL COMPLY ONLY WITH THE REQUIREMENTS OF THAT SECTION.
5. ADDITIONS TO AND REMODELS OF BUILDINGS ORIGINALLY CONSTRUCTED PRIOR TO JULY 1, 2008

REQUIREMENTS

ROOFING

1. **705A.2 ROOF COVERINGS** WHERE THE ROOFING PROFILE HAS AN AIRSPACE UNDER THE ROOF COVERING, INSTALLED OVER A COMBUSTIBLE DECK, A 72 LB. (32.7 KG) CAP SHEET COMPLYING WITH ASTM D3909, STANDARD SPECIFICATION FOR "ASPHALT ROLLED ROOFING (GLASS FELT) SURFACED WITH MINERAL GRANULES," SHALL BE INSTALLED OVER THE ROOF DECK. BIRD STOPS SHALL BE USED AT THE EAVES WHEN THE PROFILE FITS, TO PREVENT DEBRIS AT THE EAVE. HIP & RIDGE CAPS SHALL BE MUDDED IN TO PREVENT INTRUSION OF FIRE OR EMBERS.
   EXCEPTION: CAP SHEET IS NOT REQUIRED WHEN NO LESS THAN 1" OF MINERAL WOOL BOARD OR OTHER NONCOMBUSTIBLE MATERIAL IS LOCATED BETWEEN THE ROOFING MATERIAL & WOOD FRAMING OR DECK.
   ALTERNATELY, A CLASS A FIRE RATED ROOF UNDERLAYMENT, TESTED IN ACCORDANCE WITH ASTM E108, SHALL BE PERMITTED TO BE USED. IF THE SHEATHING CONSISTS OF EXTERIOR FIRE-RETARDANT-TREATED WOOD, THE UNDERLAYMENT SHALL NOT BE REQUIRED TO COMPLY WITH A CLASS A CLASSIFICATION. BIRD STOPS SHALL BE USED AT THE EAVES WHEN THE PROFILE FITS, TO PREVENT DEBRIS AT THE EAVE. HIP AND RIDGE CAPS SHALL BE MUDDED IN TO PREVENT INTRUSION OF FIRE OR EMBERS.
2. **705A.3 ROOF VALLEYS** WHERE VALLEY FLASHING IS INSTALLED, THE FLASHING SHALL BE NOT LESS THAN 0.019-INCH (0.48 MM) NO. 26 GAGE GALVANIZED SHEET CORROSION-RESISTANT METAL INSTALLED OVER NOT LESS THAN ONE LAYER OF MINIMUM 72 POUND (32.4 KG) MINERAL-SURFACED NONPERFORATED CAP SHEET COMPLYING WITH ASTM D3909, AT LEAST 36-INCH-WIDE (914 MM) RUNNING THE FULL LENGTH OF THE VALLEY.
3. **705A.4 ROOF GUTTERS.** ROOF GUTTERS SHALL BE PROVIDED WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES & DEBRIS IN THE GUTTER.

VENTS

4. **706A.1 GENERAL** WHERE PROVIDED, VENTILATION OPENINGS FOR ENCLOSED ATTICS AND ENCLOSED ENDS, RIDGE ENDS, UNDER EAVES AND CORNICES, ENCLOSED EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDER FLOOR VENTILATION, FOUNDATIONS AND CRAWL SPACES, OR ANY OTHER OPENING INTENDED TO PERMIT VENTILATION, EITHER IN A HORIZONTAL OR VERTICAL PLANE, SHALL BE IN ACCORDANCE WITH SECTION 1202 AND SECTIONS 706A.1 THROUGH 706A.2 TO RESIST BUILDING IGNITION FROM THE INTRUSION OF BURNING EMBERS AND FLAME THROUGH THE VENTILATION OPENINGS.
5. **706A.2 REQUIREMENTS** VENTILATION OPENINGS SHALL BE FULLY COVERED WITH WILDFIRE FLAME AND EMBER RESISTANT VENTS APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHAL, OR WUI VENTS TESTED TO ASTM E2886 AND LISTED, BY COMPLYING WITH ALL OF THE FOLLOWING REQUIREMENTS:
   1. THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER INTRUSION TEST.
   2. THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME INTRUSION TEST.
   3. THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662°F (350°C).
6. **706A.2.1 OFF RIDGE AND RIDGE VENTS** VENTS THAT ARE INSTALLED ON A SLOPED ROOF, SUCH AS DORMER VENTS, SHALL COMPLY WITH ALL OF THE FOLLOWING:
   1. VENTS SHALL BE COVERED WITH A MESH WHERE THE DIMENSIONS OF THE MESH THEREIN SHALL BE A MINIMUM OF 1/16-INCH (1.6 MM) AND SHALL NOT EXCEED 1/8-INCH (3.2 MM) IN DIAMETER.
   2. THE MESH MATERIAL SHALL BE NONCOMBUSTIBLE.
   3. THE MESH MATERIAL SHALL BE CORROSION RESISTANT.

EXTERIOR COVERINGS

7. **707A.3 EXTERIOR WALL COVERINGS** THE EXTERIOR WALL COVERING SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING REQUIREMENTS, EXCEPT AS PERMITTED FOR EXTERIOR WALL ASSEMBLIES COMPLYING WITH SECTION 707A.4:
   1. NONCOMBUSTIBLE MATERIAL.
   2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
   3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
8. **707A.3.1 EXTENT OF EXTERIOR WALL COVERING** EXTERIOR WALL COVERINGS SHALL EXTEND FROM THE TOP OF THE FOUNDATION TO THE ROOF, AND TERMINATE AT 2 INCH (50.8 MM) NOMINAL SOLID WOOD BLOCKING BETWEEN RAFTERS AT ALL ROOF OVERHANGS, OR IN THE CASE OF ENCLOSED EAVES, TERMINATE AT THE ENCLOSURE.

EXTERIOR WALL ASSEMBLIES

9. **707A.4 EXTERIOR WALL ASSEMBLIES** EXTERIOR WALL ASSEMBLIES OF BUILDINGS OR STRUCTURES SHALL BE CONSTRUCTED USING ONE OR MORE OF THE FOLLOWING METHODS, UNLESS THEY ARE COVERED BY AN EXTERIOR WALL COVERING COMPLYING WITH SECTION 707A.3.:
   1. ASSEMBLY OF SAWN LUMBER OR GLUE-LAMINATED WOOD WITH THE SMALLEST MINIMUM NOMINAL DIMENSION OF 4 INCHES (102 MM). SAWN OR GLUE-LAMINATED PLANKS SPLINED, TONGUE-AND-GROOVE, OR LOCK CLOSE TOGETHER AND WELL SPIKED.
   2. LOG WALL CONSTRUCTION ASSEMBLY.
   3. ASSEMBLY THAT HAS BEEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE TEST SET FORTH IN ASTM E2707 WITH THE CONDITION OF ACCEPTANCE SHOWN IN SECTION 707A.4.1.
   4. ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE TEST SET FORTH IN SFM STANDARD 12-7A-1.
   5. ASSEMBLY SUITABLE FOR EXTERIOR FIRE EXPOSURE WITH A 1-HOUR FIRE-RESISTANCE RATING, RATED FROM THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
   6. ASSEMBLY SUITABLE FOR EXTERIOR FIRE EXPOSURE CONTAINING ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR WALL COVERING OR CLADDING ON THE EXTERIOR SIDE OF THE FRAME.
   7. ASSEMBLY SUITABLE FOR EXTERIOR FIRE EXPOSURE CONTAINING ANY OF THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL AS COMPLYING WITH A 1-HOUR FIRE-RESISTANCE RATING, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.

OPEN ROOF EAVES

10. **707A.5 OPEN ROOF EAVES** THE EXPOSED ROOF DECK ON THE UNDERSIDE OF UNENCLOSED ROOF EAVES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING:
    1. NONCOMBUSTIBLE MATERIAL.
    2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
    3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
    4. MATERIALS APPROVED FOR NOT LESS THAN 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
    5. ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND AN EXTERIOR COVERING ON THE UNDERSIDE OF THE ROOF DECK.
    6. THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTANCE-RATED EXTERIOR ASSEMBLY, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263, APPLIED TO THE UNDERSIDE OF THE ROOF DECK DESIGNED FOR EXTERIOR FIRE EXPOSURE. INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.
    EXCEPTION TO SECTION 707A.5: THE FOLLOWING MATERIALS DO NOT REQUIRE PROTECTION: FASCIA & OTHER ARCHITECTURAL TRIM BOARDS.

ENCLOSED ROOF EAVES AND ROOF EAVE SOFFITS

11. **707A.6 ENCLOSED ROOF EAVES AND ROOF EAVE SOFFITS**
    THE EXPOSED UNDERSIDE OF ENCLOSED ROOF EAVES HAVING EITHER A BOXED-IN ROOF EAVE SOFFIT WITH A HORIZONTAL UNDERSIDE, OR SLOPING RAFTER TAILS WITH AN EXTERIOR COVERING APPLIED TO THE UNDERSIDE OF THE RAFTER TAILS, SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
    1. NONCOMBUSTIBLE MATERIAL.
    2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
    3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
    4. MATERIALS APPROVED FOR NOT LESS THAN 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
    5. ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING OR CLADDING ON THE UNDERSIDE OF THE RAFTER TAILS OR SOFFIT.
    6. THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTANCE-RATED EXTERIOR ASSEMBLY, AS TESTED IN ACCORDANCE WITH ASTM E119, APPLIED TO THE UNDERSIDE OF THE RAFTER TAILS OR SOFFIT, INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.
    7. BOXED-IN ROOF EAVE SOFFIT ASSEMBLIES WITH A HORIZONTAL UNDERSIDE THAT MEET THE PERFORMANCE CRITERIA IN SECTION 707A.11 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2957.
    8. BOXED-IN ROOF EAVE SOFFIT ASSEMBLIES WITH A HORIZONTAL UNDERSIDE THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SFM STANDARD 12-7A-3.
    EXCEPTION TO SECTION 707A.6: THE FOLLOWING MATERIALS DO NOT REQUIRE PROTECTION: FASCIA & OTHER ARCHITECTURAL TRIM BOARDS.

PORCH CEILINGS

12. **707A.7 EXTERIOR PORCH CEILINGS** THE EXPOSED UNDERSIDE OF EXTERIOR PORCH CEILINGS SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
    1. NONCOMBUSTIBLE MATERIAL.
    2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
    3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
    4. MATERIALS APPROVED FOR NOT LESS THAN 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
    5. ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING OR CLADDING ON THE UNDERSIDE OF THE RAFTER TAILS OR SOFFIT.
    6. THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTANCE-RATED EXTERIOR ASSEMBLY, AS TESTED IN ACCORDANCE WITH ASTM E119, APPLIED TO THE UNDERSIDE OF THE CEILING ASSEMBLY, INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.
    7. PORCH CEILING ASSEMBLIES WITH A HORIZONTAL UNDERSIDE THAT MEET THE PERFORMANCE CRITERIA IN SECTION 707A.11 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2957.
    8. PORCH CEILING ASSEMBLIES WITH A HORIZONTAL UNDERSIDE THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SFM STANDARD 12-7A-3.
    EXCEPTION TO SECTION 707A.7: ARCHITECTURAL TRIM BOARDS DO NOT REQUIRE PROTECTION.

FLOOR PROJECTIONS

13. **707A.8 FLOOR PROJECTIONS** THE EXPOSED UNDERSIDE OF A CANTILEVERED FLOOR PROJECTION WHERE A FLOOR ASSEMBLY EXTENDS OVER AN EXTERIOR WALL SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
    1. NONCOMBUSTIBLE MATERIAL.
    2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
    3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
    4. MATERIALS APPROVED FOR NOT LESS THAN 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
    5. ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING ON THE UNDERSIDE OF THE CEILING.
    6. THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTANCE-RATED EXTERIOR ASSEMBLY, AS TESTED IN ACCORDANCE WITH ASTM E119, APPLIED TO THE UNDERSIDE OF THE FLOOR ASSEMBLY, INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.
    7. THE UNDERSIDE OF A FLOOR PROJECTION ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN SECTION 707A.10 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2957.
    8. THE UNDERSIDE OF A FLOOR PROJECTION ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SFM STANDARD 12-7A-3.
    EXCEPTION TO SECTION 707A.8: ARCHITECTURAL TRIM BOARDS DO NOT REQUIRE PROTECTION.

UNDER FLOOR & UNDERSIDE PROTECTION

14. **707A.9 UNDERFLOOR PROTECTION** THE UNDERFLOOR AREA OF ELEVATED OR OVERHANGING BUILDINGS SHALL BE ENCLOSED TO GRADE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS CHAPTER OR THE UNDERSIDE OF THE EXPOSED UNDERFLOOR SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
    1. NONCOMBUSTIBLE MATERIAL.
    2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
    3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
    4. MATERIALS APPROVED FOR NOT LESS THAN 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
    5. ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING ON THE UNDERSIDE OF THE FLOOR PROJECTION.
    6. THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTANCE-RATED EXTERIOR ASSEMBLY, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263, APPLIED TO THE UNDERSIDE OF THE FLOOR, INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.
    7. THE UNDERSIDE OF A FLOOR ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN SECTION 707A.11 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2957.
    8. THE UNDERSIDE OF AN APPENDAGE ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SFM STANDARD 12-7A-3.
    EXCEPTION TO SECTION 707A.9: THE UNDERFLOOR PROTECTION SHALL NOT BE REQUIRED WHERE THE UNDERFLOOR AREA IS LESS THAN 2 FEET (610 MM) FROM THE GRADE BELOW.
15. **707A.10 UNDERSIDE OF APPENDAGES** WHEN REQUIRED BY THE ENFORCING AGENCY, THE UNDERSIDE OF OVERHANGING APPENDAGES SHALL BE ENCLOSED TO GRADE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS CHAPTER, OR THE UNDERSIDE OF THE EXPOSED UNDERFLOOR SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
    1. NONCOMBUSTIBLE MATERIAL.
    2. IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
    3. FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
    4. MATERIALS APPROVED FOR NOT LESS THAN 1-HOUR FIRE-RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
    5. ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND THE EXTERIOR COVERING ON THE UNDERSIDE OF THE APPENDAGE PROJECTION.
    6. THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTANCE-RATED EXTERIOR ASSEMBLY, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263, APPLIED TO THE UNDERSIDE OF THE APPENDAGE, INCLUDING ASSEMBLIES USING THE GYPSUM PANEL AND SHEATHING PRODUCTS LISTED IN THE GYPSUM ASSOCIATION FIRE RESISTANCE DESIGN MANUAL.
    7. THE UNDERSIDE OF AN APPENDAGE ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN SECTION 707A.11 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2957.
    8. THE UNDERSIDE OF AN APPENDAGE ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SFM STANDARD 12-7A-3.
    EXCEPTION TO SECTION 707A.10: STRUCTURAL COLUMNS AND BEAMS DO NOT REQUIRE PROTECTION WHEN CONSTRUCTED WITH SAWN LUMBER OR GLUE LAMINATED WOOD WITH THE SMALLEST MINIMUM NOMINAL DIMENSION OF 4 INCHES (102 MM). SAWN OR GLUE-LAMINATED PLANKS SHALL BE SPLINED, TONGUE-AND-GROOVE, OR SET CLOSE TOGETHER AND WELL SPIKED.

DECKING

23. **709A.1.1 FLASHING.** A MINIMUM OF A 6-INCH (150 MM) METAL FLASHING, APPLIED VERTICALLY ON THE EXTERIOR OF THE WALL, SHALL BE INSTALLED AT ALL DECK-TO-WALL INTERSECTIONS.
24. **709A.3 DECKING SURFACES** THE WALKING SURFACE MATERIAL OF DECKS, PORCHES, BALCONIES & STAIRS SHALL BE CONSTRUCTED WITH ONE OF THE FOLLOWING MATERIALS:
    1. MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION 709A.4 WHEN TESTED IN ACCORDANCE WITH BOTH ASTM E2632 AND ASTM E2726.
    2. IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION 704A.3.
    3. MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARD 12-7A-4 AND SECTION 704A.3.
    4. EXTERIOR FIRE-RETARDANT-TREATED WOOD.
    5. NONCOMBUSTIBLE MATERIAL.
    6. ANY MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4A WHEN ATTACHED EXTERIOR WALL COVERING IS ALSO COMPOSED OF NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL.
    EXCEPTION: WALL MATERIAL SHALL BE PERMITTED TO BE OF ANY MATERIAL THAT OTHERWISE COMPLIES WITH THIS CHAPTER WHEN THE DECKING SURFACE MATERIAL COMPLIES WITH THE PERFORMANCE REQUIREMENTS ASTM E84 WITH A CLASS B FLAME SPREAD INDEX.
    7. ANY MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION 709A.5 WHEN TESTED IN ACCORDANCE WITH ASTM E2632 AND WHEN ATTACHED EXTERIOR WALL COVERING IS ALSO COMPOSED OF ONLY NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIALS.
    EXCEPTION: WALL MATERIAL SHALL BE PERMITTED TO BE OF ANY MATERIAL THAT OTHERWISE COMPLIES WITH THIS CHAPTER WHEN THE DECKING SURFACE MATERIAL COMPLIES WITH THE PERFORMANCE REQUIREMENTS ASTM E84 WITH A CLASS B FLAME SPREAD INDEX.

EXTERIOR GLAZING & OPENINGS

16. **708A.2 EXTERIOR GLAZING** THE FOLLOWING EXTERIOR GLAZING MATERIALS AND/OR ASSEMBLIES SHALL COMPLY WITH THIS SECTION:
    1. EXTERIOR WINDOWS.
    2. EXTERIOR GLAZED DOORS.
    3. GLAZED OPENINGS WITHIN EXTERIOR DOORS.
    4. GLAZED OPENINGS WITHIN EXTERIOR GARAGE DOORS.
    5. EXTERIOR STRUCTURAL GLASS VENEER.
    6. SKYLIGHTS.
    7. VENTS.
17. **708A.2.1 EXTERIOR WINDOWS, SKYLIGHTS AND EXTERIOR GLAZED DOOR ASSEMBLY REQUIREMENTS.** EXTERIOR WINDOWS, SKYLIGHTS & EXTERIOR GLAZED DOOR ASSEMBLIES SHALL COMPLY WITH ONE OF THE FOLLOWING REQUIREMENTS:
    1. BE CONSTRUCTED OF MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING, OR
    2. BE CONSTRUCTED OF GLASS BLOCK UNITS, OR
    3. HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257, OR
    4. BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-2.
18. **708A.2.2 OPERABLE SKYLIGHTS.** OPERABLE SKYLIGHTS SHALL BE PROTECTED BY A NONCOMBUSTIBLE MESH SCREEN WHERE THE DIMENSIONS OF THE OPENINGS IN THE SCREEN SHALL NOT EXCEED 1/8-INCH (3.2MM).
19. **708A.2.3 STRUCTURAL GLASS VENEER** THE WALL ASSEMBLY BEHIND STRUCTURAL GLASS VENEER SHALL COMPLY WITH SECTION 707A.3.
20. **708A.3 EXTERIOR DOORS** EXTERIOR DOORS SHALL COMPLY WITH ONE OF THE FOLLOWING:
    1. THE EXTERIOR SURFACE OR CLADDING SHALL BE OF NONCOMBUSTIBLE MATERIAL.
    2. THE EXTERIOR SURFACE OR CLADDING SHALL BE OF IGNITION RESISTANT MATERIAL.
    3. THE EXTERIOR DOOR SHALL BE CONSTRUCTED OF SOLID CORE WOOD THAT COMPLIES WITH THE FOLLOWING REQUIREMENTS:
    3.1 STILES AND RAILS SHALL NOT BE LESS THAN 13/8 INCHES THICK.
    3.2 PANELS SHALL NOT BE LESS THAN 11/4 INCHES THICK, EXCEPT FOR THE EXTERIOR PERIMETER OF THE PANEL THAT SHALL BE PERMITTED TO TAPER TO A TONGUE NOT LESS THAN 3/8 INCH THICK.
    4. THE EXTERIOR DOOR ASSEMBLY SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 252.
    5. THE EXTERIOR SURFACE OR CLADDING SHALL BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SECTION 707A.3.1 WHEN TESTED IN ACCORDANCE WITH ASTM E2707.
    6. THE EXTERIOR SURFACE OR CLADDING SHALL BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-1.
21. **708A.3.1 EXTERIOR DOOR GLAZING.** GLAZING IN EXTERIOR DOORS SHALL COMPLY WITH SECTION 708A.2.1.
22. **708A.4 GARAGE DOOR PERIMETER GAP** EXTERIOR GARAGE DOORS SHALL RESIST THE INTRUSION OF EMBERS FROM ENTERING BY PREVENTING GAPS BETWEEN DOORS AND DOOR OPENINGS, AT THE BOTTOM, SIDES & TOPS OF DOORS, FROM EXCEEDING 1/8 INCH (3.2 MM). GAPS BETWEEN DOORS & DOOR OPENINGS SHALL BE CONTROLLED BY ONE OF THE FOLLOWING METHODS:
    1. WEATHER-STRIPPING PRODUCTS MADE OF MATERIALS THAT: (A) HAVE BEEN TESTED FOR TENSILE STRENGTH IN ACCORDANCE WITH ASTM D638 (STANDARD TEST METHOD FOR TENSILE PROPERTIES OF PLASTICS) AFTER EXPOSURE TO ASTM G155 (STANDARD PRACTICE FOR OPERATING XENON ARC LIGHT APPARATUS FOR EXPOSURE OF NON-METALLIC MATERIALS) FOR A PERIOD OF 2,000 HOURS, WHERE THE MAXIMUM ALLOWABLE DIFFERENCE IN TENSILE STRENGTH VALUES BETWEEN EXPOSED AND NON-EXPOSED SAMPLES DOES NOT EXCEED 10%; AND (B) EXHIBIT A V-2 OR BETTER FLAMMABILITY RATING WHEN TESTED TO UL 94, STANDARD FOR TESTS FOR FLAMMABILITY OF PLASTIC MATERIALS FOR PARTS IN DEVICES AND APPLIANCES.
    2. DOOR OVERLAPS ONTO JAMBS AND HEADERS.
    3. GARAGE DOOR JAMBS & HEADERS COVERED WITH METAL FLASHING.

door schedule - elevation a (d)

DOOR #	WIDTH	HEIGHT	THICK	TYPE	OPERATION	CORE OR GLAZING	MATERIAL	FRAME	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	3'-0"	6-8"	1-3/4"	FRENCH	SWING	DG, TG	WOOD	WOOD	OPTIONAL	0.58	0.65	1	ENTRY
2	6'-0"	6-8"	1-3/4"	FRENCH	SLIDING	DG, TG	VINYL	VINYL	YES	0.58	0.65	1	
3	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	PRIVACY
4	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	

window schedule - elevation a (w)

WINDOW #	WIDTH	HEIGHT	TYPE	MATERIAL	GLAZING	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	2'-0"	3-6"	VERTICAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	
2	3'-0"	4'-0"	VERTICAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	OPAQUE
3	6'-0"	2'-0"	HORIZONTAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	

door schedule - elevation b (d)

DOOR #	WIDTH	HEIGHT	THICK	TYPE	OPERATION	CORE OR GLAZING	MATERIAL	FRAME	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	3'-0"	6-8"	1-3/4"	FRENCH	SWING	DG, TG	WOOD	WOOD	OPTIONAL	0.58	0.65	1	ENTRY
2	6'-0"	6-8"	1-3/4"	FRENCH	SLIDING	DG, TG	VINYL	VINYL	YES	0.58	0.65	1	
3	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	PRIVACY
4	2'-0"	6-8"	1-1/2"	INTERIOR	SWING	SOLID	WOOD	WOOD	NO	N/A	N/A	1	

window schedule - elevation b (w)

WINDOW #	WIDTH	HEIGHT	TYPE	MATERIAL	GLAZING	SCREEN	U FACTOR	SHGC	QUANTITY	NOTES
1	2'-0"

general specifications:

#	NOTE
1	**GENERAL REQUIREMENTS**

STANDARDS

1.0 CODES GOVERNING CONSTRUCTION:

•	2022 CALIFORNIA	BUILDING CODE	(CBC)	TITLE 24	PART 2; VOLUME 1 & 2
•	2022 CALIFORNIA	RESIDENTIAL CODE	(CRC)	TITLE 24	PART 2.5
•	2022 CALIFORNIA	ELECTRICAL CODE	(CEC)	TITLE 24	PART 3
•	2022 CALIFORNIA	MECHANICAL CODE	(CMC)	TITLE 24	PART 4
•	2022 CALIFORNIA	PLUMBING CODE	(CPC)	TITLE 24	PART 5
•	2022 CALIFORNIA	ENERGY CODE	(CEC)	TITLE 24	PART 6
•	2022 CALIFORNIA	FIRE CODE	(CFC)	TITLE 24	PART 9
•	2022 CALIFORNIA	GREEN BUILDING STDS CODE	(CALGREEN)	TITLE 24	PART 11
•	2022 CALIFORNIA	BLDG ENERGY EFFICIENCY STDS	(CBEES)		

1.1 ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE 2022 EDITION OF THE CALIFORNIA BUILDING STANDARDS CODE (TITLE 24), WHICH ADOPTS THE 2021 IBC, 2021 IRC, 2021 UMC, 2021 UPC, 2020 NEC, 2021 CEC AND THE 2021 CGBSC.

1.2 ALL WORK SHALL CONFORM TO THE CODE AMENDMENTS, ORDINANCES AND REQUIREMENTS OF THE LOCAL GOVERNMENTAL JURISDICTION HAVING AUTHORITY OVER THE PROJECT.

1.3 THE APPROVED PLANS, SPECIFICATIONS, CALCULATIONS AND OTHER PROJECT CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED PROJECT. THEY DO NOT INCLUDE THE METHODS OF CONSTRUCTION.

1.4 THE APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ALL APPROVED REVISIONS SHALL BE PRESENT AT THE PROJECT SITE AT ALL TIMES.

1.5 ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY EACH SUBCONTRACTOR BEFORE COMMENCING WORK. ANY ERRORS, OMISSIONS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, ENGINEER, GENERAL CONTRACTOR AND/OR PROJECT MANAGER BEFORE CONSTRUCTION BEGINS.

1.6 ALL WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED MEASUREMENTS.

1.7 NOTES & DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERIC NOTES & TYPICAL DETAILS IN CASE OF CONFLICT.

1.8 WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, SUCH DETAILS SHALL BE THE SAME AS FOR SIMILAR WORK SHOWN ON THE DRAWINGS. WHERE SUFFICIENT SIMILAR WORK IS NOT SHOWN THE ARCHITECT, ENGINEER, GENERAL CONTRACTOR AND/OR PROJECT MANAGER SHALL BE CONSULTED FOR CLARIFICATION.

1.9 ANY OPTIONS OR SUBSTITUTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY. NO EXTRA CHARGES OR SUBSTITUTIONS SHALL BE MADE IN THE FIELD FROM THE APPROVED CONSTRUCTION DOCUMENTS UNLESS WRITTEN APPROVAL OF SUCH CHANGE OR SUBSTITUTION IS OBTAINED FROM THE ARCHITECT/ENGINEER. IF CHANGES ARE MADE WITHOUT WRITTEN APPROVAL, SUCH CHANGES ALONG WITH ANY ADDITIONAL COSTS, REPAIRS AND COORDINATION WITH OTHER AFFECTED ITEMS SHALL BE THE LEGAL AND FINANCIAL RESPONSIBILITY OF THE CONTRACTOR AND/OR SUBCONTRACTOR INVOLVED WITH THE CHANGE.

SAFETY

1.10 IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING & SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, MATERIALS, ETC. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION TECHNIQUES, SEQUENCES, PROCEDURES, SUPERVISION & INSTALLATION OF ALL TEMPORARY BRACING & SHORING TO ENSURE THE SAFETY OF THE WORK. BRACING & SHORING IS TO BE INSTALLED PER THE CURRENT OSHA & ANY OTHER APPLICABLE SAFETY STANDARDS. ALL BRACING &/OR SHORING SHALL STAY IN PLACE UNTIL ALL WORK HAS BEEN SUITABLY COMPLETED.

1.11 THE STRUCTURE IS DESIGNED AS A STABLE UNIT AFTER ALL COMPONENTS ARE IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BRACING AND SHORING AS REQUIRED TO PROVIDE VERTICAL, LATERAL AND TORSIONAL STABILITY OF THE STRUCTURE OR ANY PORTION THEREOF DURING CONSTRUCTION.

1.12 THE CONTRACTOR SHALL DESIGN, CONSTRUCT & MAINTAIN ALL SAFETY DEVICES, INCLUDING BRACING & SHORING, & SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE & FEDERAL HEALTH & SAFETY LAWS, REGULATIONS & STANDARDS.

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

1.14 ALL CONSTRUCTION MATERIAL AT ALL TIMES KEEP THE PROJECT AREA FREE FROM ACCUMULATION OF WASTE MATERIALS CAUSED BY THEIR WORK.

INSURANCE

1.15 CONTRACTORS SHALL MAINTAIN, FOR THE ENTIRE DURATION OF THE PROJECT, FULL AND UNLIMITED WORKMEN'S COMPENSATION INSURANCE IN ACCORDANCE WITH THE LABOR CODE OF THE STATE OF CALIFORNIA. THEY SHALL ALSO CARRY PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE IN AMOUNTS SATISFACTORY TO THE OWNER AND WITH COMPANIES SELECTED WITH THE CONSENT OF THE OWNER.

#	NOTE
2	**SITE WORK**

DEMOLITION AND PREPARATION

2.1 REMOVE ALL DEBRIS FROM THE PROJECT AND DISPOSE OF IT LEGALLY IN A TIMELY FASHION.

2.2 DO NOT REMOVE ANY VEGETATION EXCEPT AS NOTED ON THE DRAWINGS OR WITH PRIOR OWNER OR ARCHITECT APPROVAL.

2.3 CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO LOCATE AND PROTECT ANY UNDERGROUND OR CONCEALED CONDUIT, PLUMBING OR OTHER UTILITIES WHERE WORK IS PERFORMED. PRIOR TO EXCAVATION, CONTACT UNDERGROUND SERVICE ALERT THROUGHOUT CONSTRUCTION.

2.4 ALL UTILITY LINES SHALL BE BURIED, WRAPPED AND PROTECTED TO MEET APPLICABLE CODE REQUIREMENTS & INDUSTRY STANDARD CONSTRUCTION PROCEDURES.

2.5 FORM SIDES OF TRENCHES FOR FOOTINGS AS REQUIRED TO PROVIDE FOR FIRM CONTAINMENT OF FOOTINGS AND REMOVE ALL LOOSE SOIL AND STANDING WATER FROM THE TRENCHES.

2.6 SHOULD LOOSE FILL, EXPANSIVE SOIL, GROUND WATER OR OTHER HAZARDOUS CONDITIONS BE ENCOUNTERED DURING THE EXCAVATION OF THE FOOTINGS, THE ARCHITECT SHALL BE NOTIFIED AND ALL FOUNDATION WORK SHALL HALT UNTIL A SOLUTION TO THE ISSUE IS REACHED.

2.7 TRENCHES OR EXCAVATIONS MORE THAN 5 FEET IN DEPTH INTO WHICH A PERSON IS REQUIRED TO DESCEND SHALL HAVE ALL NECESSARY PERMITS FROM THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO BUILDING/GRADING PERMIT ISSUANCE OR BEFORE ANY WORK COMMENCES WITHIN THE TRENCH.

GRADING AND DRAINAGE

2.8 ALL UTILITY TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE DENSITY.

2.9 GROUND SURFACE IMMEDIATELY ADJACENT TO THE OUTSIDE PERIMETER OF BUILDINGS SHALL BE PITCHED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN ONE UNIT VERTICAL IN TWENTY UNITS HORIZONTAL (5% SLOPE) FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A LESSER DISTANCE MAY BE APPROVED BY THE JURISDICTION PRIOR TO PLACEMENT OF CONCRETE ON FILL MATERIAL 12 INCHES OR MORE IN DEPTH. (CBC 1803.5.6 & 1803.6)

#	NOTE
3	**FOUNDATIONS AND CONCRETE**

STANDARDS

3.1 FOUNDATION DESIGN IS BASED ON A SOILS BEARING VALUE OF 1,500 PSF, UON IN THE SOILS REPORT, WITH THE BASE OF THE FOOTING TO BE PLACED AS SHOWN IN THE APPROVED CONSTRUCTION DOCUMENTS, WITH A MINIMUM DEPTH BELOW THE ADJACENT COMPETENT FORMATIONAL GRADE OF 12" IF NOT REINFORCED, WITH THE TOP OF FOOTING BASE TO BE PLACED NOT LESS THAN 12" IF NOT SPECIFIED. THICKNESS OF THE FOOTING SHALL NOT BE LESS THAT 6" IF NOT SPECIFIED. (CBC TABLE R403.1(1) & CBC TABLE 1809.7)

3.2 FORMWORK SHALL RESULT IN A FINAL STRUCTURE THAT CONFORMS TO SHAPES, SIZES & DIMENSIONS OF FOUNDATIONS AS SHOWN IN THE APPROVED CONSTRUCTION DOCUMENTS WITHIN TOLERANCES OF CBC 3.3.6, CRSI MANUAL OF STD PRACTICE 26.10 OR ACI 318).

3.3 FORMWORK SUPPORTING VERTICAL SURFACES SHALL REMAIN IN PLACE FOR A MINIMUM OF 2 DAYS.

3.4 FORMWORK SUPPORTING BEAMS AND GIRDERS SHALL REMAIN IN PLACE FOR A MINIMUM OF 4 DAYS.

3.5 PIPES, CONDUITS OR DUCTS SHALL NOT BE PLACED IN CONCRETE SLABS, BEAMS OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED IN THE APPROVED CONSTRUCTION DOCUMENTS (CPC SECTION 312).

3.6 CONCRETE TO BE READY MIX CONCRETE (ACI 318, ASTM C150, C595 & C1157) LATEST ADOPTED STANDARD) OR CONCRETE MIXED CONSTANT OF 1 PART CEMENT, 3 PARTS SAND, 4 PARTS 1-INCH MAXIMUM SIZE ROCK, AND NOT MORE THAN 7-1/2 GALLONS OF WATER PER SACK OF CEMENT. (CRC R402.2 & CBC SECTION 1903)

3.7 CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI FOR POURED IN PLACE CONTINUOUS AND SPREAD FOOTINGS, UON (CRC TABLE R402.2, CBC TABLE 1808.8.1 & ACI 318). MAXIMUM SLUMP SHALL NOT BE GREATER THAN 4".

3.7 MINIMUM ULTIMATE COMPRESSIVE CONCRETE STRENGTHS SHALL BE (CRC TABLE R402.2 & CBC TABLE 1804.3):

ITEM	STRENGTH (PSI)	@DAYS	SPECIAL INSPECTION
SLAB ON GRADE	2500	28	NO
FOOTINGS	2500	28	NO
GRADE BEAMS	3000	28	NO
CAISSONS	3000	28	NO
STRUCTURAL DECK	3000	28	YES
COLUMNS	3000	28	YES

3.8 CONCRETE SLABS ON GRADE SHALL NOT BE LESS THAN 4" THICK & HAVE #3 REINFORCING BARS AT 18" OC EACH WAY, ON A BASE OF 2" CLEAN GRADED SAND OVER A 15 MIL POLYETHYLENE VAPOR BARRIER OVER 4" OF CLEAN GRADED GRAVEL, CONSISTING OF CLEAN GRADED SAND, GRAVEL OR CRUSHED STONE, NOMINAL SIZE ¼" TO 1½", WHICH SHALL BE FREE OF THE CONCRETE SLAB, UON. (CRC SECTION R506 & CBC SECTION 1907).

3.9 CONCRETE FOUNDATIONS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF CRC SECTION R403 & ACI 318 & CBC 1808.8

3.10 CONCRETE FOOTINGS SHALL BE DEEPENED AS REQUIRED TO OBTAIN MINIMUM CONCRETE EMBEDMENT AND SOLID HOLD DOWN BOLT SUPPORT. ALL HOLD DOWN BOLTS SHALL HAVE A MINIMUM OF 7" OF CONCRETE EMBEDMENT.

