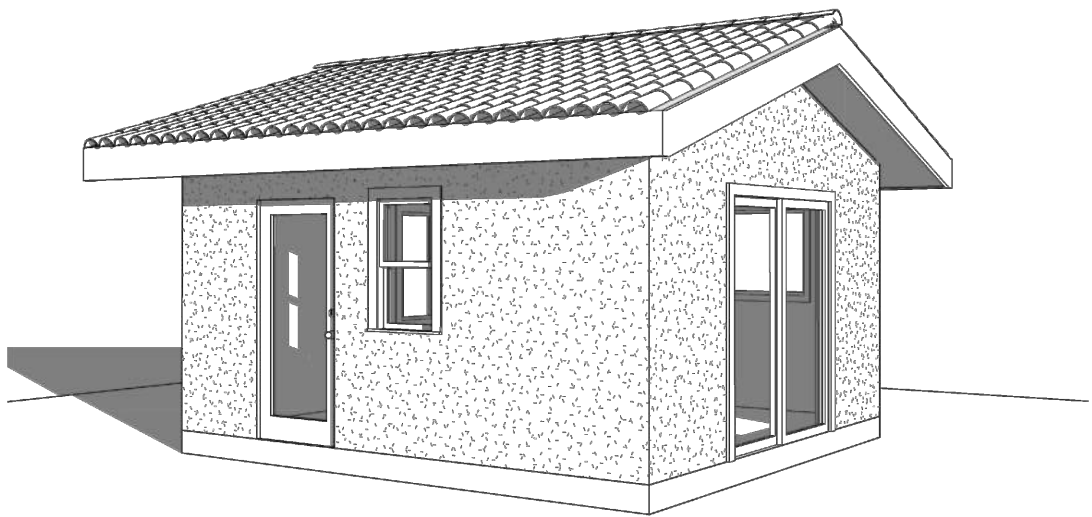


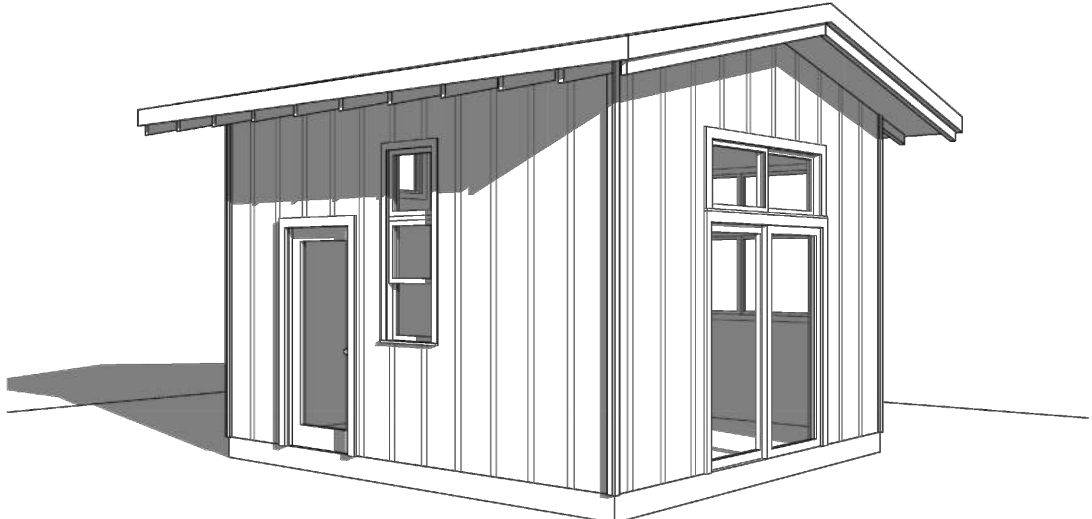
# encinitas pradu studio

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.

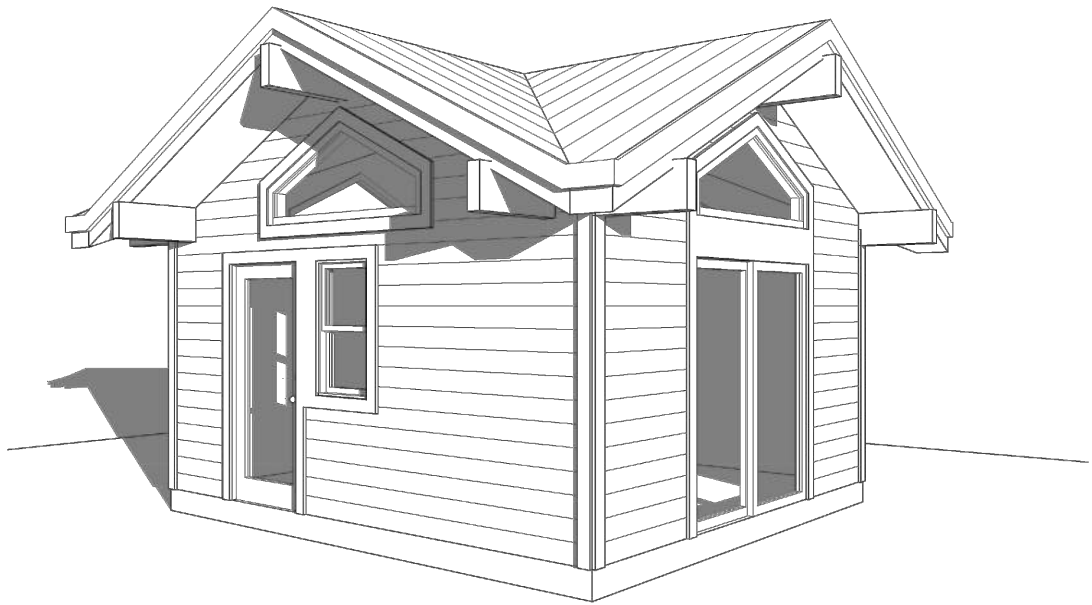
a



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:

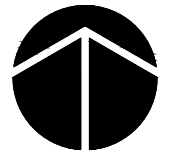
SITE ADDRESS =

## slope analysis:

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



NOT TO SCALE

## energy requirement notes:

- CONNECTION TO A PHOTOVOLTAIC SOLAR SYSTEM IS REQUIRED FOR THIS PROJECT. SOLAR SYSTEM IS A DEFERRED SUBMITTAL.
- 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
- 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:

- 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.1, REQUIRED, E.S. SECTION 150.1(C)14.
- 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:

- A PHOTOVOLTAIC (PV) SOLAR SYSTEM IS REQUIRED AND A SEPARATE PERMIT WILL BE REQUIRED. THE PV SYSTEM MUST BE INSTALLED, OPERATIONAL AND HAVE FINAL APPROVAL PRIOR TO FINAL BUILDING INSPECTION AND APPROVAL FOR THE ADU.
- 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:

- 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 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 SUITABILITY 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.
- 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:

<b>LOT AREAS</b>			
GROSS LOT AREA	=	SF	
NET LOT AREA	=	SF	
(DEDUCTIONS PER CHAP 30.04)	=	( SF)	
<b>BUILDING AREAS</b>			
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	
<b>FAR (FLOOR AREA RATIO)</b>			
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	=	SF	
FAR ALLOWED x GROSS LOT AREA	=	SF	
PROPOSED FAR (TOTAL BULK FLOOR AREA / GROSS LOT AREA)	=	SF	
FAR PROPOSED	=	SF	
<b>LOT COVERAGE (LC)</b>			
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	=	SDUHS
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
a0.0	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
<b>HEIGHT</b>				
EXISTING RESIDENCE	=	FT		
EXISTING ACCESSORY STRUCTURE	=	FT		
PROPOSED ADU	=	FT		
<b>STORY</b>				
EXISTING RESIDENCE	=			
EXISTING ACCESSORY STRUCTURE	=			
PROPOSED ADU	=	1		

## grading:

CUT	=	YD <sup>3</sup>
FILL	=	YD <sup>3</sup>
IMPORT	=	YD <sup>3</sup>
EXPORT	=	YD <sup>3</sup>
OVEREXCAVATION & RECOMPACTION	=	YD <sup>3</sup>
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	FIRM	DZN PARTNERS
	ADDRESS	662 2ND ST
	CITY, STATE, ZIP	ENCINITAS, CA 92024
	PHONE	(760) 753-2464
ENERGY CONSULTANT	EMAIL	B.SMITH@DZNPARTNERS.COM
	CONTACT	BART SMITH, AIA LEED AP
	FIRM	BEAR TECHNOLOGYS CONSULTANTING, INC
	ADDRESS	3431 DON ARTURO DR
ENGINEER	CITY, STATE, ZIP	CARLSBAD, CA 92010
	PHONE	(760) 635-2327
	EMAIL	WAYNE@BEARTECHCONSULTING.COM
	CONTACT	WAYNE SEWARD
ENGINEER	FIRM	PCSD ENGINEERING
	ADDRESS	3529 COASTVIEW COURT
	CITY, STATE, ZIP	CARLSBAD, CA 92010
	PHONE	(760) 207-1885
ENGINEER	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.



662 2ND ST

ENCINITAS, CA

(760) 753-2464

DZNPARTNERS.COM

STUDIO PRADU

CITY: ENCINITAS

2023.03-08

2023.05-22

JOB: 202241R

PROJECT DATA

a0.0



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

&	AND	EP	ELECTRICAL PANEL	POC	PRECAST CONCRETE
@	AT	EQ	EQUAL	PKT	POCKET
°	DEGREES	EQUIP	EQUIPMENT	PL	PLATE
Ø	DIAMETER	EW	EACH WAY	PIL	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 EXTINGUISHER	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	FN	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	HIC	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	WITHOUT	WITHOUT
DR	DOOR	MW	MICROWAVE OVEN	WC	WATER CLOSURE
DS	DOWNSPOUT	N	NORTH	WD	WOOD
DTP	DOUBLE TOP PLATE	NIA	NOT APPLICABLE	WDW	WINDOW
DV	DRYER VENT	NAT	NATURAL	WDWR	WARMING DRAWER
DW	DISHWASHER	NAP	NOT A PART	WH	WATER HEATER
DZN	DESIGN	NBC	NOT IN CONTRACT	WHS	WOOD HORIZONTAL SLIDER
E	EAST	NO	NUMBER	WI	WROUGHT IRON
EACH	EACH	NOM	NOMINAL	WIC	WALK IN CLOSET
EGR	EXISTING GRADE	NTS	NOT TO SCALE	WMH	WALL MOUNTED HEATER
EJ	EXTENSION JOINT	O/	OVER	WP	WATERPROOF
ELEC	ELECTRIC	OC	ON CENTER	WS	WOOD SCREW
ELEV	ELEVATOR OR ELEVATION	OA	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	ENGLISH TAIL	OZ	OUNCE	YD	YARD
ENCL	ENCLOSURE	P	POLE		

door schedule - elevation a

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

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

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

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

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

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	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

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

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

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-SEMGLOSS	2-SEMGLOSS	
	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:

- IF FIRE SPRINKLERS ARE REQUIRED AT THE ADU THAN THESE NOTES APPLY.
- 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.
- 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.
- SECTION 903.2.01** ADDITIONAL AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 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 A FIRE FLOW OF 1,500 GALLONS PER MINUTE AS CALCULATED PER SECTION 907.3. THE FIRE CODES 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 10 MINUTES BY A FIRE DEPARTMENT.
- SECTION 903.2.01** 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.
- 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.
- A FIRE UNDERGROUND FLUSH CERTIFICATION SHALL BE REQUIRED AT FINAL INSPECTION.
- 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

- IF THE PROPERTY THAT WILL CONTAIN THE ADU IS IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE SEE NOTES BELOW & ON SHEET a0.1F
- THE ADU SHALL COMPLY WITH CHAPTER 7A OF THE CURRENT CALIFORNIA BUILDING CODE.
- 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:

- ALL GLAZING IN DOORS SHALL BE TEMPERED.
- SEE ELEVATIONS FOR "IG" AT WINDOWS THAT REQUIRE TEMPERED GLAZING.
- 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.
- SEE ELEVATIONS FOR WINDOW OPERATION DIRECTION & LOCATION OF MUNTINS.
- SEE FLOOR PLANS FOR DOOR SWING DIRECTION.
- ALL GLAZED OPENINGS SHALL MEET THE REQUIREMENTS OF THE CBC T24 SHEETS PROVIDED IN THE PLANS.
- 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
<input type="checkbox"/>	<input type="checkbox"/>	CEMENT PLASTER SIDING - SAND



# very high fire hazard severity zone

## very high fire hazard severity zone notes:

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

IF THE PROPERTY THAT WILL CONTAIN THE ADU IS IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE THESE NOTES & NOTES ON SHEET #40.1 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**
- GROUP U OCCUPANCY ACCESSORY BUILDINGS OF ANY SIZE LOCATED AT LEAST 50 FEET (15 240 MM) FROM AN APPLICABLE BUILDING ON THE SAME LOT.
  - 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.
  - GROUP C OCCUPANCY SPECIAL BUILDINGS CONFORMING TO THE LIMITATIONS SPECIFIED IN SECTION 450.4.1.
  - NEW ACCESSORY BUILDINGS AND MISCELLANEOUS STRUCTURES SPECIFIED IN SECTION 710A SHALL COMPLY ONLY WITH THE REQUIREMENTS OF THAT SECTION.
  - ADDITIONS TO AND REMODELS OF BUILDINGS ORIGINALLY CONSTRUCTED PRIOR TO JULY 1, 2008.

### REQUIREMENTS

#### ROOFING

- 706A.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 MUDDO 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 MUDDO IN TO PREVENT INTRUSION OF FIRE OR EMBERS.
- 706A.3 ROOF VALLEYS** WHERE VALLEY FLASHING IS INSTALLED, THE FLASHING SHALL BE NOT LESS THAN 1/8 INCH (0.48 MM) 26 GAUGE 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.
- 706A.4 ROOF GUTTERS, ROOF GUTTERS** SHALL BE PROVIDED WITH THE MEANS TO PREVENT THE ACCUMULATION OF LEAVES & DEBRIS IN THE GUTTER.

#### VENTS

- 706A.1 GENERAL** WHERE PROVIDED, VENTILATION OPENINGS FOR ENCLOSED ATTICS, GARLE 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.
- 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:
  - THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER INTRUSION TEST.
  - THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME IGNITION TEST.
  - THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662°F (350°C).
- 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:
  - 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.
  - THE MESH MATERIAL SHALL BE NONCOMBUSTIBLE.
  - THE MESH MATERIAL SHALL BE CORROSION RESISTANT.

#### EXTERIOR COVERINGS

- 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:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
- 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

- 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:
  - ASSEMBLY OF SAWN LUMBER OR GLUE-LAMINATED WOOD WITH THE SMALLEST MINIMUM NOMINAL DIMENSION OF 4 INCHES (102 MM), OR GLUE-LAMINATED PLANKS SPLINED, TONGUE-AND-GROOVE, OR SET CLOSE TOGETHER AND WELL SPIKED.
  - LOG WALL CONSTRUCTION ASSEMBLY.
  - ASSEMBLY THAT HAS BEEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE ACCEPTANCE SHOWN IN SECTION 707A.4.1.
  - ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES FOR A 10-MINUTE DIRECT FLAME CONTACT EXPOSURE ACCEPTANCE SHOWN IN SFM STANDARD 12-7A-3.
  - ASSEMBLY SUITABLE FOR EXTERIOR FIRE EXPOSURE WITH A 1-HOUR FIRE-RESISTANCE RATED PORTION OF THE EXTERIOR SIDE, AS TESTED IN ACCORDANCE WITH ASTM E119 OR UL 263.
  - ASSEMBLY SUITABLE FOR EXTERIOR FIRE EXPOSURE CONTAINING ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND AN EXTERIOR COVERING OR CLADDING ON THE EXTERIOR SIDE OF THE FRAMING.
  - 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

- 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:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
  - 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.
  - 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.
  - 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

- 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 UNDERLIE, 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:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
  - 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.
  - 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.
  - THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTIVE EXTERIOR ASSEMBLY 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.
  - BOXED-IN ROOF EAVE SOFFIT ASSEMBLIES WITH A HORIZONTAL UNDERLIE 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

- 707A.7 EXTERIOR PORCH CEILINGS** THE EXPOSED UNDERSIDE OF EXTERIOR PORCH CEILINGS SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
  - 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.
  - 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.
  - 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.
  - PORCH CEILING ASSEMBLIES WITH A HORIZONTAL UNDERLIE THAT MEET THE PERFORMANCE CRITERIA IN SECTION 707A.11 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2997.
  - PORCH CEILING ASSEMBLIES WITH A HORIZONTAL UNDERLIE 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

- 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:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
  - 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.
  - 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 FLOOR PROJECTION ASSEMBLY THAT MEETS THE PERFORMANCE CRITERIA IN SECTION 707A.10 WHEN TESTED IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN ASTM E2997.
  - 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 SFM STANDARD 12-7A-3.
- 707A.8.1 EXTERIOR DOOR PERIMETER GAP** EXTERIOR GARBAGE 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:
  - 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.
  - DOOR OVERLAPS ONTO JAMBS AND HEADERS.
  - GARBAGE DOOR JAMBS & HEADERS COVERED WITH METAL FLASHING.

#### 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:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
  - 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.
  - ONE LAYER OF 5/8-INCH (15.9 MM) TYPE X GYPSUM SHEATHING APPLIED BEHIND AN EXTERIOR COVERING ON THE UNDERSIDE OF THE FLOOR PROJECTION.
  - 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.
  - 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 SFM STANDARD 12-7A-3.
  - THE UNDERSIDE OF A FLOOR 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:** 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.

- 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 UNDER-FLOOR SHALL BE PROTECTED BY ONE OR MORE OF THE FOLLOWING:
  - NONCOMBUSTIBLE MATERIAL.
  - IGNITION-RESISTANT MATERIAL. THE IGNITION-RESISTANT MATERIAL SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 704A.2.
  - FIRE-RETARDANT-TREATED WOOD. THE FIRE-RETARDANT-TREATED WOOD SHALL BE LABELED FOR EXTERIOR USE AND SHALL MEET THE REQUIREMENTS OF SECTION 2303.2.
  - 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.
  - 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.
  - THE EXTERIOR PORTION OF A 1-HOUR FIRE-RESISTIVE EXTERIOR ASSEMBLY 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.
  - BOXED-IN ROOF EAVE SOFFIT ASSEMBLIES WITH A HORIZONTAL UNDERLIE THAT MEET THE PERFORMANCE CRITERIA IN ACCORDANCE WITH THE TEST PROCEDURES SET FORTH IN SFM STANDARD 12-7A-3.**EXCEPTION TO SECTION 707A.10:** THE FOLLOWING MATERIALS DO NOT REQUIRE PROTECTION: FASCIA & OTHER ARCHITECTURAL TRIM BOARDS.

#### EXTERIOR GLAZING & OPENINGS

- 708A.2 EXTERIOR GLAZING** THE FOLLOWING EXTERIOR GLAZING MATERIALS AND/OR ASSEMBLIES SHALL COMPLY WITH THIS SECTION:
  - EXTERIOR WINDOWS.
  - EXTERIOR GLAZED DOORS.
  - GLAZED OPENINGS WITHIN EXTERIOR DOORS.
  - GLAZED OPENINGS WITHIN EXTERIOR GARBAGE DOORS.
  - EXTERIOR STRUCTURAL GLASS SHEET.
  - SKYLIGHTS.
  - VENTS.
- 708A.2.1 EXTERIOR WINDOWS, SKYLIGHTS AND EXTERIOR GLAZED DOOR ASSEMBLY REQUIREMENTS** EXTERIOR WINDOWS, SKYLIGHTS & EXTERIOR GLAZED DOORS SHALL COMPLY WITH SECTION 2406 OF THE FOLLOWING REQUIREMENTS:
  - BE CONSTRUCTED OF UNIFRAME GLAZING WITH A MINIMUM OF ONE 1/2" PANE MEETING THE REQUIREMENTS OF SECTION 2406 OF THE FOLLOWING REQUIREMENTS:
    - GLAZING, OR
    - BE CONSTRUCTED OF GLASS BLOCK UNITS, OR
    - HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257, OR
    - BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-3.
  - GLAZING, OR
  - BE CONSTRUCTED OF GLASS BLOCK UNITS, OR
  - HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257, OR
  - BE TESTED TO MEET THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-3.
- 708A.2.2 OPERABLE SKYLIGHTS.** OPERABLE SKYLIGHTS SHALL BE PROTECTED BY A NON-COMBUSTIBLE MESH SCREEN WHERE THE DIMENSIONS OF THE OPENINGS IN THE SCREEN SHALL NOT EXCEED 1/8-INCH (3.2 MM).
- 708A.2.3 STRUCTURAL GLASS VENEER** THE WALL ASSEMBLY BEHIND STRUCTURAL GLASS VENEER SHALL COMPLY WITH SECTION 707A.3.
- 708A.3 EXTERIOR DOORS** EXTERIOR DOORS SHALL COMPLY WITH ONE OF THE FOLLOWING:
  - THE EXTERIOR SURFACE OR CLADDING SHALL BE OF NONCOMBUSTIBLE MATERIAL.
  - THE EXTERIOR SURFACE OR CLADDING SHALL BE OF IGNITION RESISTANT MATERIAL.
  - THE EXTERIOR DOOR SHALL BE CONSTRUCTED OF SOLID CORE WOOD THAT COMPLIES WITH THE FOLLOWING REQUIREMENTS:
    - STILES AND RAILS SHALL NOT BE LESS THAN 135 INCHES THICK.
    - 3/2 PANELS SHALL NOT BE LESS THAN 114 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.
    - THE EXTERIOR DOOR ASSEMBLY SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN 20 MINUTES WHEN TESTED ACCORDING TO NFPA 257.
  - 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.

- 708A.3.1 EXTERIOR DOOR GLAZING.** GLAZING IN EXTERIOR DOORS SHALL COMPLY WITH SECTION 708A.2.1.
- 708A.4 GARAGE DOOR PERIMETER GAP** EXTERIOR GARBAGE 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:
  - 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.
  - DOOR OVERLAPS ONTO JAMBS AND HEADERS.
  - GARBAGE DOOR JAMBS & HEADERS COVERED WITH METAL FLASHING.

#### DECKING

- 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.

- 709A.3 DECKING SURFACES** THE WALKING SURFACE MATERIAL OF DECKS, PORCHES, BALCONIES & STAIRS SHALL BE CONSTRUCTED WITH ONE OF THE FOLLOWING MATERIALS:
  - MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION 709A.4 WHEN TESTED IN ACCORDANCE WITH BOTH ASTM E2632 AND ASTM E2726.
  - IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SECTION 704A.3.
  - MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARD 12-7A-4 AND SECTION 704A.3.
  - EXTERIOR FIRE-RETARDANT-TREATED WOOD.
  - NONCOMBUSTIBLE MATERIAL.
  - ANY MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-4 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.

## door schedule - elevation a

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

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, TG	YES	0.58	0.65	1	OPAQUE
3	6'-0"	3'-0"	HORIZONTAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	

## door schedule - elevation b

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

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, TG	YES	0.58	0.65	1	OPAQUE
3	6'-0"	3'-0"	HORIZONTAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	
4	6'-0"	2'-0"	FIXED	VINYL	DG, TG	NO	0.58	0.67	2	TRANSOM OVER DOOR 2 & WINDOW 3
5	2'-0"	2'-0"	FIXED	VINYL	DG, TG	NO	0.58	0.67	1	TRANSOM OVER WDW 1
6	2'-0"	2'-0"	AWNING	VINYL	DG, TG	YES	0.58	0.65	1	STORAGE LOFT

## door schedule - elevation c

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

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, TG	YES	0.58	0.65	1	OPAQUE
3	3'-0"	5'-0"	VERTICAL SLIDER	VINYL	DG, TG	YES	0.58	0.65	1	
4	6'-0"	2'-6"	FIXED	VINYL	DG, TG	NO	0.58	0.67	4	HIGH PENTAGON TRANSOM EACH SIDE

## schedule notes:

- ALL GLAZING IN EXTERIOR DOORS SHALL BE TEMPERED IN THE VHFSZ.
- ALL GLAZING IN WINDOWS SHALL BE TEMPERED IN THE VHFSZ.
- THE PROPERTY THAT WILL CONTAIN THE ADU IS IN THE VERY HIGH FIRE HAZARD SEVERITY ZONE. SEE NOTES ON SHEET #40.1F CONCERNING DOOR & WINDOW CONSTRUCTION AND TEMPERED GLAZING.
- SEE ELEVATIONS FOR WINDOW OPERATION DIRECTION & LOCATION OF MUNTINS.
- SEE FLOOR PLANS FOR DOOR SWING DIRECTION.
- ALL GLAZED OPENINGS SHALL MEET THE REQUIREMENTS OF THE CBC T24 SHEETS PROVIDED IN THE PLANS.
- VINYL WINDOWS AND EXTERIOR VINYL DOOR FRAMES & SASH WILL BE COMPRISED OF VINYL MATERIAL WITH WELDED CORNERS & METAL REINFORCEMENT IN THE INTERLOCK AREA.

## very high fire hazard severity zone notes:

- THE ADU SHALL COMPLY WITH CHAPTER 7A OF THE CURRENT CALIFORNIA BUILDING CODE BECAUSE IT IS IN THE VHFSZ.
- 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 FEET FROM STRUCTURE) & COMPOSITION SHALL BE DETERMINED BY THE FIRE DEPARTMENT & SHOWN ON THE IMPROVEMENT/GRADING PLANS, FINAL MAP & BUILDING PLANS.

PREPARER SIGNATURE



3.24 CONTINUOUS FOOTING REINFORCING SHALL BE CONTINUED THROUGH ALL WALL CONNECTIONS

PREPARER SIGNATUR

OR CITY STAMPS \_\_\_\_\_

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STRUCTION DOCUMENTS.



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**Abstract**

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## 2.1. ENLIGHTENING

**Abstract**

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## SPECIFICATIONS

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# 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

## RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

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<b>CHAPTER 3 GREEN BUILDING SECTION 301 GENERAL</b>		
<b>301.1 SCOPE.</b> 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.		
<b>301.1.1 Additions and alterations. [HCD]</b> 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.		
<b>Note:</b> 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.		
<b>Note:</b> 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.		
<b>301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD]</b> - NOT USED		
<b>SECTION 302 MIXED OCCUPANCY BUILDINGS</b>		
<b>302.1 MIXED OCCUPANCY BUILDINGS.</b> - NOT USED		
<b>DIVISION 4.1 PLANNING AND DESIGN</b>		
<b>ABBREVIATION DEFINITIONS:</b> HCD Department of Housing and Community Development BSG 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		
<b>CHAPTER 4 RESIDENTIAL MANDATORY MEASURES</b>		
<b>SECTION 4.102 DEFINITIONS</b>		
<b>4.102.1 DEFINITIONS</b> The following terms are defined in Chapter 2 (and are included here for reference)		
<b>FRENCH DRAIN.</b> 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.		
<b>WATTLES.</b> 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.		
<b>4.106 SITE DEVELOPMENT</b>		
<b>4.106.1 GENERAL.</b> 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.		
<b>4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION.</b> 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.  <ol style="list-style-type: none"><li>Retention basins of sufficient size shall be utilized to retain storm water on the site.</li><li>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.</li><li>Compliance with a lawfully enacted storm water management ordinance.</li></ol>		
<b>Note:</b> 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: <a href="https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html">https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html</a> )		
<b>4.106.3 GRADING AND PAVING.</b> 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:  <ol style="list-style-type: none"><li>Swales</li><li>Water collection and disposal systems</li><li>French drains</li><li>Water retention gardens</li><li>Other water measures which keep surface water away from buildings and aid in groundwater recharge.</li></ol>		
<b>Exception:</b> Additions and alterations not altering the drainage path.		
<b>4.106.4 Electric vehicle (EV) charging for new construction.</b> - NOT USED		
<b>4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities.</b> - NOT USED		
<b>4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings.</b> - NOT USED		
<b>DIVISION 4.2 ENERGY EFFICIENCY</b>		
<b>4.201 GENERAL</b>		
<b>4.201.1 SCOPE.</b> For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.		
<b>DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION</b>		
<b>4.303 INDOOR WATER USE</b>		
<b>4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS.</b> 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.		
<b>Note:</b> 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.		
<b>4.303.1.1 Water Closets.</b> 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.		
<b>Note:</b> The effective flush volume of dual-flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.		
<b>4.303.1.2 Urinals.</b> - NOT USED		
<b>4.303.1.3 Showerhead.</b>		
<b>4.303.1.3.1 Single Showerhead.</b> 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.		
<b>4.303.1.3.2 Multiple showerheads serving one shower.</b> 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.		
<b>Note:</b> A hand-held shower shall be considered a showerhead.		

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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4.303.1.4 Faucets.</b>		
<b>4.303.1.4.1 Residential Lavatory Faucets.</b> 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.		
<b>4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas.</b> - NOT USED		
<b>4.303.1.4.3 Metering Faucets.</b> - NOT USED		
<b>4.303.1.4.4 Kitchen Faucets.</b> 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.		
<b>Note:</b> Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.		
<b>4.303.1.4.5 Pre-rinse spray valves.</b> - NOT USED		
<b>4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential/commercial buildings.</b> - NOT USED		
<b>4.303.3 Standards for plumbing fixtures and fittings.</b> Plumbing fixtures and fittings shall be installed in accordance with the <i>California Plumbing Code</i> , and shall meet the applicable standards referenced in Table 1701.1 of the <i>California Plumbing Code</i> .		
<b>NOTE:</b> THIS TABLE COMPILES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.		
<b>TABLE - MAXIMUM FIXTURE WATER USE</b>		
<b>FIXTURE TYPE</b>		<b>FLOW RATE</b>
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
<b>4.304 OUTDOOR WATER USE</b>		
<b>4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS.</b> 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.		
<b>NOTES:</b>  1. The Model Water Efficient Landscape Ordinance (MWELO) is located in the <i>California Code Regulations</i> , Title 23, Chapter 2.7, Division 2. MWLEO and supporting documents, including water budget calculator, are available at: <a href="https://www.water.ca.gov/">https://www.water.ca.gov/</a>		
<b>DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b>		
<b>4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE</b>		
<b>4.406.1 RODENT PROOFING.</b> Annular spaces around pipes, electric cables, conduits or other openings in solebottom 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.		
<b>4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</b>		
<b>4.408.1 CONSTRUCTION WASTE MANAGEMENT.</b> 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.		
<b>Exceptions:</b>  <ol style="list-style-type: none"><li>Excavated soil and land-clearing debris.</li><li>Alternate waste reduction methods developed by working with local waste management diversion or recycle facilities capable of compliance with this code do not exist or are not located reasonably close to the jobsite.</li><li>The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located outside the jurisdiction boundaries of the diversion facility.</li></ol>		
<b>4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN.</b> 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.  <ol style="list-style-type: none"><li>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.</li><li>Specify construction and demolition waste materials will be sorted on-site (source separated) or bulk transfer (single stream).</li><li>Identify diversion facilities where the construction and demolition waste material collected will be recycled.</li><li>Identify construction methods employed to reduce the amount of construction and demolition waste generated.</li></ol> Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both.		
<b>4.408.3 WASTE MANAGEMENT COMPANY.</b> 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.  <b>Note:</b> The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.		
<b>4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR].</b> 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.		
<b>4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE.</b> 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.		
<b>4.408.5 DOCUMENTATION.</b> 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.		
<b>NOTES:</b>  <ol style="list-style-type: none"><li>Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at <a href="http://www.hcd.ca.gov/CALGreen.html">www.hcd.ca.gov/CALGreen.html</a> may be used to assist in documenting compliance with this section.</li><li>Mixed construction and demolition debris (C &amp; D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle).</li></ol>		
<b>4.410 BUILDING MAINTENANCE AND OPERATION</b>		
<b>4.410.1 OPERATION AND MAINTENANCE MANUAL.</b> 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:  <ol style="list-style-type: none"><li>Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.</li><li>Operation and maintenance instructions for the following:<ol style="list-style-type: none"><li>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.</li><li>Roof and yard drainage, including gutters and downspouts.</li><li>Space conditioning systems, including condensers and air filters.</li><li>Landscape irrigation systems.</li><li>Water reuse systems.</li></ol></li><li>Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations.</li></ol>		

Y	NA	RESPON. PARTY
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<ol style="list-style-type: none"><li>Public transportation and/or carpool options available in the area.</li><li>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.</li><li>Information about water-conserving landscape and irrigation design and controllers which conserve water.</li><li>Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.</li><li>Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.</li><li>Information about state solar energy and incentive programs available.</li><li>A copy of all special inspections verifications required by the enforcing agency or this code.</li><li>Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures.</li><li>Information and/or drawings identifying the location of grab bar reinforcements.</li></ol>		
<b>4.410.2 RECYCLING BY OCCUPANTS.</b> 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 waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.  <b>Exception:</b> Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.		
<b>DIVISION 4.5 ENVIRONMENTAL QUALITY</b>		
<b>SECTION 4.501 GENERAL</b>		
<b>4.501.1 Scope.</b> 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.		
<b>SECTION 4.502 DEFINITIONS</b>		
<b>4.502.1 DEFINITIONS</b> The following terms are defined in Chapter 2 (and are included here for reference)		
<b>AGRIFIBER PRODUCTS.</b> Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.		
<b>COMPOSITE WOOD PRODUCTS.</b> Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, lumber, oriented strand board, laminated timber, prefabricated wood joists or finger-jointed lumber, all as specified in California Code of Regulations (CCR), title 17, Section 93120.1.		
<b>DIRECT-VENT APPLIANCE.</b> A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges the flue gas to the outside atmosphere.		
<b>MAXIMUM INCREMENTAL REACTIVITY (MIR).</b> 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 <sub>3</sub> /g ROG). <b>Note:</b> MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.		
<b>MOISTURE CONTENT.</b> The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.		
<b>PRODUCT-WEIGHTED MIR (PWMIR).</b> The sum of all weighted-MIR for all ingredients in a product subject to this code. The total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding trainer and packaging). <b>Note:</b> PWMIR is calculated according to equations found in CCR, Title 17, Section 94521 (a).		
<b>REACTIVE ORGANIC COMPOUND (ROC).</b> Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.		
<b>VOC.</b> 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 94500(a).		
<b>4.503 FIREPLACES</b>		
<b>4.503.1 GENERAL.</b> 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.		
<b>4.504 POLLUTANT CONTROL</b>		
<b>4.504.1 COVERING OF DUCT OPENINGS &amp; PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION.</b> 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.		
<b>4.504.2 FINISH MATERIAL POLLUTANT CONTROL.</b> Finish materials shall comply with this section.		
<b>4.504.2.1 Adhesives, Sealants and Caulks.</b> 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:  <ol style="list-style-type: none"><li>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.</li><li>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 <i>California Code of Regulations</i>, Title 17, commencing with section 94507.</li></ol>		
<b>4.504.2.2 Paints and Coatings.</b> 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 4.2.1, 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.		
<b>4.504.2.3 Aerosol Paints and Coatings.</b> 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 <i>California Code of Regulations</i> , 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.		
<b>4.504.2.4 Verification.</b> 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:  <ol style="list-style-type: none"><li>Manufacturer's product specification.</li><li>Field verification of on-site product containers.</li></ol>		
<b>4.504.3 CARPET SYSTEMS.</b> 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.  <a href="https://www.cdph.ca.gov/Programs/CCDPHP/DEODD/EHLB/IAQ/Pages/VOC.aspx">https://www.cdph.ca.gov/Programs/CCDPHP/DEODD/EHLB/IAQ/Pages/VOC.aspx</a> .		
<b>4.504.3.1 Carpet cushion.</b> 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)		
2017  See California Department of Public Health's website for certification programs and testing labs.  <a href="https://www.cdph.ca.gov/Programs/CCDPHP/DEODD/EHLB/IAQ/Pages/VOC.aspx">https://www.cdph.ca.gov/Programs/CCDPHP/DEODD/EHLB/IAQ/Pages/VOC.aspx</a> .		
<b>4.504.3.2 Carpet adhesive.</b> All carpet adhesive shall meet the requirements of Table 4.504.1.		
<b>4.504.4 RESILIENT FLOORING SYSTEMS.</b> 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.  <a href="https://www.cdph.ca.gov/Programs/CCDPHP/DEODD/EHLB/IAQ/Pages/VOC.aspx">https://www.cdph.ca.gov/Programs/CCDPHP/DEODD/EHLB/IAQ/Pages/VOC.aspx</a> .		







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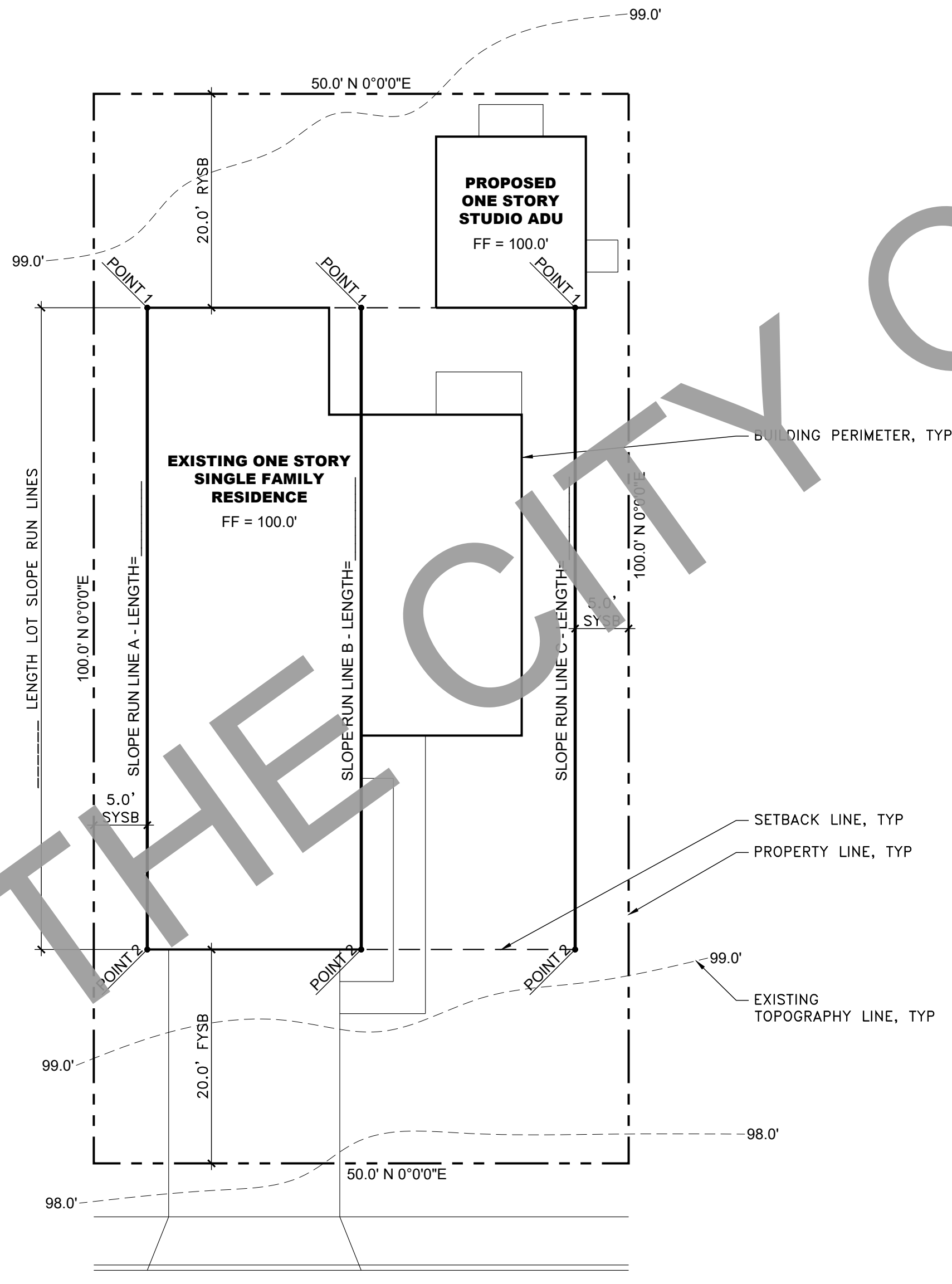
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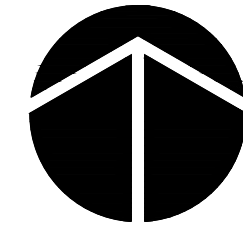
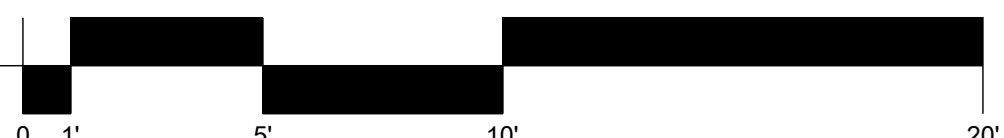
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**1** sample average lot slope diagram  
SCALE: 1"=10'-0"



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

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.

**DZNPARTNERS**

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

**STUDIO PRADU**

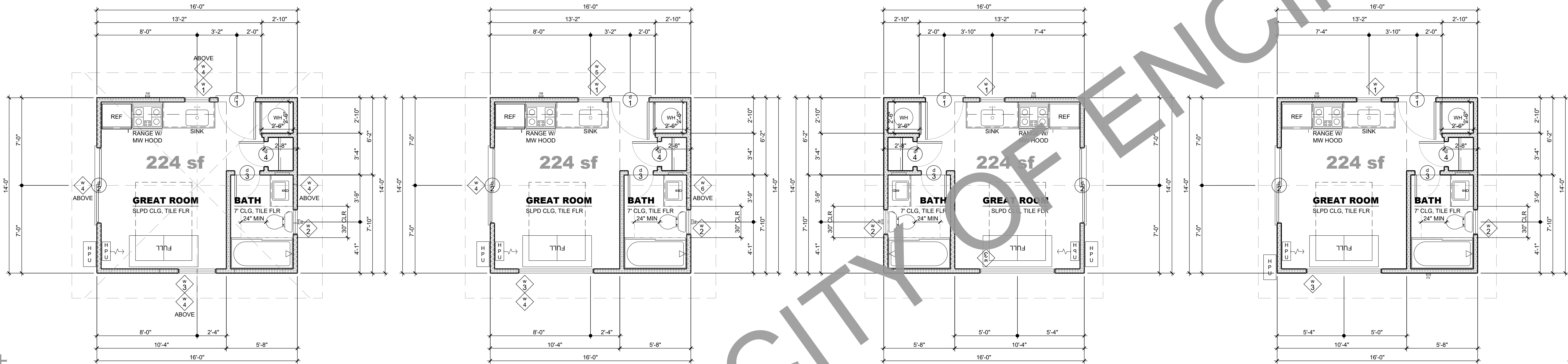
CITY: ENCINITAS

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"

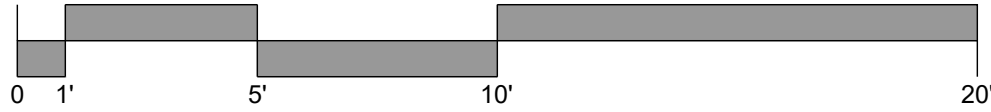
3 reverse floor plan a  
SCALE: 1/4" = 1'-0"

4 floor plan a  
SCALE: 1/4" = 1'-0"

drawing:			drawing:			drawing:			drawing:		
SYMBOL	=	DESCRIPTION	SYMBOL	=	DESCRIPTION	SYMBOL	=	DESCRIPTION	SYMBOL	=	DESCRIPTION
(N)	=	NEW		=	EXISTING FOOTING		=	BUILDING SECTION LETTER SHEET NUMBER		=	SHEAR PANEL LETTER SHEAR PANEL LENGTH
(E)	=	EXISTING		=	NEW FOOTING		=	WALL SECTION LETTER SHEET NUMBER		=	TRUSS NUMBER
	=	EXISTING WALL REMOVED		=	NORTH ARROW		=	DETAIL NUMBER SHEET NUMBER		=	STRUCTURAL GRID LINE
	=	EXISTING WALL TO REMAIN		=	NEW POINT ELEVATION		=	INTERIOR ELEVATION		=	SHEAR DRAG LINE
	=	NEW 4" WALL		=	EXISTING POINT ELEVATION		=	LEVEL CHANGE		=	PAD FOOTING
	=	NEW 6" WALL		=	NEW CONTOUR		=	ROOM OR SPACE NUMBER		=	POST
	=	NEW 8" WALL		=	EXISTING CONTOUR		=	ROOM NAME CEILING HEIGHT, FLOORING		=	HOLD DOWN
	=	NEW 8" CMU WALL		=	PROPERTY LINE		=	WINDOW NUMBER		=	FACTORY BUILT SHEAR PANEL
	=	NEW DWELLING UNIT SEPARATION WALL		=	CENTER LINE		=	DOOR NUMBER		=	FLOOR JOISTS
	=	BEARING WALL		=	SET BACK LINE		=	REVISION NUMBER		=	CEILING JOISTS
	=	NON-BEARING WALL WATERFRAMING JOISTS		=	FLOOR MATERIAL CHANGE		=	KEYNOTE NUMBER		=	RAFTER OR TRUSS

floor plan notes:

- SEE LEGENDS TO THE LEFT FOR SYMBOLS RELATING TO THE FLOOR PLAN.
- SEE SHEET #0.1 FOR SCHEDULES RELATING TO THE FLOOR PLAN.
- THE KITCHEN SHALL HAVE UPPER CABINETS, BASE CABINETS, AND COUNTERTOPS AS DEPICTED ON THIS FLOOR PLAN AND IN THE INTERIOR ELEVATIONS.  
  
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 MIRRORRED 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/SOWER COMBINATIONS
  - BATHTUB SHALL BE PORCELAIN OVER CAST IRON.
  - PROVIDE FULL HEIGHT TILE WAINSCOT ON WALLS WITHIN TUB AREA.
  - PROVIDE SLIDING CLEAR TEMPERED GLASS TUB/SOWER 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.
- CLOSETS SHALL HAVE A SHELF AND POLE AS SHOWN ON THE FLOOR PLAN.



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 90 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:

- 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.
- 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.
- 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"
- 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).
- EXHAUST DUCT SIZE, LENGTH AND OUTLET LOCATION FOR FANS AND HOODS TO BE NOTED ON THE PLANS.

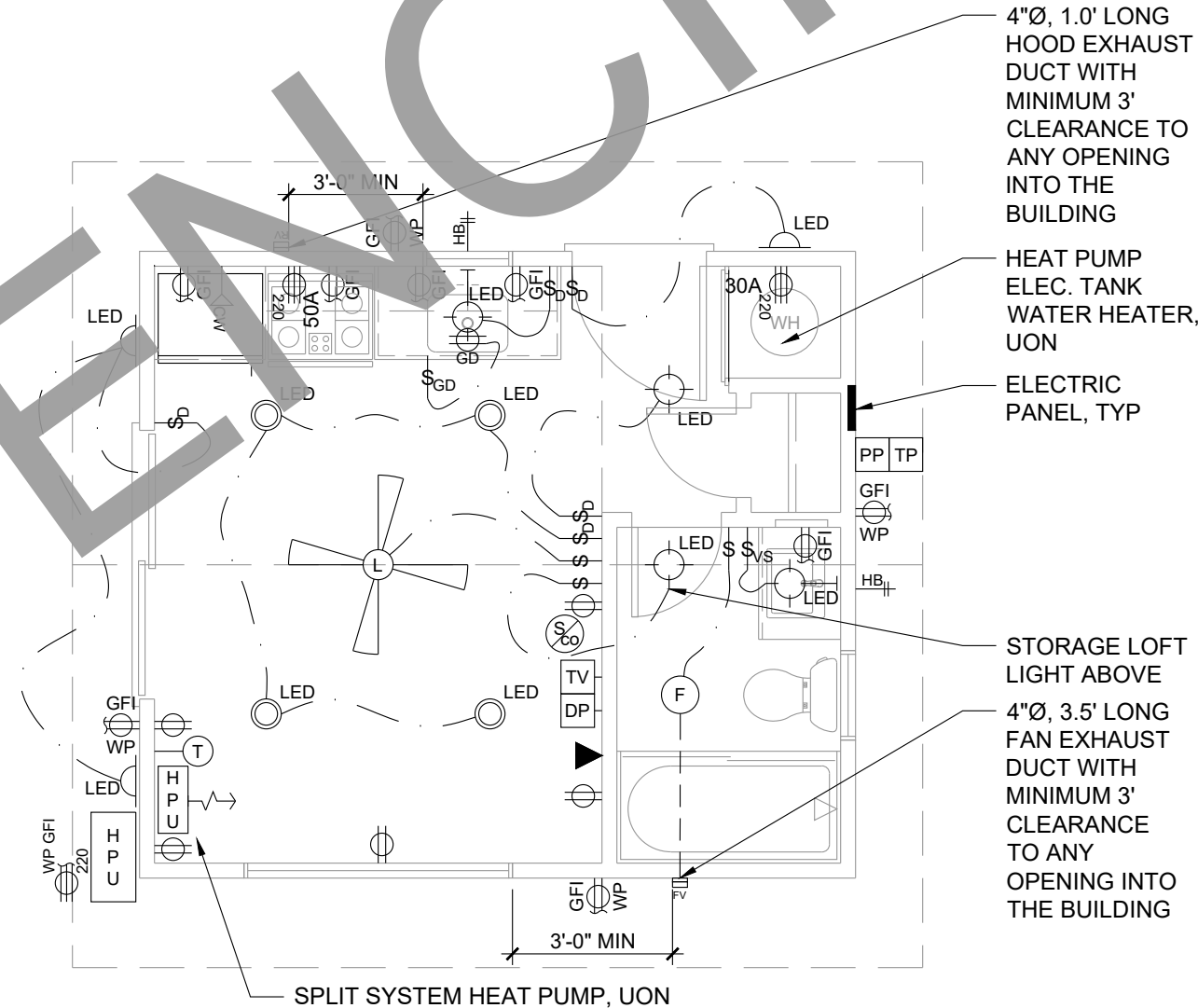
electric:

- ✓ SELECTION
- ☐ NEW METER WITH \_\_\_\_\_ AMP PANEL
- ☐ SUBPANEL \_\_\_\_\_ AMP TO EXISTING \_\_\_\_\_ AMP MAIN PANEL
- DISTANCE TO CONNECTION = \_\_\_\_\_ FEET
- CONTACT SD&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(b)	1500 VA x _____ circuits =	3000	VA
Laundry load -220.16(b)	1500 VA x _____ circuits =	N/A	VA
General Lighting Total		3700	VA
2. COOKING EQUIPMENT LOADS - Nameplate Value			
Range _____ VA =	5000	VA	
Cooking _____ VA =			
Ovens _____ VA =			
Cooking Equipment Total		5000	VA
3. ELECTRIC DRYER 220-18 (Nameplate, 5000 VA minimum)			
Dryer _____ VA =			
Dryer Total		N/A	VA
4. FIXED APPLIANCE LOADS 220-30(b)			
Dishwasher =	N/A	VA	
Disposal =	1000	VA	
Compactor =	VA		
Water Heater =	4500	VA	
Hydromassage Bathtub =	1500	VA	
Microwave Oven =	VA		
Built-in Vacuum =	VA		
Fixed Appliance Total		10000	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 _____ 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	78	Ampere	
(Please put total on front of card under Computed Load)			

utility plan notes:

- SEE LEGENDS BELOW FOR SYMBOLS RELATING TO THE UTILITY PLAN.
- SEE SHEET a0.1 FOR SCHEDULES RELATING TO THE UTILITY PLAN.
- RECEPTACLE OUTLET LOCATION PER NEC ARTICLE 210.52.
- 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.
- 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)).
- TAMPER RESISTANT RECEPTACLES ARE REQUIRED FOR ALL LOCATIONS DESCRIBED IN 210.52 (IE ALL RECEPTACLES IN A DWELLING).
- WEATHER RESISTANT TYPE FOR RECEPTACLES INSTALLED IN DAMP OR WET LOCATIONS.
- 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.
- OUTLETS MUST BE WITHIN 6FT OF ANY OPENING AND NOT TO EXCEED 12FT APART. ANY ISOLATED WALL 2FT OR WIDER TO HAVE OUTLET(S).
- ALL EXTERIOR LIGHTING SHALL BE HIGH EFFICACY, OAE
- RECESSED LIGHTS SHOWN IN SLOPED CEILINGS SHALL BE A MODEL DESIGNED TO PROVIDE A PERPENDICULAR LIGHT SOURCE IN A SLOPED CEILING.
- PROVIDE UFER GROUND AT ELECTRIC SERVICE LOCATION IN FOUNDATION. GROUND SHALL BE A 20' LONG #4 REINFORCING BAR, OAE
- 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)
- 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.
- 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.
- ALL HOT WATER PIPING SIZED 1/2" OR LARGER IS REQUIRED TO BE INSULATED AS FOLLOWS: 1" PIPE SIZE OR LESS: 1" THICK INSULATION. LARGER PIPE SIZES REQUIRE 1 1/2" THICK INSULATION. NOTE: IN ADDITION, THE 1/2" SIZE HOT WATER PIPE TO THE KITCHEN SINK IS REQUIRED TO BE INSULATED. ES 150.0(J)2
- SEE T24 DOCUMENTATION SHEET FOR MORE INFORMATION ON WATER HEATING, SPACE HEATING, AND COOLING EQUIPMENT SPECIFICATIONS.
- 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, THE 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 ONLY.
- CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING IS SERVED FROM A COMMERCIAL SOURCE AND A 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.
- SHOW THE LOCATIONS OR PROVIDE NOTES OF ALL SMOKE ALARMS MEETING THE REQUIREMENTS OF CRC SECTION R314.
  - 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.



PREPARER SIGNATURE

FOR CITY STAMPS

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UTILITY PLAN

a2.0



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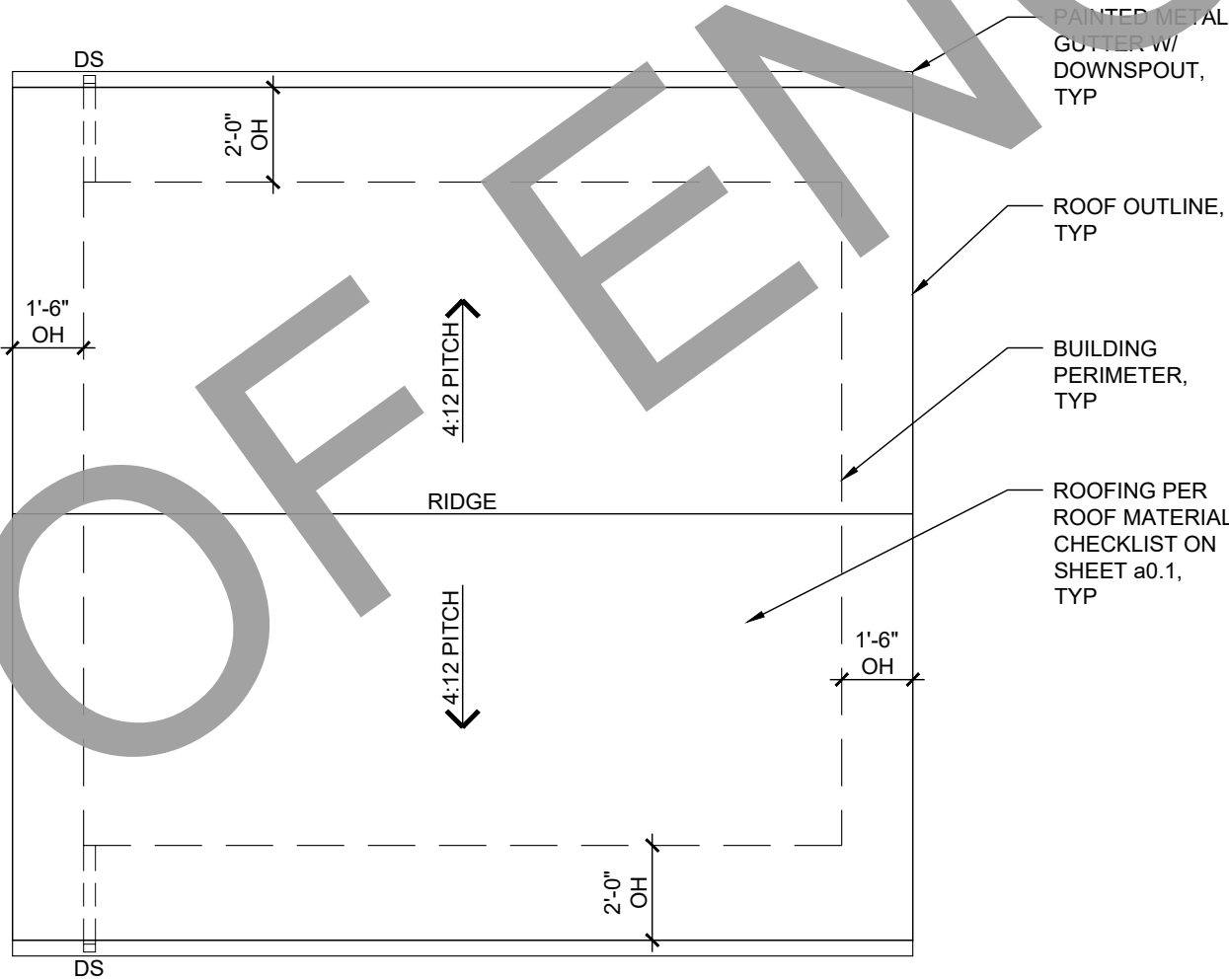
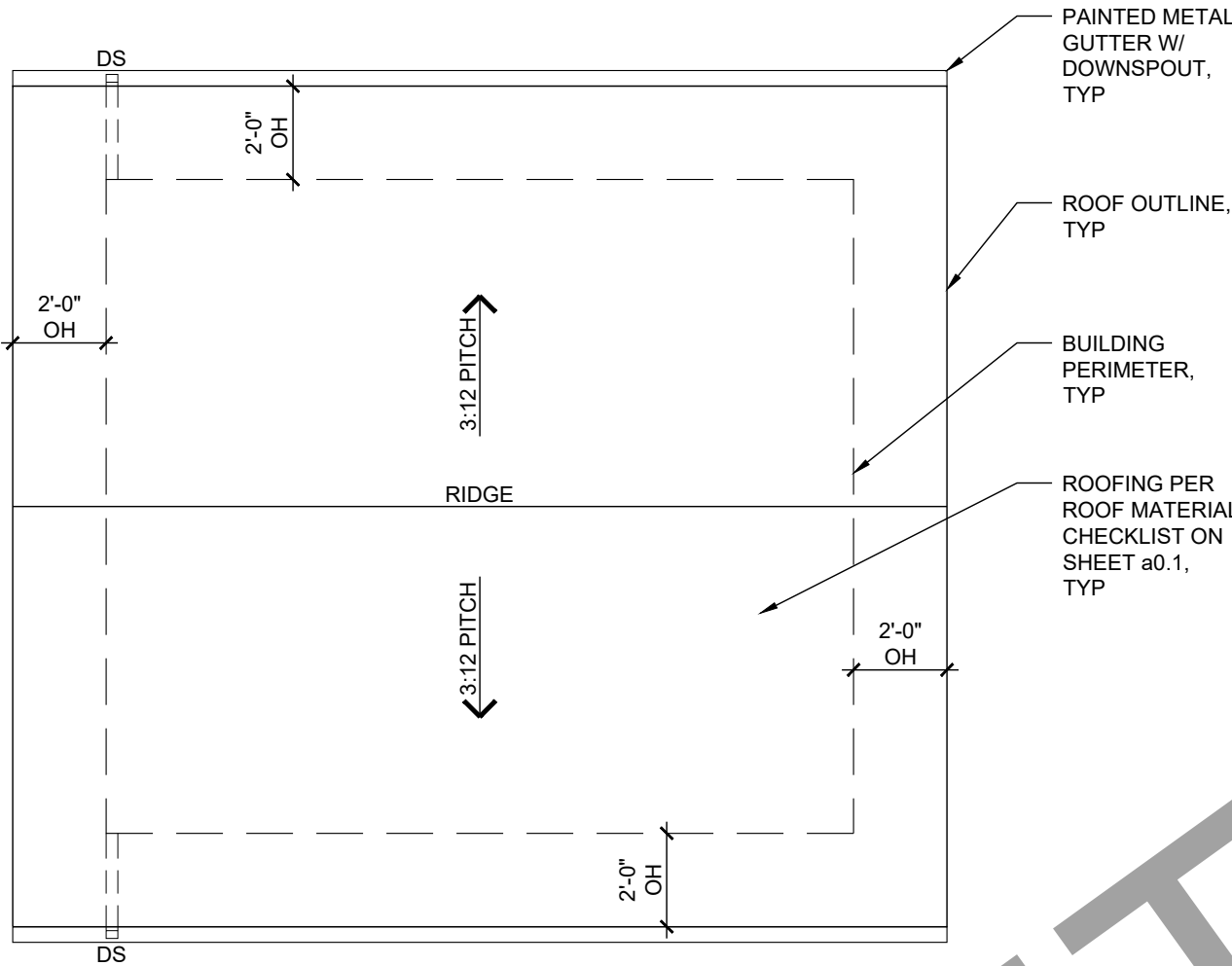
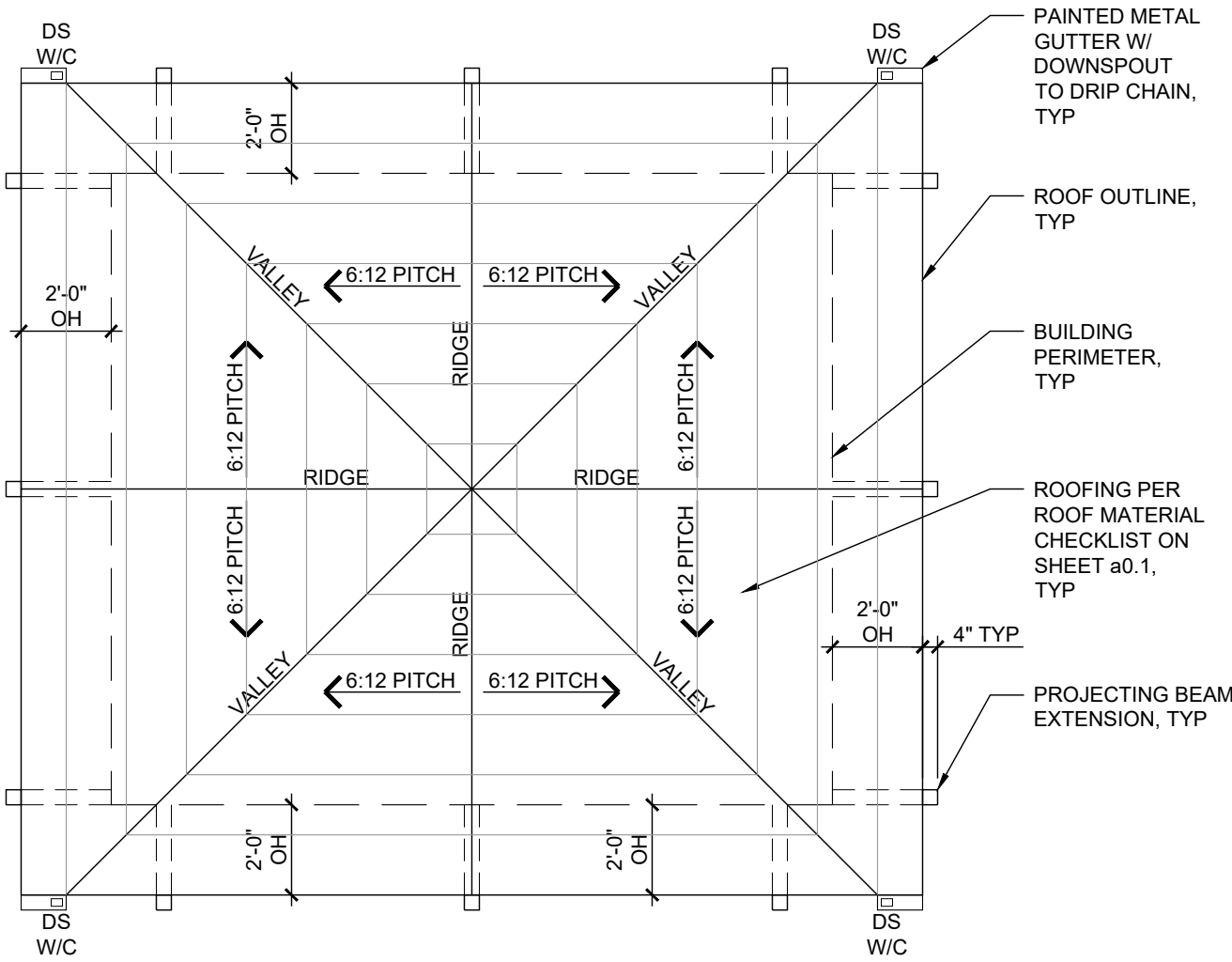
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roof plan notes:

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/a0.4 PROVIDE INSULATION ALTERNATIVES.