3.11 IN THE EVENT FOUNDATION EXCAVATIONS ARE REQUIRED TO A DEPTH GREATER THAN REQUIRED, ADDITIONAL DEPTH SHALL BE FILLED WITH THE SAME CONCRETE AS USED FOR THE FOOTINGS. THE ADDITIONAL CONCRETE SHALL BE PLACED AT THE BOTTOM OF THE FOOTING EXCAVATION WITH THE REINFORCING MAINTAINED AT THE LOCATION SHOWN FOR ORIGINAL FOOTING DEPTH. NO UNCONTROLLED FILL SHALL BE USED. (CRC SECTION R403.1.1 & R403.1.4)

3.12 SHEAR WALLS SHALL BE SUPPORTED BY CONTINUOUS FOUNDATIONS. (CRC 403)

3.13 FOUNDATIONS OR FOUNDATION WALLS SUPPORTING WOOD SHALL EXTEND AT LEAST 6" ABOVE THE ADJACENT FINISH GRADE (CRC R404.1.6 & CPC POST 1.8.2)

3.14 ALL FOUNDATION WALLS, SLABS AND SLEEPERS ON A CONCRETE SLAB THAT IS IN DIRECT CONTACT WITH EARTH, AND SILLS WHICH REST ON CONCRETE OR MASONRY FOUNDATIONS, SHALL BE PRESSURE TREATED WOOD OR FOUNDATION REDWOOD (CRC R317.1 AND CBC SECTION 2304.12.1.4)

3.15 ALL HOLD DOWNS, DOWELS AND INSERTS MUST BE ANCHORED IN PLACE PRIOR TO CONCRETE PLACEMENT AND FOUNDATION INSPECTION.

REINFORCEMENT

3.16 CONCRETE SLABS SHALL BE REINFORCED WITH REINFORCING BARS AT 18" OC MIN EACH WAY, UON . REINFORCING SHALL BE PLACED ON CONCRETE CHAIRS TO MAINTAIN STEEL REINFORCEMENT IN THE MIDDLE THIRD OF SLAB THICKNESS (CBC 1907 & ACI 318).

3.17 CONTINUOUS CONCRETE FOOTINGS AND STEM WALLS SHALL BE PROVIDED WITH A MINIMUM TWO LONGITUDINAL NO. 4 BARS, ONE BAR NEAR THE TOP AND ONE AT THE BOTTOM OF THE FOOTING. (CRC R403.1.3(2)

3.18 STEEL REINFORCEMENT SHALL COMPLY WITH THE REQUIREMENTS OF ARTICLE 2.4 OF TMS 602 & ASTM A615, A706 OR A996. ASTM A996 BARS PRODUCED FROM RAIL STEEL SHALL BE TYPE R. THE MINIMUM YIELD STRENGTH OF REINFORCING STEEL SHALL BE 60 KSI (GRADE 60 PSI) (GRADE 60 KSI) (276 MPa) REINFORCING STEEL (STEEL REINFORCEMENT FOR CONCRETE STRUCTURES SHALL BE DEFORMED & COMPLY WITH ASTM A615. (CBC 2103.4)

3.19 REINFORCING BAR LAPPED SPLICES IN CONCRETE SHALL BE 40 BAR DIAMETERS OR 20" MINIMUM, UON. SPLICES SHALL BE SECURELY WIRED TOGETHER WITH 16 GAUGE WIRE. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHERE POSSIBLE. (CRC R403.1.3.5.4)

3.20 ALL CONNECTORS AND METAL HARDWARE IN CONTACT WITH PRESSURE TREATED WOOD, TIMBERS OR CONCRETE SHALL HAVE CORROSION RESISTANT COATINGS OR PROTECTION SUCH AS 'ZMAX', HOT DIPPED GALVANIZED, OR BE STAINLESS STEEL; HDG: ASTM A 123/A 123M, ASTM A 153/A 153M & ASTM A 90/A 90M. (CRC R317.3 & CBC 2304.10.5.1 & ACI 318).

3.21 REINFORCEMENT SHALL BE ACCURATELY PLACED, ADEQUATELY SUPPORTED, & SECURED AGAINST DISPLACEMENT PRIOR TO CONCRETE PLACEMENT (CBC 1907.1, CRC R403.1.3.5.2 & THE LATEST ADOPTED STANDARDS OF THE WESTERN CONCRETE REINFORCING STEEL INSTITUTE).

3.22 CLEAR SPACING BETWEEN REINFORCEMENT SHALL NOT BE LESS THAN 1 BAR DIAMETER, 1", OR 1-1/3 TIMES THE MAXIMUM AGGREGATE SIZE. (CBC R403.1.5.2).

STEEL REINFORCEMENT IN CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COVERAGE (CRC R403.1.3.5.3):

3.22.1 CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH : 3"

3.22.2 CONCRETE SURFACES EXPOSED TO EARTH & WEATHER, #5 OR LESS : 1-1/2"

3.22.3 CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH : 3/4"

3.23 PROVIDE #3 REINFORCING BAR STIRRUPS AT 5' 0C FROM TOP TO BOTTOM REINFORCEMENT IN ALL CONTINUOUS FOOTINGS, OAK. ALL TIES AND STIRRUPS SHALL CONFORM TO ASTM A-615, GRADE 40 KSI STEEL

3.24 CONTINUOUS FOOTING REINFORCEMENT TO BE CONTINUOUS ACROSS ALL SPREAD OR SPOT FOOTINGS.

3.25 REINFORCING SHALL BE CONTINUOUS AROUND CORNERS AND THROUGH INTERSECTIONS

CONNECTIONS

3.26 ANCHOR BOLTS AT FOUNDATION PLATES OR SILLS SHALL BE BOLTED OR ANCHORED TO THE FOUNDATION OR FOUNDATION WALL PER THE FOLLOWING WITH 'ZMAX', GALVANIZED OR STAINLESS STEEL FINISH (CRC R403.1.6.1 & CRC R602.11.1):

A. MINIMUM 5/8"Ø ½" STEEL ANCHOR BOLTS A307

B. BOLTS EMBEDDED AT LEAST 7" INTO CONCRETE OR MASONRY

C. BOLTS SPACED MAXIMUM 4' ON CENTER OR PER SHEAR SCHEDULE

D. MINIMUM 2 BOLTS PER PLATE/SILL PIECE WITH 1 BOLT LOCATED MAXIMUM 12" & MINIMUM 7 BOLT DIAMETERS FROM EACH END OF EACH SILL PLATE/PIECE.

E. MINIMUM 3" BY 3" BY 0.229" STEEL PLATE WASHER BETWEEN SILL & NUT ON EACH BOLT

3.27 ALL NON-BEARING INTERIOR SILLS OR PLATES SHALL BE ANCHORED OR TIED SHALL BE ATTACHED TO THE FOUNDATION WITH SIMPSON CO PDPAW, 250 PINS AT 36" O.C. WITH 1" Ø WASHERS. PROVIDE ONE PIN WITHIN 6" OF EACH END OF EACH SILL PLATE, UOE. (CBC ES ESR-2185)

3.28 DOWEL ANY NEW FOOTINGS TO EXISTING FOOTINGS WITH 2 - #4 x 2' REINFORCING BARS @ TOP & BOTTOM WITH 6" MINIMUM EMBEDMENT IN 5/8"Ø CORED HOLES WITH SIMPSON SET EPOXY GROUT. (ICC-ES, ESR-1772)

3.29 ALL HOLD DOWNS SHALL BE INSTALLED WITH SIMPSON SET EPOXY ADHESIVE GROUT. INSTALLATION PER MANUFACTURERS SPECIFICATIONS AND OBTAIN SPECIAL INSPECTION (ICC-ES, ESR-1772)

3.30 DOWEL NEW CONCRETE SLABS TO EXISTING CONCRETE WALLS WITH #4 x 2' REINFORCING BARS @ 24" OC WITH 6" MINIMUM EMBEDMENT IN 5/8"Ø CORED HOLES WITH SIMPSON SET EPOXY ADHESIVE GROUT. (ICC-ES, ESR-1772)

3.31 DOWEL NEW THREADED ROD ANCHOR BOLTS INTO EXISTING CONCRETE FOOTINGS WITH 6" MINIMUM EMBEDMENT IN 5/8"Ø CORED HOLES WITH SIMPSON SET EPOXY ADHESIVE GROUT. (ICC-ES, ESR-1772)

RAISED FLOOR - STEM WALL FOUNDATION

3.32 NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS FOR PROTECTION OF WOOD AGAINST DECAY (CRC R317.1):

A. ALL WOOD IN CONTACT WITH GROUND, EMBEDDED IN CONCRETE IN DIRECT CONTACT WITH GROUND, OR EMBEDDED IN CONCRETE EXPOSED TO WEATHER

B. WOOD JOISTS OR THE BOTTOM OF WOOD STRUCTURAL PANELS WITHIN 12" OF THE EXPOSED GROUND IN CRAWL SPACES SHALL BE OF NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD

C. THE UNDERSIDE OF WOOD FLOORS WITHOUT A VAPOR RETARDER IN CRAWL SPACE FOUNDATION WALLS AND ARE LESS THAN 6" FROM EXPOSED EARTH SHALL BE OF NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD

D. WOOD FRAMING, SHEATHING, & SIDING ON THE EXTERIOR OF THE BUILDING & HAVING CLEARANCE LESS THAN 6" FROM THE EXPOSED GROUND OR LESS THAN 2" VERTICALLY FROM CONCRETE STEPS, PORCH SLABS, PATIO SLABS, AND SIMILAR HORIZONTAL SURFACES EXPOSED TO THE WEATHER

E. SILLS AND SLEEPERS ON CONCRETE OR MASONRY SLAB IN DIRECT CONTACT WITH GROUND UNLESS SEPARATED FROM SUCH SLAB BY IMPERVIOUS MOISTURE BARRIER

F. ENDS OF WOOD GIRDERS ENTERING MASONRY OR CONCRETE WALLS WITH CLEARANCES LESS THAN 1/2" ON TOPS, SIDES, AND ENDS

G. WOOD STRUCTURAL MEMBERS SUPPORTING MOISTURE-PERMEABLE FLOORS OR ROOFS EXPOSED TO WEATHER, SUCH AS CONCRETE OR MASONRY SLABS, UNLESS SEPARATED FROM SUCH FLOORS OR ROOFS BY ACCEPTABLE WATERPROOFING

H. WOOD FURRING STRIPS OR OTHER WOOD FRAMING MEMBERS ATTACHED DIRECTLY TO INTERIOR OF EXTERIOR CONCRETE OR MASONRY WALLS BELOW GRADE EXCEPT WHERE VAPOR RETARDER APPLIED BETWEEN WALL AND FURRING OR FRAMING MEMBER

3.33 UNDERFLOOR AREAS SHALL HAVE VENTILATION OPENINGS THROUGH FOUNDATION WALLS OR EXTERIOR WALLS, WITH MINIMUM NET AREA OF VENTILATION OPENINGS OF 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDERFLOOR AREA. ONE SUCH VENTILATION OPENING SHALL BE WITHIN 3 FEET OF EACH CORNER OF THE BUILDING. (CRC R408.1)

3.34 UNDERFLOOR AREAS SHALL BE PROVIDED WITH A MINIMUM 18-INCH BY 24-INCH ACCESS OPENING. (CRC R408.4)

#	NOTE
4	**MASONRY**

STANDARDS

4.1 CONCRETE MASONRY UNITS SHALL COMPLY WITH ARTICLE 2.3 OF TMS 602 FOR LOAD-BEARING UNITS. (CBC 2103.1) OAK

4.2 GROUT SHALL CONFORM ARTICLE 2.2 OF TMS 602 & SHALL CONSIST OF 1 PART PORTLAND CEMENT, 1/10 PART HYDRATED LIME, 2-1/4 TO 3 PARTS SAND, & 1 TO 2 PARTS GRAVEL. GROUT SHALL BE PROPORTIONED TO PROVIDE A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS. OAK (CBC 2103.3)

4.3 MORTAR FOR CONSTRUCTION OF MASONRY, FOUNDATION & RETAINING WALLS SHALL CONFORM TO ARTICLE 2.1 A 2.6 OF TMS 602 & SHALL CONSIST OF 1 PART PORTLAND CEMENT, 2-1/4 TO 3 PARTS SAND, & 1/4 TO 1/2 PART HYDRATED LIME. OAK (CBC 2103.2)

4.4 PORTLAND CEMENT SHALL BE TYPE 1. (ASTM 150) AGGREGATES SHALL HAVE A MAXIMUM SIZE OF 1/2" FOR FOOTINGS AND ½" FOR ALL OTHER LOCATIONS. (ASTM C33).

4.5 MORTAR FOR CMU AND BRICK/MASONRY VENEER SHALL CONFORM TO ANSI C270 FOR TYPE N OR S; OR SHALL COMPLY WITH ANSI A118.4 FOR LATEX-MODIFIED PORTLAND CEMENT MORTAR. (CBC 2103.2.4, 1404.10)

4.6 MASONRY CEMENT SHALL CONFORM TO ASTM C91-18

4.7 QUICK LIME AND HYDRATED LIME SHALL CONFORM TO ASTM C977-18

4.8 PORTLAND CEMENT MORTARS FOR INSTALLING CERAMIC WALL AND FLOOR TILE SHALL COMPLY WITH ANSI A108.1A AND ANSI A108.1B AND BE OF THE COMPOSITIONS INDICATED IN CBC TABLE 2103.2.3. (CBC 2103.2.3)

4.9 GLASS UNIT MASONRY CONSTRUCTION SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS & COMPLY WITH CHAPTER 13 OF TMS 402 & CBC §2110 (CBC 2110.1) MORTAR FOR USE WITH GLASS UNITS SHALL BE USED. (ASTM C270, TYPE S OR N)

REINFORCEMENT

4.10 STEEL REINFORCEMENT SHALL COMPLY WITH THE REQUIREMENTS OF ARTICLE 2.4 OF TMS 602 & ASTM A615, A706 OR A996. ASTM A996 BARS PRODUCED FROM RAIL STEEL SHALL BE TYPE R. THE MINIMUM YIELD STRENGTH OF REINFORCING STEEL SHALL BE 60 KSI (GRADE 60 PSI) (GRADE 60 KSI) (276 MPa) REINFORCING STEEL (STEEL REINFORCEMENT FOR CONCRETE STRUCTURES SHALL BE DEFORMED & COMPLY WITH ASTM A615. (CBC 2103.4)

4.11 REINFORCING BAR LAPPED SPLICES IN MASONRY SHALL BE 40 BAR DIAMETERS OR 20" MINIMUM, UON. SPLICES SHALL BE SECURELY WIRED TOGETHER WITH 16 GAUGE WIRE. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHERE POSSIBLE (CBC 2107.2.1)

4.12 REINFORCEMENT SHALL BE ACCURATELY PLACED, ADEQUATELY SUPPORTED, & SECURED AGAINST DISPLACEMENT PRIOR TO GROUT PLACEMENT (CBC 1907.1, CRC R403.1.3.5.2 & THE LATEST ADOPTED STANDARDS OF THE WESTERN CONCRETE REINFORCING STEEL INSTITUTE).

4.13 CLEAR SPACING BETWEEN REINFORCEMENT SHALL NOT BE LESS THAN 1 BAR DIAMETER, 1", OR 1-1/3 TIMES THE MAXIMUM AGGREGATE SIZE (CRC R403.1.5.2).

CONNECTIONS

4.14 ALL LEDGER BOLTS SHALL BE BENT BAR ANCHOR BOLTS WITH A 90° BEND WITH AN INSIDE Ø OF 3 BOLT Ø, PLUS AN EXTENSION OF 1-1/2 BOLT Ø AT THE FREE END. THE EFFECTIVE EMBEDMENT DEPTH OF LEDGER BOLTS SHALL BE MEASURED PERPENDICULAR FROM THE INSIDE FACE OF THE SUPPORTING CONCRETE OR MASONRY WALL TO THE OUTERMOST EMBEDMENT SHALL BE NO LESS THAN 5 BOLT Ø BUT NOT LESS THAN 2", UON. ALL BOLTS SHALL BE GROUTED IN PLACE WITH AT LEAST 1" OF GROUT BETWEEN THE BOLT AND MASONRY.

#	NOTE
5	**STEEL**

STANDARDS

5.1 STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED & ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL FOR BUILDINGS (AISC CURRENT EDITION AND SUPPLEMENTS).

5.2 STRUCTURAL STEEL, STEEL USED AS STRUCTURAL SHAPES SUCH AS WIDE-FLANGE SECTIONS, CHANNELS, PLATES, & ANGLES SHALL COMPLY WITH ASTM A992, GRADE B. STEEL USED FOR STRUCTURAL TUBES SHALL COMPLY WITH ASTM A500, GRADE B.

5.3 STRUCTURAL STEEL SHALL CONFORM TO CHAPTER 22 OF THE 2022 CBC AND AISC 360.

W-WIDE FLANGE SHAPES	ASTM A992	F_y=50-65 KSI
PLATES, ANGLES & CHANNELS	ASTM A36	F_y=36 KSI
HOLLOW TUBE SHAPES	ASTM A500, GRADE B	F_y=46 KSI
ROUND PIPE SHAPES	ASTM A53, GRADE B	F_y=35 KSI

5.4 ALL STRUCTURAL STEEL SHALL BE IDENTIFIED AS NOTED IN THE 2022 CBC. DESIGN OF STEEL MEMBERS SHALL BE BASED ON AISC ASD METHODS PROVIDED IN THE AISC MANUAL OF STEEL CONSTRUCTION, 15TH EDITION. ALL FIELD CONNECTIONS, BOLTS, WELDS, & ABRADED PLACES ON THE SHOP PAINT SHALL BE TOUCHED UP WITH THE SAME COLOR OF PAINT AS THE SHOP COAT.

5.10 ALL STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED, UON.

CONNECTIONS

5.11 BOLTS SHALL BE A307 QUALITY WITH WASHERS, UON; HIGH STRENGTH BOLTS A490 BOLTS MUST BE SPECIAL INSPECTED. UON.

5.12 ALL NAILS SHALL BE COMMON WIRE NAILS, UNLESS OTHERWISE NOTED.

5.13 MACHINE BOLTS, LAG SCREWS, & SIMILAR FASTENERS SHALL CONFORM TO ASTM A307 & ASTM A563, UON.

5.14 STEEL DECKING SHALL BE SECURELY ANCHORED TO SUPPORTING STEEL WITH A MINIMUM OF ½" MINIMUM THICKNESS.

5.15 STEEL ERECTOR TO PROVIDE TEMPORARY BRACING REQUIRED TO MAINTAIN A PLUMB & PROPERLY BRACED STRUCTURE DURING CONSTRUCTION.

WELDING

5.16 ALL WELDS SHALL CONFORM TO THE CURRENT EDITION OF THE CODE FOR WELDING IN BUILDING CONSTRUCTION OF THE AMERICAN WELDING SOCIETY (AWS D1.1). WELDING SHALL BE MADE ONLY BY WELDERS AND WELDING OPERATORS QUALIFIED AS PRESCRIBED IN THE STANDARD QUALIFICATION PROCEDURE FOR WELDING IN BUILDING CONSTRUCTION OF THE AMERICAN WELDING SOCIETY.

5.17 FIELD SHOP WELDING SHALL BE PERFORMED BY A DULY CERTIFIED WELDER USING LOW HYDROGEN E70-T6 ELECTRODE ROD.

5.18 STRUCTURAL STEEL FIELD WELDING SHALL BE CONTINUOUSLY INSPECTED BY AN APPROVED REGISTERED SPECIAL INSPECTOR.

5.19 WELD LENGTHS CALLED FOR ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED.

5.20 WELDING ELECTRODES SHALL BE SIMPLY TO AWSAS.1 FOR AS.5, E70XX, UON .

5.21 WELDING FILLER METAL SHALL BE AWS D1.1, TABLE 4.1.1).

#	NOTE
6	**WOOD, TIMBER & CARPENTRY**

STANDARDS

6.1 ALL TIMBER DESIGN & CONSTRUCTION SHALL BE IN ACCORDANCE WITH CBC CHAPTER 23 & THE NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION (LATEST EDITION AND SUPPLEMENTS) WITH AMENDMENTS PER CBC SECTION 2306.

6.2 ALL LUMBER AND TIMBERS SHALL BE CLEARLY GRADE MARKED BY WWPA OR WCLIB PER DOC PS 20 (CBC §2303.1.1).

6.3 LUMBER & TIMBER SHALL BE CUT SQUARE AND TO ACCURATE LENGTH AND NEATLY ASSEMBLED. ALL FRAMING SHALL BE PROVIDED OVER AND UNDER OPENINGS, STRAIGHT AND TRUE.

6.4 MOISTURE CONTENT OF SAWN LUMBER AT THE TIME OF INSTALLATION SHALL NOT EXCEED 19%. (CBC §2303.1.9.2).

6.5 STANDARD WOOD GRADES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LUMBER OR TIMBER	SPECIES	GRADE
PRESSURE TREATED SILL PLATES ON CONCRETE	DOUGLAS FIR-LARCH	#2
2x4 STUDS LESS THAN 8' TALL	DOUGLAS FIR-LARCH	#2
2x4 STUDS LESS THAN 10' TALL, 4x4 STUDS, PLATES, STRIPPING, MISC. CONCEALED FRAMING, BLOCKING & FIRESTOPPING	DOUGLAS FIR-LARCH	#2
2x & 3x MEMBERS, LARGER THAN 4" NOMINAL WIDTH STUDS, PLATES, JOISTS, RAFTERS, STRIPPING, MISC. CONCEALED FRAMING, BLOCKING & FIRESTOPPING	DOUGLAS FIR-LARCH	#2 JOISTS & PLANKS OR BETTER
POSTS LARGER THAN 4x4	DOUGLAS FIR-LARCH	#1, POSTS & TIMBERS
BEAMS,

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] - NOT USED

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 MIXED OCCUPANCY BUILDINGS. - NOT USED

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. - NOT USED

4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities. - NOT USED

4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings. - NOT USED

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. - NOT USED

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. - NOT USED

4.303.1.4.3 Metering Faucets. - NOT USED

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. - NOT USED

4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings. - NOT USED

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 complying 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.
   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 strandboard, 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 flue gases to the outside atmosphere.

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

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

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

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

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

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.

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

4.504.5 COMPOSITE WOOD PRODUCTS. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxic 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, Australian AS/NZS 2269, European 636 3S standards, and Canadian CSA 0121, CSA 0151, CSA 0153 and CSA 0325 standards.
   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.

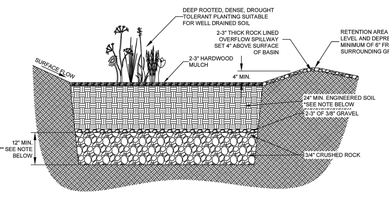
Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

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.

FOR USE IN THE STATE OF CALIFORNIA ONLY

BIORETENTION DETAIL
FOR STANDARD PROJECTS ONLY



*BIORETENTION "ENGINEERED SOIL" LAYER SHALL BE MINIMUM 24" DEEP "SANDY LOAM" SOIL MIX WITH NO MORE THAN 5% CLAY CONTENT. THE MIX SHALL CONTAN 50-60% SAND, 20-30% COMPOST OR HARDWOOD MULCH, AND 20-30% TOPSOIL.

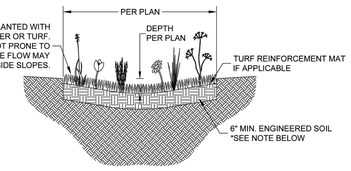
**3/4" CRUSHED ROCK LAYER SHALL BE A MINIMUM OF 12" BUT MAY BE DEEPENED TO INCREASE THE INFILTRATION AND STORAGE ABILITY OF THE BASIN.

THE EFFECTIVE AREA OF THE BASIN SHALL BE LEVEL AND SHALL BE SIZED BASED ON CITY OF ENCINITAS BMP DESIGN MANUAL CALCULATIONS.

A - SURFACE FLOW WITH SPILL WAY

VEGETATED SWALE

SWALE SHALL BE PLANTED WITH ADEQUATE GROUNDCOVER OR TURF. PLANTS THAT ARE NOT PRONE TO BLOCKING THE DRAINAGE FLOW MAY ALSO BE PLANTED ON SIDE SLOPES.



**ENGINEERED SOIL" LAYER SHALL BE MINIMUM 6" DEEP "SANDY LOAM" SOIL MIX WITH NO MORE THAN 5% CLAY CONTENT. THE MIX SHALL CONTAIN 50-60% SAND, 20-30% COMPOST OR HARDWOOD MULCH, AND 20-30% TOPSOIL.

NOTE: VEGETATED SWALES ON GRADES OF MORE THAN 2.5% MUST INSTALL CHECK DAMS TO LIMIT THE SLOPE OF THE SWALE TO 2.5% UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING SERVICES.

NOTE: NO FILTER FABRIC IS TO BE USED IN THIS SECTION.

B - VEGETATED SWALE

CITY OF ENCINITAS

THE APPLICANT SHALL IMPLEMENT SITE DESIGN STORMWATER BEST MANAGEMENT PRACTICES (BMP) AND LOW IMPACT DEVELOPMENT (LID) CONCEPTS SUCH AS IMPERVIOUS AREA DISPERSION, DRAINAGE TO NATURAL VEGETATION, REDUCTION IN IMPERVIOUS SURFACES, BREAKING UP HARDSCAPE AREA, ETC. APPLICANT IS REQUIRED TO INCORPORATE THESE CONCEPTS WITH NEW CONSTRUCTION IN LIEU OF SELECTIONS A OR B.

C - SITE DESIGN
+
LID CONCEPTS

department notes:

BUILDING

B1 SURFACE WATER WILL DRAIN AWAY FROM BUILDING. THE GRADE SHALL FALL A MINIMUM OF 6" WITHIN THE FIRST 10 FEET. SECTION R401.3

B2 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.

B3 PROJECTIONS, INCLUDING EAVES, MUST BE AT LEAST 24" FROM A PROPERTY LINE. TABLE R302.1

ENGINEERING

E1 OWNER IS TO OBTAIN A CONSTRUCTION PERMIT FROM THE ENGINEERING DEPARTMENT AT LEAST 48 HOURS PRIOR TO WORKING IN THE PUBLIC RIGHT OF WAY. FAILURE TO DO SO WILL RESULT IN AN ISSUANCE OF A STOP WORK NOTICE AND DOUBLE PERMIT FEES. IT IS THE RESPONSIBILITY OF THE OWNER TO KNOW THE LOCATION OF THE PROPERTY LINES.

E2 ALL UTILITIES SERVING THE ADU FROM THE RESIDENCE SHALL BE INSTALLED UNDERGROUND.

E3 NO CONCENTRATED DRAINAGE FLOWS ARE PERMITTED OVER ADJACENT PROPERTY LINES. WATER IS TO DRAIN AWAY FROM STRUCTURES FOR A MINIMUM OF 5 FEET AT 2 PERCENT AND BE CONVEYED TO AN APPROVED DRAINAGE FACILITY.

E4 EARTHWORK, CUT OR FILL, WHICH IS OVER 50 CUBIC YARDS, REQUIRES AN ADDITIONAL ENGINEERING GRADING PERMIT. PROVIDE EARTHWORK QUANTITIES:
_ CUBIC YARDS CUT, _ CUBIC YARDS FILL, _ CUBIC YARDS IMPORT/EXPORT
_ CUBIC YARDS OVER-EXCAVATION AND RE-COMPACTION

E5 EROSION CONTROL MEASURES (E.G. BONDED FIBER MATRIX, VEGETATIVE COVER, JUTE MATTING) MUST BE IMPLEMENTED WHERE APPLICABLE TO PREVENT SOIL EROSION ON SITE. SEDIMENT CONTROL MEASURES (E.G. SILT FENCING, FIBER ROLLS, DETENTION BASINS) MUST BE IN PLACE TO PREVENT ERODED SOIL FROM LEAVING SITE. MATERIALS MANAGEMENT BMP MUST ALSO BE FOLLOWED TO ENSURE NO CONTACT OF RAINWATER WITH MATERIALS THAT MAY CONTRIBUTE TO WATER QUALITY DEGRADATION DOWNSTREAM (E.G. CONCRETE OR STUCCO WASHOUT AREAS, COVERED STORAGE AREAS FOR HAZARDOUS MATERIALS, PLACEMENT OF PORTABLE TOILETS OVER A PERVIOUS SURFACE).

E6 NO DIRECTLY CONNECTED IMPERVIOUS AREAS (DCIA) SHALL BE ALLOWED. DCIA MEANS STORM RUNOFF GENERATED AND CONVEYED VIA IMPERVIOUS AREAS, SUCH AS ROOF, ROOF DRAIN, DRIVEWAY, AND STREET. BMP MEASURES SHALL BE IDENTIFIED ON THE SITE PLAN. MOST COMMON MEASURES ARE DESIGNATED TURF AREAS, WHICH RECEIVE ROOF DRAINS AND RUNOFF FROM IMPERVIOUS AREAS. TURF AND LANDSCAPED AREAS THAT ARE DESIGNED FOR BMP'S SHALL BE DELINEATED ON PLANS AND A NOTE PLACED ON PLANS PROHIBITING MODIFICATION OR REMOVAL OF THE BMP LANDSCAPE AREAS WITHOUT A CITY PERMIT.

E7 RAIN GUTTERS FOR STORM WATER POLLUTION CONTROL PURPOSES, ALL RUNOFF FROM ALL ROOF DRAINS SHALL DISCHARGE ONTO GRASS AND LANDSCAPE AREAS PRIOR TO COLLECTION AND DISCHARGE ONTO THE STREET AND/OR INTO THE PUBLIC STORM DRAIN SYSTEM. GRASS AND LANDSCAPE AREAS DESIGNATED FOR STORM WATER POLLUTION CONTROL SHALL NOT BE MODIFIED WITHOUT A PERMIT FROM THE CITY.

E8 TOTAL AREA OF NEW IMPERVIOUS SURFACE: _____SQ. FT.
TOTAL AREA OF REPLACED IMPERVIOUS SURFACES: _____SQ. FT.

FIRE DEPARTMENT

F1 ADDRESS NUMBERS: STREET NUMBERS: APPROVED NUMBERS AND/OR ADDRESSES SHALL BE PLACED ON ALL NEW AND EXISTING BUILDINGS AND AT APPROPRIATE ADDITIONAL LOCATIONS AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROADWAY FRONTING THE PROPERTY FROM EITHER DIRECTION OF APPROACH. SAID NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND, AND SHALL MEET THE FOLLOWING MINIMUM STANDARDS AS TO SIZE: 4" HIGH WITH A 3/8" STROKE FOR RESIDENTIAL BUILDINGS, 8" HIGH WITH A 1/2" STROKE FOR COMMERCIAL AND MULTI-FAMILY RESIDENTIAL BUILDINGS, 12" HIGH WITH A 1" STROKE FOR INDUSTRIAL BUILDINGS. ADDITIONAL NUMBERS SHALL BE REQUIRED WHERE DEEMED NECESSARY BY THE FIRE MARSHAL, SUCH AS REAR ACCESS DOORS, BUILDING CORNERS, AND ENTRANCES TO COMMERCIAL CENTERS.

F2 **SECURITY GATES.** AN AUTOMATIC GATE ACROSS A FIRE ACCESS ROADWAY OR DRIVEWAY SHALL BE EQUIPPED WITH AN APPROVED EMERGENCY KEY-OPERATED SWITCH OVERRIDING ALL COMMAND FUNCTIONS & OPENING THE GATE. WHERE THIS SECTION REQUIRES AN APPROVED KEY-OPERATED SWITCH, IT MAY BE DUAL-KEYED OR EQUIPPED WITH DUAL SWITCHES PROVIDED TO FACILITATE ACCESS BY LAW ENFORCEMENT PERSONNEL. CFC SECTION 503.6 AMENDMENT
• ALL GATES PROVIDING ACCESS FROM A ROAD TO A DRIVEWAY SHALL BE AT LEAST TWO FEET WIDER THAN THE WIDTH OF THE TRAFFIC LANE(S) SERVING THE GATE.

F3 SHOW THE LOCATIONS OR PROVIDE NOTES OF ALL CARBON MONOXIDE ALARMS TO MEET THE REQUIREMENTS OF CALIFORNIA RESIDENTIAL CODE SECTION R315.
• INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WITHIN WHICH FUEL-BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES.
• WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED THE ALARM SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL THE ALARMS IN THE INDIVIDUAL UNIT.
*WHERE AREAS OF NO CONSTRUCTION IS TAKING PLACE CARBON MONOXIDE DETECTORS CAN BE SOLELY BATTERY POWERED

F4 CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVER-CURRENT PROTECTION.

F5 SHOW THE LOCATIONS OR PROVIDE NOTES OF ALL SMOKE ALARMS MEETING THE REQUIREMENTS OF CRC SECTION R314.
• ON THE CEILING OR WALL OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF BED ROOMS.
• IN EACH ROOM USED FOR SLEEPING PURPOSES.
• IN EACH STORY WITHIN A DWELLING UNIT, INCLUDING BASEMENTS.
• IN 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.
*WHERE AREAS OF NO CONSTRUCTION IS TAKING PLACE SMOKE DETECTORS CAN BE SOLELY BATTERY POWERED ONLY.

F6 VENT OPENINGS SHALL BE COVERED WITH A NON-COMBUSTIBLE CORROSION RESISTANT WIRE MESH WITH MESHES OF A MINIMUM OF 1/16" AND SHALL NOT EXCEED

PLANNING DEPARTMENT

P1 THE AVERAGE LOT SLOPE IS _____% WITHIN THE BUILDING ENVELOPE AREA.

P2 THE DETACHED ACCESSORY UNIT MUST BE SEPARATED FROM THE MAIN RESIDENCE BY A DISTANCE OF SIX FEET [6'] OR GREATER.

P3 THE DETACHED ACCESSORY UNIT ROOF EAVES MUST BE SEPARATED FROM THE MAIN RESIDENCE ROOF EAVES BY A DISTANCE OF FOUR FEET [4'] OR GREATER.

P4 ALL DETACHED ACCESSORY UNITS SHALL BE PROVIDED A MINIMUM OF FOUR FEET [4'-0"] FROM THE SIDE & REAR PROPERTY LINES.

P5 THE MAXIMUM HEIGHT FOR A DETACHED ADU IS SIXTEEN FEET [16'-0"] UNLESS IT IS WITHIN A 1/2 MILE OF A MAJOR TRANSIT STATION WHICH ALLOWS A HEIGHT OF EIGHTEEN FEET [18'-0"].

P6 ALLOWABLE HEIGHT IS MEASURED FROM THE LOWER OF EXISTING OR FINISH GRADE.