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FOR CITY STAMPS



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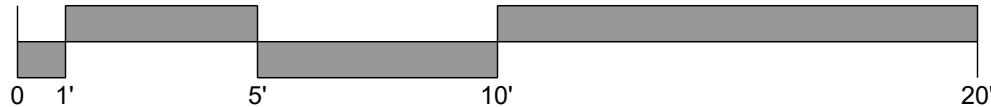


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1 roof plan c  
SCALE: 1/4" = 1'-0"

2 roof plan b  
SCALE: 1/4" = 1'-0"

3 roof plan a  
SCALE: 1/4" = 1'-0"



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ROOF PLANS

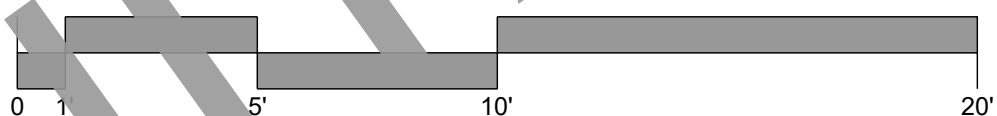
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FOR USE IN THE CITY OF ENCINITAS

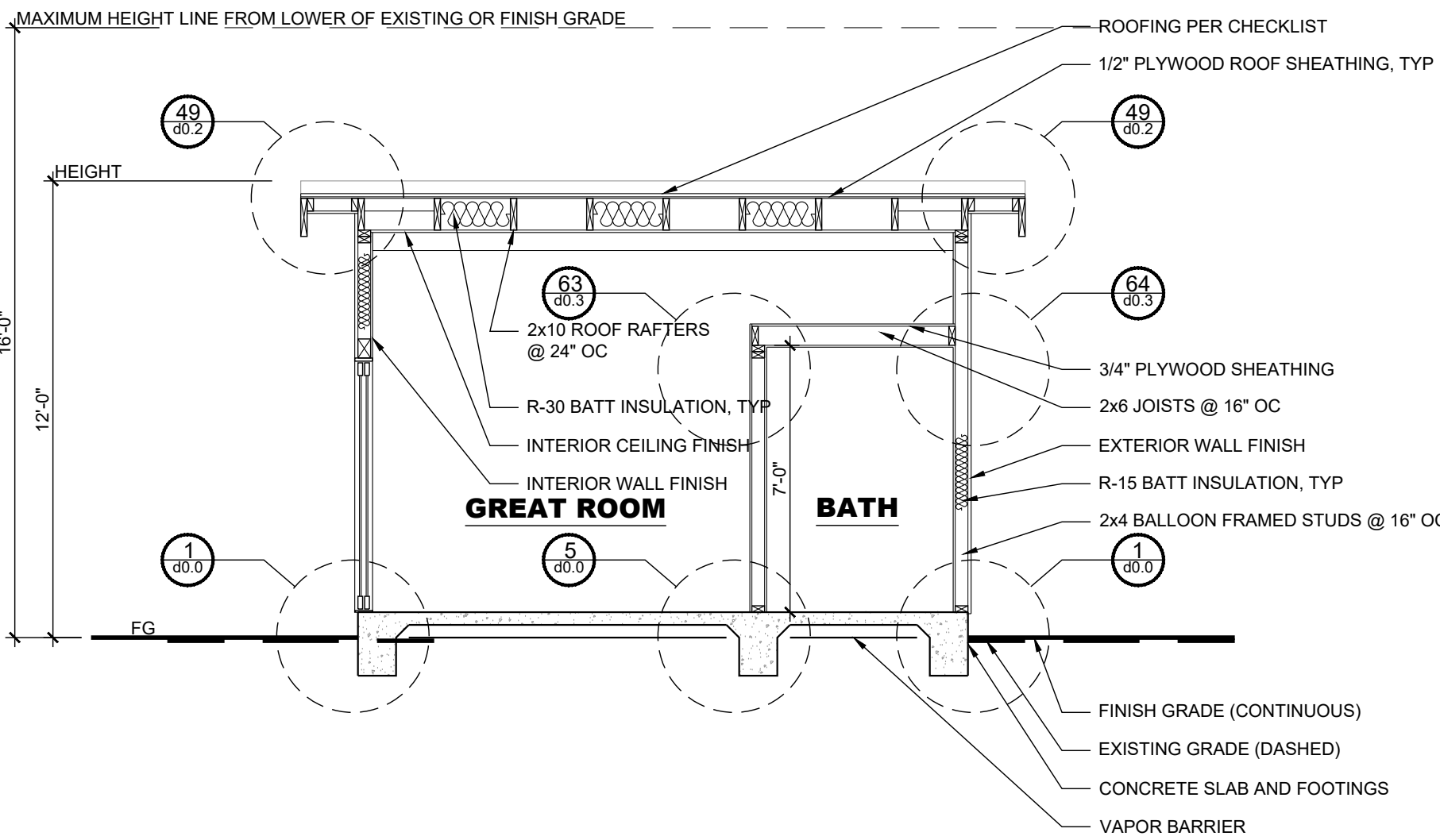


elevation + section notes:

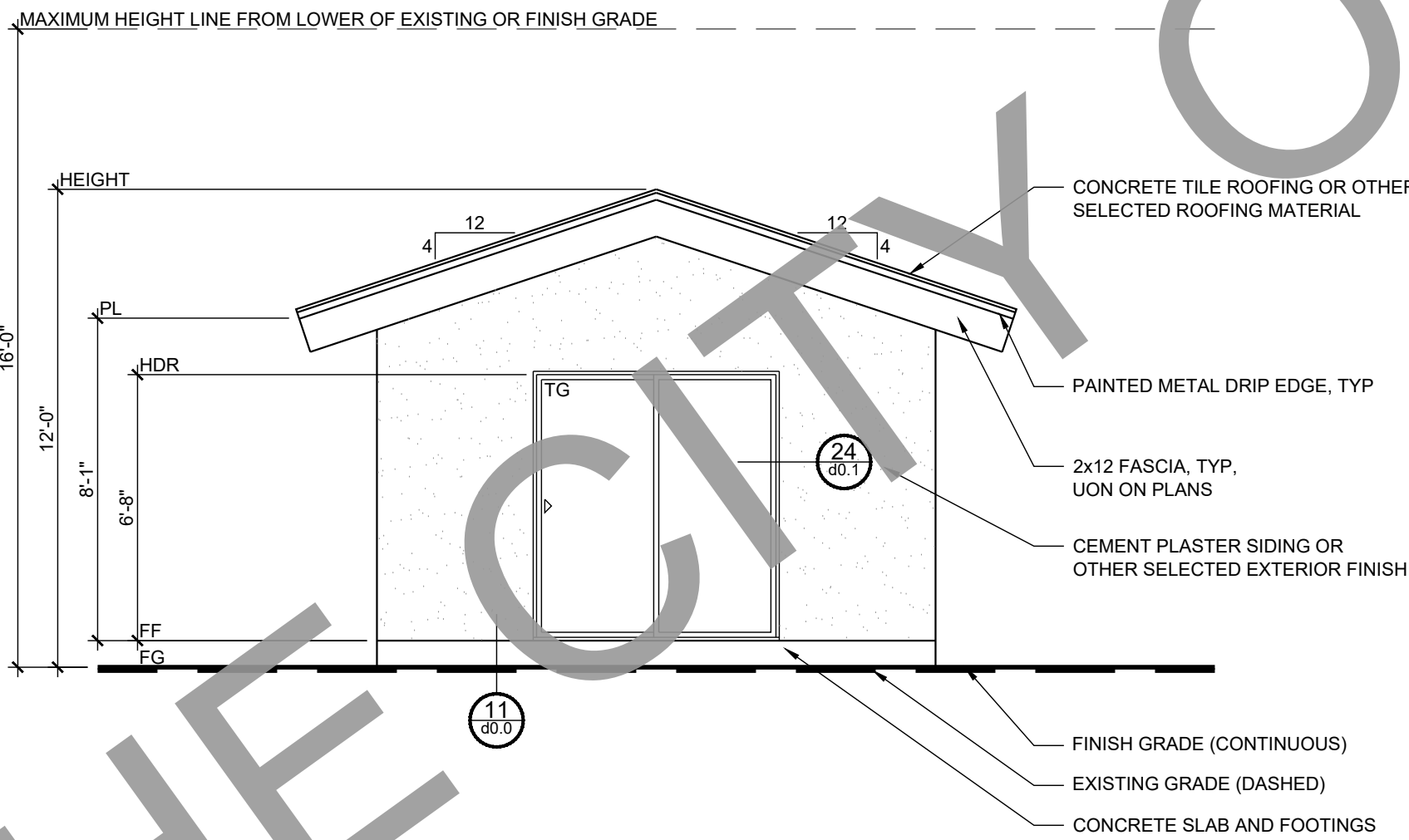
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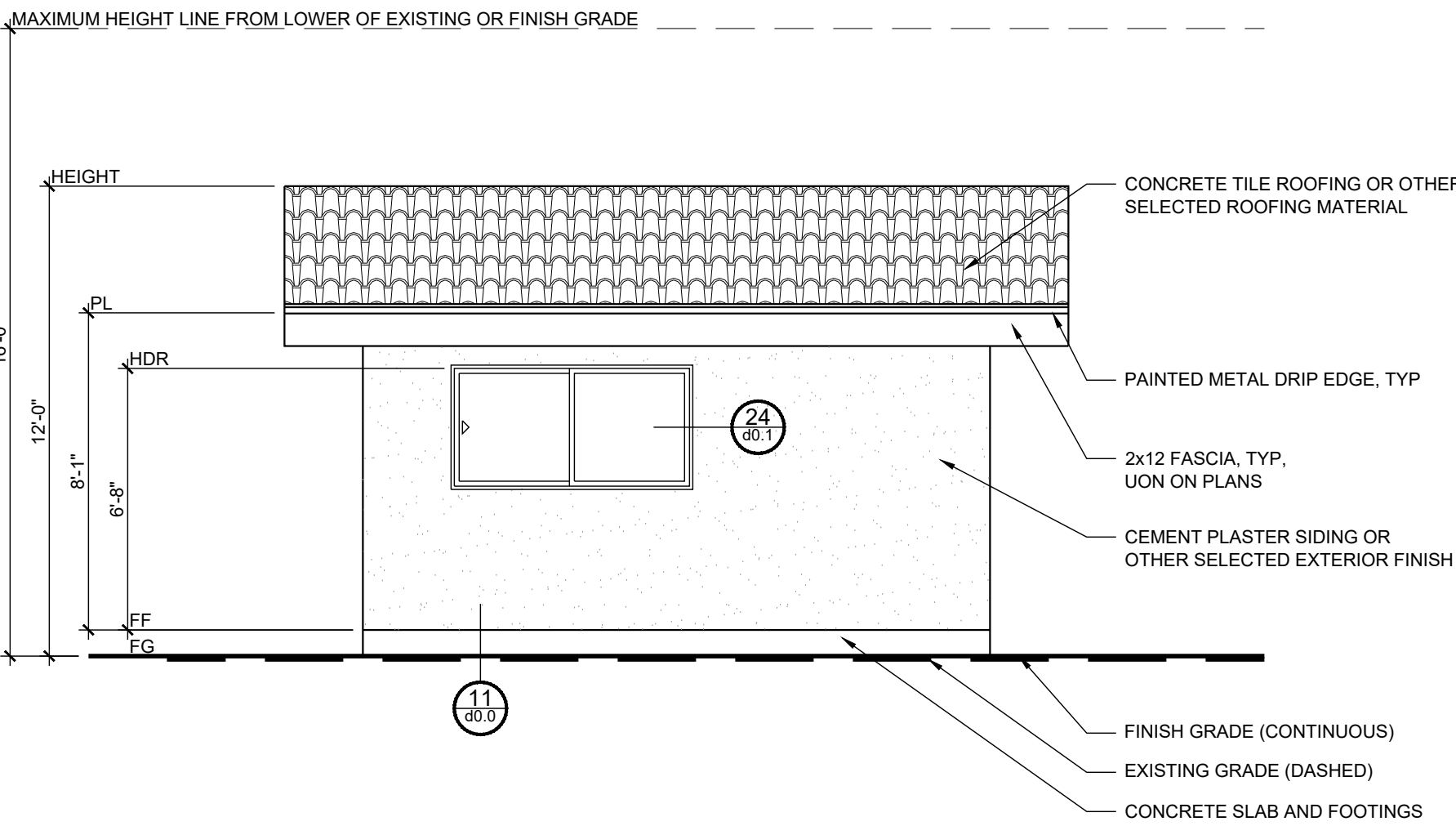
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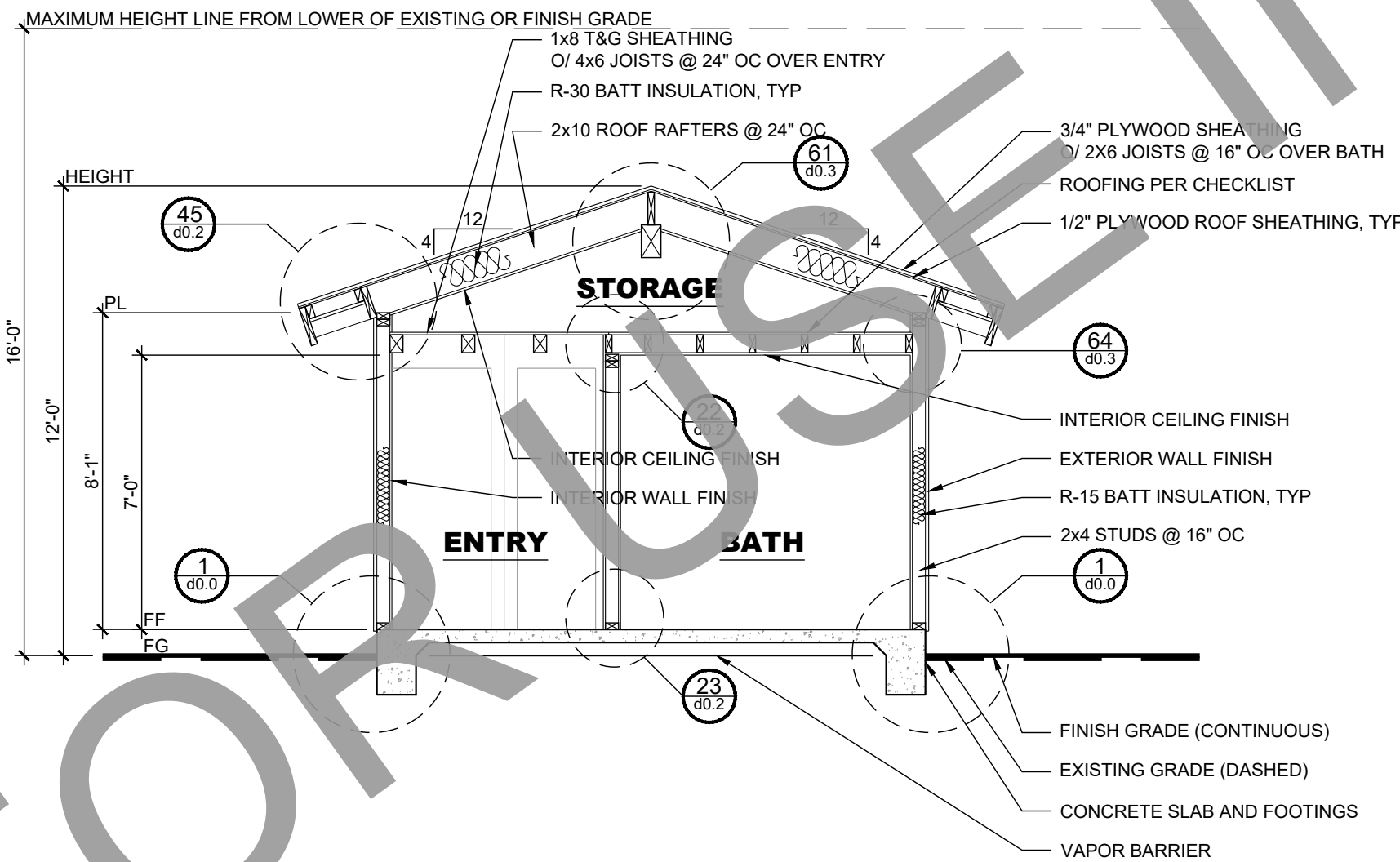
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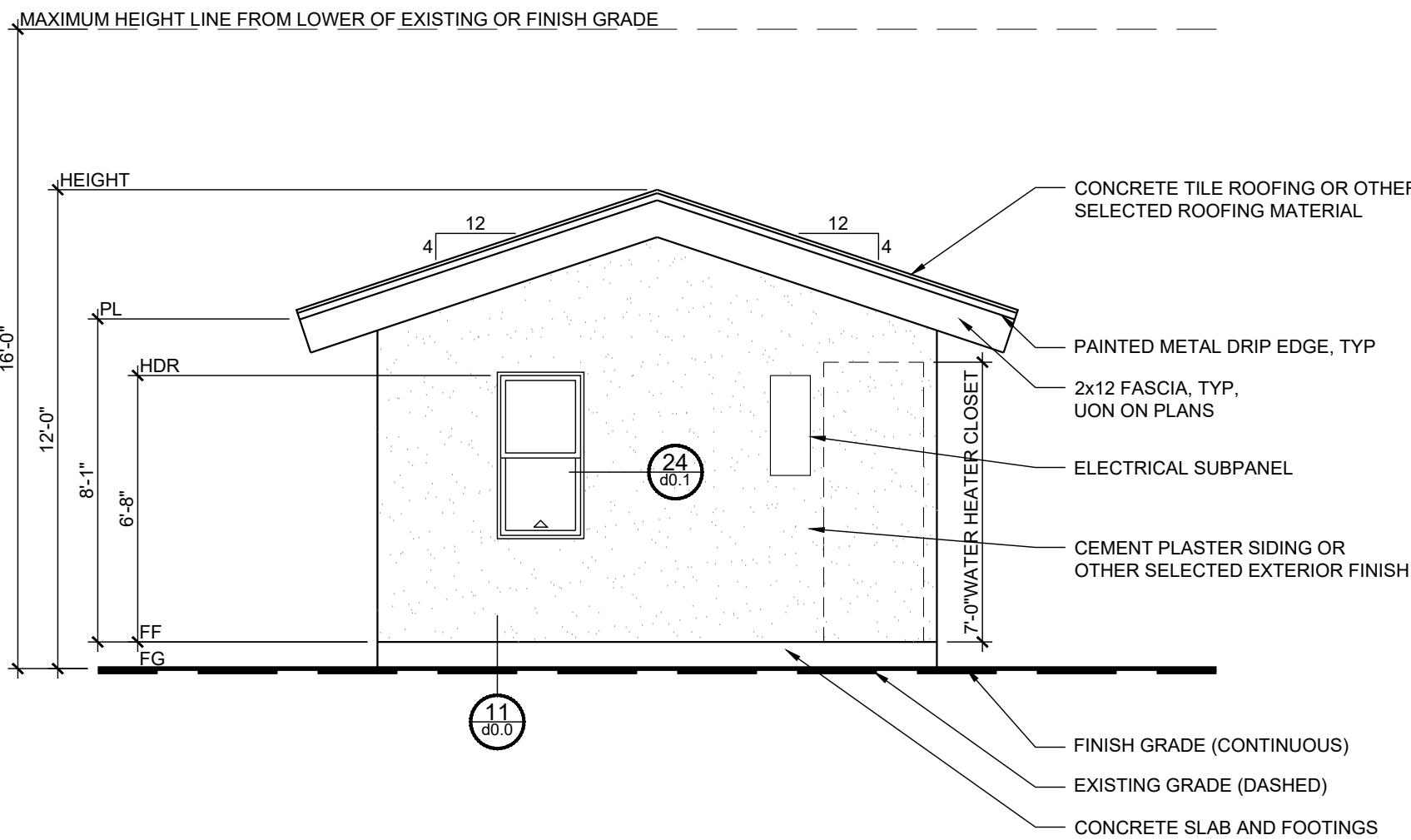
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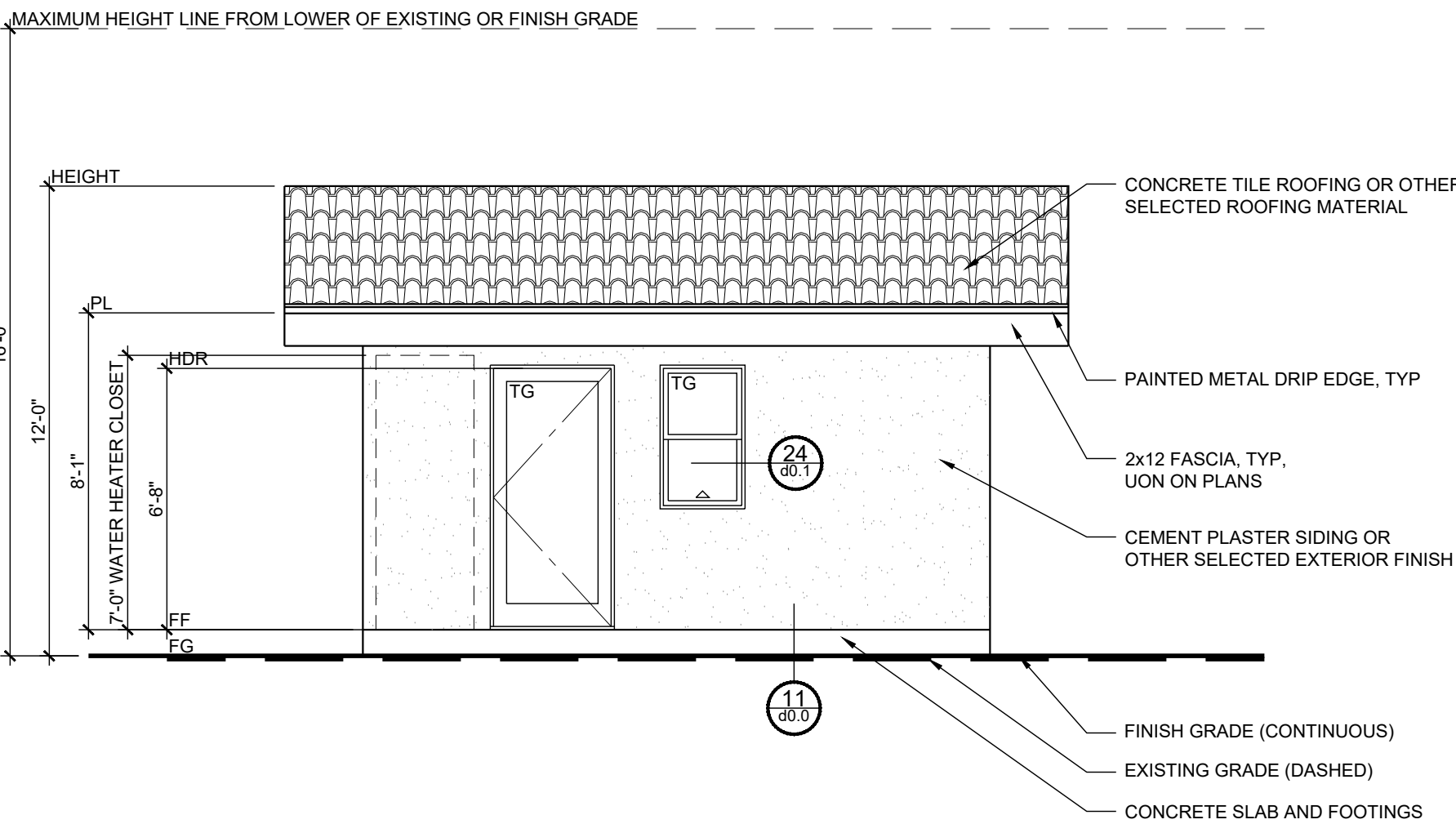
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SCALE: 1/4" = 1'-0"



3 section g  
SCALE: 1/4" = 1'-0"



5 left elevation a  
SCALE: 1/4" = 1'-0"



7 front elevation a  
SCALE: 1/4" = 1'-0"

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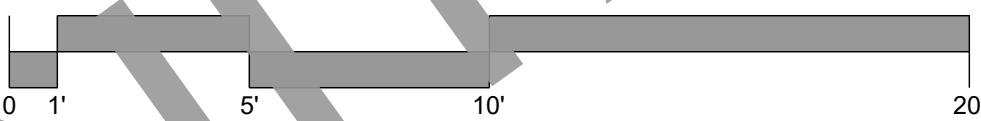
A ELEVATIONS + SECTIONS

a4.0

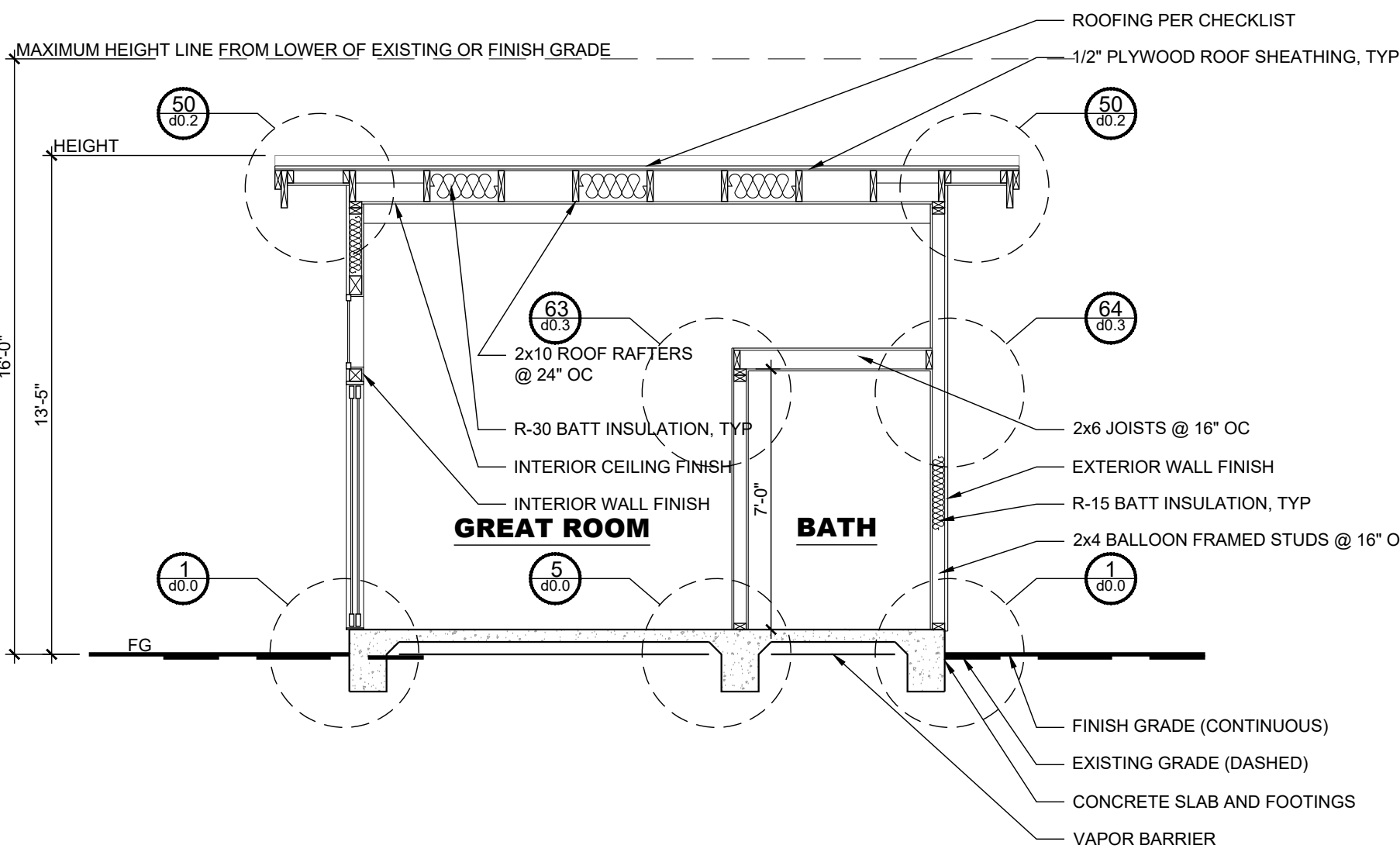


elevation + section notes:

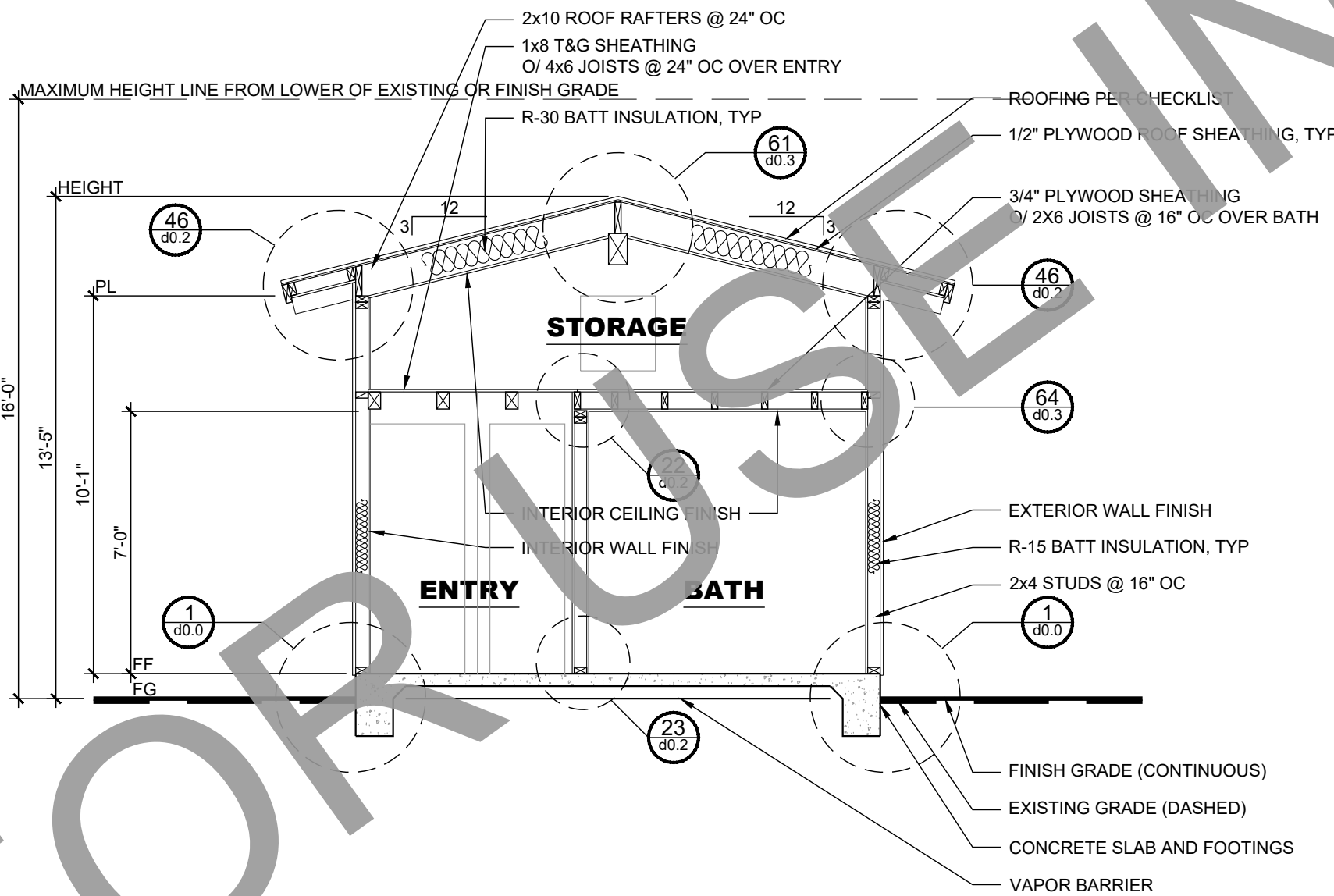
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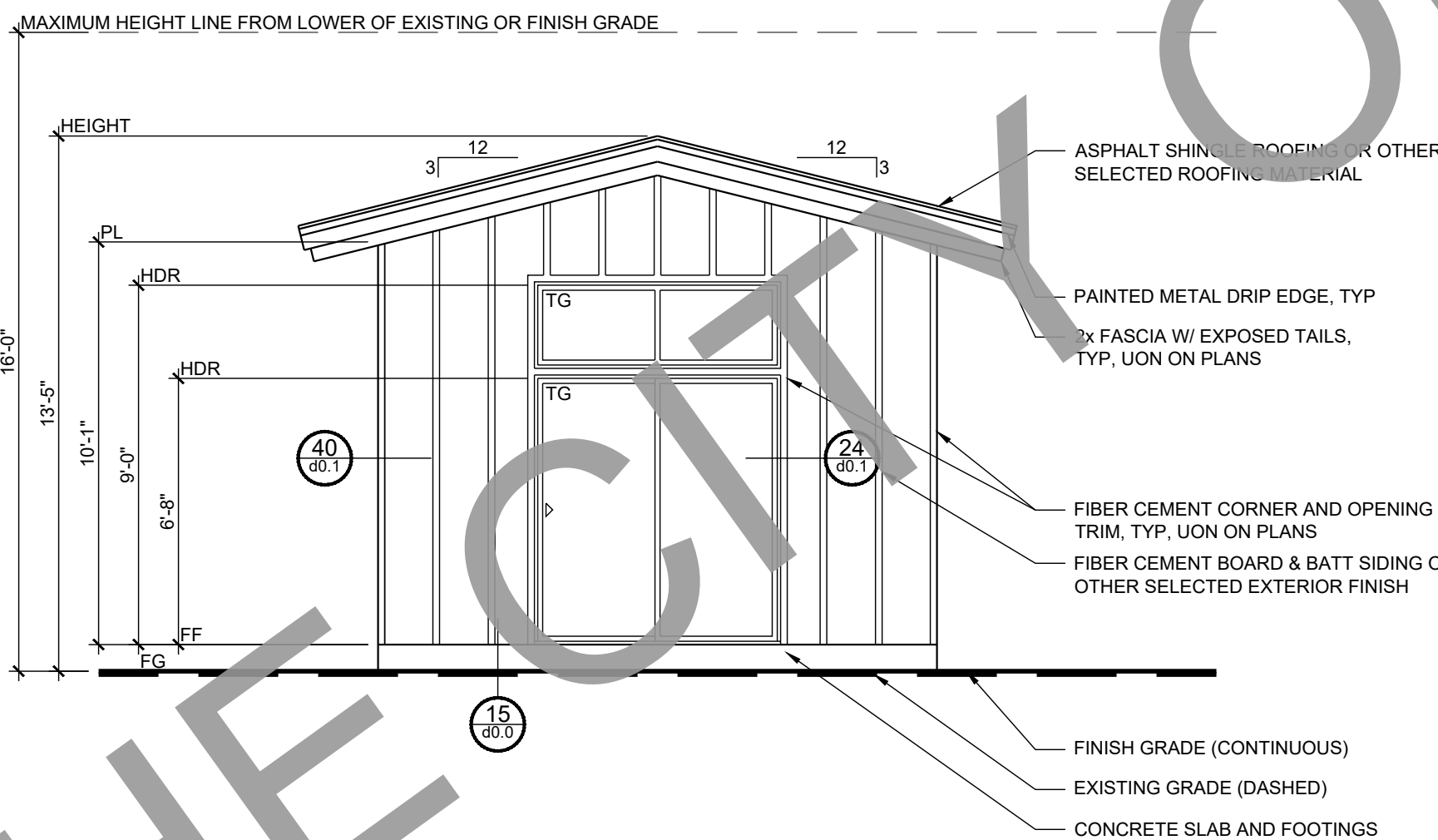
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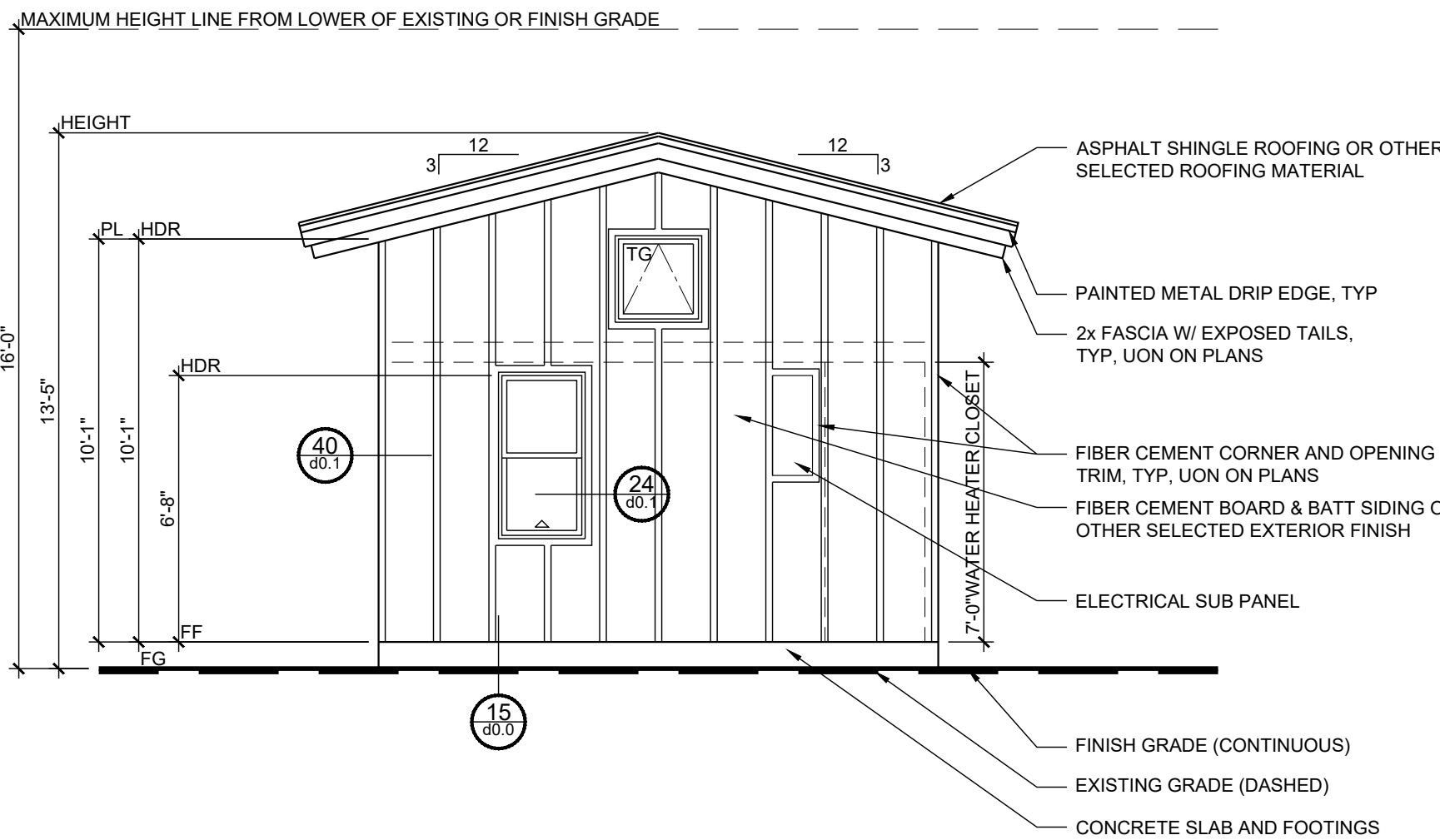
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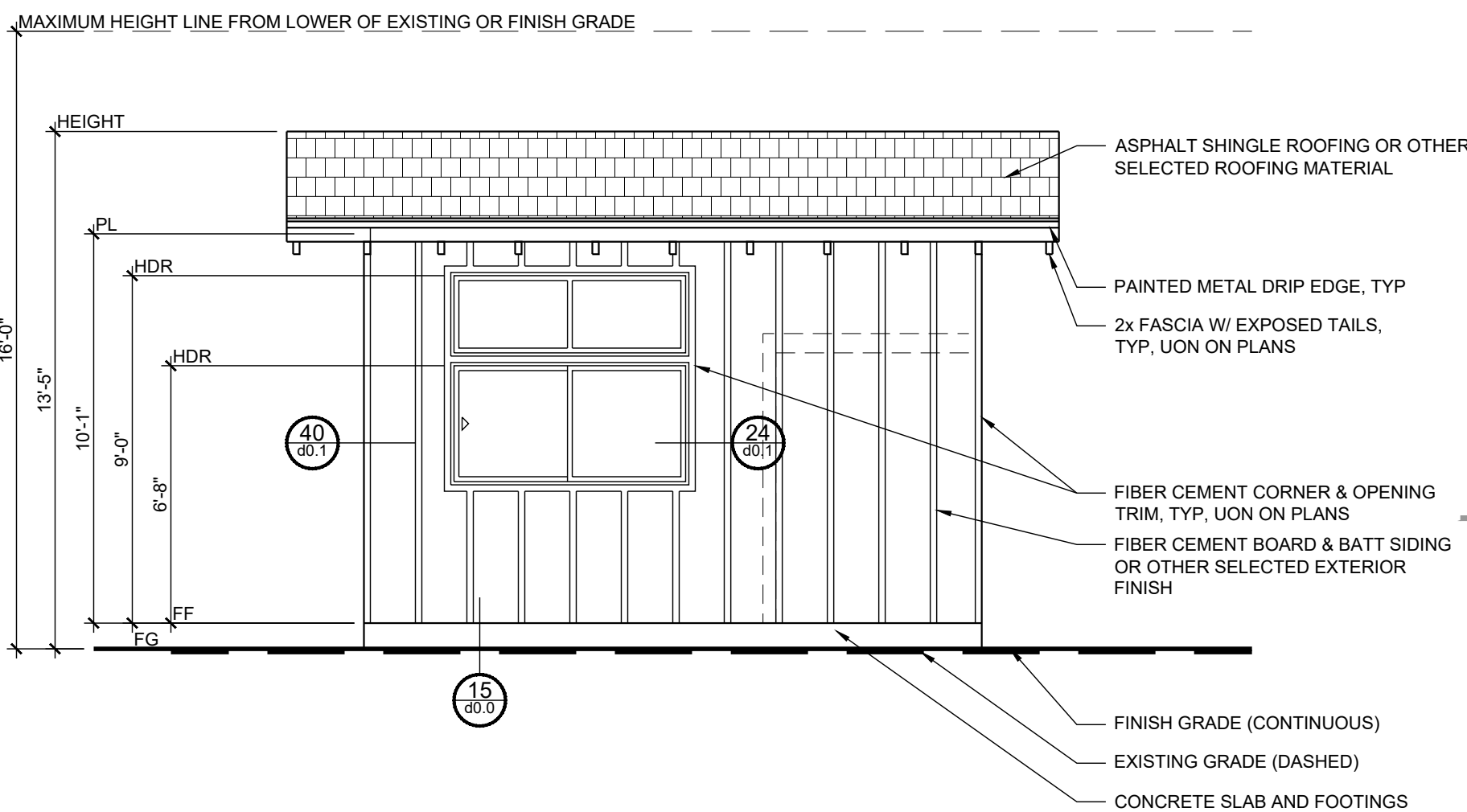
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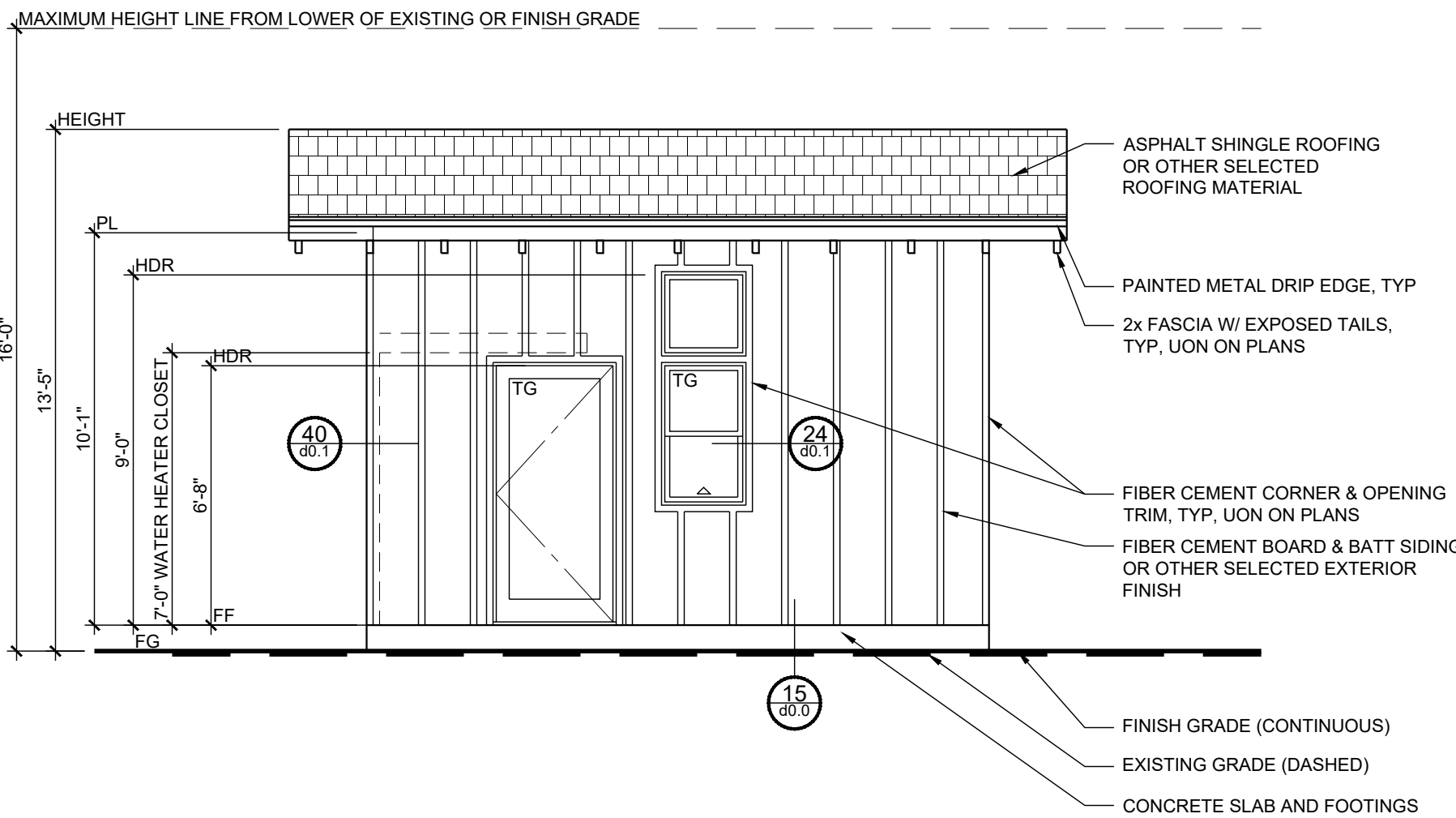
4 right elevation b  
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5 left elevation b  
SCALE: 1/4" = 1'-0"



6 rear elevation b  
SCALE: 1/4" = 1'-0"



7 front elevation b  
SCALE: 1/4" = 1'-0"

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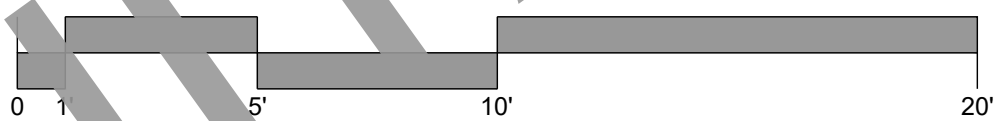
B ELEVATIONS + SECTIONS

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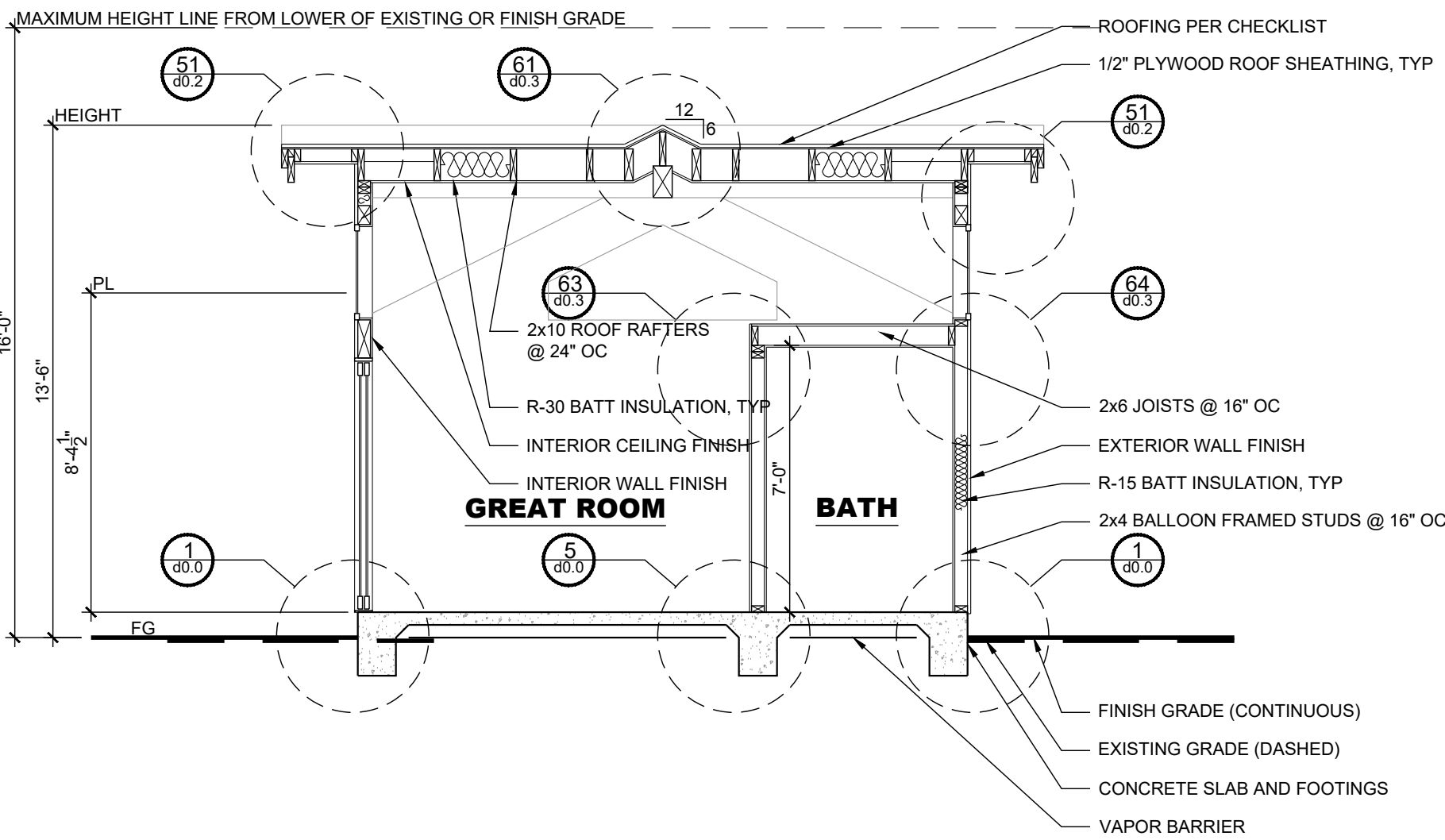


elevation + section notes:

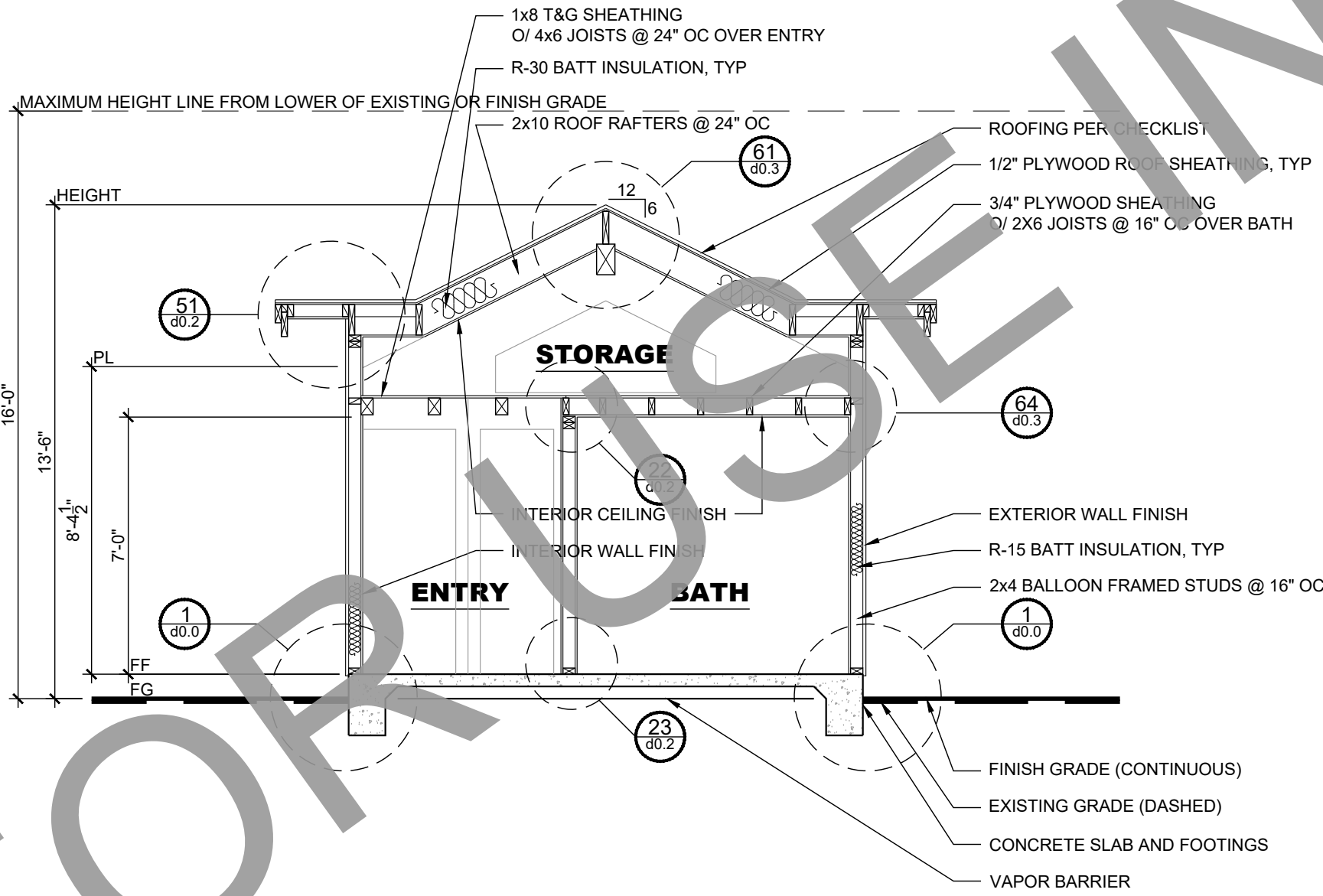
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1 section e  
SCALE: 1/4" = 1'-0"

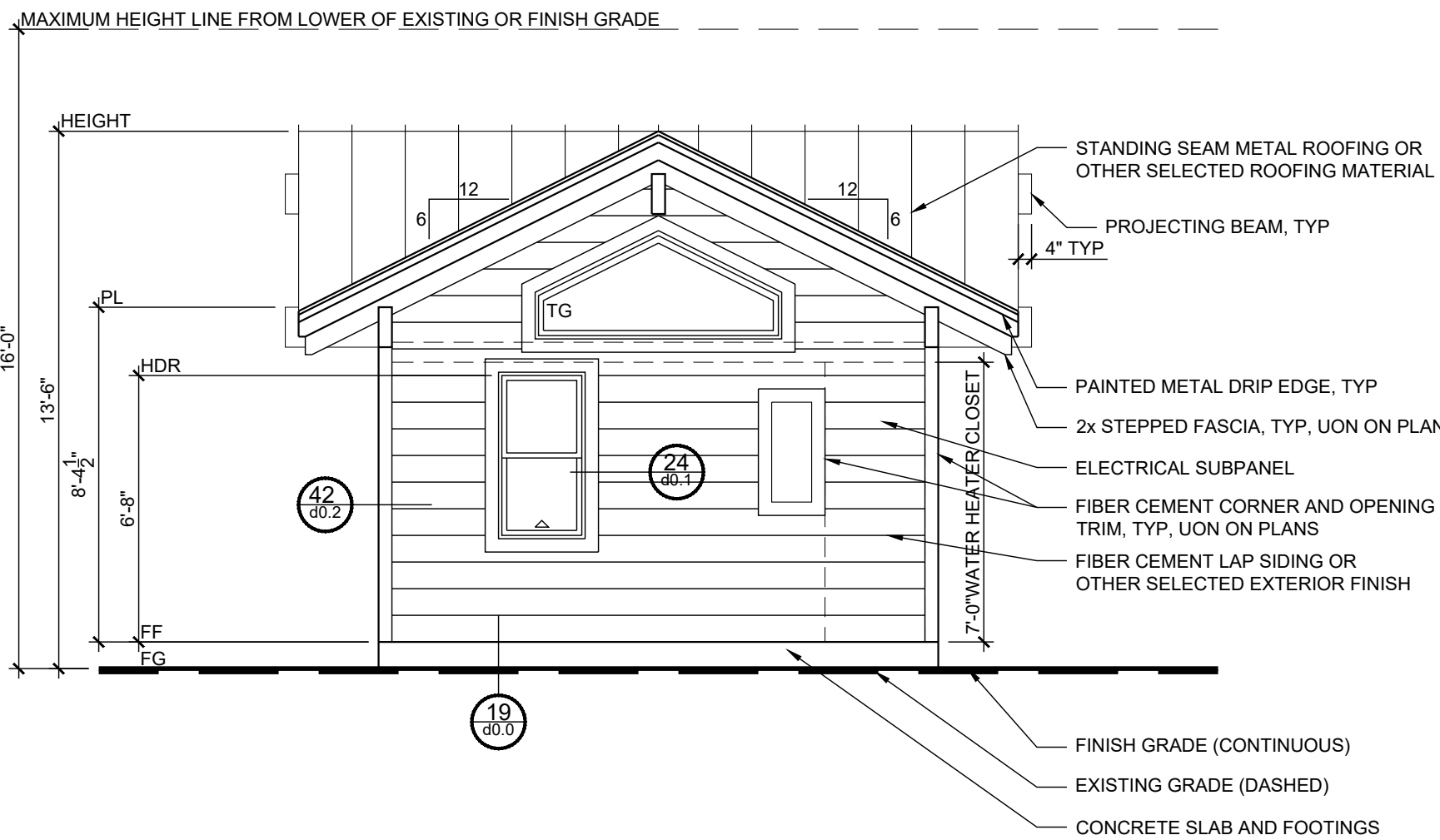


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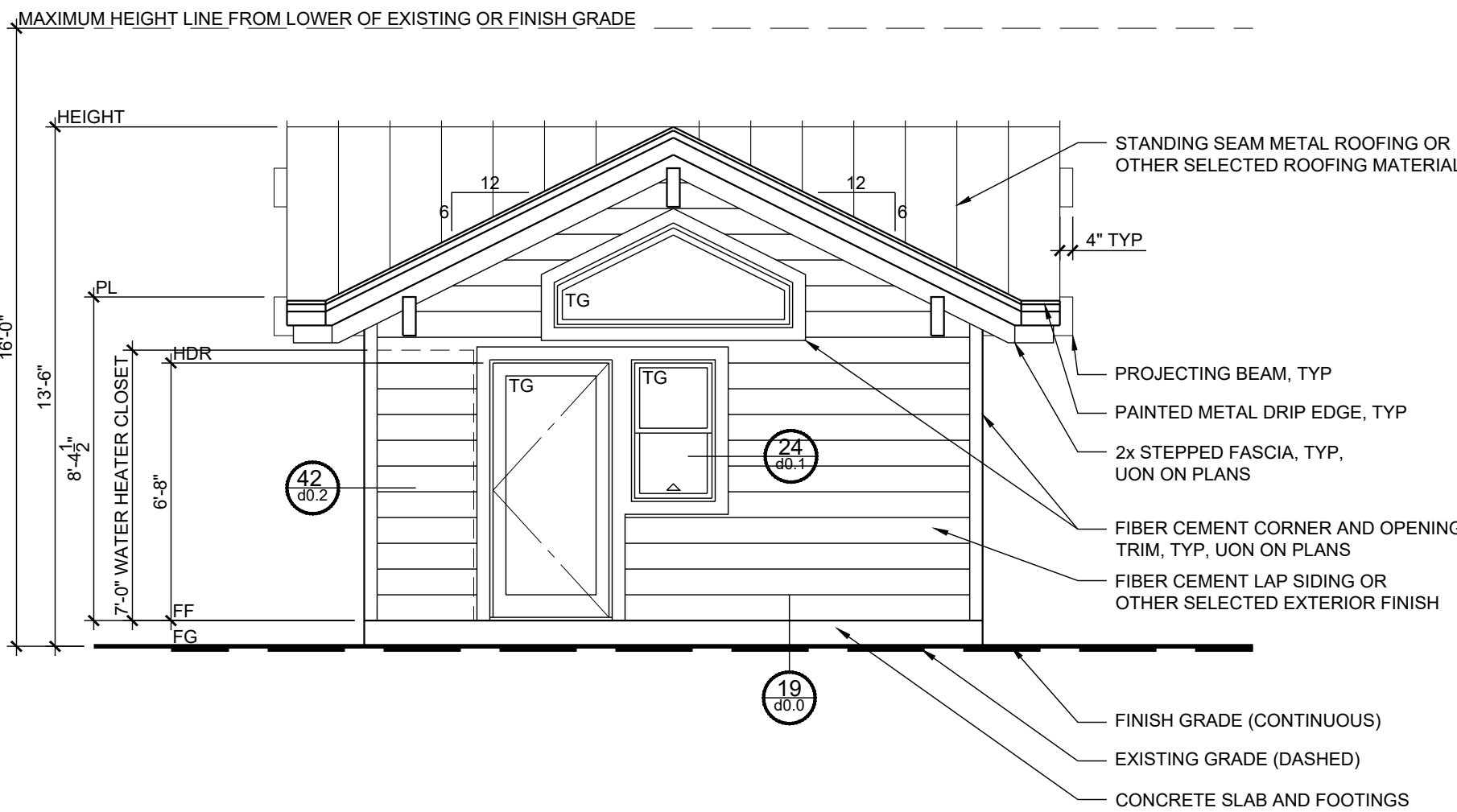
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4 right elevation c  
SCALE: 1/4" = 1'-0"



5 left elevation c  
SCALE: 1/4" = 1'-0"

6 rear elevation c  
SCALE: 1/4" = 1'-0"



7 front elevation c  
SCALE: 1/4" = 1'-0"

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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 60", 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 PANEL HAS THE CAPABILITY OF WITHSTANDING A HORIZONTAL LOAD OF 50 POUNDS PER LINEAR FOOT WITHOUT CONTACTING THE GLASS & BE NOT LESS THAN 11/2" 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, FLOOR, 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 ON 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:
	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.


2022 CBC TABLE 2304.10.2 FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>1</sup>	SPACING OR PENETRATION
ROOF		
1. BLOCKING BETWEEN CEILING JOISTS, RAFTERS OR TRUSSES TO TOP PLATE OR OTHER FRAMING BELOW	3-8d COMMON (2-1/2" x 11") <sup>1</sup> OR 3-10d BOX (3" x 12") <sup>1</sup> OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	EACH END, TOENAIL
BLOCKING BETWEEN RAFTERS OR TRUSS NOT AT THE WALL, TOP PLATE, TO RAFTER OR TRUSS	2-3" x 14 GAGE STAPLES 7/16" CROWN OR 2-3" x 14 GAGE STAPLES 7/16" CROWN OR 2-3" x 14 GAGE STAPLES 7/16" CROWN	EACH END, TOENAIL
FLAT BLOCKING TO TRUSS AND WEB FILLE	2-16d COMMON (3-1/2" x 162") OR 2-16d COMMON (3-1/2" x 162") OR 2-16d COMMON (3-1/2" x 162")	FACE NAIL
2. CEILING JOISTS TO TOP PLATE	3-10d BOX (3" x 12") <sup>1</sup> OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	EACH JOIST, TOENAIL
3. CEILING JOIST NOT ATTACHED TO RAFTER, LAP OVER PANELS (NO 11/2" RISE) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1) OR CEILING JOIST ATTACHED TO RAFTER (HEEL JOINT) (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	3-16d COMMON (3-1/2" x 162") OR 3-16d COMMON (3-1/2" x 162") OR 3-16d COMMON (3-1/2" x 162")	FACE NAIL
5. COLLAR JOIST TO STUD	2-16d COMMON (3-1/2" x 162") OR 2-16d COMMON (3-1/2" x 162") OR 2-16d COMMON (3-1/2" x 162")	FACE NAIL
6. RAFTER OR TRUSS TO TOP PLATE (SEE SECTION 2308.7.3.1, TABLE 2308.7.3.1)	3-16d COMMON (3-1/2" x 162") OR 3-16d COMMON (3-1/2" x 162") OR 3-16d COMMON (3-1/2" x 162")	2 TOENAILS ON ONE SIDE AND 1 TOENAIL ON OPPOSITE SIDE OF RAFTER OR TRUSS <sup>2</sup>
7. ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS, OR LAP OF RAFTER TO 2-INCH RIDGE BEAM	3-16d COMMON (3-1/2" x 162") OR 3-16d COMMON (3-1/2" x 162") OR 3-16d COMMON (3-1/2" x 162")	END NAIL
WALL		
8. STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	24" OC, FACE NAIL
9. STUD TO STUD AND BUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	12" OC, FACE NAIL
10. BUILT-UP HEADER (2" TO 2" HEADER)	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	12" OC, EA EDGE, FACE NAIL
11. CONTINUOUS HEADER TO STUD	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	TOENAIL
12. TOP PLATE TO TOP PLATE	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	12" OC, FACE NAIL
13. TOP PLATE TO TOP PLATE, AT END JOINTS	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 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)	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	12" OC, FACE NAIL
15. BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING AT BRACED WALL PANELS	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	16" OC, FACE NAIL
16. STUD TO TOP OR BOTTOM PLATE	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	TOENAIL
17. TOP PLATES, LAP AT CORNERS AND INTERSECTIONS	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	END NAIL
18. 1" BRACE TO EACH STUD AND PLATE	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	FACE NAIL
19. 1"x6" SHEATHING TO EACH BEARING	2-1/4" x 16 GAGE STAPLES 1" CROWN OR 2-1/4" x 16 GAGE STAPLES 1" CROWN OR 2-1/4" x 16 GAGE STAPLES 1" CROWN	FACE NAIL
20. 1"x6" AND WIDER SHEATHING TO BEARING	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	FACE NAIL
FLOOR		
21. JOIST TO SILL, TOP PLATE OR GIRDER	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	TOENAIL
22. RIM JOIST, BAND JOIST, OR BLOCKING TO TOP PLATE, SILL OR OTHER FRAMING BELOW	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	4" OC, TOENAIL
23. 1"x6" SUBFLOOR OR LESS TO EACH JOIST	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	FACE NAIL
24. 2" SUBFLOOR TO JOIST OR GIRDER	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	BLIND & FACE NAIL
25. 2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	EACH BEARING, FACE NAIL
26. COMMON (4"x0.192")	20d COMMON (4"x0.192")	32" OC, FACE NAIL AT TOP & BOTTOM STAGGERED ON OPPOSITE SIDES
28. BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	BOTTOM STAGGERED ON OPPOSITE SIDES
27. LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	EACH JOIST OR RAFTER, FACE NAIL
28. JOIST TO BAND JOIST OR RIM JOIST	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN	END NAIL
29. BRIDGING OR BLOCKING TO JOIST, RAFTER OR TRUSS	3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 GAGE STAPLES 7/16" CROWN OR 3-1/4" x 14 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 <sup>3</sup>		
FIELD = INTERMEDIATE SUPPORTS (EDGES = FIELD) (INCHES)		
30. 3/8" - 1/2"	16d COMMON OR DEFORMED (2" x 0.113") <sup>1</sup> OR 2-3/8" x 0.113" NAIL (SUBFLOOR & WALL) OR 2-3/8" x 0.113" NAIL (ROOF) OR 2-3/8" x 0.113" NAIL (ROOF) OR 2-3/8" x 0.113" NAIL (ROOF)	8" - 12"
31. 19/32" - 3/4"	16d COMMON OR DEFORMED (2" x 0.113") <sup>1</sup> OR 2-3/8" x 0.113" NAIL (SUBFLOOR & WALL) OR 2-3/8" x 0.113" NAIL (ROOF) OR 2-3/8" x 0.113" NAIL (ROOF)	8" - 12"
32. 7/8" - 1-1/4"	16d COMMON OR DEFORMED (2" x 0.113") <sup>1</sup> OR 2-3/8" x 0.113" NAIL (SUBFLOOR & WALL) OR 2-3/8" x 0.113" NAIL (ROOF) OR 2-3/8" x 0.113" NAIL (ROOF)	8" - 12"
33. 1/2" FIBERBOARD SHEATHING <sup>5</sup>	1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD Ø) OR 1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD Ø) OR 1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD Ø)	3 - 6
34. 5/8" FIBERBOARD SHEATHING <sup>5</sup>	1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD Ø) OR 1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD Ø) OR 1-1/2" x 0.120" GALVANIZED ROOFING NAIL (7/16" HEAD Ø)	3 - 6
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING		
35. 3/4" AND LESS	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	6 - 12
36. 7/8" - 1"	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	6 - 12
37. 1- 1/8" - 1- 1/4"	16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162") OR 16d COMMON (3-1/2" x 162")	6 - 12
PANEL SIDING TO FRAMING		
38. 1/2" OR LESS	1-1/8" x 0.106" OR 1-1/8" x 0.106" OR 1-1/8" x 0.106"	6 - 12
39. 5/8"	1-1/8" x 0.106" OR 1-1/8" x 0.106" OR 1-1/8" x 0.106"	6 - 12
INTERIOR PANELING		
40. 1/4"	1d CASING (1-1/2" x 0.099") OR 1d FINISH (1-1/2" x 0.079")	6 - 12
41. 3/8"	1d CASING (1-1/2" x 0.099") OR 1d FINISH (1-1/2" x 0.079")	6 - 12

structural design basis:

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

2022 cbc/crc shear panel schedule:

SHEAR PANEL DESIGNATION	STRUCTURAL 1 APA-RATED WOOD STRUCTURAL PANEL	COMMON NAIL SPACING @ BOUNDARIES & EDGES (BN & EN) FIELD NAILING (FN) @ 12" OC	ALLOWABLE SHEAR/F' W/ WOOD STUDS @ 16" OC	SLIDING ANCHOR SYSTEM <sup>4</sup>				
				5/8" Ø ANCHOR BOLT SPACING <sup>2</sup> 2x SILL - V=1184# 3x SILL - V=1520#	FRAMING CLIP SPACING V=450# SIMPSON CO A35, OAE	16d COMMON NAIL SPACING <sup>3</sup> 2x SOLE PLATE ONLY V=121#	1/2"Ø LAG SCREW SPACING <sup>5</sup> 2x SOLE PLATE ONLY V=880#	
 SP LENGTH (FT)	THICKNESS	OC (INCH)	#/FT	OC (INCH)	OC (INCH)	OC (INCH)	OC (INCH)	
A	3/8"	8d@6	280	48	18	5	23	
B <sup>1</sup>	15/32"	8d@4	430	42	12	3	15	
C <sup>1</sup>	15/32"	8d@3	550	32	9	2	12	
D <sup>1</sup>	15/32"	8d@2	730	24	7	→	9	
E <sup>1</sup>	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 (IARR 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.

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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STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

STRUCTURAL NOTES

s0.0



F

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foundation plan notes:

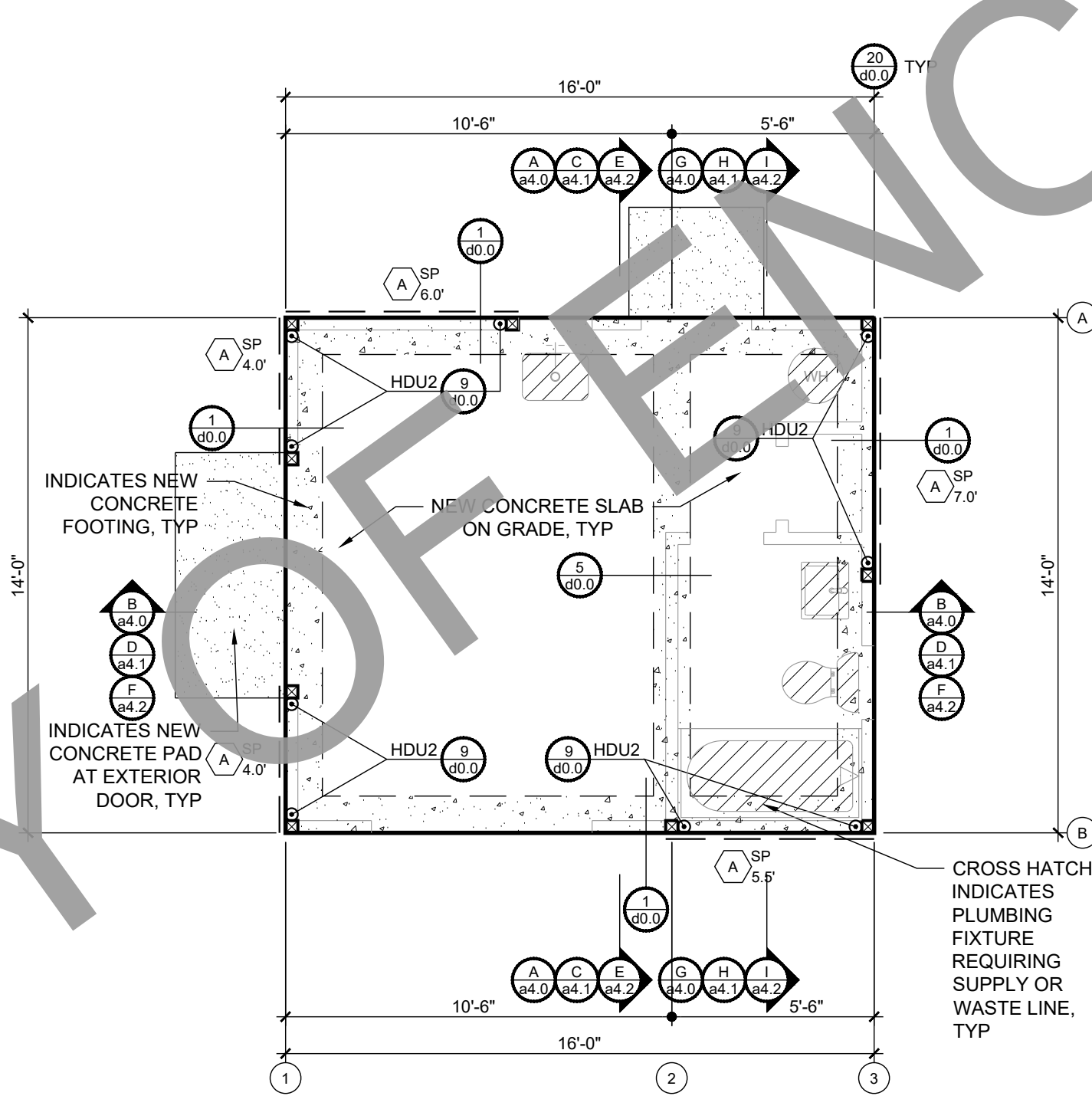
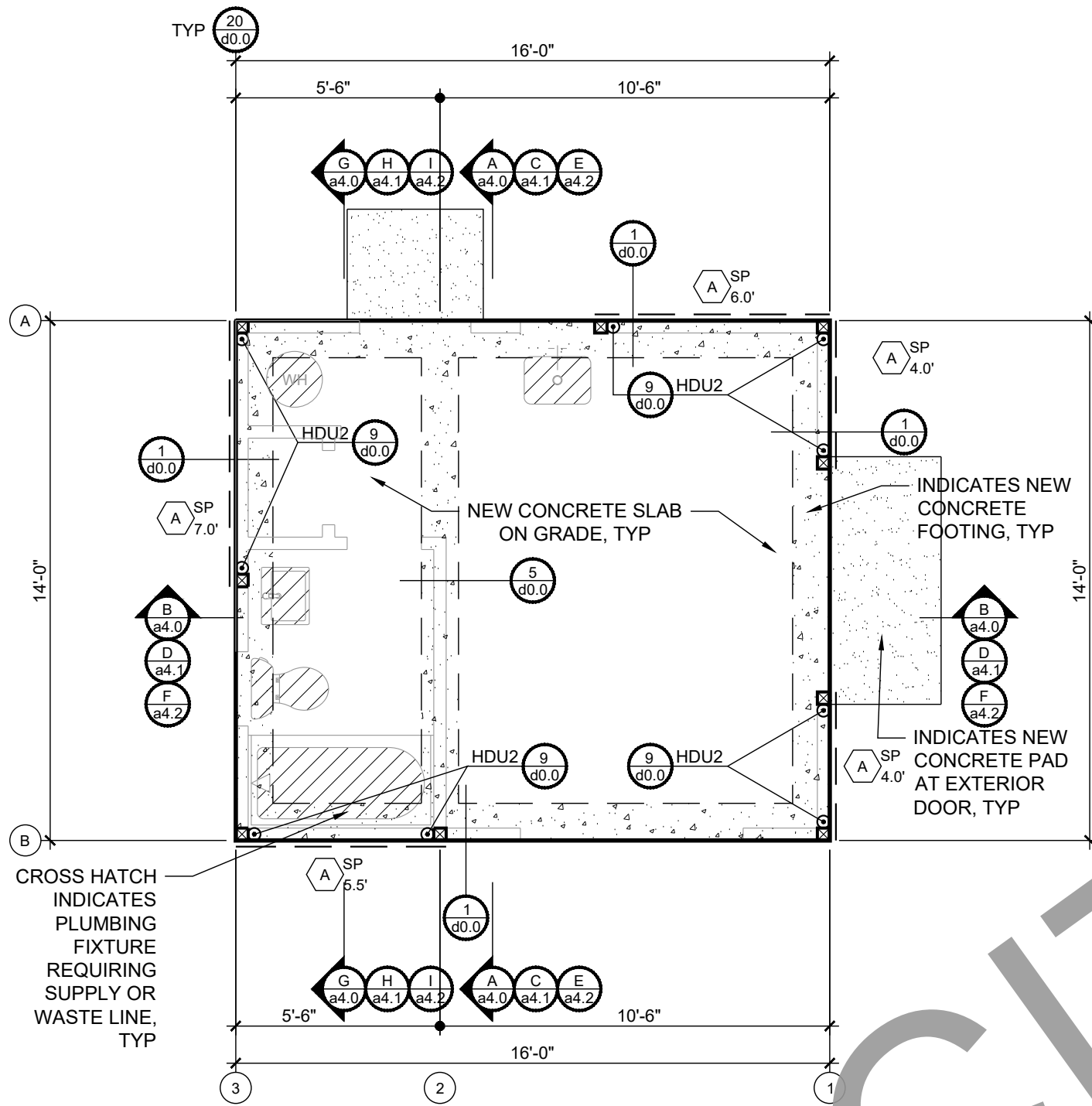
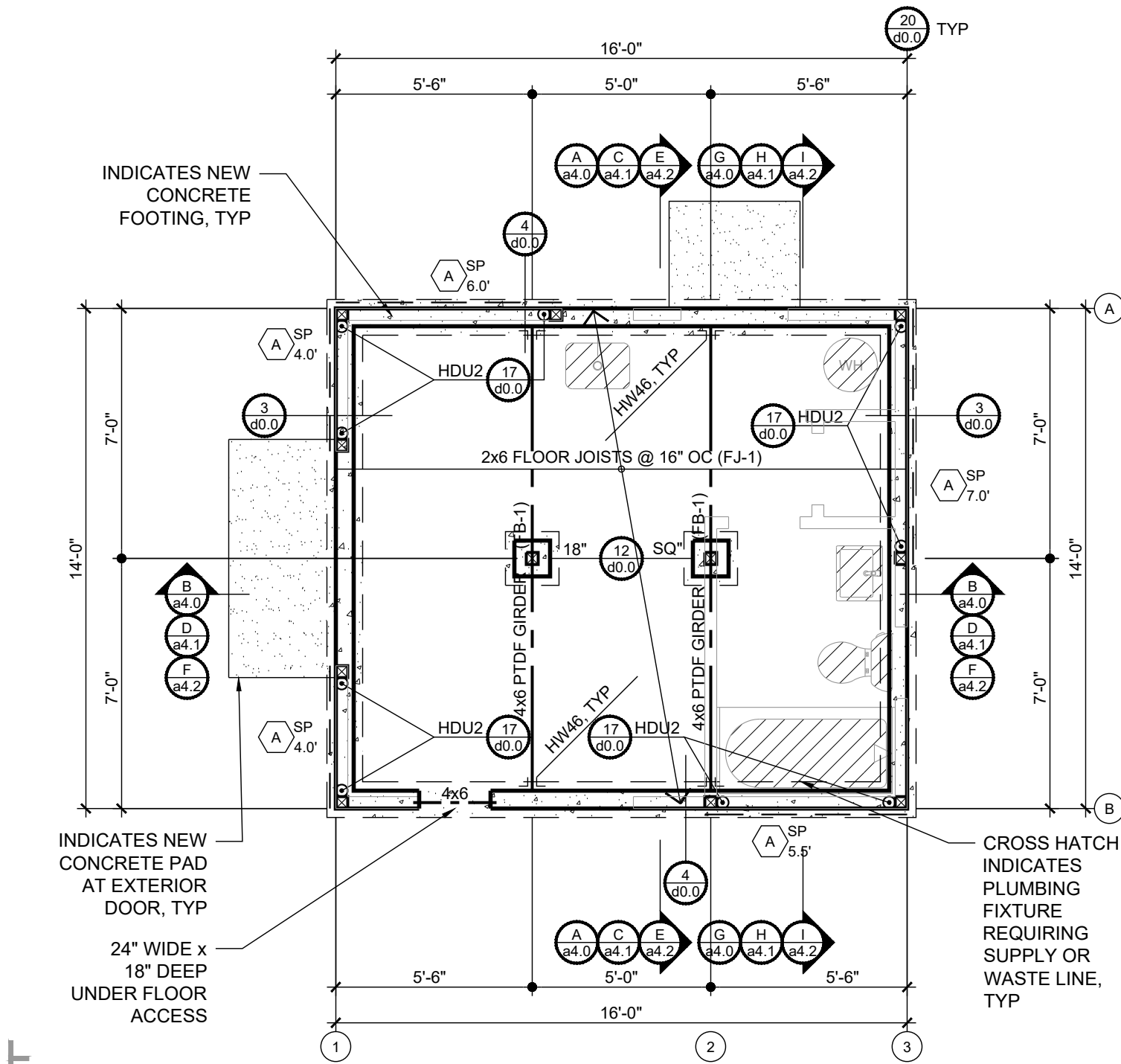
- EXPANSIVE SOIL LOCATIONS SHALL SUBSTITUTE DETAIL 2/d0.0 FOR DETAIL 1/d0.0 AT PERIMETER FOOTINGS.
- EXPANSIVE SOIL LOCATIONS SHALL SUBSTITUTE DETAIL 6/d0.0 FOR DETAIL 5/d0.0 AT INTERIOR FOOTINGS.
- ROOF FRAMING PLAN FOR OTHER ELEVATIONS MAY HAVE DIFFERENT SHEAR PANEL LENGTHS. VERIFY SHEAR PANEL LENGTHS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

raised floor plan notes:

- EXPANSIVE SOIL LOCATIONS SHALL PROVIDE FOOTING DIMENSIONS SPECIFIED IN DETAILS 3, 4, 7, 8, 12/d0.0 FOR EXPANSIVE SOILS.
- 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.
- PROVIDE EXHAUSTION VENTS FOR RAISED FLOOR AREA AT 1 SQ. FT. OF VENT AREA FOR EVERY 100 SQ. FT. OF RAISED FLOOR AREA. 224/150 = 1.5 SQ. FT. SIX(6) 14" FOUNDATION VENTS ARE REQUIRED AND SHALL BE EVENLY DISTRIBUTED AT THE FOUNDATION PERIMETER. CRC §408.1
- PROVIDE A 18"x24" FOUNDATION ACCESS TO RAISED FLOOR FOUNDATION AREAS. CRC §408.4
- PROVIDE R-19 BATT INSULATION AT UNDER-FLOOR JOISTS, TYP.
- 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).

PREPARER SIGNATURE

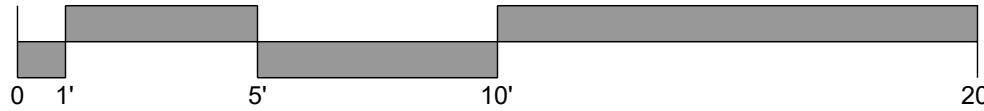
FOR CITY STAMPS



1 raised floor a  
SCALE: 1/4" = 1'-0"

2 reverse foundation plan a  
SCALE: 1/4" = 1'-0"

3 foundation plan a  
SCALE: 1/4" = 1'-0"



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STUDIO PRADU

CITY: ENCINITAS

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FOUNDATION  
PLANS

s1.0



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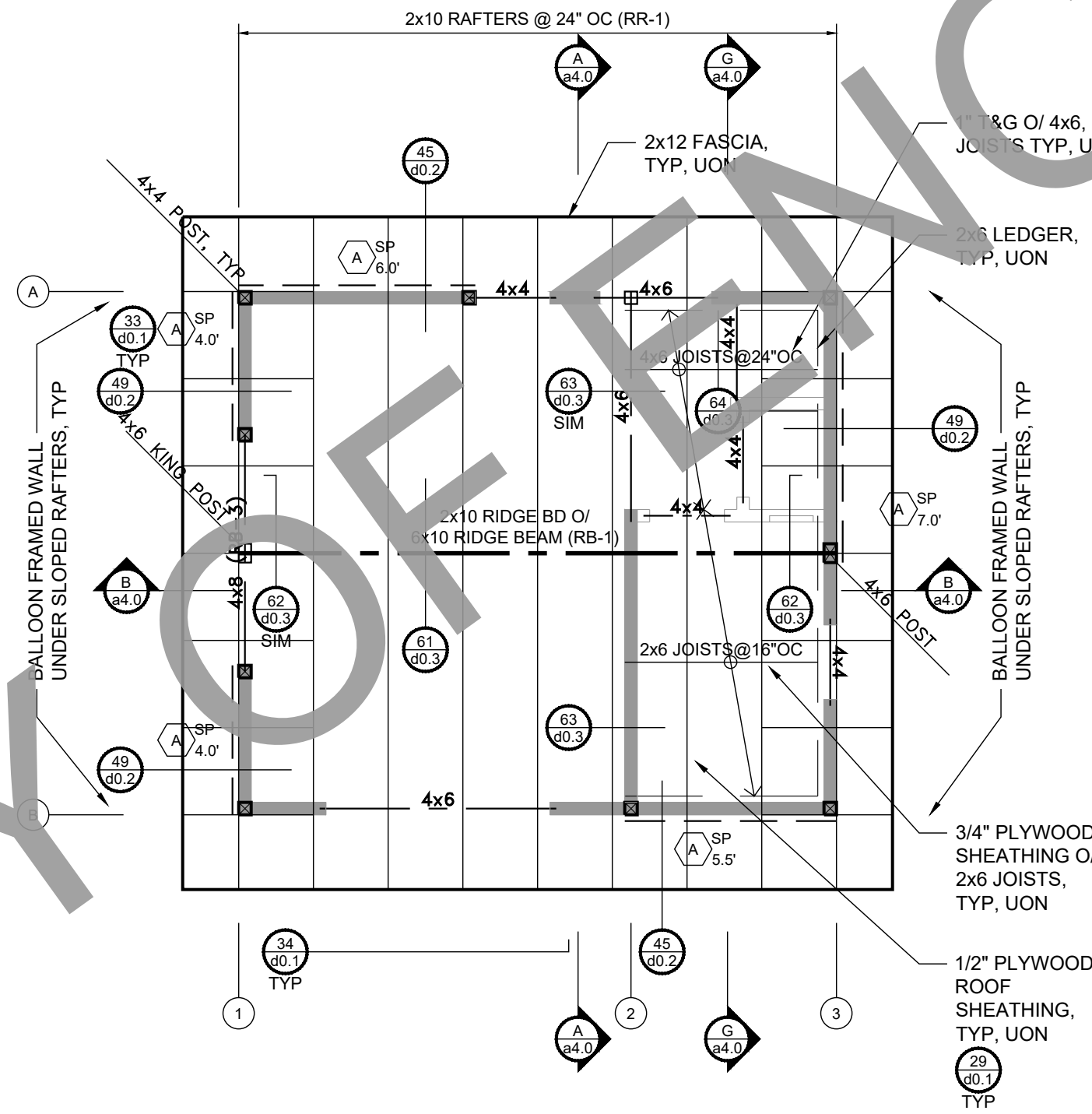
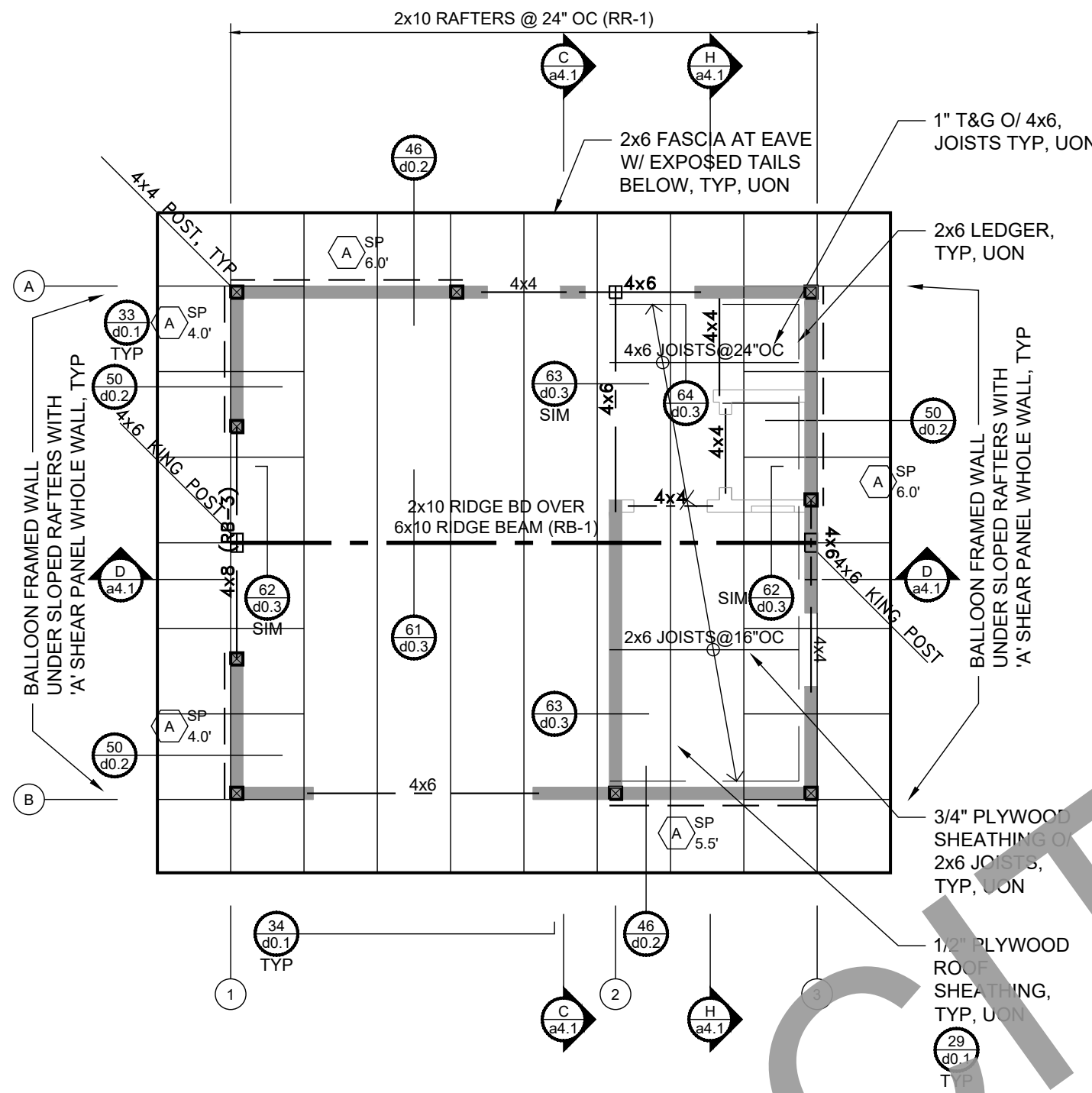
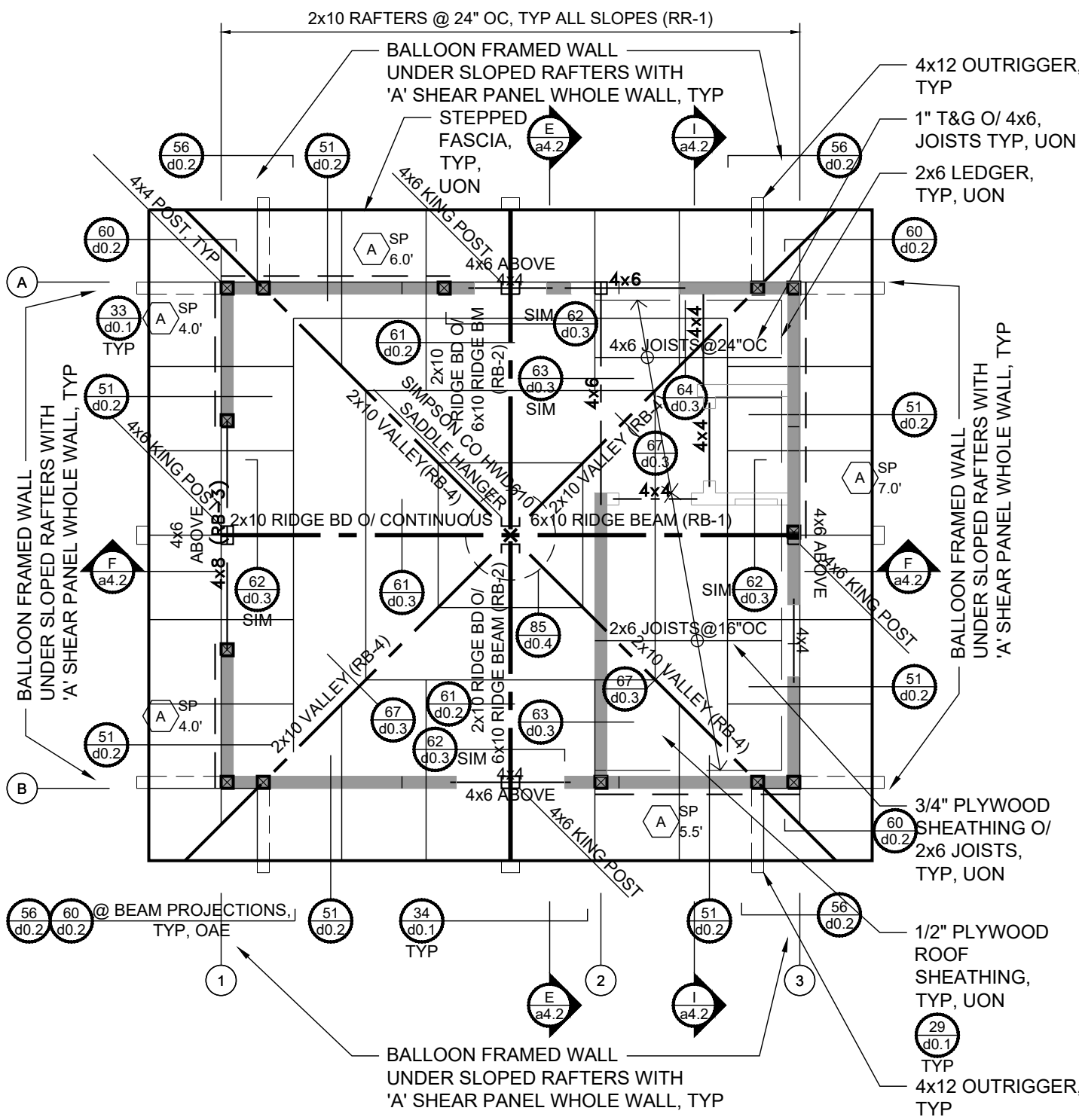
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roof framing plan notes:

- ENCLOSED RAFTER SPACES DO NOT REQUIRE VENTING IF THE FOLLOWING SPECIFIC INSULATION DESIGN IS USED, PER SECTION 050503.9.6:
    - IF THE INSULATION IS AIR-PERMEABLE, 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.
    - IF THE INSULATION IS AIR-IMPERMEABLE, AND IT IS IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING.
    - 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, 88/00.4 PROVIDE MORE INFORMATION ABOUT THESE ROOF INSULATION ALTERNATIVES.
  - FLOOR DIAPHRAGMS 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).
  - 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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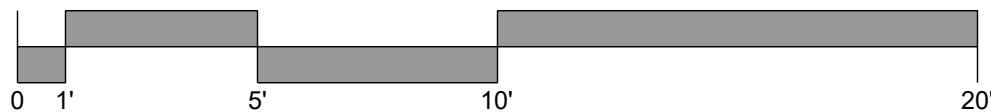
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1 roof framing plan c  
SCALE: 1/4" = 1'-0"

2 roof framing plan b  
SCALE: 1/4" = 1'-0"

3 roof framing plan a  
SCALE: 1/4" = 1'-0"



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CITY: ENCINITAS

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ROOF FRAMING  
PLANS

s2.0

L

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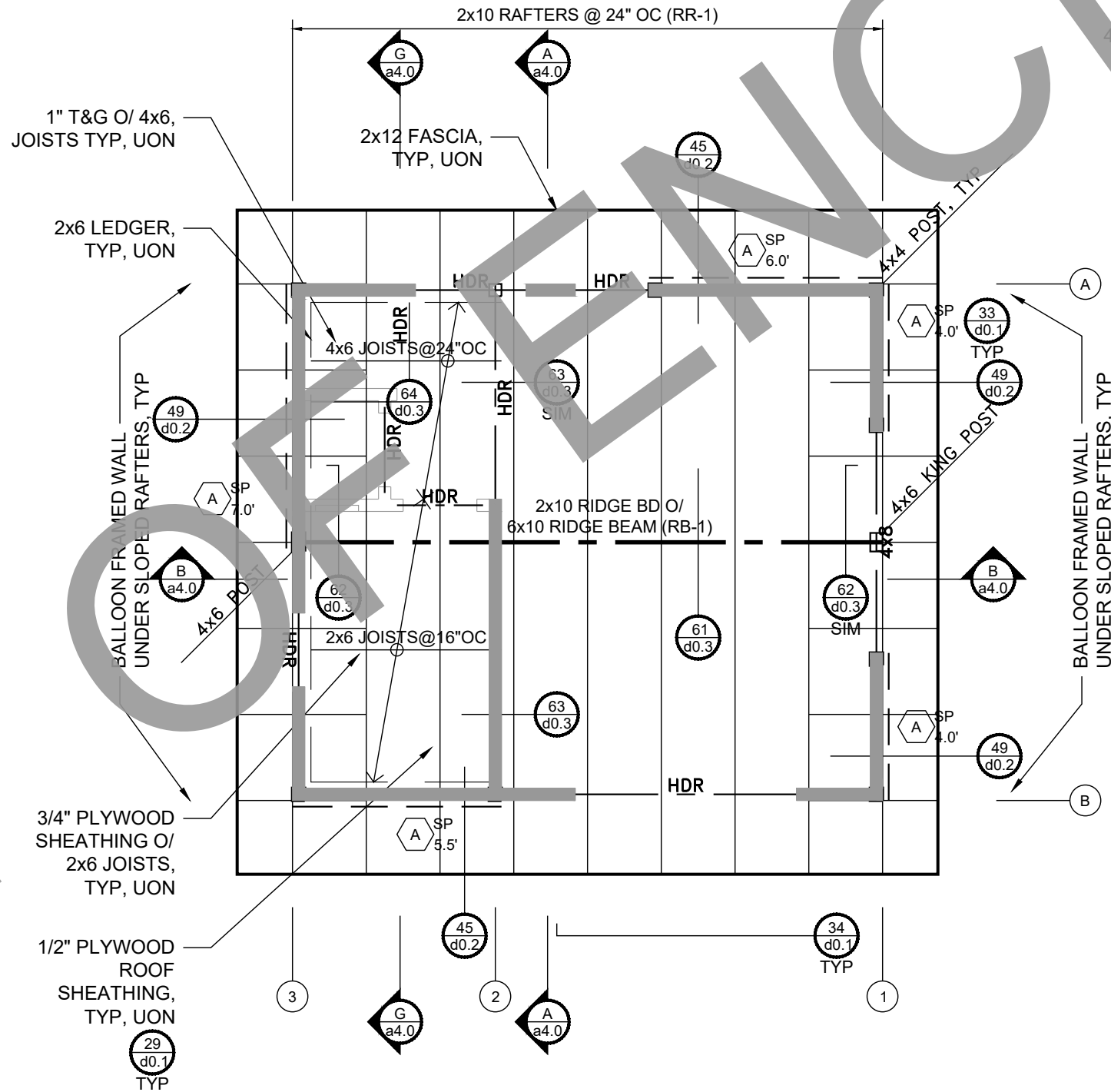
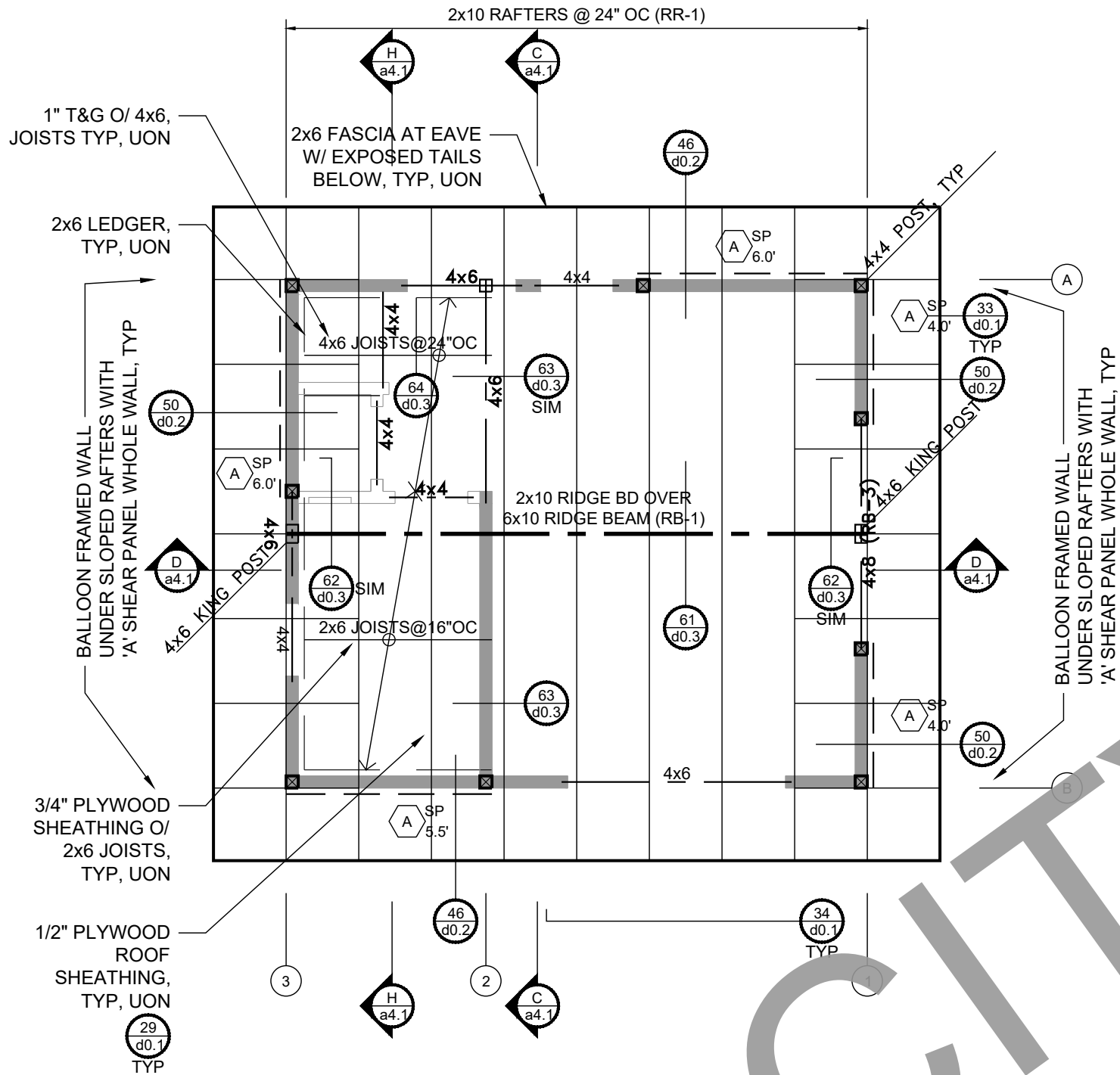
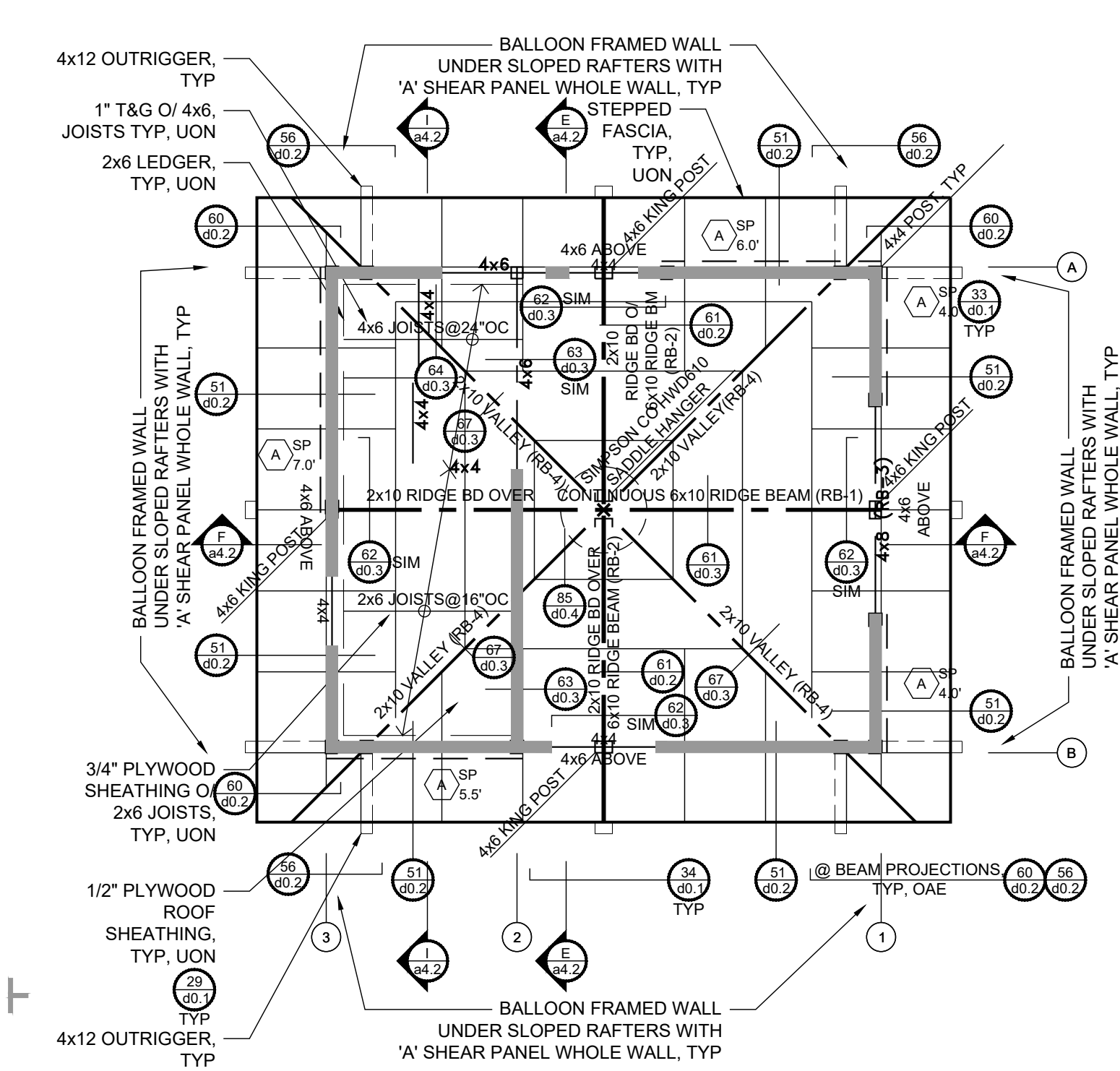
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roof framing plan notes:

- ENCLOSED RAFTER SPACES DO NOT REQUIRE VENTING IF THE FOLLOWING SPECIFIC INSULATION DESIGN IS USED, PER SECTION 050503.9.6:
    - IF THE INSULATION IS AIR-PERMEABLE AND IT IS INSTALLED DIRECTLY BELOW THE ROOF SHEATHING WITH RIGID BOARD SHEET INSULATION WITH A MINIMUM R-5 VALUE INSTALLED ABOVE THE ROOF SHEATHING.
    - IF THE INSULATION IS AIR-IMPERMEABLE AND IT IS IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING.
    - 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, 88/00.4 PROVIDE MORE INFORMATION ABOUT THESE ROOF INSULATION ALTERNATIVES.
  - FLOOR JOIST PHRASE SHALL BE 23/32" APA STURD-I-FLOOR, EXPOSURE 1, 40/20, TONGUE AND 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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4

reverse roof framing plan c

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

5

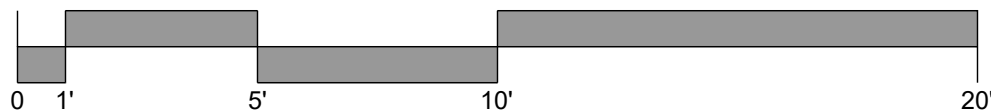
reverse roof framing plan b

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

6

reverse roof framing plan a

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



STUDIO PRADU

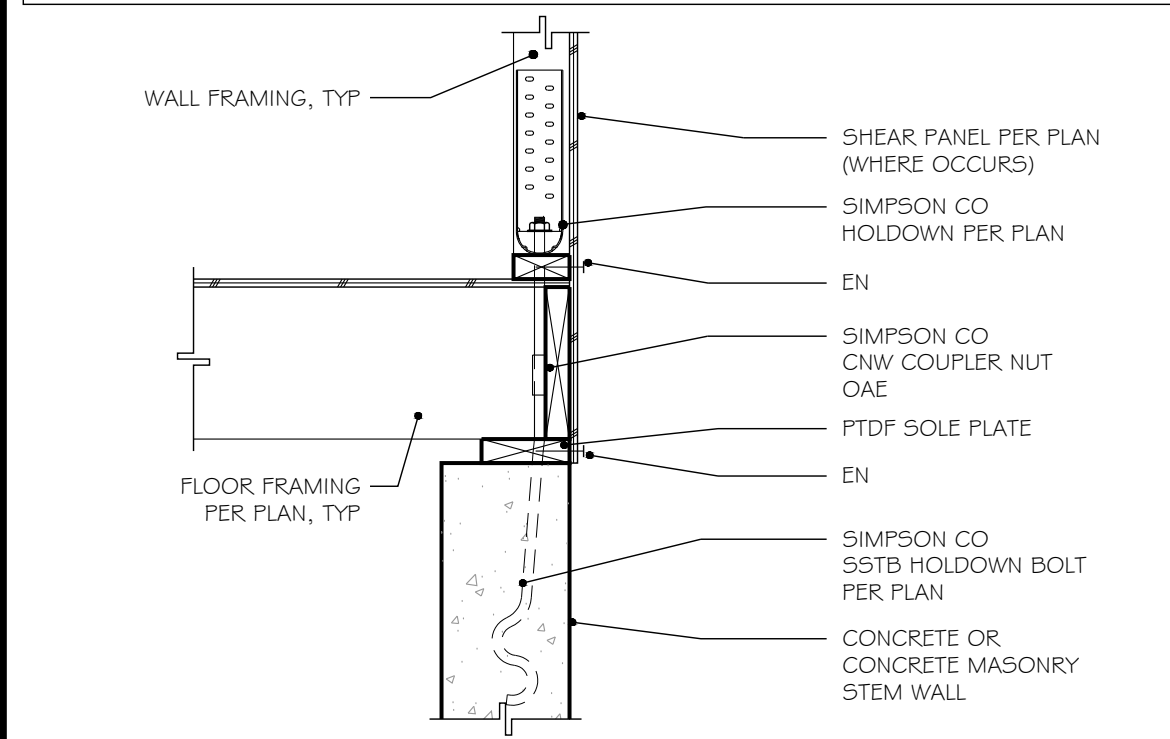
CITY: ENCINITAS

JOB: 202241R

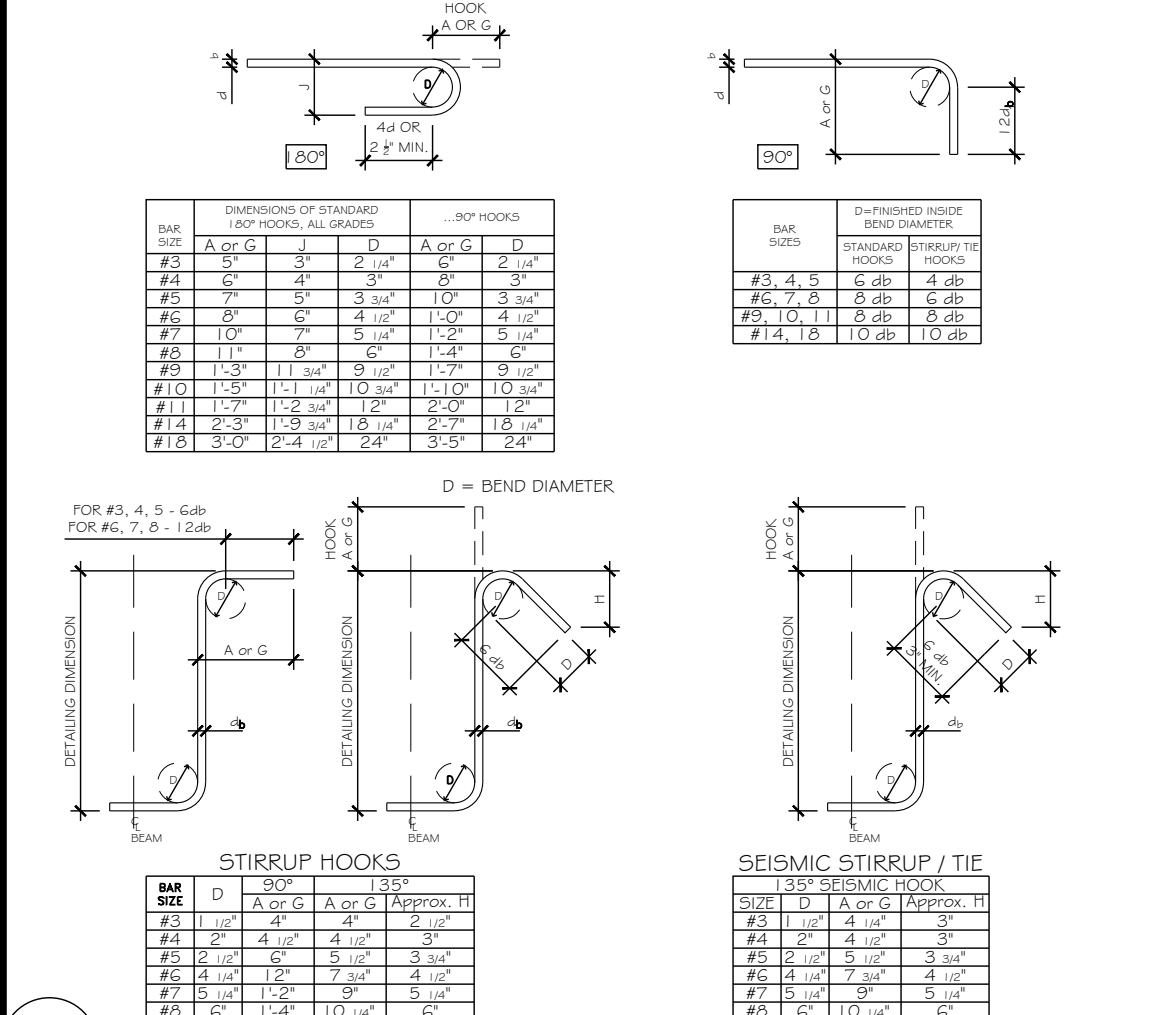
REVERSE ROOF  
FRAMING PLANS

s2.1

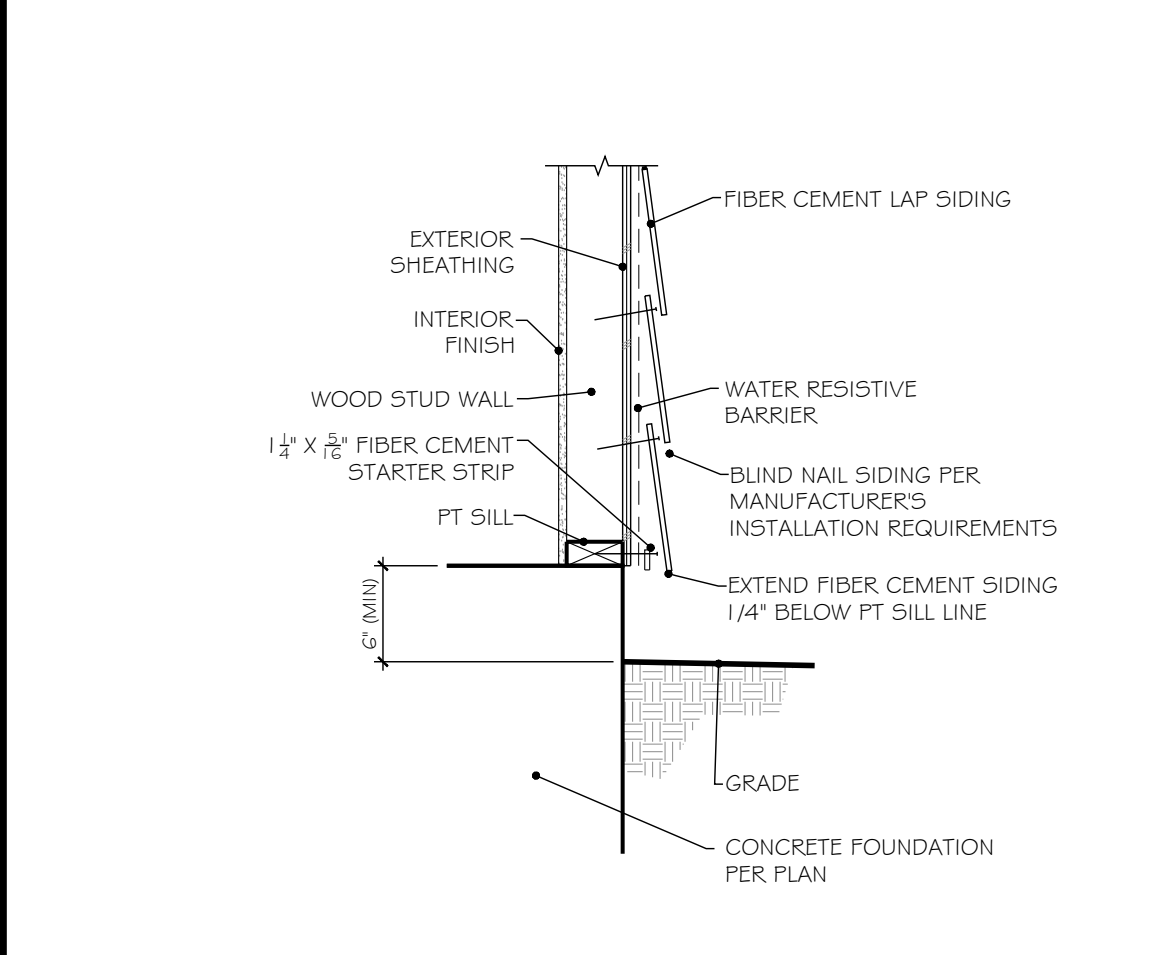
MODEL NO.	ANCHOR BOLT	CONNECTION TO POST	EMBEDMENT	EDGE DISTANCE	MIN WD MEMBER THICKNESS
HDU2	5/8" (SSTB16)	6-SDS 1/2" X 2 1/2"	12 3/4"	1 3/4"	3"
HDU4	5/8" (SSTB20)	10-SDS 1/2" X 2 1/2"	16 3/4"	1 3/4"	3"
HDU5	5/8" (SSTB24)	14-SDS 1/2" X 2 1/2"	20 3/4"	1 3/4"	3"
HDU8	5/8" (SSTB28)	20-SDS 1/2" X 2 1/2"	24 3/4"	1 3/4"	3"
HDU11	1" (SB1X30)	30-SDS 1/2" X 2 1/2"	24"	1 3/4"	5 1/2"
HDU14	1" (SB1X30)	36-SDS 1/2" X 2 1/2"	24"	1 3/4"	7 1/4"



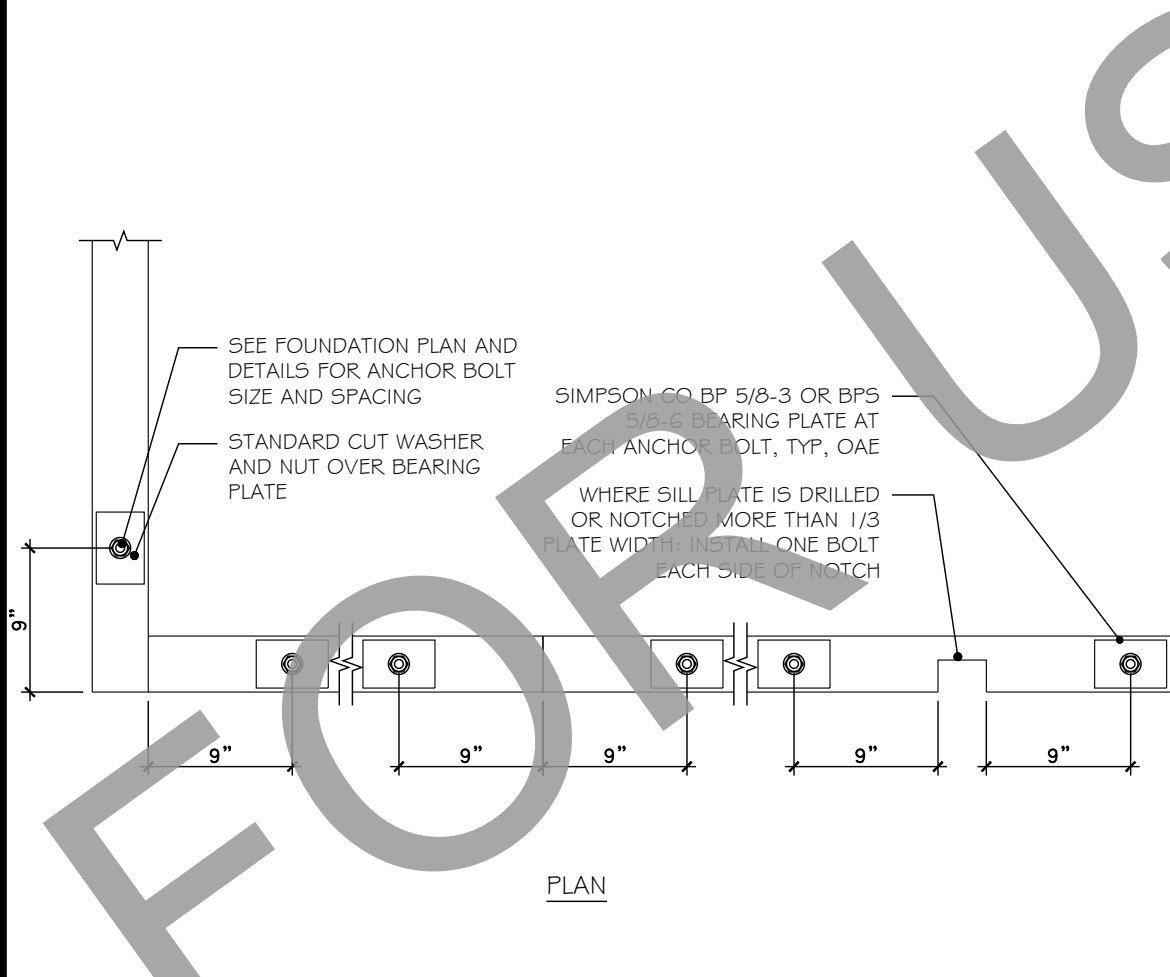
**17** HOLDOWN AT STEM WALL FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SW-0096



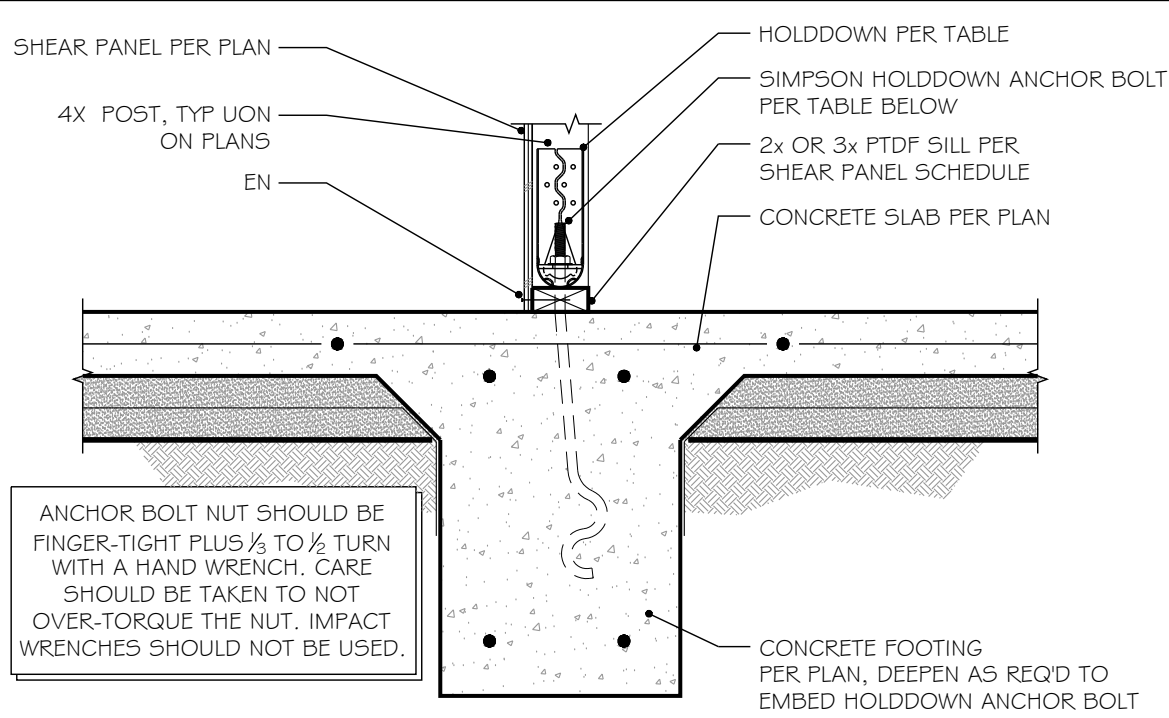
**18** STANDARD HOOK DETAILS  
SCALE: N.T.S.  
A-DT-FDN-SG-0041