P7 PROJECTIONS, INCLUDING EAVES, MUST BE NO GREATER THAN 12" INTO A REQUIRED 4' SETBACK.

site plan notes:

1. THE APPLICANT SHALL PROVIDE A DIMENSIONED SITE PLAN DRAWN TO SCALE SHOWING THE FOLLOWING: NORTH ARROW, PROPERTY LINES, EASEMENTS, STREETS, EXISTING AND PROPOSED BUILDINGS, AND STRUCTURES, LOCATION OF YARDS USED FOR ALLOWABLE INCREASE OF BUILDING AREA, DIMENSIONED SETBACKS, MINIMUM SEPARATION FROM EXISTING STRUCTURES AND FUEL MODIFICATION ZONES. UNIFORM ADMINISTRATIVE CODE SECTION 302.
2. IF A GRADING PLAN IS REQUIRED, INCORPORATE THE ENTIRE APPROVED GRADING/IMPROVEMENT PLAN (ALL SHEETS) WITH THE BUILDING PLANS.
3. SITE PLAN SHALL PROVIDE DIMENSIONS SHOWING REQUIRED FIRE APPARATUS ACCESS ROADS. FIRE ACCESS ROADWAYS SHALL HAVE AN UNOBSTRUCTED IMPROVED WIDTH OF NOT LESS THAN 24 FEET, EXCEPTIONS: 1. RESIDENTIAL DWELLINGS NOT IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE SHALL HAVE A MINIMUM OF 20 FEET OF UNOBSTRUCTED IMPROVED WIDTH. 2. SINGLE-FAMILY RESIDENTIAL DRIVEWAYS SERVING NO MORE THAN TWO SINGLE-FAMILY DWELLINGS SHALL HAVE A MINIMUM OF 16 FEET OF UNOBSTRUCTED IMPROVED WIDTH.
FIRE ACCESS ROADWAYS
• SURFACE FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS NOT LESS THAN 75,000 LBS. AND SHALL BE PROVIDED WITH AN APPROVED PAVED SURFACE TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES.
• GATED ENTRANCES WITH CARD READERS, GUARD STATIONS OR CENTER MEDIANS, WHICH HAVE SEPARATED LANES OF ONE-WAY TRAFFIC, SHALL BE NOT LESS THAN 14 FEET WIDE PER LANE.
• EXISTING LEGAL LOTS THAT HAVE EASEMENT ACCESS ROADWAYS LESS THAN 20 FEET WIDE THAT PROVIDE PRIMARY ACCESS TO OTHER LOTS SHALL RECORD A COVENANT GRANTING EASEMENT RIGHTS FOR EMERGENCY VEHICLE INGRESS AND EGRESS PURPOSES AND SHALL RELINQUISH RIGHTS TO BUILD ANY BUILDING, WALL, FENCE OR OTHER STRUCTURE WITHIN 5 FEET OF THE EXISTING ACCESS EASEMENT.
• ALL DEAD END FIRE APPARATUS ACCESS ROADWAYS IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED AREA FOR TURNING AROUND FIRE APPARATUS. ACCESS ROADS SERVING MORE THAN FOUR (4) DWELLING UNITS SHALL BE PROVIDED WITH A CUL-DE-SAC. THE MINIMUM UNOBSTRUCTED PAVED RADIUS WIDTH FOR A CUL-DE-SAC SHALL BE 36 FEET CURB LINE TO CURB LINE WITH NO PARKING. ALTERNATE TYPES OF TURN-AROUND (HAMMERHEADS, ETC.) MAY BE CONSIDERED BY THE FIRE MARSHAL AS NEEDED TO ACCOMPLISH THE INTENT OF THE FIRE CODE.
4. AN ADU PLACED CLOSER THAN 5'-0" TO PROPERTY LINES IS REQUIRED TO PROVIDE A BOUNDARY SURVEY REPORT. CONCRETE PLACEMENT WILL NOT BE APPROVED UNTIL A BOUNDARY SURVEY SHOWING COMPLIANCE TO THE APPROVED PLANS IS PROVIDED TO THE BUILDING DIVISION. A CALIFORNIA LICENSED SURVEYOR IS REQUIRED TO COMPLETE ENCINITAS BOUNDARY LAND SURVEY FORM AND PROVIDE IT TO THE BUILDING INSPECTOR AT THE FOUNDATION INSPECTION.
5. THE CITY OF ENCINITAS REQUIRES A SOILS REPORT, PER CBC SEC. 1803.5.12 WHICH REQUIRES A SOILS REPORT FOR ALL PROJECTS, WITH EXCEPTIONS GRANTED ON A CASE-BY-CASE BASIS.
THE CITY MAY EXEMPT A PROJECT FROM THE SOILS REPORT REQUIREMENTS FOR ROOM ADDITIONS UNDER 500 SQUARE FEET IN ACCORDANCE WITH CBC, SEC. 1803.1.1.1, WHICH STATES THAT IF THE BUILDING DIVISION HAS KNOWLEDGE OF THE SOIL QUALITIES FOR THAT PROPERTY, THEN A REPORT IS NOT REQUIRED. THAT POLICY MAY BE APPLIED TO AN ADU UNDER 500 SQUARE FEET.
ALL INDEPENDENT STRUCTURES OUTSIDE OF A CERTIFIED PAD WILL REQUIRE A LIMITED SOILS REPORT INCLUDING DETACHED ADUs.
ALTERNATIVELY, A SOILS LETTER SHALL BE PREPARED THAT REPRESENTS THE SUITABILITY OF THE SITE SOILS FOR THE PROPOSED ADU, BASED ON THE SOIL ENGINEER'S KNOWLEDGE OF THE NEIGHBORING PROPERTIES. IN ADDITION TO THE ABOVE, THE BUILDING OFFICIAL MAY WAIVE THE SOILS REPORT REQUIREMENT IN CERTAIN SCENARIOS ON A CASE-BY-CASE BASIS.
A SOILS REPORT OR SOILS LETTER PREPARED BY A SOIL'S ENGINEER THAT ADDRESSES THE SUITABILITY OF THE SITE SOIL FOR THE PROPOSED ADU IS REQUIRED BY THE CITY OF ENCINITAS.
EXCEPTION:
A. STRUCTURE IS TO BE CONSTRUCTED ON A CERTIFIED PAD.
B. THE CITY HAS A COMPACTION REPORT ON RECORD FOR THE SITE.
C. THE CITY HAS A SOIL'S REPORT ON FILE FOR THE SITE.
D. OTHER CIRCUMSTANCES SUBJECT TO REVIEW AND APPROVAL BY THE BUILDING OFFICIAL ON A CASE-BY-CASE BASIS.

swimming pool notes:

IF THE PROPERTY WHERE THE ADU IS TO BE LOCATED HAS A SWIMMING POOL, THE POOL MUST MEET THE RULES BELOW:
SWIMMING POOL SAFETY SHALL COMPLY WITH SECTION 3109.4 CBC (INCLUDING 3109.4.4) INCLUDING:
• POOL SHALL BE COMPLETELY ENCLOSED BY A BARRIER COMPLYING WITH SECTIONS 3109.4.1 THRU 3109.4.3.
• SHALL COMPLY WITH SECTION 3109.4.4. POOL SHALL BE EQUIPPED WITH ***TWO*** OF THE FOLLOWING SEVEN DROWNING PREVENTION SAFETY FEATURES:

SP1 THE POOL SHALL BE ISOLATED FROM ACCESS TO A HOME BY AN ENCLOSURE THAT MEETS THE REQUIREMENTS OF SECTION 3109.4.4.3.

SP2 THE POOL SHALL INCORPORATE REMOVABLE MESH POOL FENCING THAT MEETS ANSI/APSP/ICC AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) SPECIFICATION F2286 STANDARD ON CONJUNCTION WITH A GATE THAT IS SELF CLOSING AND SELF-LATCHING AND CAN ACCOMMODATE A KEY LOCKABLE DEVICE

SP3 THE POOL SHALL BE EQUIPPED WITH AN APPROVED SAFETY POOL COVER THAT MEETS ALL REQUIREMENTS OF THE ASTM SPECIFICATIONS F1346.

SP4 THE RESIDENCE SHALL BE EQUIPPED WITH EXIT ALARMS ON THOSE DOORS PROVIDING DIRECT ACCESS TO THE POOL.
ALL DOORS PROVIDING DIRECT ACCESS FROM THE HOME TO THE SWIMMING POOL SHALL BE EQUIPPED WITH A SELF-CLOSING, SELF-LATCHING DEVICE WITH A RELEASE MECHANISM PLACED NO LOWER THAN 54 INCHES (1372 MM) ABOVE THE FLOOR.

SP6 SWIMMING POOL ALARMS THAT, WHEN PLACED IN POOLS, WILL SOUND UPON DETECTION OF ACCIDENTAL OR UNAUTHORIZED ENTRANCE INTO THE WATER. THESE POOL ALARMS SHALL MEET AND BE INDEPENDENTLY CERTIFIED TO THE ASTM STANDARD 2208 "STANDARDS SPECIFICATION FOR POOL ALARMS" WHICH INCLUDES SURFACE MOTION, PRESSURE, SONAR, LASER AND INFRARED TYPE ALARMS. FOR PURPOSES OF THIS ARTICLE, "SWIMMING POOL ALARMS" SHALL NOT INCLUDE SWIMMING PROTECTION ALARM DEVICES DESIGNED FOR INDIVIDUAL USE, SUCH AS AN ALARM ATTACHED TO A CHILD THAT SOUNDS WHEN THE CHILD EXCEEDS A CERTAIN DISTANCE OR BECOMES SUBMERGED IN WATER.

SP7 OTHER MEANS OF PROTECTION, IF THE DEGREE OF PROTECTION AFFORDED IS EQUAL TO OR GREATER THAN THAT AFFORDED BY ANY OF THE DEVICES SET FORTH IN ITEMS 1-4, & HAVE BEEN INDEPENDENTLY VERIFIED BY AN APPROVED TESTING LABORATORY AS MEETING STANDARDS FOR THOSE DEVICES ESTABLISHED BY THE ASTM OR THE AMERICAN SOCIETY OF TESTING MECHANICAL ENGINEERS (ASME).

stormwater notes:

STORMWATER POLLUTION CONTROL BMP NOTES RELATIVE TO CONSTRUCTION ACTIVITIES

CONCRETE WASHOUT

SW1 CONTRACTOR SHALL ESTABLISH AND USE AN ADEQUATELY SIZED CONCRETE WASHOUT AREA TO CONTAIN WASHOUT WASTES ON SITE. IT IS ILLEGAL TO WASH CONCRETE, SLURRY, MORTAR, STUCCO, PLASTER AND THE LIKE INTO THE STORMWATER CONVEYANCE SYSTEM OR ANY RECEIVING WATER. CONTRACTOR SHALL POST A SIGN DESIGNATING THE WASHOUT LOCATION.

CONSTRUCTION SITE ACCESS

SW2 A STABILIZED CONSTRUCTION SITE ACCESS SHALL BE PROVIDED FOR VEHICLES EGRESS AND INGRESS TO PREVENT TRACKING DIRT OFF SITE. THIS SHALL INCLUDE USING MATERIAL SUCH AS GRAVEL AND/OR CORRUGATED STEEL PANELS/PLATES.

CONSTRUCTION VEHICLES

SW3 A SPECIFIC AREA AWAY FROM GUTTERS AND STORMDRAIN SHALL BE DESIGNATED FOR CONSTRUCTION VEHICLES PARKING, VEHICLE REFUELING, AND ROUTINE EQUIPMENT MAINTENANCE. ALL MAJOR REPAIRS SHALL BE MADE OFF-SITE.

EROSION CONTROL

SW4 EROSION CONTROL MUST BE PROVIDED FOR ALL EROSIVE SURFACES. SLOPED SURFACES ESPECIALLY SHALL BE PROTECTED AGAINST EROSION BY INSTALLING EROSION RESISTANT SURFACES SUCH AS EROSION CONTROL MATS, ADEQUATE GROUND COVER VEGETATION, AND BONDED FIBER MATRIX.

SW5 NO EXCAVATION AND GRADING ACTIVITIES ARE ALLOWED DURING WET WEATHER.

SW6 DIVERSION DIKES SHALL BE CONSTRUCTED TO CHANNEL RUNOFF AROUND THE CONSTRUCTION SITE. CONTRACTOR SHALL PROTECT CHANNELS AGAINST EROSION USING PERMANENT AND TEMPORARY EROSION CONTROL MEASURES.

SW7 REMOVE EXISTING VEGETATION ONLY WHEN ABSOLUTELY NECESSARY. LARGE PROJECTS SHALL BE CONDUCTED IN PHASES TO AVOID UNNECESSARY REMOVAL OF THE NATURAL GROUND COVER. DO NOT REMOVE TREES OR SHRUBS UNNECESSARILY; THEY HELP DECREASE EROSION.

SW8 PLANT PERMANENT VEGETATION AS SOON AS POSSIBLE, ONCE EXCAVATION AND GRADING ACTIVITIES ARE COMPLETE.

SW9 WATER USAGE FOR DUST CONTROL SHALL BE MINIMIZED.

ON-SITE CONSTRUCTION MATERIAL STORAGE

SW10 STORED MATERIALS SHALL BE CONTAINED IN A SECURE PLACE TO PREVENT SEEPAGE AND SPILLAGE. CONTRACTOR SHALL STORE THESE PRODUCTS WHERE THEY WILL STAY DRY OUT OF THE RAIN. CONTRACTOR SHALL PROVIDE SECONDARY CONTAINMENT FOR ALL FUEL STORED ON-SITE.

SW11 ELIMINATE OR REDUCE POLLUTION OF STORMWATER FROM STOCKPILES KEPT ON-SITE. STOCKPILES MAY INCLUDE SOIL, PARING MATERIALS, ASPHALT CONCRETE, AGGREGATE BASE, ETC. STOCKPILES SHALL BE LOCATED AWAY FROM CONCENTRATED STORMWATER FLOW AND STORMDRAIN INLETS. STOCKPILES SHALL BE COVERED OR PROTECTED WITH SOIL STABILIZATION MEASURES AND PROVIDED WITH A TEMPORARY SEDIMENT BARRIER AROUND THE PERIMETER AT ALL TIMES.

TRAINING

SW12 CONTRACTORS' EMPLOYEES WHO PERFORM CONSTRUCTION IN THE CITY OF ENCINITAS SHALL BE TRAINED TO BE FAMILIAR WITH THE CITY OF ENCINITAS STORMWATER POLLUTION CONTROL REQUIREMENTS. THESE BMP NOTES SHALL BE AVAILABLE TO EVERYONE WORKING ON SITE. THE PROPERTY OWNER(S) AND THE PRIME CONTRACTOR MUST INFORM SUBCONTRACTORS ABOUT STORMWATER REQUIREMENTS AND THEIR OWN RESPONSIBILITIES.

WASTE MANAGEMENT

SW13 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY DISPOSING OF ALL WASTE AND UNUSED CONSTRUCTION MATERIAL. DUMPING OF UNUSED OR WASTE PRODUCTS ONTO THE GROUND, WHERE WATER CAN CARRY THEM INTO THE CONVEYANCE SYSTEM IS STRICTLY PROHIBITED.

SW14 NO SEEPAGE FROM DUMPSTERS SHALL BE DISCHARGED INTO STORMWATER. BERMS/DIKES SHALL BE PLACED AROUND DUMPSTERS TO DIVERT THE NATURAL STORM RUNOFF. DUMPSTERS SHALL BE CHECKED FREQUENTLY FOR LEAKS. DUMPSTER LIDS SHALL REMAIN CLOSED AT ALL TIMES. DUMPSTERS WITHOUT LIDS SHALL BE PLACED WITHIN STRUCTURES WITH IMPERVIOUS ROOFING OR COVERED WITH TARPS IN ORDER TO AVOID RAIN CONTACT WITH ANY TRASH MATERIAL.

SW15 CONSTRUCTION MATERIALS, INCLUDING SOLVENTS, WATER-BASED PAINTS, VEHICLE FLUIDS, BROKEN ASPHALT AND CONCRETE, AND CLEARED VEGETATION CAN BE RECYCLED. NON-RECYCLABLE MATERIALS MUST BE TAKEN TO AN APPROPRIATE LANDFILL OR DISPOSED OF AS HAZARDOUS WASTE. FOR INFORMATION ON DISPOSAL OF HAZARDOUS MATERIAL, CALL THE **HAZARDOUS WASTE HOTLINE** TOLL FREE AT (800) 714-1195. FOR INFORMATION ON LANDFILLS AND TO ORDER DUMPSTERS CALL **EDCO** AT (760) 436-4151.

SW16 POLLUTANTS SHALL BE KEPT OFF EXPOSED SURFACES. PLACE TRASH CANS AND RECYCLING RECEPTACLES AROUND THE SITE.

SW17 PORTABLE TOILETS MUST BE IN GOOD WORKING ORDER AND CHECKED FREQUENTLY FOR LEAKS. CONTRACTOR SHALL PROVIDE SECONDARY CONTAINMENT AND LOCATE PORTABLE TOILETS AWAY FROM STORMDRAIN INLETS ON PERVIOUS SURFACES.

SW18 ALL CONSTRUCTION DEBRIS SHALL BE KEPT AWAY FROM THE STREET, GUTTER, AND STORMDRAIN. CONTRACTOR MUST ROUTINELY CHECK AND CLEAN UP MATERIAL THAT MAY HAVE TRAVELED AWAY FROM CONSTRUCTION SITE.

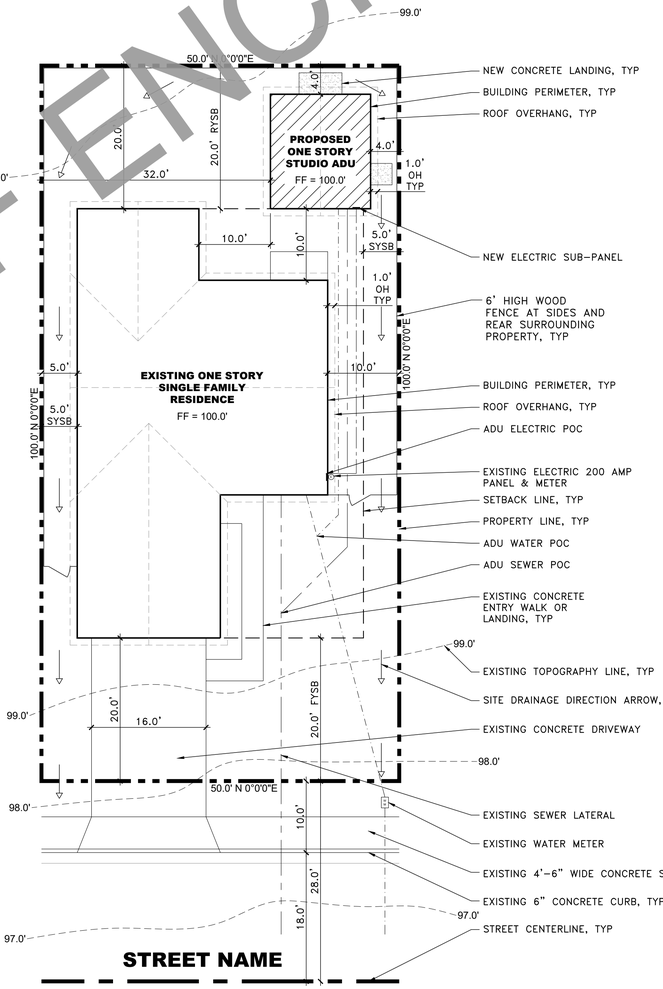
site plan note:

THE APPLICANT SHALL PROVIDE A DIMENSIONED SITE PLAN DRAWN TO SCALE SHOWING THE FOLLOWING: NORTH ARROW, PROPERTY LINES, EASEMENTS, STREETS, EXISTING AND PROPOSED BUILDINGS, AND STRUCTURES, LOCATION OF YARDS USED FOR ALLOWABLE INCREASE OF BUILDING AREA, DIMENSIONED SETBACKS, MINIMUM SEPARATION FROM EXISTING STRUCTURES AND FUEL MODIFICATION ZONES. UNIFORM ADMINISTRATIVE CODE SECTION 302.

site plan information:

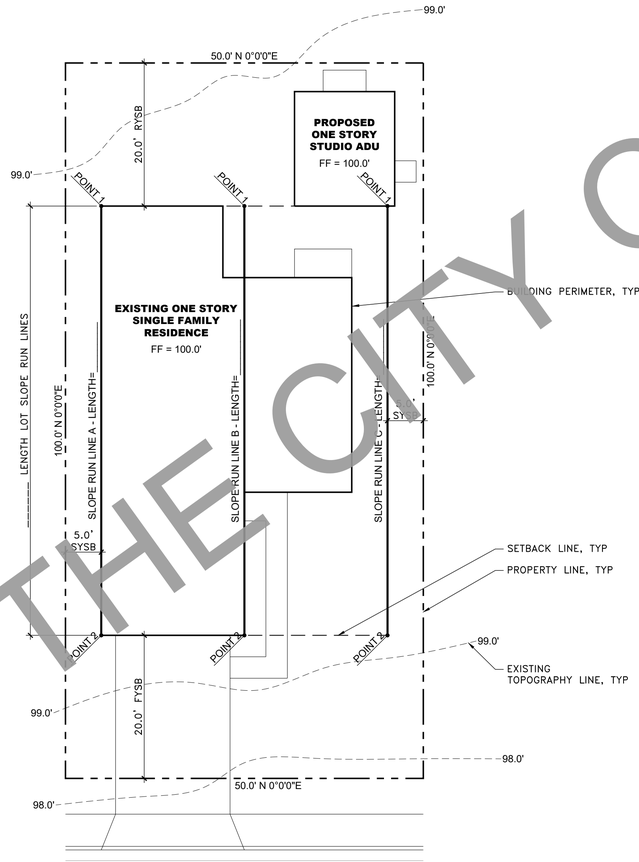
√ CHECKLIST TO BE INCLUDED ON SITE PLAN

- ☐ ALL EXTERIOR SITE BOUNDARIES CORRECTLY SCALED & DIMENSIONED
- ☐ NORTH ARROW
- ☐ SCALE OF PLAN, GRAPHIC & WRITTEN
- ☐ LEGEND OF SYMBOLS, LINES, ABBREVIATIONS, ETC. USED ON PLAN
- ☐ SITE CONTOURS, GRADE ELEVATIONS & OTHER TOPOGRAPHIC FEATURES
- ☐ LOCATE & DIMENSION ALL DRIVEWAYS, ACCESS ROADS, & CURB CUTS
- ☐ ULTIMATE RIGHT OF WAY DIMENSION TO CENTERLINE OF ROAD
- ☐ SHOW FIRE ACCESS ROADS / DRIVEWAY & MAXIMUM FIRE HOSE PULL LENGTH OF 150 FT
- ☐ LOCATION & DIMENSIONS OF ALL EASEMENTS (ROAD, ELECTRIC, WATER, SEWER, GAS & OPEN SPACE ETC.)
- ☐ SHOW & DIMENSION REQUIRED & PROPOSED BUILDING SETBACKS
- ☐ LOCATION OF EXISTING & PROPOSED BUILDINGS AND STRUCTURES WITH NUMBER OF STORIES
- ☐ SHOW & DIMENSION HORIZONTAL PROJECTIONS (EAVES, DECKS, BAY WINDOWS, ETC)
- ☐ DISTANCE OF ALL EXISTING & PROPOSED STRUCTURES FROM EACH OTHER & FROM PROPERTY LINES
- ☐ LOCATION & HEIGHT OF ALL FENCES & RETAINING WALLS
- ☐ LOCATION & SIZE OF OFF-STREET PARKING
- ☐ LOCATION OF EXISTING & PROPOSED VEGETATION
- ☐ LOCATION OF EXISTING & PROPOSED UTILITIES TO NEW ADU
- ☐ LOCATION OF EXISTING & NEW UTILITIES (SEWER LATERAL WITH CLEANOUTS, WATER LINES WITH SHUT OFF, GAS LINES, ELECTRICAL OVERHEAD OR UNDERGROUND CONDUITS)
- ☐ LOCATE & NOTE NEW SEWER LATERAL SERVING THE PROPOSED ADU. REFER TO CPC 311.1
- ☐ ADU SEWER LINE CANNOT BE CONNECTED DIRECTLY TO THE EXISTING MAIN DWELLING UNIT EXCEPT AS SPECIFIED IN GOVERNMENT CODE SECTION 65852.2
- ☐ LOCATION OF EXISTING AND NEW METER LOCATIONS (ELECTRICAL, GAS & WATER.)
- ☐ SITE PLAN SIGNED BY PREPARER.
- ☐ IF REQUIRED, INCORPORATE THE APPROVED GRADING PLAN/IMPROVEMENT PLAN WITH THE BUILDING PLANS.
- ☐ IF REQUIRED, PROVIDE A FUEL MODIFICATION ZONE PER UNIFORM ADMINISTRATION CODE SECTION 302, SEE SHEET a0.1F FOR MORE MORE INFORMATION
- ☐ LOCATION OF APPLICABLE PERMANENT SOURCE CONTROL & SITE DESIGN BMPs PER STORM WATER INTAKE FORM & STANDARD PROJECT SWQMP (CITY FORM)



1 **sample site plan**
SCALE: 1" =10'-0"

0 1'



1 sample average lot slope diagram

SCALE: 1"=10'-0"

0 1' 5' 10' 20'

average lot slope calcs:

A. LENGTH LOT SLOPE RUN LINE A = FT
LOT SLOPE RUN LINE A ELEVATION AT POINT 1 = FT
LOT SLOPE RUN LINE A ELEVATION AT POINT 2 = FT
POINT 1 (FT) - POINT 2 (FT) / LENGTH (FT) % SLOPE AT RUN LINE A

B. LENGTH LOT SLOPE RUN LINE B = FT
LOT SLOPE RUN LINE B ELEVATION AT POINT 1 = FT
LOT SLOPE RUN LINE B ELEVATION AT POINT 2 = FT
POINT 1 (FT) - POINT 2 (FT) / LENGTH (FT) = % SLOPE AT RUN LINE B

C. LENGTH LOT SLOPE RUN LINE C = FT
LOT SLOPE RUN LINE C ELEVATION AT POINT 1 = FT
LOT SLOPE RUN LINE C ELEVATION AT POINT 2 = FT
POINT 1 (FT) - POINT 2 (FT) / LENGTH (FT) = % SLOPE AT RUN LINE C

T. RUN LINE A % + RUN LINE B % + RUN LINE C % / 3 = % TOTAL
AVERAGE LOT SLOPE IS %

NOTES:
1. SEE SAMPLE AVERAGE LOT SLOPE EXHIBIT ON SHEET a0.5
2. FOR LOTS THAT EXCEED AN AVERAGE LOT SLOPE OF 10% ADDITIONAL HEIGHT RESTRICTIONS WILL APPLY AS PER EMC 30.16

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

DZN PARTNERS
682 SECOND ST
ENCINITAS, CA
(760) 753 2464
DZNPARTNERS.COM

STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

AVERAGE LOT SLOPE DIAGRAM

a0.5

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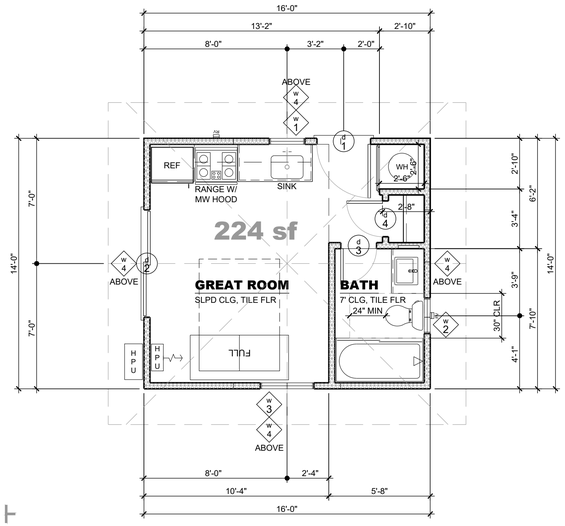
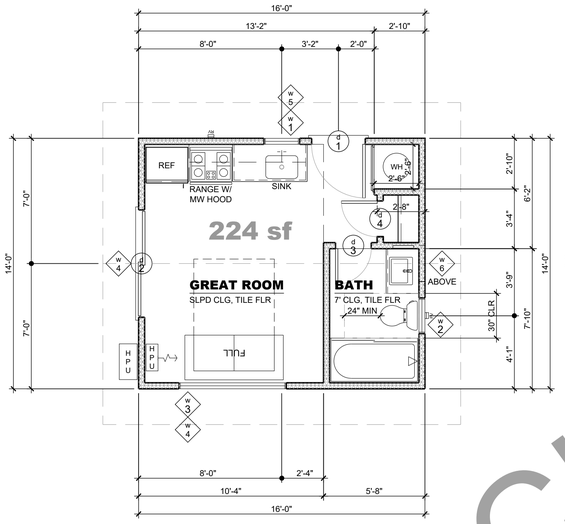


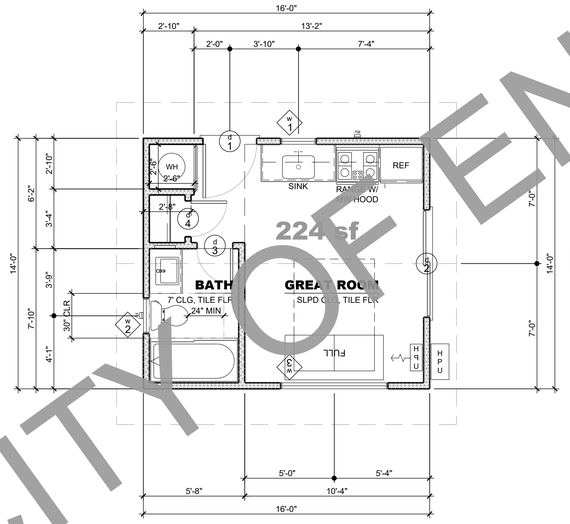
1 floor plan c

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



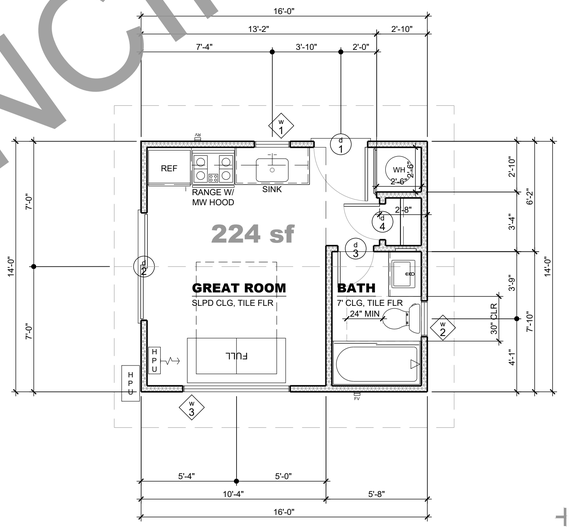
2 floor plan b

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



3 reverse floor plan a

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



4 floor plan a

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

drawing:

SYMBOL	=	DESCRIPTION
(N)	=	NEW
(E)	=	EXISTING
	=	EXISTING WALL REMOVED
	=	EXISTING WALL TO REMAIN
	=	NEW 4" WALL
	=	NEW 6" WALL
	=	NEW 8" WALL
	=	NEW 8" CMU WALL
	=	NEW DWELLING UNIT SEPARATION WALL
	=	BEARING WALL
	=	NON-BEARING WALL FRAMING PLANS

drawing:

SYMBOL	=	DESCRIPTION
	=	EXISTING FOOTING
	=	NEW FOOTING
	=	NORTH ARROW
+ 100.0	=	NEW POINT ELEVATION
+ 100.0	=	EXISTING POINT ELEVATION
100.0	=	NEW CONTOUR
100.0	=	EXISTING CONTOUR
	=	PROPERTY LINE
	=	CENTER LINE
	=	SET BACK LINE
	=	FLOOR MATERIAL CHANGE

drawing:

SYMBOL	=	DESCRIPTION
A A0.1	=	BUILDING SECTION LETTER SHEET NUMBER
A A0.1	=	WALL SECTION LETTER SHEET NUMBER
D1 A0.1	=	DETAIL NUMBER SHEET NUMBER
1 A0.1	=	INTERIOR ELEVATION
	=	LEVEL CHANGE
101	=	ROOM OR SPACE NUMBER
ROOM 0' CLG, FLOORING	=	ROOM NAME CEILING HEIGHT, FLOORING
W1	=	WINDOW NUMBER
D1	=	DOOR NUMBER
#	=	REVISION NUMBER
1	=	KEYNOTE NUMBER

drawing:

SYMBOL	=	DESCRIPTION
A SP 0'	=	SHEAR PANEL LETTER SHEAR PANEL LENGTH
T1	=	TRUSS NUMBER
1	=	STRUCTURAL GRID LINE
DL	=	SHEAR DRAG LINE
P-1	=	PAD FOOTING
	=	POST
	=	HOLD DOWN
	=	FACTORY BUILT SHEAR PANEL
	=	FLOOR JOISTS
	=	CEILING JOISTS
	=	RAFTER OR TRUSS

floor plan notes:

1. SEE LEGENDS TO THE LEFT FOR SYMBOLS RELATING TO THE FLOOR PLAN.
2. SEE SHEET a0.1 FOR SCHEDULES RELATING TO THE FLOOR PLAN.
3. THE KITCHEN SHALL HAVE UPPER CABINETS, BASE CABINETS, AND COUNTERTOPS AS DEPICTED ON THIS FLOOR PLAN AND IN THE INTERIOR ELEVATIONS.
4. BATHROOMS

   LAVATORIES:
   - SHALL BE PLACED IN A VANITY BASE CABINET WITH A COUNTERTOP.
   - SHALL HAVE A MIRROR AT THE WALL BEHIND THE LAVATORY.
   - SHALL HAVE A MIRRORED MEDICINE CABINET AT THE SIDE WHEN DEPICTED WITH A RECTANGLE IN THE WALL.

   TOILETS:
   - SHALL BE FLUSH TANK.
   - SHALL BE PLACED IN A SPACE WITH 30" CLEAR WIDTH.
   - SHALL HAVE 24" CLEAR IN FRONT OF THE FIXTURE.

   BATHTUB/SHOWER COMBINATIONS
   - BATHTUB SHALL BE PORCELAIN OVER CAST IRON.
   - PROVIDE FULL HEIGHT TILE WAINSCOT ON WALLS WITHIN TUB AREA.
   - PROVIDE SLIDING CLEAR TEMPERED GLASS TUB/SHOWER ENCLOSURE OR EQUAL.

   SHOWERS
   - FLOOR TO BE TILE OVER ASPHALTIC WATERPROOF MEMBRANE LINER, TYPICAL.
   - DRAIN TO BE LINEAR OR ROUND AS DEPICTED ON THE FLOOR PLAN.
   - ENTRY CURB SHALL BE 4" WIDE AND TALL WITH TILE FINISH, TYP.
   - SHALL HAVE A CLEAR TEMPERED GLASS SHOWER ENCLOSURE WITH OPENING AS SHOWN ON THE FLOOR PLAN OR EQUAL.
   - WALLS IN SHOWER AREA WILL HAVE A FULL HEIGHT TILE WAINSCOT.
   - SEATS SHOWN IN SHOWERS SHALL BE 16" HIGH AND WILL BE TILED TO MATCH THE WALLS.
   - EACH SHOWER SHALL HAVE A 12" WIDE X 16" HIGH NICHE FOR SOAP AND SHAMPOO BOTTLES IN A WAINSCOT WALL.
5. CLOSETS SHALL HAVE A SHELF AND POLE AS SHOWN ON THE FLOOR PLAN.

0 1' 5' 10' 20'

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

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STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

FLOOR PLANS

a1.0

photovoltaic requirements:

2022 CALIFORNIA ENERGY CODE SECTION 150.1(c)14:

ALL LOW-RISE RESIDENTIAL BUILDINGS SHALL HAVE A PHOTOVOLTAIC (PV) SYSTEM MEETING THE MINIMUM QUALIFICATION REQUIREMENTS AS SPECIFIED IN JOINT APPENDIX JA11, WITH ANNUAL ELECTRICAL OUTPUT EQUAL TO OR GREATER THAN THE DWELLING'S ANNUAL ELECTRICAL USAGE AS DETERMINED BY EQUATION 150.1-C:

EQUATION 150.1-C

ANNUAL PHOTOVOLTAIC ELECTRICAL OUTPUT

$kW_{PV} = (CFA \times A)/1000 + (NDwell \times B)$

WHERE:

kW_{PV} =	kWDC SIZE OF THE PV SYSTEM
CFA =	CONDITIONED FLOOR AREA
NDwell =	NUMBER OF DWELLING UNITS
A =	ADJUSTMENT FACTOR FROM TABLE 150.1-C
B =	DWELLING ADJUSTMENT FACTOR FROM TABLE 150.1-C

EXCEPTION 1 TO SECTION 150.1(C)14: NO PV SYSTEM IS REQUIRED IF THE EFFECTIVE ANNUAL SOLAR ACCESS IS RESTRICTED TO LESS THAN 80 CONTIGUOUS SQUARE FEET BY SHADING FROM EXISTING PERMANENT NATURAL OR MANMADE BARRIERS EXTERNAL TO THE DWELLING, INCLUDING BUT NOT LIMITED TO TREES, HILLS, AND ADJACENT STRUCTURES. THE EFFECTIVE ANNUAL SOLAR ACCESS SHALL BE 70 PERCENT OR GREATER OF THE OUTPUT OF AN UNSHADED PV ARRAY ON AN ANNUAL BASIS.

EXCEPTION 2 TO SECTION 150.1(C)14: IN CLIMATE ZONE 15, THE PV SYSTEM SIZE SHALL BE THE SMALLER OF A SIZE THAT CAN BE ACCOMMODATED BY THE EFFECTIVE ANNUAL SOLAR ACCESS OR A PV SYSTEM SIZE REQUIRED BY THE EQUATION 150.1-C, BUT NO LESS THAN 1.5 WATT DC PER SQUARE FOOT OF CONDITIONED FLOOR AREA.

EXCEPTION 3 TO SECTION 150.1(C)14: IN ALL CLIMATE ZONES, FOR DWELLING UNITS WITH TWO HABITABLE STORIES, THE PV SYSTEM SIZE SHALL BE THE SMALLER OF A SIZE THAT CAN BE ACCOMMODATED BY THE EFFECTIVE ANNUAL SOLAR ACCESS OR A PV SYSTEM SIZE REQUIRED BY THE EQUATION 150.1-C, BUT NO LESS THAN 1.0 WATT DC PER SQUARE FOOT OF CONDITIONED FLOOR AREA

EXCEPTION 4 TO SECTION 150.1(C)14: IN ALL CLIMATE ZONES, FOR LOW-RISE RESIDENTIAL DWELLINGS WITH THREE HABITABLE STORIES AND SINGLE-FAMILY DWELLINGS WITH THREE OR MORE HABITABLE STORIES, THE PV SYSTEM SIZE SHALL BE THE SMALLER OF A SIZE THAT CAN BE ACCOMMODATED BY THE EFFECTIVE ANNUAL SOLAR ACCESS OR A PV SYSTEM SIZE REQUIRED BY THE EQUATION 150.1-C, BUT NO LESS THAN 0.8 WATT DC PER SQUARE FOOT OF CONDITIONED FLOOR AREA.

EXCEPTION 5 TO SECTION 150.1(C)14: FOR A DWELLING UNIT PLAN THAT IS APPROVED BY THE PLANNING DEPARTMENT PRIOR TO JANUARY 1, 2020 WITH AVAILABLE SOLAR READY ZONE BETWEEN 80 AND 200 SQUARE FEET, THE PV SYSTEM SIZE IS LIMITED TO THE LESSER OF THE SIZE THAT CAN BE ACCOMMODATED BY THE EFFECTIVE ANNUAL SOLAR ACCESS OR A SIZE THAT IS REQUIRED BY THE EQUATION 150.1-C.

EXCEPTION 6 TO SECTION 150.1(C)14: PV SYSTEM SIZES FROM EQUATION 150.1-C MAY BE REDUCED BY 25 PERCENT IF INSTALLED IN CONJUNCTION WITH A BATTERY STORAGE SYSTEM. THE BATTERY STORAGE SYSTEM SHALL MEET THE QUALIFICATION REQUIREMENTS SPECIFIED IN JOINT APPENDIX JA12 AND HAVE A MINIMUM CAPACITY OF 7.5 KWH.

residential ventilation requirements:

1. KITCHENS REQUIRE EXHAUST FANS WITH A MINIMUM 100 CFM DUCTED TO THE EXTERIOR. DETAIL COMPLIANCE BY INCLUDING A COMPLYING EXHAUST FAN OR A DUCTED RANGE HOOD TO THE EXTERIOR. 3 SONES MAXIMUM.
2. EACH BATHROOM CONTAINING A BATHTUB, SHOWER OR TUB/SHOWER COMBINATION SHALL BE MECHANICALLY VENTILATED FOR PURPOSES OF HUMIDITY CONTROL IN ACCORDANCE WITH THE CALIFORNIA MECHANICAL CODE, CHAPTER 4; AND THE CALIFORNIA GREEN BUILDING STANDARDS CODE, CHAPTER 4, DIVISION 4.5.
3. BATHROOMS REQUIRE EXHAUST FANS (MINIMUM 50 CFM SWITCHED OR 20 CM CONTINUOUS) 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".*
4. 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. A) *ALL FANS INSTALLED TO MEET ALL OF THE PRECEDING VENTILATION REQUIREMENTS MUST BE SPECIFIED AT A NOISE RATING OF A MAXIMUM 1 "SONE" (CONTINUOUS USE) OR 3 "SONE" (INTERMITTENT).*
5. EXHAUST DUCT SIZE, LENGTH AND OUTLET LOCATION FOR FANS AND HOODS TO BE NOTED ON THE PLANS.

electric:

√ SELECTION

☐ NEW METER WITH _____ AMP PANEL

☐ SUBPANEL _____ AMP TO EXISTING _____ AMP MAIN PANEL

DISTANCE TO CONNECTION =_____FEET

CONTACT SDG&E REGARDING ELECTRIC SERVICE TO THIS DETACHED ADU. ANY EXISTING SERVICE UPGRADE OR NEW SERVICE FOR THE ADU WILL REQUIRE A SEPARATE PERMIT FROM THE CITY OF ENCINITAS.

SINGLE FAMILY DWELLING
ELECTRICAL SERVICE LOAD CALCULATION

OPTIONAL METHOD NEC 220-30
As an alternative method, the STANDARD METHOD, found in ARTICLE 220 of the National Electric Code, may be used

1. GENERAL LIGHTING LOADS
Dwelling 224 sq. ft. x 3 VA = 700 VA
Small appliance loads -220-16 (a) 1500 VA x 2 circuits = 3000 VA
Laundry load -220-16(b) 1500 VA x 0 circuits = N/A VA
General Lighting Total 3700 VA

2. COOKING EQUIPMENT LOADS - Nameplate Value
Range 5000 VA = 5000 VA
Cooktop: VA = VA
Oven(s) VA = VA
Cooking Equipment Total 5000 VA

3. ELECTRIC DRYER 220-18 (Nameplate, 5000 VA minimum)
Dryer N/A VA = Dryer Total N/A VA

4. FIXED APPLIANCE LOADS 230-30(b3)
Dishwasher = N/A VA
Disposal = 1000 VA
Compactor = VA
Water Heater = 4500 VA
Hydromassage Bathtub = VA
Microwave Oven = 1500 VA
Built-in Vacuum = VA
= VA
Fixed Appliance Total 7000 VA

5. OPTIONAL SUBTOTAL (Add all of the above totals) 15700 VA

6. APPLYING DEMAND FACTORS - TABLE 220-30
Optional Subtotal (from line 5) { First 10,000 VA x 100% = 10,000 VA; Remaining 5700 VA x 40% = 2280 VA }

7. HEATING OR AC LOAD - TABLE 220-30
Larger of the Heating or AC Load = 6000 VA

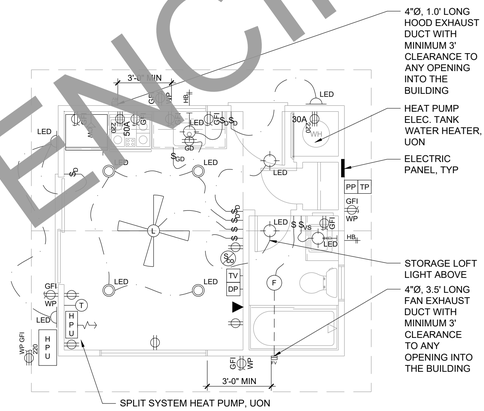
8. OPTIONAL LOADS TOTAL (Add totals from lines 6 and 7) = 18280 VA

9. MINIMUM SERVICE SIZE = Optional Loads Total / 240 Volt = 76 Ampere

(Please put total on front of card under Computed Load)

utility plan notes:

1. SEE LEGENDS BELOW FOR SYMBOLS RELATING TO THE UTILITY PLAN.
2. SEE SHEET a0.1 FOR SCHEDULES RELATING TO THE UTILITY PLAN.
3. RECEPTACLE OUTLET LOCATION PER NEC ARTICLE 210.52.
4. GFCI PROTECTED OUTLETS FOR LOCATIONS DESCRIBED IN NEC 210.8(A): LAUNDRY AREAS, KITCHEN DISHWASHERS, KITCHENS, GARAGES, BATH ROOMS, OUTDOORS, WITHIN 6' OF A SINK, ETC. RECEPTACLE OUTLET LOCATION PER NEC ARTICLE 210.52.
5. BATH RECEPTACLE OUTLETS SHALL BE SUPPLIED BY A MINIMUM OF ONE 20 AMP CIRCUIT. SUCH CIRCUITS SHALL HAVE NO OTHER OUTLETS. THIS CIRCUIT MAY SERVE MULTIPLE BATHS (NEC ART. 210-52(D)).
6. TAMPER RESISTANT RECEPTACLES ARE REQUIRED FOR ALL LOCATIONS DESCRIBED IN 210.52 (IE ALL RECEPTACLES IN A DWELLING).
7. WEATHER RESISTANT TYPE FOR RECEPTACLES INSTALLED IN DAMP OR WET LOCATIONS.
8. ARC-FAULT PROTECTION FOR ALL OUTLETS (NOT JUST RECEPTACLES) LOCATED IN ROOMS DESCRIBED IN NEC 210.12(A): KITCHENS, LAUNDRY AREAS, FAMILY, LIVING BEDROOMS, DINING, HALLS, ETC.
9. OUTLETS MUST BE WITHIN 6FT OF ANY OPENING AND NOT TO EXCEED 12FT APART. ANY ISOLATED WALL 2FT OR WIDER TO HAVE OUTLET(S).
10. ALL EXTERIOR LIGHTING SHALL BE HIGH EFFICACY, OAE
11. RECESSED LIGHTS SHOWN IN SLOPED CEILINGS SHALL BE A MODEL DESIGNED TO PROVIDE A PERPENDICULAR LIGHT SOURCE IN A SLOPED CEILING.
12. PROVIDE UFER GROUND AT ELECTRIC SERVICE LOCATION IN FOUNDATION. GROUND SHALL BE A 20' LONG #4 REINFORCING BAR, OAE.
13. PROVIDE SMOKE DETECTORS IN EACH SLEEPING ROOM AND AT A POINT CENTRALLY LOCATED IN AN AREA GIVING ACCESS TO EACH SEPARATE SLEEPING AREA. SMOKE DETECTORS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING AND SHALL BE EQUIPPED WITH A BATTERY BACKUP. SMOKE DETECTORS MAYBE SOLELY BATTERY POWERED WHEN INSTALLED IN EXISTING BUILDINGS. (CRC §R314.6)
14. WHERE MORE THAN ONE COMBINATION SMOKE/CARBON MONOXIDE DETECTOR IS REQUIRED, THE ALARM SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL THE ALARMS IN THE RESIDENCE.
15. CONTROL VALVES IN BATHTUBS, WHIRLPOOL BATHTUBS, SHOWERS AND TUB-SHOWER COMBINATIONS MUST BE PRESSURE BALANCED OR THERMOSTATIC MIXING VALVES. CPC SECTION 414.5 AND 418.0.
16. ALL HOT WATER PIPING SIZED ¾" OR LARGER IS REQUIRED TO BE INSULATED AS FOLLOWS: 1" PIPE SIZE OR LESS: 1" THICK INSULATION; LARGER PIPE SIZES REQUIRE 1½" THICK INSULATION. NOTE: IN ADDITION, THE ½" SIZE HOT WATER PIPE TO THE KITCHEN SINK IS REQUIRED TO BE INSULATED. ES 150.0(J)2
17. SEE T24 DOCUMENTATION SHEET FOR MORE INFORMATION ON WATER HEATING, SPACE HEATING, AND COOLING EQUIPMENT SPECIFICATIONS.
18. SHOW THE LOCATIONS OR PROVIDE NOTES OF ALL CARBON MONOXIDE ALARMS TO MEET THE REQUIREMENTS OF CALIFORNIA RESIDENTIAL CODE SECTION R315.
• INSTALLED IN DWELLING UNITS AND IN SLEEPING UNITS WITHIN WHICH FUEL-BURNING APPLIANCES ARE INSTALLED AND IN DWELLING UNITS THAT HAVE ATTACHED GARAGES.
• WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED THE ALARM SHALL BE INTERCONNECTED IN A MANNER THAT ACTIVATION OF ONE ALARM SHALL ACTIVATE ALL THE ALARMS IN THE INDIVIDUAL UNIT.
*WHERE AREAS OF NO CONSTRUCTION IS TAKING PLACE CARBON MONOXIDE DETECTORS CAN BE SOLELY BATTERY POWERED
19. CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING IS SERVED FROM A COMMERCIAL SOURCE AND WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVER-CURRENT PROTECTION.
20. SHOW THE LOCATIONS OR PROVIDE NOTES OF ALL SMOKE ALARMS MEETING THE REQUIREMENTS OF CRC SECTION R314.
• ON THE CEILING OR WALL OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF BED ROOMS.
• IN EACH ROOM USED FOR SLEEPING PURPOSES.
• IN EACH STORY WITHIN A DWELLING UNIT, INCLUDING BASEMENTS.
• IN 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.
*WHERE AREAS OF NO CONSTRUCTION IS TAKING PLACE SMOKE DETECTORS CAN BE SOLELY BATTERY POWERED ONLY.



1 **utility plan**
SCALE: 1/4" = 1'-0"
0 1' 5' 10' 20'

electrical:

SYMBOL	=	DESCRIPTION
LED	=	LIGHT EMITTING DIODE
E	=	ELECTRICAL METER
	=	ELECTRICAL PANEL
	=	DUPLEX OUTLET
	=	HALF HOT DUPLEX OUTLET
	=	QUADRAPLEX OUTLET
GFI	=	GROUND FORCE OUTLET
WP	=	WATERPROOF GFI OUTLET
	=	IN-FLOOR OUTLET
GD	=	GARBAGE DISPOSAL OUTLET
DG	=	DEDICATED GROUND OUTLET
	=	220V OUTLET
WP GFI 220	=	WATERPROOF 220V OUTLET
$	=	1 WAY SWITCH
$3	=	3 WAY SWITCH

electrical:

SYMBOL	=	DESCRIPTION
$D	=	DIMMER SWITCH
$K	=	KEY OPERATED SWITCH
$WP	=	WEATHERPROOF SWITCH
$VS	=	VACANCY SENSOR SWITCH
D	=	DOOR OPERATED SWITCH
F	=	VENT FAN
F IAQ	=	INDOOR AIR QUALITY FAN
F WHF	=	WHOLE HOUSE FAN
H	=	HEAT LAMP
J	=	JUNCTION BOX
L	=	LIGHT
M	=	MOTION DETECTOR
P	=	PHOTOELECTRIC SENSOR
HF	=	HEAT LAMP/FAN COMBO
LF	=	LED LIGHT/FAN COMBO

electrical:

SYMBOL	=	DESCRIPTION
LHF	=	LED LIGHT/HEAT LAMP/FAN COMBO
	=	CEILING SURFACE MOUNT FIXTURE
	=	WALL MOUNTED FIXTURE
	=	HANGING FIXTURE
	=	RECESSED CEILING FIXTURE
	=	RECESSED CEILING WALL WASH FIXTURE
M	=	RECESSED MOISTURE RESISTANT CEILING FIXTURE
	=	FLOOD FIXTURE
	=	TRACK LIGHT FIXTURE
	=	FLOURESCENT TUBE FIXTURE
	=	LED UNDERCABINET FIXTURE
	=	CEILING FAN WITH LIGHT
	=	STEP LIGHT
L	=	GRID CEILING LIGHT

plumbing:

SYMBOL	=	DESCRIPTION
	=	WATER METER
FWM	=	FIRE WATER METER
WH	=	TANK WATER HEATER
HP WH	=	ELECTRIC HEAT PUMP WATER HEATER
WH	=	TANKLESS WATER HEATER
WC	=	WATER CONDITIONER
SO	=	WATER SERVICE SHUTOFF
HB	=	HOSE BIB
CW	=	COLD WATER VALVE
RP	=	RECESSED PLUMBING
	=	SHOWERHEAD
	=	OVERHEAD SHOWERHEAD
	=	ADJUSTABLE SHOWERHEAD

plumbing:

SYMBOL	=	DESCRIPTION
	=	FIRE SPRINKLER
	=	ROUND SHOWER DRAIN
	=	LINEAR SHOWER DRAIN
CO	=	CLEAN OUT
FD	=	FLOOR DRAIN
FS	=	FLOOR SINK
	=	DECK OR ROOF DRAIN
OS	=	OVERFLOW SCUPPER
DS	=	DECK OR ROOF DRAIN + OVERFLOW SCUPPER
DS	=	DOWNSPOUT
	=	URINAL
	=	BIDET
	=	TOILET - FLOOR MOUNT

plumbing:

SYMBOL	=	DESCRIPTION
	=	TOILET - WALL MOUNT
	=	FAUCET
	=	PEDESTAL SINK
	=	BATH SINK
	=	BATHTUB
	=	FREESTANDING BATHTUB
	=	BAR OR HAND SINK
	=	SINGLE SINK
	=	DOUBLE SINK
	=	TRIPLE SINK
	=	APRON SINK

mechanical:

SYMBOL	=	DESCRIPTION
HPWH	=	SPLIT SYSTEM HEAT PUMP EXTERIOR UNIT
HPU	=	SPLIT SYSTEM HEAT PUMP INTERIOR UNIT
T	=	THERMOSTAT
SA	=	SUPPLY AIR WALL REGISTER
	=	SUPPLY AIR CEILING REGISTER
	=	SUPPLY AIR FLOOR REGISTER
RA	=	RETURN AIR WALL REGISTER
	=	RETURN AIR CEILING REGISTER
	=	RETURN AIR FLOOR REGISTER

mechanical:

SYMBOL	=	DESCRIPTION
	=	RIGID SUPPLY AIR DUCT
	=	RIGID RETURN AIR DUCT
	=	FLEXIBLE SUPPLY AIR DUCT
FE	=	FIRE EXTINGUISHER
VM	=	VACUUM MOTOR
V	=	VACUUM OUTLET
DV	=	DRYER VENT
FV	=	FAN VENT
RV	=	RANGE / OVEN VENT

media+safety:

SYMBOL	=	DESCRIPTION
ALARM	=	ALARM SOURCE
AUDIO	=	AUDIO SOURCE
DATA	=	DATA SOURCE
PP	=	PHONE PANEL
TP	=	TELEVISION PANEL
VP	=	VIDEO PANEL
TV	=	CABLE TELEVISION JACK
DP	=	DATAPORT NETWORK JACK
	=	TELEPHONE JACK
	=	DOORBELL OR GARAGE DOOR

media+safety:

SYMBOL	=	DESCRIPTION
	=	DOORBELL CHIMES
DB	=	DOORBELL TRANSFORMER
A	=	ALARM SYSTEM PAD
CO	=	CARBON MONOXIDE DETECTOR
S	=	SMOKE DETECTOR
S CO	=	SMOKE & CARBON MONOXIDE DETECTOR
	=	EMERGENCY LIGHT FIXTURE
EXIT	=	ILLUMINATED EXIT SIGN
SP	=	SPEAKER
	=	VIDEO CAMERA

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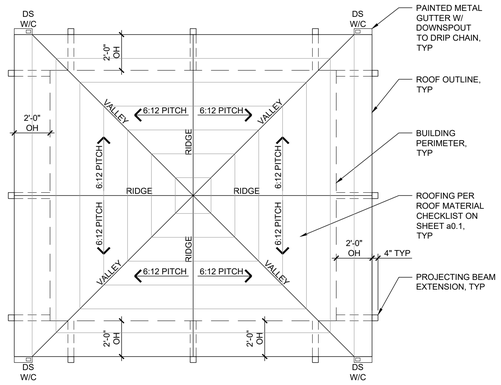
STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

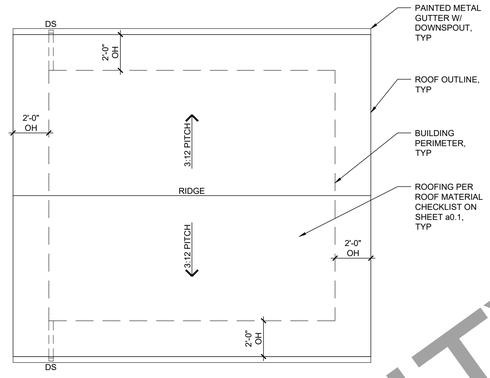
UTILITY PLAN

a2.0



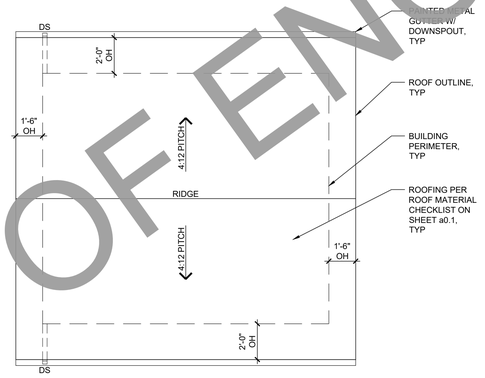
1 roof plan c

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



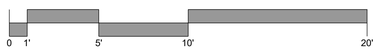
2 roof plan b

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



3 roof plan a

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



roof plan notes:

1. ALL ROOFING SHALL BE CLASS A RATED.
2. ROOFING SELECTION PER ROOF MATERIAL CHECKLIST ON SHEET a0.1.
3. NO ATTICS PROPOSED, ATTIC VENTING NOT REQUIRED. DETAILS 86, 87 & 88/d0.4 PROVIDE INSULATION ALTERNATIVE

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

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STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

ROOF PLANS

a3.0

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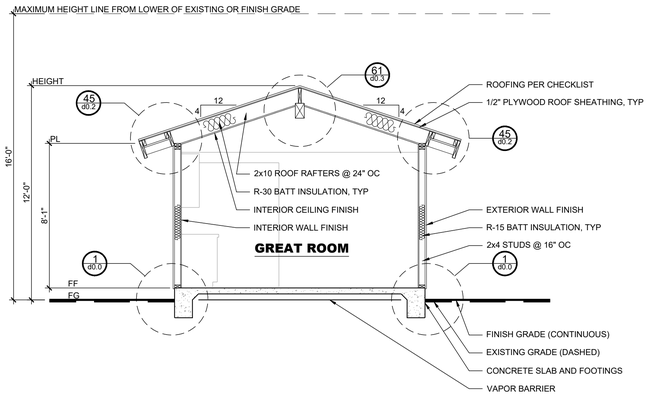
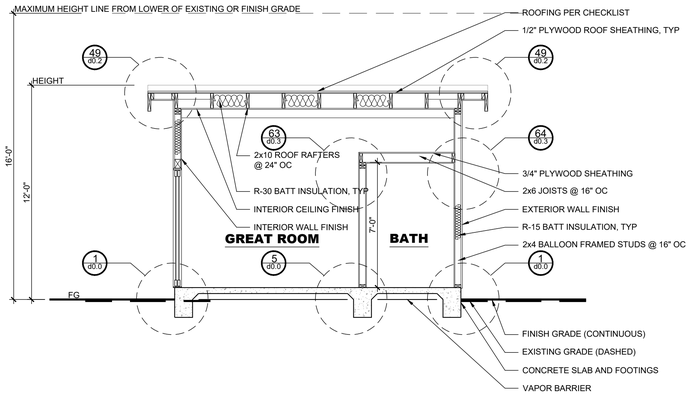


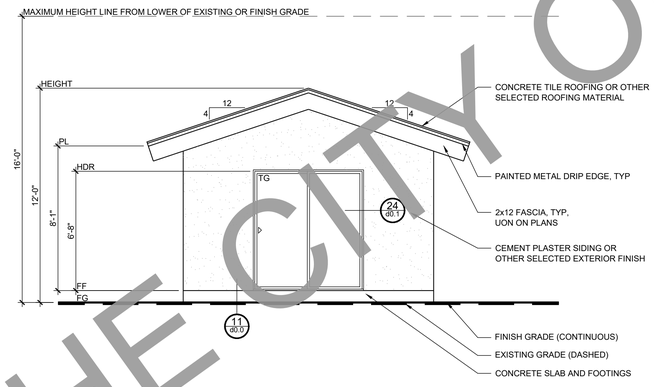
1 section a

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



2 section b

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



4 right elevation a

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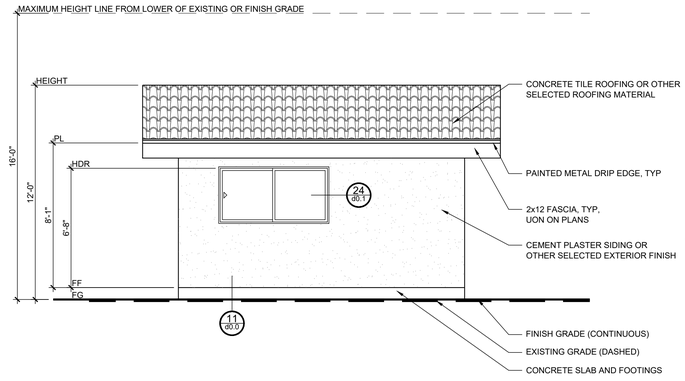

6 rear elevation a

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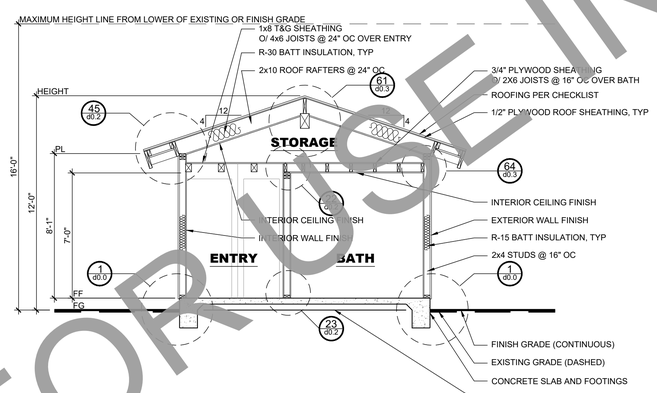
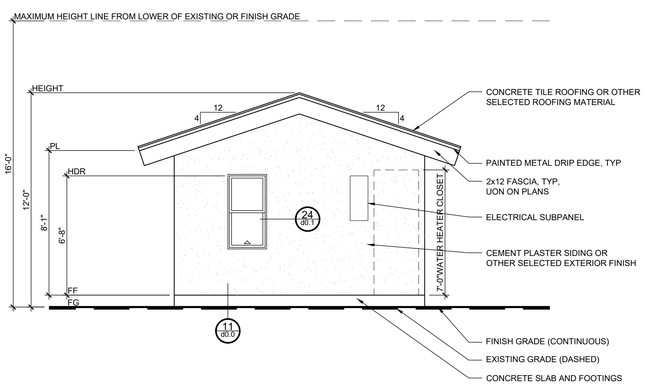


3 section g

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



5 left elevation a

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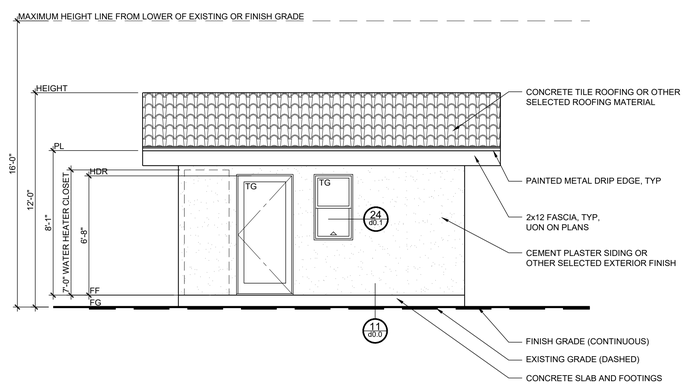

7 front elevation a

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

elevation + section notes:

1. ROOF PLAN NOTES THE LOCATION OF GUTTERS AND DOWNSPOUTS
2. ADJUSTMENT OF ROOF PITCH OR PLATE HEIGHT MAY BE REQUIRED. RAISED FLOOR FOUNDATION IS SELECTED TO MEET HEIGHT REQUIREMENTS.
3. ELEVATIONS & SECTIONS SHALL SHOW BOTH FINISH (CONTINUOUS) & EXISTING (DASHED) GRADE AND THE APPROPRIATE HEIGHT LIMITATION LINE FROM THE LOWER OF THE FINISH OR EXISTING GRADE.
4. IF THE AVERAGE LOT SLOPE EXCEEDS 10% (NOT INCLUDING RR ZONED LOTS) THAN THE ADDITIONAL SLOPED LOT HEIGHT LIMITATION LINES SHALL BE SHOWN AS WELL.

0 1' 5' 10' 20'

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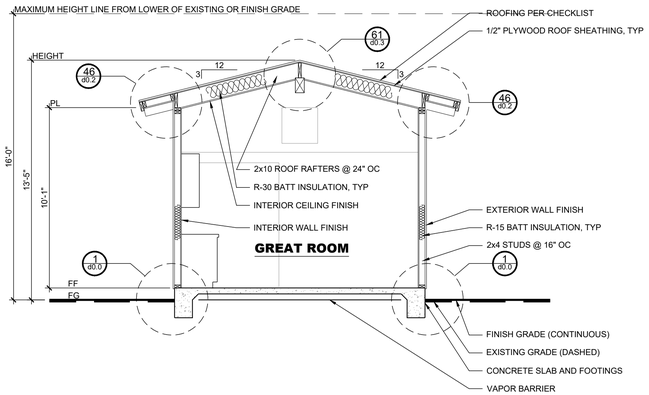
A ELEVATIONS + SECTIONS

a4.0



1 section c

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

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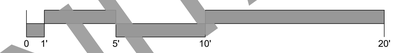
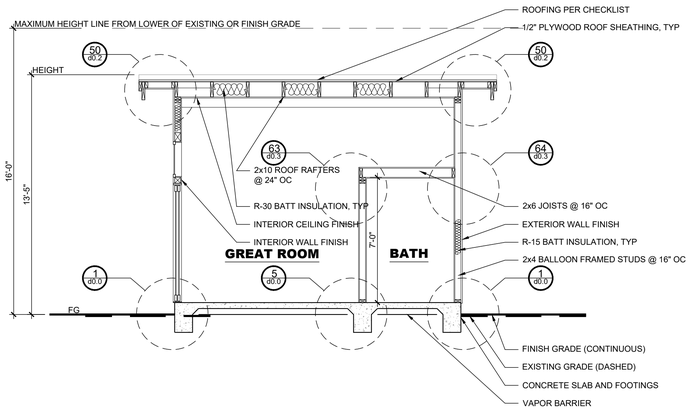
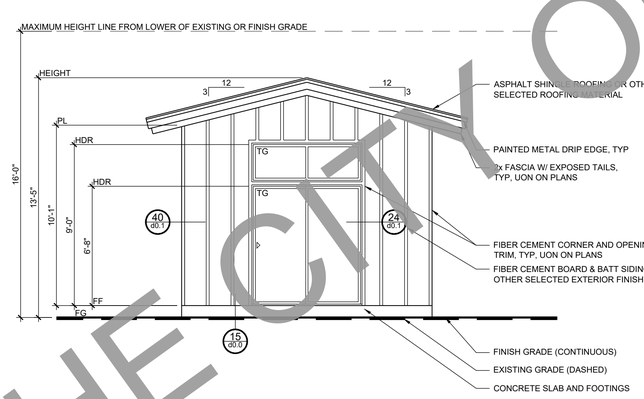




2 section d

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



4 right elevation b

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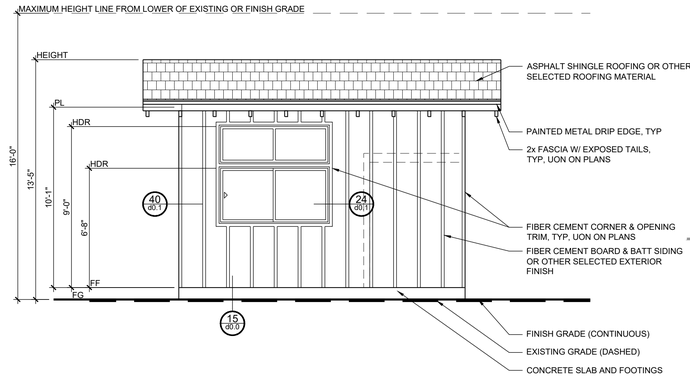

6 rear elevation b

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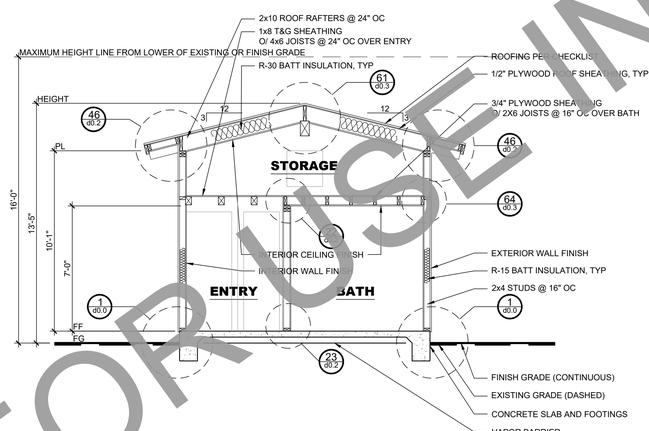

3 section h

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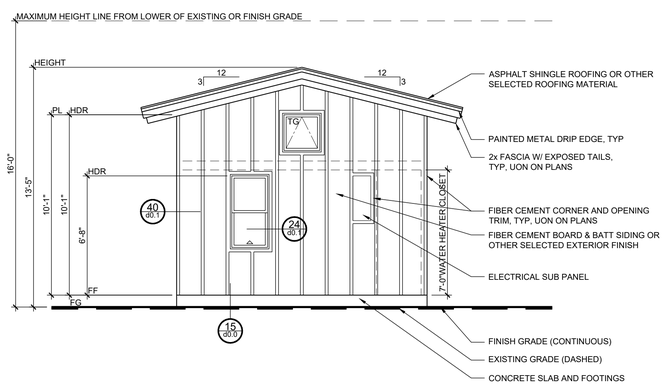

5 left elevation b

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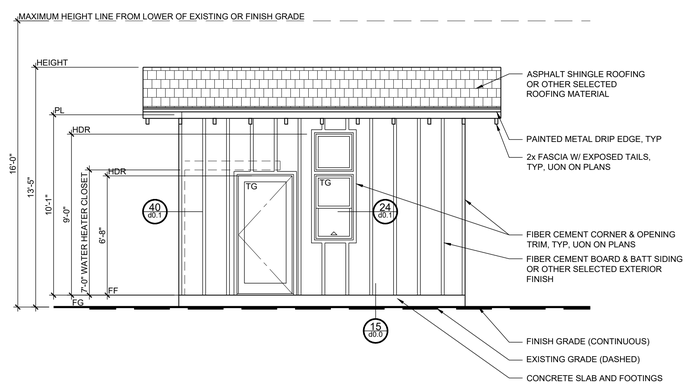

7 front elevation b

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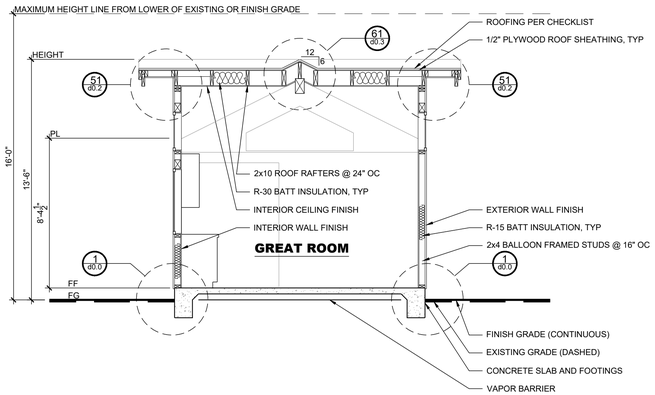
B ELEVATIONS + SECTIONS

a4.1



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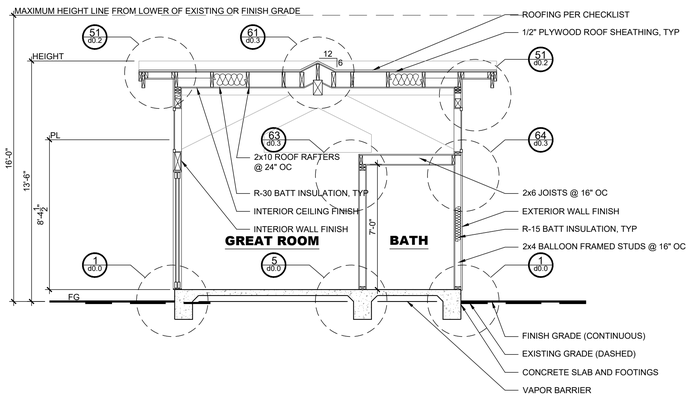

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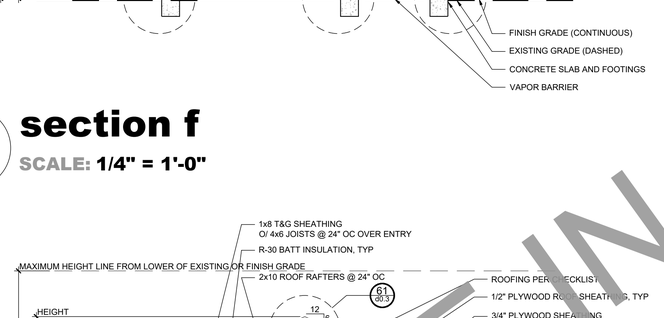

3 section i

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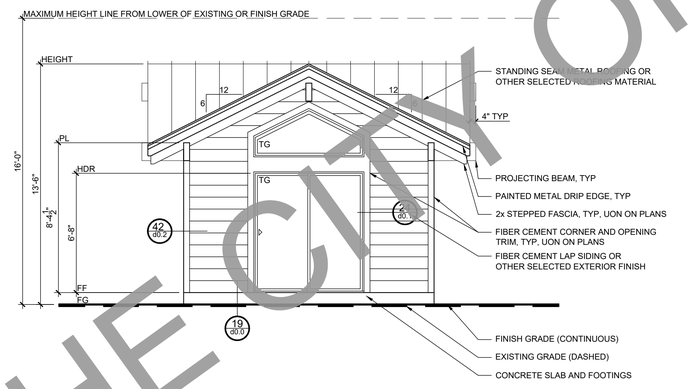

4 right elevation c

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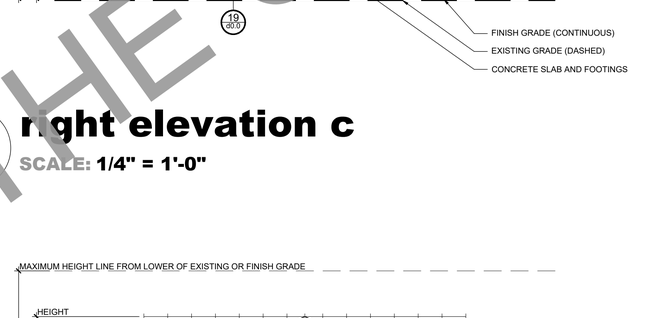

5 left elevation c

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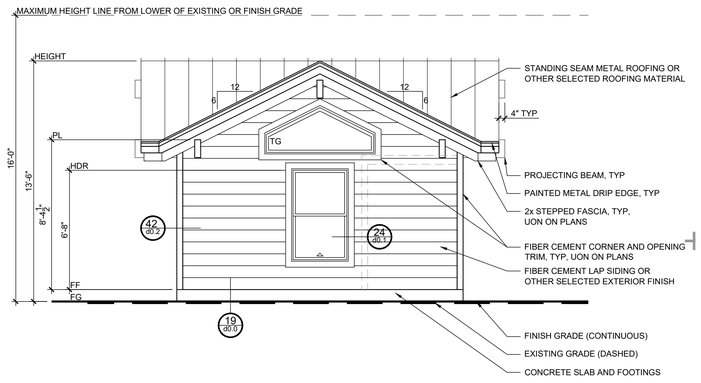

6 rear elevation c

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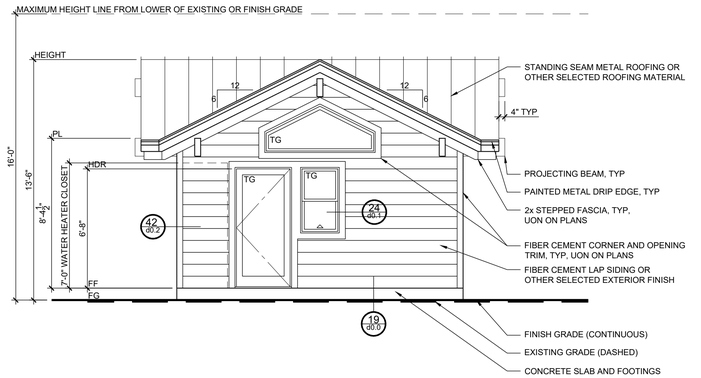

7 front elevation c

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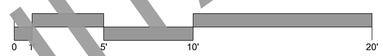

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JOB: 202241R

C ELEVATIONS + SECTIONS

a4.2

safety glazing notes:

2406.4 HAZARDOUS LOCATIONS.

- THE LOCATIONS SPECIFIED IN SECTIONS 2406.4.1 THROUGH 2406.4.7 SHALL BE CONSIDERED SPECIFIC HAZARDOUS LOCATIONS REQUIRING SAFETY GLAZING MATERIALS.