**19** LAP SIDING AT FOUNDATION  
SCALE: 1" = 1'-0"  
A-DT-FIN-PC5-L5-0001

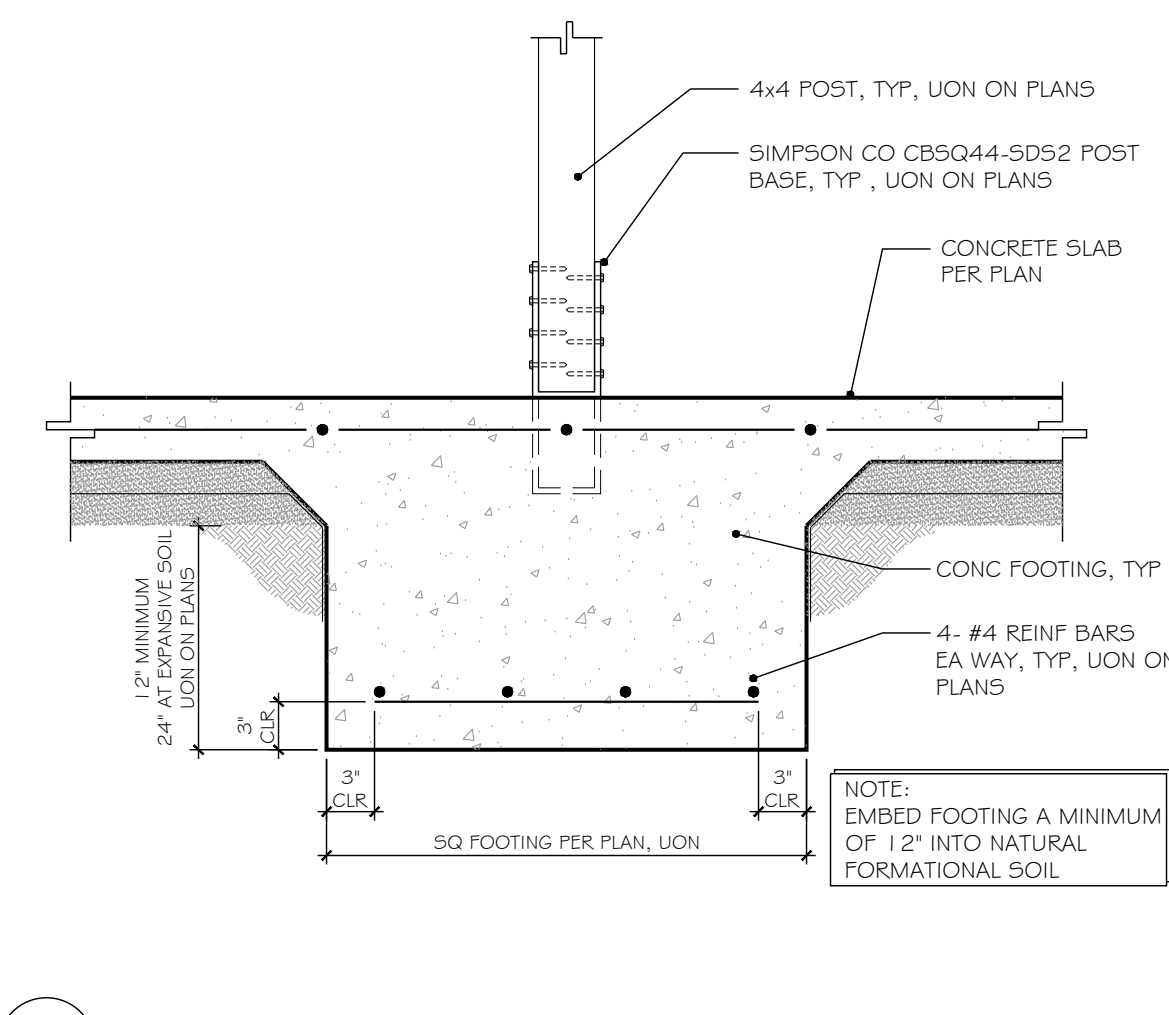


**20** SILL PLATE ANCHOR BOLTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SG-ANC-002

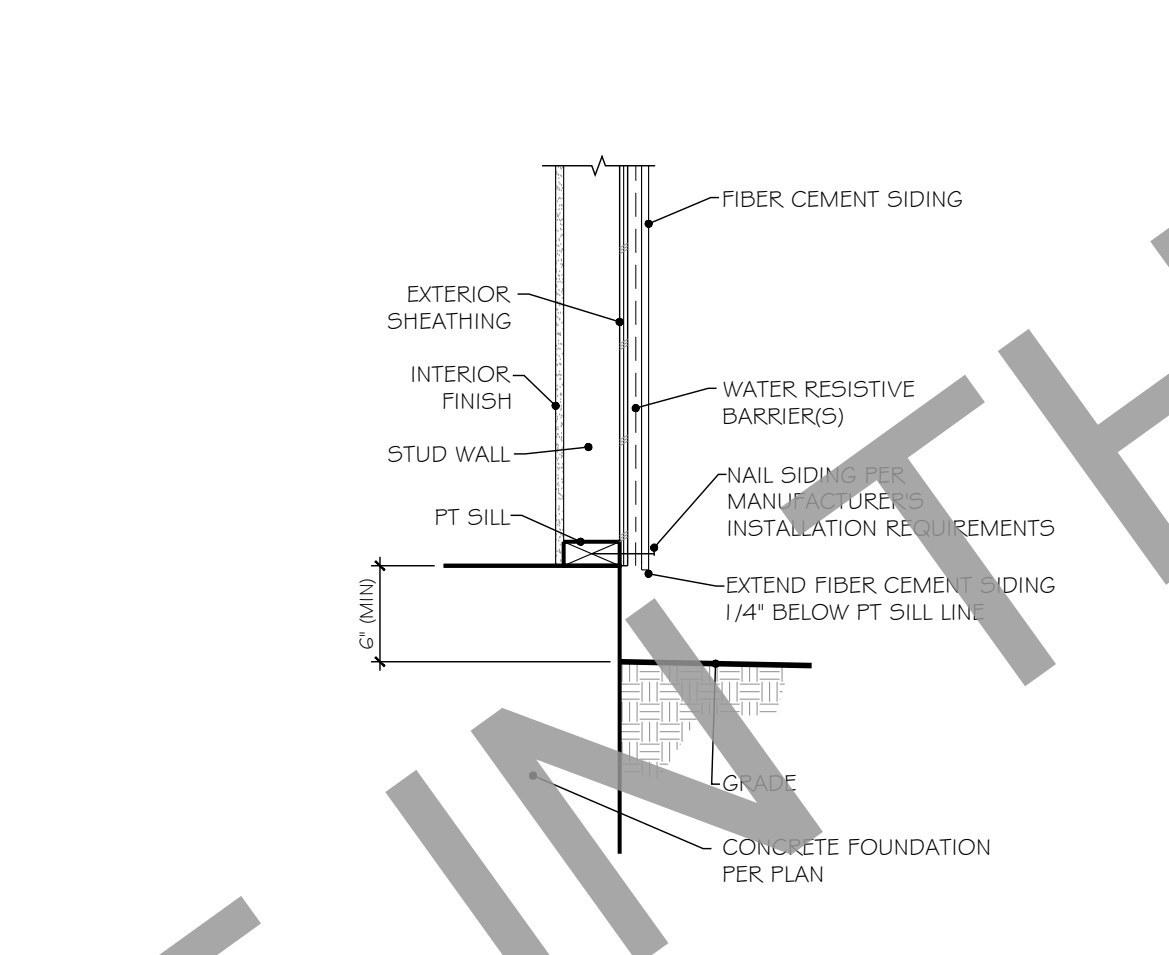


HOLD DOWN	ANCHOR Ø	POST SCREWS	EDGE DISTANCE	EMBED	MIN POST
HDU2	5/8" (SSTB16)	6-SDS 1/2" X 2 1/2"	1 3/4"	16"	4x4
HDU4	5/8" (SSTB20)	10-SDS 1/2" X 2 1/2"	1 3/4"	16"	4x4
HDU5	5/8" (SSTB24)	14-SDS 1/2" X 2 1/2"	1 3/4"	20"	4x4
HDU8	5/8" (SSTB28)	20-SDS 1/2" X 2 1/2"	1 3/4"	24"	4x4
HDU11	1" (SB1X30)	30-SDS 1/2" X 2 1/2"	1 3/4"	24"	4x6
HDU14	1" (SB1X30)	36-SDS 1/2" X 2 1/2"	1 3/4"	24"	4x6

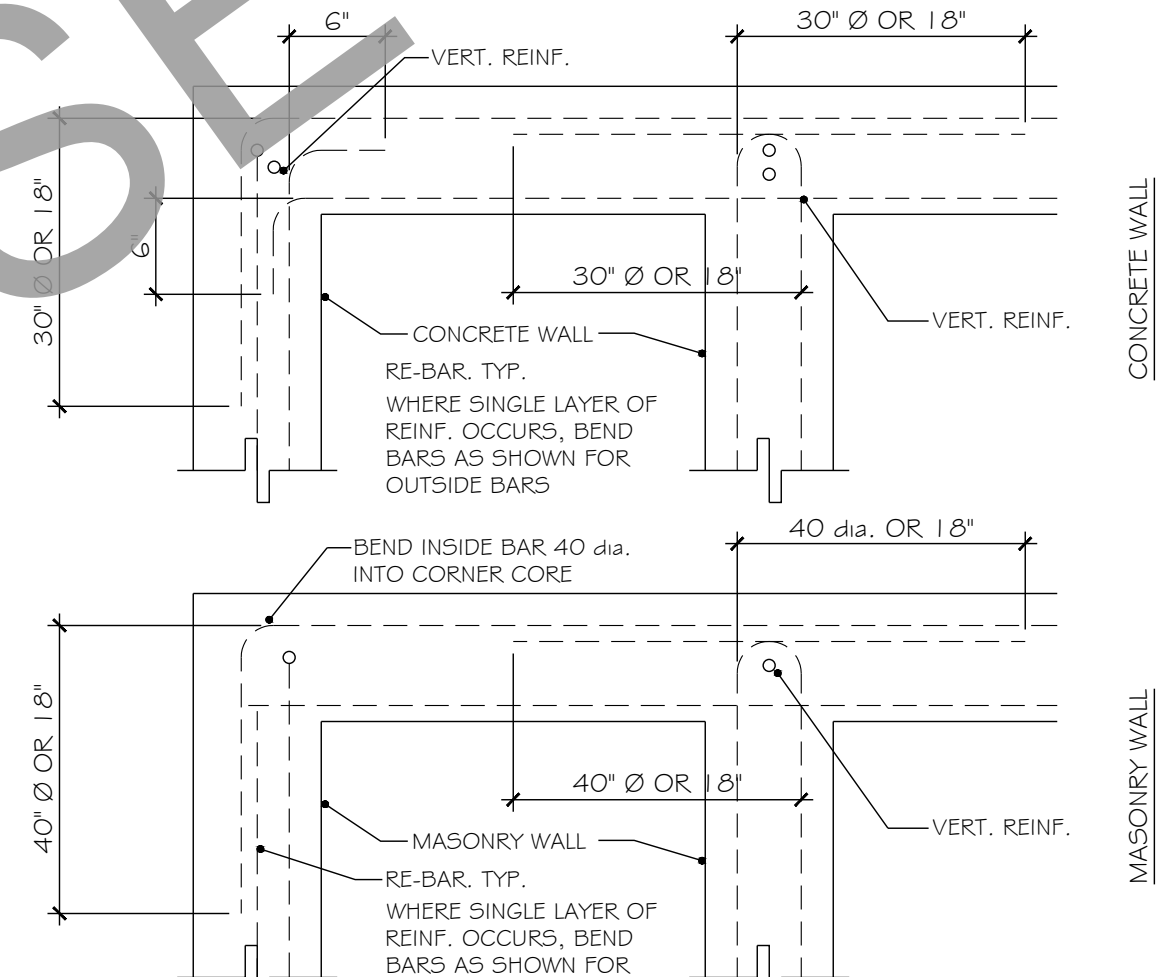
**13** HOLDOWN - INTERIOR FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SG-ANC-017



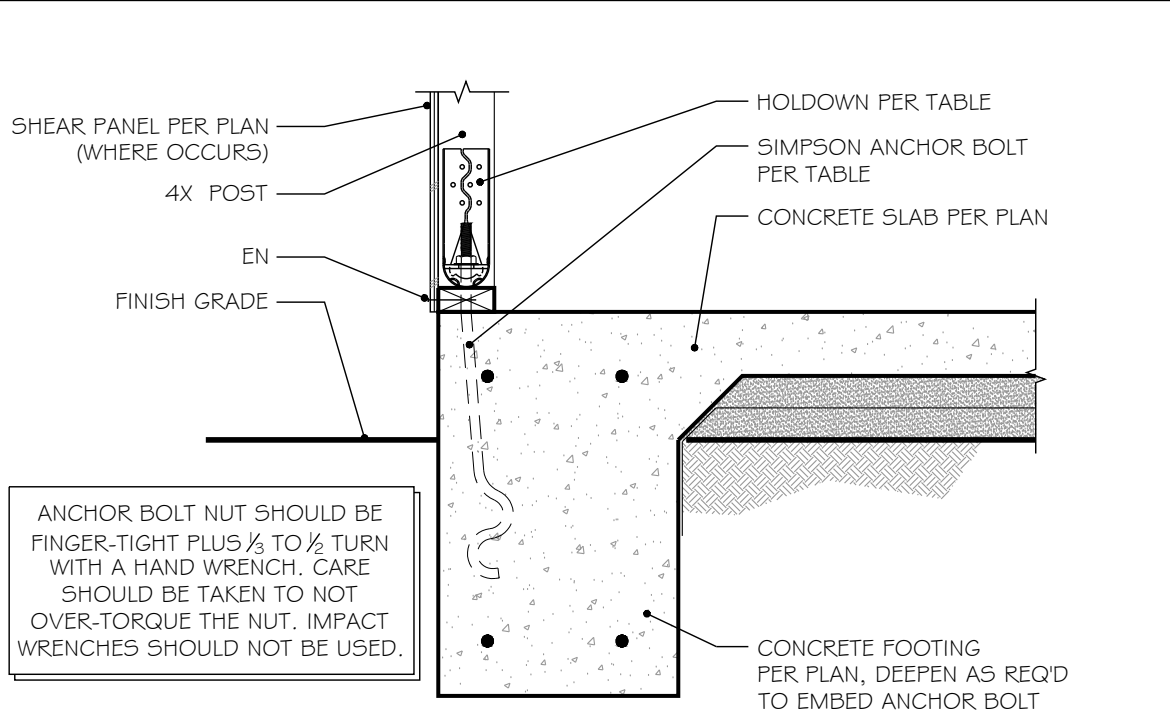
**14** POST FOOTING WITHIN SLAB  
SCALE: 1" = 1'-0"  
A-DT-FDN-CP-0020



**15** BOARD AND BATT SIDING AT FOUNDATION  
SCALE: 1" = 1'-0"  
A-DT-FIN-PC5-BB-0001

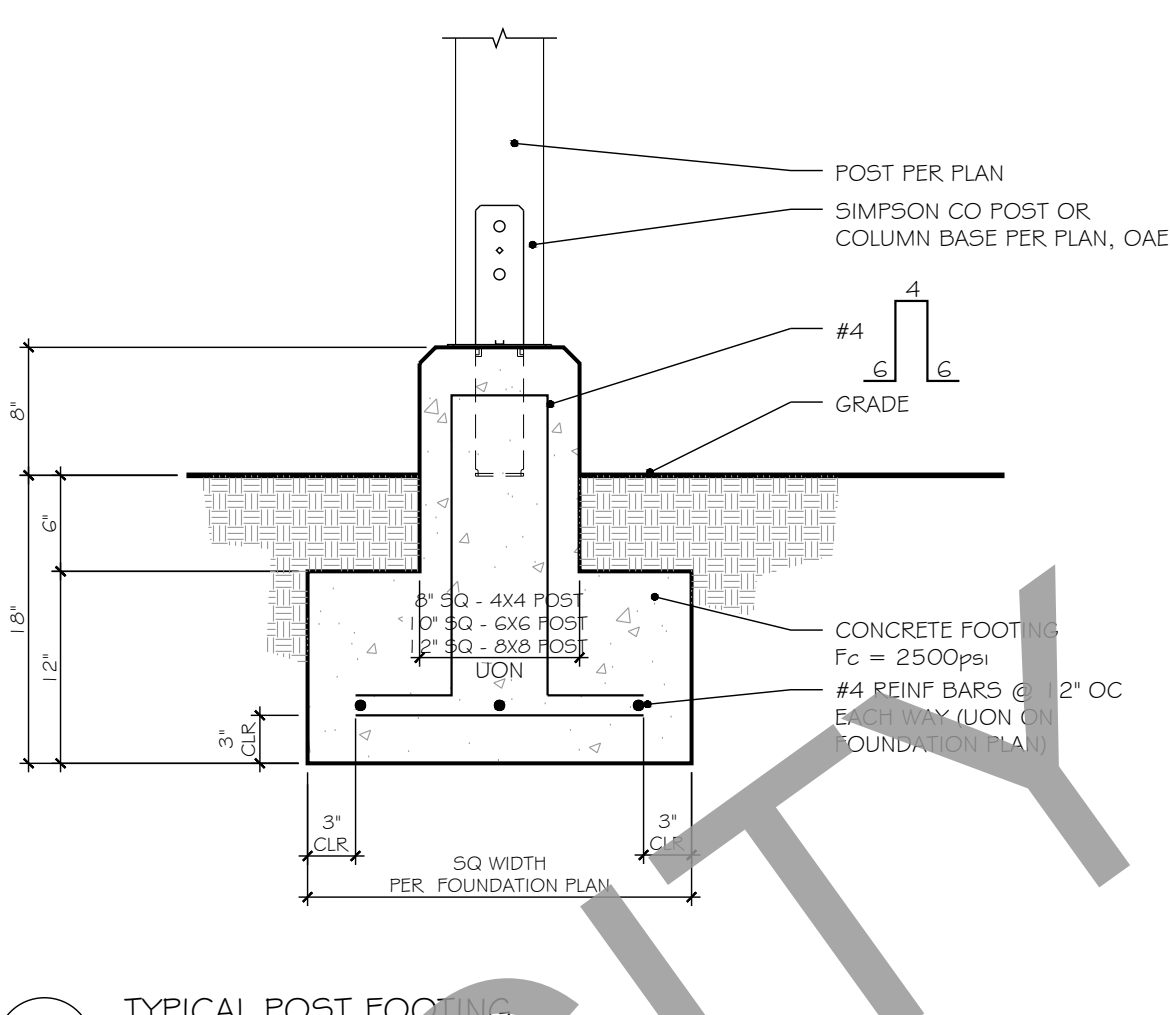


**16** TYPICAL CONCRETE / MASONRY WALL REINFORCEMENT  
SCALE: 1" = 1'-0"  
A-DT-FDN-SW-0021

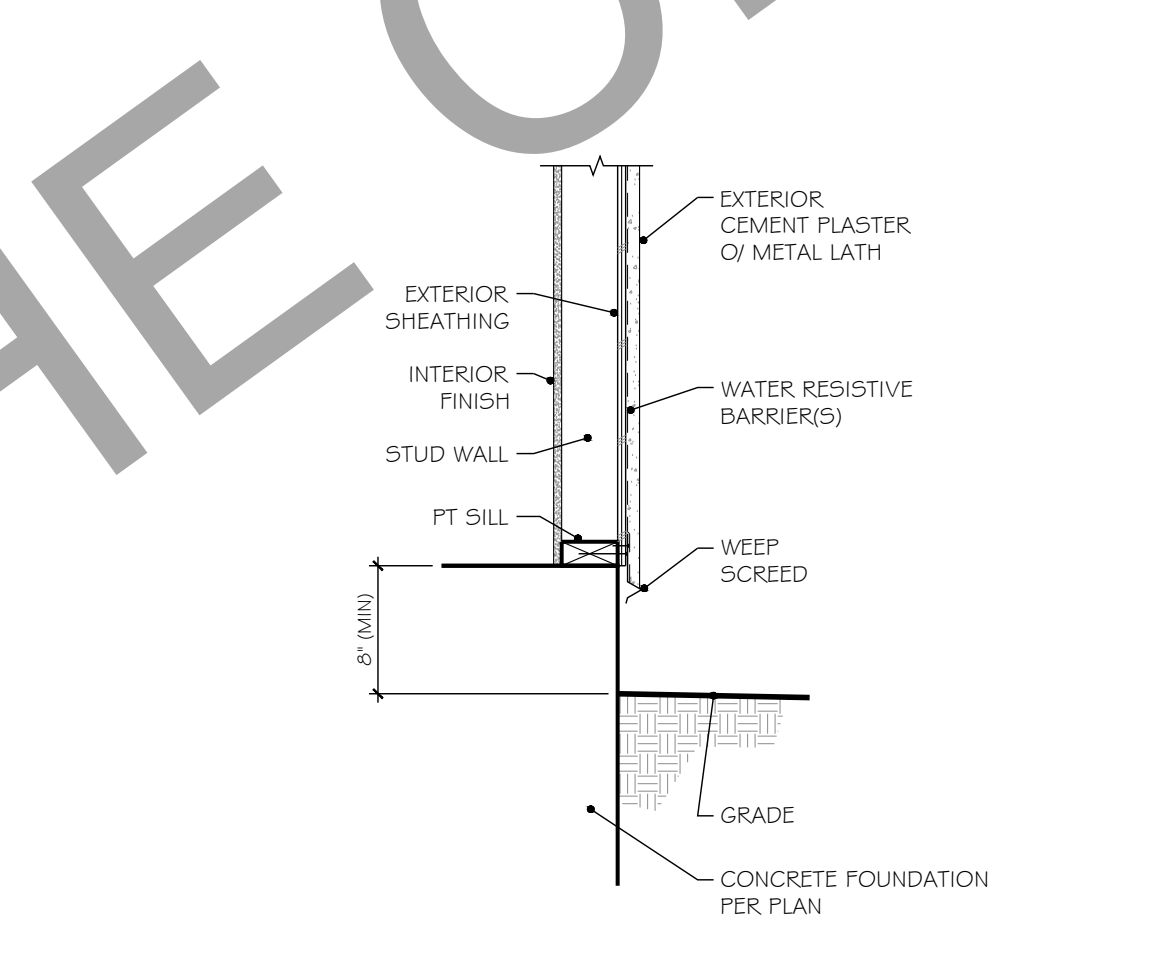


HOLD DOWN	ANCHOR Ø	POST SCREWS	EDGE DISTANCE	EMBED	MIN POST
HDU2	5/8" (SSTB16)	6-SDS 1/2" X 2 1/2"	1 3/4"	12"	4x4
HDU4	5/8" (SSTB20)	10-SDS 1/2" X 2 1/2"	1 3/4"	16"	4x4
HDU5	5/8" (SSTB24)	14-SDS 1/2" X 2 1/2"	1 3/4"	20"	4x4
HDU8	5/8" (SSTB28)	20-SDS 1/2" X 2 1/2"	1 3/4"	24"	4x4
HDU11	1" (SB1X30)	30-SDS 1/2" X 2 1/2"	1 3/4"	24"	4x6
HDU14	1" (SB1X30)	36-SDS 1/2" X 2 1/2"	1 3/4"	24"	4x6

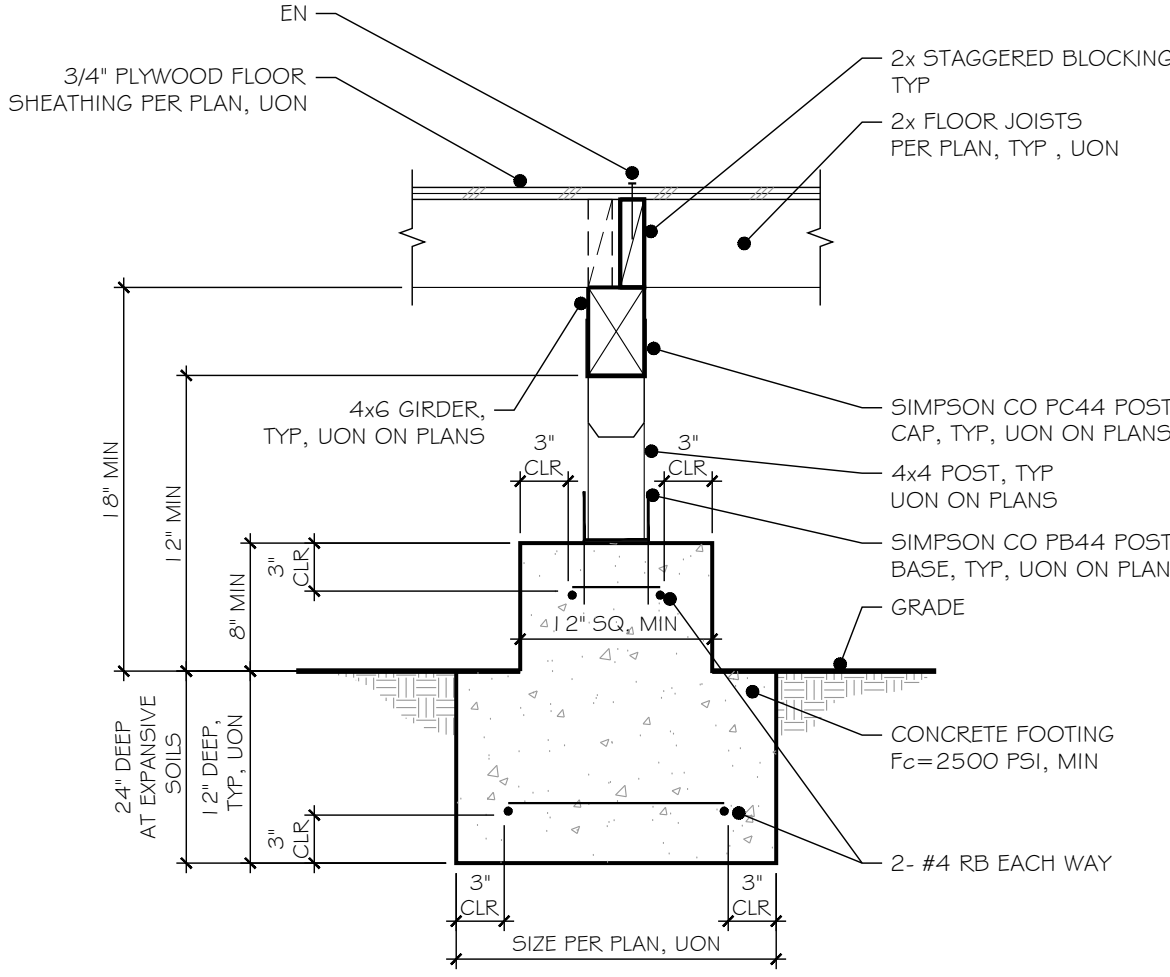
**9** HOLDOWN - PERIMETER FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SG-ANC-013



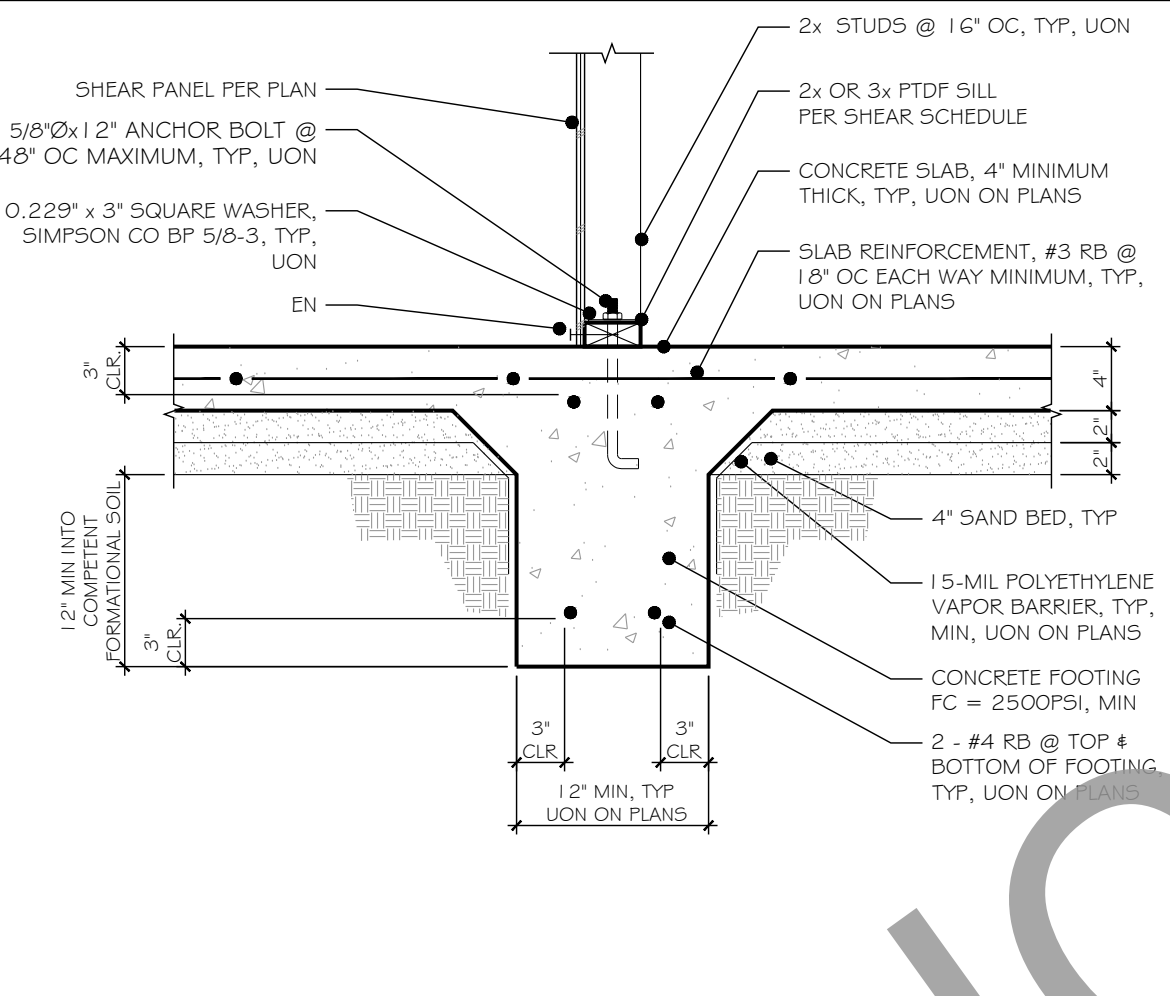
**10** TYPICAL POST FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-CP-0003



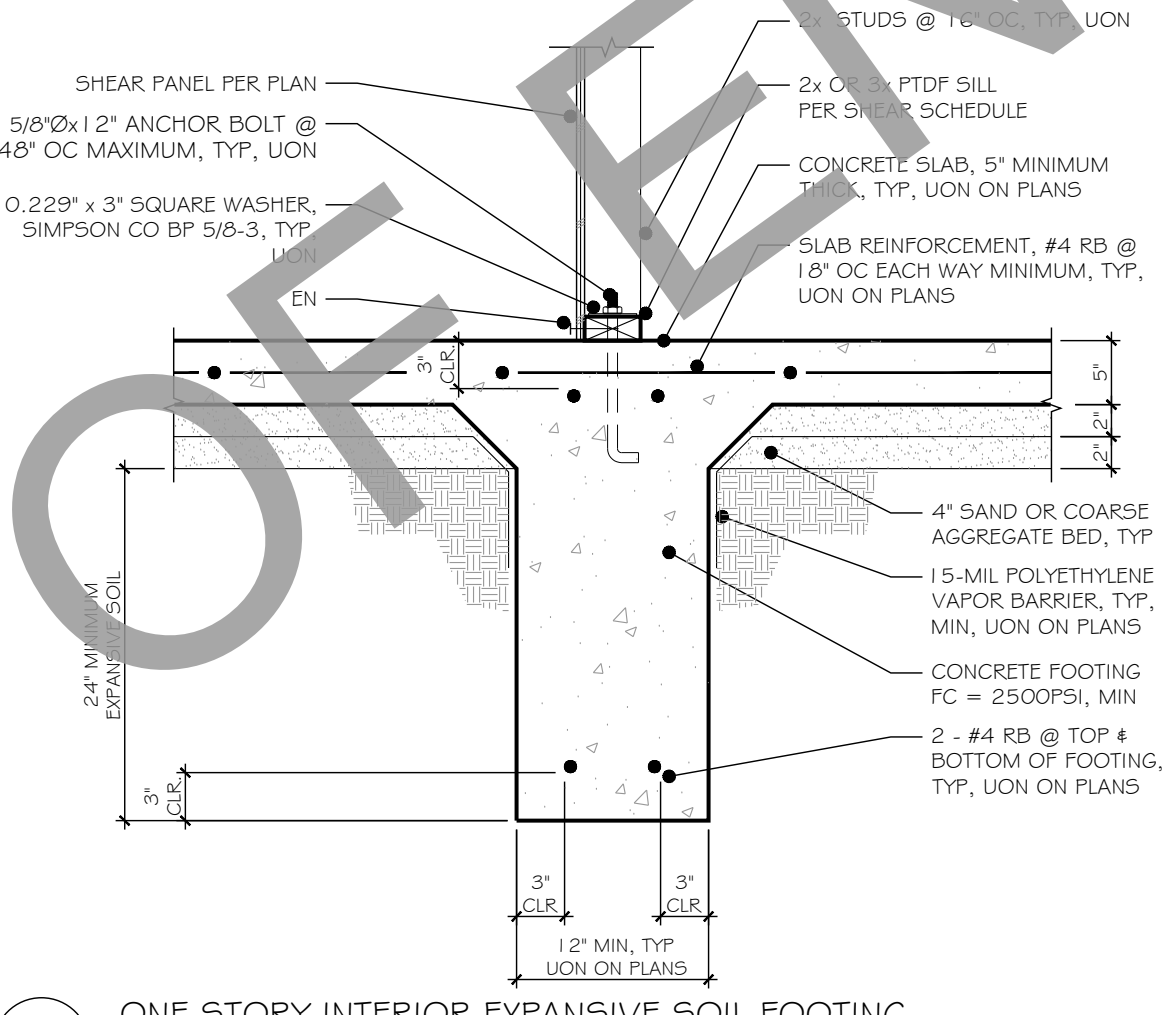
**11** CEMENT PLASTER WEEP SCREED AT FOUNDATION  
SCALE: 1" = 1'-0"  
A-DT-FIN-PL-0001



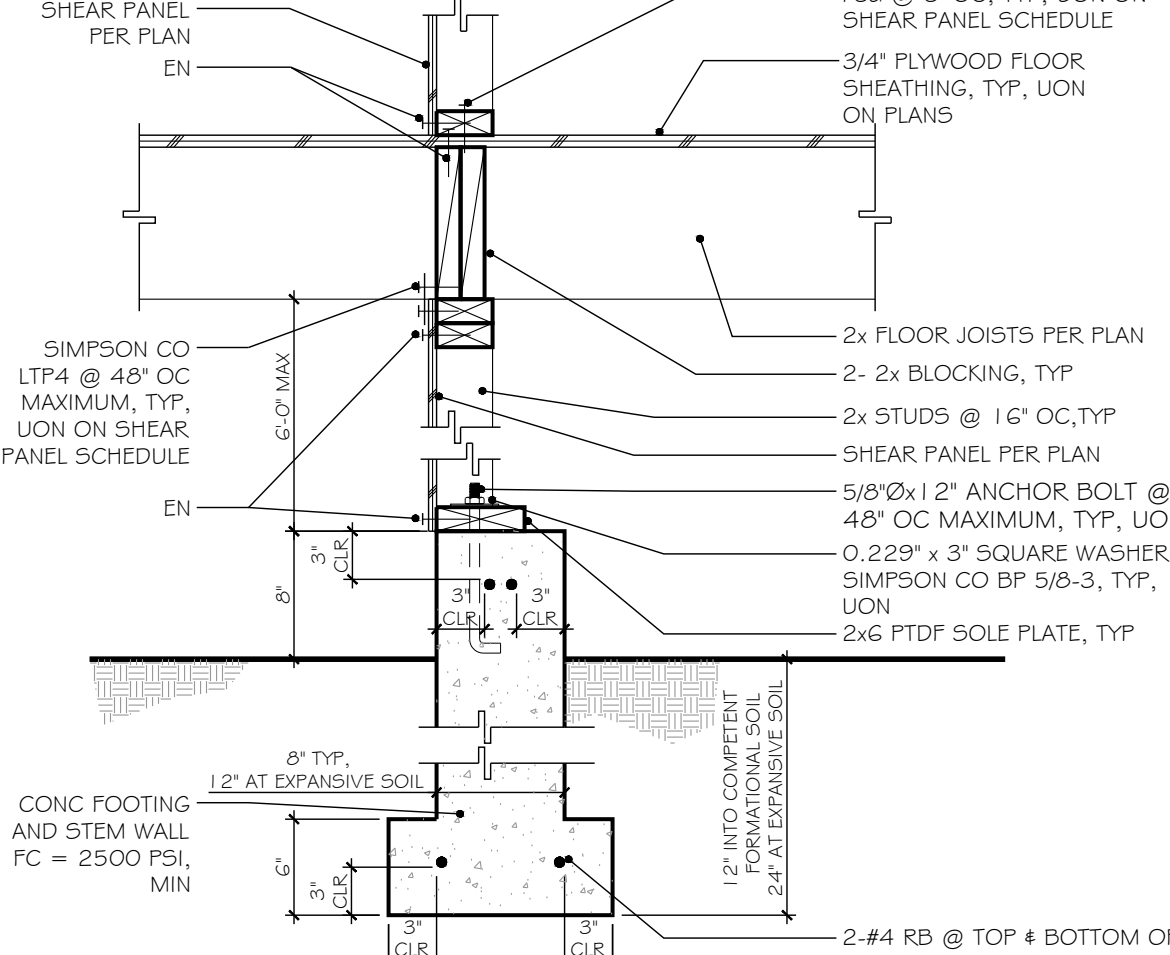
**12** FLOOR JOIST AND GIRDER BEAMS AT PAD FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SW-0133



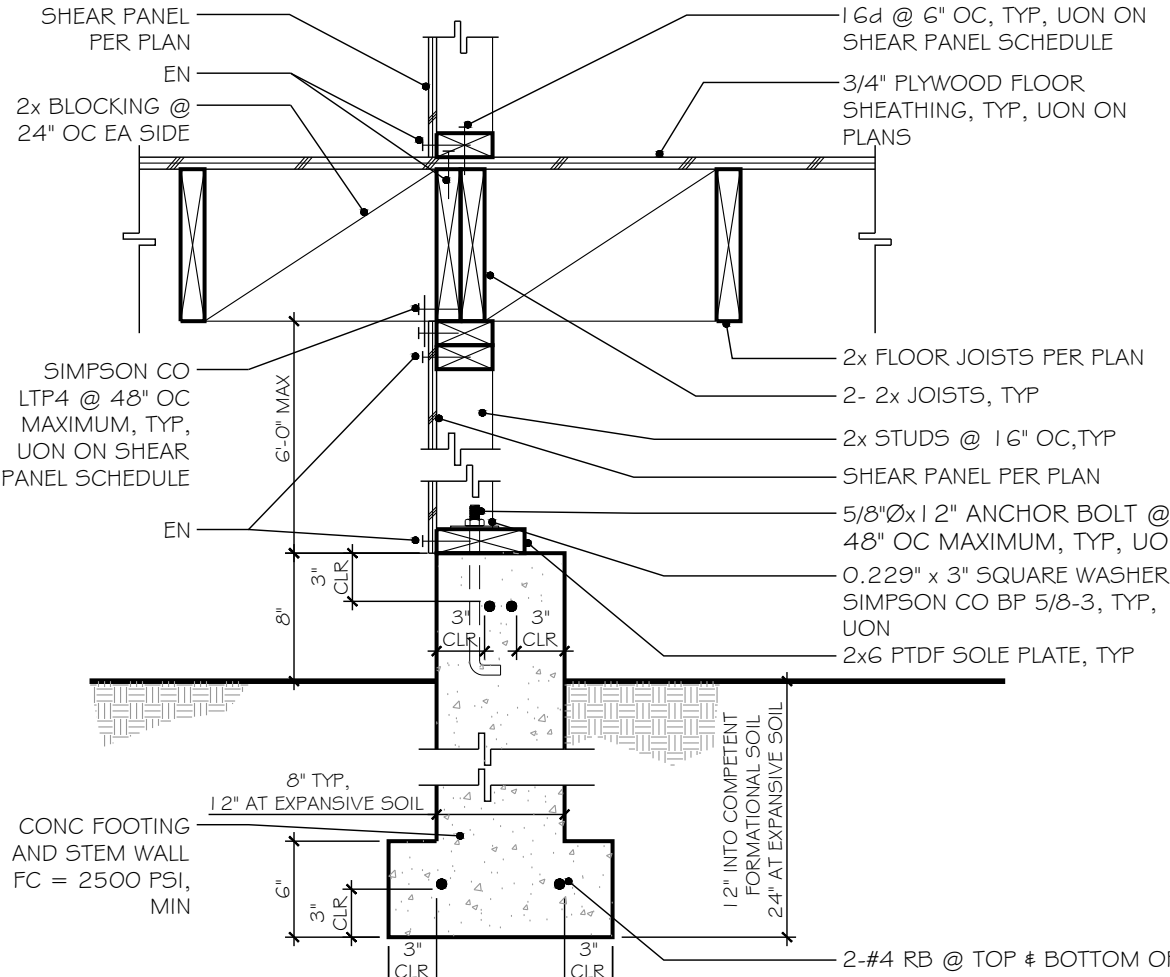
**5** SLAB ON GRADE ONE STORY INTERIOR FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SG-INT-014



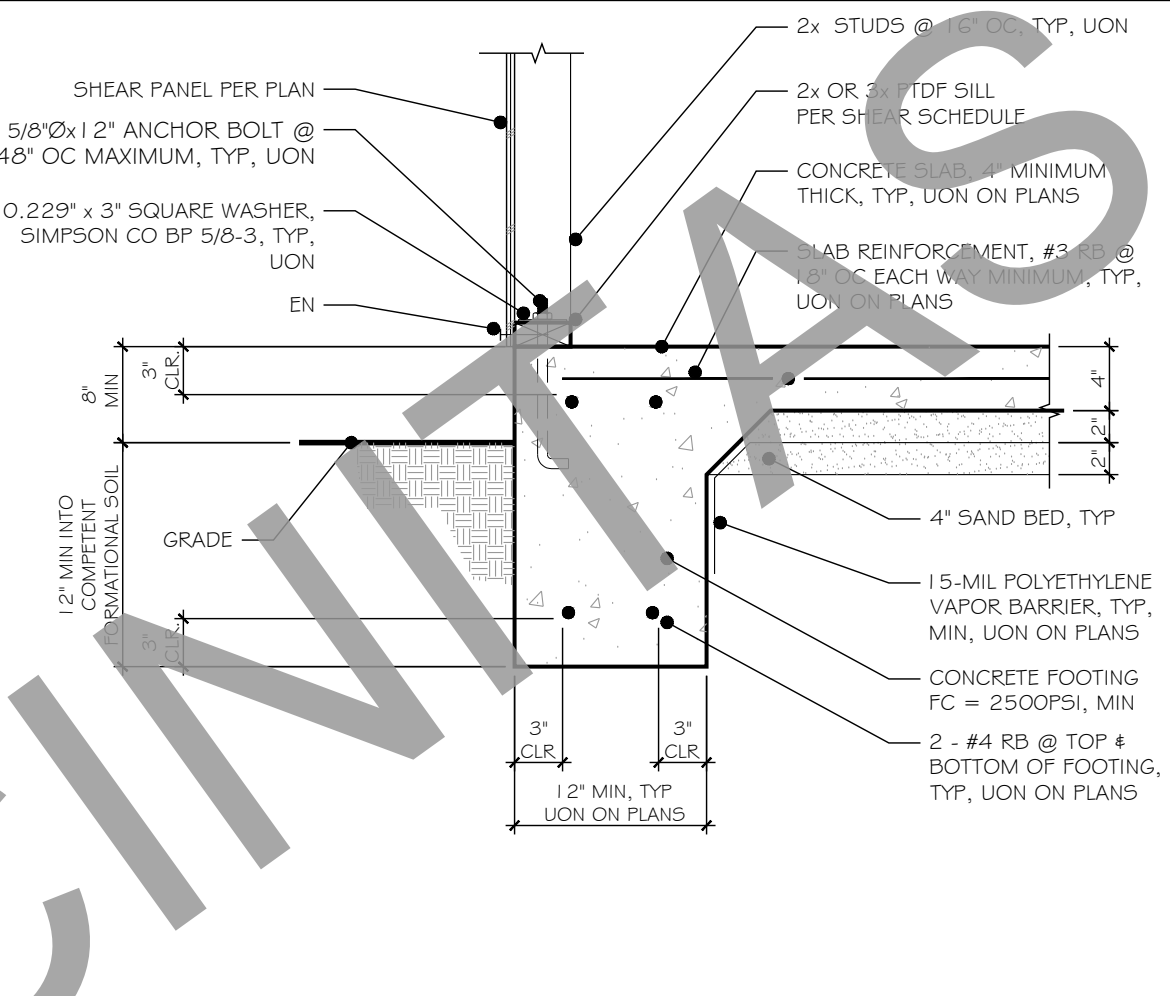
**6** ONE STORY INTERIOR EXPANSIVE SOIL FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SG-INT-015



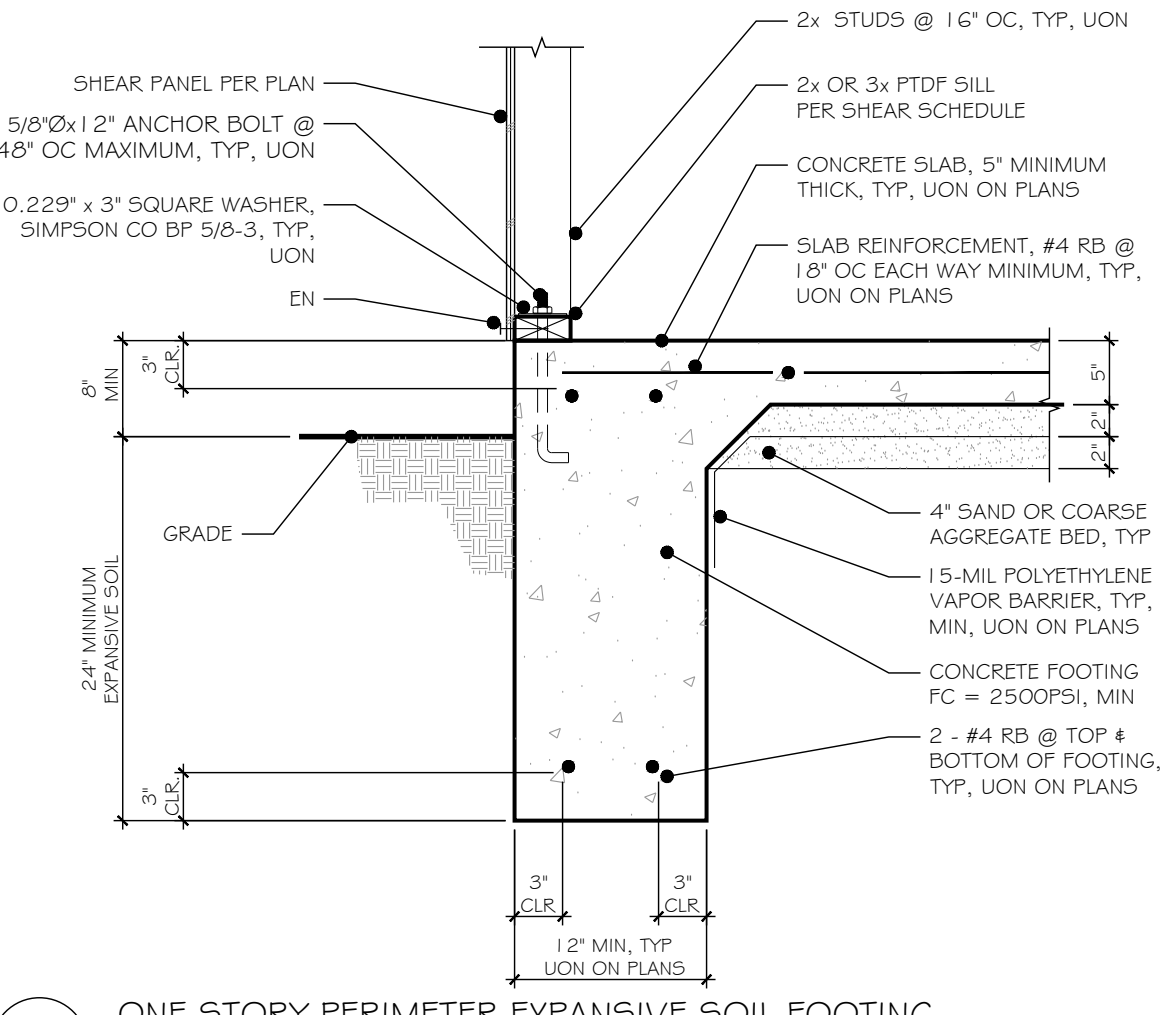
**7** ONE-STOREY INTERIOR STEM WALL FOOTING - PERPENDICULAR  
SCALE: 1" = 1'-0"  
A-DT-FDN-SW-0073



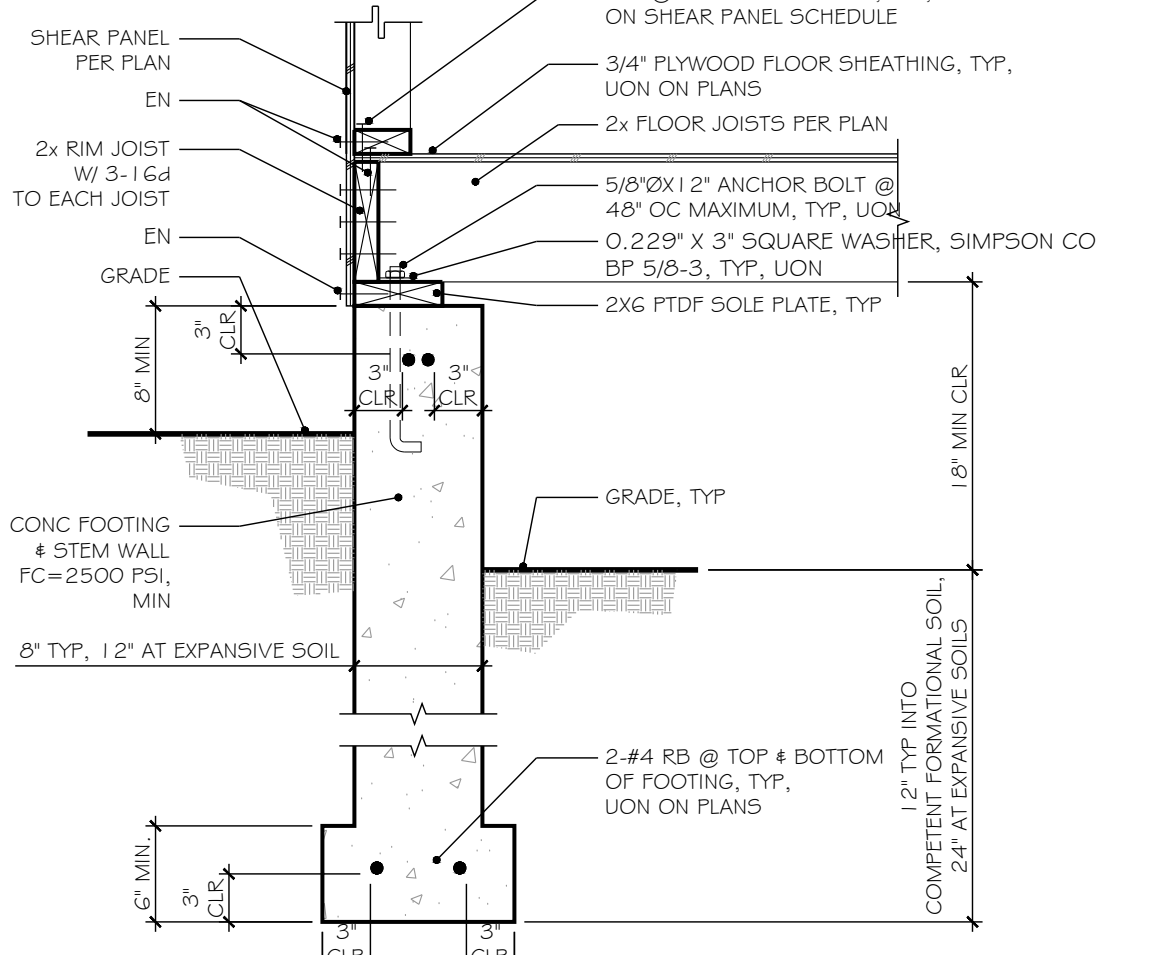
**8** ONE-STOREY INTERIOR STEM WALL FOOTING - PARALLEL  
SCALE: 1" = 1'-0"  
A-DT-FDN-SW-0134



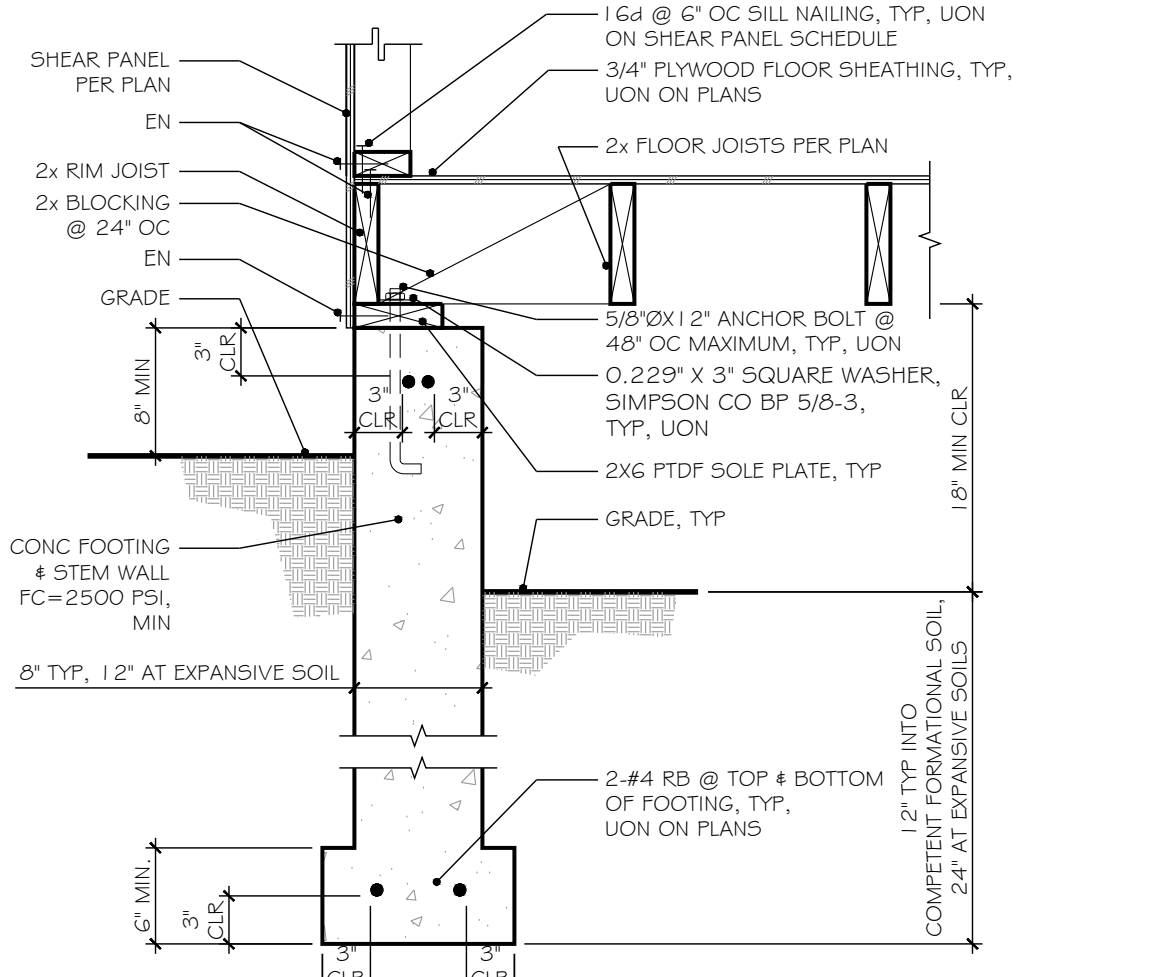
**1** SLAB ON GRADE ONE STORY PERIMETER FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FDN-SG-PTR-025