2406.4.1 GLAZING IN DOORS.

- GLAZING IN ALL FIXED & OPERABLE PANELS OF SWINGING, SLIDING, & BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION.

EXCEPTIONS:

1. GLAZED OPENINGS OF A SIZE THROUGH WHICH A 3" Ø SPHERE IS UNABLE TO PASS.
2. DECORATIVE GLAZING.
3. GLAZING MATERIALS USED AS CURVED GLAZED PANELS IN REVOLVING DOORS.
4. COMMERCIAL REFRIGERATED CABINET GLAZED DOORS.

2406.4.2 GLAZING ADJACENT TO DOORS.

- GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION & WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION.

EXCEPTIONS:

1. DECORATIVE GLAZING.
2. WHERE THERE IS AN INTERVENING WALL OR OTHER PERMANENT BARRIER BETWEEN THE DOOR & GLAZING.
3. WHERE ACCESS THROUGH THE DOOR IS TO A CLOSET OR STORAGE AREA 3 FEET (914 MM) OR LESS IN DEPTH. GLAZING IN THIS APPLICATION SHALL COMPLY WITH SECTION 2406.4.3.
4. GLAZING IN WALLS ON THE LATCH SIDE OF & PERPENDICULAR TO THE PLANE OF THE DOOR IN A CLOSED POSITION IN ONE- & TWO-FAMILY DWELLINGS OR WITHIN DWELLING UNITS IN GROUP R-2.

2406.4.3 GLAZING IN WINDOWS.

GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION:

1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SQUARE FEET.
2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18" ABOVE THE FLOOR.
3. THE TOP EDGE OF THE GLAZING IS GREATER THAN 36" ABOVE THE FLOOR.
4. ONE OR MORE WALKING SURFACE(S) ARE WITHIN 36", MEASURED HORIZONTALLY & IN A STRAIGHT LINE, OF THE PLANE OF THE GLAZING.

EXCEPTIONS:

1. DECORATIVE GLAZING.
2. WHERE A HORIZONTAL RAIL IS INSTALLED ON THE ACCESSIBLE SIDE(S) OF THE GLAZING 34" TO 38" ABOVE THE WALKING SURFACE. THE RAIL SHALL BE CAPABLE OF WITHSTANDING A HORIZONTAL LOAD OF 50 POUNDS PER LINEAR FOOT WITHOUT CONTACTING THE GLASS & BE NOT LESS THAN 1 1/2" IN CROSS-SECTIONAL HEIGHT.
3. OUTBOARD PANES IN INSULATING GLASS UNITS OR MULTIPLE GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLASS IS 25'-0" OR MORE ABOVE ANY GRADE, ROOF, WALKING SURFACE OR OTHER HORIZONTAL OR SLOPED (WITHIN 45° OF HORIZONTAL) SURFACE ADJACENT TO THE GLASS EXTERIOR.

2406.4.4 GLAZING IN GUARDS AND RAILINGS.

- GLAZING IN GUARDS & RAILINGS, INCLUDING STRUCTURAL BALUSTER PANELS & NONSTRUCTURAL IN-FILL PANELS, REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

2406.4.5 GLAZING AND WET SURFACES

- GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS & INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.

EXCEPTION:

1. GLAZING THAT IS MORE THAN 60", MEASURED HORIZONTALLY & IN A STRAIGHT LINE, FROM THE WATER'S EDGE OF A BATHTUB, HOT TUB, SPA, WHIRLPOOL OR SWIMMING POOL.

2406.4.6 GLAZING ADJACENT TO STAIRWAYS AND RAMPS

- GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS & RAMPS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

EXCEPTIONS:

1. THE SIDE OF A STAIRWAY, LANDING OR RAMP THAT HAS A GUARD COMPLYING WITH THE PROVISIONS OF SECTIONS 1015 AND 1607.9, AND THE PLANE OF THE GLASS IS GREATER THAN 18" FROM THE RAILING.
2. GLAZING 36" OR MORE MEASURED HORIZONTALLY FROM THE WALKING SURFACE.

2406.4.7 GLAZING ADJACENT TO THE BOTTOM STAIRWAY LANDING

- GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 60" ABOVE THE LANDING & WITHIN A 60" HORIZONTAL ARC THAT IS LESS THAN 180° FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

EXCEPTION:

1. GLAZING THAT IS PROTECTED BY A GUARD COMPLYING WITH CBC SECTIONS 1015 AND 1607.9 WHERE THE PLANE OF THE GLASS IS GREATER THAN 18" FROM THE GUARD.

structural design basis:

VERTICAL DESIGN			LATERAL DESIGN						FOUNDATION DESIGN		
			SEISMIC			WIND					
LOAD		PSF	ITEM		VALUE	ITEM		VALUE	ITEM		VALUE
ROOF DEAD	=	18	SITE CLASS	=	D	BASIC WIND SPEED	=	110 MPH	SOIL	=	TYPE 5
ROOF LIVE		20	IMPORTANCE FACTOR, I	=	1.0	IMPORTANCE FACTOR	=	1.0	SITE CLASS	=	D, LATERAL DESIGN
ROOF SNOW	=	N/A	OCCUPANCY CATEGORY	=	II	OCCUPANCY CATEGORY	=	II	SOIL BEARING PRESSURE	=	1,000 #/SF
FLOOR DEAD	=	15	SEISMIC DESIGN CATEGORY	=	D	WIND EXPOSURE CATEGORY	=	B	RETAINING WALLS		
FLOOR LIVE	=	40	Ss	=	1.104	HEIGHT & EXPOSURE ADJ. COEFF.	=	1.0	RESTRAINED LOAD (EFP)	=	N/A
			S1	=	0.425	TOPO ADJ. FACTOR	=	1.0	CANTILEVER LOAD (EFP)	=	N/A
			Sds	=	0.779	SIMPLIFIED DESIGN WIND PRESSURE	=	26.6 #/SF (Ps30)	PASSIVE SOIL PRESSURE	=	N/A
			Sd1	=	0.446	DESIGN WIND PRESSURE	=	16.0 #/SF	COEFFICIENT OF FRICTION	=	N/A
			LATITUDE	=	33.191				SOILS REPORT		
			LONGITUDE	=	-117.423				BY	=	N/A
			PLYWOOD SHEAR, R	=	6.5						
			SEISMIC FORCE RESISTING SYSTEMS :								
			Cs = Sds/(R/I) = 0.120/1.4 (ASD)								
			V = Cs • W (ASD) = 0.086 • W								

2022 cbc/crc shear panel schedule:

SHEAR PANEL DESIGNATION (X) SP LENGTH (FT)	STRUCTURAL 1 APA-RATED WOOD STRUCTURAL PANEL THICKNESS	COMMON NAIL SPACING @ BOUNDARIES & EDGES (BN &EN) FIELD NAILING (FN) @ 12" OC OC (INCH)	ALLOWABLE SHEAR/FT W/ WOOD STUDS @ 16" OC #/FT	SLIDING ANCHOR SYSTEM [4] 5/8" Ø ANCHOR BOLT SPACING [2] 2x SILL - V=1184# 3x SILL - V=1520# OC (INCH)	FRAMING CLIP SPACING V=450# - SIMPSON CO A35, OAE OC (INCH)	16d COMMON NAIL SPACING [3] 2x SOLE PLATE ONLY V=121# OC (INCH)	1/2"Ø LAG SCREW SPACING [5] 2x SOLE PLATE ONLY V=880# OC (INCH)
A	3/8"	8d@6	280	48	18	5	23
B [1]	15/32"	8d@4	430	42	12	3	15
C [1]	15/32"	8d@3	550	32	9	2	12
D [1]	15/32"	8d@2	730	24	7	→	9
E [1]	15/32"	8d@2	870	20	6	→	6
SW	SIMPSON CO. STRONGWALL (SEE ATTACHED DETAIL SHEETS IF SPECIFIED FOR PROJECT)						
WSW	SIMPSON CO. WOOD STRONGWALL (SEE ATTACHED DETAIL SHEETS IF SPECIFIED FOR PROJECT)						
SSW	SIMPSON CO. STEEL STRONGWALL (SEE ATTACHED DETAIL SHEETS IF SPECIFIED FOR PROJECT)						
HF	HARDY FRAME (SEE ATTACHED DETAIL SHEETS IF SPECIFIED FOR PROJECT)						

FOOTNOTES:

1. FRAMING AT FOUNDATION SILL PLATES AND ADJOINING PANEL EDGE STUDS SHALL BE A SINGLE 3X NOMINAL MEMBER, AND ALL NAILS SHALL BE STAGGERED W/ 1/2" EDGE DISTANCE. 2X NOMINAL SOLE PLATE MAY BE USED AT RAISED FLOOR AND UPPER LEVELS.
2. SIMPSON CO BP 5/8 BEARING PLATES (LARR 25293), OR EQUAL, SHALL BE USED WITH ALL 5/8"Ø ANCHORS. 5/8"Ø SIMPSON WEDGE-ALL WEDGE ANCHORS (ICBO ER-3631) MAY BE USED IN LIEU OF 5/8"Ø ANCHOR BOLTS AT EXISTING FOOTINGS WITH SAME SPACING PER TABLE ABOVE.
3. ALL SILL NAILING SHALL BE STAGGERED A 1/2" MINIMUM, TYPICAL.
4. WHEN A SHEAR PANEL IS SPECIFIED ON BOTH SIDES OF A WALL, ALL SLIDING ANCHOR CONNECTORS SHALL BE ATTACHED WITH SPACINGS FROM THE TABLE ABOVE TO BE REDUCED BY HALF.
5. MINIMUM 4" PENETRATION INTO 4x MATERIAL.

2022 CBC TABLE 2304.10.2 FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[2]	SPACING AND LOCATION
ROOF		
1. BLOCKING BETWEEN CEILING JOISTS, RAFTERS OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	4-8d BOX (2-1/2"x0.113"); OR 3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN	EACH END, TOENAIL
BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL TOP PLATE, TO RAFTER OR TRUSS	2-8d COMMON (2-1/2"x0.131"); OR 2-3"x0.131" NAILS; OR 2-3" 14 GAGE STAPLES 2-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN	EACH END, TOENAIL
FLAT BLOCKING TO TRUSS AND WEB FILLER	16d BOX (3-1/2"x0.135"); OR 3"x0.131" NAILS @ 6" OC; OR 3"x14 GAGE STAPLES @ 6" C.C.	FACE NAIL
2. CEILING JOISTS TO TOP PLATE	3-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3"14 GAGE STAPLES 7/16" CROWN	EACH JOIST, TOENAIL
3. CEILING JOIST NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS (NO TIES) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3)	3-16d COMMON (3-1/2"x0.162"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-3" 14 GAGE STAPLES 7/16" CROWN	FACE NAIL
4. CEILING JOIST ATTACHED TO PARALLEL RAFTER (HEEL JOINT) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	PER TABLE 2308.7.3.1	FACE NAIL
5. COLLAR TIE TO RAFTER	3-10d COMMON (3"x0.148"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-3"x14 GAGE STAPLES 7/16" CROWN	FACE NAIL
6. RAFTER OR TRUSS TO TOP PLATE (SEE SECTION 2308.7.5, TABLE 2308.7.5)	3-10d COMMON (3"x0.148"); OR 3-16d BOX (3-1/2"x0.135"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-3" 14 GAGE STAPLES 7/16" CROWN	2 TOENAILS ON ONE SIDE AND 1 TOENAIL ON OPPOSITE SIDE OF RAFTER OR TRUSS[c]
7. ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS; OR ROOF RAFTER TO 2-INCH RIDGE BEAM	2-16d COMMON (3-1/2"x0.162"); OR 3-16d BOX (3-1/2"x0.135"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN; OR	END NAIL
	3-16d BOX (3-1/2"x0.135"); OR 3-16d BOX (3-1/2"x0.135"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-3" 14 GAGE STAPLES 7/16" CROWN	TOENAIL
WALL		
8. STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3.1/2"x0.162"); 10d BOX (3"x0.128"); OR 3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN	24" OC, FACE NAIL 16" OC, FACE NAIL
9. STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d COMMON (3.1/2"x0.162") 16d BOX (3-1/2"x0.135"); OR 3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN	16" OC, FACE NAIL 12" OC, FACE NAIL
10. BUILT-UP HEADER (2" TO 2" HEADER)	16d COMMON (3.1/2"x0.162"); OR 16d BOX (3-1/2"x0.135")	16" OC, EA EDGE, FACE NAIL 12" OC, EA EDGE, FACE NAIL
11. CONTINUOUS HEADER TO STUD	4-8d COMMON (2-1/2"X.131"); OR 4-10d BOX (3"x0.128"); OR 5-8d BOX (2-1/2"x0.113")	TOENAIL
12. TOP PLATE TO TOP PLATE	16D COMMON (3-1/2"x0.162") 10d BOX (3"x0.128"); OR 3"x0.131" NAILS; OR 3" 14 GAGE STAPLES 7/16" CROWN	16" OC, FACE NAIL 12" OC, FACE NAIL
13. TOP PLATE TO TOP PLATE, AT END JOINTS	8-16d COMMON (3-1/2"x0.162"); OR 12-16d BOX (3-1/2"x0.135"); OR 12-10d BOX (3"x0.128"); OR 12-3"x0.131" NAILS; OR 12-3" 14 GAGE STAPLES 7/16" CROWN	EA SIDE OF END JOINT, FACE NAIL (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
14. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANELS)	16d COMMON (3-1/2"x0.162") 16d BOX (3-1/2"x0.135"); OR 3"x0.131" NAILS; OR 3" 14 GAGE STAPLES 7/16" CROWN	16" OC, FACE NAIL 12" OC, FACE NAIL
15. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING AT BRACED WALL PANELS	2- 16d COMMON (3-1/2"x0.162"); OR 3-16d BOX (3"x0.135"); OR 4-3"x0.131" NAILS; OR 4-3" 14 GAGE STAPLES 7/16" CROWN	16" OC, FACE NAIL
16. STUD TO TOP OR BOTTOM PLATE	3-16d BOX (3-1/2"x0.135"); OR 4-8d COMMON (2-1/2"x0.131"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-8d BOX (2-1/2"x0.113"); OR 4-3" 14 GAGE STAPLES 7/16" CROWN; OR	TOENAIL
	2-16d COMMON (3-1/2"x0.162"); OR 3- 16d BOX (3"x0.135"); OR 3- 10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN	END NAIL
17. TOP PLATES, LAP AT CORNERS AND INTERSECTIONS	2-16d COMMON (3-1/2"x0.162"); OR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES 7/16" CROWN	END NAIL
18. 1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2-1/2"x0.131"); OR 2-8d COMMON (2-1/2"x0.113"); OR 2-10d BOX (3"x0.128"); OR 2-3"x0.131" NAILS; OR 2-3" 14 GAGE STAPLES 7/16" CROWN	FACE NAIL
19. 1"x6" SHEATHING TO EACH BEARING	3-8d BOX (2-1/2"x0.113"); OR 2-8d COMMON (2-1/2"x0.131"); OR 2-10d BOX (3"x0.128") 2-1-3/4" 16 GAGE STAPLES,1" CROWN	FACE NAIL
20. 1"x8" AND WIDER SHEATHING TO BEARING	3-8d COMMON (2-1/2"x0.131"); OR 3-8d BOX (2-1/2"x0.113"); OR 3-10d BOX (3"x0.128"); OR 3-1-3/4" 16 GAGE STAPLES,1" CROWN	FACE NAIL
	WIDER THAN 1 2.5" 4-8d COMMON (2-1/2"x0.131"); OR 4-8d BOX (2-1/2"x0.113"); OR 4-10d BOX (3"x0.128"); OR 4-1-3/4" 16 GAGE STAPLES,1" CROWN	
FLOOR		
21. JOIST TO SILL, TOP PLATE OR GIRDER	4-8d BOX (2-1/2"x0.113"); OR 3-8d COMMON (2-1/2"x0.131"); OR FLOOR 3-10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3"x14 GAGE STAPLES 7/16" CROWN	TOENAIL
	8d BOX (2-1/2"x0.113"); OR	4" OC, TOENAIL
22. RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	8d COMMON (2-1/2"x0.131"); OR 10d BOX (3"x0.128"); OR 3"x0.131" NAILS; OR 3"x14 GAGE STAPLES 7/16" CROWN	6" OC, TOENAIL
23. 1"x6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2-1/2"x0.113"); OR 2-8d COMMON (2-1/2"x0.131"); OR 3-10d BOX (3"x0.128"); OR 2-1-3/4" 16 GAGE STAPLES,1" CROWN	FACE NAIL
24. 2" SUBFLOOR TO JOIST OR GIRDER	3- 16d BOX (3-1/2"x0.135"); OR 2- 16d COMMON (3-1/2"x0.162")	BLIND & FACE NAIL
25. 2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	3- 16d BOX (3-1/2"x0.135"); OR 2- 16d COMMON (3-1/2"x0.162")	EACH BEARING, FACE NAIL
26. BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON (4"x0.192")	32" OC, FACE NAIL AT TOP & BOTTOM STAGGERED ON OPPOSITE SIDES
	10d BOX (3"x0.128"); OR 3"x0.131" NAILS; OR 3" 14 GAGE STAPLES,7/16" CROWN	24" OC, FACE NAIL AT TOP & BOTTOM STAGGERED ON OPPOSITE SIDES
	AND: 2- 20d COMMON (4"x0.192") 3- 10d BOX (3"x0.128"); OR 3-3"x0.131" NAILS; OR 3-3" 14 GAGE STAPLES,7/16" CROWN	ENDS AND AT EACH SPLICE, FACE NAIL
27. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3- 16d COMMON (3-1/2"x0.162"); OR 4-16d BOX (3-1/2"x0.135"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-3" 14 GAGE STAPLES,7/16" CROWN	EACH JOIST OR RAFTER, FACE NAIL
28. JOIST TO BAND JOIST OR RIM JOIST	3- 16d COMMON (3-1/2"x0.162"); OR 4-10d BOX (3"x0.128"); OR 4-3"x0.131" NAILS; OR 4-3"x14 GAGE STAPLES,7/16" CROWN	END NAIL
29. BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	2-8d COMMON (2-1/2"x0.131"); OR 2-10d BOX (3"x0.128"); OR 2-3"x0.131" NAILS; OR 2-3"x14 GAGE STAPLES,7/16" CROWN	EACH END, TOE NAIL
WOOD STRUCTURAL PANELS (WSP), SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLE BOARD WALL SHEATHING TO FRAMING[d]		
	FIELD = INTERMEDIATE SUPPORTS	EDGES - FIELD (INCHES)
30. 3/8" - 1/2"	6d COMMON OR DEFORMED (2" x 0.113"); OR 2-3/8" x 0.113" NAIL (SUBFLOOR & WALL)	6 - 12
	8d COMMON OR DEFORMED (2-1/2"x0.131"x 0.281" HEAD) (ROOF) OR RSRS-01 (2-3/8"x0.113") NAIL (ROOF)[d]	6[a] - 6[a]
	1-3/4" 16 GAGE STAPLE, 7/16" CROWN (SUBFLOOR & WALL)	4 - 8
	2-3/8" x 0.113" x 0.266" HEAD NAIL (ROOF)	3[a] - 3[a]
	1-3/4" 16 GAGE STAPLE, 7/16" CROWN (ROOF)	3[a] - 3[a]
31. 19/32" - 3/4"	8d COMMON (2-1/2"x0.131"); OR DEFORMED (2" x 0.113")(SUBFLOOR &WALL)	6 - 12
	8d COMMON OR DEFORMED (2-1/2" x 0.113" x 0.281" HEAD) (ROOF) OR RSRS-01 (2-3/8" x 0.113") NAIL (ROOF)[d]	6[a] - 6[a]
	2-3/8" x 0.131" x 0.266" HEAD NAIL; OR 2" 16 GAGE STAPLE, 7/16" CROWN	4 - 8
32. 7/8" - 1-1/4"	10d COMMON (3" x 0.148"); OR DEFORMED (2-1/2" x 0.131" x 0.281" HEAD)	6-12
OTHER EXTERIOR WALL SHEATHING		
33. 1/2" FIBERBOARD SHEATHING [b]	1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD) OR 1-1/4" 16 GAGE STAPLE W/ 7/16" OR 1" CROWN	3 - 6
34. 5/8" FIBERBOARD SHEATHING [b]	1-3/4" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD) OR 1-1/2" 16 GAGE STAPLE W/ 7/16" OR 1" CROWN	3 - 6
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING		
35. 3/4" AND LESS	8d COMMON (2-1/2" x 0.131"); OR DEFORMED (2" x 0.113"); OR DEFORMED (2" x 0.120")	6 - 12
36. 7/8" - 1"	8d COMMON (2-1/2" x 0.131"); OR DEFORMED (2-1/2" x 0.113"); OR DEFORMED (2-1/2" x 0.120")	6 - 12
37. 1- 1/8" - 1- 1/4"	10d COMMON (3" x 0.148"); OR DEFORMED (2-1/2" x 0.131") DEFORMED (2-1/2" x 0.120")	6 - 12
PANEL SIDING TO FRAMING		
38. 1/2" OR LESS	6d CORROSION-RESISTANT SIDING (1-7/8" x 0.106"); OR 6d CORROSION-RESISTANT CASING (2" x 0.099")	6 - 12
39. 5/8"	8d CORROSION-RESISTANT SIDING (2-3/8" x 0.128"); OR 8d CORROSION-RESISTANT CASING (2-1/2" x 0.113")	6 - 12
INTERIOR PANELING		
40. 1/4"	4d CASING (1-1/2" x 0.080"); OR 4d FINISH (1-1/2" x 0.072")	6 - 12
41. 3/8"	6d CASING (2" x 0.099"); OR 6d FINISH (2" x 0.092") (PANEL SUPPORTS @ 24")	6 - 12

FOR SI: 1 INCH = 25.4 MM

a. NAILS SPACED @ 6" AT INTERMEDIATE SUPPORTS (FIELD) WHERE SPANS ARE 48" OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL & PARTICLE BOARD DIAPHRAGMS & SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.

b. SPACING SHALL BE @ 6" OC ON THE EDGES & @ 12" OC @ INTERMEDIATE SUPPORTS (FIELD) FOR NON-STRUCTURAL APPLICATIONS. PANEL SUPPORTS @ 16" OC (24" OC IF STRENGTH AXIS IS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED)

c. WHERE A RAFTER IS FASTENED TO AN ADJACENT PARALLEL CEILING JOIST IN ACCORDANCE WITH THIS SCHEDULE & THE CEILING JOIST IS FASTENED TO THE TOP PLATE ACCORDING TO THIS SCHEDULE, THE NUMBER OF TOENAILS IN THE RAFTER SHALL BE PERMITTED TO BE REDUCED BY 1 NAIL.

d. RSRS-01 IS A ROOF SHEATHING RING SHANK NAIL MEETING SPECIFICATIONS IN ASTM F1667.

e. TABULATED FASTENER REQUIREMENTS APPLY WHERE THE ULTIMATE DESIGN WIND SPEED IS LESS THAN 140 MPH. FOR WOOD STRUCTURAL PANEL ROOF SHEATHING ATTACHED TO GABLE-END ROOF FRAMING & TO INTERMEDIATE SUPPORTS (FIELD) WITHIN 48" OF ROOF EDGES & RIDGES, NAILS SHALL BE SPACED @ 4" OC WHERE THE ULTIMATE DESIGN WIND SPEED IS GREATER THAN 130 MPH IN EXPOSURE B OR GREATER THAN 110 MPH IN EXPOSURE C. SPACING EXCEEDING 6" OC @ INTERMEDIATE SUPPORTS (FIELD) SHALL BE PERMITTED WHERE THE FASTENING IS DESIGNED PER THE AWC NDS.

f. FASTENING IS ONLY PERMITTED WHERE THE ULTIMATE DESIGN WIND SPEED IS LESS THAN OR EQUAL TO 110 MPH.

g. NAILS & STAPLES ARE CARBON STEEL MEETING THE SPECIFICATIONS OF ASTM F1667. CONNECTIONS USING NAILS & STAPLES OF OTHER MATERIALS, SUCH AS STAINLESS STEEL, SHALL BE DESIGNED BY ACCEPTABLE ENGINEERING PRACTICE OR APPROVED PER SECTION104.11.

2304.10.2.1 ADDITIONAL REQUIREMENTS. FASTENERS USED FOR THE ATTACHMENT OF EXTERIOR WALL COVERINGS SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL, MECHANICALLY DEPOSITED ZINC-COATED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. THE COATINGS WEIGHTS FOR HOT-DIPPED ZINC-COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTM A153. THE COATING WEIGHTS FOR MECHANICALLY DEPOSITED ZINC-COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTM B695, CLASS 55 MINIMUM.

FOR USE IN THE CITY OF ENCINITAS

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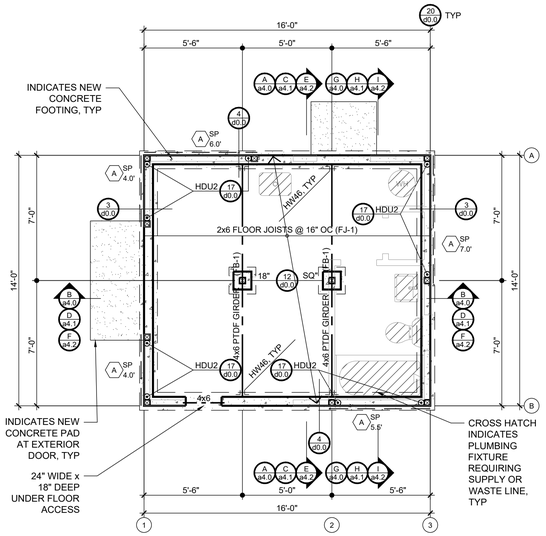
STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

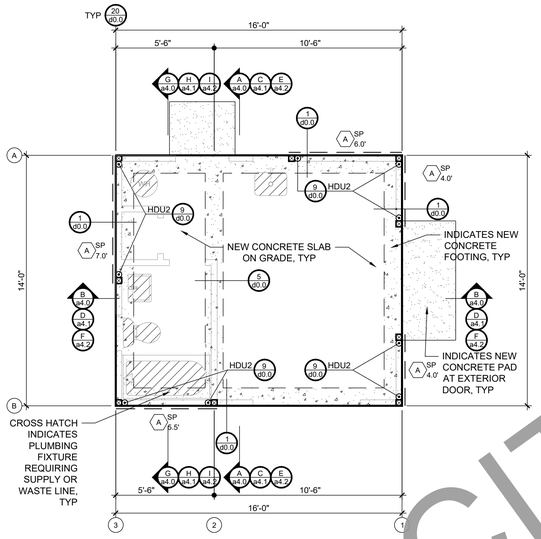
STRUCTURAL NOTES

s0.0



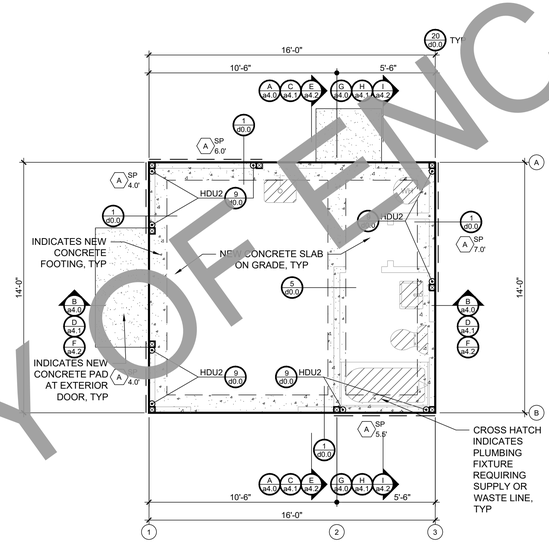
1 raised floor a

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



2 reverse foundation plan a

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



3 foundation plan a

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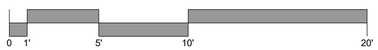

foundation plan notes:

1. EXPANSIVE SOIL LOCATIONS SHALL SUBSTITUTE DETAIL 2/d0.0 FOR DETAIL 1/d0.0 AT PERIMETER FOOTINGS.
2. EXPANSIVE SOIL LOCATIONS SHALL SUBSTITUTE DETAIL 6/d0.0 FOR DETAIL 5/d0.0 AT INTERIOR FOOTINGS.
3. ROOF FRAMING PLAN FOR OTHER ELEVATIONS MAY HAVE DIFFERENT SHEAR PANEL LENGTHS. VERIFY SHEAR PANEL LENGTHS WITH ROOF FRAMING PLAN PRIOR TO PLACING HOLD DOWN AND/OR ANCHOR BOLTS.

raised floor plan notes:

1. EXPANSIVE SOIL LOCATIONS SHALL PROVIDE FOOTING DIMENSIONS SPECIFIED IN DETAILS 3, 4, 7, 11, 12/ d0.0 FOR EXPANSIVE SOILS.
2. ROOF FRAMING PLAN FOR OTHER ELEVATIONS MAY HAVE DIFFERENT SHEAR PANEL LENGTHS. VERIFY SHEAR PANEL LENGTHS WITH ROOF FRAMING PLAN PRIOR TO PLACING HOLD DOWN AND/OR ANCHOR BOLTS.
3. PROVIDE FOUNDATION VENTS FOR RAISED FLOOR AREA AT 1 SQ. FT. OF VENT AREA FOR EVERY 150 SQ. FT. OF RAISED FLOOR AREA. 224/150 = 1.5 SQ. FT. SIX[6] 8"X14" FOUNDATION VENTS ARE REQUIRED AND SHALL BE EVENLY DISTRIBUTED AT THE FOUNDATION PERIMETER. CRC §408.1
4. PROVIDE A 18"X24" FOUNDATION ACCESS TO RAISED FLOOR FOUNDATION AREAS. CRC §408.4
5. PROVIDE R-19 BATT INSULATION AT UNDER-FLOOR JOISTS, TYP.
6. FLOOR DIAPHRAGM SHALL BE 23/32" APA STURD-I-FLOOR, EXPOSURE 1, 40/20, TONGUE & GROOVE WITH 10d COMMON NAILS @ 6" OC AT BOUNDARY (BN) & PANEL EDGE NAILING (EN) AND 12" OC AT INTERMEDIATE FRAMING MEMBERS (FN).

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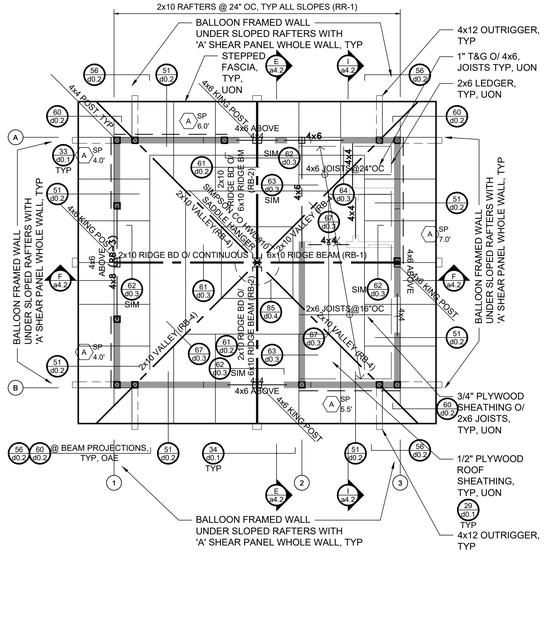
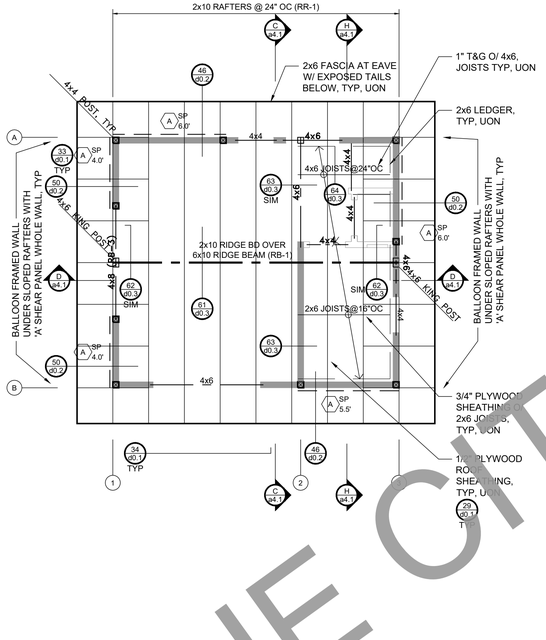
FOUNDATION PLANS

s1.0



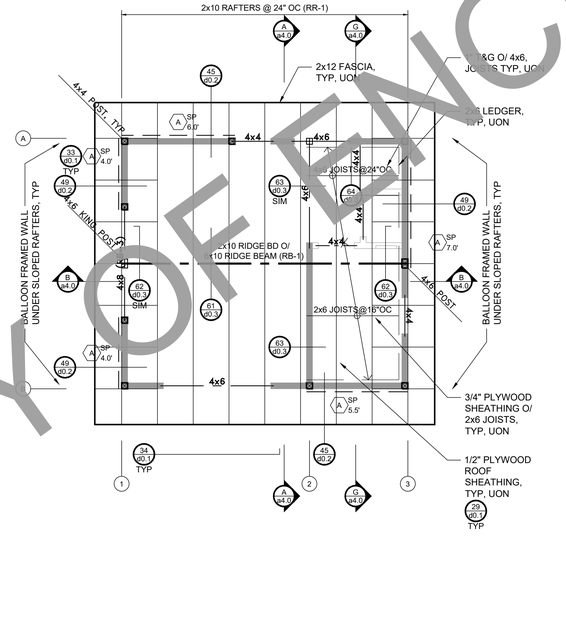
1 roof framing plan c

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



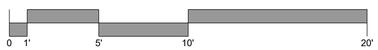
2 roof framing plan b

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



3 roof framing plan a

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



roof framing plan notes:

1. ENCLOSED RAFTER SPACES DO NOT REQUIRE VENTING IF THE FOLLOWING SPECIFIC INSULATION DESIGN IS USED, PER SECTION [illegible]SEM3.9.6:
   a. IF THE INSULATION IS AIR-**PERMEABLE** AND IT IS INSTALLED DIRECTLY BELOW THE ROOF SHEATHING WITH RIGID BOARD OR SHEET INSULATION WITH A MINIMUM R-5 VALUE INSTALLED ABOVE THE ROOF SHEATHING.
   b. IF THE INSULATION IS AIR-**IMPERMEABLE** AND IT IS IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING, OR
   c. IF **TWO LAYERS** OF INSULATION ARE INSTALLED BELOW THE ROOF SHEATHING: AN **AIR-IMPERMEABLE** LAYER IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING AND AN ADDITIONAL LAYER OF **AIR-IMPERMEABLE** INSULATION INSTALLED DIRECTLY UNDER THE AIR-IMPERMEABLE INSULATION.