**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



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

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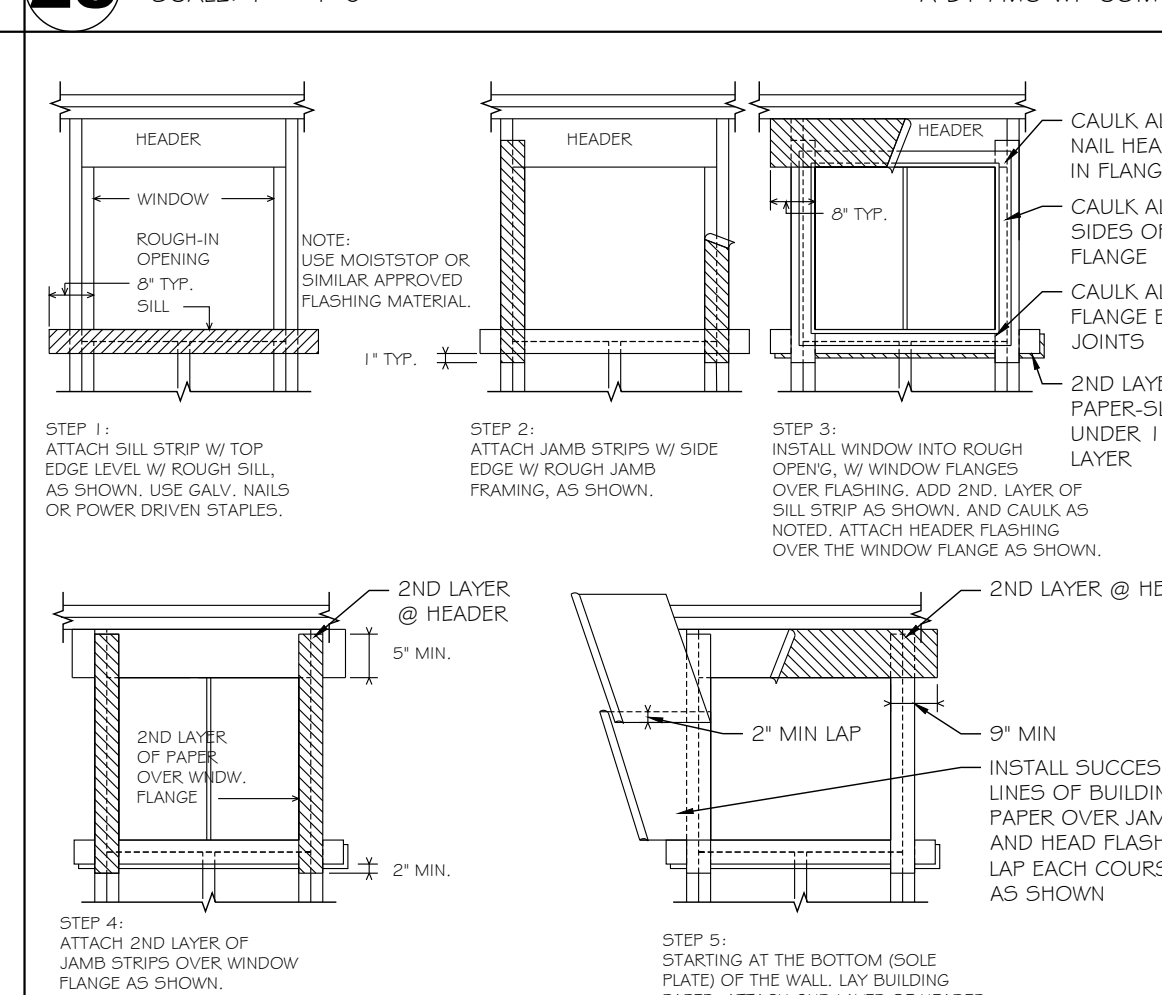
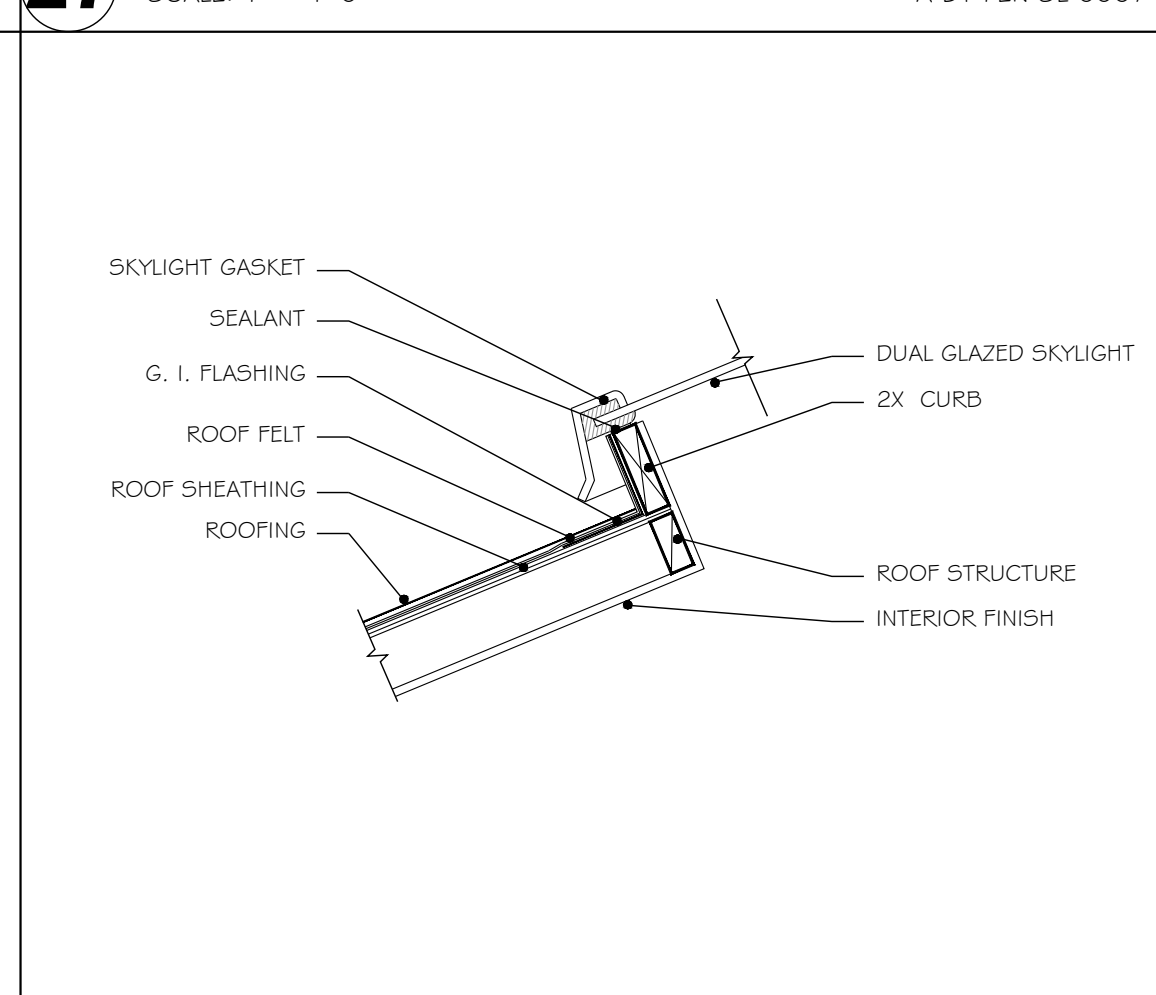
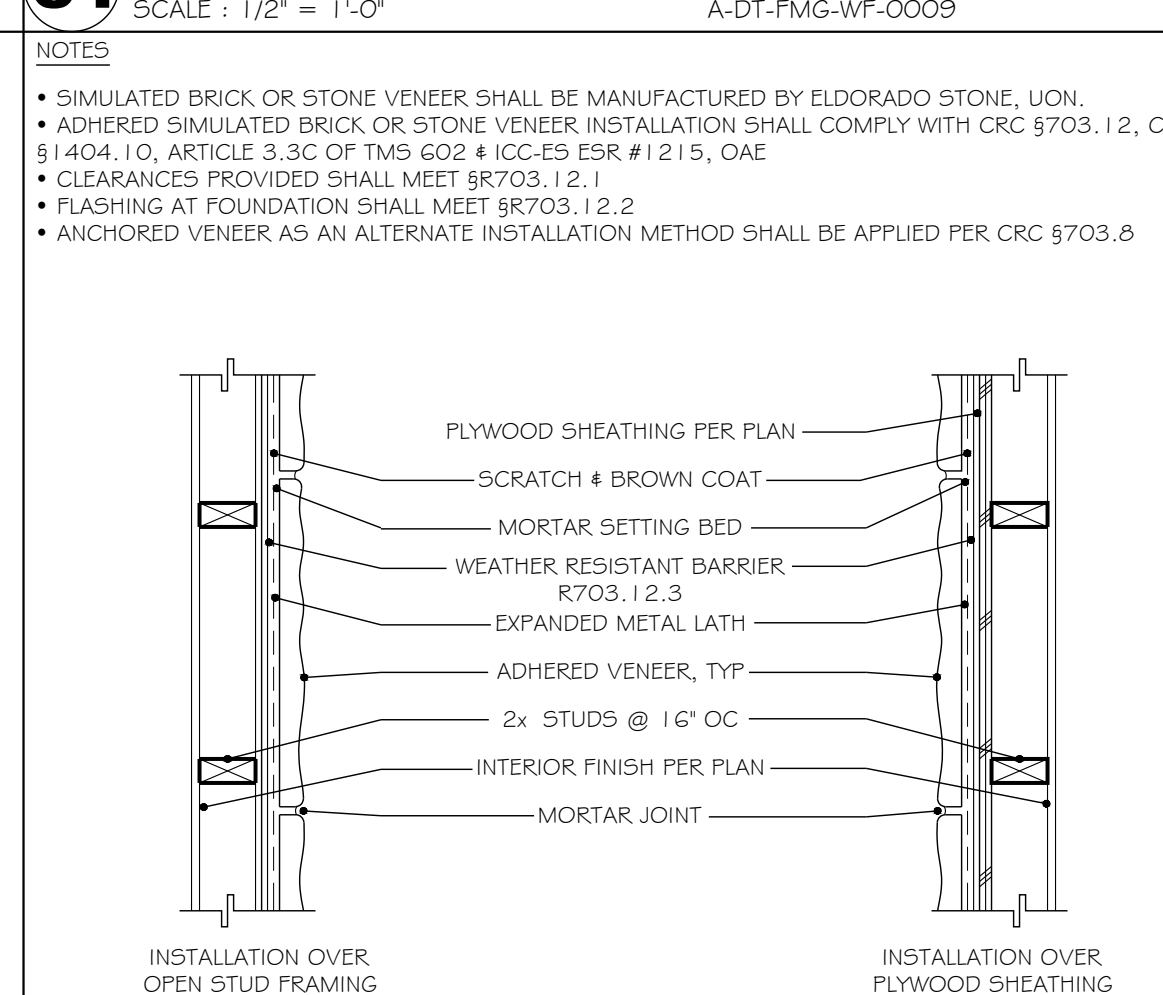
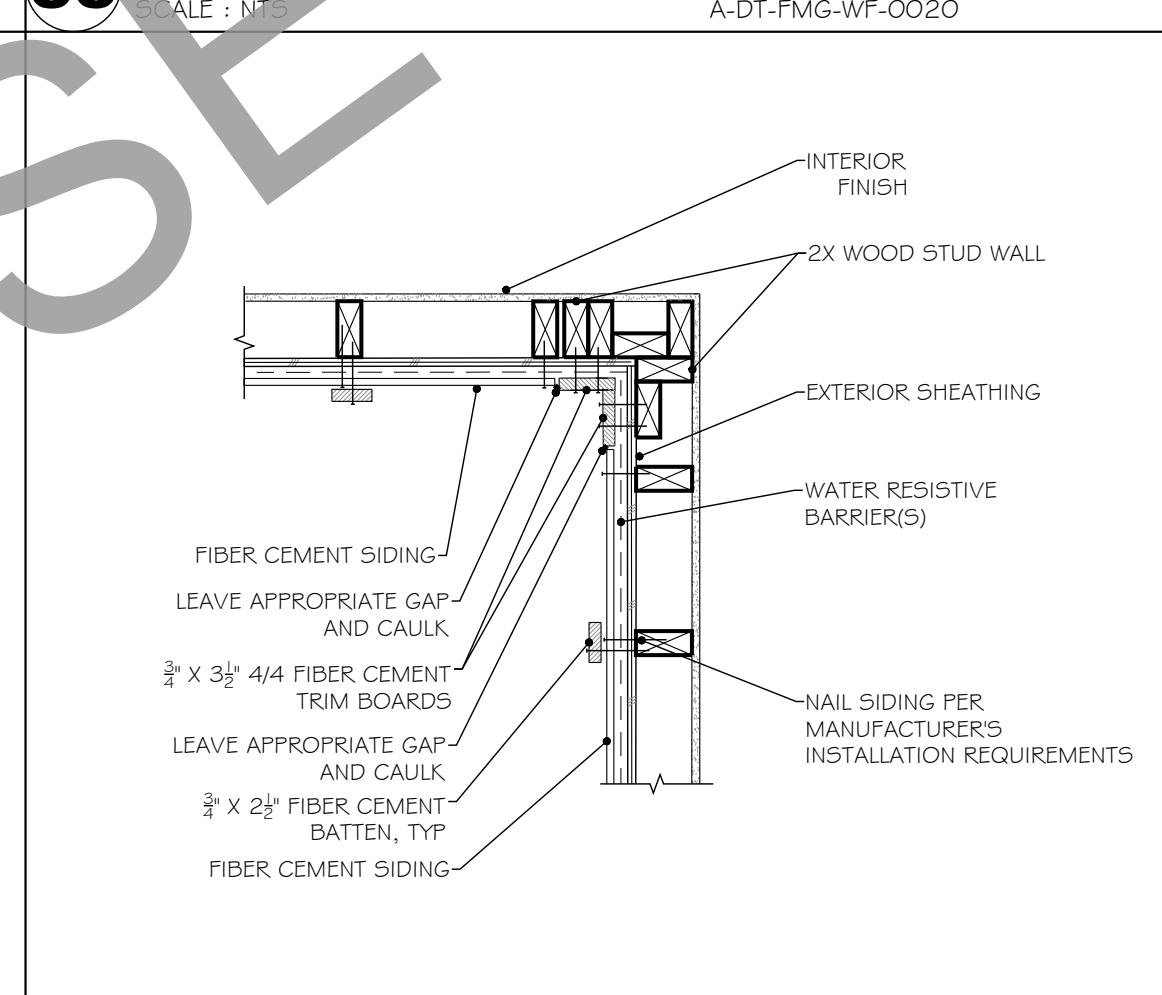
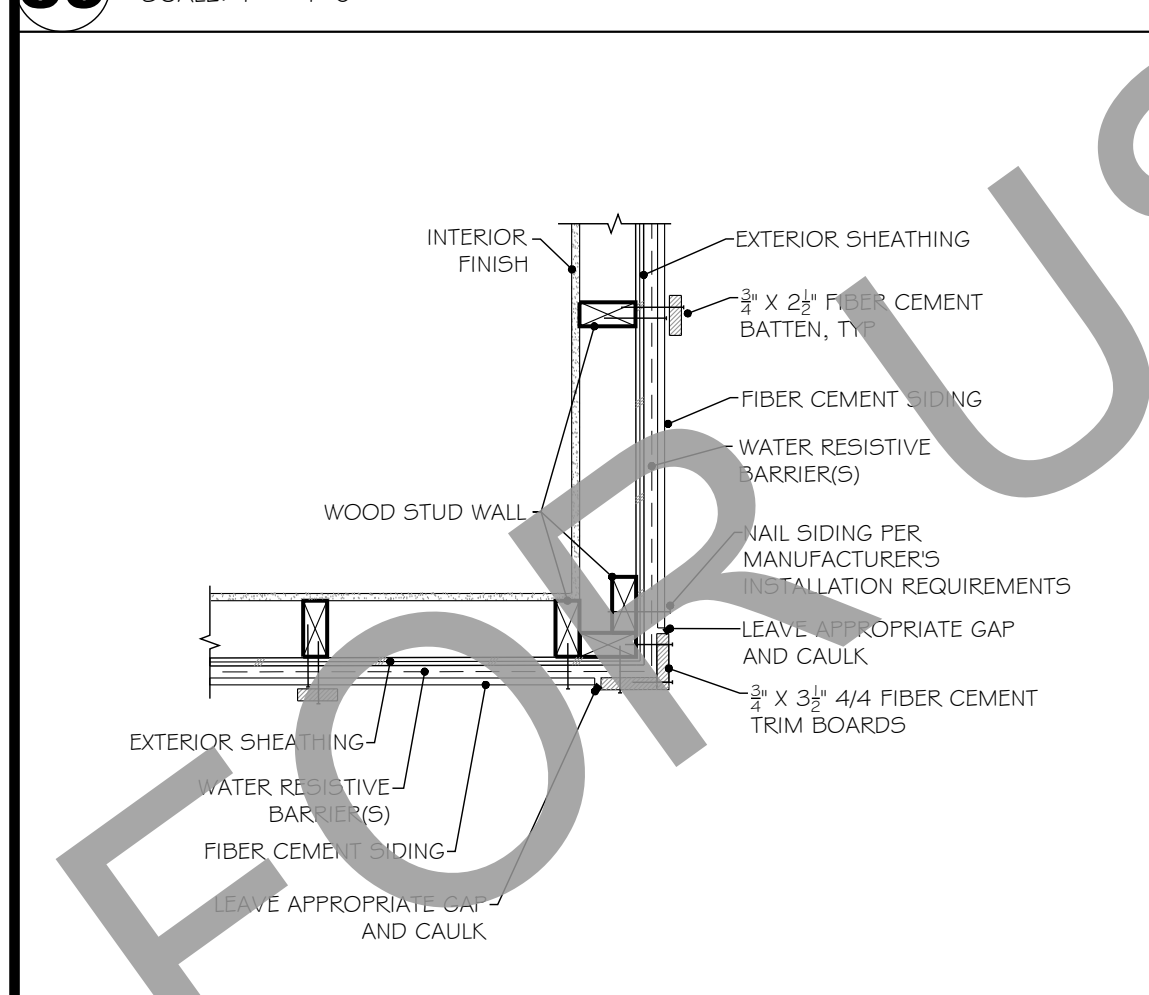
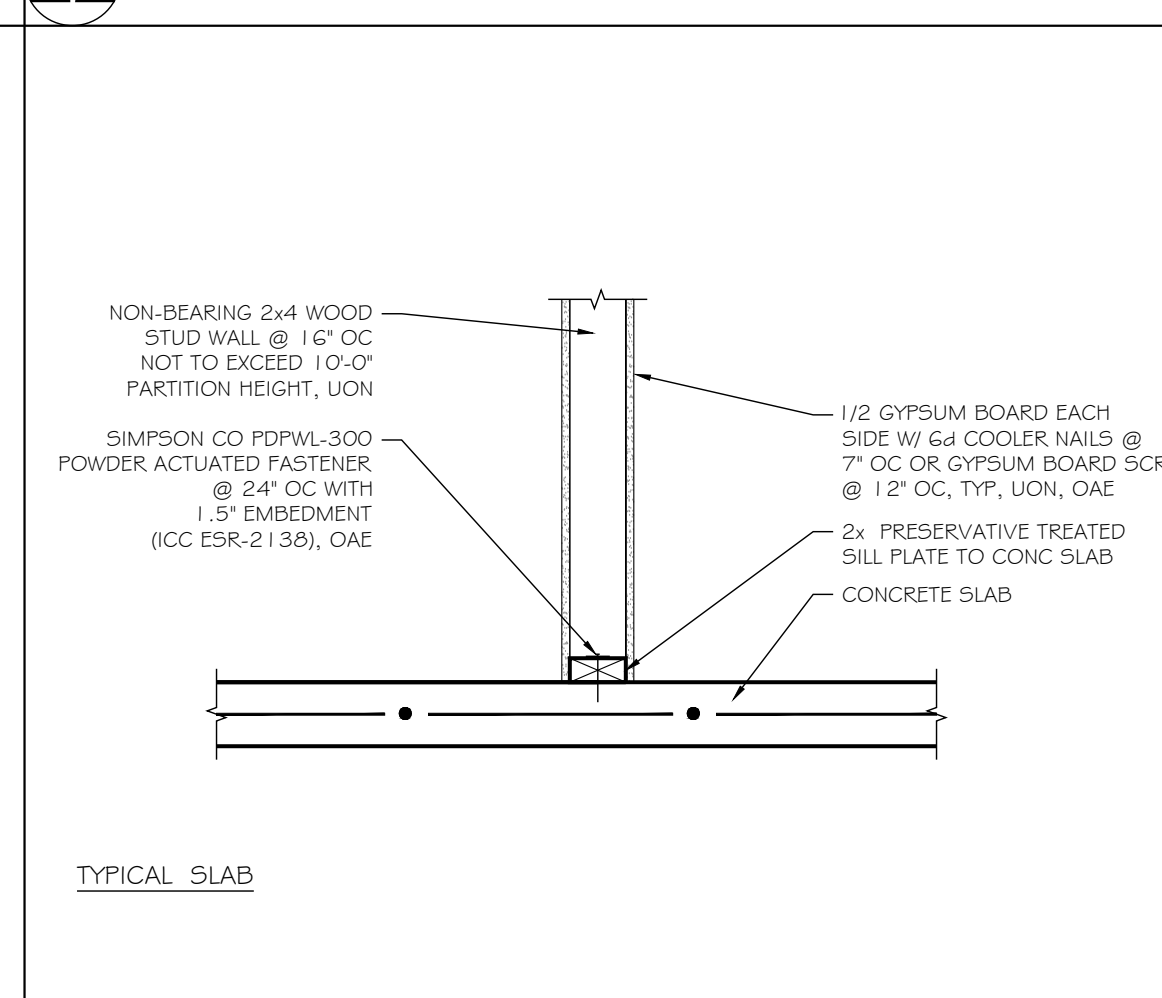
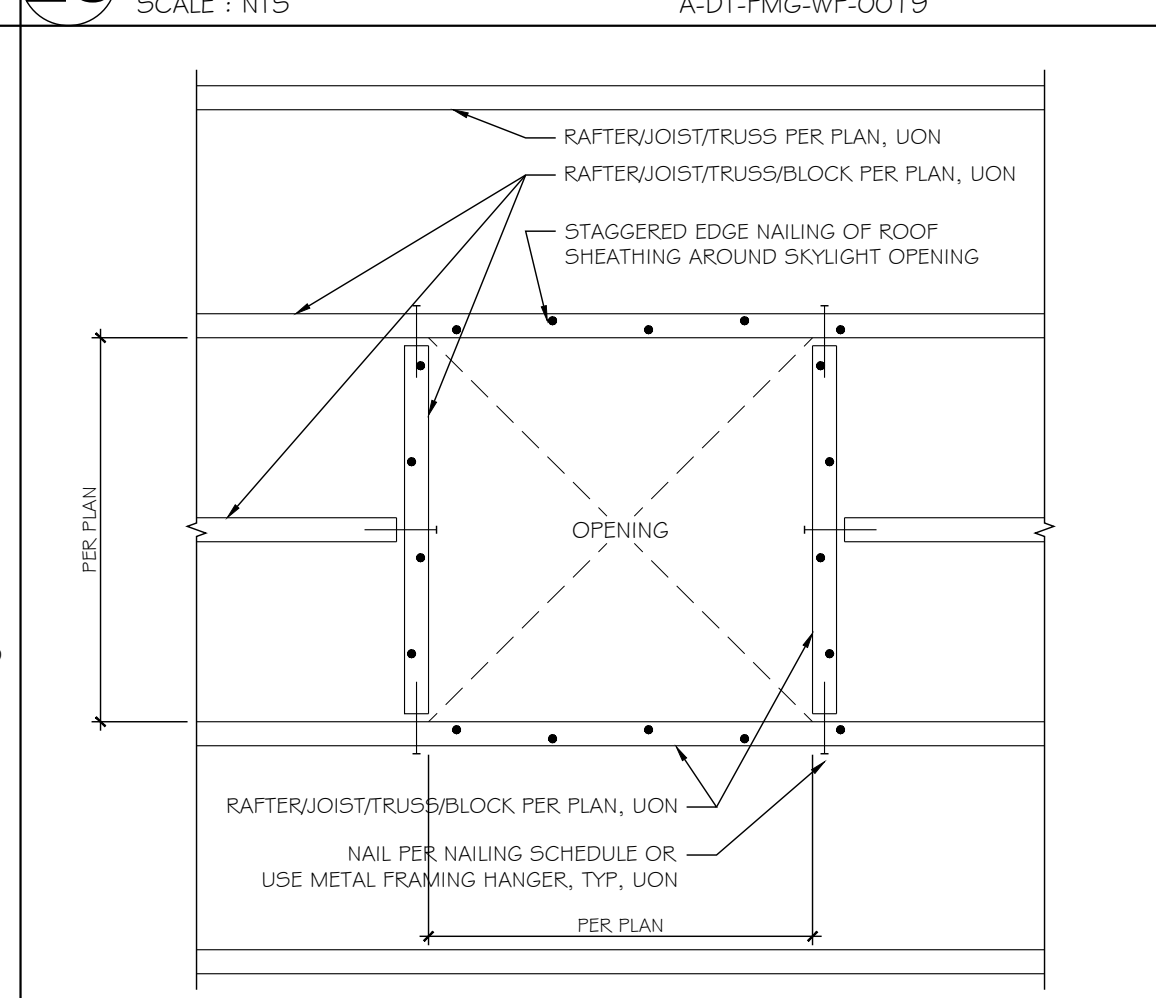
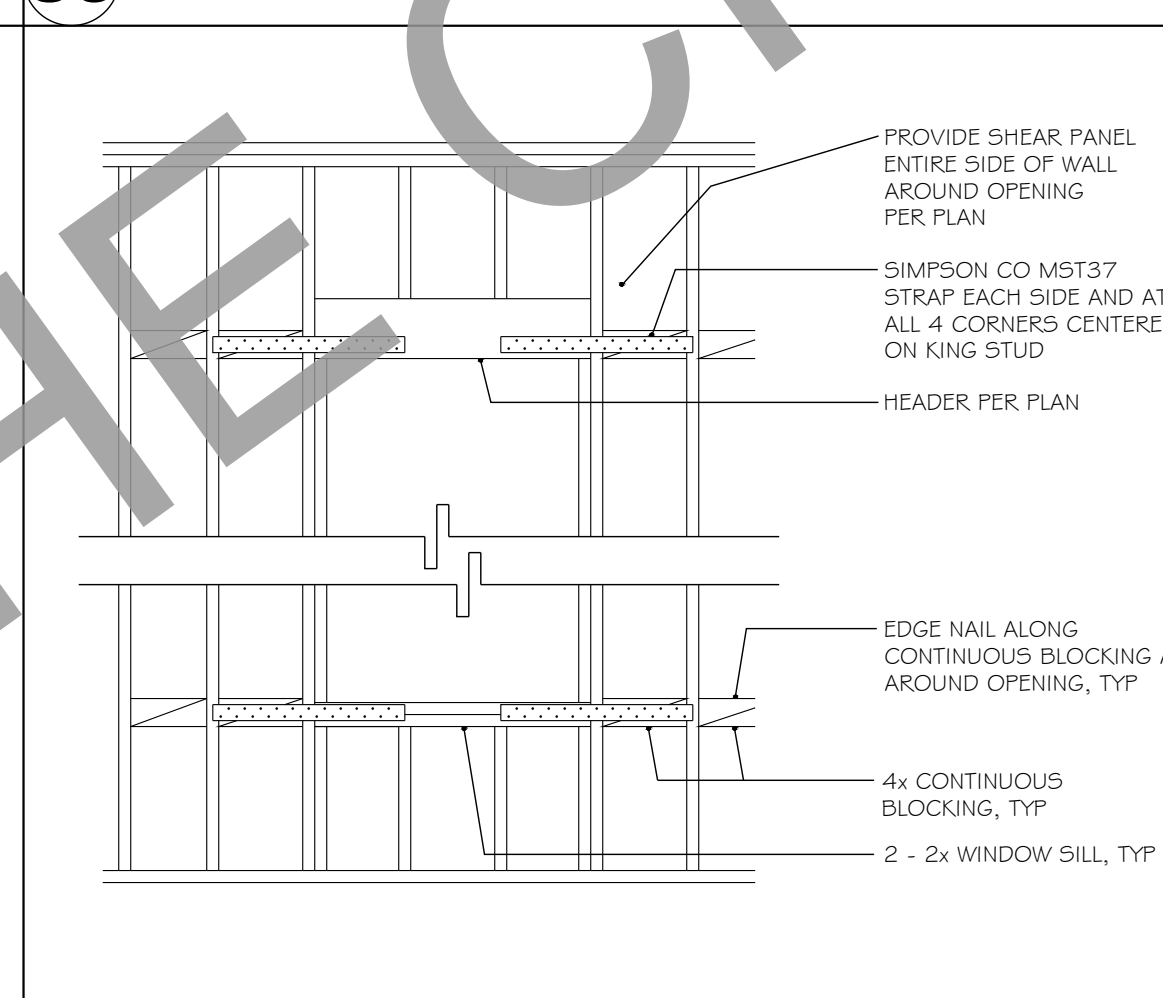
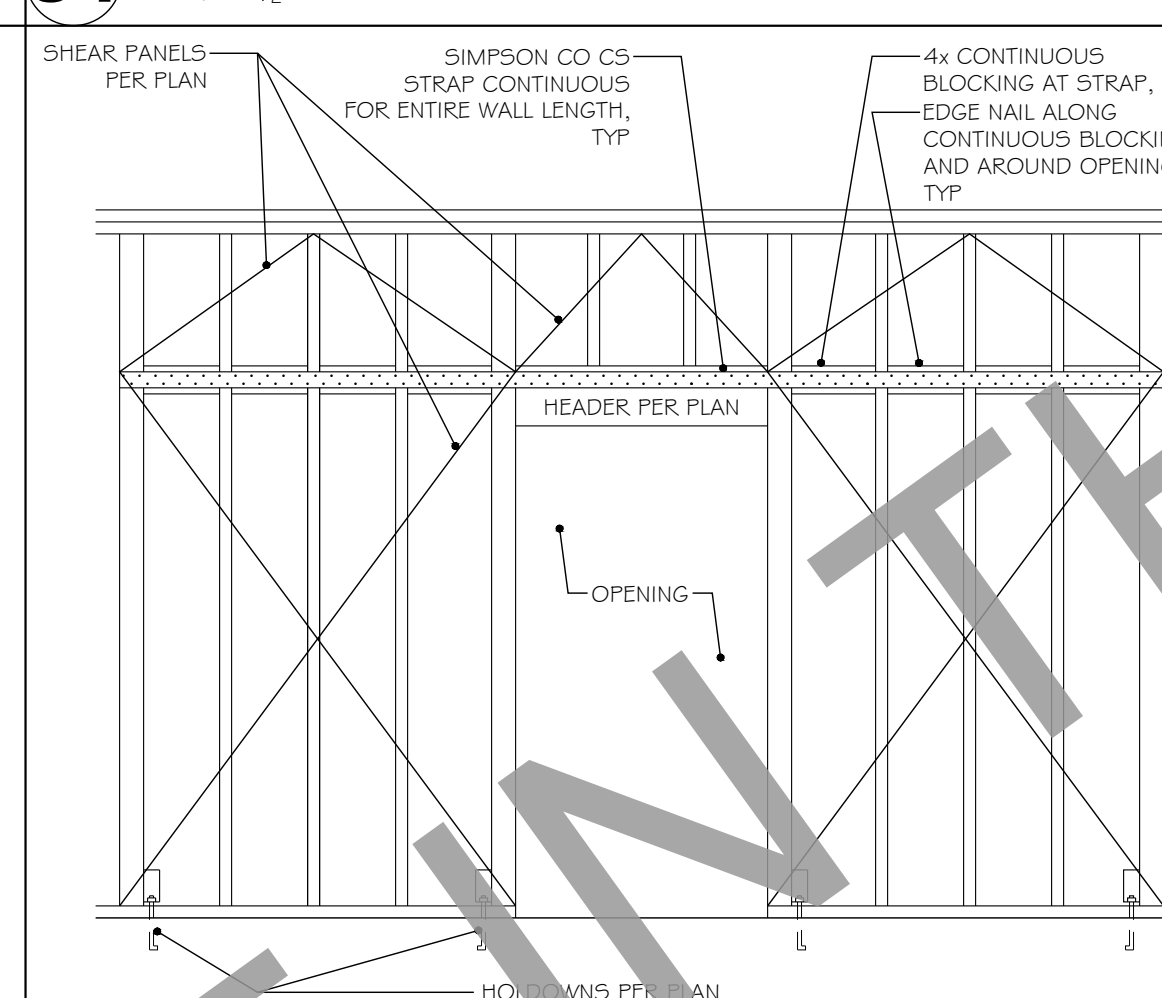
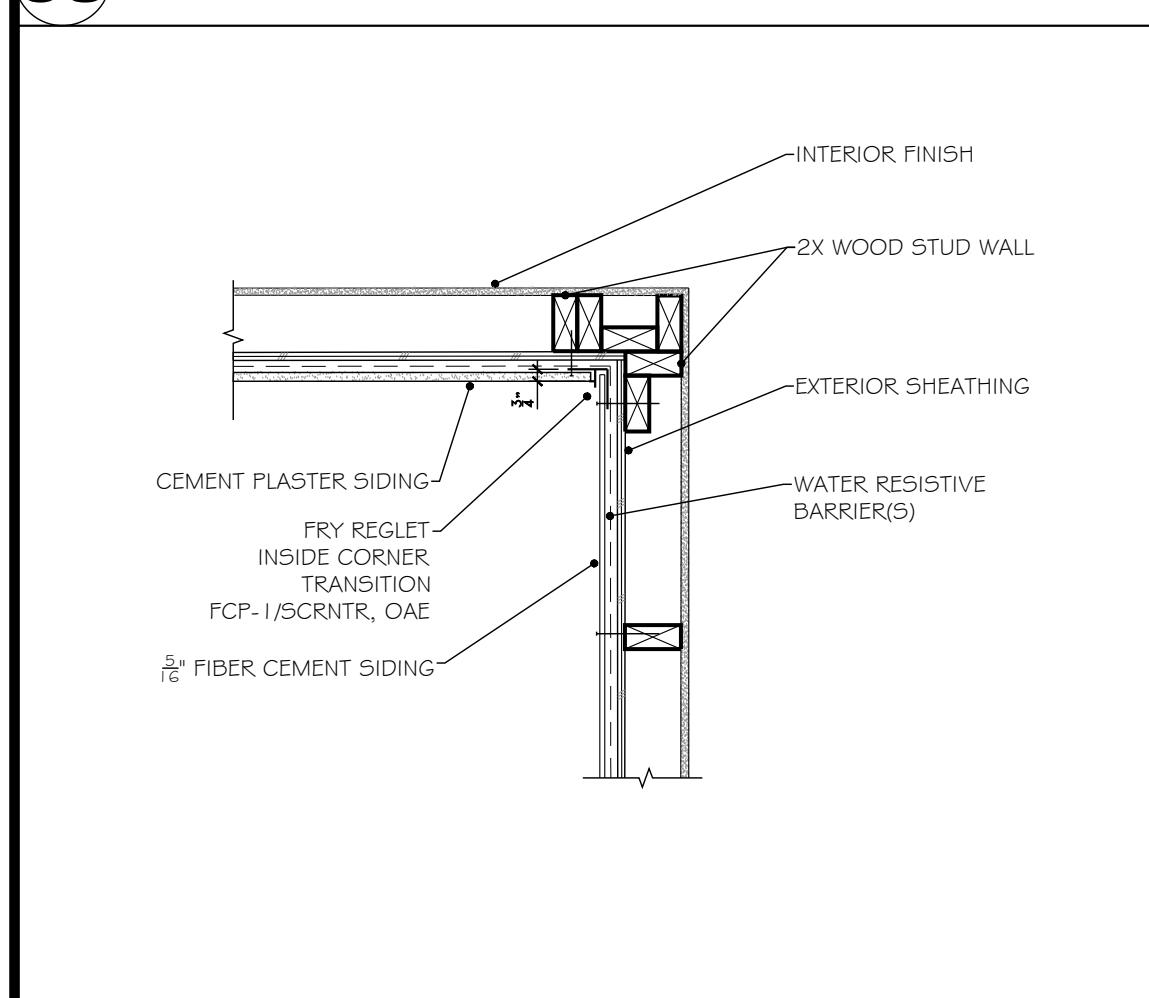
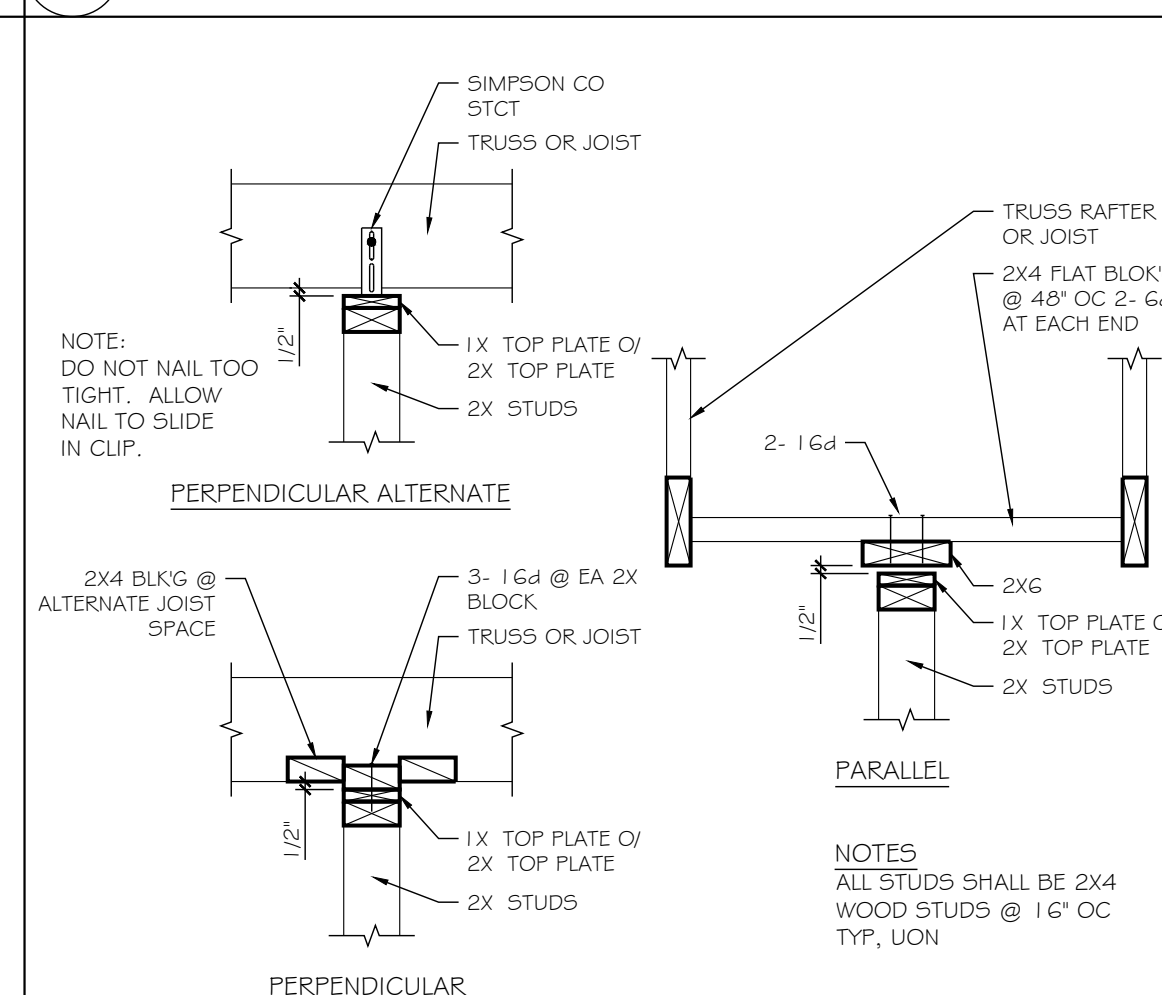
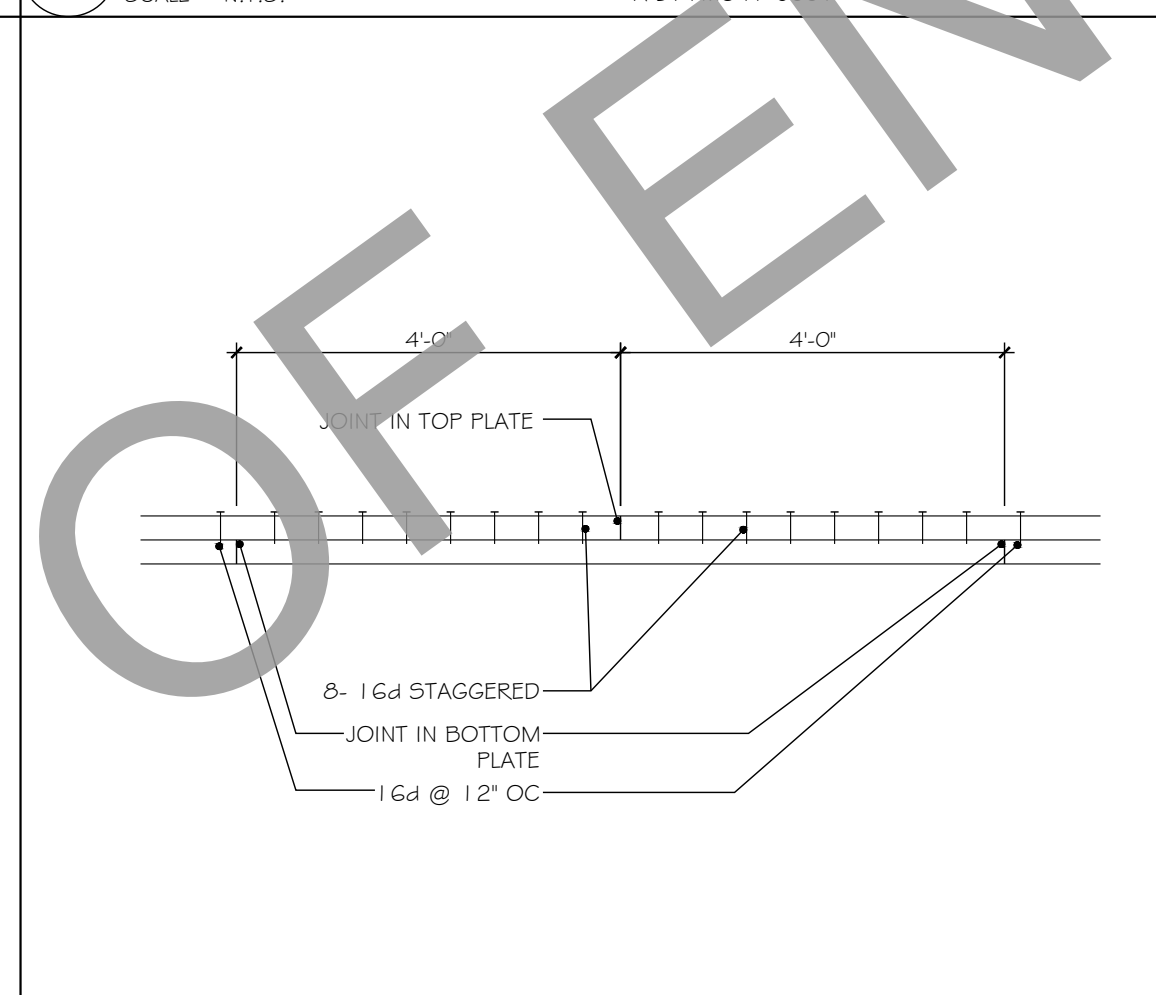
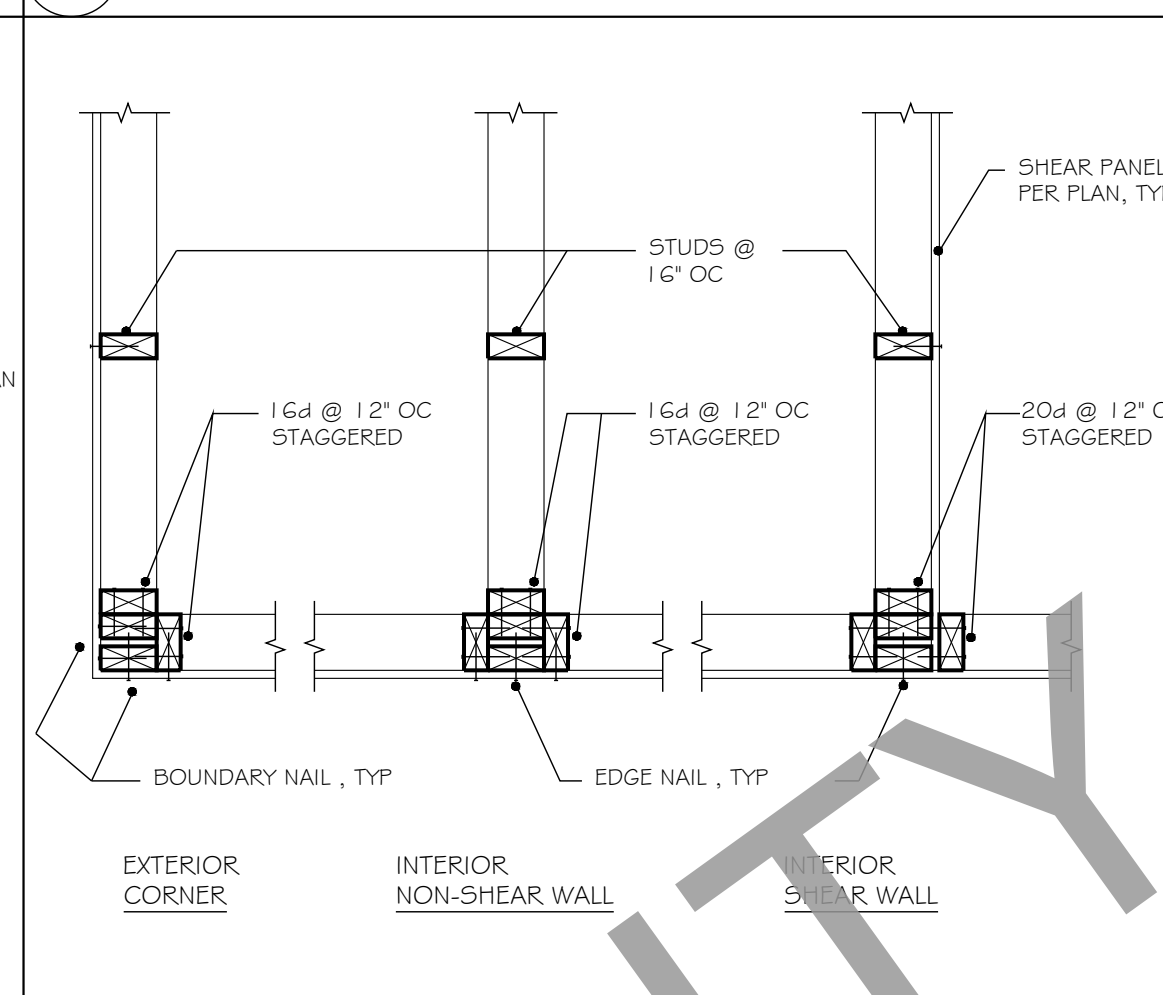
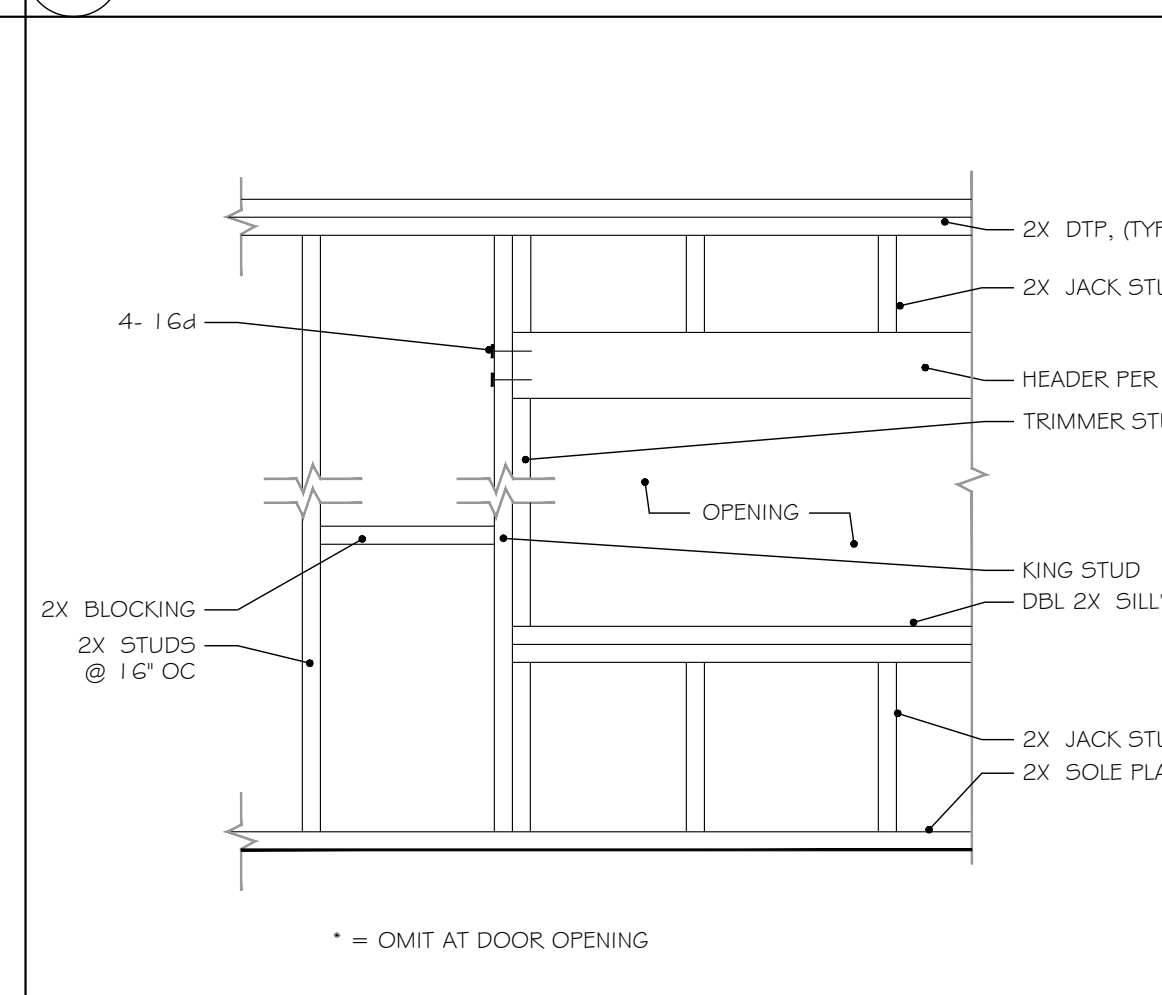
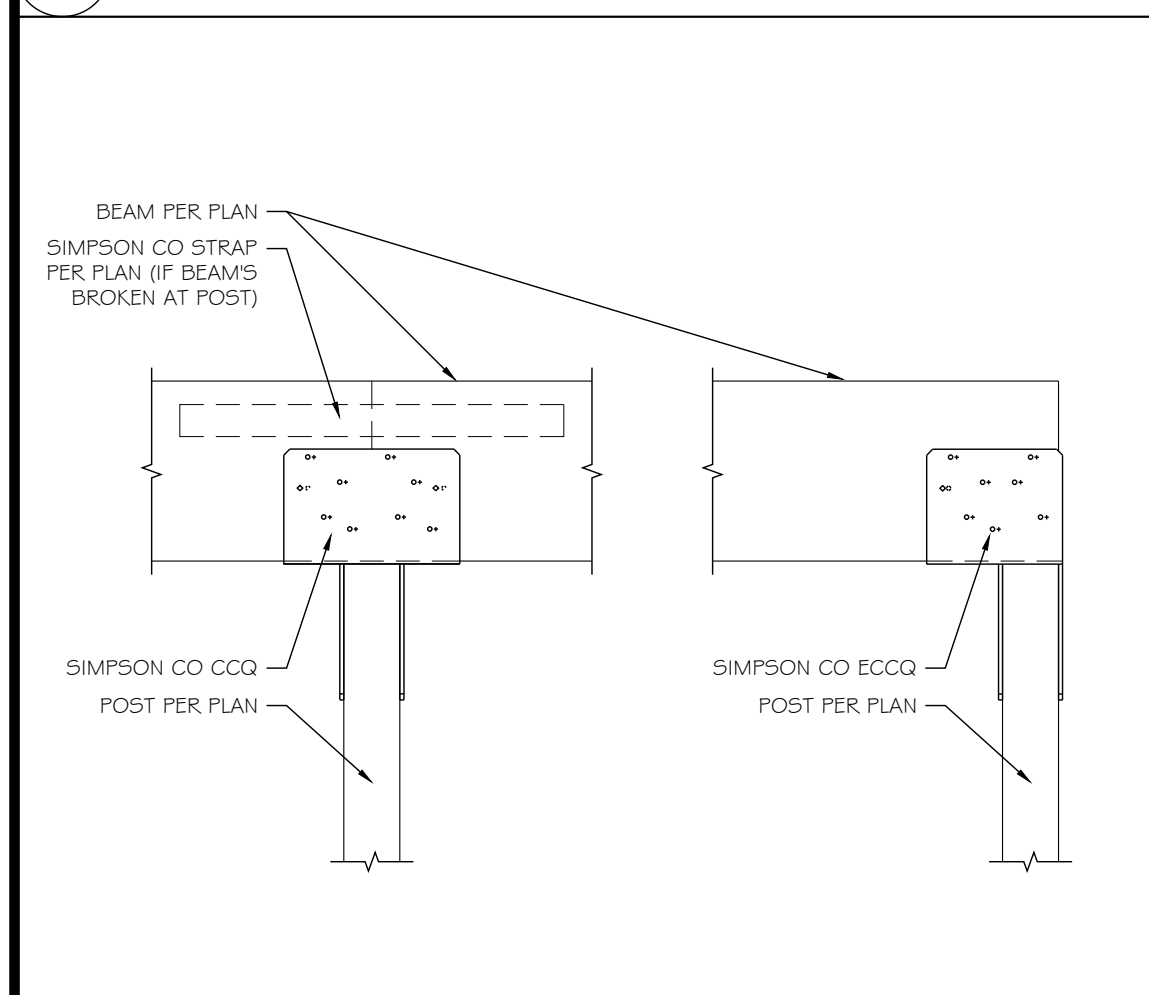
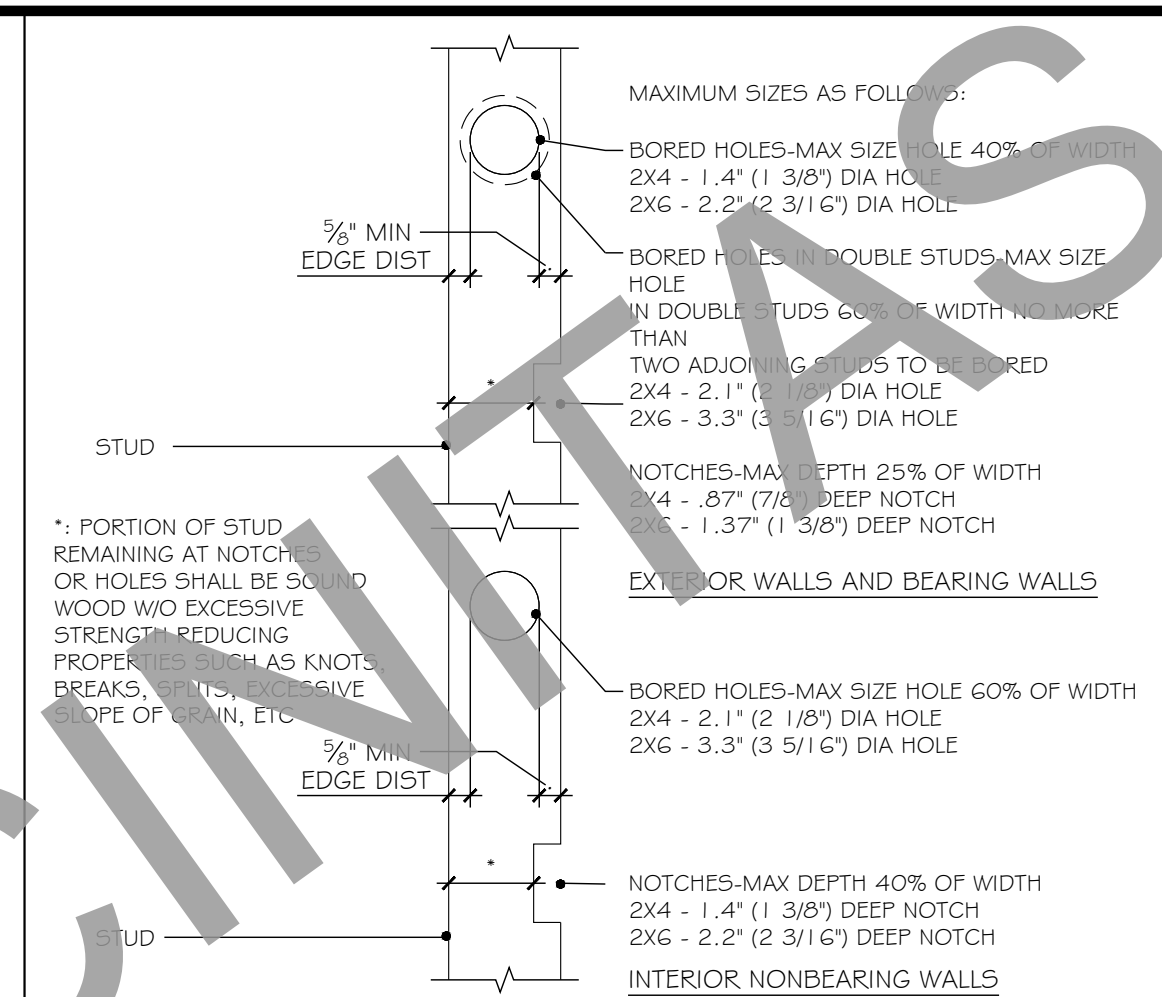
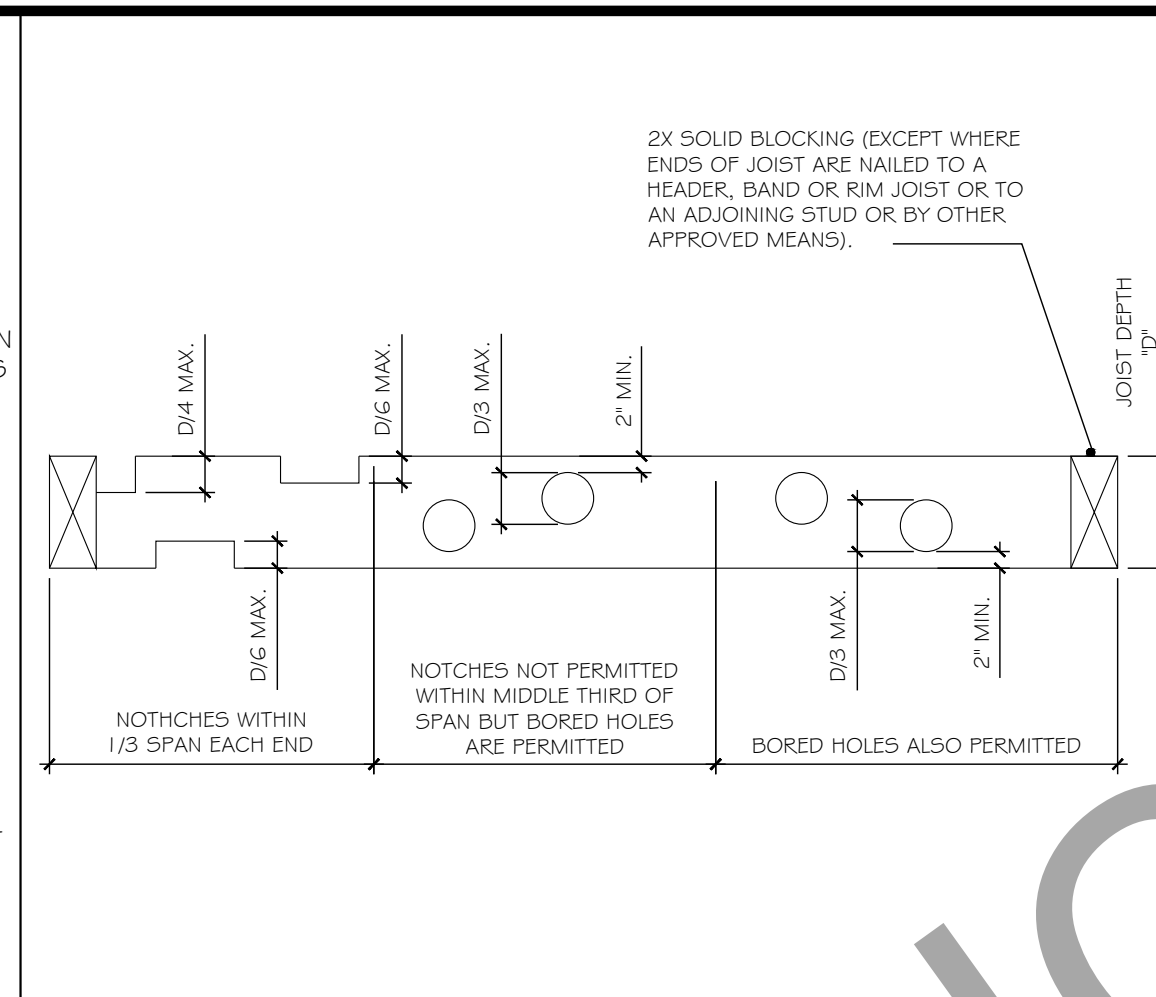
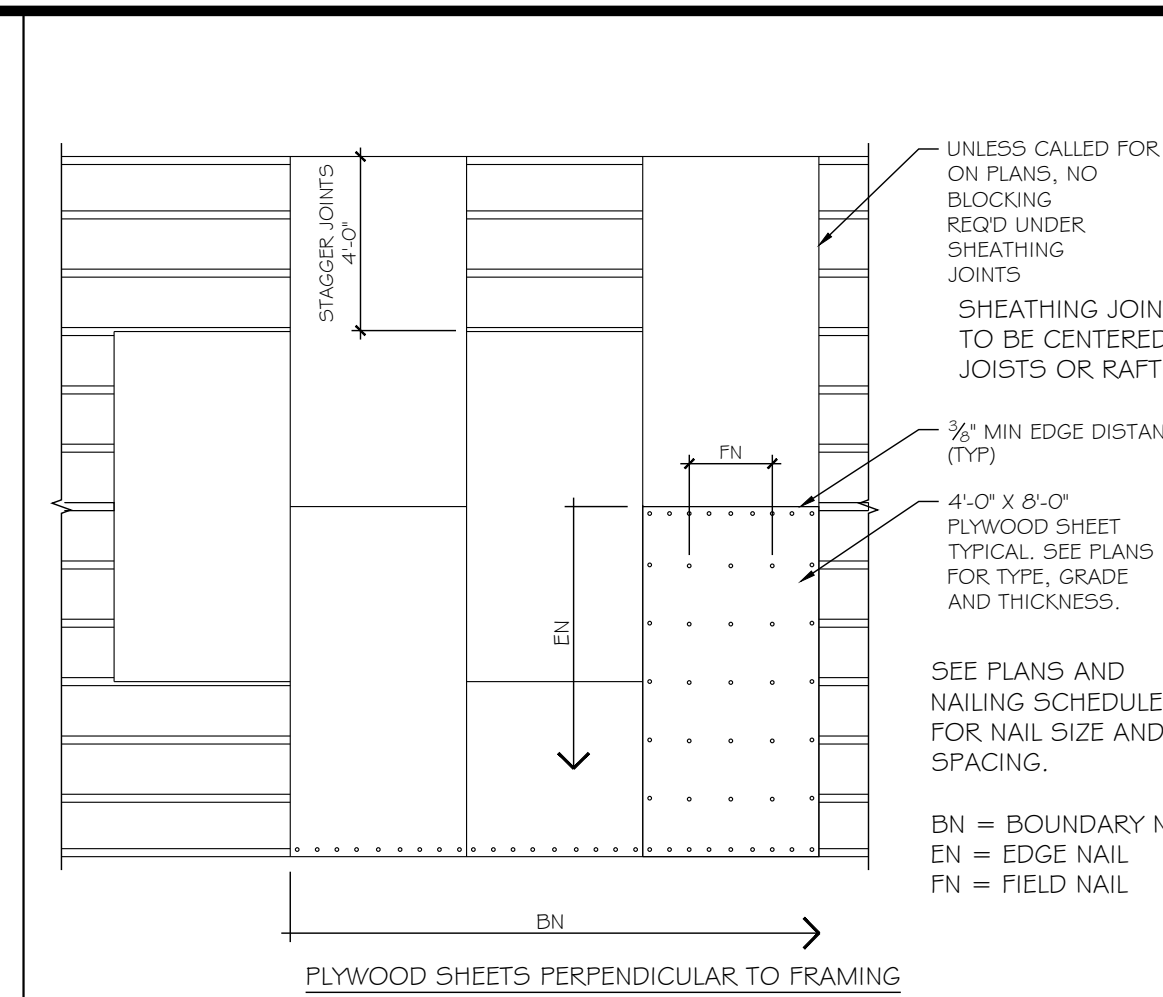
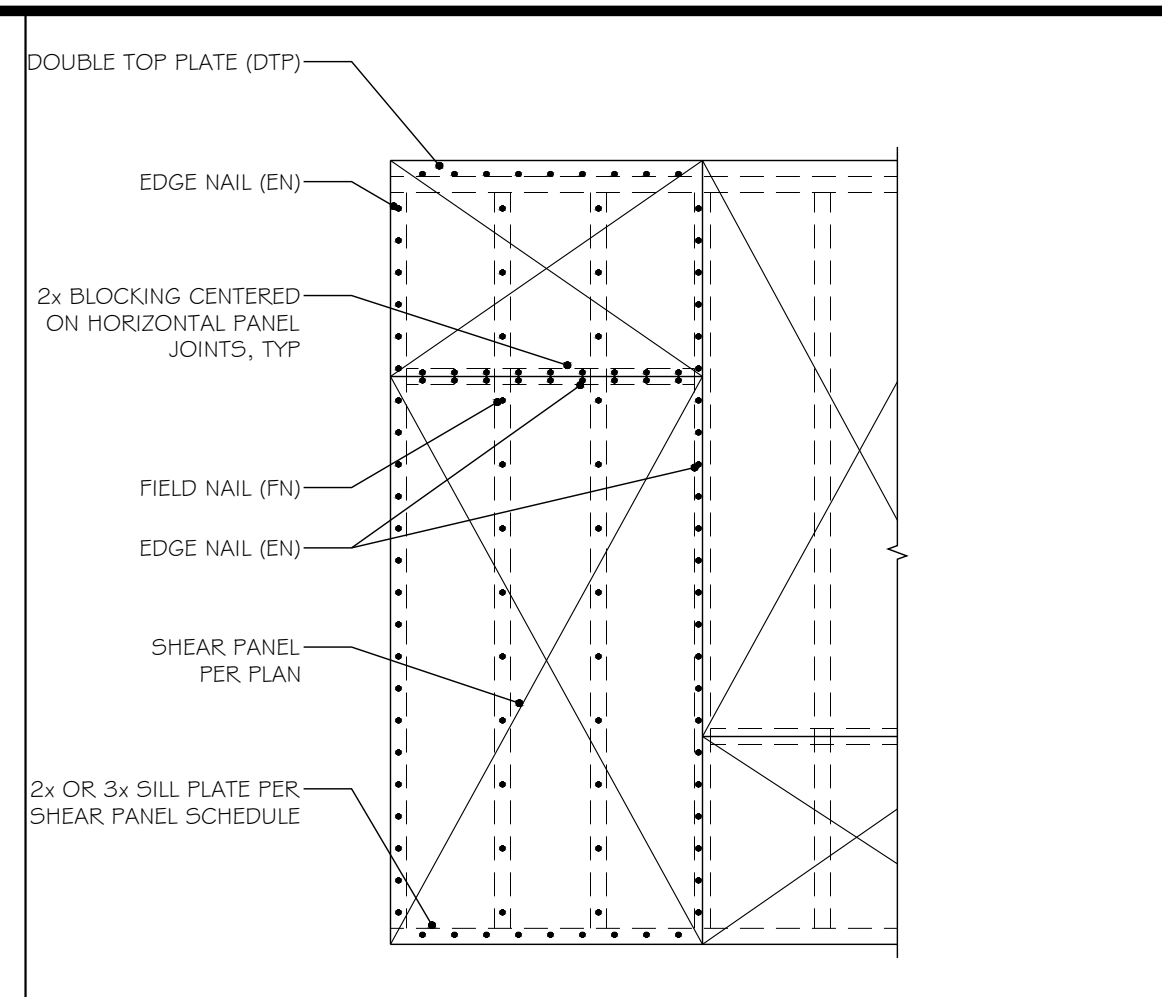
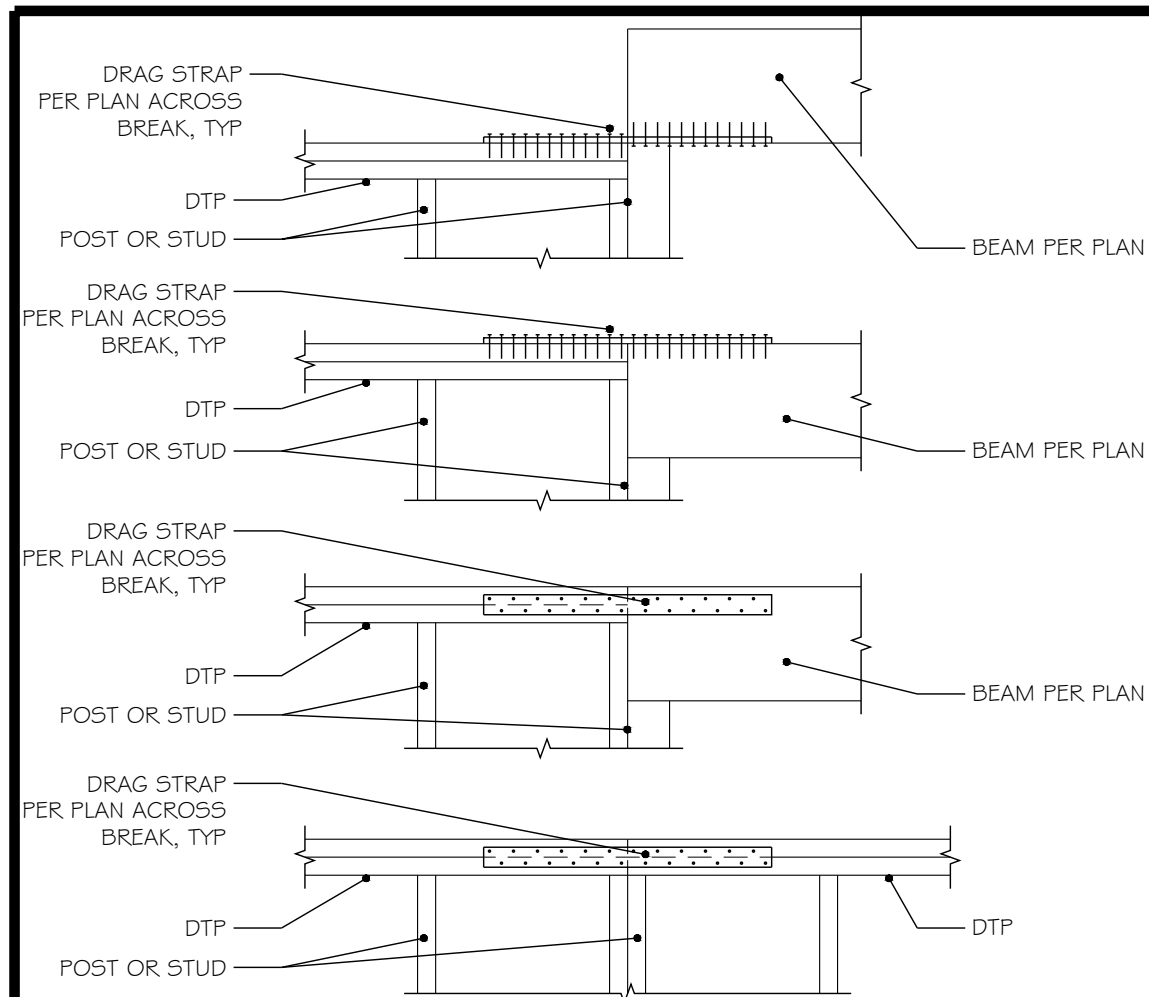
CITY: ENCINITAS

JOB: 202241R

DETAILS

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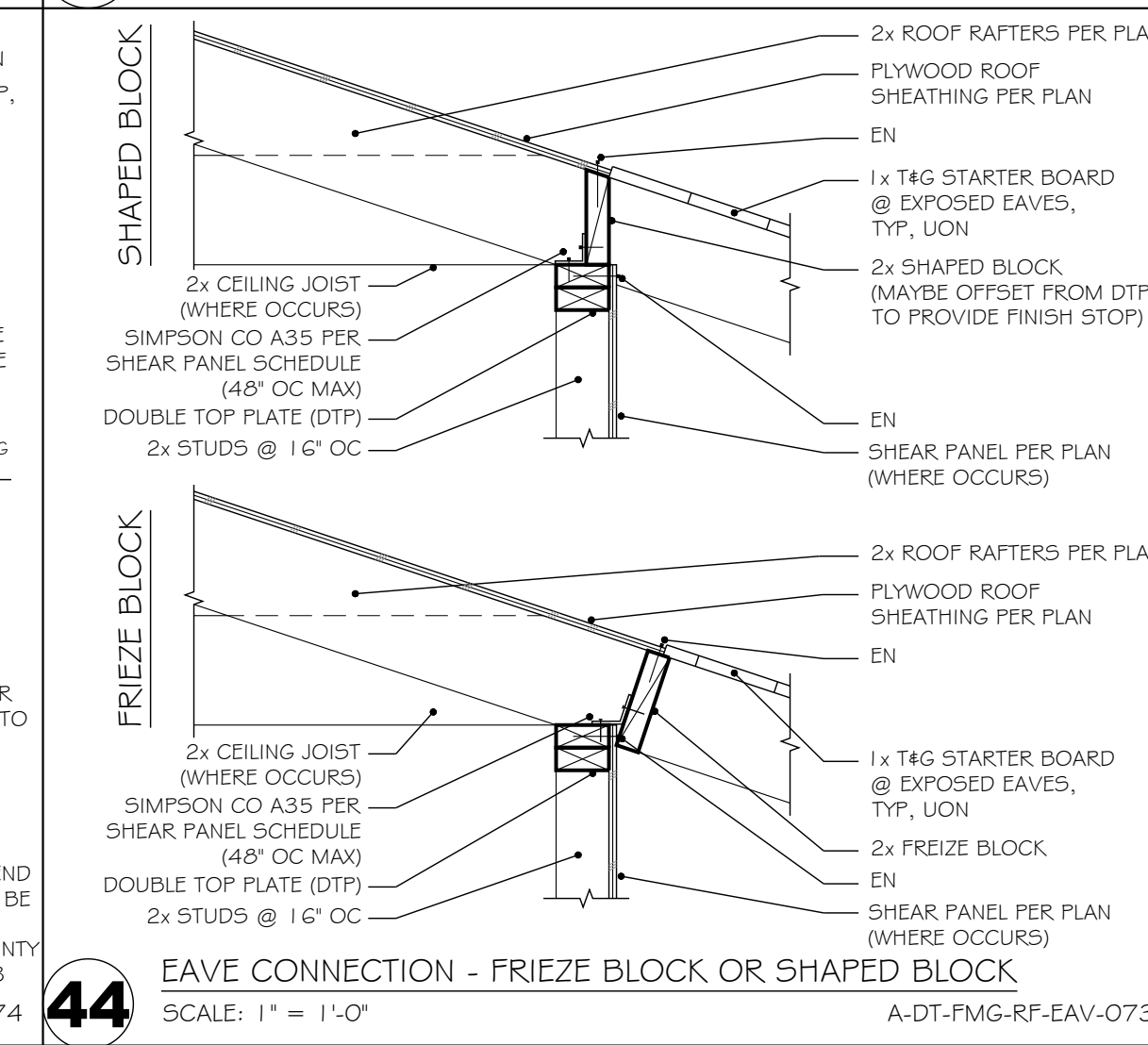
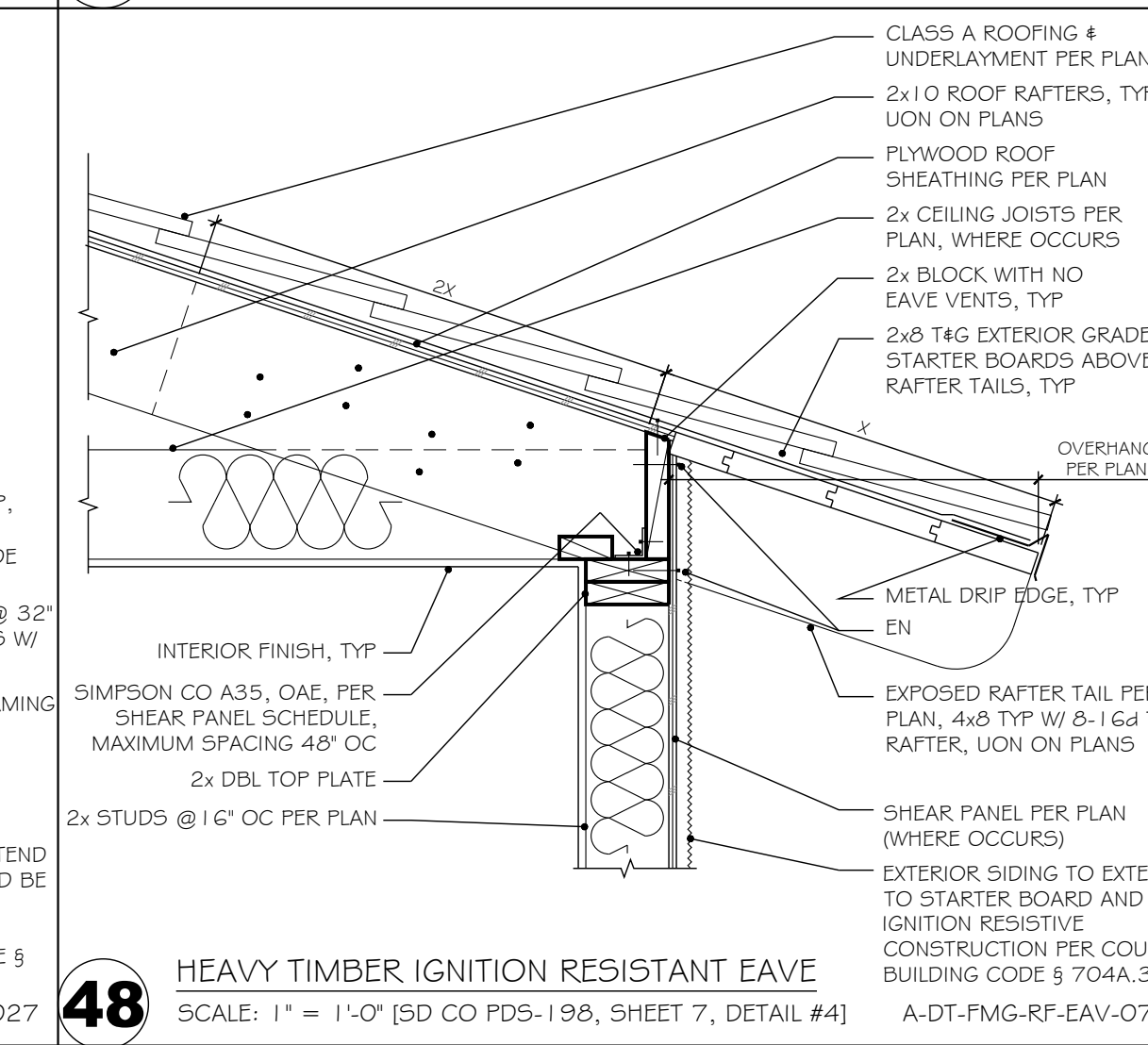
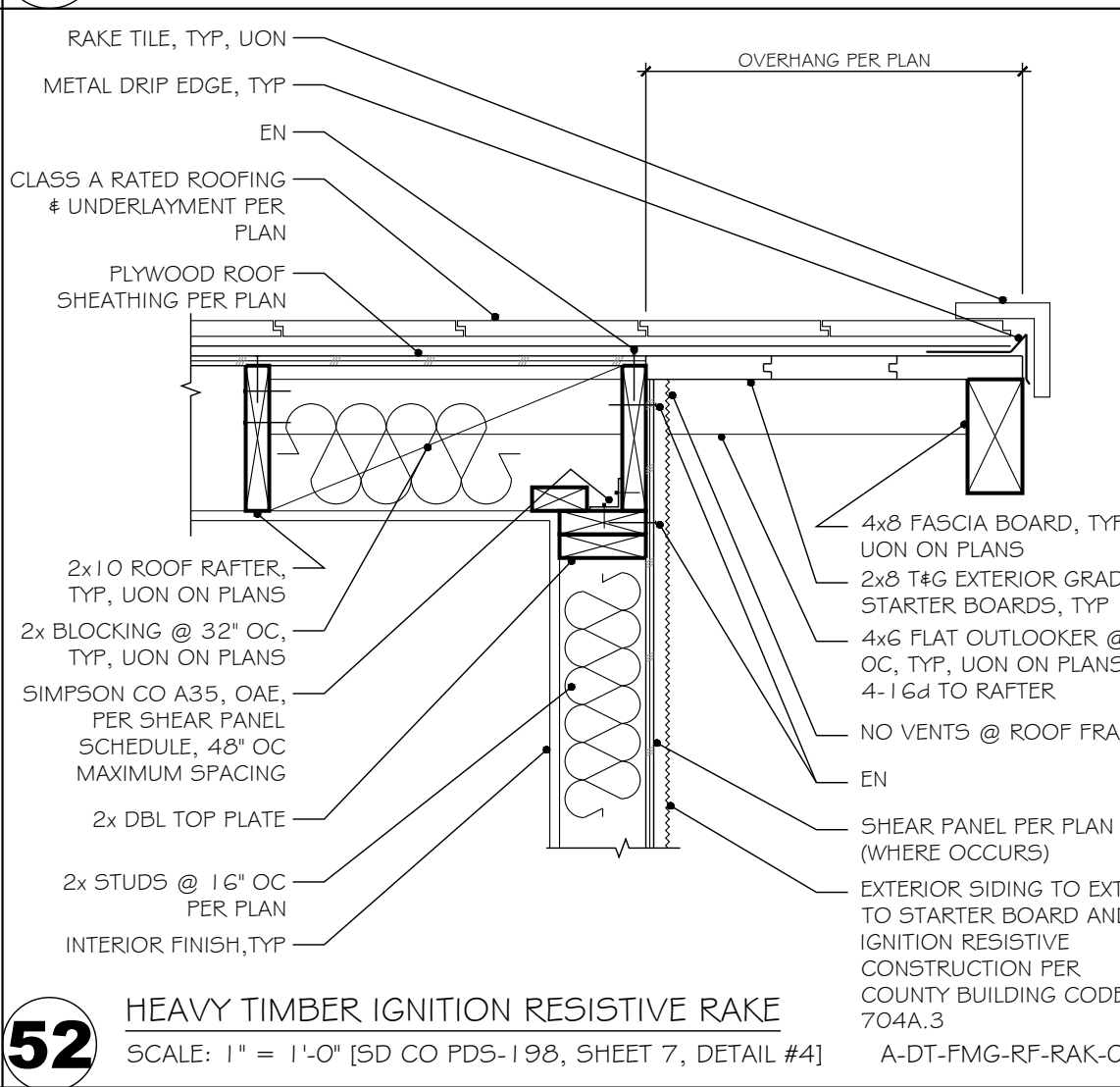
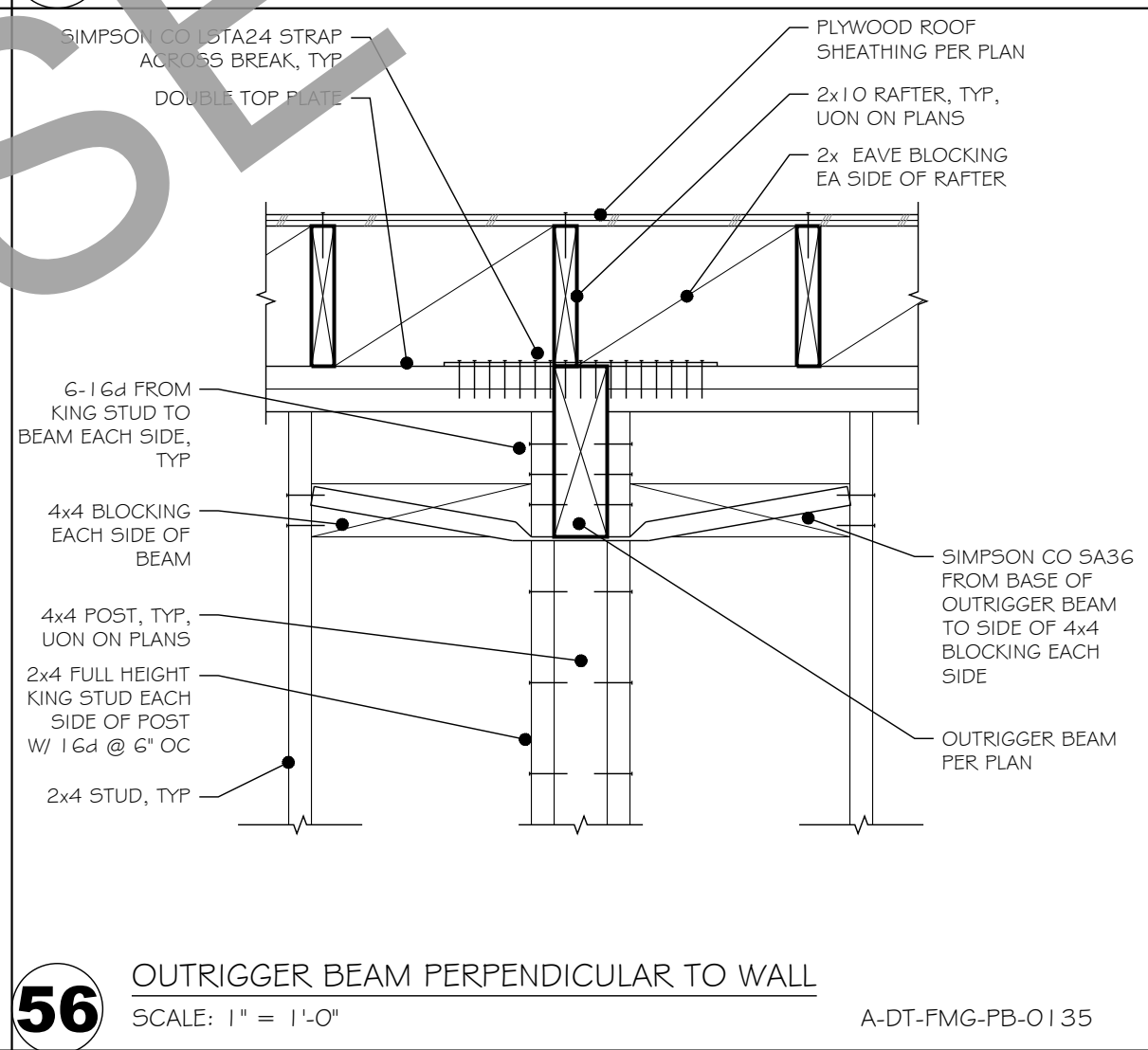
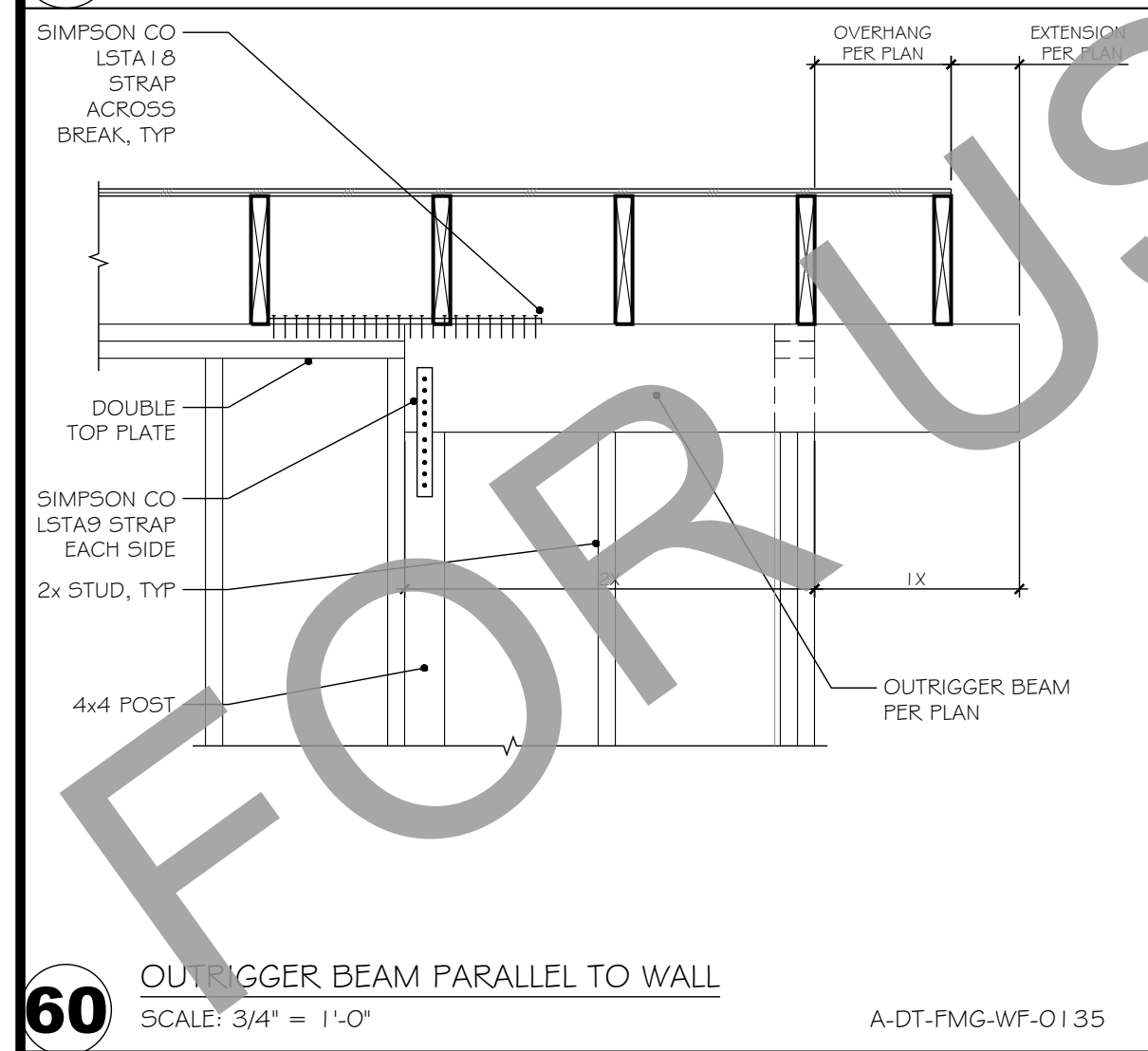
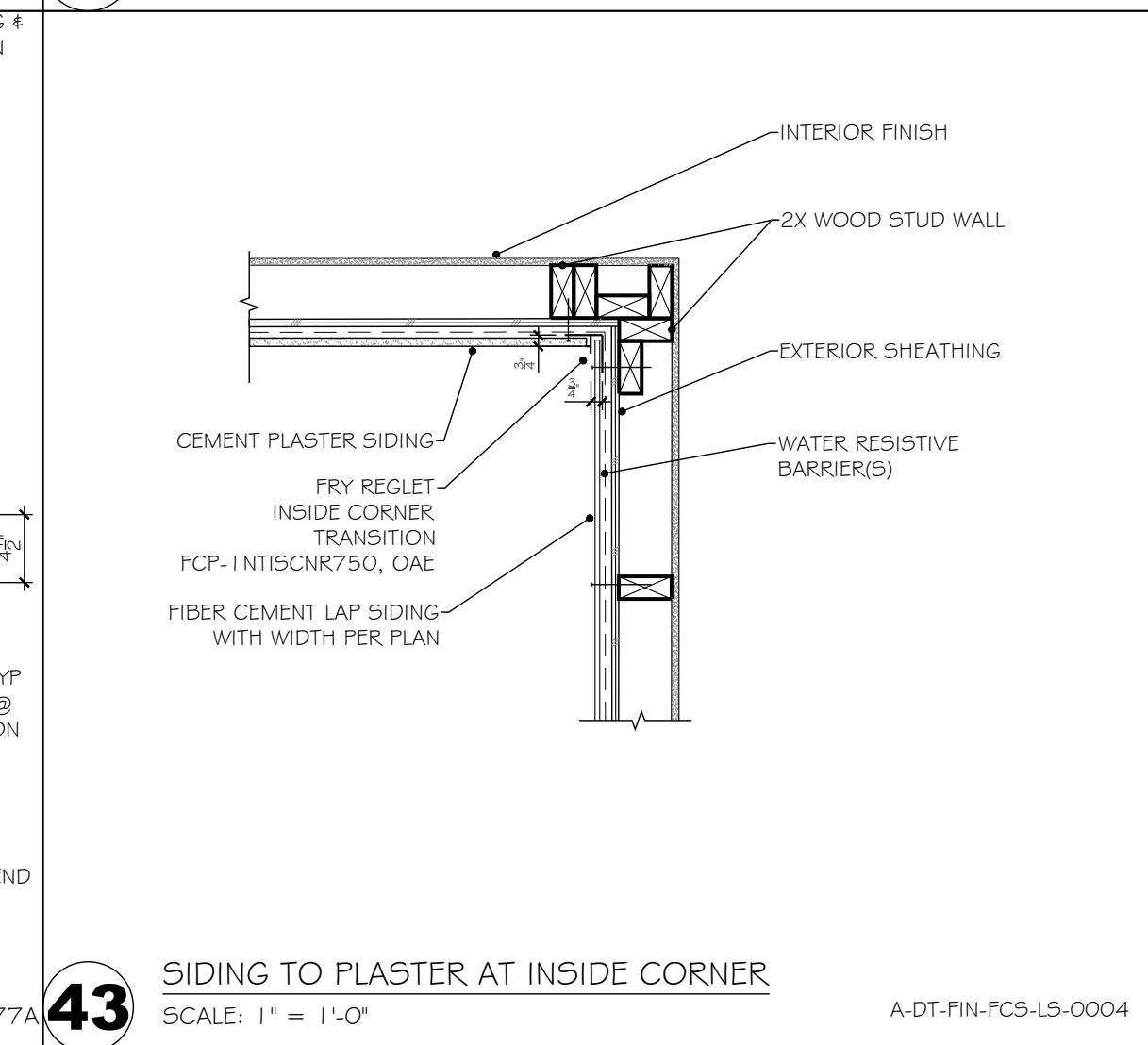
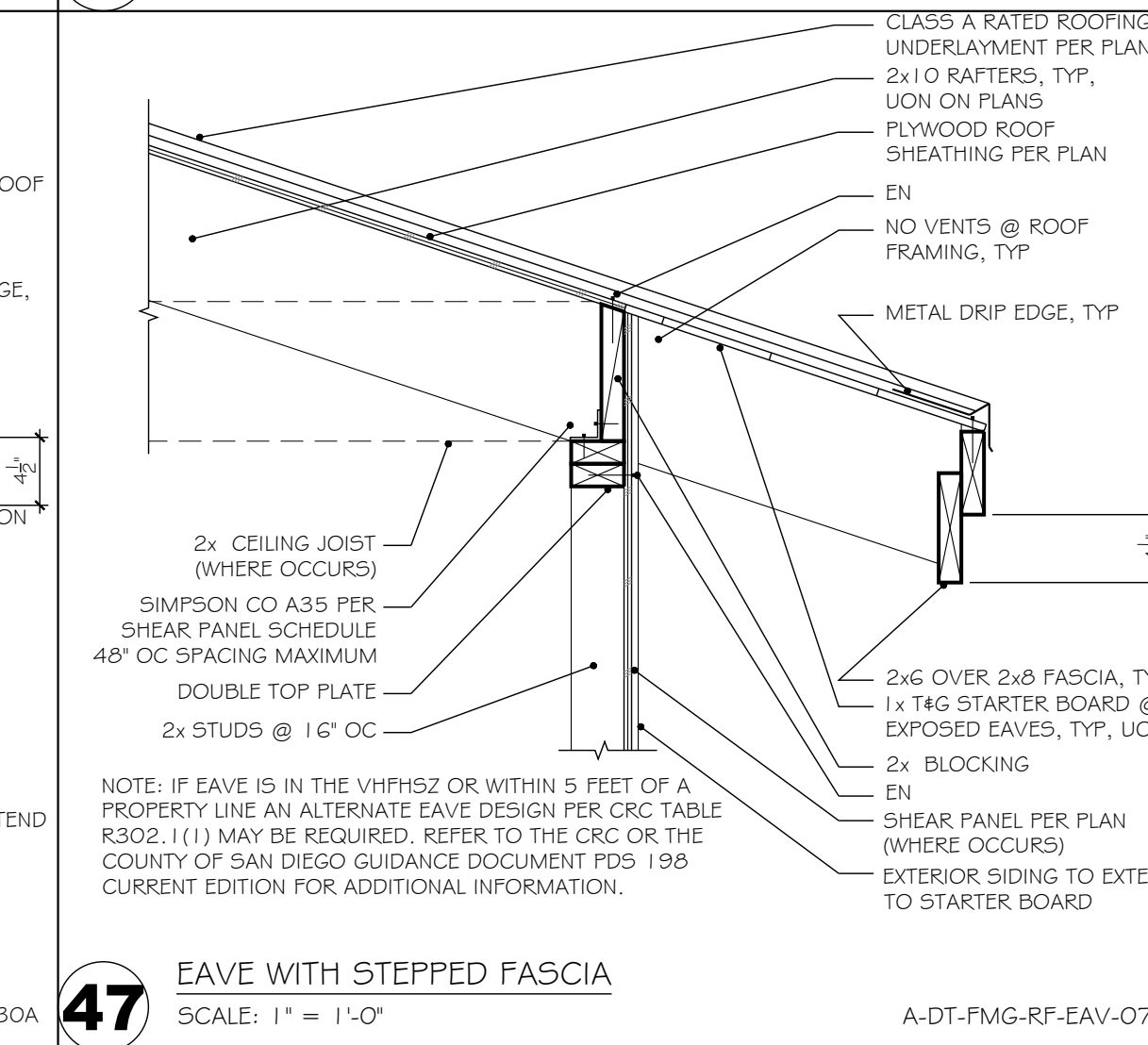
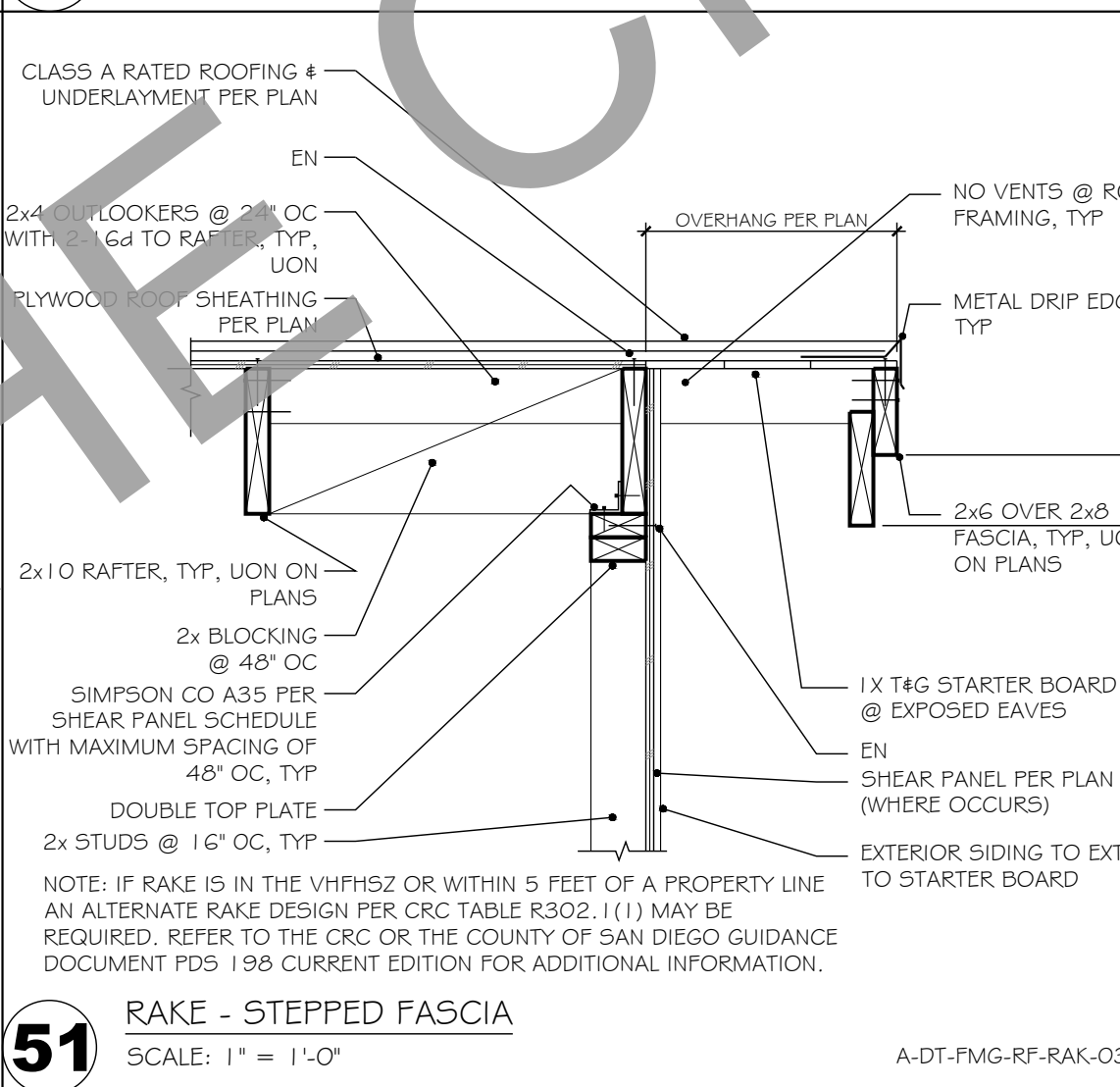
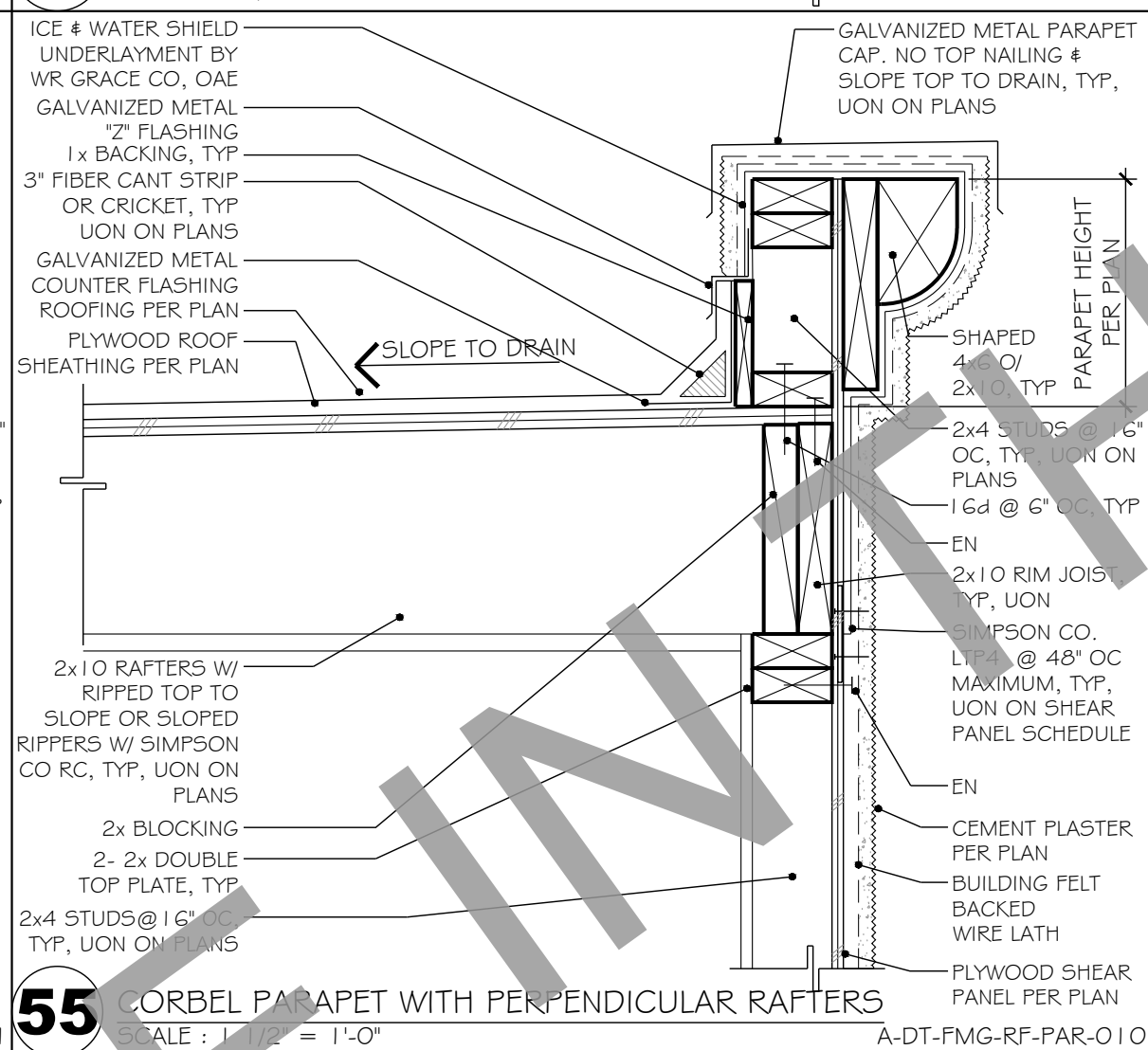
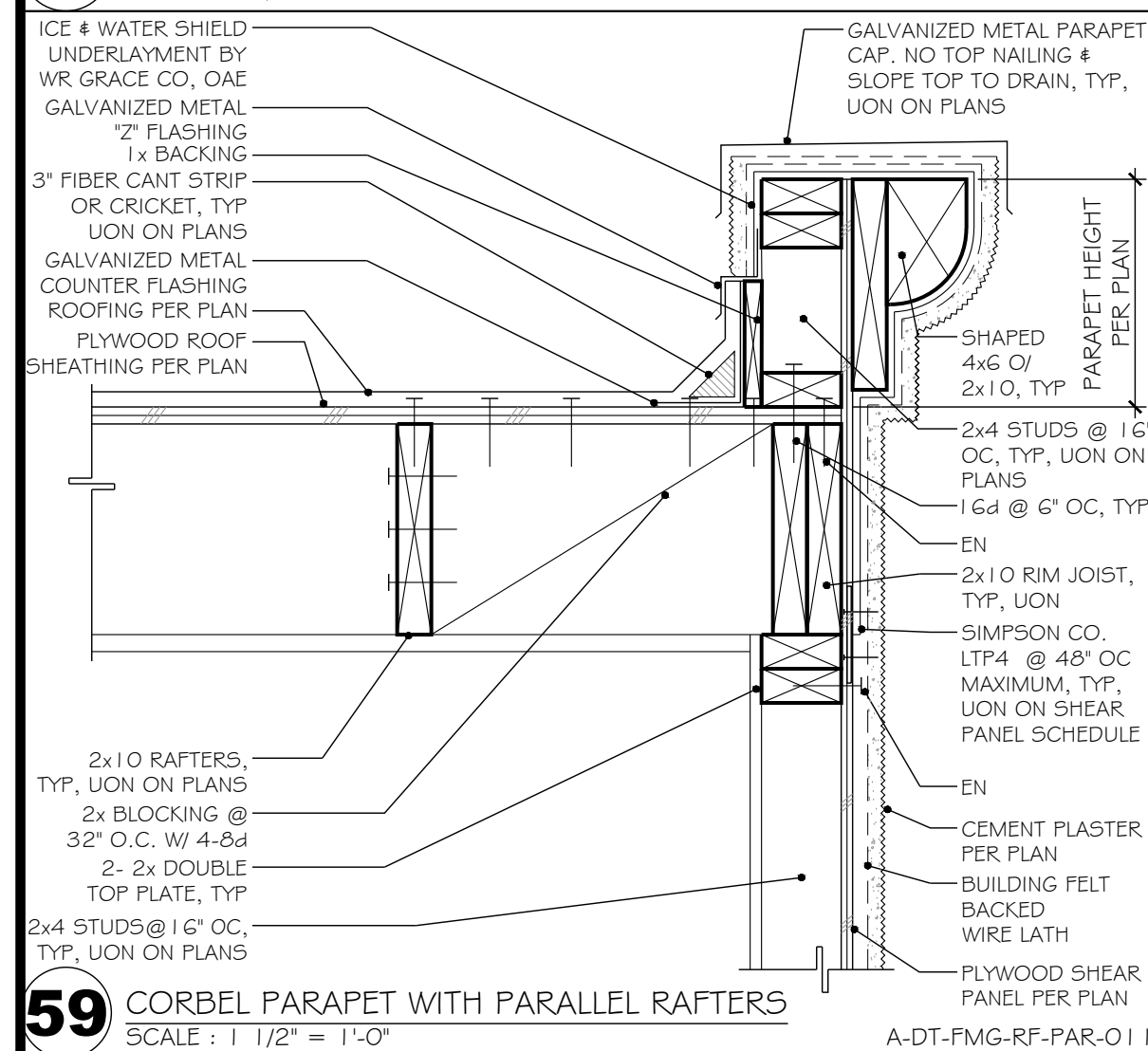
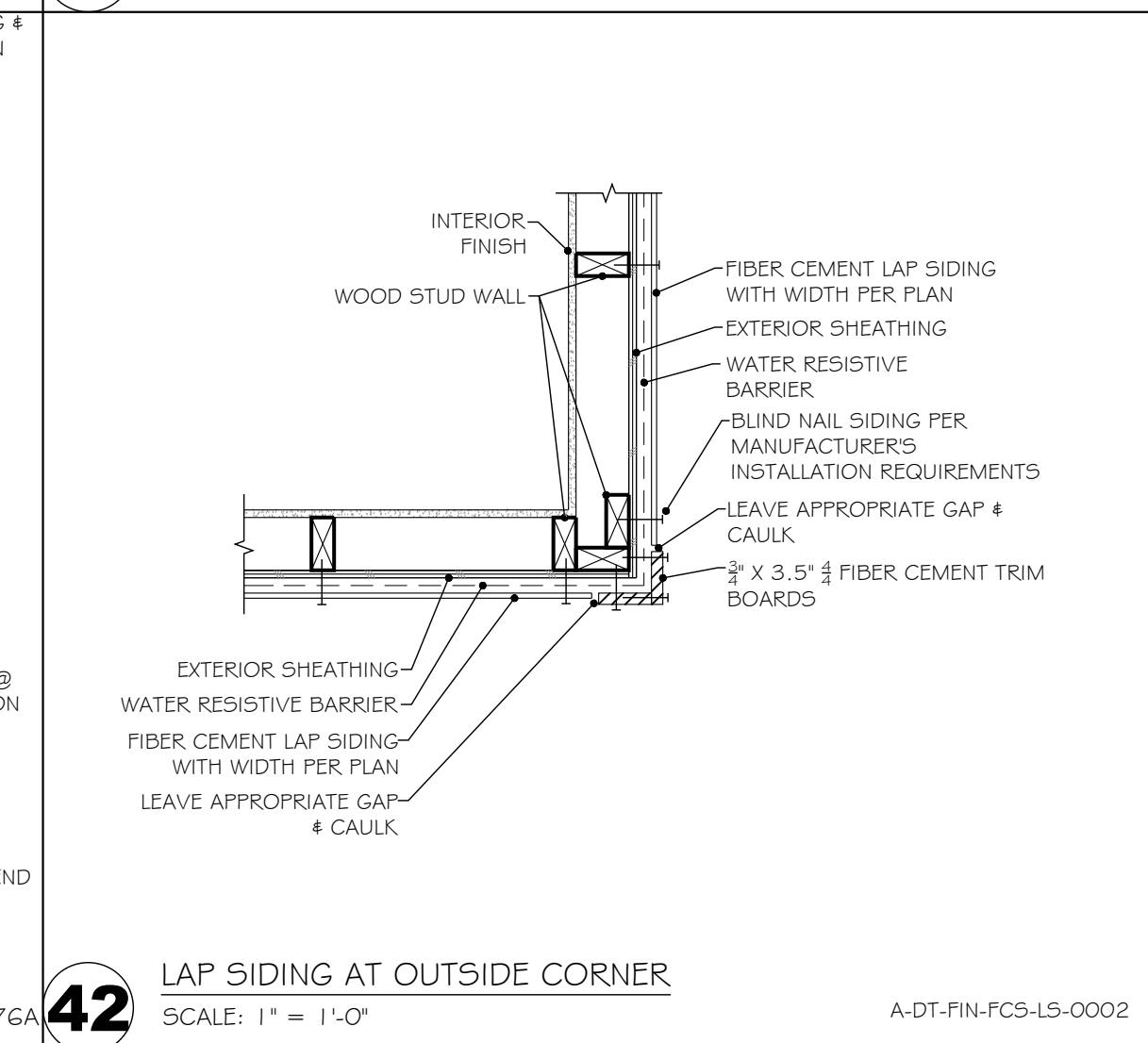
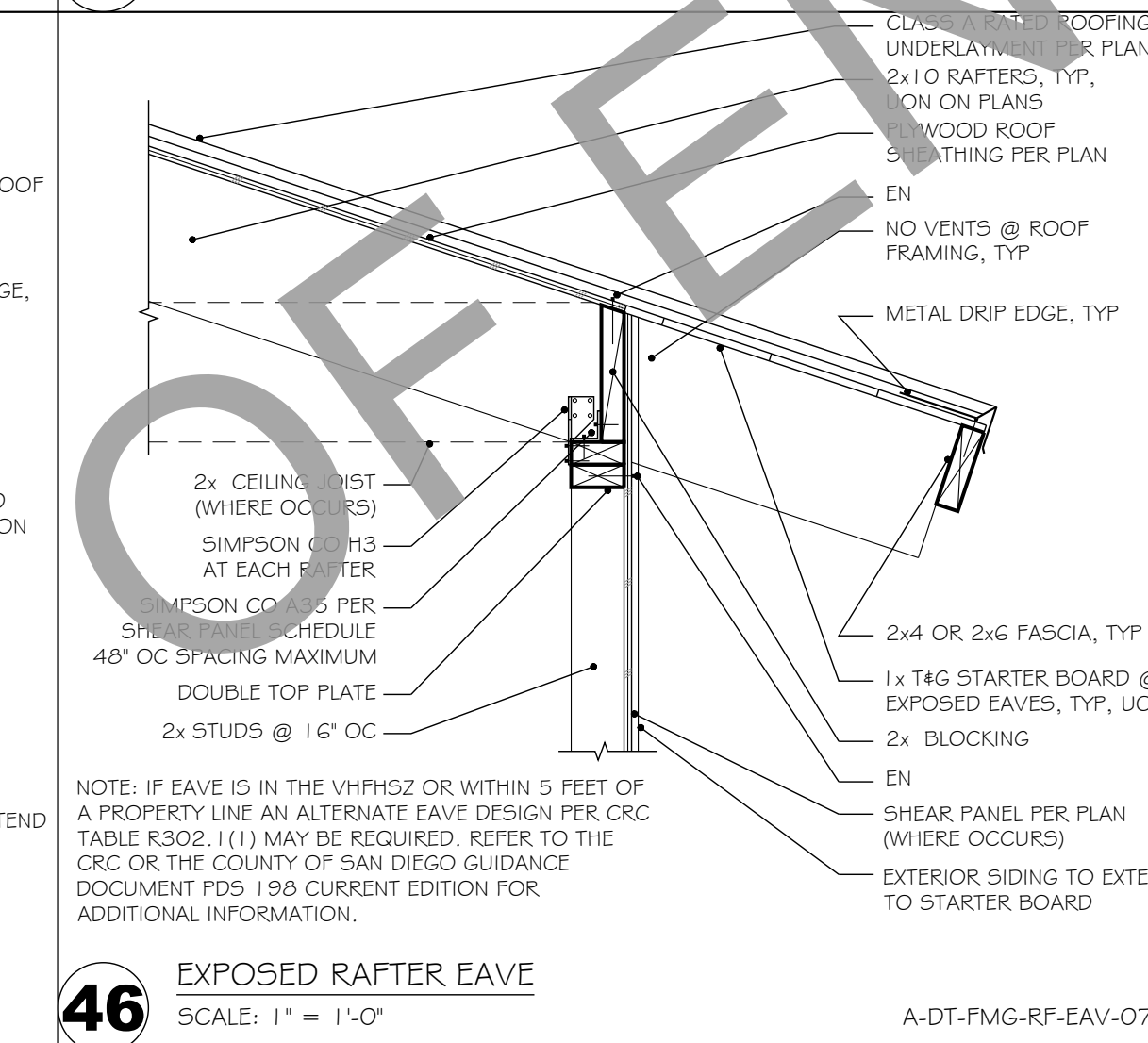
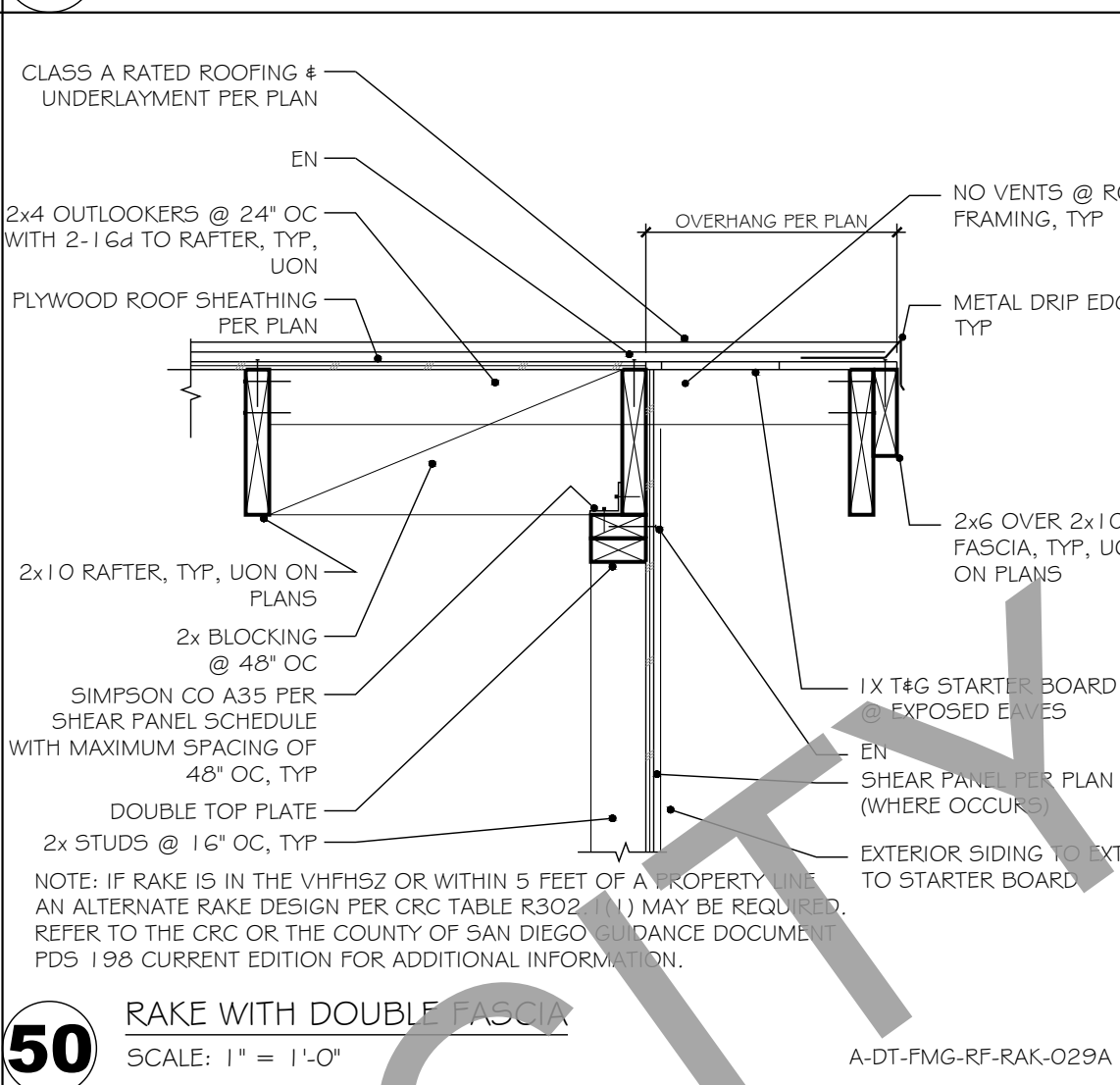
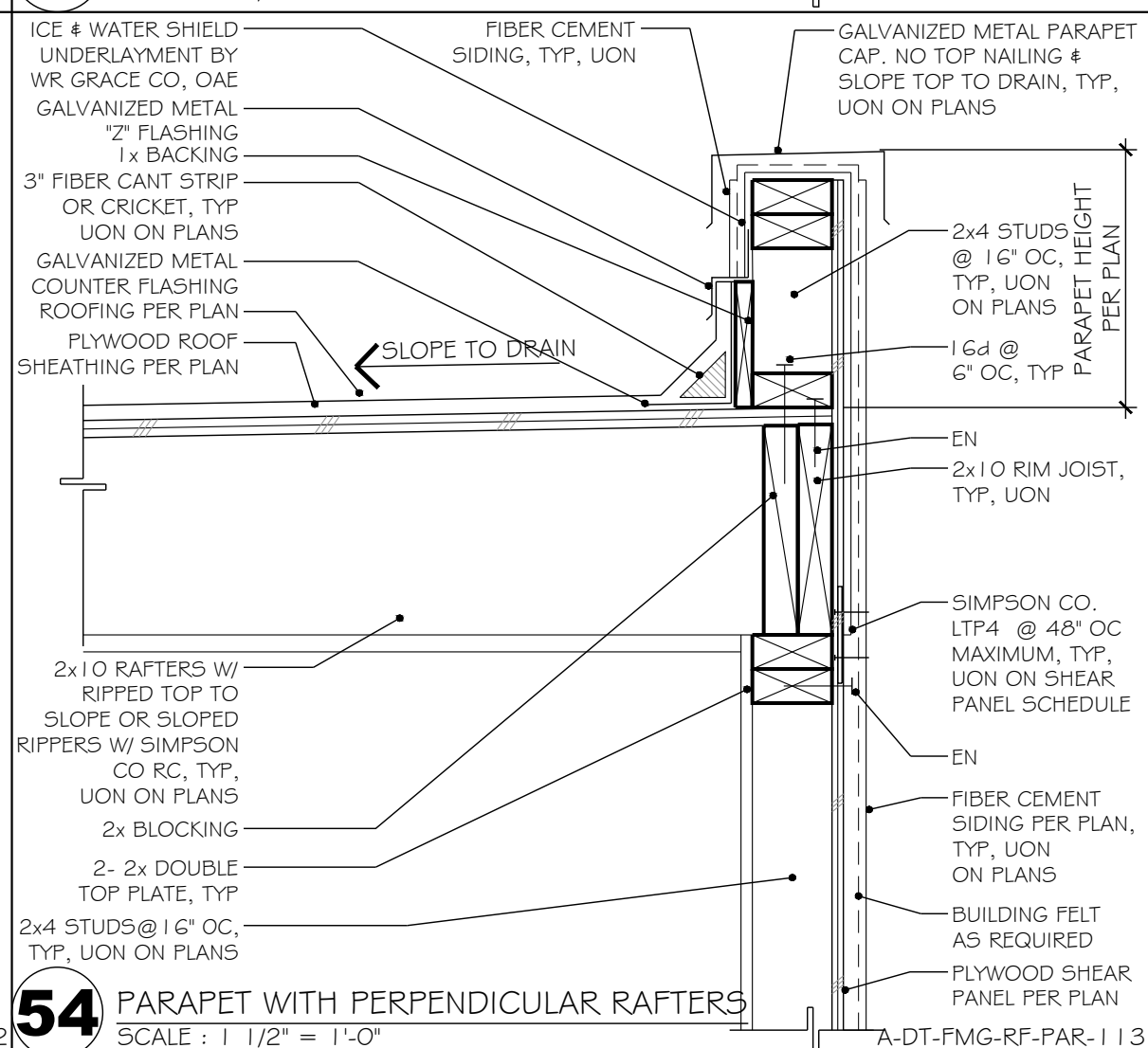
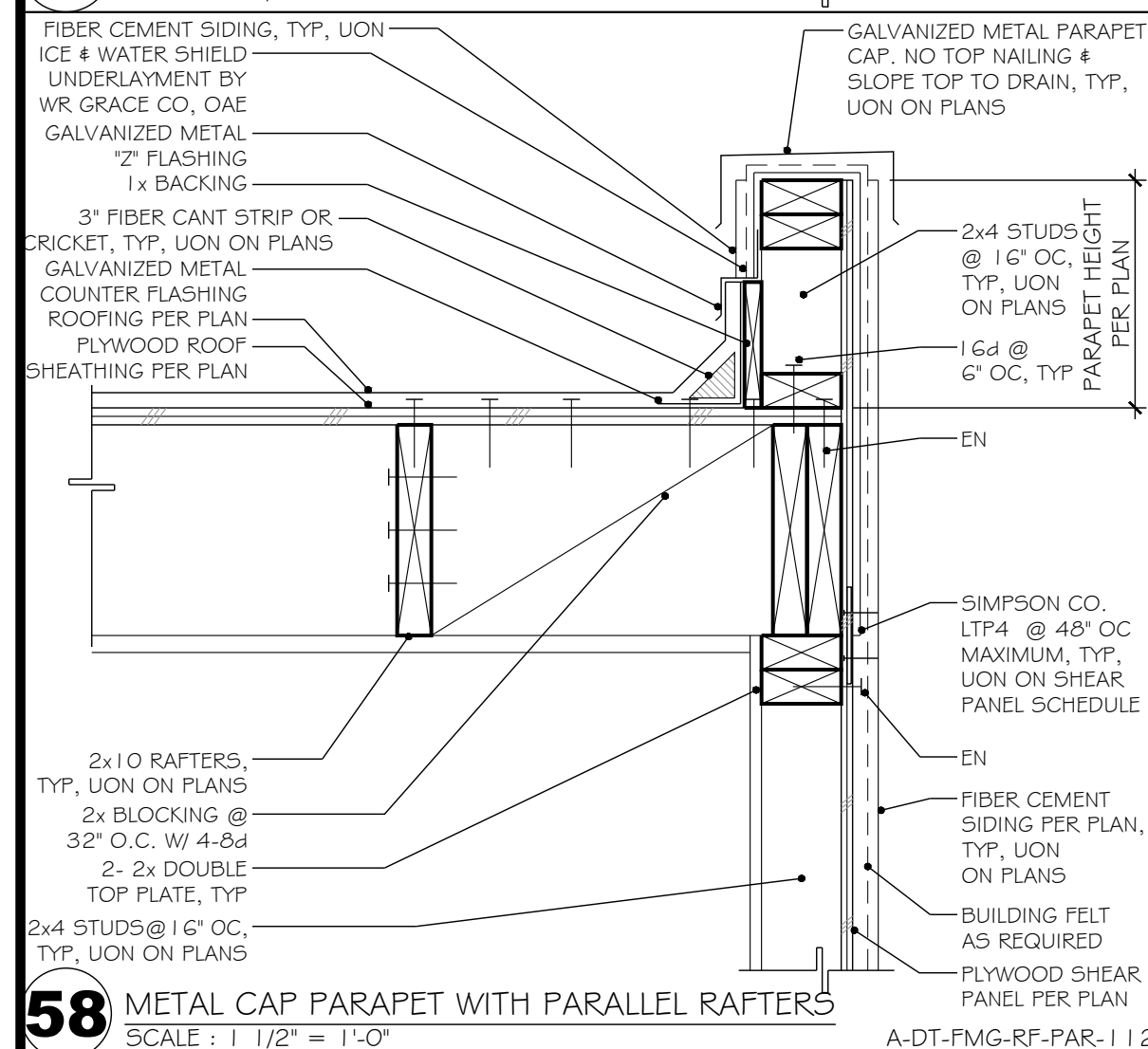
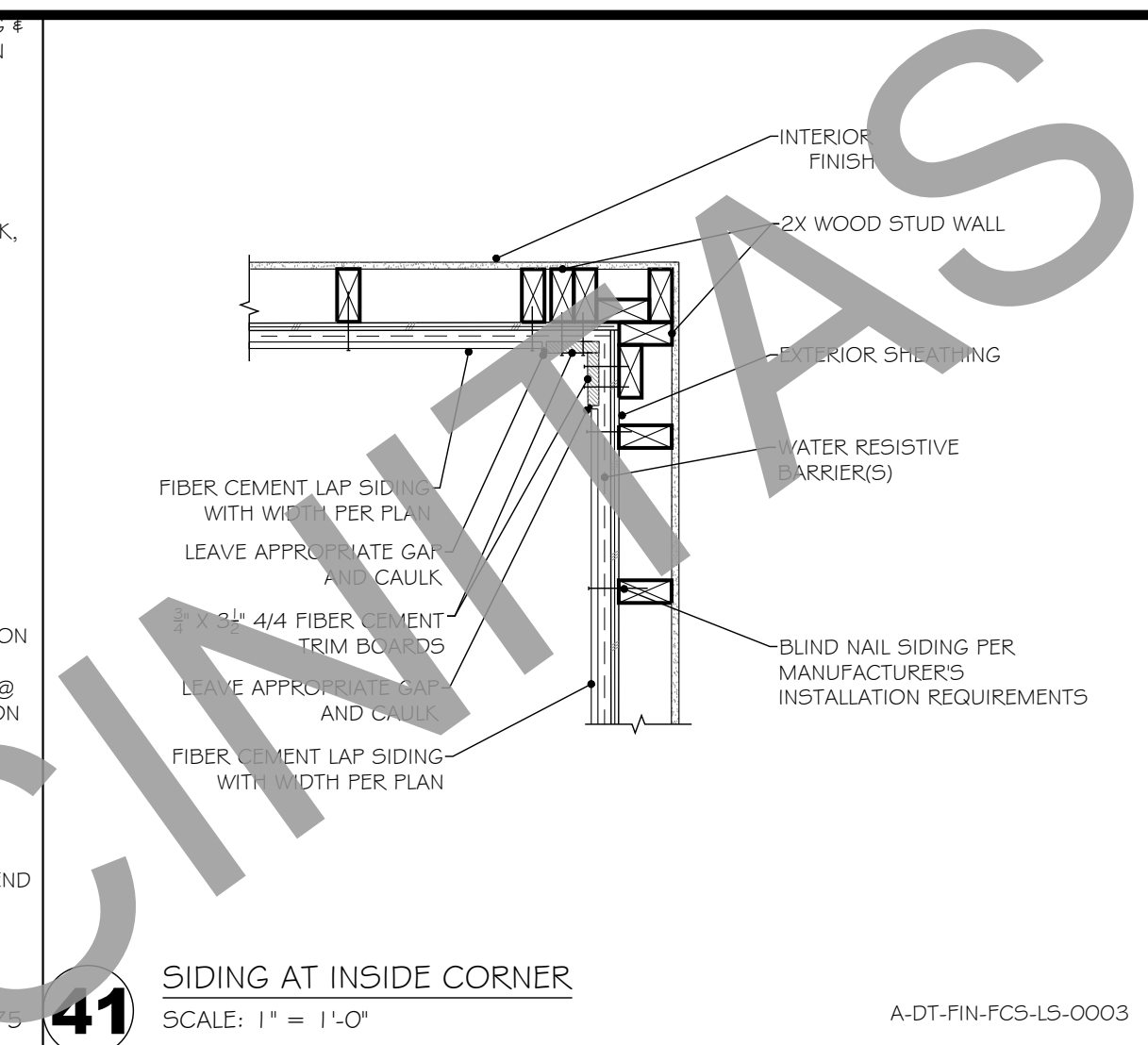
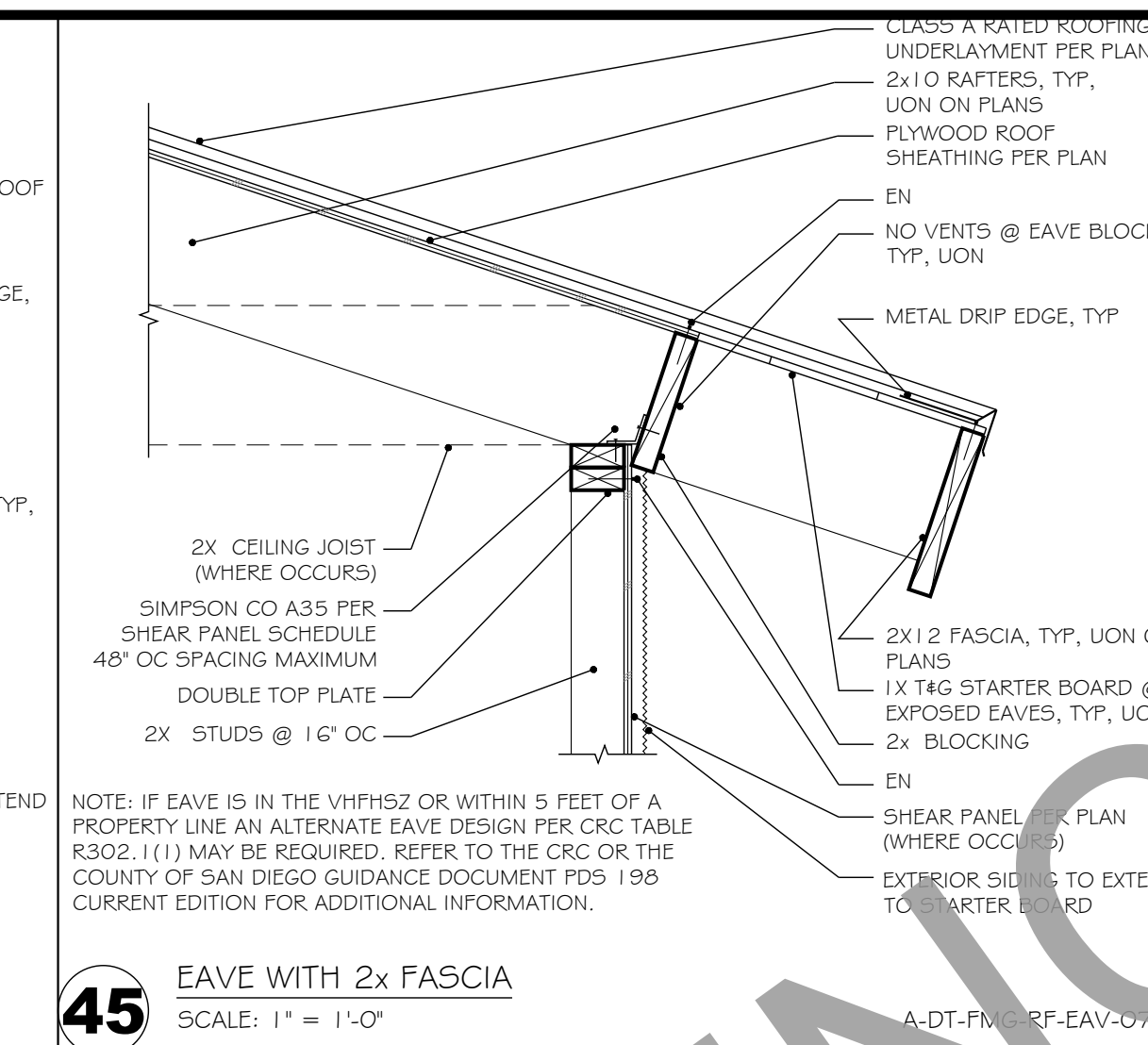
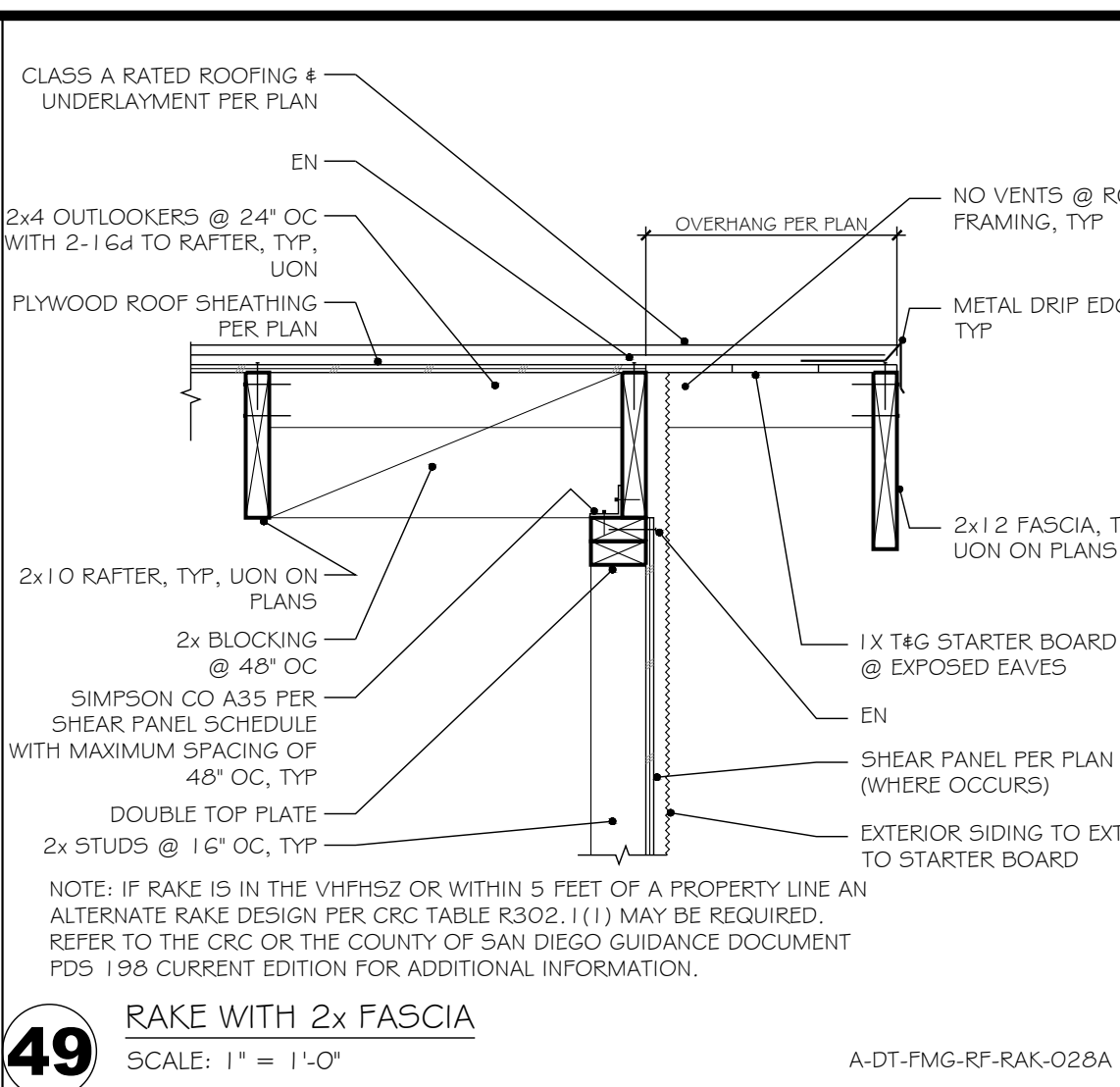
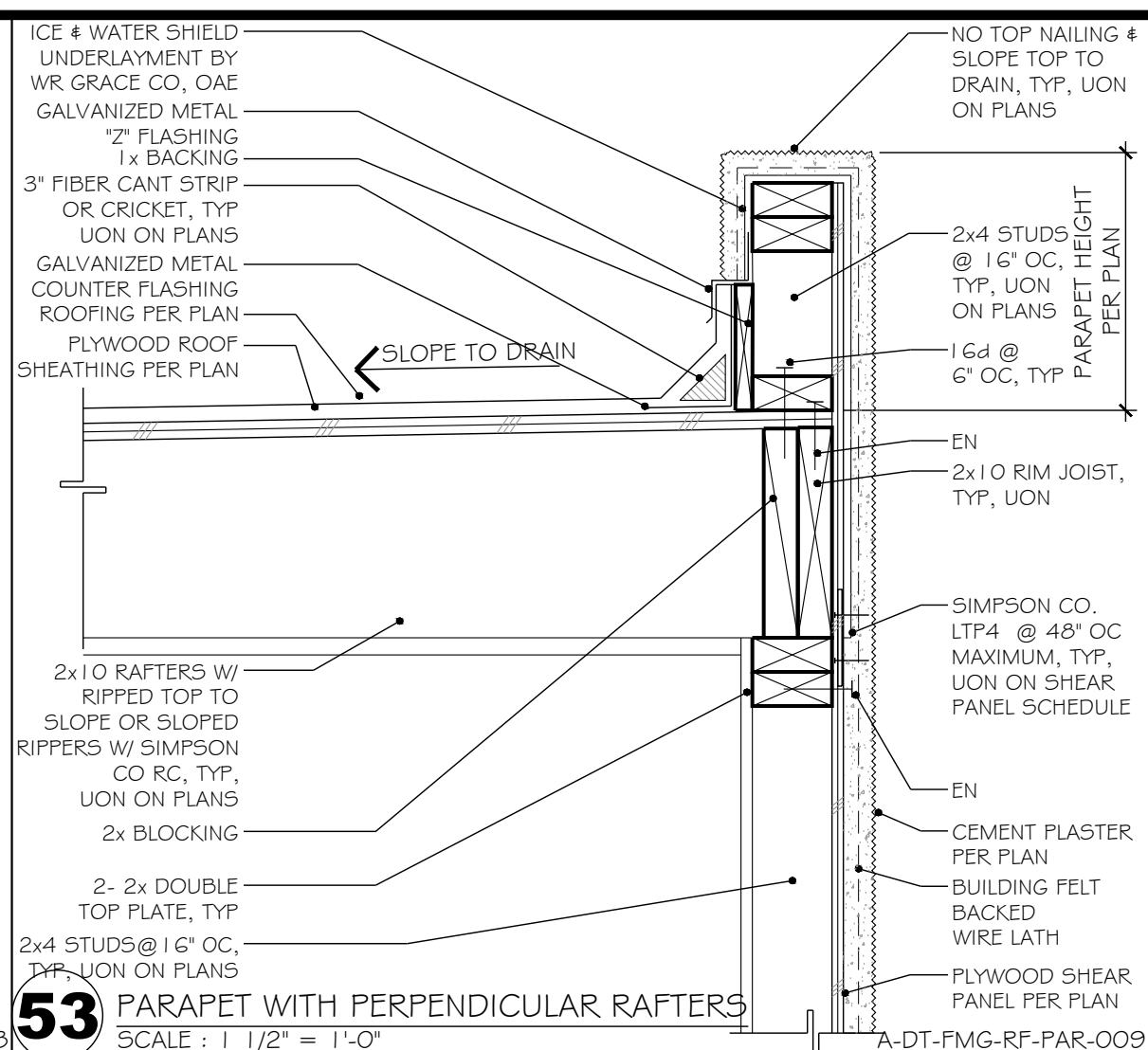
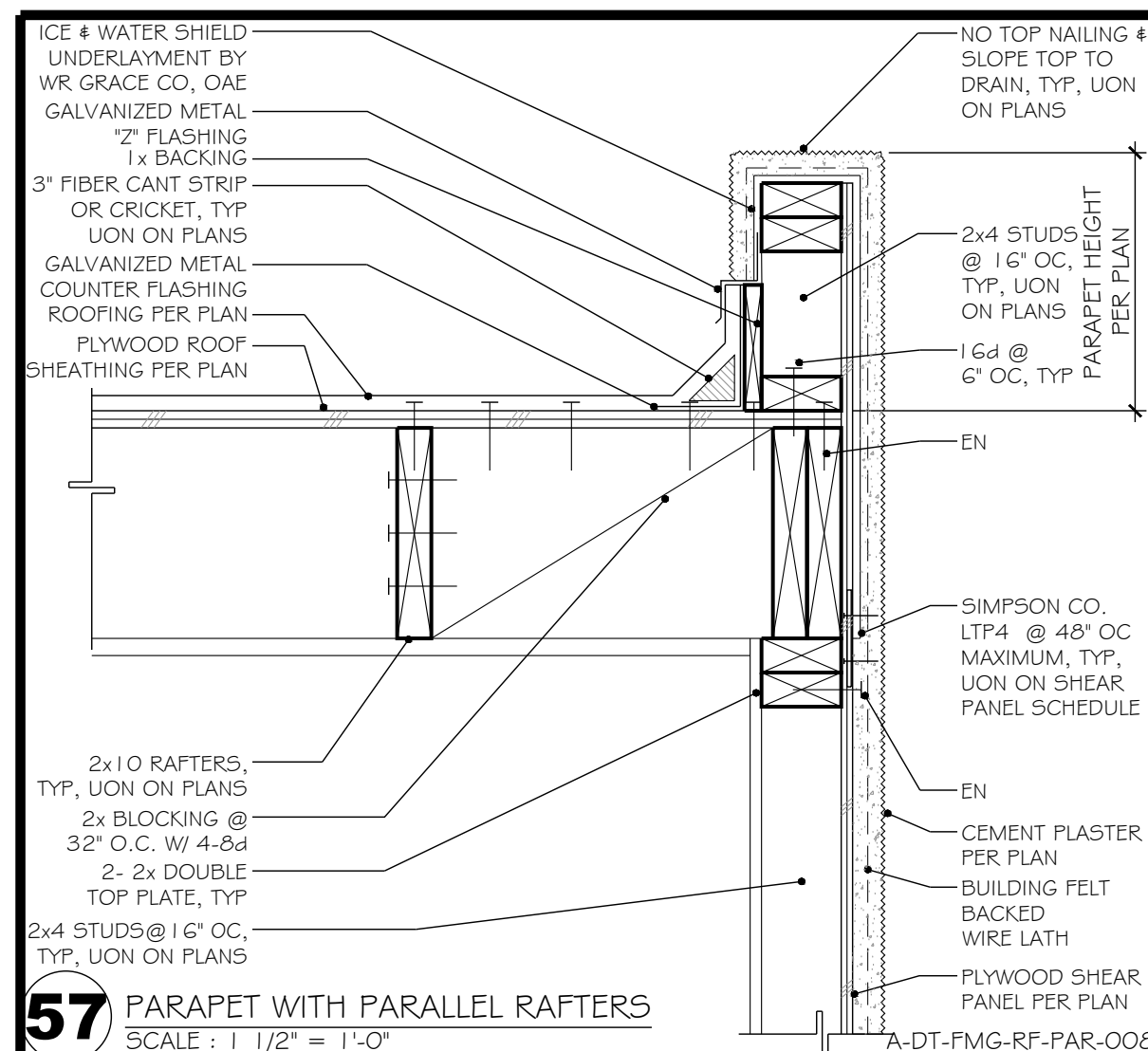
PRADU