   DETAILS 86, 87, 88/d0.4 PROVIDE MORE INFORMATION ABOUT THESE ROOF INSULATION ALTERNATIVES.
2. FLOOR DIAPHRAGM SHALL BE 23/32" APA STURD-I-FLOOR, EXPOSURE 1, 40/20, TONGUE & GROOVE WITH 10d COMMON NAILS @ 6" OC AT BOUNDARY (BN) & PANEL EDGE NAILING (EN) AND 12" OC AT INTERMEDIATE FRAMING MEMBERS (FN).
3. ROOF DIAPHRAGM SHALL BE 15/32" APA RATED SHEATHING (MIN), EXPOSURE 1, 24/0 MAXIMUM SPAN RATING WITH 8d COMMON NAILS @ 6" OC AT BOUNDARY (BN) & PANEL EDGE NAILING (EN) AND 12" OC AT INTERMEDIATE FRAMING MEMBERS (FN).

TRELLIS MEMBERS AND OTHER WEATHER EXPOSED MEMBERS SHALL BE PRESSURE TREATED DOUGLAS FIR (PTDF) OR NATURALLY PEST AND ROT RESISTANT WOOD SPECIES SUCH AS REDWOOD OR CEDAR, TYP, OAE

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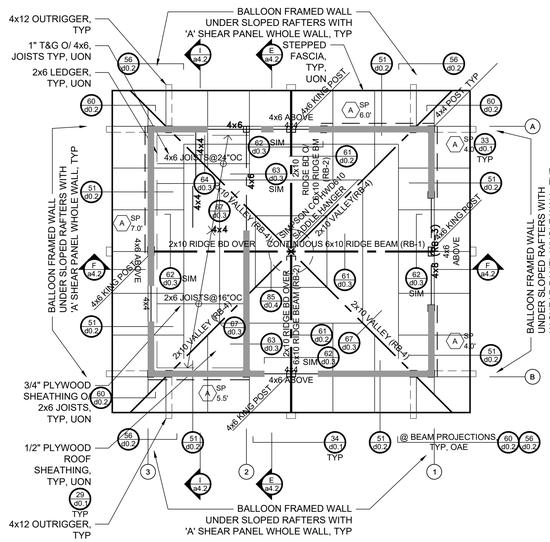
CITY: ENCINITAS

JOB: 202241R

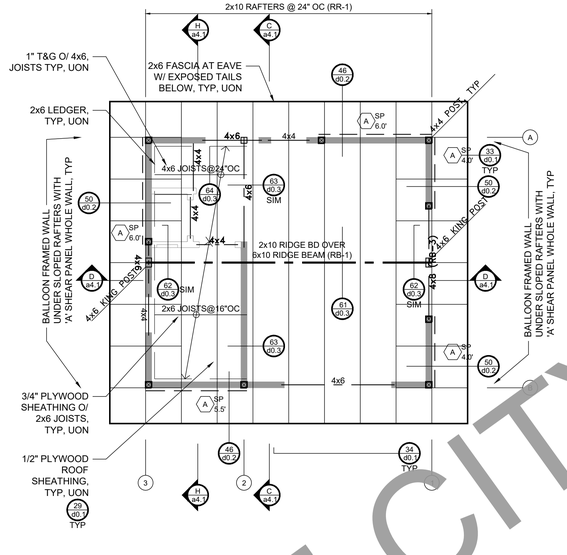
ROOF FRAMING PLANS

s2.0



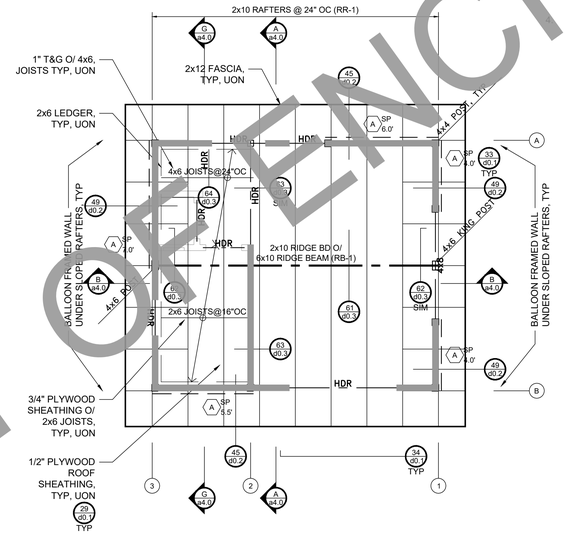
4 reverse roof framing plan c

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



5 reverse roof framing plan b

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



6 reverse roof framing plan a

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

0 1' 5' 10' 20'

roof framing plan notes:

1. ENCLOSED RAFTER SPACES DO NOT REQUIRE VENTING IF THE ROOFING SPECIFIC INSULATION DESIGN IS USED, PER SECTION [illegible]DEM3.9.6:
   a. IF THE INSULATION IS AIR-**PERMEABLE** AND IT IS INSTALLED DIRECTLY BELOW THE ROOF SHEATHING WITH RIGID BOARD OR SHEET INSULATION WITH A MINIMUM R-5 VALUE INSTALLED ABOVE THE ROOF SHEATHING.
   b. IF THE INSULATION IS AIR-**PERMEABLE** AND IT IS IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING, OR
   c. IF **TWO LAYERS** OF INSULATION ARE INSTALLED BELOW THE ROOF SHEATHING: AN **AIR-IMPERMEABLE** LAYER IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING AND AN ADDITIONAL LAYER **OF AIR-PERMEABLE** INSULATION INSTALLED DIRECTLY UNDER THE AIR-IMPERMEABLE INSULATION.

   DETAILS 86, 87, 88/d0.4 PROVIDE MORE INFORMATION ABOUT THESE ROOF INSULATION ALTERNATIVES.
2. FLOOR DIAPHRAGM SHALL BE 23/32" APA STURD-I-FLOOR, EXPOSURE 1, 40/20, TONGUE & GROOVE WITH 10d COMMON NAILS @ 6" OC AT BOUNDARY (BN) & PANEL EDGE NAILING (EN) AND 12" OC AT INTERMEDIATE FRAMING MEMBERS (FN).
3. ROOF DIAPHRAGM SHALL BE 15/32" APA RATED SHEATHING (MIN), EXPOSURE 1, 24/0 MAXIMUM SPAN RATING WITH 8d COMMON NAILS @ 6" OC AT BOUNDARY (BN) & PANEL EDGE NAILING (EN) AND 12" OC AT INTERMEDIATE FRAMING MEMBERS (FN).

TRELLIS MEMBERS AND OTHER WEATHER EXPOSED MEMBERS SHALL BE PRESSURE TREATED DOUGLAS FIR (PTDF) OR NATURALLY PEST AND ROT RESISTANT WOOD SPECIES SUCH AS REDWOOD OR CEDAR, TYP,OAE

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

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CITY: ENCINITAS

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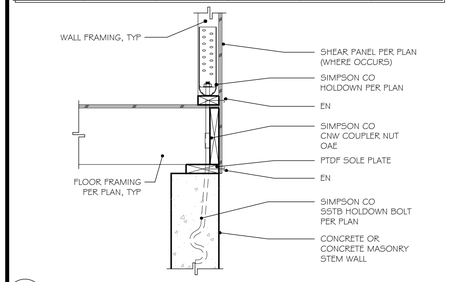
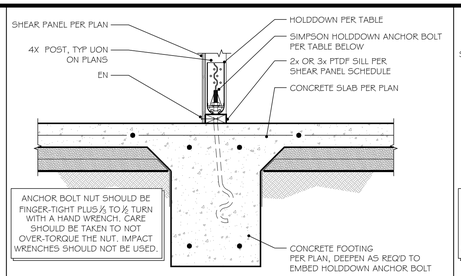
REVERSE ROOF FRAMING PLANS

s2.1

MODEL NO.	ANCHOR BOLT	CONNECTION TO POST	EMBEDMENT	EDGE DISTANCE	MIN WD MEMBER THICKNESS
HDU2	⅝" (SSTB16)	6-SDS ¼"X2 ½"	12 ⅜"	1 ¾"	3"
HDU4	⅝" (SSTB20)	10-SDS ¼"X2 ½"	16 ⅜"	1 ¾"	3"
HDU5	⅝" (SSTB24)	14-SDS ¼"X2 ½"	20 ⅜"	1 ¾"	3"
HDU8	⅞" (SSTB28)	20-SDS ¼"X2 ½"	24 ⅛"	1 ¾"	3"
HDU11	1" (5B1x30)	30-SDS ¼"X2 ½"	24"	1 ¾"	5 ½"
HDU14	1" (5B1x30)	36-SDS ¼"X2 ½"	24"	1 ¾"	7 ¼"

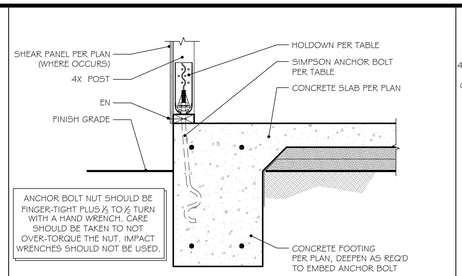


17 HOLDOWN AT STEM WALL FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SW-0096



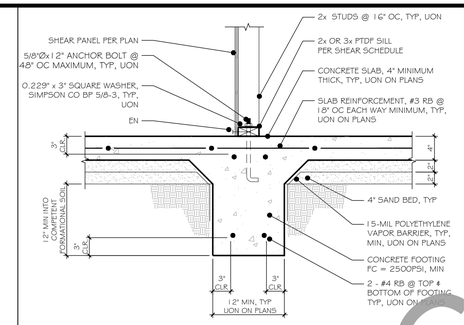
HOLD DOWN	ANCHOR Ø	POST SCREWS	EDGE DISTANCE	EMBED	MIN POST
HDU2	5/8" (SSTB16)	6 SDS ¼" X 2½"	1¾"	12"	4x4
HDU4	5/8" (SSTB20)	10 SDS ¼" X 2½"	1¾"	16"	4x4
HDU5	**5/8" (SSTB24)**	14 SDS ¼" X 2½"	1¾"	20"	4x4
HDU8	**7/8" (SSTB28)**	20 SDS ¼" X 2½"	1¾"	24"	4x4
HDU11	**1" (S81X30)**	30 SDS ¼" X 2½"	1¾"	24"	4X6
HDU14	**1" (S81X30)**	36 SDS ¼" X 2½"	1¾"	24"	4X6

13 HOLDOWN - INTERIOR FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-ANC-017

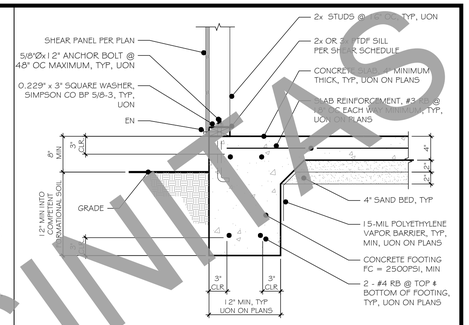


HOLD DOWN	ANCHOR Ø	POST SCREWS	EDGE DISTANCE	EMBED	MIN POST
HDU2	5/8" (SSTB16)	6 SDS ¼" X 2½"	1¾"	12"	4x4
HDU4	5/8" (SSTB20)	10 SDS ¼" X 2½"	1¾"	16"	4x4
HDU5	5/8" (SSTB24)	14 SDS ¼" X 2½"	1¾"	20"	4x4
HDU8	7/8" (SSTB28)	20 SDS ¼" X 2½"	1¾"	24"	4x4
HDU11	1" (S81X30)	30 SDS ¼" X 2½"	1¾"	24"	4X6
HDU14	1" (S81X30)	36 SDS ¼" X 2½"	1¾"	24"	4X6

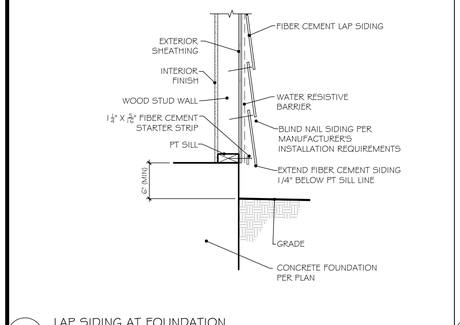
9 HOLDOWN - PERIMETER FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-ANC-013



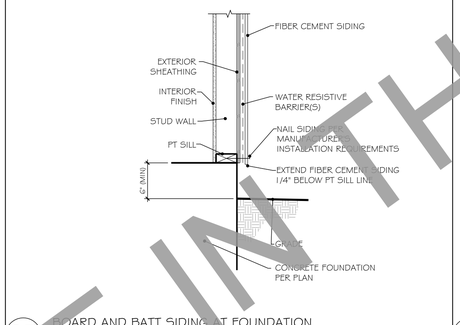
5 SLAB ON GRADE ONE STORY INTERIOR FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-INT-014



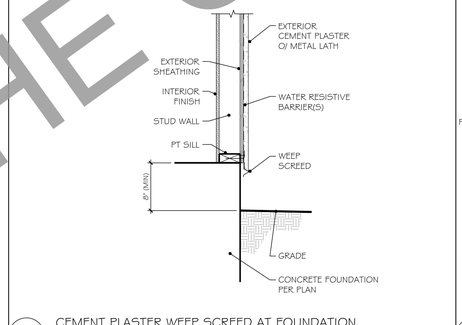
1 SLAB ON GRADE ONE STORY PERIMETER FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-PTR-025



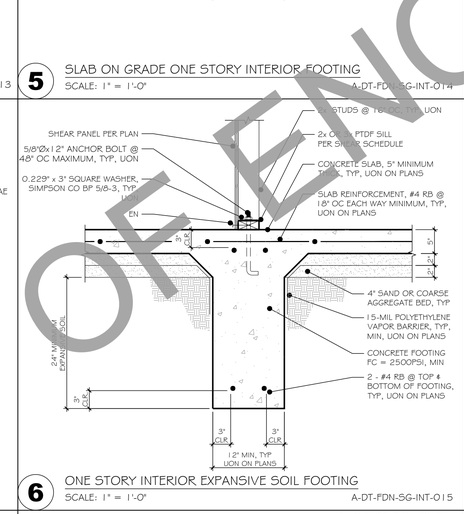
19 LAP SIDING AT FOUNDATION
SCALE: 1" = 1'-0" A-DT-FIN-FCS-LS-0001



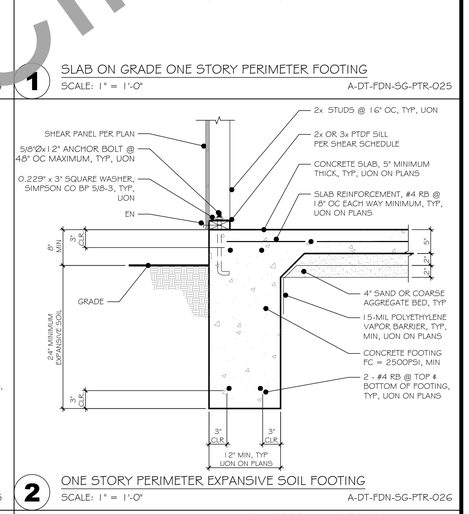
15 BOARD AND BATT SIDING AT FOUNDATION
SCALE: 1" = 1'-0" A-DT-FIN-FCS-BB-0001



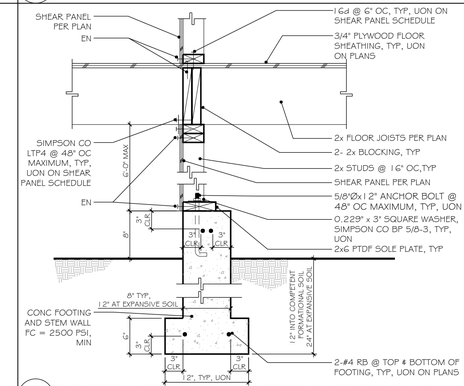
11 CEMENT PLASTER WEEP SCREED AT FOUNDATION
SCALE: 1" = 1'-0" A-DT-FIN-PL-0001



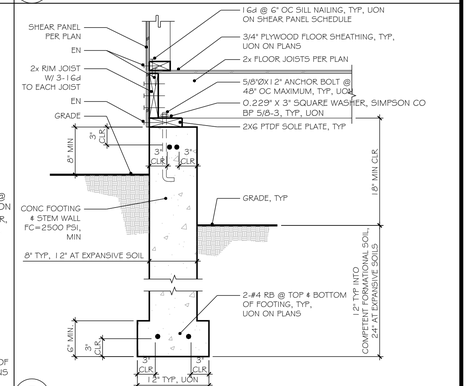
6 ONE STORY INTERIOR EXPANSIVE SOIL FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-INT-015



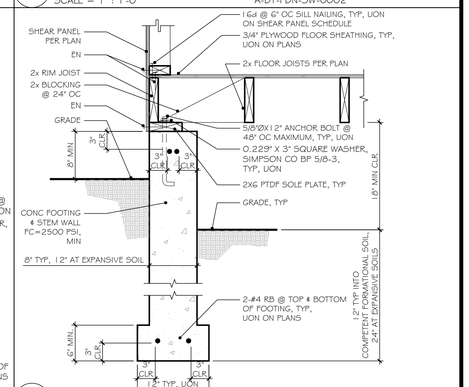
2 ONE STORY PERIMETER EXPANSIVE SOIL FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-PTR-026



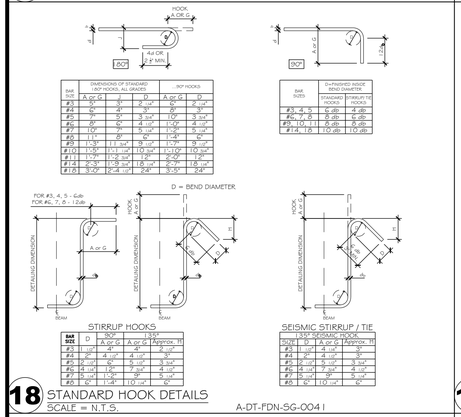
3 ONE STORY EXTERIOR STEM WALL FOOTING-PERPENDICULAR
SCALE = 1" : 1'-0" A-DT-FDN-SW-0002



7 ONE-STORY INTERIOR STEM WALL FOOTING - PERPENDICULAR
SCALE = 1" : 1'-0" A-DT-FDN-SW-0073



4 ONE STORY EXTERIOR STEM WALL FOOTING-PARALLEL
SCALE = 1" : 1'-0" A-DT-FDN-SW-0135



18 STANDARD HOOK DETAILS
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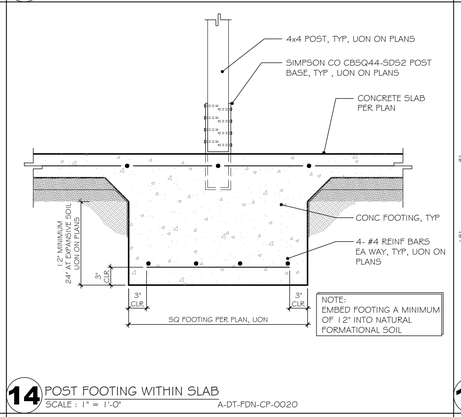
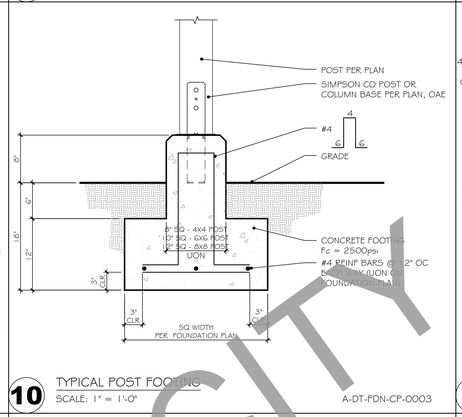
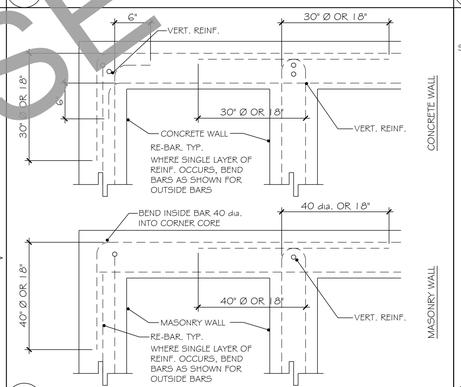


14 POST FOOTING WITHIN SLAB
SCALE : 1" = 1'-0" A-DT-FDN-CP-0020

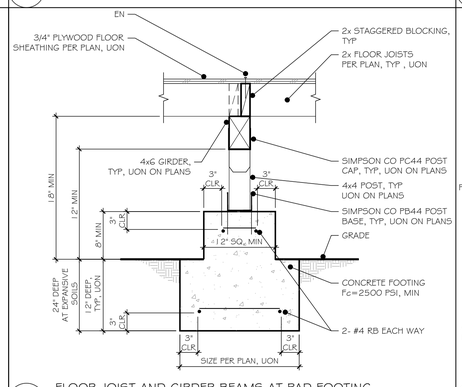


10 TYPICAL POST FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-CP-0003

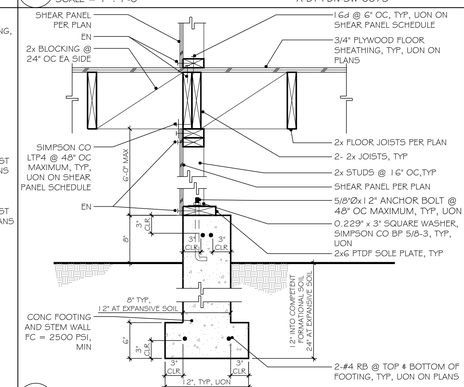
20 SILL PLATE ANCHOR BOLTING
SCALE: 1" = 1'-0" A-DT-FDN-SG-ANC-002



16 TYPICAL CONCRETE / MASONRY WALL REINFORCEMENT
SCALE = 1" : 1'-0" A-DT-FDN-SW-0021



12 FLOOR JOIST AND GIRDER BEAMS AT PAD FOOTING
SCALE: 1" = 1'-0" A-DT-FDN-SW-0133



8 ONE-STORY INTERIOR STEM WALL FOOTING - PARALLEL
SCALE = 1" : 1'-0" A-DT-FDN-SW-0134

4 ONE STORY EXTERIOR STEM WALL FOOTING-PARALLEL
SCALE = 1" : 1'-0" A-DT-FDN-SW-0135

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

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PRADU

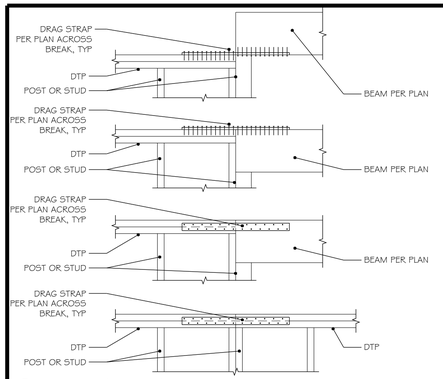
CITY: ENCINITAS

___/___/_____

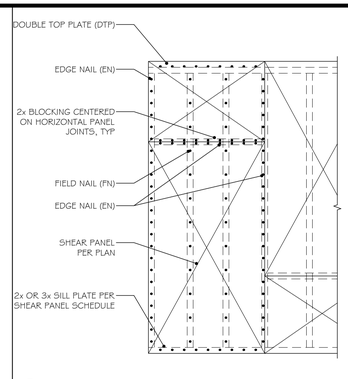
JOB: 202241R

DETAILS

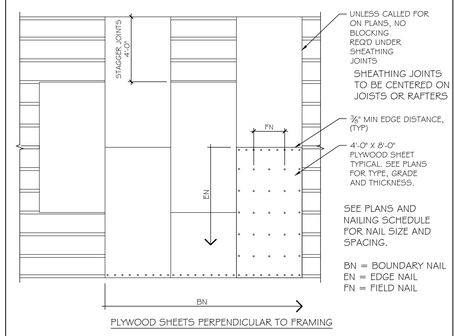
d0.0



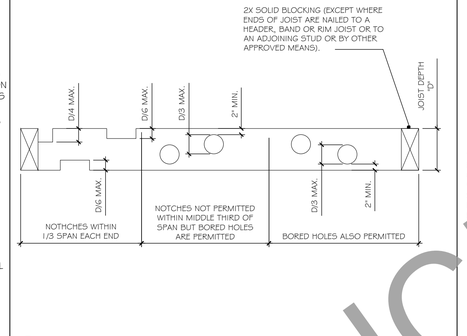
37 DRAG STRAP AT TOP PLATE TO BEAM OR TOP PLATE
SCALE: 3/4" = 1'-0" A-DT-FMG-WF-0013



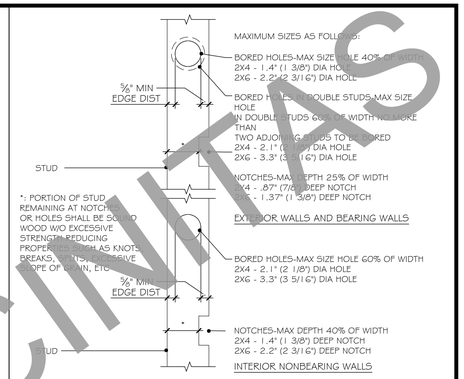
33 TYPICAL SHEAR PANEL
SCALE : NTS A-DT-FMG-WF-0018



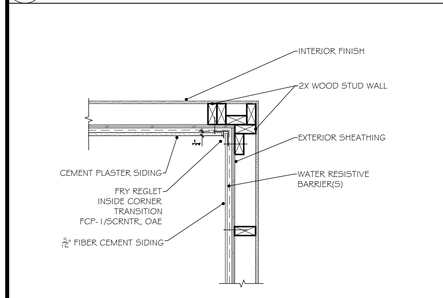
29 WOOD ROOF AND FLOOR SHEATHING LAYOUT
SCALE: 1" = 1'-0" A-DT-FMG-FF-0002



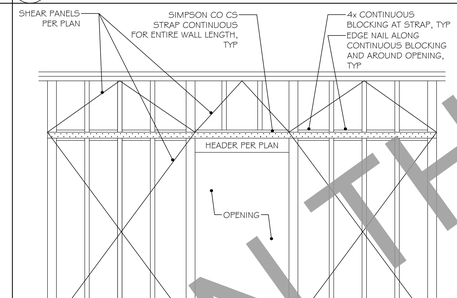
25 JOIST CUTTING, BORING AND NOTCHING
SCALE = N.T.S. A-DT-FMG-FF-0001



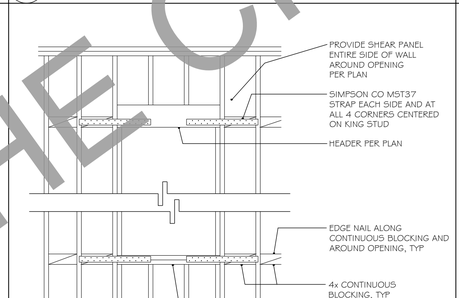
21 STUD CUTTING, BORING AND NOTCHING
SCALE = NTS A-DT-FMG-WF-0004



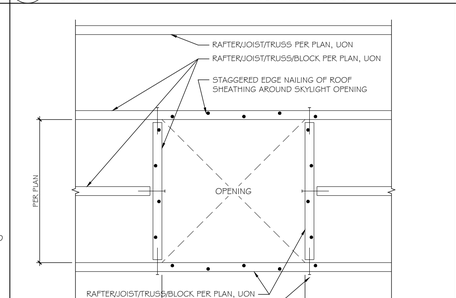
39 SIDING TO PLASTER AT INSIDE CORNER
SCALE: 1" = 1'-0" A-DT-FIN-FCS-BB-0004



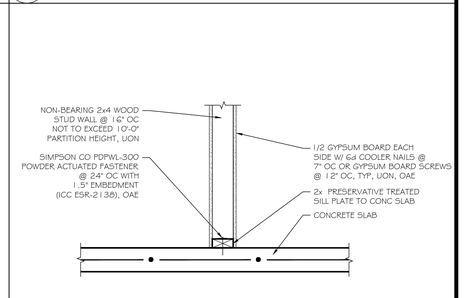
35 SHEAR WALL DETAIL
SCALE : NTS A-DT-FMG-WF-0020



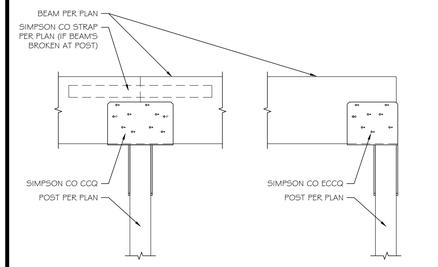
31 OPENING BLOCKING AND STRAPPING IN SHEAR PANEL
SCALE = 1/2" = 1'-0" A-DT-FMG-WF-0009



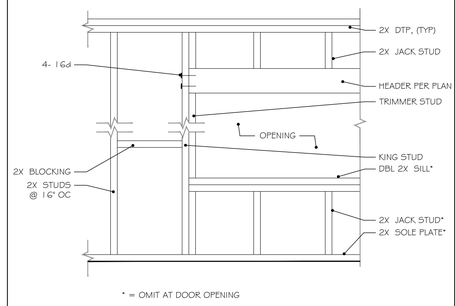
27 DIAPHRAGM OPENING AT SKYLIGHT
SCALE: 1" = 1'-0" A-DT-FEN-SL-0007



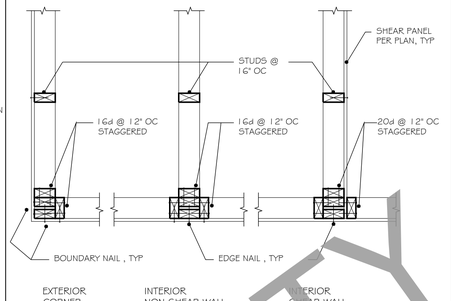
23 NON-BEARING INTERIOR STUD WALL TO CONCRETE SLAB
SCALE: 1" = 1'-0" A-DT-FMG-WF-COM-005



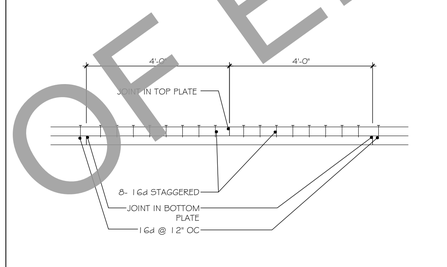
38 POST TO BEAM WITH CCQ/ECCQ
SCALE: 1" = 1'-0" A-DT-FMG-PB-0007



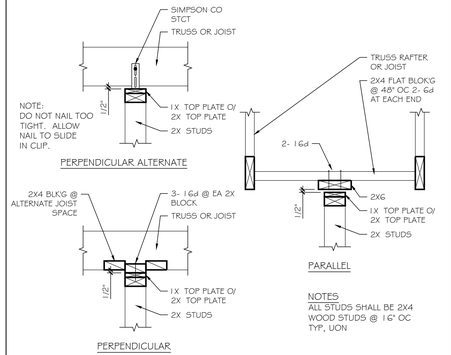
34 FRAMING FOR ROUGH WINDOW OR DOOR OPENING
SCALE: 1½" = 1'-0" A-DT-FMG-WF-0006



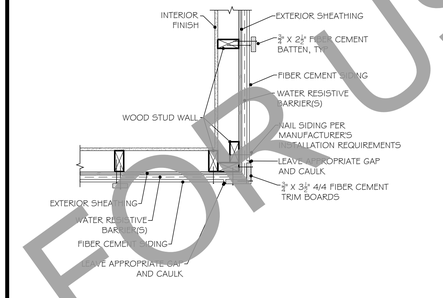
30 STUD WALL INTERSECTION
SCALE: 1" = 1'-0" A-DT-FMG-WF-0005



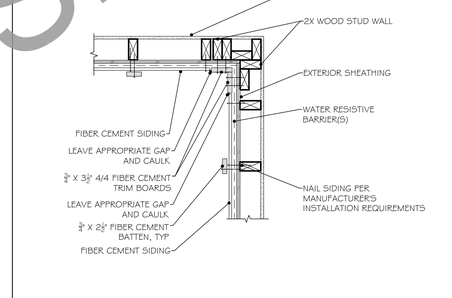
26 DOUBLE TOP-PLATE SPLICE
SCALE : NTS A-DT-FMG-WF-0019



22 NON-BEARING/NON-SHEAR PARTITIONS AT TOP
SCALE: 1" = 1'-0" A-DT-FMG-WF-0008

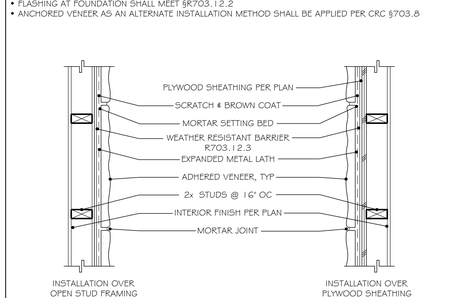


40 SIDING AT OUTSIDE CORNER
SCALE: 1" = 1'-0" A-DT-FIN-FCS-BB-0002

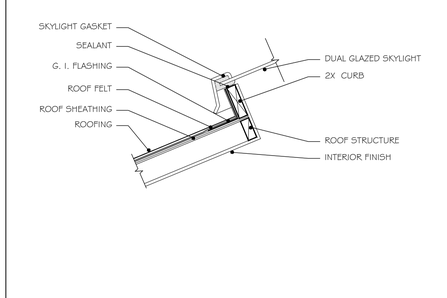


36 SIDING AT INSIDE CORNER
SCALE: 1" = 1'-0" A-DT-FIN-FCS-BB-0003

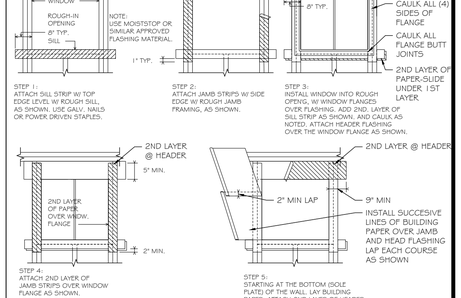
NOTES
- SIMULATED BRICK OR STONE VENEER SHALL BE MANUFACTURED BY ELDORADO STONE, UON.
- ADHERED SIMULATED BRICK OR STONE VENEER INSTALLATION SHALL COMPLY WITH CRC §703.12, CBC §1404.10, ARTICLE 3.3C OF TMS 602 & ICC-ES ESR #1215, OAE
- CLEARANCES PROVIDED SHALL MEET §R703.12.1.
- FLASHING AT FOUNDATION SHALL MEET §R703.12.2
- ANCHORED VENEER AS AN ALTERNATE INSTALLATION METHOD SHALL BE APPLIED PER CRC §703.8



32 ADHERED SIMULATED BRICK OR STONE VENEER AT STUD WALL
SCALE: 1" = 1'-0" A-DT-FMG-WF-0026



28 CURB MOUNTED SKYLIGHT AT SLOPED ROOF
SCALE: 1" = 1'-0" A-DT-FEN-SL-0001



24 WINDOW FLASHING
SCALE: 1/2" = 1'-0" A-DT-FEN-WD-0002

FOR USE IN THE CITY OF ENCINITAS

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JOB: 202241R

DETAILS

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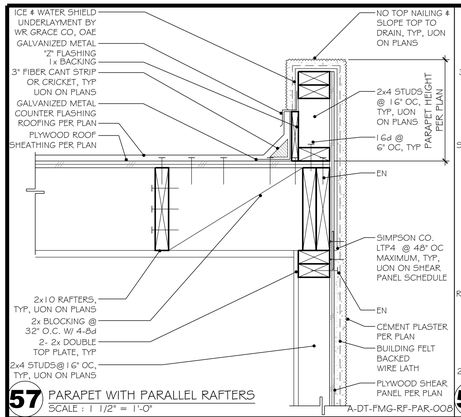
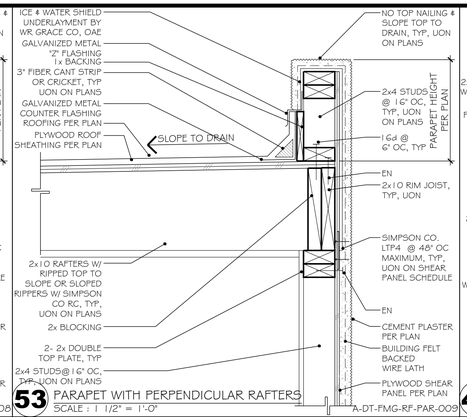
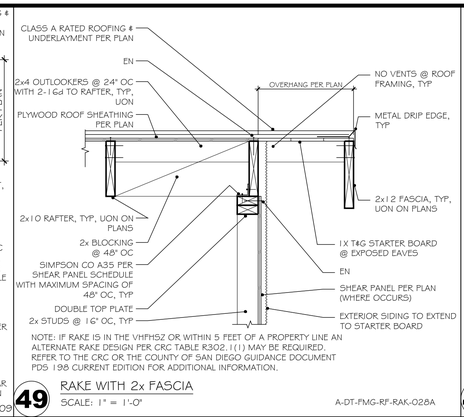


57 PARAPET WITH PARALLEL RAFTERS
SCALE : 1 1/2" = 1'-0"
A-DT-FMG-RF-PAR-008

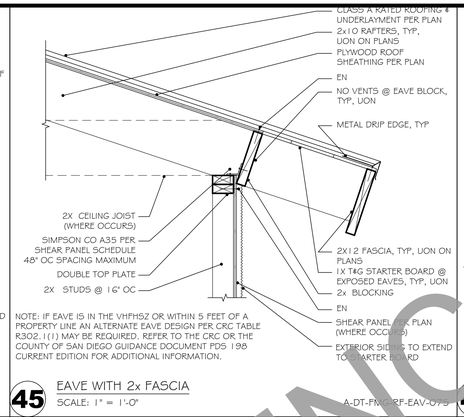


53 PARAPET WITH PERPENDICULAR RAFTERS
SCALE : 1 1/2" = 1'-0"
A-DT-FMG-RF-PAR-009



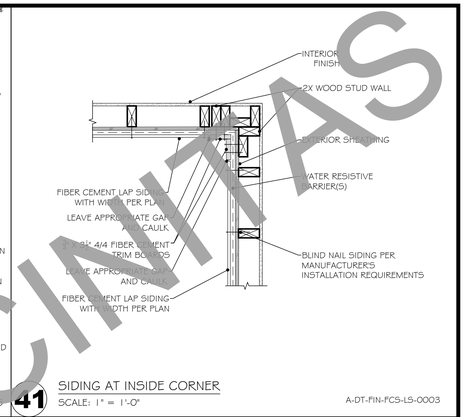
NOTE: IF EAVE IS IN THE VHFHSZ OR WITHIN 5 FEET OF A PROPERTY LINE AN ALTERNATE RAKE DESIGN PER CRC TABLE R302.1(1) MAY BE REQUIRED. REFER TO THE CRC OR THE COUNTY OF SAN DIEGO GUIDANCE DOCUMENT PDS 196 CURRENT EDITION FOR ADDITIONAL INFORMATION.