CITY: ENCINITAS

**JOB:** 202241R

## DETAILS

**d0.1**



PREPARER SIGNATURE

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## PRADU

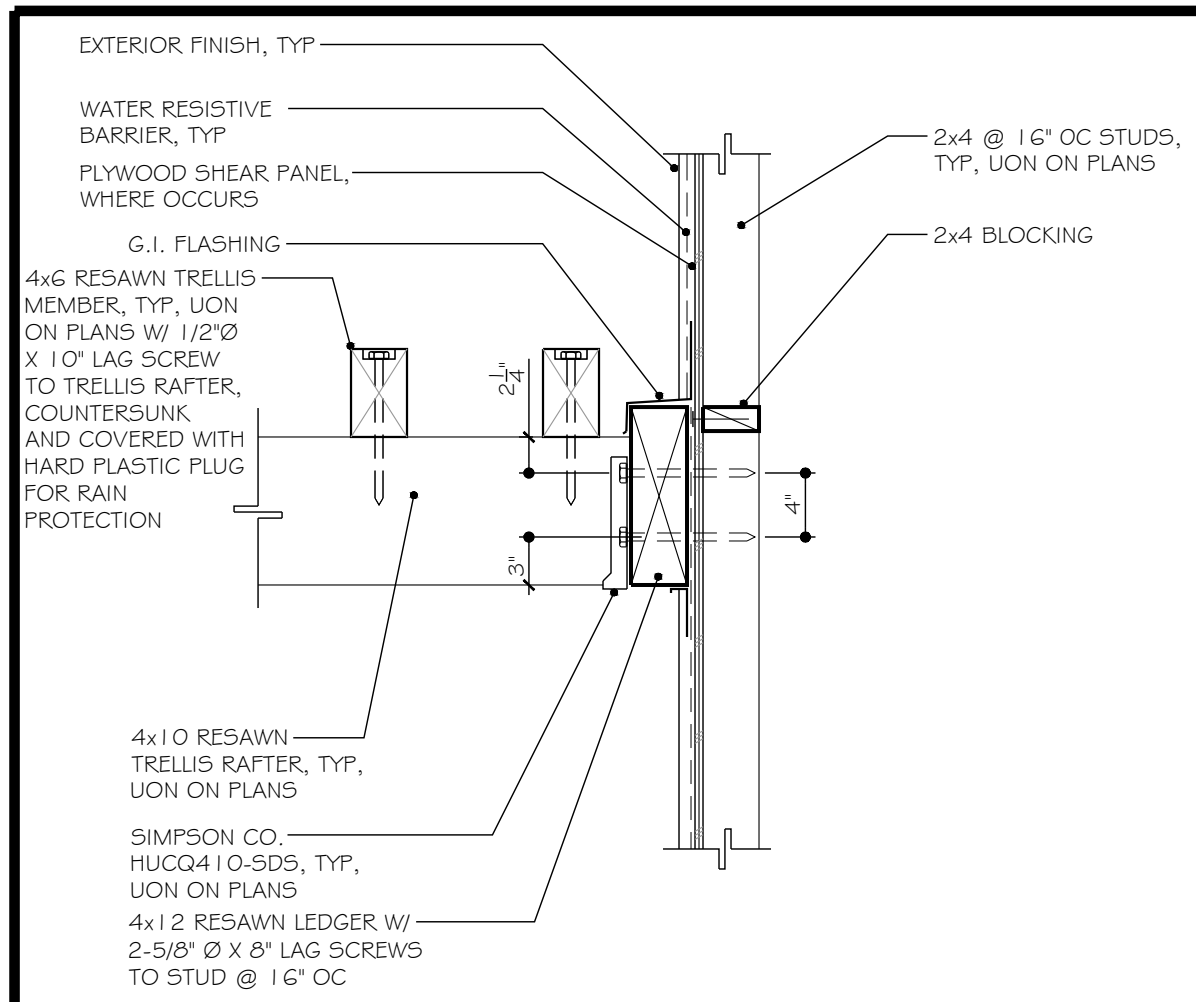
CITY: ENCINITAS

<b>JOB:</b>	202241R
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## DETAILS

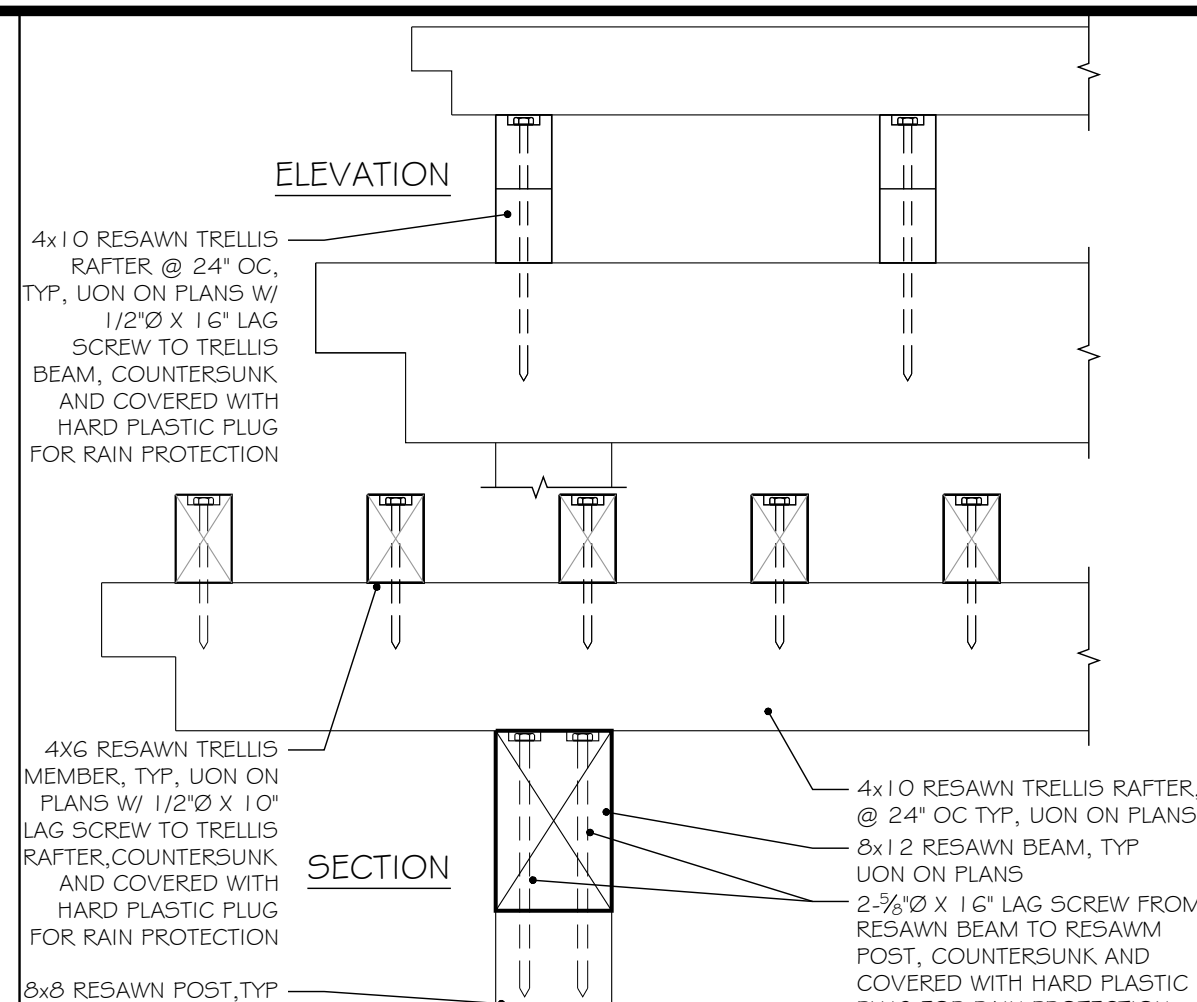
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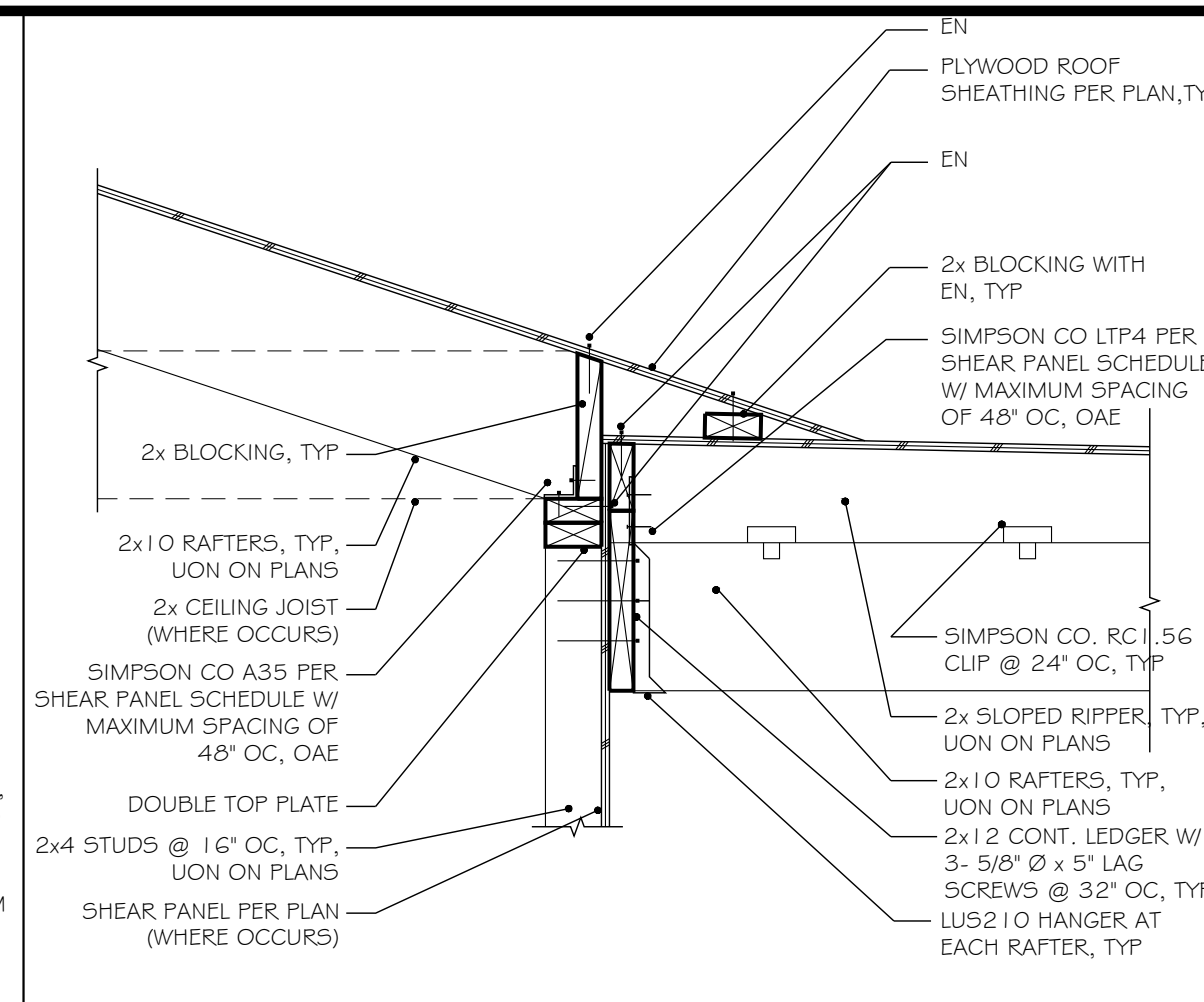
**77** TRELLIS LEDGER AT WALL  
SCALE : 1" = 1'-0"

A-DT-FMG-RF-TRL-055



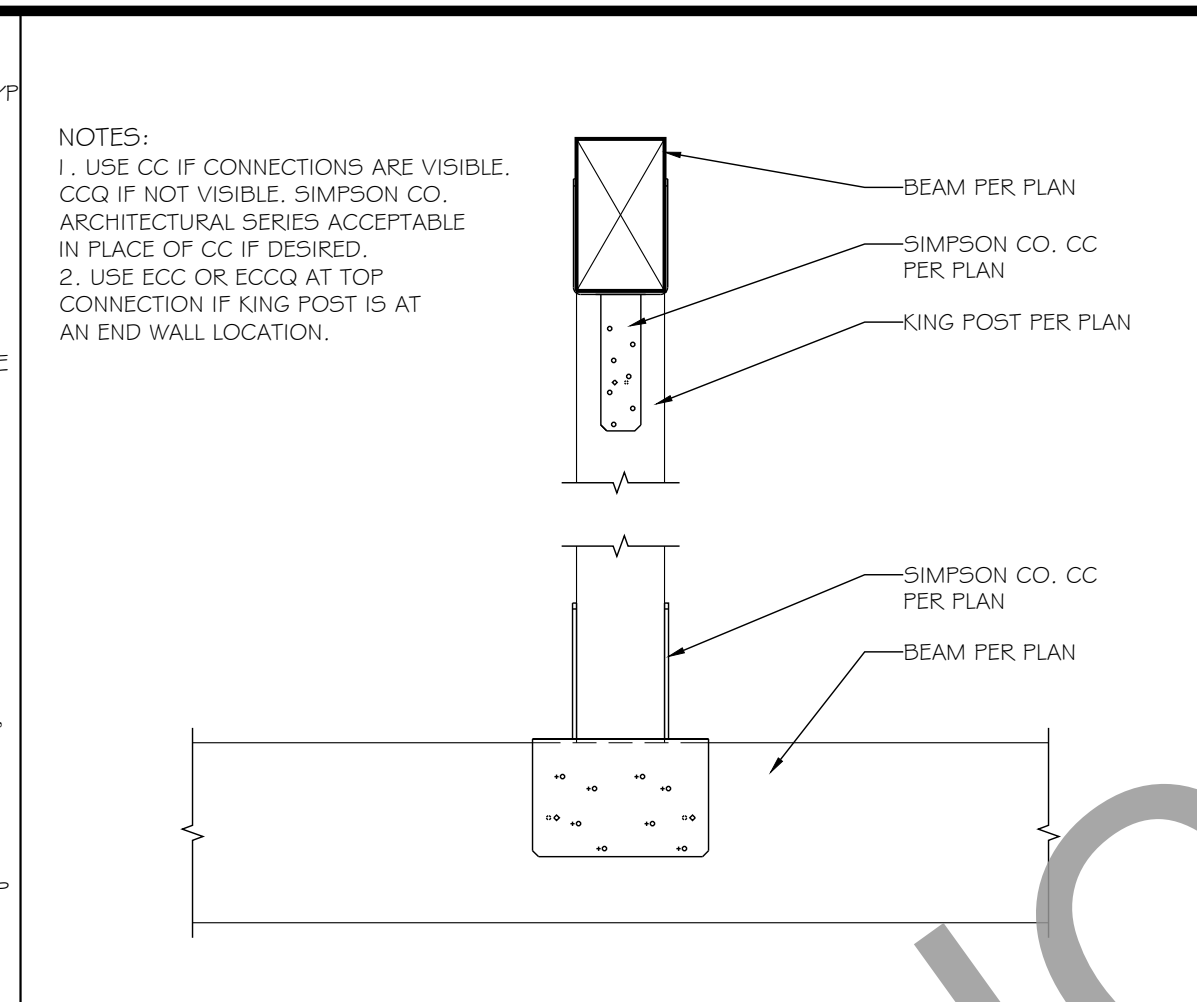
**73** POST/BEAM/RAFTER/TRELLIS CONNECTIONS  
SCALE: 1" = 1'-0"

A-DT-FMG-RF-TRL-054



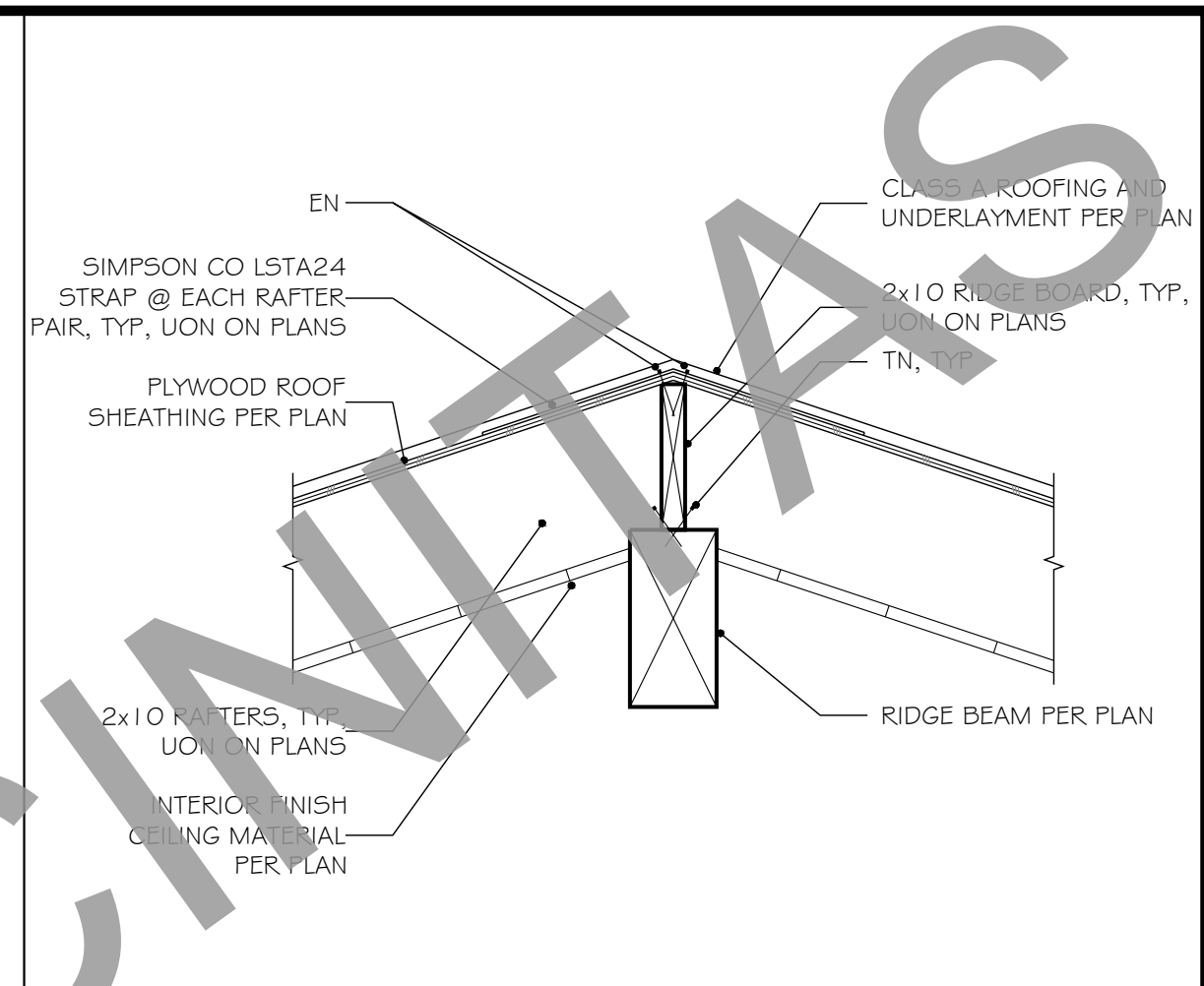
**69** SLOPED TO LOW SLOPE ROOF TRANSITION  
SCALE: 1" = 1'-0"

A-DT-FMG-RF-0332



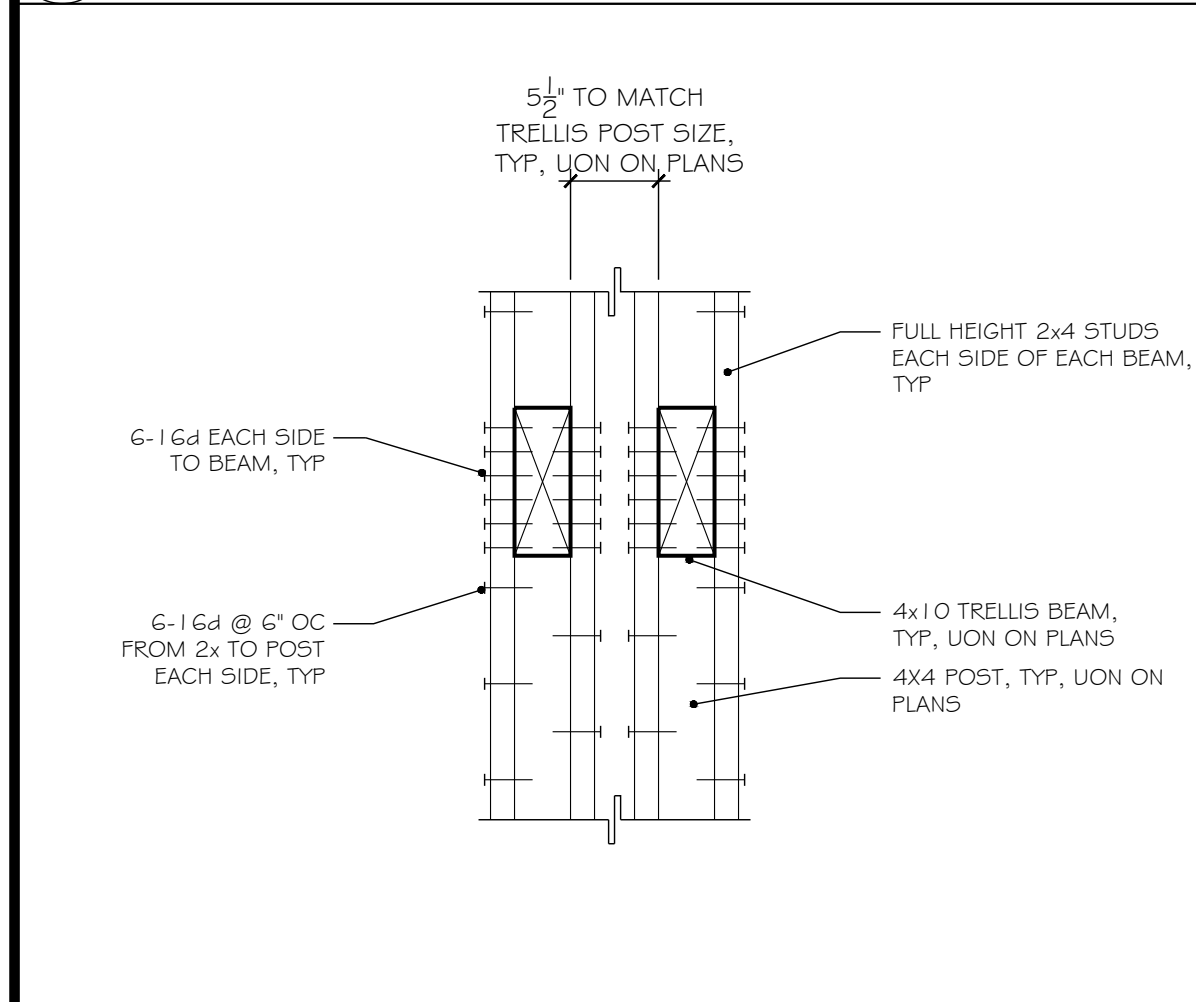
**65** KING POST  
SCALE: 1" = 1'-0"

A-DT-FMG-RF-0006



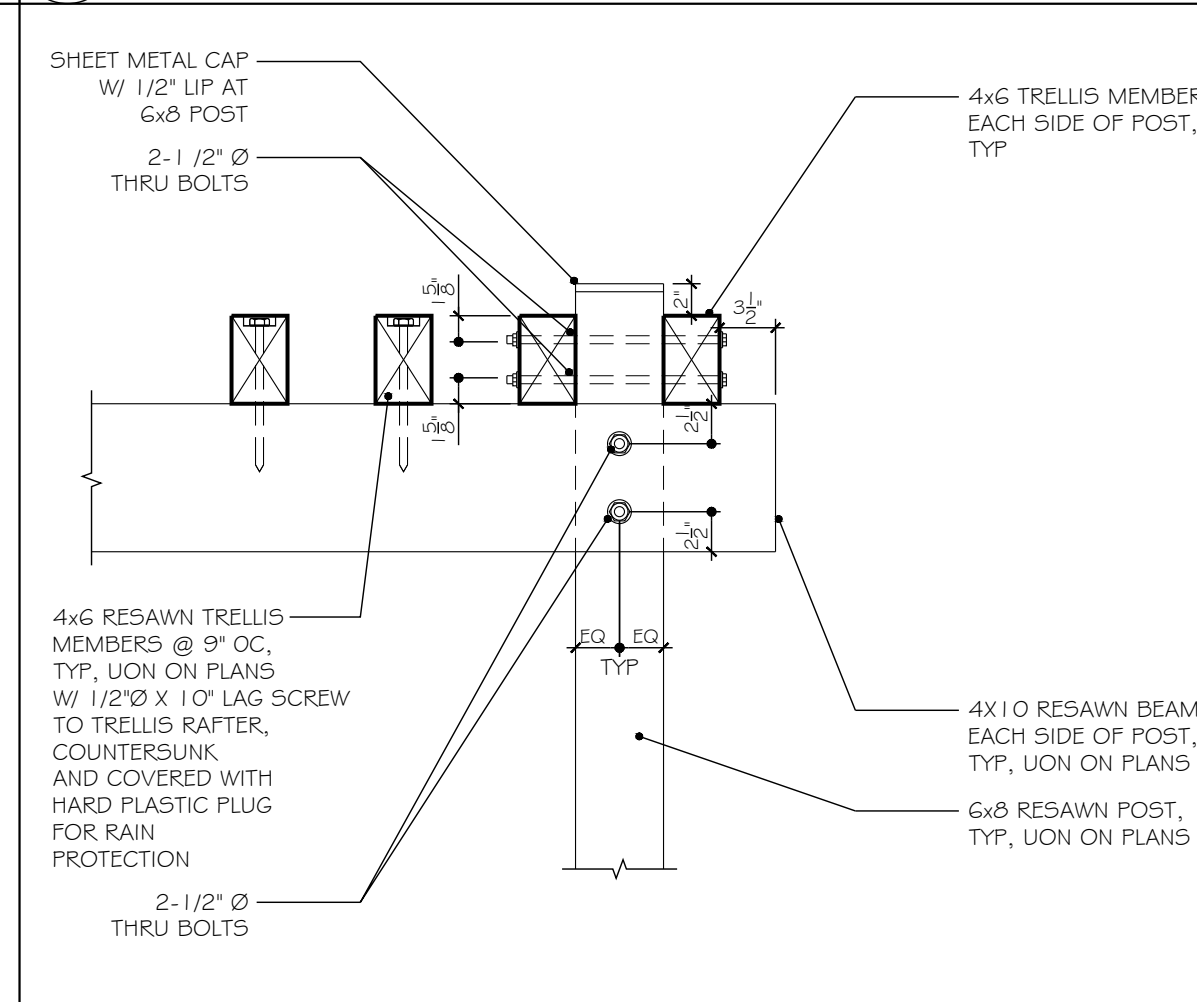
**61** RAFTERS AT RIDGE BOARD OVER RIDGE BEAM  
SCALE: 1" = 1'-0"

A-DT-FMG-RF-RDG-003



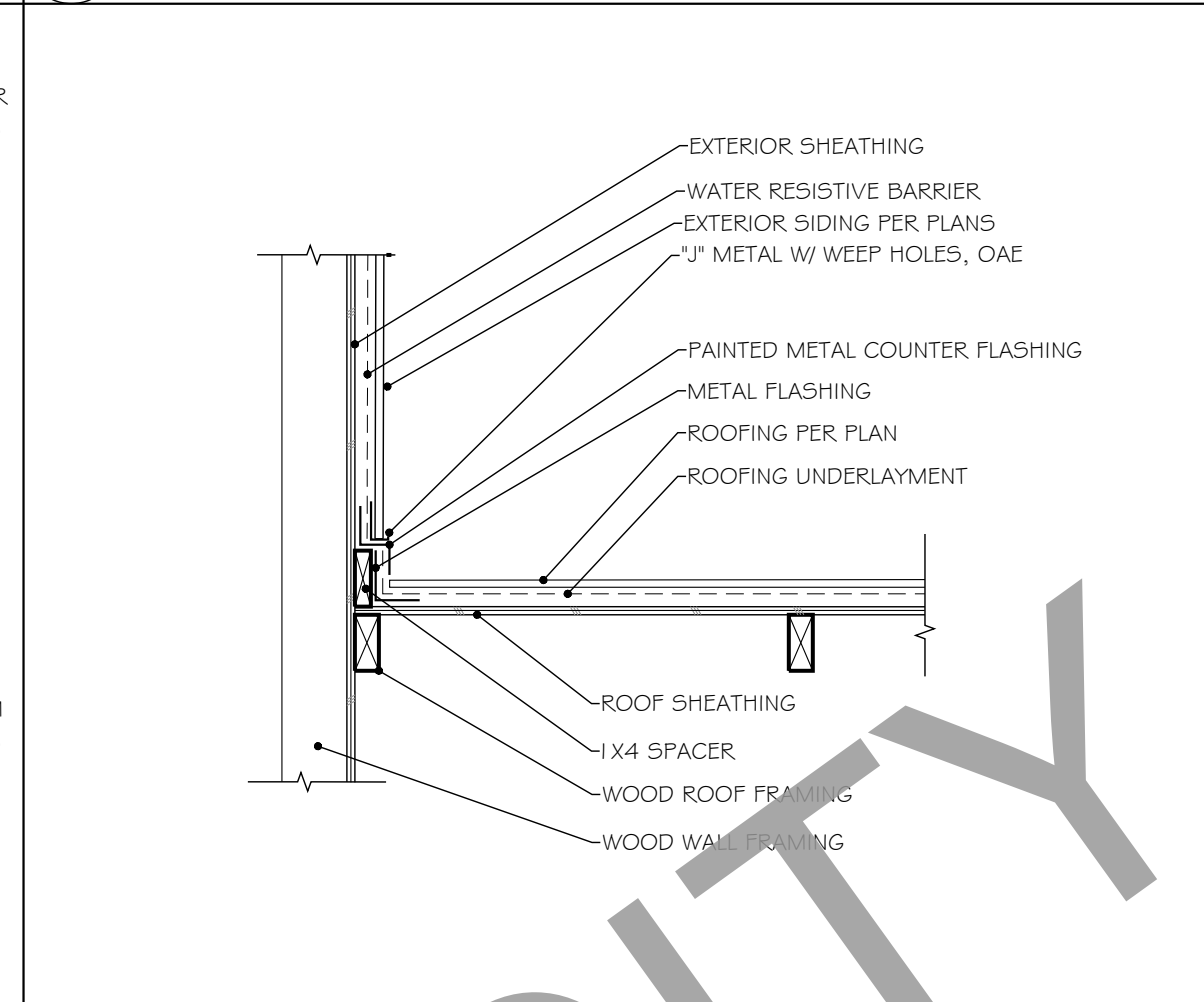
**78** TRELLIS BEAMS TO STUD WALL  
SCALE : 1" = 1'-0"

A-DT-FMG-PB-0034



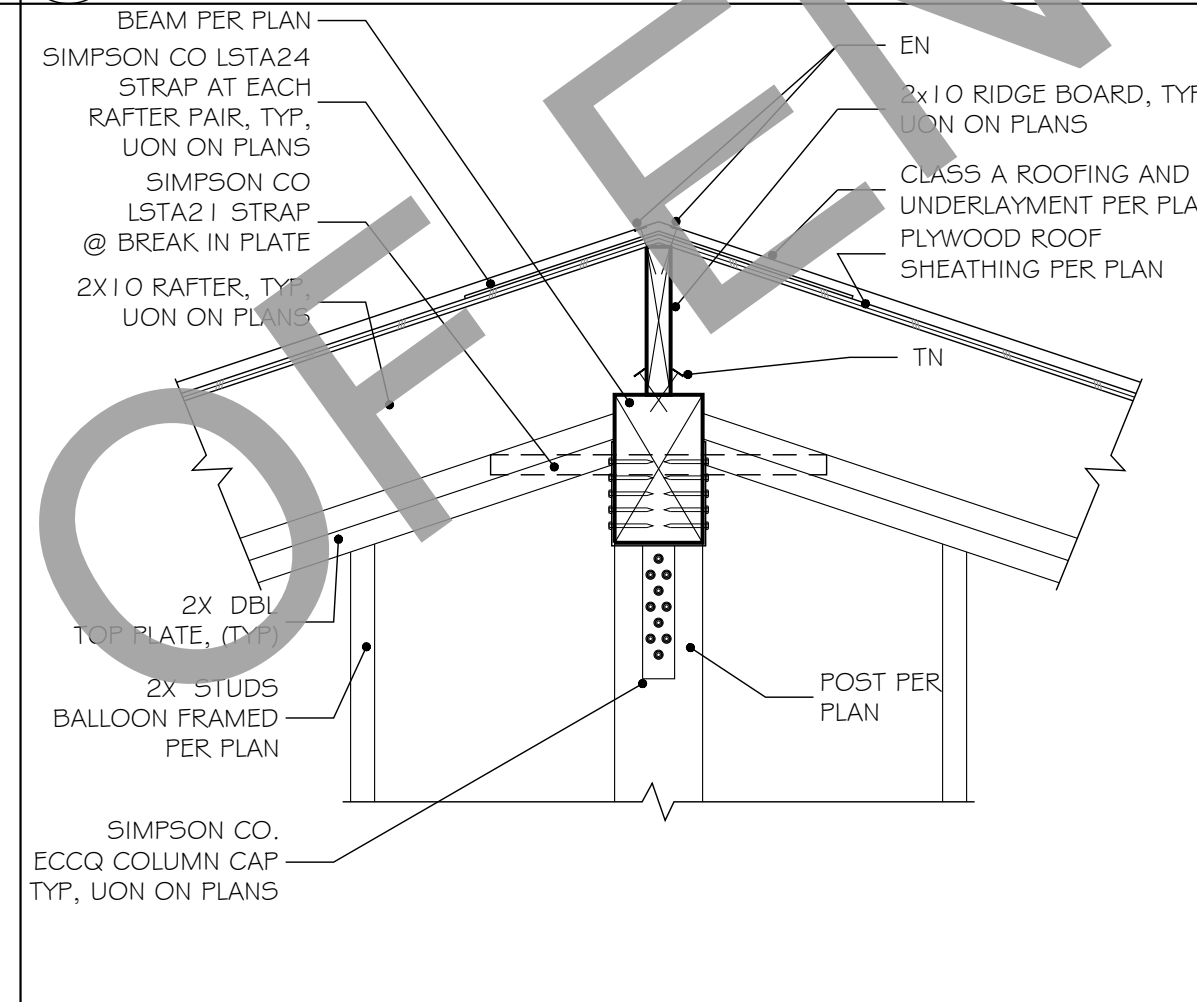
**74** TRELLIS AT POST  
SCALE: 1" = 1'-0"

A-DT-FMG-PB-0136



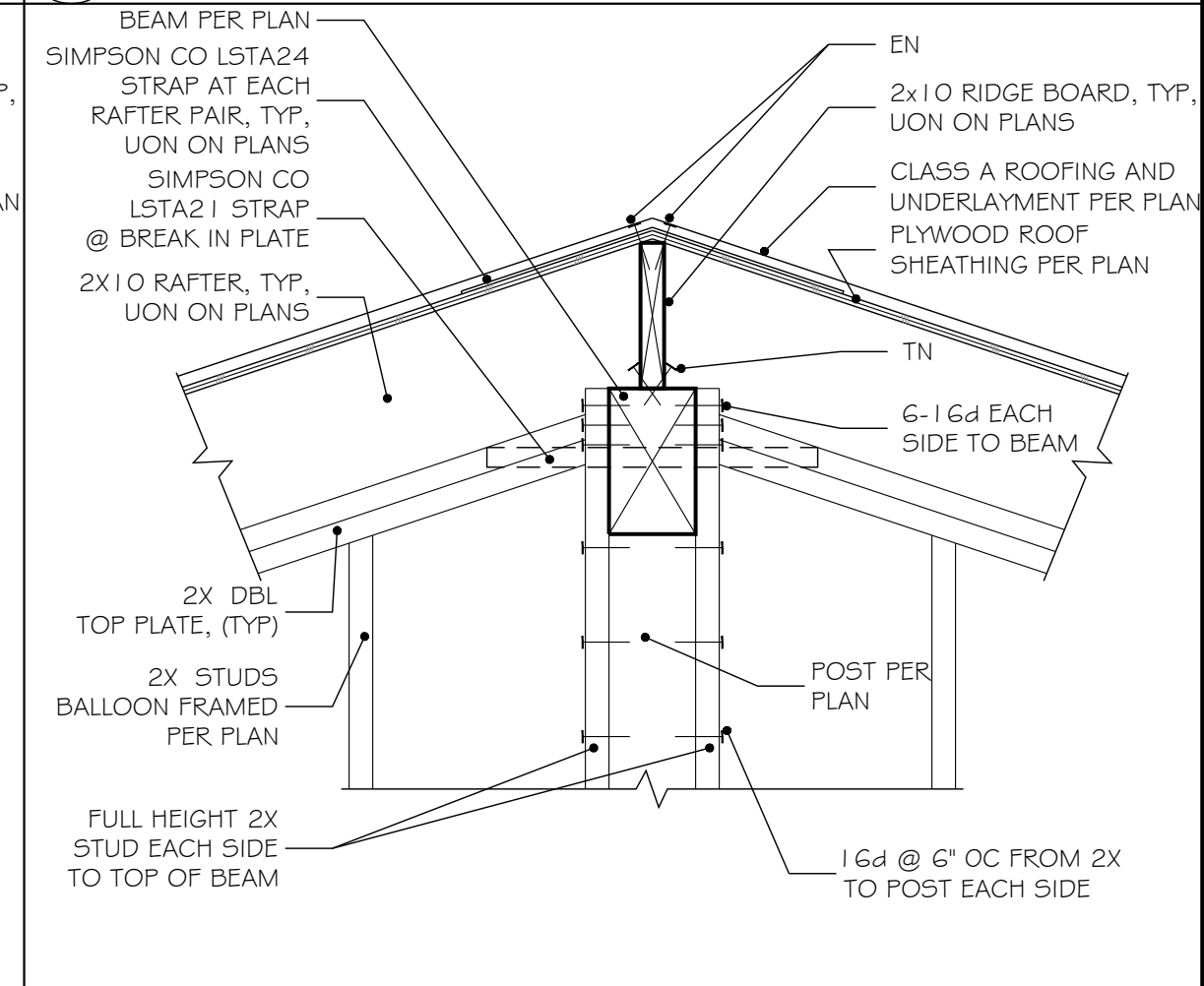
**70** ROOF TO WALL - FIBER CEMENT LAP SIDING  
SCALE: 1" = 1'-0"

A-DT-FIN-WP-0004



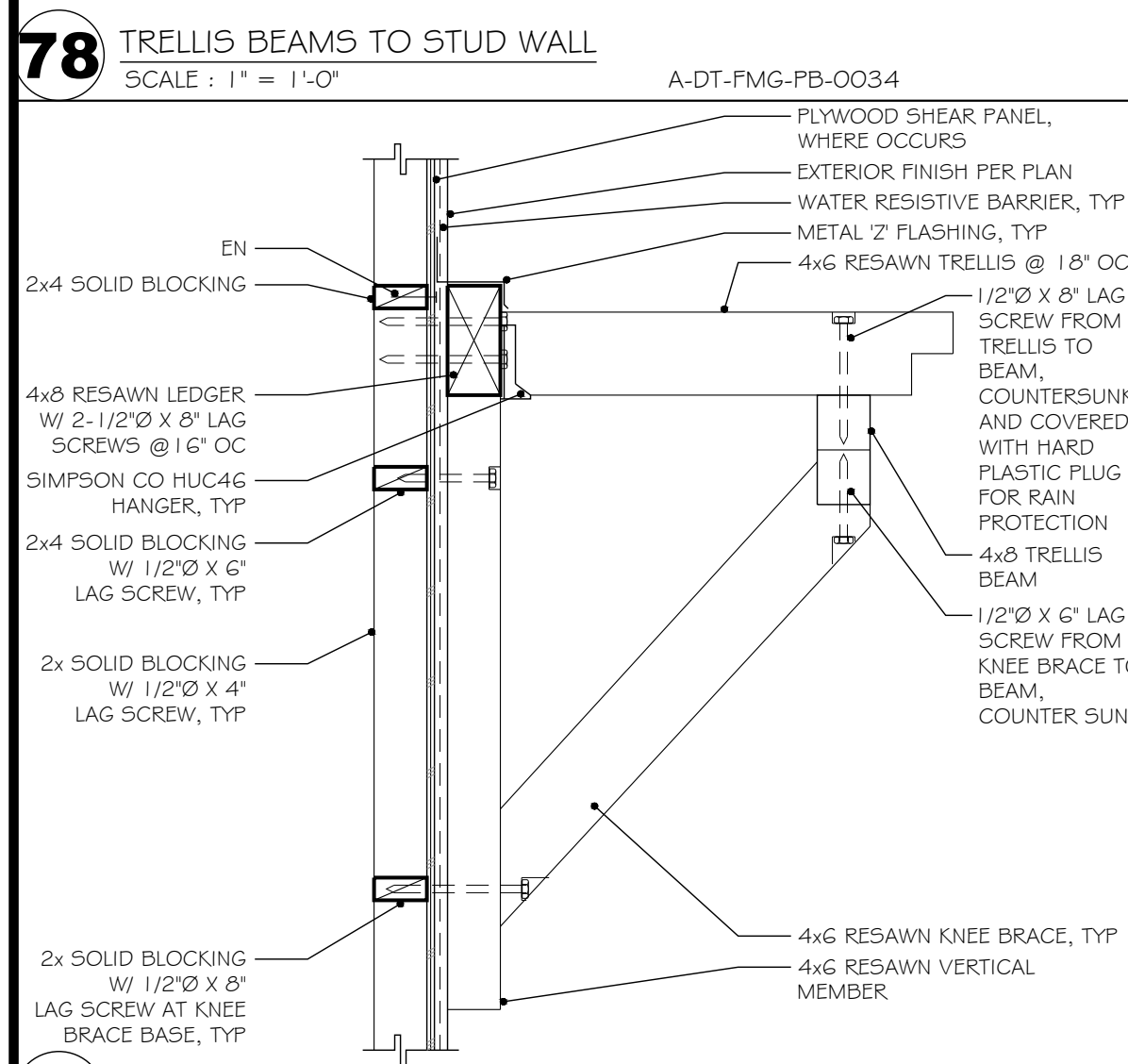
**66** RIDGE BOARD & BEAM AT WALL POST W/ HARDWARE  
SCALE : 1" = 1'-0"

A-DT-FMG-RF-RDG-023



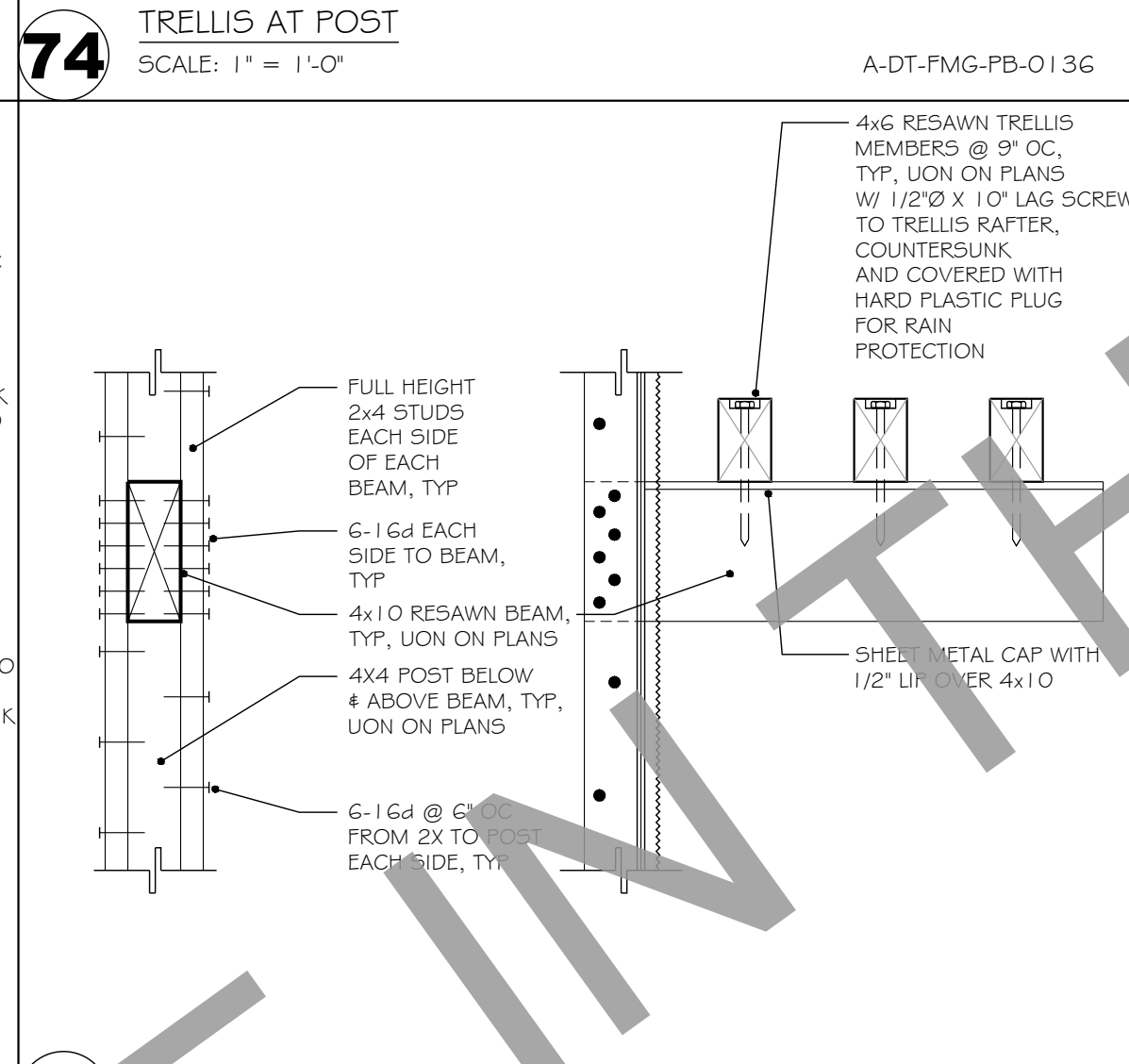
**62** RIDGE BOARD & BEAM AT WALL POST W/O HARDWARE  
SCALE : 1" = 1'-0"

A-DT-FMG-RF-RDG-005B



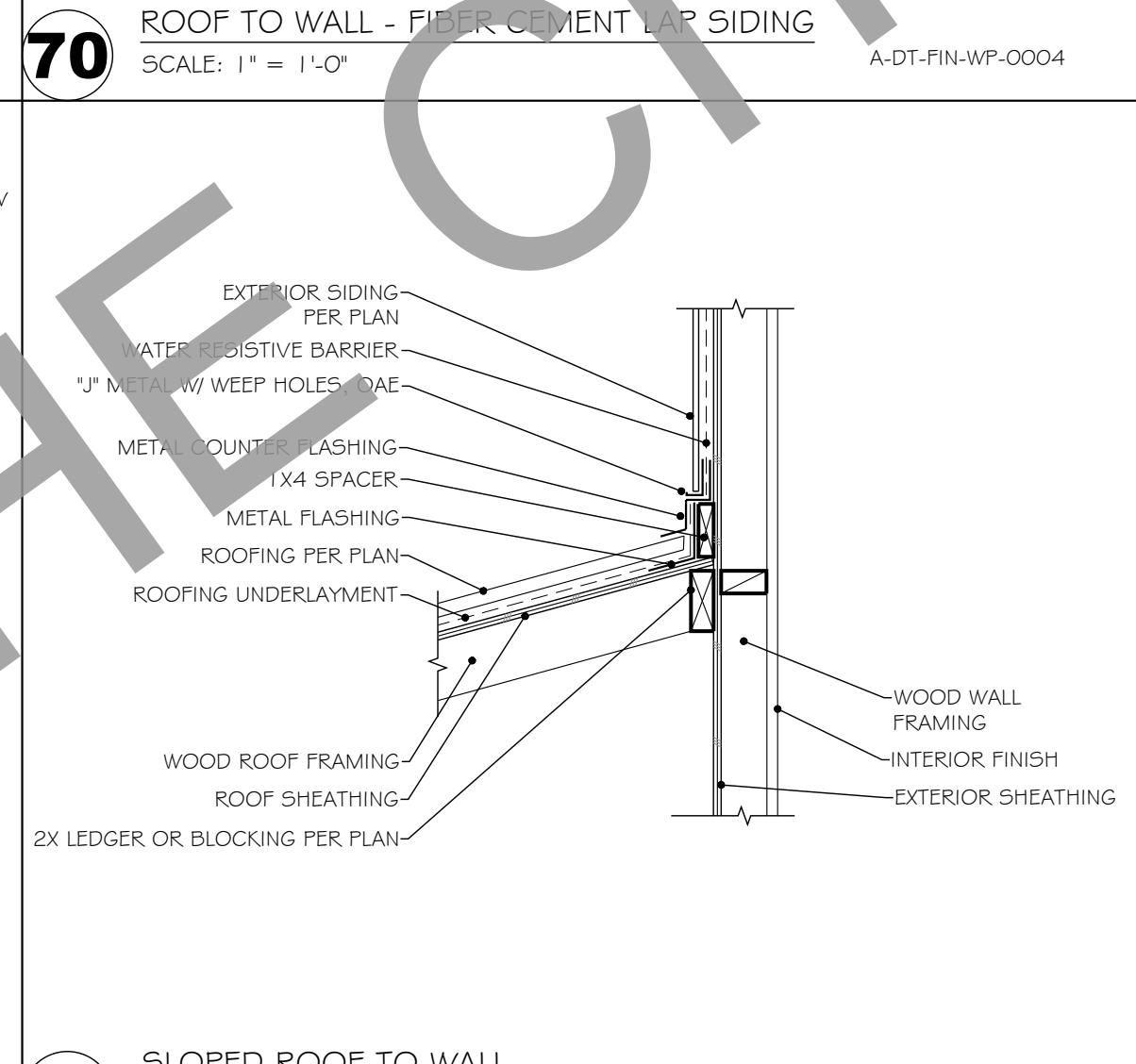
**79** KNEE BRACE TRELLIS OPENING CAP  
SCALE : 1" = 1'-0"

A-DT-FMG-RF-0321



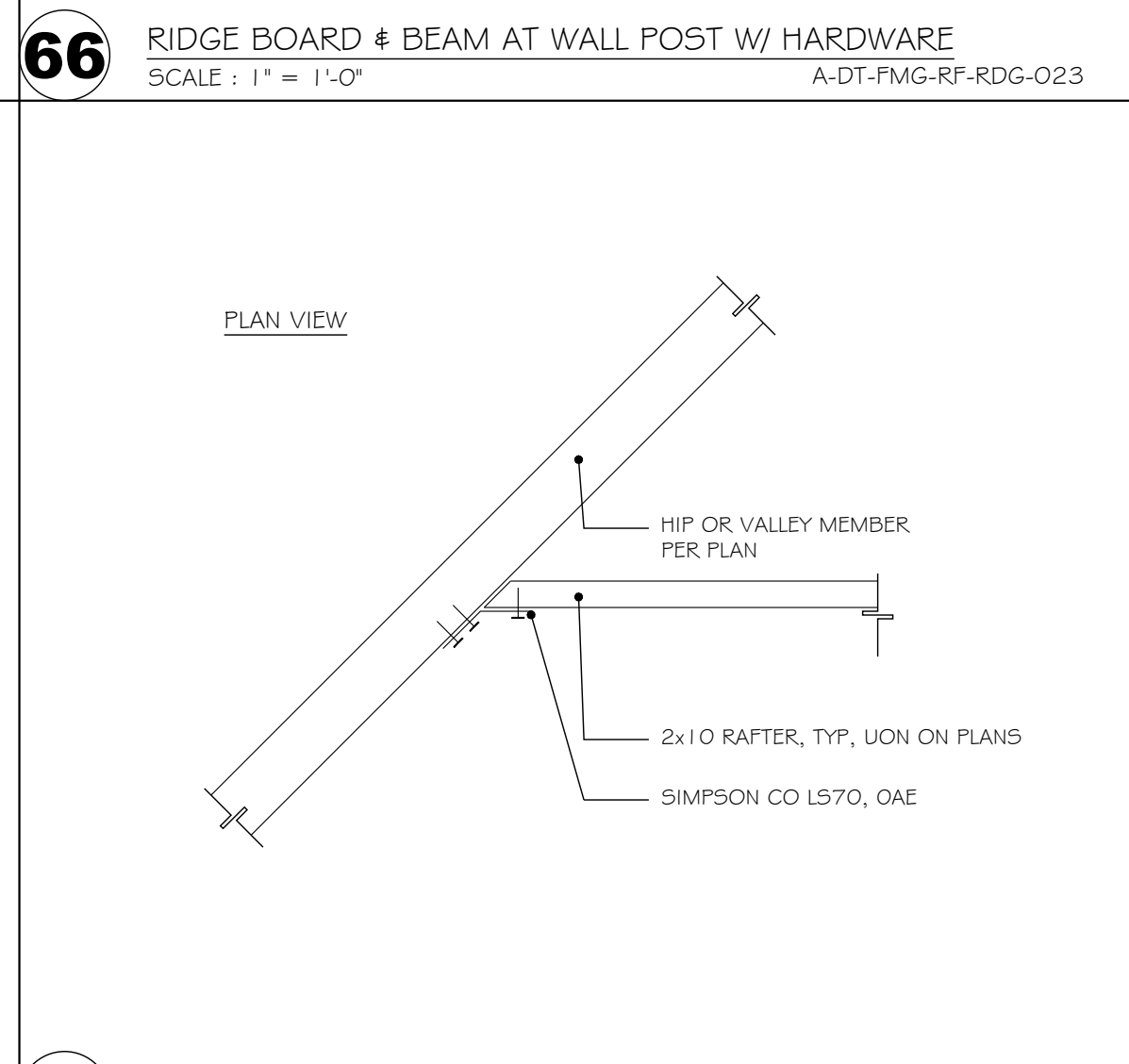
**75** CANTILEVER TRELLIS OPENING CAP  
SCALE : 1" = 1'-0"

A-DT-FMG-PB-0137



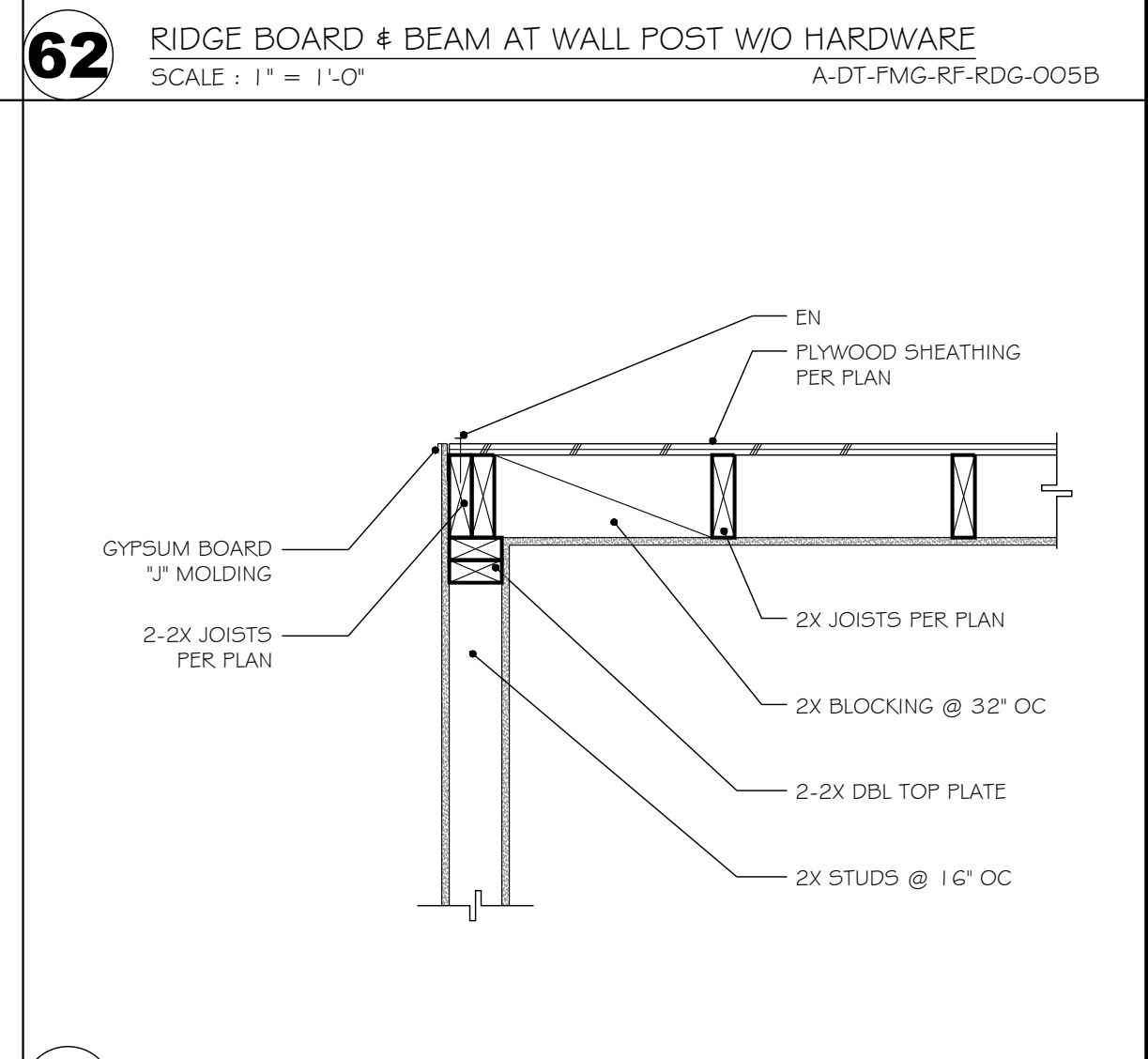
**71** SLOPED ROOF TO WALL  
SCALE: 1" = 1'-0"