49 RAKE WITH 2x FASCIA
SCALE: 1" = 1'-0"
A-DT-FMG-RF-RAK-028A

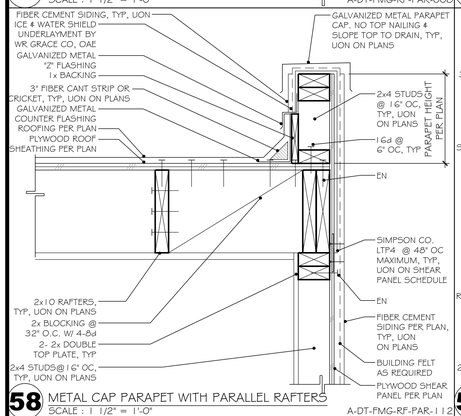


NOTE: IF EAVE IS IN THE VHFHSZ OR WITHIN 5 FEET OF A PROPERTY LINE AN ALTERNATE EAVE DESIGN PER CRC TABLE R302.1(1) MAY BE REQUIRED. REFER TO THE CRC OR THE COUNTY OF SAN DIEGO GUIDANCE DOCUMENT PDS 196 CURRENT EDITION FOR ADDITIONAL INFORMATION.

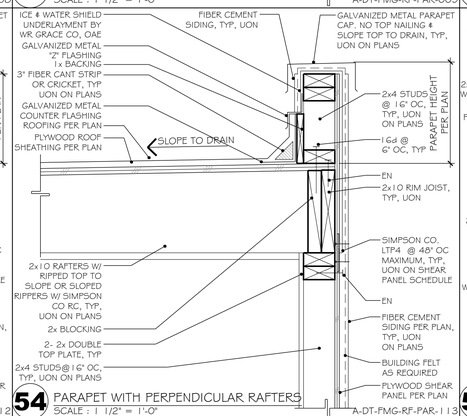
45 EAVE WITH 2x FASCIA
SCALE: 1" = 1'-0"
A-DT-FMG-RF-EAV-075



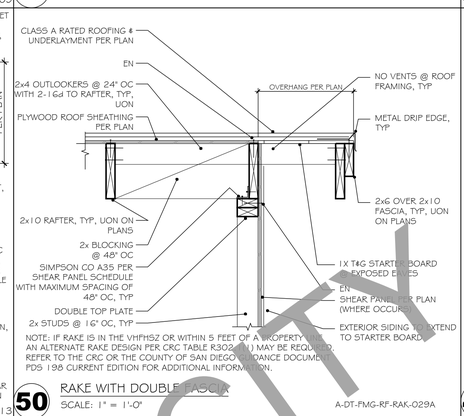
41 SIDING AT INSIDE CORNER
SCALE: 1" = 1'-0"
A-DT-FIN-FCS-LS-0003



58 METAL CAP PARAPET WITH PARALLEL RAFTERS
SCALE : 1 1/2" = 1'-0"
A-DT-FMG-RF-PAR-112

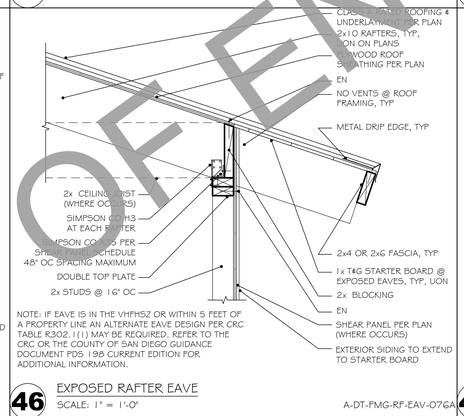


54 PARAPET WITH PERPENDICULAR RAFTERS
SCALE : 1 1/2" = 1'-0"
A-DT-FMG-RF-PAR-113



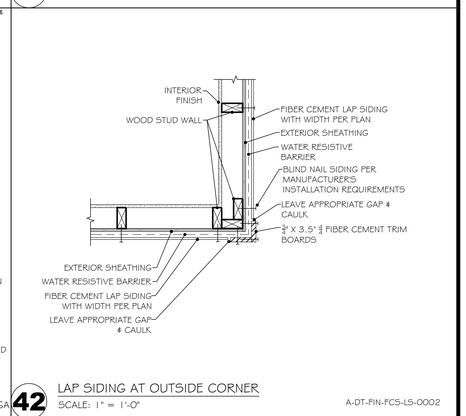
NOTE: IF RAKE IS IN THE VHFHSZ OR WITHIN 5 FEET OF A PROPERTY LINE AN ALTERNATE RAKE DESIGN PER CRC TABLE R302.1(1) MAY BE REQUIRED. REFER TO THE CRC OR THE COUNTY OF SAN DIEGO GUIDANCE DOCUMENT PDS 196 CURRENT EDITION FOR ADDITIONAL INFORMATION.

50 RAKE WITH DOUBLE FASCIA
SCALE: 1" = 1'-0"
A-DT-FMG-RF-RAK-029A

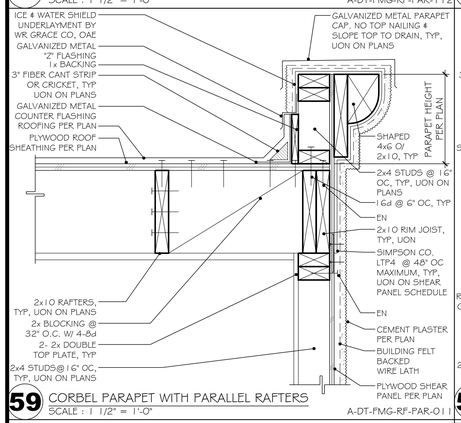


NOTE: IF EAVE IS IN THE VHFHSZ OR WITHIN 5 FEET OF A PROPERTY LINE AN ALTERNATE EAVE DESIGN PER CRC TABLE R302.1(1) MAY BE REQUIRED. REFER TO THE CRC OR THE COUNTY OF SAN DIEGO GUIDANCE DOCUMENT PDS 196 CURRENT EDITION FOR ADDITIONAL INFORMATION.

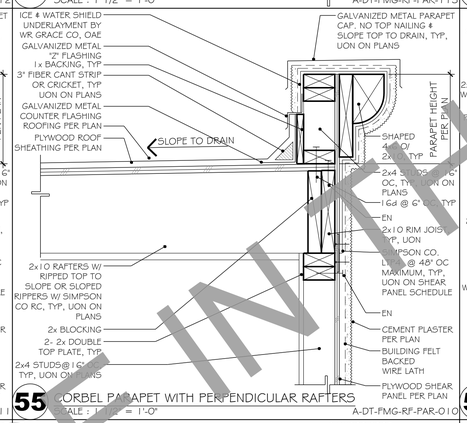
46 EXPOSED RAFTER EAVE
SCALE: 1" = 1'-0"
A-DT-FMG-RF-EAV-076A



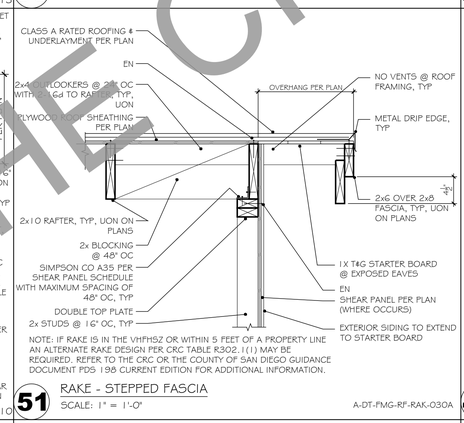
42 LAP SIDING AT OUTSIDE CORNER
SCALE: 1" = 1'-0"
A-DT-FIN-FCS-LS-0002



59 CORBEL PARAPET WITH PARALLEL RAFTERS
SCALE : 1 1/2" = 1'-0"
A-DT-FMG-RF-PAR-011

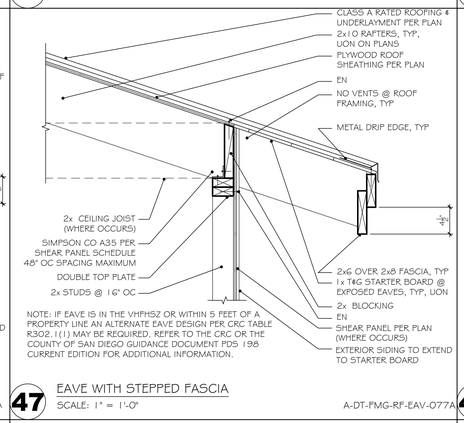


55 CORBEL PARAPET WITH PERPENDICULAR RAFTERS
SCALE : 1 1/2" = 1'-0"
A-DT-FMG-RF-PAR-010

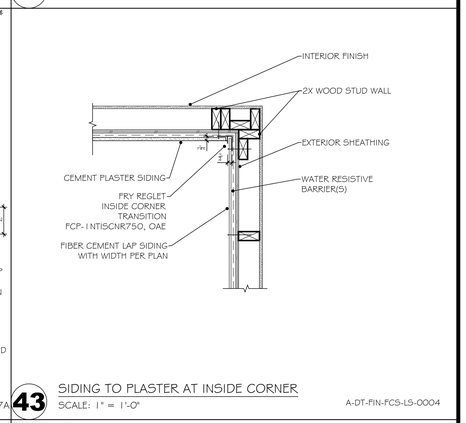


NOTE: IF RAKE IS IN THE VHFHSZ OR WITHIN 5 FEET OF A PROPERTY LINE AN ALTERNATE RAKE DESIGN PER CRC TABLE R302.1(1) MAY BE REQUIRED. REFER TO THE CRC OR THE COUNTY OF SAN DIEGO GUIDANCE DOCUMENT PDS 196 CURRENT EDITION FOR ADDITIONAL INFORMATION.

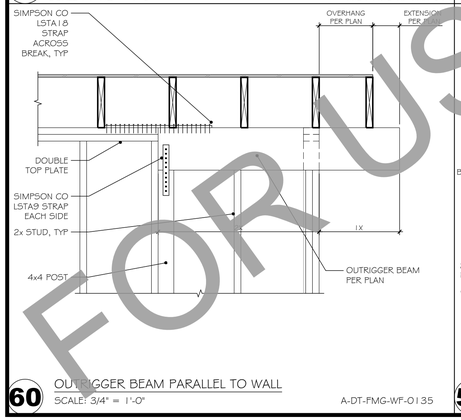
51 RAKE - STEPPED FASCIA
SCALE: 1" = 1'-0"
A-DT-FMG-RF-RAK-030A



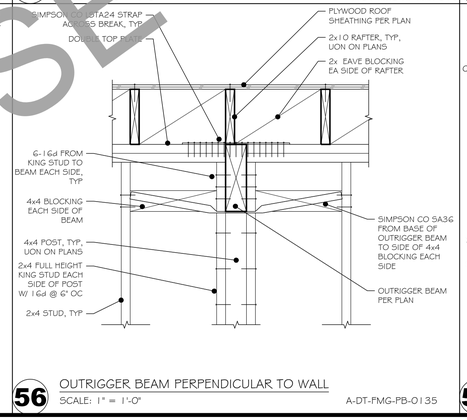
47 EAVE WITH STEPPED FASCIA
SCALE: 1" = 1'-0"
A-DT-FMG-RF-EAV-077A



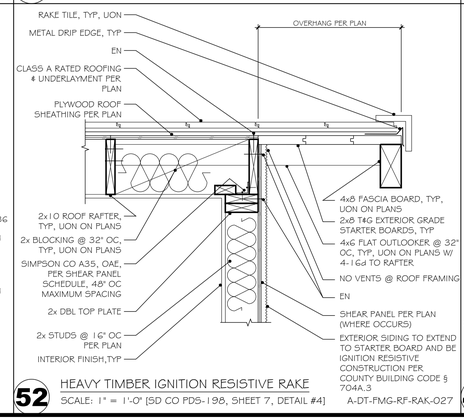
43 SIDING TO PLASTER AT INSIDE CORNER
SCALE: 1" = 1'-0"
A-DT-FIN-FCS-LS-0004



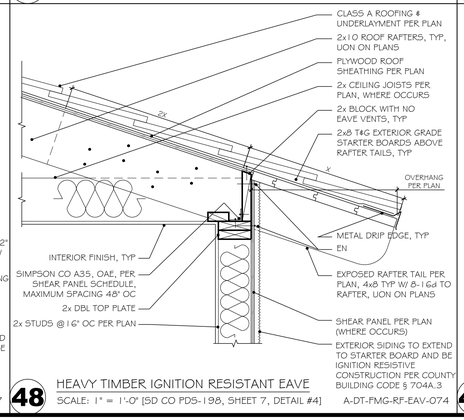
60 OUTRIGGER BEAM PARALLEL TO WALL
SCALE: 3/4" = 1'-0"
A-DT-FMG-WF-013S



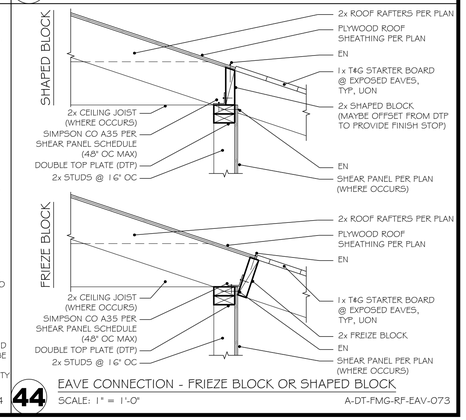
56 OUTRIGGER BEAM PERPENDICULAR TO WALL
SCALE: 1" = 1'-0"
A-DT-FMG-PB-013S



52 HEAVY TIMBER IGNITION RESISTIVE RAKE
SCALE: 1" = 1'-0" [SD CO PDS-196, SHEET 7, DETAIL #4]
A-DT-FMG-RF-RAK-027



48 HEAVY TIMBER IGNITION RESISTANT EAVE
SCALE: 1" = 1'-0" [SD CO PDS-196, SHEET 7, DETAIL #4]
A-DT-FMG-RF-EAV-074



44 EAVE CONNECTION - FRIEZE BLOCK OR SHAPED BLOCK
SCALE: 1" = 1'-0"
A-DT-FMG-RF-EAV-073

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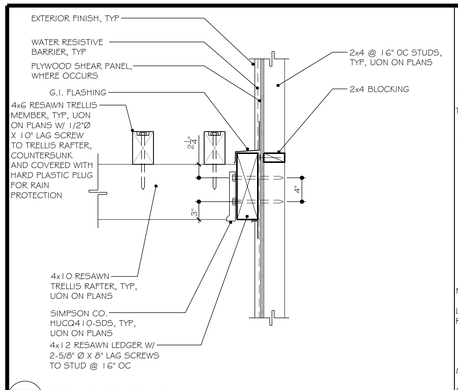
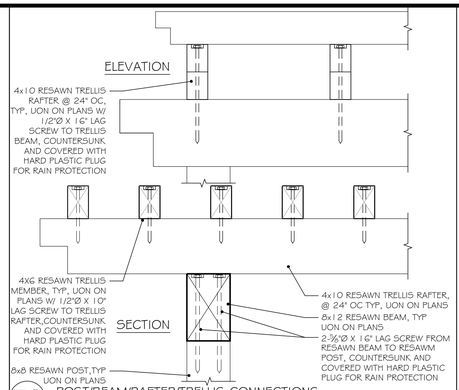
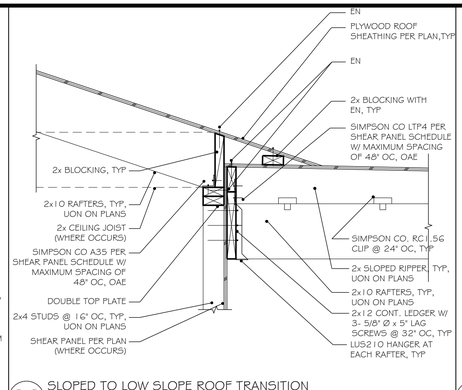


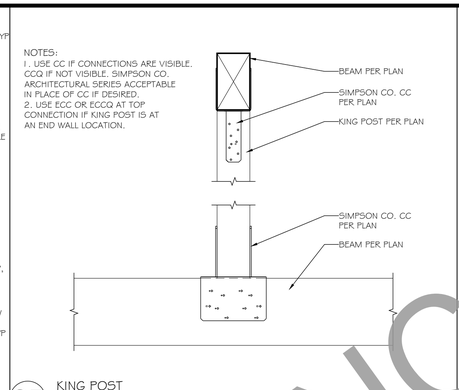
77 TRELLIS LEDGER AT WALL
SCALE : 1" = 1'-0" A-DT-FMG-RF-TRL-055



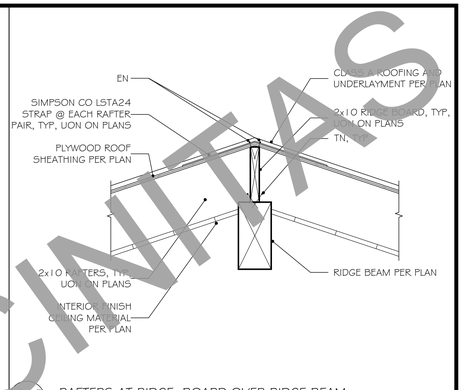
73 POST/BEAM/RAFTER/TRELLIS CONNECTIONS
SCALE: 1" = 1'-0" A-DT-FMG-RF-TRL-054



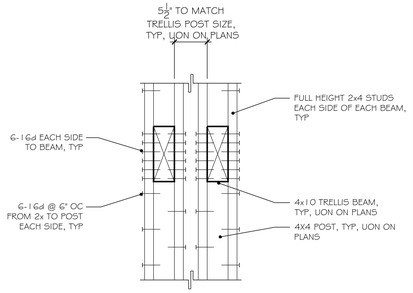
69 SLOPED TO LOW SLOPE ROOF TRANSITION
SCALE: 1" = 1'-0" A-DT-FMG-RF-0332



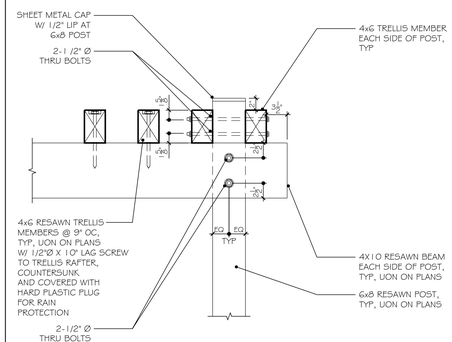
65 KING POST
SCALE: 1" = 1'-0" A-DT-FMG-PB-0008



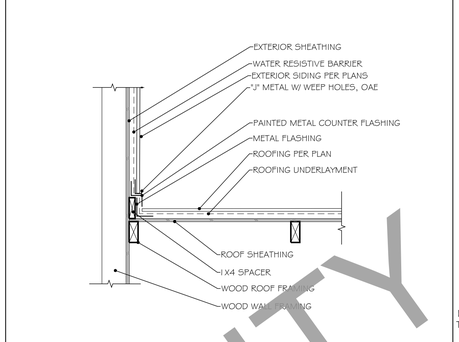
61 RAFTERS AT RIDGE BOARD OVER RIDGE BEAM
SCALE : 1" = 1'-0" A-DT-FMG-RF-RDG-003



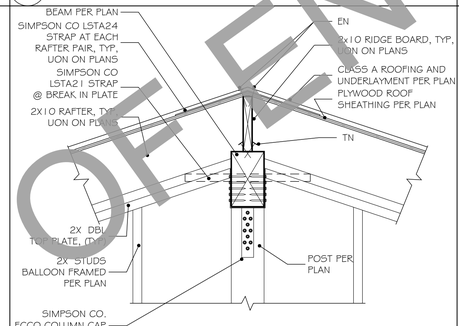
78 TRELLIS BEAMS TO STUD WALL
SCALE : 1" = 1'-0" A-DT-FMG-PB-0034



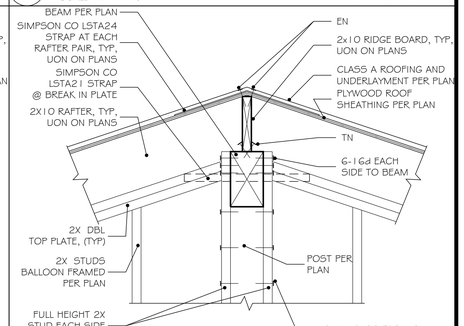
74 TRELLIS AT POST
SCALE: 1" = 1'-0" A-DT-FMG-PB-0136



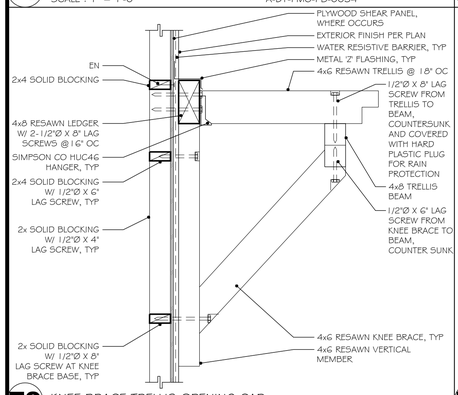
70 ROOF TO WALL - FIBER CEMENT LAP SIDING
SCALE: 1" = 1'-0" A-DT-FIN-WP-0004



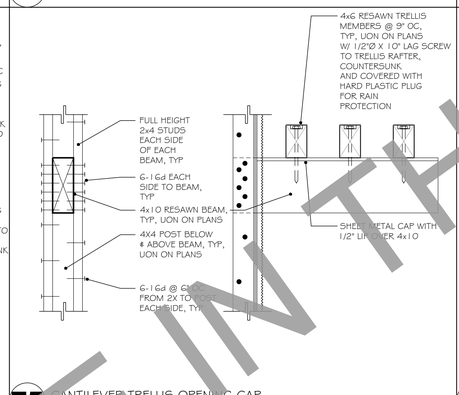
66 RIDGE BOARD & BEAM AT WALL POST W/ HARDWARE
SCALE : 1" = 1'-0" A-DT-FMG-RF-RDG-023



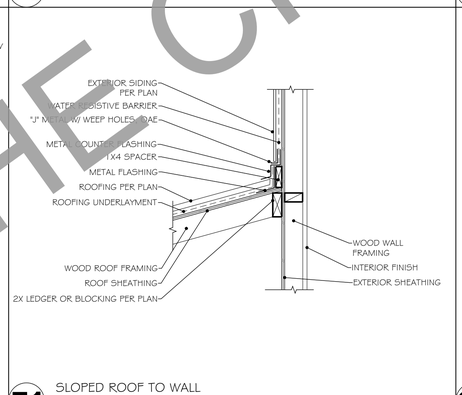
62 RIDGE BOARD & BEAM AT WALL POST W/O HARDWARE
SCALE : 1" = 1'-0" A-DT-FMG-RF-RDG-005B



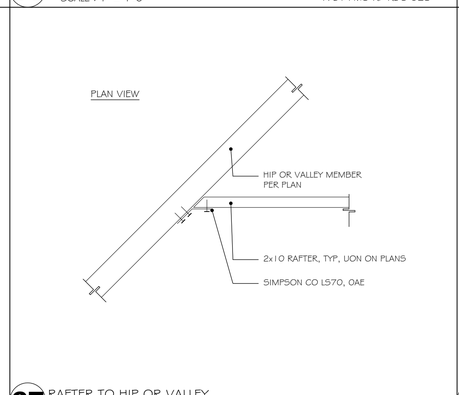
79 KNEE BRACE TRELLIS OPENING CAP
SCALE : 1" = 1'-0" A-DT-FMG-RF-0321



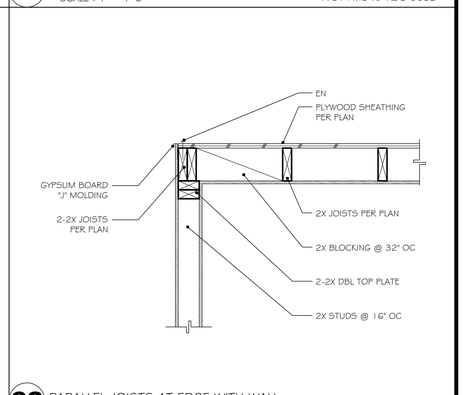
75 CANTILEVER TRELLIS OPENING CAP
SCALE : 1" = 1'-0" A-DT-FMG-PB-0137



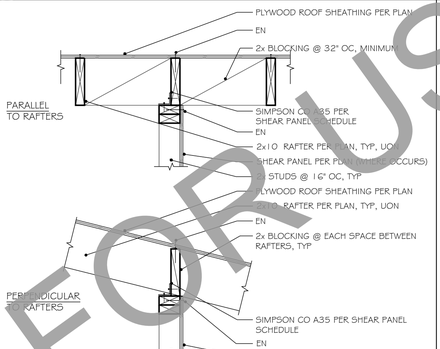
71 SLOPED ROOF TO WALL
SCALE: 1" = 1'-0" A-DT-FIN-WP-0003



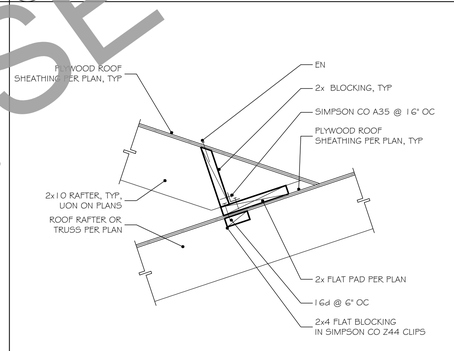
67 RAFTER TO HIP OR VALLEY
SCALE : 1" = 1'-0" A-DT-FMG-RF-0328



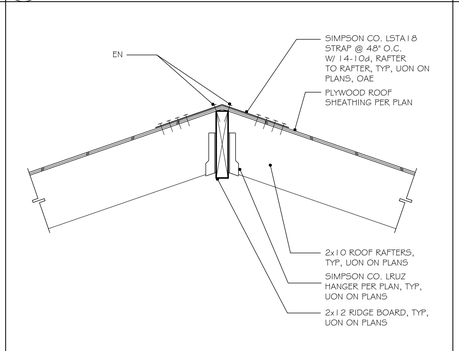
63 PARALLEL JOISTS AT EDGE WITH WALL
SCALE : 1" = 1'-0" A-DT-FMG-FF-0132



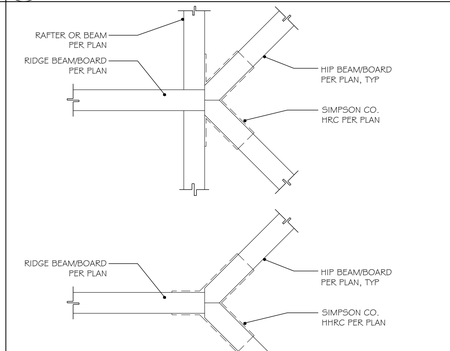
80 INTERIOR SHEAR WALL TO ROOF
SCALE: 1" = 1'-0" A-DT-FMG-RF-WAL-039



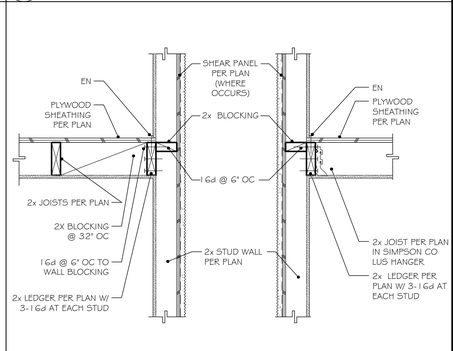
76 CALIFORNIA ROOF FILL CONNECTION
SCALE : 1" = 1'-0" A-DT-FMG-RF-0183



72 RIDGE BOARD DETAIL
SCALE = 1" : 1'-0" A-DT-FMG-RF-0074



68 HIP/RIDGE DETAIL
SCALE : 1" = 1'-0" A-DT-FMG-RF-0017



64 JOISTS TO LEDGER AT WALL
SCALE : 1" = 1'-0" A-DT-FMG-FF-0153

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

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PRADU

CITY: ENCINITAS

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JOB: 202241R

DETAILS

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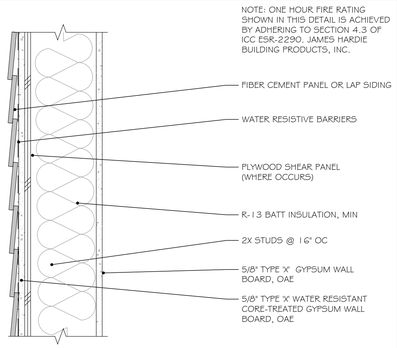
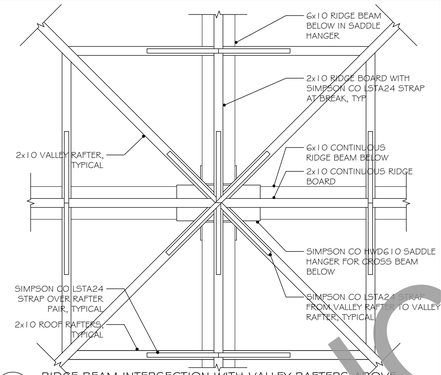
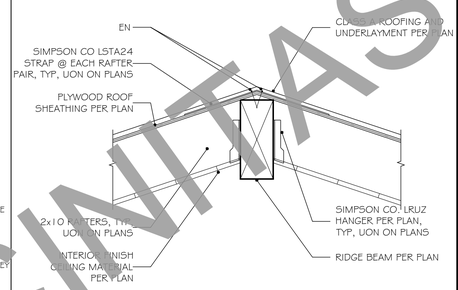


89 EXTERIOR ONE HOUR WALL - FIBER CEMENT SIDING EXTERIOR
SCALE: 2" = 1'-0" A-DT-FIN-FR-WAL-033



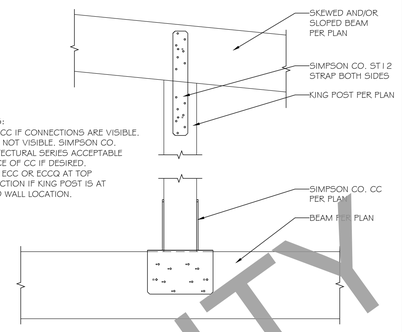
85 RIDGE BEAM INTERSECTION WITH VALLEY RAFTERS ABOVE
SCALE: 1" = 1'-0" A-DT-FMG-RF-RDG-026



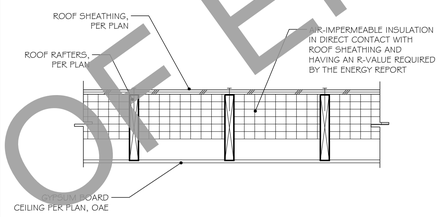
81 RAFTERS TO RIDGE BEAM
SCALE : 1" = 1'-0" A-DT-FMG-RF-RDG-024

98

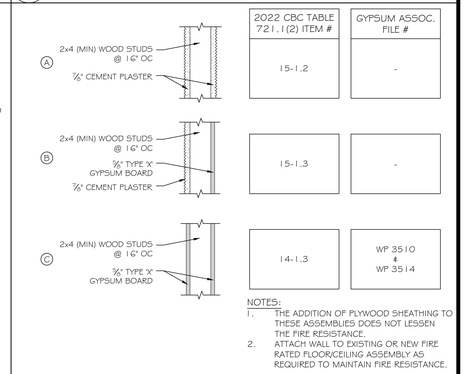
94



90 KING POST WITH SLOPED AND/OR SKEWED TOP BEAM
SCALE: 1" = 1'-0" A-DT-FMG-PB-0142



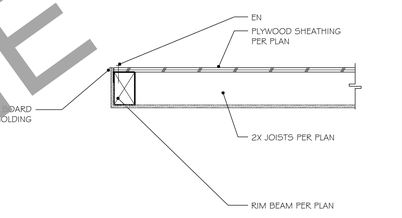
86 INSULATION AT UNVENTED ROOF ASSEMBLY - IMPERMEABLE ONLY
SCALE : 1" = 1'-0" A-DT-FMG-RF-0326



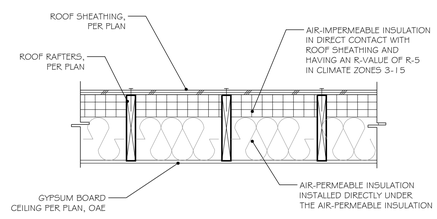
82 FIRE RESISTANCE - ONE HOUR WOOD FRAMED WALLS
SCALE: 1" = 1'-0" A-DT-FIN-FR-WAL-001

99

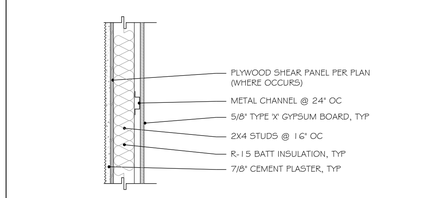
95



91 PERPENDICULAR JOISTS AT EDGE
SCALE : 1" = 1'-0" A-DT-FMG-FF-0154



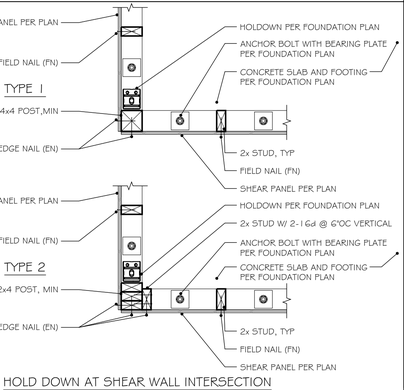
87 INSULATION AT UNVENTED ROOF ASSEMBLY - BOTH TYPES
SCALE : 1" = 1'-0" A-DT-FMG-RF-0325



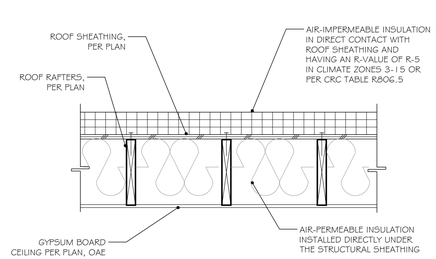
83 A-DT-FIN-FR-WAL-025

100

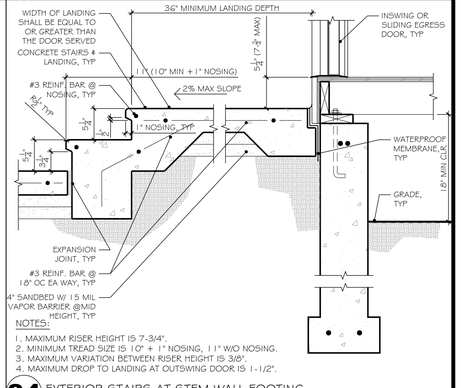
96



92 HOLD DOWN AT SHEAR WALL INTERSECTION
SCALE: 1" = 1'-0" A-DT-FDN-SG-ANC-018



88 INSULATION AT UNVENTED ROOF ASSEMBLY - OVER/UNDER
SCALE : 1" = 1'-0" A-DT-FMG-RF-0327



84 EXTERIOR STAIRS AT STEM WALL FOOTING
SCALE = 1" : 1'-0" A-DT-FDN-SW-0136

FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

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PRADU

CITY: ENCINITAS

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JOB: 202241R

DETAILS

d0.4

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A
Calculation Date/Time: 2023-01-11T08:41:58-08:00

Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SA.1-03.ribd22x

GENERAL INFORMATION					
01	**Project Name**	Encinitas PRADU - Studio A			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Studio A Street			
04	**City**	Encinitas	05	**Standards Version**	2022
06	**Zip code**	92024	07	**Software Version**	EnergyPro 9.0
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**	0.58
18	**Total Cond. Floor Area (ft^2)**	224	19	**Glazing Percentage (%)**	41.50%
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**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A
Calculation Date/Time: 2023-01-11T08:41:58-08:00

Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SA.1-03.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	34.6	49.9	35.2			
Proposed Design						
North Facing	30.6	34.9	28.3	4	15	6.9
East Facing	30.5	33.8	27.7	4.1	16.1	7.5
South Facing	30.1	33.7	27.7	4.5	16.2	7.5
West Facing	30.4	35.2	28.4	4.2	14.7	6.8
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: 1.60 kWdc
- Proposed PV Capacity Scaling: North (1.60 kWdc) East (1.60 kWdc) South (1.60 kWdc) West (1.60 kWdc)

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A
Calculation Date/Time: 2023-01-11T08:41:58-08:00

Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SA.1-03.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	0	0.81	5.88	-0.81	-5.88
Space Cooling	3.55	57.55	1.26	27.99	2.29	29.56
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.44	4.71	58.22	1.88	19.22
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**10.89**	**143.01**	**7.53**	**100.11**	**3.36**	**42.9**
Space Heating	0	0	0.94	6.78	-0.94	-6.78
Space Cooling	3.55	57.55	0.99	23.45	2.56	34.1
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.44	4.77	58.59	1.82	18.85
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**10.89**	**143.01**	**7.45**	**96.84**	**3.44**	**46.17**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A
Calculation Date/Time: 2023-01-11T08:41:58-08:00

Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SA.1-03.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	0	0.56	3.93	-0.56	-3.93
Space Cooling	3.55	57.55	1.05	27.16	2.5	30.39
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.44	4.65	57.56	1.94	19.88
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**10.89**	**143.01**	**7.01**	**96.67**	**3.88**	**46.34**
Space Heating	0	0	0.5	3.55	-0.5	-3.55
Space Cooling	3.55	57.55	1.36	31.95	2.19	25.6
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.44	4.61	57.34	1.98	20.1
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**10.89**	**143.01**	**7.22**	**100.86**	**3.67**	**42.15**

CalCERTS, Inc. HERS PROVIDER
FOR USE IN THE CITY OF ENCINITAS

General Notes

CEA CERTIFIED ENERGY ANALYST

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address

BEAR TECHNOLOGIES CONSULTING, INC.
3431 DON ARTURO DRIVE,
CARLSBAD, CALIFORNIA 92010
(760) 635-2327
wayne@beartechconsulting.com
http://www.beartechconsulting.com

Project Name and Address

ENCINITAS PRADU - STUDIO A ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SA.1-03	T-01
Date: 01/11/2023	
Scale:	

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]	53.48	48.73	4.75	8.88
Net EUI[2]	15.16	10.41	4.75	31.33
East Facing				
Gross EUI[1]	53.48	48.3	5.18	9.69
Net EUI[2]	15.16	9.98	5.18	34.17
South Facing				
Gross EUI[1]	53.48	48.58	4.9	9.16
Net EUI[2]	15.16	10.25	4.91	32.39
West Facing				
Gross EUI[1]	53.48	49.07	4.41	8.25
Net EUI[2]	15.16	10.74	4.42	29.16

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 (%)**
1.6	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

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

- Whole house fan
- Exposed slab floor in conditioned zone
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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

- Indoor air quality ventilation
- Kitchen range hood
- Whole house fan airflow and fan efficacy
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

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**
Encinitas PRADU - Studio A	224	1	1	1	1	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**
ADU Studio A	Conditioned	Ductless Mini-Split1	224	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)**
Front Wall	ADU Studio A	_WALL: 2x4 Exterior	0	Front	128	27	90
Left Wall	ADU Studio A	_WALL: 2x4 Exterior	90	Left	112	8	90
Rear Wall	ADU Studio A	_WALL: 2x4 Exterior	180	Back	128	18	90
Right Wall	ADU Studio A	_WALL: 2x4 Exterior	270	Right	112	40	90

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Area (ft^2)**	**Skylight Area (ft^2)**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Cool Roof**
Roof	ADU Studio A	_ROOF: SLPD. CLG.	0	Front	224	0	4	0.1	0.85	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**
w1	Window	Front Wall	Front	0			1	7	0.58	NFRC	0.65	NFRC	Bug Screen
d1	Window	Front Wall	Front	0			1	20	0.58	NFRC	0.65	NFRC	Bug Screen
w2	Window	Left Wall	Left	90			1	8	0.58	NFRC	0.65	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**
w3	Window	Rear Wall	Back	180			1	18	0.58	NFRC	0.65	NFRC	Bug Screen
d2	Window	Right Wall	Right	270			1	40	0.58	NFRC	0.65	NFRC	Bug Screen

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**
Slab On Grade	ADU Studio A	224	60	none	0	0%	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**
_WALL: 2x4 Exterior	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco
_ROOF: SLPD. CLG.	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 24 in. O. C.	R-30	None / None	0.035	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 Inside Finish: Gypsum Board

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FOR USE BY THE CITY OF ENCINITAS

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Firm Name and Address

BEAR TECHNOLOGIES CONSULTING, INC.
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Project Name and Address

ENCINITAS PRADU - STUDIO A ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SA.1-03	T-02
Date: 01/11/2023	
Scale:	

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
Not 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	AOSmithFPTU50	ADU Studio A	ADU Studio A	ADU Studio A

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
Ductless Mini-Split1	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	VCHP-ductless	1	HSPF	8.5	11800	7080	EERSEER	16.8	11.5	Zonally Controlled	Multi-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	Required	Yes	No	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 1	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

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	22	0.35	Exhaust	No	n/a	No	Yes	

COOLING VENTILATION

01	02	03	04	05	06	07	08	09
Name	Airflow Rate (CFM/ft2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans	CFVCS Type	Exhausts to	HERS Verification
WH Fan 1	0.08	17	0.0588	1	1	Not a CFVCS	Outside	Required

PROJECT NOTES

****
This report is based on the drawings received on 01/03/2023.
****

SCOPE OF WORK: Construct a ADU - Studio (A Elevation).

1) DO NOT USE FOR ACTUAL HEATING/COOLING DESIGN. 2) The Title 24 calculations used for this project are used for the purpose of complying with the current Title 24 code provisions and are intended to be used in order to obtain compliance per Title 24 regulations. They are NOT intended to be used as a substitute for the heating and cooling loads required for the structure(s) that are normally done by a mechanical engineer(s) or HVAC contractor(s) and in NO CIRCUMSTANCES is this to be used in lieu of the normal calculation methods used by a mechnical engineer(s) or HVAC contractor(s). 3) The assembly components found in this document are for modeling purposes only and may not reflect the actual conditions of the walls, roof(s), floor(s), windows and doors of the structure.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Wayne Seward	Documentation Author Signature: Wayne Seward
Company: Bear Technologies Consulting Inc.	Signature Date: 2023-01-11 09:10:06
Address: 3431 Don Arturo Drive	CEA/ HERS Certification Identification (If applicable): R19-04-30011
City/State/Zip: Carlsbad, CA 92010	Phone: 760-635-2327

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: Bart M Smith	Responsible Designer Signature: Bart M Smith
Company: DZN Partners	Date Signed: 2023-01-11 10:42:50
Address: 682 2nd Street	License: C-22557
City/State/Zip: Encinitas, CA 92024	Phone: 760-753-2464

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

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FOR USE IN THE CITY OF ENCINITAS
CalCERTS, Inc. HERS PROVIDER

General Notes

CEA CERTIFIED ENERGY ANALYST
R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address
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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.

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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)1C-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 cauk. 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).

5/6/22

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 controling 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:

5/6/22

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.

5/6/22

FOR USE IN THE STATE OF CALIFORNIA

General Notes

CEA CERTIFIED ENERGY ANALYST

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address

BEAR TECHNOLOGIES CONSULTING, INC.
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Project Name and Address

ENCINITAS PRADU - STUDIO A ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SA.1-03	T-04
Date: 01/11/2023	
Scale:	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio B
Calculation Date/Time: 2023-01-09T11:17:14-08:00

Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SB.1-03.ribd22x

GENERAL INFORMATION					
01	**Project Name**	Encinitas PRADU - Studio B			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Studio A Street			
04	**City**	Encinitas	05	**Standards Version**	2022
06	**Zip code**	92024	07	**Software Version**	EnergyPro 9.0
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**	0.58
18	**Total Cond. Floor Area (ft^2)**	224	19	**Glazing Percentage (%)**	55.80%
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**

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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Calculation Description: Title 24 Analysis
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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	34.6	49.9	35.2			
Proposed Design						
North Facing	30.7	36.5	28.9	3.9	13.4	6.3
East Facing	30.7	35.1	28.2	3.9	14.8	7
South Facing	30.2	34.8	28.1	4.4	15.1	7.1
West Facing	30.5	36.9	29	4.1	13	6.2
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: 1.60 kWdc
- Proposed PV Capacity Scaling: North (1.60 kWdc) East (1.60 kWdc) South (1.60 kWdc) West (1.60 kWdc)

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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Calculation Description: Title 24 Analysis
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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	0	0.77	5.42	-0.77	-5.42
Space Cooling	3.56	57.68	1.41	33.35	2.15	24.33
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.45	4.68	57.94	1.91	19.51
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**10.9**	**143.15**	**7.61**	**104.73**	**3.29**	**38.42**
Space Heating	0	0	1.04	7.39	-1.04	-7.39
Space Cooling	3.56	57.68	1.08	26.8	2.48	30.88
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.45	4.77	58.55	1.82	18.9
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**10.9**	**143.15**	**7.64**	**100.76**	**3.26**	**42.39**

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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	0	0.66	4.63	-0.66	-4.63
Space Cooling	3.56	57.68	1.06	29.46	2.5	28.22
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.45	4.68	57.8	1.91	19.65
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**10.9**	**143.15**	**7.15**	**99.91**	**3.75**	**43.24**
Space Heating	0	0	0.55	3.83	-0.55	-3.83
Space Cooling	3.56	57.68	1.42	36.38	2.14	21.3
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.59	77.45	4.64	57.53	1.95	19.92
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**10.9**	**143.15**	**7.36**	**105.76**	**3.54**	**37.39**

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FOR USE IN THE CITY OF ENCINITAS

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Project	Sheet
23Q1019-SB.1-03	T-01
Date: 01/11/2023	
Scale:	

ENERGY USE INTENSITY

	Standard Design (kBtu/ft² - yr)	Proposed Design (kBtu/ft² - yr)	Compliance Margin (kBtu/ft² - yr)	Margin Percentage
North Facing				
Gross EUI[1]	53.5	49.66	3.84	7.18
Net EUI[2]	15.17	11.34	3.83	25.25
East Facing				
Gross EUI[1]	53.5	49	4.5	8.41
Net EUI[2]	15.17	10.68	4.49	29.6
South Facing				
Gross EUI[1]	53.5	49.23	4.27	7.98
Net EUI[2]	15.17	10.91	4.26	28.08
West Facing				
Gross EUI[1]	53.5	50.06	3.44	6.43
Net EUI[2]	15.17	11.73	3.44	22.68

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 (%)**
1.6	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

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

- Whole house fan
- Exposed slab floor in conditioned zone
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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

- Indoor air quality ventilation
- Kitchen range hood
- Whole house fan airflow and fan efficacy
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft²)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Encinitas PRADU - Studio B	224	1	1	1	1	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft²)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
ADU Studio B	Conditioned	Ductless Mini-Split1	224	8	DHW Sys 1	New

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft²)**	**Window and Door Area (ft2)**	**Tilt (deg)**
Front Wall	ADU Studio B	_WALL: 2x4 Exterior	0	Front	128	31	90
Left Wall	ADU Studio B	_WALL: 2x4 Exterior	90	Left	112	12	90
Rear Wall	ADU Studio B	_WALL: 2x4 Exterior	180	Back	128	30	90
Right Wall	ADU Studio B	_WALL: 2x4 Exterior	270	Right	112	52	90

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Area (ft²)**	**Skylight Area (ft²)**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Cool Roof**
Roof	ADU Studio B	_ROOF: SLPD, CLG.	0	Front	224	0	3	0.1	0.85	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
w5	Window	Front Wall	Front	0			1	4	0.58	NFRC	0.65	NFRC	Bug Screen
w1	Window	Front Wall	Front	0			1	7	0.58	NFRC	0.65	NFRC	Bug Screen
d1	Window	Front Wall	Front	0			1	20	0.58	NFRC	0.65	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 (ft²)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
w6	Window	Left Wall	Left	90			1	4	0.58	NFRC	0.65	NFRC	Bug Screen
w2	Window	Left Wall	Left	90			1	8	0.58	NFRC	0.65	NFRC	Bug Screen
w3	Window	Rear Wall	Back	180			1	18	0.58	NFRC	0.65	NFRC	Bug Screen
w4	Window	Rear Wall	Back	180			1	12	0.58	NFRC	0.65	NFRC	Bug Screen
d2	Window	Right Wall	Right	270			1	40	0.58	NFRC	0.65	NFRC	Bug Screen
w4 2	Window	Right Wall	Right	270			1	12	0.58	NFRC	0.65	NFRC	Bug Screen

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	**Zone**	**Area (ft²)**	**Perimeter (ft)**	**Edge Insul. R-value and Depth**	**Edge Insul. R-value and Depth**	**Carpeted Fraction**	**Heated**
Slab On Grade	ADU Studio B	224	60	none	0	0%	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**
_WALL: 2x4 Exterior	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: All Other Siding

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STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project: 23Q1019-SB.1-03
Date: 01/11/2023
Scale:
Sheet: T-02

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
_ROOF: SLPD. CLG.	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 24 in. O. C.	R-30	None / None	0.035	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 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
Not 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	AOSmithFPTU50	ADU Studio B	ADU Studio B	ADU Studio B

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
Ductless Mini-Split1	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	VCHP-ductless	1	HSPF	8.5	12000	7200	EERSEER	16.8	9.4	Zonally Controlled	Multi-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	Required	Yes	No	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 1	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

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	22	0.35	Exhaust	No	n/a	No	Yes	

COOLING VENTILATION

01	02	03	04	05	06	07	08	09
Name	Airflow Rate (CFM/ft2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans	CFVCS Type	Exhausts to	HERS Verification
WH Fan 1	0.08	17	0.0588	1	1	Not a CFVCS	Outside	Required

PROJECT NOTES

****
This report is based on the drawings received on 01/03/2023.
****

SCOPE OF WORK: Construct a ADU - Studio (B Elevation).

1) DO NOT USE FOR ACTUAL HEATING/COOLING DESIGN. 2) The Title 24 calculations used for this project are used for the purpose of complying with the current Title 24 code provisions and are intended to be used in order to obtain compliance per Title 24 regulations. They are NOT intended to be used as a substitute for the heating and cooling loads required for the structure(s) that are normally done by a mechanical engineer(s) or HVAC contractor(s) and in NO CIRCUMSTANCES is this to be used in lieu of the normal calculation methods used by a mechnical engineer(s) or HVAC contractor(s). 3) The assembly components found in this document are for modeling purposes only and may not reflect the actual conditions of the walls, roof(s), floor(s), windows and doors of the structure.

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http://www.beartechconsulting.com

Project Name and Address

ENCINITAS PRADU - STUDIO B ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SB.1-03	T-03
Date: 01/11/2023	
Scale:	

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 ceil 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 6-16 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.

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§ 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 cons 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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§ 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)1Gii;enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Gii-iv. Airflow must be measured by the installer per §150.0(o)1Giv, and rated for sound per §150.0(o)1Gv. *
§ 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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§ 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 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)-(d).
§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 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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§ 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.

5/6/22

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio B
Calculation Date/Time: 2023-01-09T11:17:14-08:00 **(Page 13 of 13)**
Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SB.1-03.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Wayne Seward	Documentation Author Signature: *Wayne Seward*
Company: Bear Technologies Consulting Inc.	Signature Date: 2023-01-11 09:13:09
Address: 3431 Don Arturo Drive	CEA/ HERS Certification Identification (If applicable): R19-04-30011
City/State/Zip: Carlsbad, CA 92010	Phone: 760-635-2327

CABEC California Association of Building Energy Consultants CERTIFIED ENERGY ANALYST

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: Bart M Smith	Responsible Designer Signature: *Bart M Smith*
Company: DZN Partners	Date Signed: 2023-01-11 10:42:50
Address: 682 2nd Street	License: C-22557
City/State/Zip: Encinitas, CA 92024	Phone: 760-753-2464

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

Easy to Verify at CalCERTS.com

Registration Number: 223-P010003962A-000-000-0000000-0000
Registration Date/Time: 2023-01-11 10:42:50
HERS Provider: CalCERTS inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901
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CITY OF ENCINITAS

General Notes

CEA CERTIFIED ENERGY ANALYST

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address

BEAR TECHNOLOGIES CONSULTING, INC.
3431 DON ARTURO DRIVE,
CARLSBAD, CALIFORNIA 92010
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Project Name and Address

ENCINITAS PRADU - STUDIO B ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SB.1-03	T-04
Date: 01/11/2023	
Scale:	

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio C
Calculation Description: Title 24 Analysis
Calculation Date/Time: 2023-01-09T09:50:18-08:00
Input File Name: 23Q1019-SC.1-03.ribd22x

GENERAL INFORMATION					
01	**Project Name**	Encinitas PRADU - Studio C			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	Studio A Street			
04	**City**	Encinitas	05	**Standards Version**	2022
06	**Zip code**	92024	07	**Software Version**	EnergyPro 9.0
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**	0.58
18	**Total Cond. Floor Area (ft^2)**	224	19	**Glazing Percentage (%)**	67.00%
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**

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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	34.3	49.2	35.1			
Proposed Design						
North Facing	31.2	38.2	29.7	3.1	11	5.4
East Facing	30.9	36.7	29	3.4	12.5	6.1
South Facing	30.7	37.5	29.4	3.6	11.7	5.7
West Facing	30.9	38.9	30	3.4	10.3	5.1
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: 1.59 kWdc
- Proposed PV Capacity Scaling: North (1.59 kWdc) East (1.59 kWdc) South (1.59 kWdc) West (1.59 kWdc)

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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	0	1.15	8.12	-1.15	-8.12
Space Cooling	3.36	55.93	1.43	35.29	1.93	20.64
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.61	77.65	4.75	58.41	1.86	19.24
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**10.72**	**141.6**	**8.08**	**109.84**	**2.64**	**31.76**
Space Heating	0	0	1.2	8.48	-1.2	-8.48
Space Cooling	3.36	55.93	1.13	30.44	2.23	25.49
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.61	77.65	4.77	58.51	1.84	19.14
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**10.72**	**141.6**	**7.85**	**105.45**	**2.87**	**36.15**

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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	0	0.86	5.99	-0.86	-5.99
Space Cooling	3.36	55.93	1.29	36.02	2.07	19.91
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.61	77.65	4.71	57.91	1.9	19.74
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**10.72**	**141.6**	**7.61**	**107.94**	**3.11**	**33.66**
Space Heating	0	0	0.83	5.82	-0.83	-5.82
Space Cooling	3.36	55.93	1.56	40.19	1.8	15.74
IAQ Ventilation	0.75	8.02	0.75	8.02	0	0
Water Heating	6.61	77.65	4.69	57.84	1.92	19.81
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**10.72**	**141.6**	**7.83**	**111.87**	**2.89**	**29.73**

CalCERTS, Inc. HERS PROVIDER
FOR USE IN THE CITY OF ENCINITAS

General Notes

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address

BEAR TECHNOLOGIES CONSULTING, INC.
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Project Name and Address

ENCINITAS PRADU - STUDIO C ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SC.1-03	T-01
Date: 01/11/2023	
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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]	53.24	50.31	2.93	5.5
Net EUI[2]	15.16	12.23	2.93	19.33
East Facing				
Gross EUI[1]	53.24	49.78	3.46	6.5
Net EUI[2]	15.16	11.7	3.46	22.82
South Facing				
Gross EUI[1]	53.24	50.41	2.83	5.32
Net EUI[2]	15.16	12.33	2.83	18.67
West Facing				
Gross EUI[1]	53.24	50.83	2.41	4.53
Net EUI[2]	15.16	12.75	2.41	15.9

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.

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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 (%)**
1.59	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

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

- Whole house fan
- Exposed slab floor in conditioned zone
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

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

- Indoor air quality ventilation
- Kitchen range hood
- Whole house fan airflow and fan efficacy
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Verified HSPF
- Verified heat pump rated heating capacity
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

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**
Encinitas PRADU - Studio C	224	1	1	1	1	1

Registration Number: 223-P010003966A-000-000-0000000-0000
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Registration Date/Time: 2023-01-11 10:42:50
Report Version: 2022.0.000
Schema Version: rev 20220901
HERS Provider: CalCERTS inc.
Report Generated: 2023-01-09 09:50:58

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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**
ADU Studio C	Conditioned	Ductless Mini-Split1	224	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)**
Front Wall	ADU Studio C	_WALL: 2x4 Exterior	0	Front	158	42	90
Left Wall	ADU Studio C	_WALL: 2x4 Exterior	90	Left	141	23	90
Rear Wall	ADU Studio C	_WALL: 2x4 Exterior	180	Back	158	30	90
Right Wall	ADU Studio C	_WALL: 2x4 Exterior	270	Right	141	55	90

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Area (ft^2)**	**Skylight Area (ft^2)**	**Roof Rise (x in 12)**	**Roof Reflectance**	**Roof Emittance**	**Cool Roof**
Roof	ADU Studio C	_ROOF: SLPD. CLG.	0	Front	224	0	6	0.1	0.85	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**
w4	Window	Front Wall	Front	0			1	15	0.58	NFRC	0.65	NFRC	Bug Screen
w1	Window	Front Wall	Front	0			1	7	0.58	NFRC	0.65	NFRC	Bug Screen
d1	Window	Front Wall	Front	0			1	20	0.58	NFRC	0.65	NFRC	Bug Screen

Registration Number: 223-P010003966A-000-000-0000000-0000
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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**
w4 2	Window	Left Wall	Left	90			1	15	0.58	NFRC	0.65	NFRC	Bug Screen
w2	Window	Left Wall	Left	90			1	8	0.58	NFRC	0.65	NFRC	Bug Screen
w3	Window	Rear Wall	Back	180			1	15	0.58	NFRC	0.65	NFRC	Bug Screen
w4 3	Window	Rear Wall	Back	180			1	15	0.58	NFRC	0.65	NFRC	Bug Screen
d2	Window	Right Wall	Right	270			1	40	0.58	NFRC	0.65	NFRC	Bug Screen
w4 4	Window	Right Wall	Right	270			1	15	0.58	NFRC	0.65	NFRC	Bug Screen

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**
Slab On Grade	ADU Studio C	224	60	none	0	0%	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**
_WALL: 2x4 Exterior	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: All Other Siding

Registration Number: 223-P010003966A-000-000-0000000-0000
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CalCERTS, Inc. HERS PROVIDER

General Notes

CEA CERTIFIED ENERGY ANALYST

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

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Project Name and Address

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STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SC.1-03	T-02
Date: 01/11/2023	
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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
_ROOF: SLPD. CLG.	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 24 in. O. C.	R-30	None / None	0.035	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 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
Not 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	AOSmithFPTU50	ADU Studio C	ADU Studio C	ADU Studio C

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
Ductless Mini-Split1	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	VCHP-ductless	1	HSPF	9.9	14500	8700	EERSEER	16.8	9.4	Zonally Controlled	Multi-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	Required	Yes	Yes	Yes	Yes

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 1	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

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	22	0.35	Exhaust	No	n/a	No	Yes	

COOLING VENTILATION

01	02	03	04	05	06	07	08	09
Name	Airflow Rate (CFM/ft2)	Cooling Vent CFM	Cooling Vent Watts/CFM	Total Watts	Number of Fans	CFVCS Type	Exhausts to	HERS Verification
WH Fan 1	0.08	17	0.0588	1	1	Not a CFVCS	Outside	Required

PROJECT NOTES

****
This report is based on the drawings received on 01/03/2023.
****

SCOPE OF WORK: Construct a ADU - Studio (C Elevation).

1) DO NOT USE FOR ACTUAL HEATING/COOLING DESIGN. 2) The Title 24 calculations used for this project are used for the purpose of complying with the current Title 24 code provisions and are intended to be used in order to obtain compliance per Title 24 regulations. They are NOT intended to be used as a substitute for the heating and cooling loads required for the structure(s) that are normally done by a mechanical engineer(s) or HVAC contractor(s) and in NO CIRCUMSTANCES is this to be used in lieu of the normal calculation methods used by a mechnical engineer(s) or HVAC contractor(s). 3) The assembly components found in this document are for modeling purposes only and may not reflect the actual conditions of the walls, roof(s), floor(s), windows and doors of the structure.

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General Notes

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

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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.

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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. *

5/6/22

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio C
Calculation Date/Time: 2023-01-09T09:50:18-08:00 **(Page 13 of 13)**
Calculation Description: Title 24 Analysis
Input File Name: 23Q1019-SC.1-03.ribd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Wayne Seward	Documentation Author Signature: Wayne Seward
Company: Bear Technologies Consulting Inc.	Signature Date: 2023-01-11 09:15:23
Address: 3431 Don Arturo Drive	CEA/ HERS Certification Identification (If applicable): R19-04-30011
City/State/Zip: Carlsbad, CA 92010	Phone: 760-635-2327

CABEC California Association of Building Energy Consultants CERTIFIED ENERGY ANALYST

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: Bart M Smith	Responsible Designer Signature: Bart M Smith
Company: DZN Partners	Date Signed: 2023-01-11 10:42:50
Address: 682 2nd Street	License: C-22557
City/State/Zip: Encinitas, CA 92024	Phone: 760-753-2464

CalCERTS HERS PROVIDER

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Easy to Verify at CalCERTS.com

Registration Number: 223-P010003966A-000-000-0000000-0000	Registration Date/Time: 2023-01-11 10:42:50	HERS Provider: CalCERTS Inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance	Report Version: 2022.0.000 Schema Version: rev 20220901	Report Generated: 2023-01-09 09:50:58

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)1Bii&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)1C-i-ii.
§ 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)1Gii-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)1HiiI:	**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:	**Bank 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 sleep-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.** At 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.

5/6/22

FOR REGENTINAS
CITY OF ENCINITAS

General Notes

CEA CERTIFIED ENERGY ANALYST

R19-04-30011
NR19-04-30020

TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address

BEAR TECHNOLOGIES CONSULTING, INC.
3431 DON ARTURO DRIVE,
CARLSBAD, CALIFORNIA 92010
(760) 635-2327
wayne@beartechconsulting.com
http://www.beartechconsulting.com

Project Name and Address

ENCINITAS PRADU - STUDIO C ADU
STUDIO A STREE
ENCINITAS, CALIFORNIA 92024

Project	Sheet
23Q1019-SC.1-03	T-04
Date: 01/11/2023	
Scale	

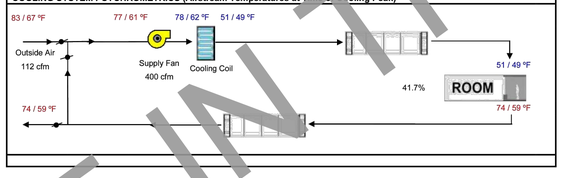
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Encinitas PRADU - Studio C ADU
Date: 1/11/2023
System Name: Ductless Mini-Split
Floor Area: 224

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Number of Systems	1						
Heating System							
Output per System	14,500	Total Room Loads	357	8,967	784	348	6,717
Total Output (Btuh)	14,500	Return Vented Lighting		0			
Output (Btuh/sqft)	64.7	Return Air Ducts		0			0
Cooling System		Return Fan		0			0
Output per System	12,000	Ventilation	112	1,087	1,570	112	4,226
Total Output (Btuh)	12,000	Supply Fan		596			-596
Total Output (Tons)	1.0	Supply Air Ducts		0			0
Total Output (Btuh/sqft)	53.6						
Total Output (sqft/Ton)	224.0	TOTAL SYSTEM LOAD		10,649	2,354		10,348
Air System							
CFM per System	400	HVAC EQUIPMENT SELECTION					
Airflow (cfm)	400	_Ductless Mini-Split		11,730	0		11,353
Airflow (cfm/sqft)	1.79						
Airflow (cfm/Ton)	400.0						
Outside Air (%)	28.0%	Total Adjusted System Output (Adjusted for Peak Design conditions)		11,730	0		11,353
Outside Air (cfm/sqft)	0.50						
Note: values above given at ARI conditions		TIME OF SYSTEM PEAK		Aug 3 PM			Jan 1 AM

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

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



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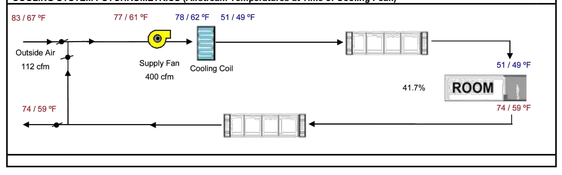
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Encinitas PRADU - Studio B ADU
Date: 1/11/2023
System Name: Ductless Mini-Split
Floor Area: 224

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Number of Systems	1						
Heating System							
Output per System	12,000	Total Room Loads	303	7,613	784	406	5,857
Total Output (Btuh)	12,000	Return Vented Lighting		0			
Output (Btuh/sqft)	53.6	Return Air Ducts		0			0
Cooling System		Return Fan		0			0
Output per System	12,000	Ventilation	112	1,087	1,570	112	4,226
Total Output (Btuh)	12,000	Supply Fan		596			-596
Total Output (Tons)	1.0	Supply Air Ducts		0			0
Total Output (Btuh/sqft)	53.6						
Total Output (sqft/Ton)	224.0	TOTAL SYSTEM LOAD		9,296	2,354		9,487
Air System							
CFM per System	400	HVAC EQUIPMENT SELECTION					
Airflow (cfm)	400	_Ductless Mini-Split		11,730	0		9,395
Airflow (cfm/sqft)	1.79						
Airflow (cfm/Ton)	400.0						
Outside Air (%)	28.0%	Total Adjusted System Output (Adjusted for Peak Design conditions)		11,730	0		9,395
Outside Air (cfm/sqft)	0.50						
Note: values above given at ARI conditions		TIME OF SYSTEM PEAK		Aug 3 PM			Jan 1 AM

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

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



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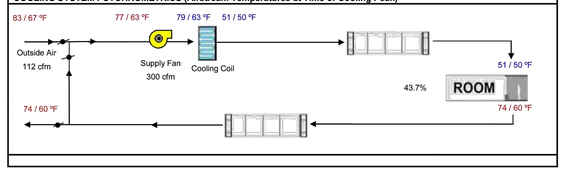
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: Encinitas PRADU - Studio A ADU
Date: 1/11/2023
System Name: Ductless Mini-Split
Floor Area: 224

ENGINEERING CHECKS		SYSTEM LOAD	COIL COOLING PEAK CFM	COIL COOLING PEAK Sensible	COIL COOLING PEAK Latent	COIL HTG. PEAK CFM	COIL HTG. PEAK Sensible
Number of Systems	1						
Heating System							
Output per System	11,800	Total Room Loads	256	6,198	784	286	5,354
Total Output (Btuh)	11,800	Return Vented Lighting		0			
Output (Btuh/sqft)	52.7	Return Air Ducts		0			0
Cooling System		Return Fan		0			0
Output per System	9,000	Ventilation	112	1,087	1,373	112	4,226
Total Output (Btuh)	9,000	Supply Fan		596			-596
Total Output (Tons)	0.8	Supply Air Ducts		0			0
Total Output (Btuh/sqft)	40.2						
Total Output (sqft/Ton)	298.7	TOTAL SYSTEM LOAD		7,880	2,156		8,984
Air System							
CFM per System	300	HVAC EQUIPMENT SELECTION					
Airflow (cfm)	300	_Ductless Mini-Split		8,959	0		9,239
Airflow (cfm/sqft)	1.34						
Airflow (cfm/Ton)	400.0						
Outside Air (%)	37.3%	Total Adjusted System Output (Adjusted for Peak Design conditions)		8,959	0		9,239
Outside Air (cfm/sqft)	0.50						
Note: values above given at ARI conditions		TIME OF SYSTEM PEAK		Aug 3 PM			Jan 1 AM

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

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



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FOR USE IN THE CITY OF ENCINITAS

PREPARER SIGNATURE

FOR CITY STAMPS

BY USING THESE PERMIT READY CONSTRUCTION DOCUMENTS, THE USER AGREES TO RELEASE THE CITY OF ENCINITAS AND THE ARCHITECT WHO PREPARED THESE CONSTRUCTION DOCUMENTS FROM ANY AND ALL CLAIMS, LIABILITIES, SUITS AND DEMANDS ON ACCOUNT OF ANY INJURY, DAMAGE OR LOSS TO PERSONS OR PROPERTY, INCLUDING INJURY OR DEATH, OR ECONOMIC LOSSES, ARISING OUT OF THE USE OF THESE CONSTRUCTION DOCUMENTS.

DZN PARTNERS
682 SECOND ST
ENCINITAS, CA
(760) 753 2464
DZNPARTNERS.COM

STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

HVAC SYSTEM SUMMARIES

T-05

CITY OF ENCINITAS
Development Services Department
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Encinitas, CA 92024
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Phone: 760-633-2710
Email: planning@encinitasca.gov

PRADU SUPPLEMENTAL REQUIREMENTS

The following adjustments shall be made to the Encinitas PRADUs plans effective July 1, 2024. Please imprint this page on your plans.

Newly constructed ADUs shall comply with the following, as per CRC, Sec. R327.1.1 thru R327.1.4.

R327.1.1 Reinforcement for Grab Bars:
At least one bathroom on the entry level shall be provided with reinforcement as per this section.

1. *Reinforcement shall be solid lumber or other equal, as approved by the AHJ.*
2. *Reinf. shall not be less than 2" x 8" nominal lumber. [$1^1/_2$" x $7^1/_4$" actual dimension] or similar. Reinf. shall be located between 32" & $39^1/_4$" above the finished floor flush with the wall framing.*
3. *Water closet reinf. shall be installed on both side walls of the fixture, or a side wall & back wall.*
4. *Shower reinforcement shall be continuous where wall framing is provided.*
5. *Bathtub and combination tub/shower reinf. shall be continuous on each end of the tub and the back wall. Also, back wall reinf. for a lower grab bar shall be provided with the bottom edge located no more than 6" above the bathtub rim.*

Exceptions:

6. *Where the water closet is not placed adjacent to a side wall capable of accommodating a grab bar, the bathroom shall have provisions for installation of floor-mounted, foldaway or similar alternate grab bar reinf. approved by the AHJ.*
7. *Reinf. shall not be required in wall framing for prefabricated shower enclosures and tub wall panels with factory- installed grab bars.*
8. *Shower enclosures that do not permit installation of reinf. &/or grab bars shall be permitted, if reinf. for installation of floor-mounted grab bars or another method is approved by the AHJ.*
9. *Bathtubs with no surrounding walls, or where wall panels do not permit the installation of reinf. shall be permitted, provided reinf. for installation of floor-mounted grab bars adjacent to the bathtub or an alternate method is approved by the AHJ.*
10. *Reinf. of floors shall not be required for bathtubs & W/C installed on concrete slab floors.*

R327.1.1.1 Documentation for Grab Bar Reinforcement:
Info. on the location of grab bar reinf. shall be placed in the operation and maintenance manual as per the Ca Green Bldg. Code, Ch 4, Div. 4.4.

R327.1.2 Electrical Receptacle Outlet, Switch and Control Heights:
Electrical receptacle, switches & controls (i.e., for heating & A/C shall be located no more than 48" to the top of the outlet box & not less than 15" from the bottom of the outlet box above the finish floor.

Exceptions:

11. *Dedicated receptacle outlets, floor receptacle outlets, controls mounted on ceiling fans, ceiling lights & controls located on appliances.*
12. *Receptacle outlets required by the Ca Elect. Code on a wall space where the distance between the finished floor & a built-in feature above the finish floor, such as a window, is less than 15".*

R327.1.3 Interior Doors:

Effective July 1, 2024, at least one bedroom & bath on the entry level shall provide a doorway with a net clear opening of not less than 32", measured with the door positioned at an angle of 90-degrees from the closed position.

R327.1.4 Doorbell Buttons:

Doorbell buttons or controls, when installed, shall not exceed 48" above exterior floor or landing, measured from the top of the doorbell button assembly.