A-DT-FIN-WP-0003



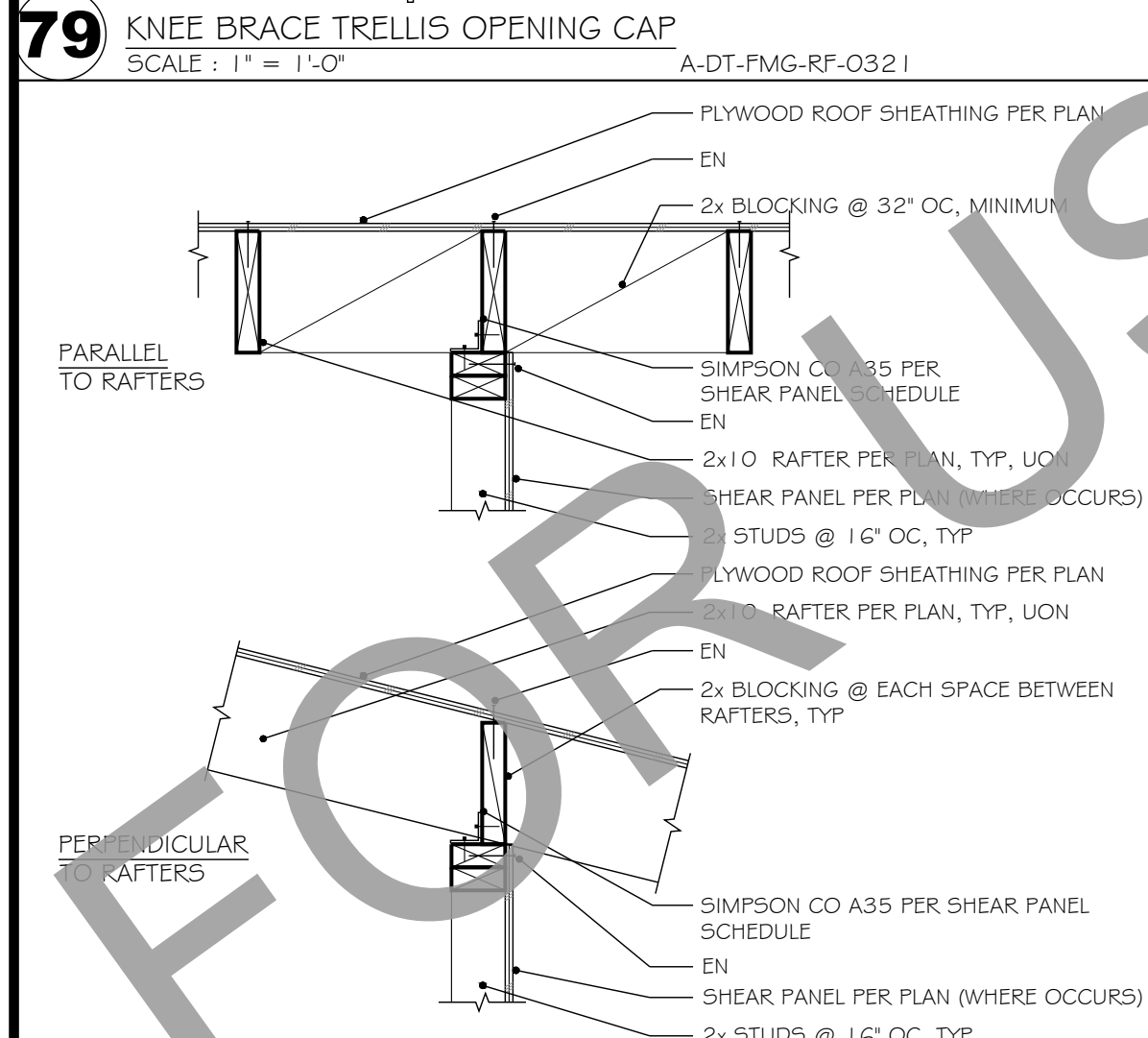
**67** RAFTER TO HIP OR VALLEY  
SCALE : 1" = 1'-0"

A-DT-FMG-RF-0328



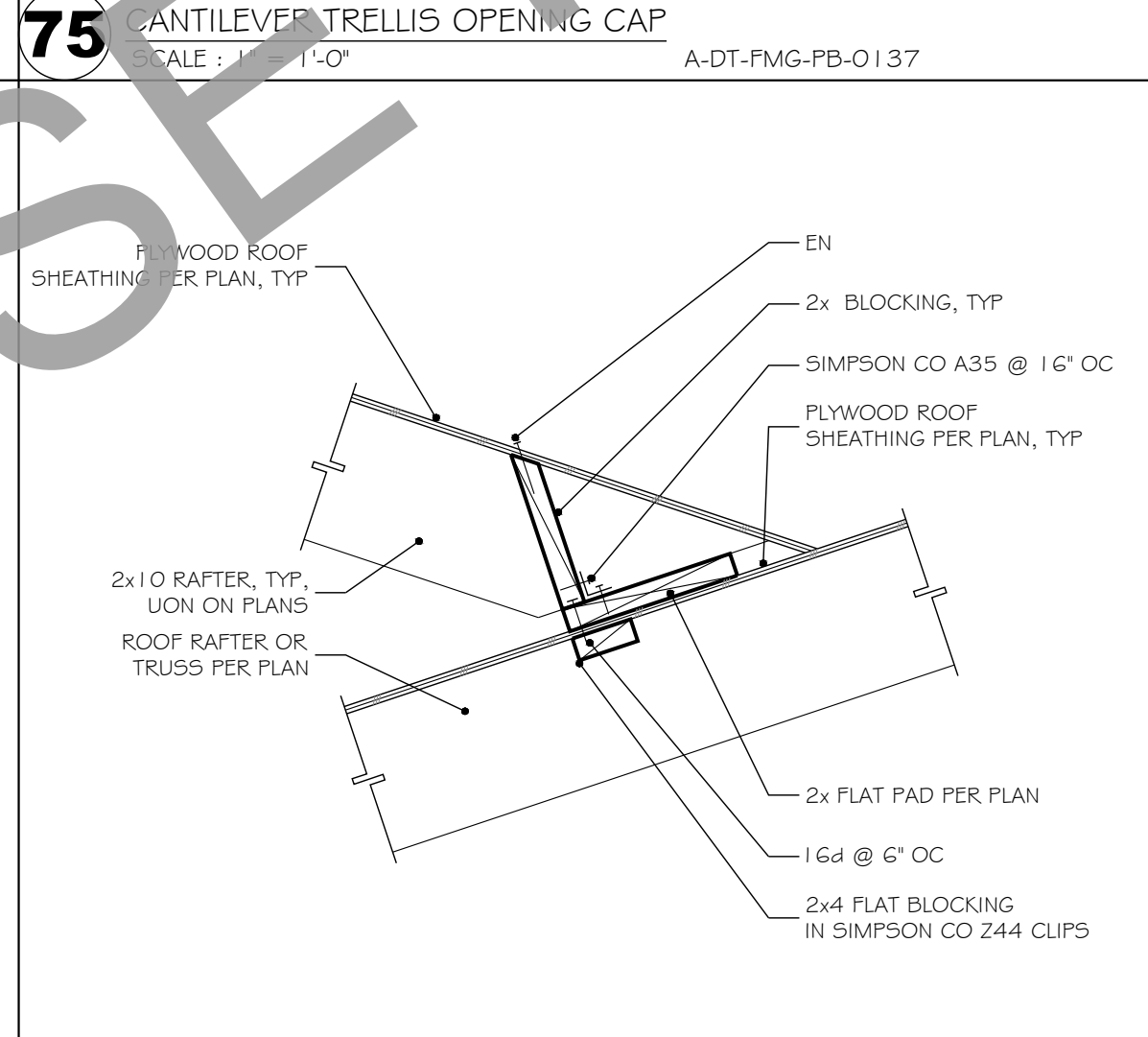
**63** PARALLEL JOISTS AT EDGE WITH WALL  
SCALE : 1" = 1'-0"

A-DT-FMG-PB-0132



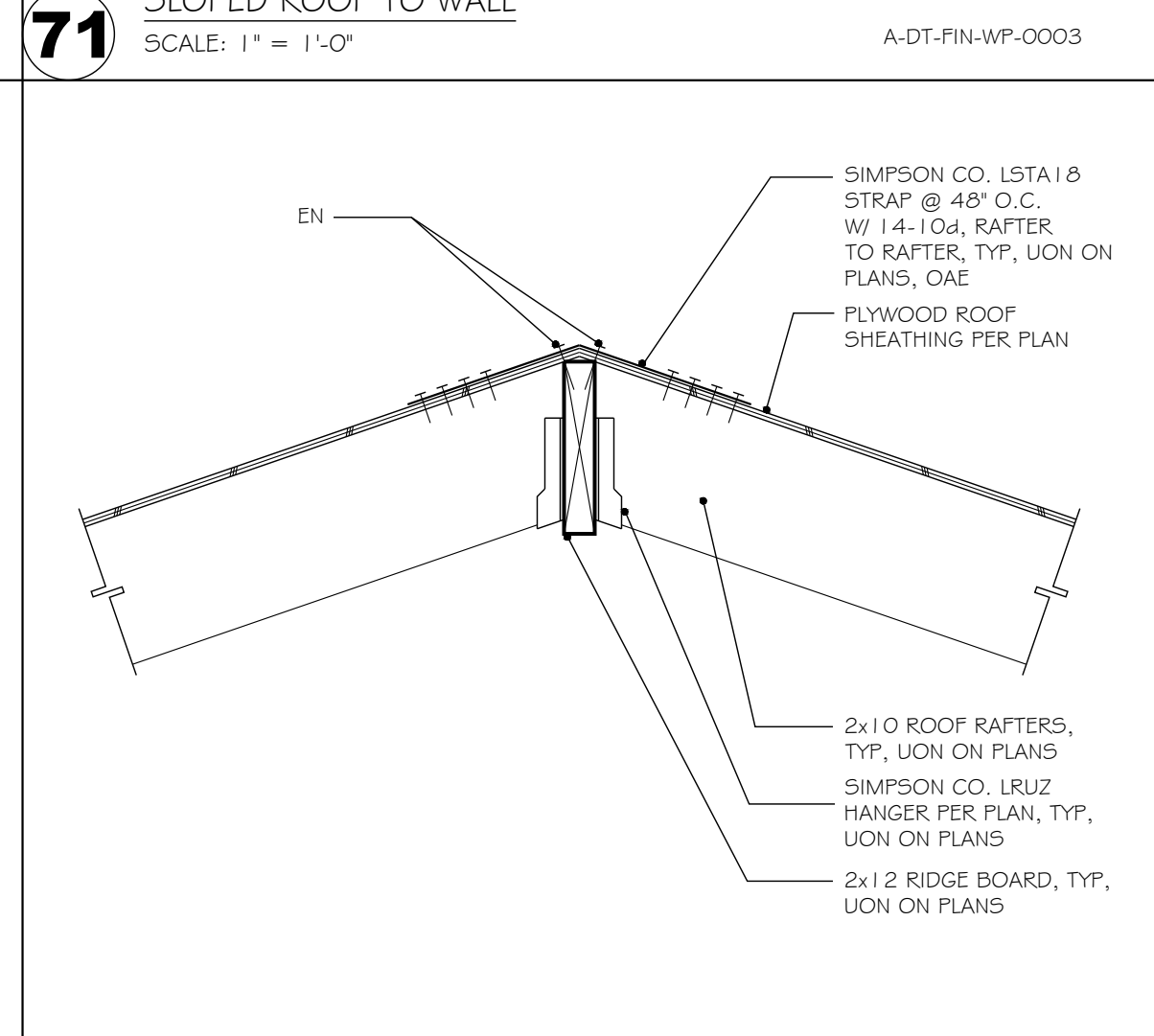
**80** INTERIOR SHEAR WALL TO ROOF  
SCALE: 1" = 1'-0"

A-DT-FMG-RF-WAL-039



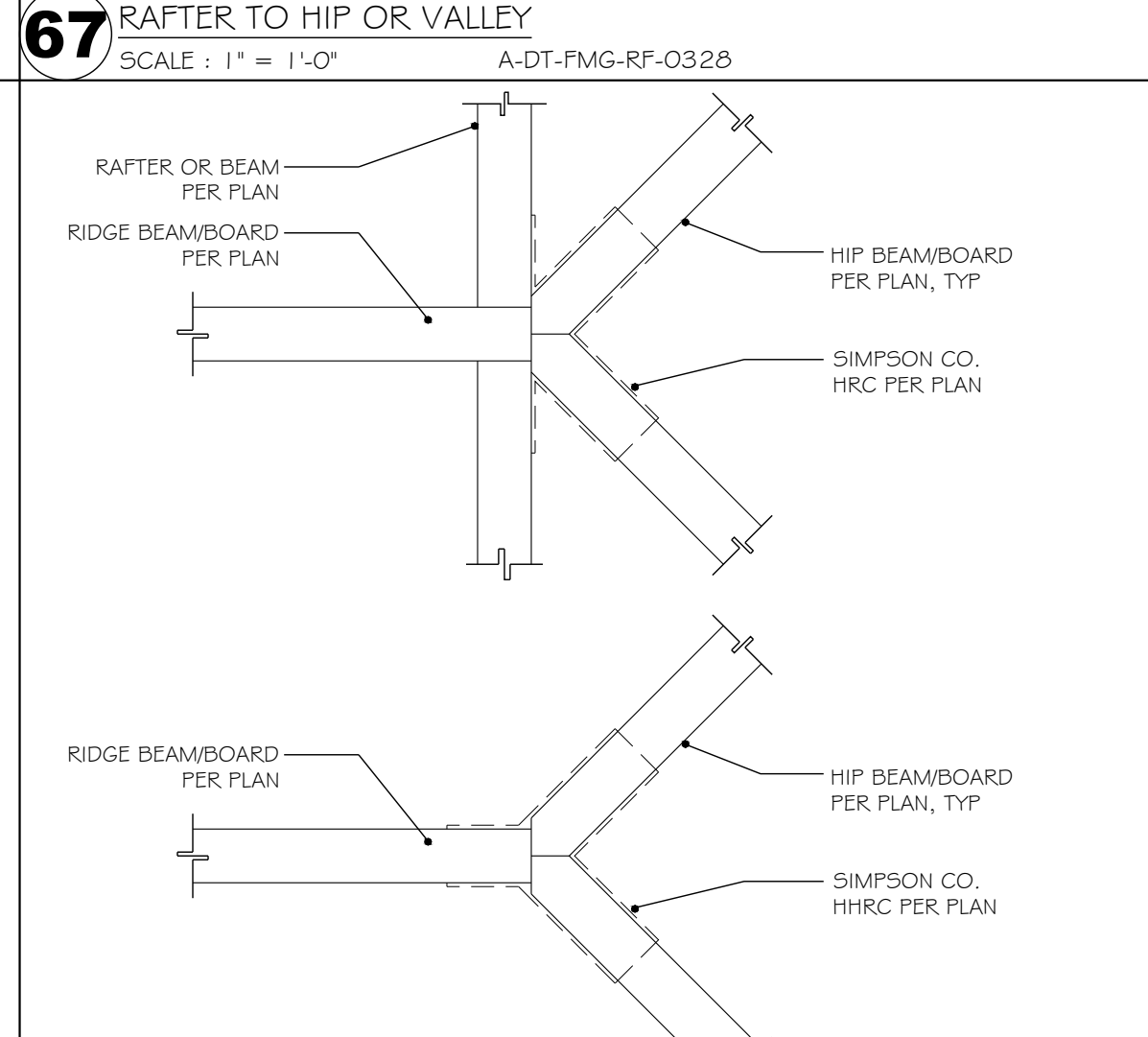
**76** CALIFORNIA ROOF FILL CONNECTION  
SCALE: 1" = 1'-0"

A-DT-FMG-RF-0163



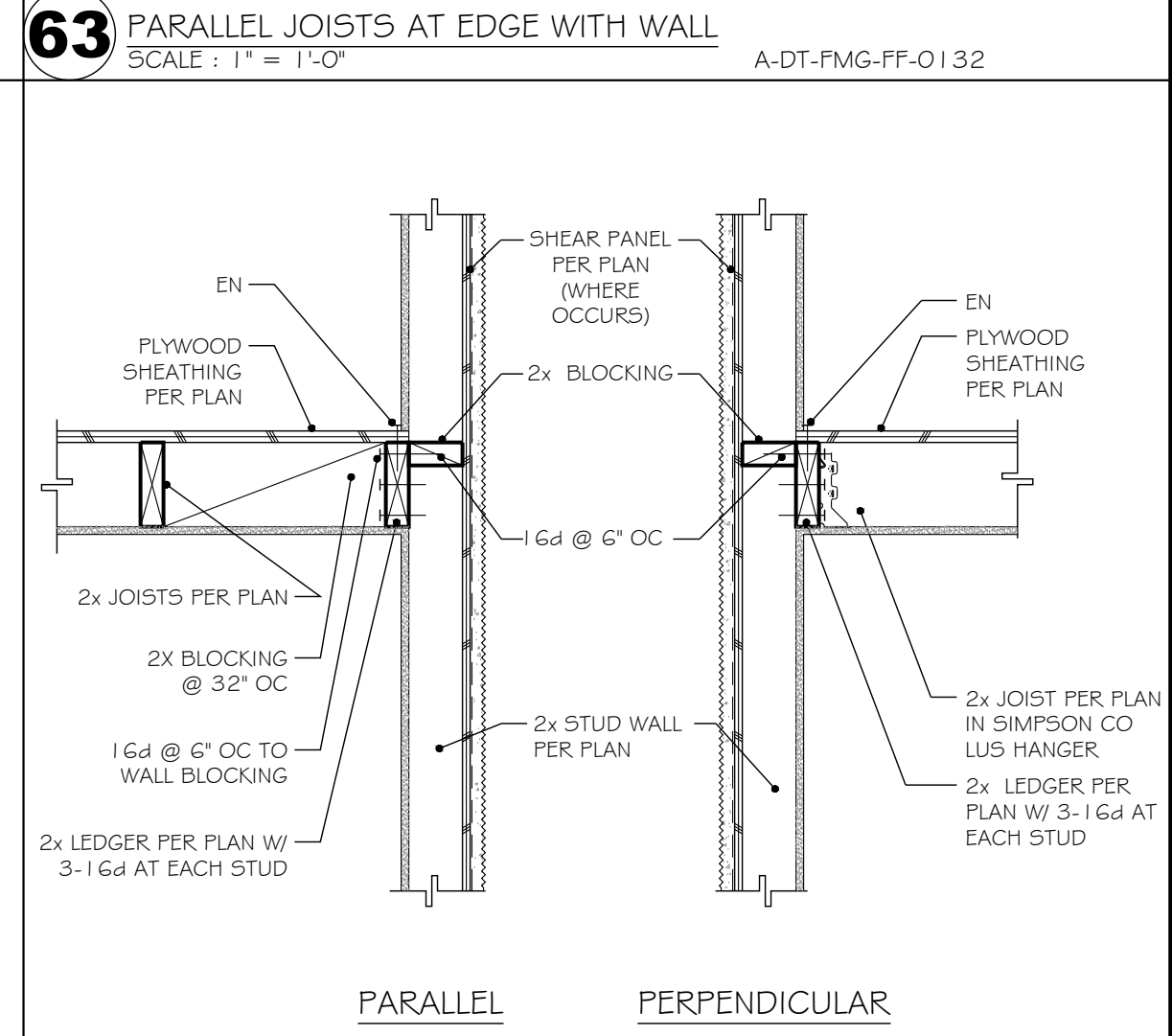
**72** RIDGE BOARD DETAIL  
SCALE : 1" = 1'-0"

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-PB-0153

PREPARER SIGNATURE

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PRADU

CITY: ENCINITAS

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DETAILS

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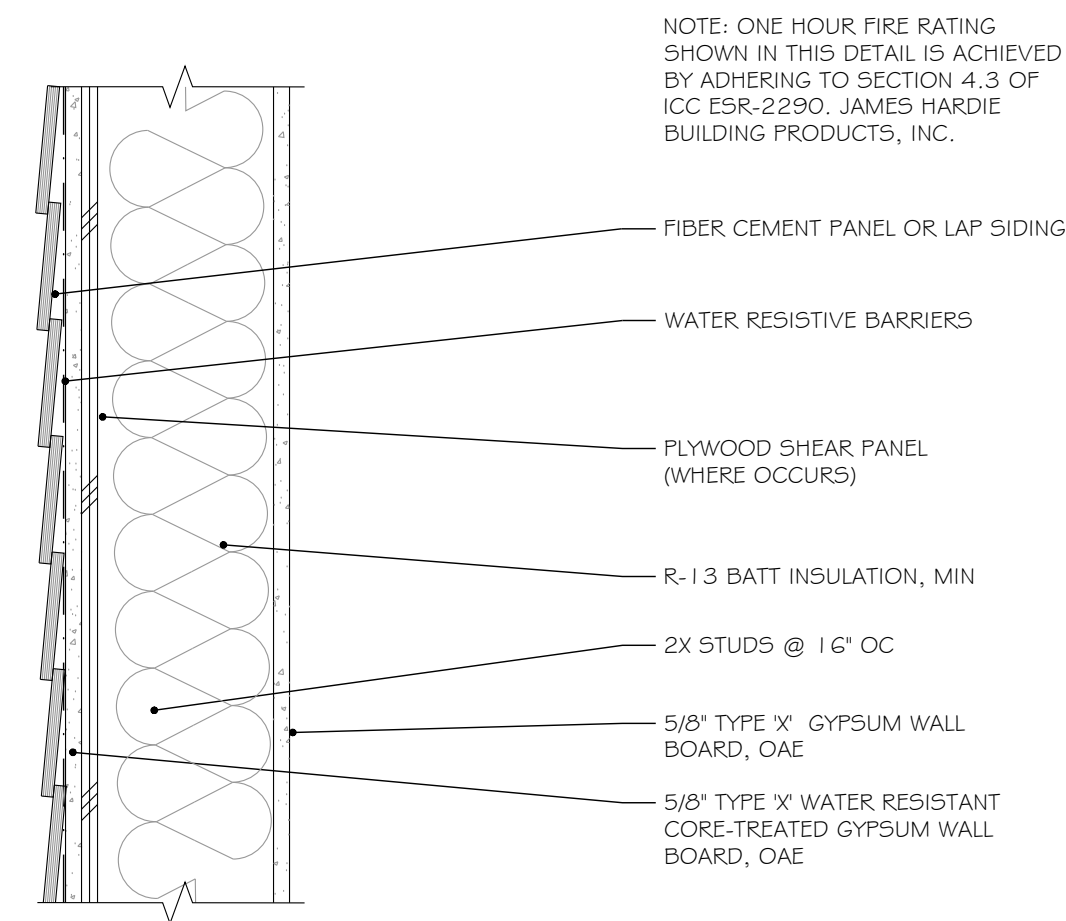
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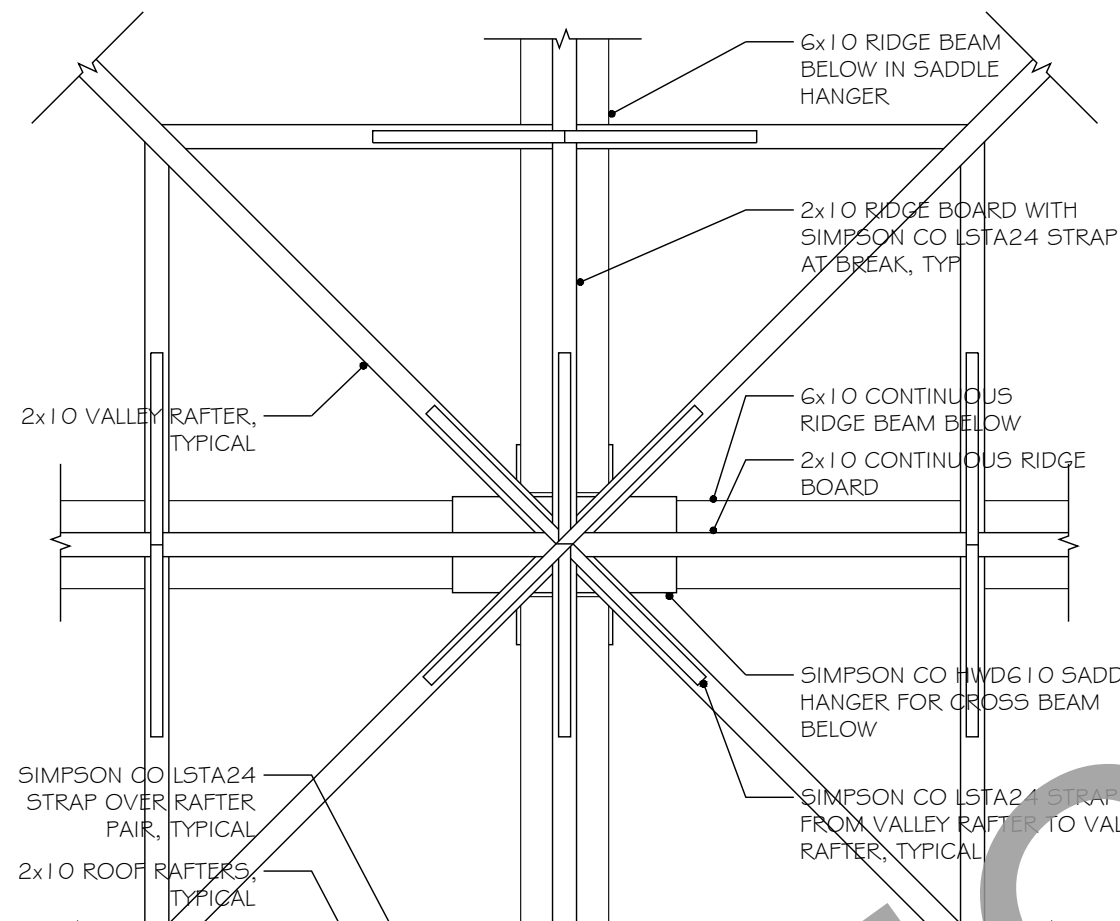
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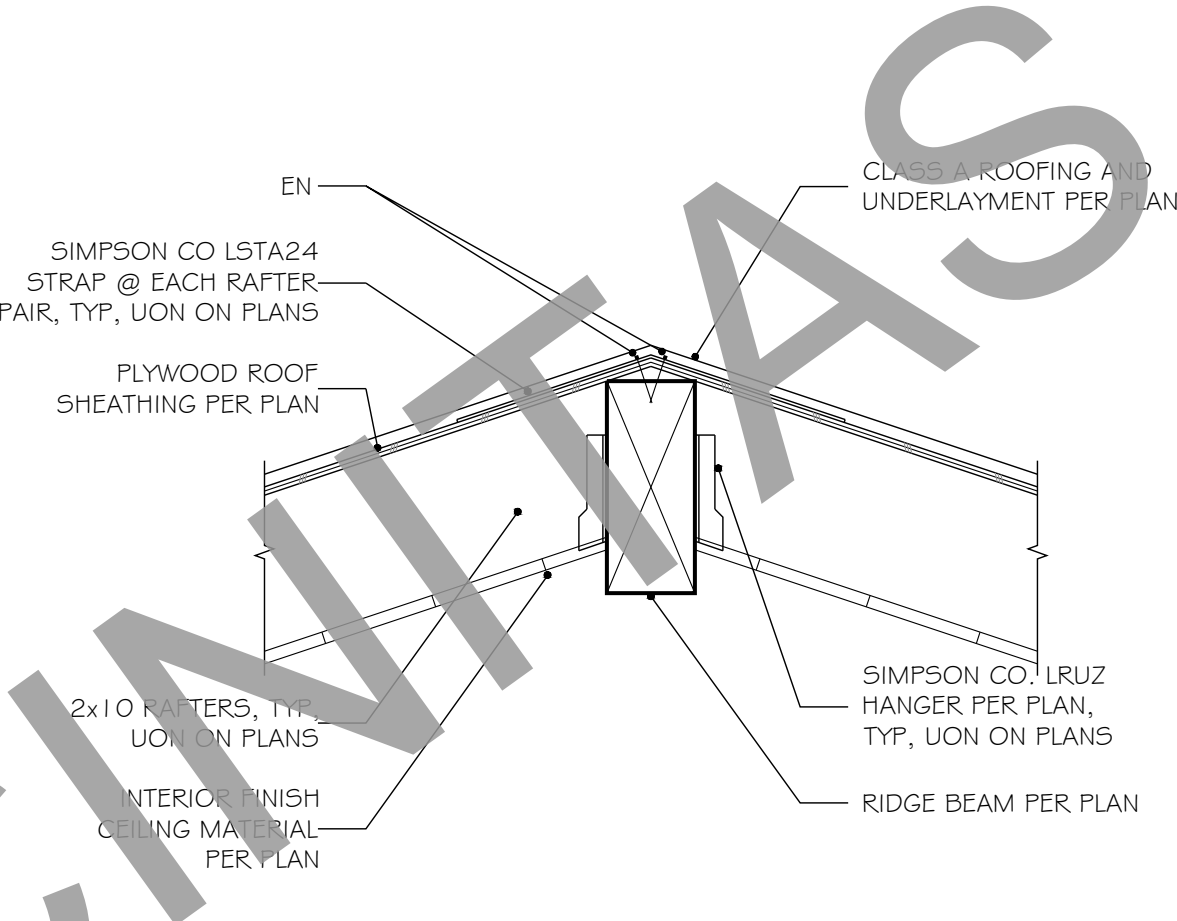
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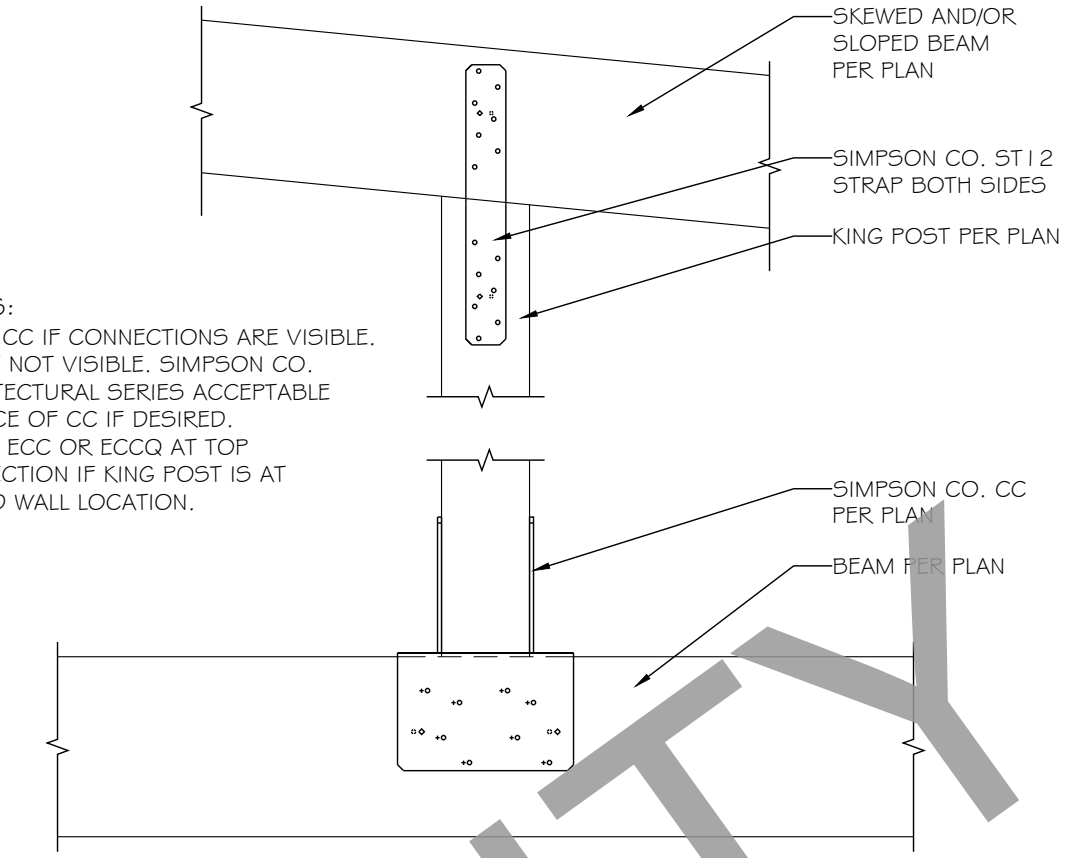
89 EXTERIOR ONE HOUR WALL - FIBER CEMENT SIDING EXTERIOR  
SCALE: 2" = 1'-0"  
A-DT-FIN-FR-WAL-033



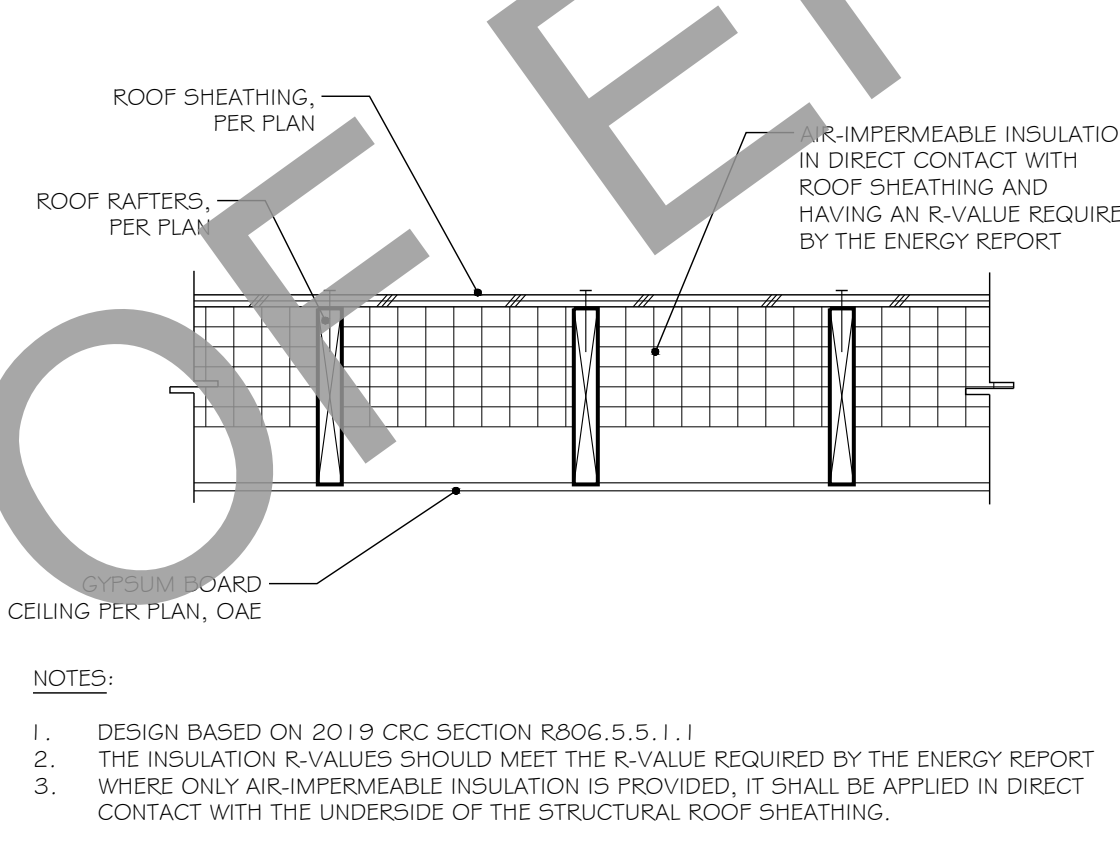
85 RIDGE BEAM INTERSECTION WITH VALLEY RAFTERS ABOVE  
SCALE: 1" = 1'-0"  
A-DT-FIN-FR-RDG-028



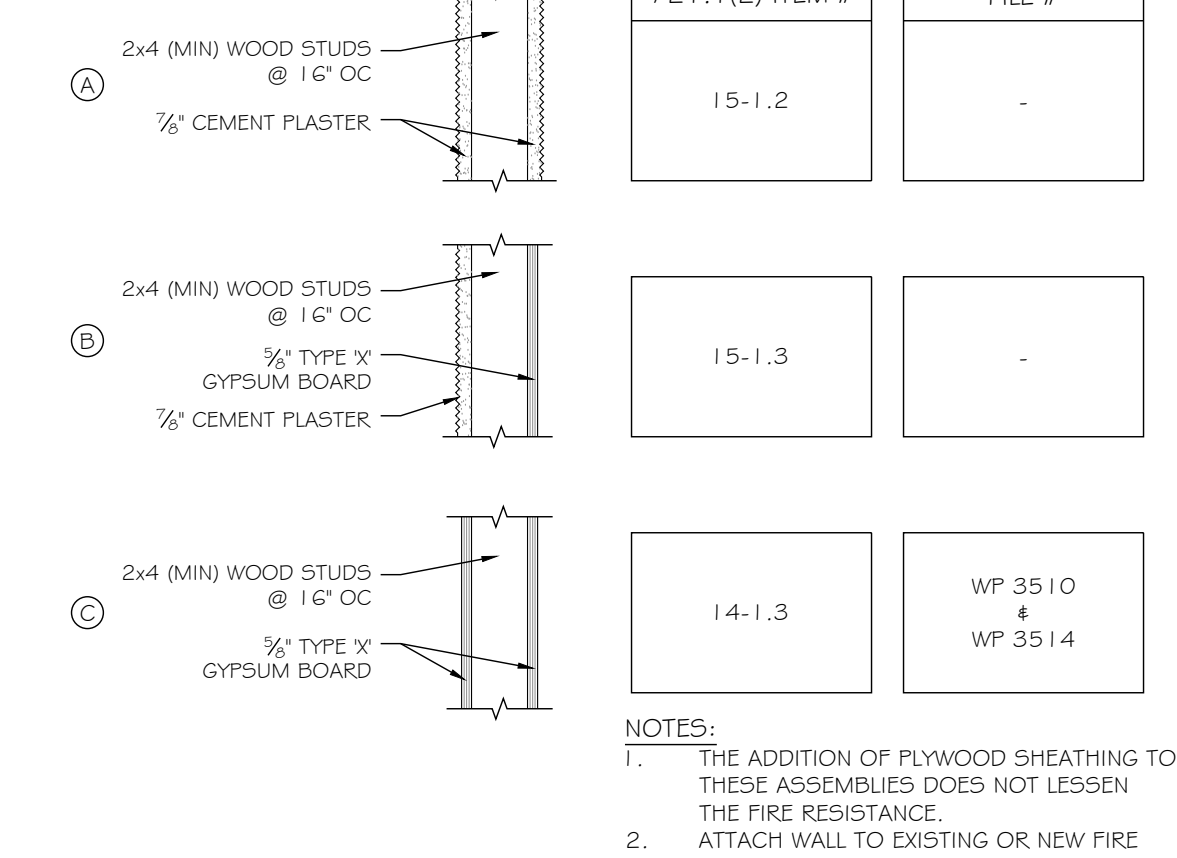
81 RAFTERS TO RIDGE BEAM  
SCALE: 1" = 1'-0"  
A-DT-FMG-RF-RDG-024



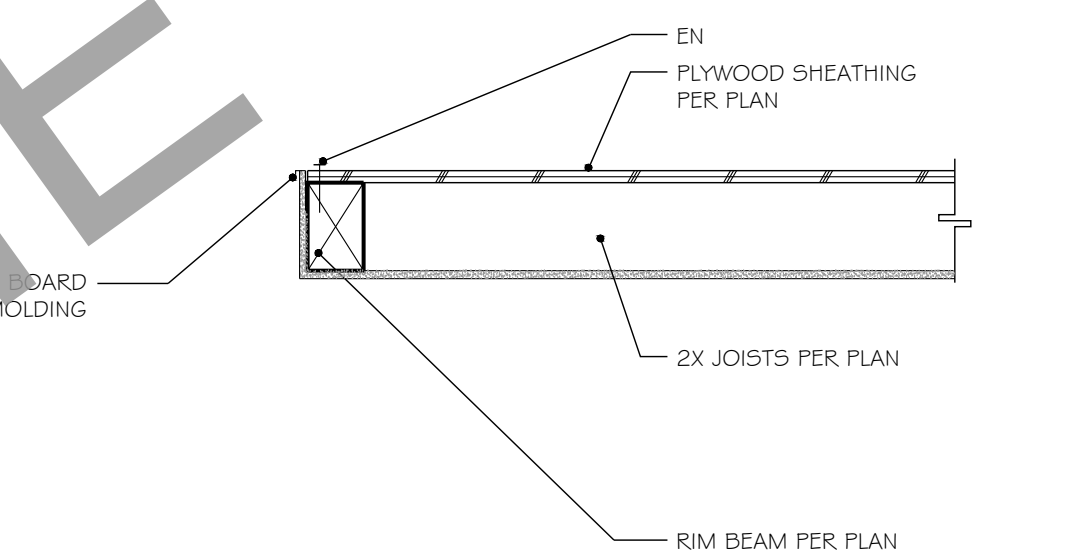
90 KING POST WITH SLOPED AND/OR SKEWED TOP BEAM  
SCALE: 1" = 1'-0"  
A-DT-FMG-PB-0142



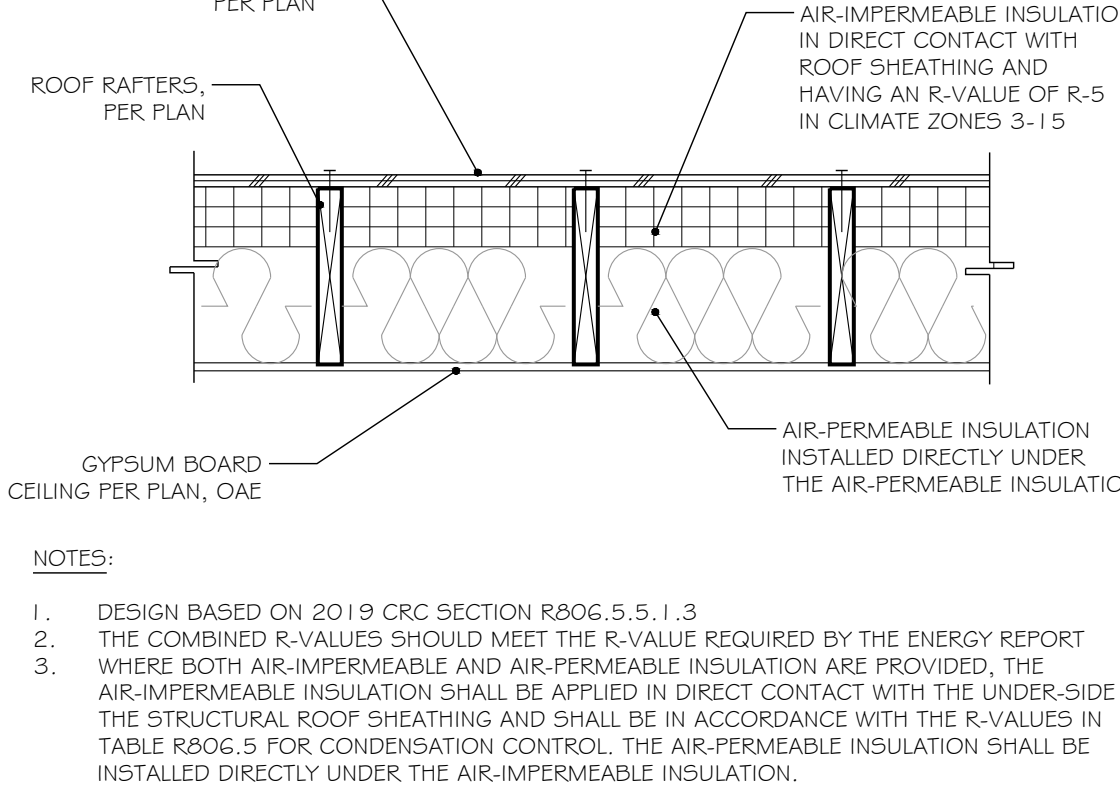
86 INSULATION AT UNVENTED ROOF ASSEMBLY - IMPERMEABLE ONLY  
SCALE: 1" = 1'-0"  
A-DT-FMG-RF-0326



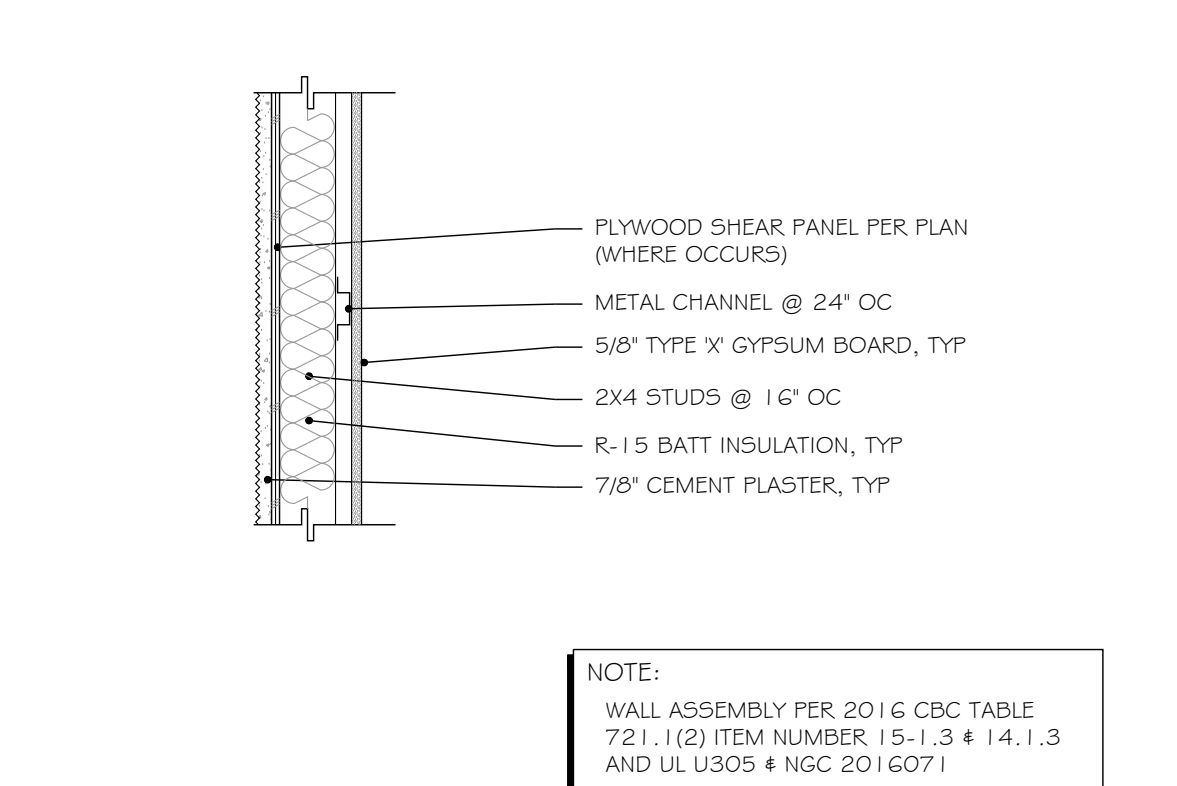
82 FIRE RESISTANCE - ONE HOUR WOOD FRAMED WALLS  
SCALE: 1" = 1'-0"  
A-DT-FIN-FR-WAL-001



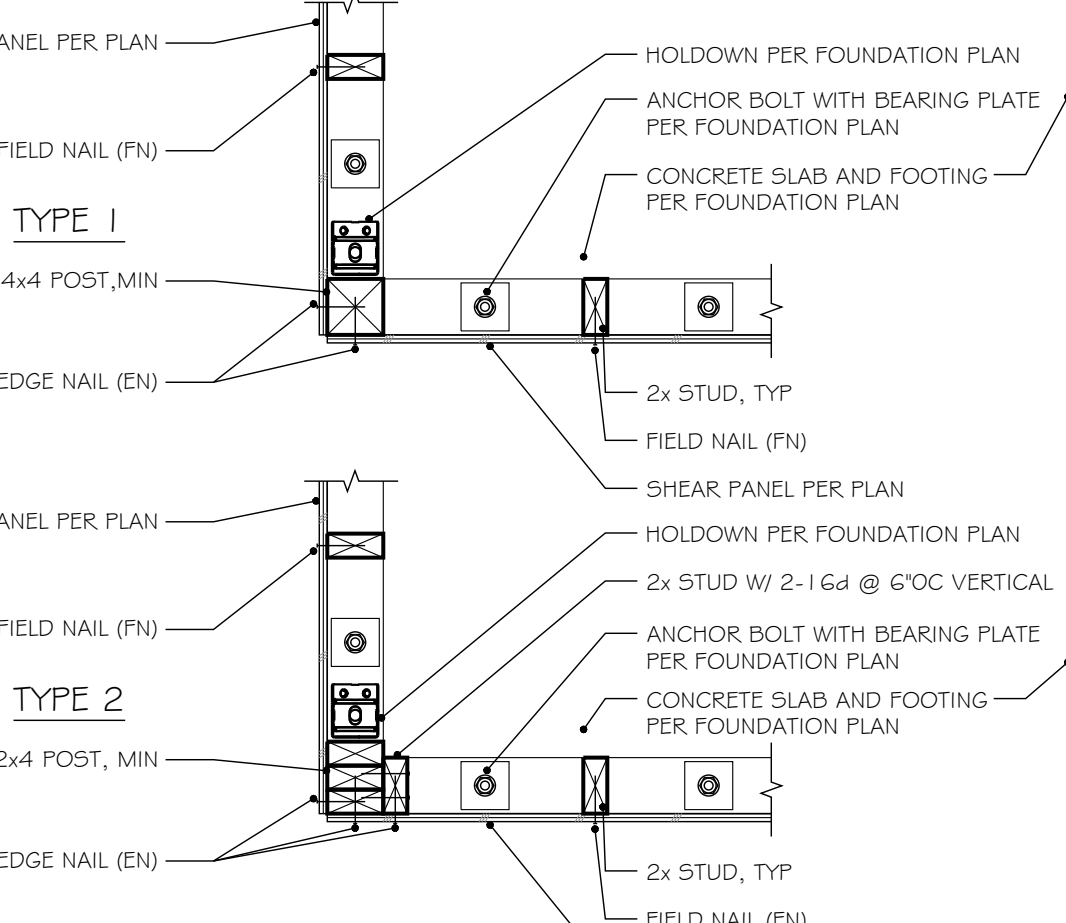
91 PERPENDICULAR JOISTS AT EDGE  
SCALE: 1" = 1'-0"  
A-DT-FMG-FF-0154



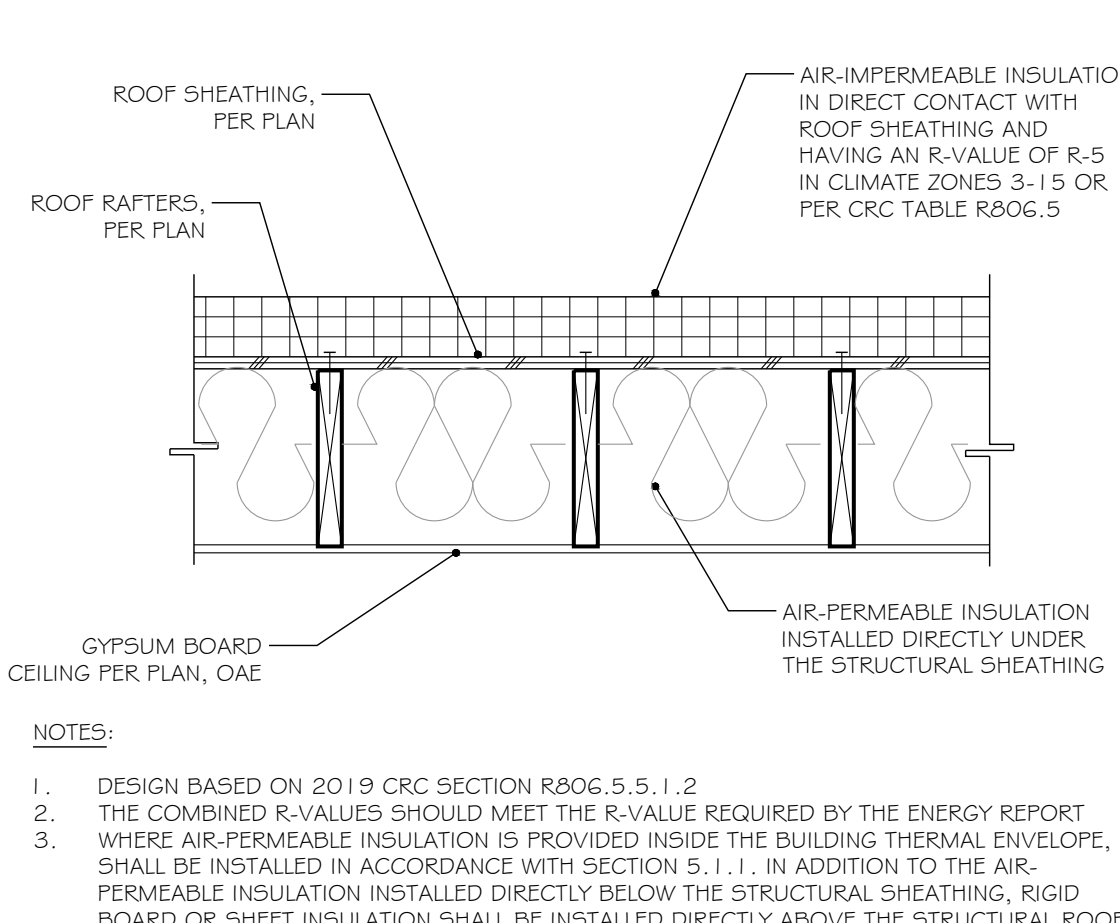
87 INSULATION AT UNVENTED ROOF ASSEMBLY - BOTH TYPES  
SCALE: 1" = 1'-0"  
A-DT-FMG-RF-0325



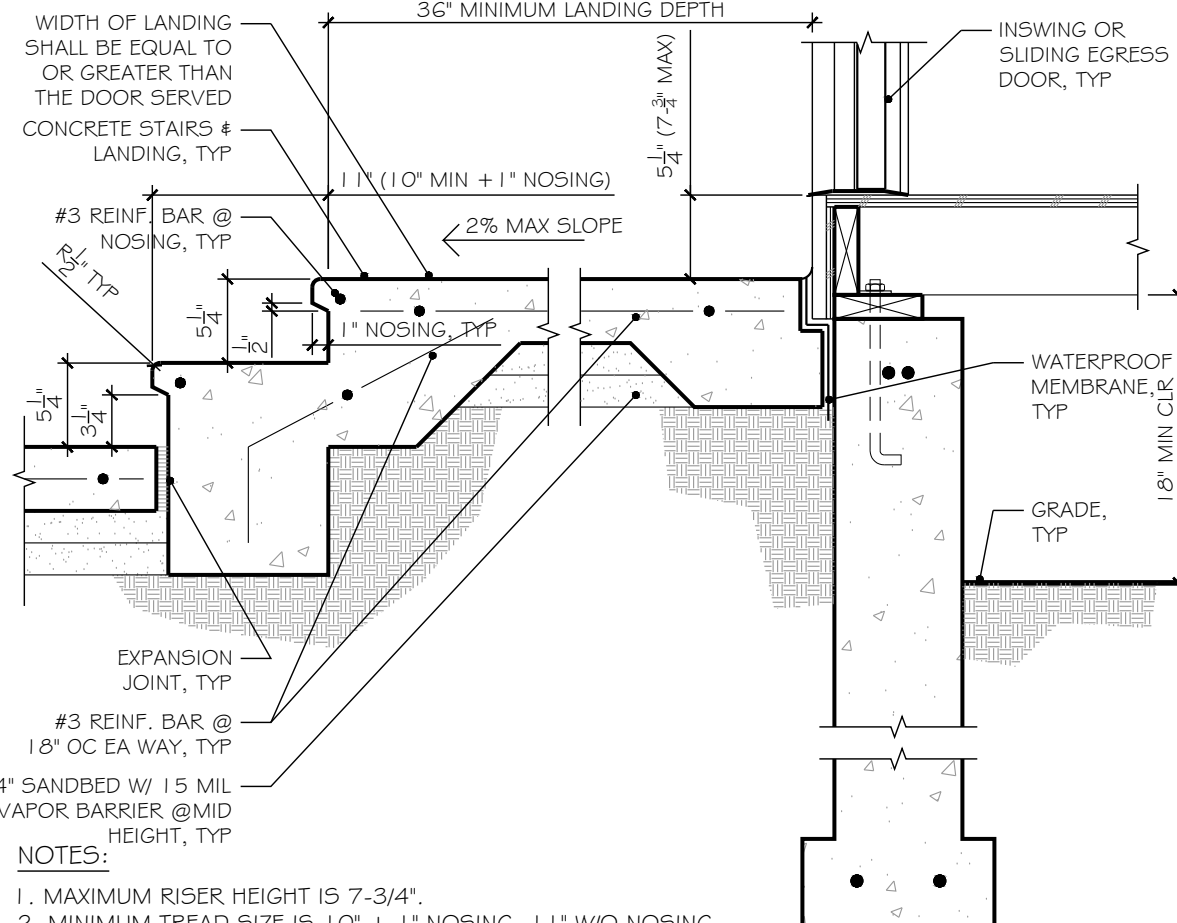
83 EXTERIOR STAIRS AT STEM WALL FOOTING  
SCALE: 1" = 1'-0"  
A-DT-FIN-FR-WAL-025



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

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PRADU

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JOB: 202241R

DETAILS

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-01-11T08:41:58-08:00

Input File Name: 23Q1019-SA.1-03.ribd22x

(Page 1 of 12)

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 <sup>2</sup> )	0	15	Number of Stories	1	
16	Existing Cond. Floor Area (ft <sup>2</sup> )	n/a	17	Fenestration Average U-factor	0.58	
18	Total Cond. Floor Area (ft <sup>2</sup> )	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

Registration Number:

223-P010003960A-000-000-00000000-0000

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: 2023-01-11 08:42:28

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-01-11T08:41:58-08:00

Input File Name: 23Q1019-SA.1-03.ribd22x

(Page 3 of 12)

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² -yr)	Standard Design TDV Energy (EDR2) (KTDV/ft² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)	Proposed Design TDV Energy (EDR2) (KTDV/ft² -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

Registration Number:

223-P010003960A-000-000-00000000-0000

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: 2023-01-11 08:42:28

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-01-11T08:41:58-08:00

Input File Name: 23Q1019-SA.1-03.ribd22x

(Page 2 of 12)

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> 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: PASS						
<sup>1</sup> Efficiency EDR includes improvements like a better building envelope and more efficient equipment						
<sup>2</sup> Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries						
<sup>3</sup> 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						
<ul style="list-style-type: none"> <li>Standard Design PV Capacity: 1.60 kWdc</li> <li>Proposed PV Capacity Scaling: North (1.60 kWdc) East (1.60 kWdc) South (1.60 kWdc) West (1.60 kWdc)</li> </ul>						

Registration Number:

223-P010003960A-000-000-00000000-0000

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: 2023-01-11 08:42:28

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-01-11T08:41:58-08:00

Input File Name: 23Q1019-SA.1-03.ribd22x

(Page 4 of 12)

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² -yr)	Standard Design TDV Energy (EDR2) (KTDV/ft² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)	Proposed Design TDV Energy (EDR2) (KTDV/ft² -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

Registration Number:

223-P010003960A-000-000-00000000-0000

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:

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Report Generated: 2023-01-11 08:42:28

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.  
3431 DON ARTURO DRIVE,  
CARLSBAD, CALIFORNIA 92010  
(760) 635-2327  
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Project Name and Address

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

Project

23Q1019-SA.1-03

Date

01/11/2023

Scale

Sheet

T-01



CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio A

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-01-11T08:41:58-08:00

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ENERGY USE INTENSITY				
	Standard Design (kBtu/ft <sup>2</sup> - yr )	Proposed Design (kBtu/ft <sup>2</sup> - yr )	Compliance Margin (kBtu/ft <sup>2</sup> - yr )	Margin Percentage
North Facing				
Gross EUI <sup>1</sup>	53.48	48.73	4.75	8.88
Net EUI <sup>2</sup>	15.16	10.41	4.75	31.33
East Facing				
Gross EUI <sup>1</sup>	53.48	48.3	5.18	9.69
Net EUI <sup>2</sup>	15.16	9.98	5.18	34.17
South Facing				
Gross EUI <sup>1</sup>	53.48	48.58	4.9	9.16
Net EUI <sup>2</sup>	15.16	10.25	4.91	32.39
West Facing				
Gross EUI <sup>1</sup>	53.48	49.07	4.41	8.25
Net EUI <sup>2</sup>	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.				

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CA Building Energy Efficiency Standards - 2022 Residential Compliance

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ZONE INFORMATION							
01	02	03	04	05	06	07	
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft <sup>2</sup> )	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 <sup>2</sup> )	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
Name	Zone	Construction	Azimuth	Orientation	Area (ft <sup>2</sup> )	Skylight Area (ft <sup>2</sup> )	Roof Rise (x in 12)
Roof	ADU Studio A	_ROOF: SLPD. CLG.	0	Front	224	0	4
FENESTRATION / GLAZING							
01	02	03	04	05	06	07	08
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.
w1	Window	Front Wall	Front	0			1
d1	Window	Front Wall	Front	0			1
w2	Window	Left Wall	Left	90			1

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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 (%)
1.6	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.											
<ul style="list-style-type: none"> <li>Whole house fan</li> <li>Exposed slab floor in conditioned zone</li> <li>Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)</li> <li>Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed</li> </ul>											
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.											
<ul style="list-style-type: none"> <li>Indoor air quality ventilation</li> <li>Kitchen range hood</li> <li>Whole house fan airflow and fan efficacy</li> <li>Verified SEER/SEER2</li> <li>Verified Refrigerant Charge</li> <li>Airflow in habitable rooms (SC3.1.4.1.7)</li> <li>Verified heat pump rated heating capacity</li> <li>Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)</li> <li>Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)</li> </ul>											
BUILDING - FEATURES INFORMATION							01	02	03	04	05
Project Name	Conditioned Floor Area (ft <sup>2</sup> )	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					

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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 <sup>2</sup> )	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
Name	Zone	Area (ft <sup>2</sup> )	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
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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Project

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T-02



CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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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

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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 mechanical 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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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
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2	EER / EER / CEER			
Heat Pump System 1	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 SC3.3.4.1	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

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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: <i>Wayne Seward</i>
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: <i>Bart M Smith</i>
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

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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-03
Date	01/11/2023
Scale	




2022 Single-Family Residential Mandatory Requirements Summary	
 <b>NOTE:</b> 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)	
<b>Building Envelope:</b>	
§ 110.6(a)1:	<b>Air Leakage.</b> 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 1011.S.2/A440-2011. *
§ 110.6(a)5:	<b>Labeling.</b> Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	<b>Field fabricated exterior doors and fenestration products</b> must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-4, 110.6-5, or JAA.5 for exterior doors. They must be caulked and/or weather-stripped.
§ 110.7:	<b>Air Leakage.</b> 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):	<b>Insulation Certification by Manufacturers.</b> Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	<b>Insulation Requirements for Heated Slab Floors.</b> Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(h):	<b>Roofing Products Solar Emissance and Thermal Emittance.</b> The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(h) and be labeled per §10-113 when the installation of a cool roof is specified on the CFR.
§ 110.8(j):	<b>Radiant Barrier.</b> 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):	<b>Roof Deck, Ceiling and Rafter Roof Insulation.</b> 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):	<b>Loose-fill Insulation.</b> Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	<b>Wall Insulation.</b> 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):	<b>Raised-floor Insulation.</b> Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	<b>Slab Edge Insulation.</b> 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:	<b>Vapor Retarder.</b> 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:	<b>Vapor Retarder.</b> 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 a permeable insulation.
§ 150.0(i):	<b>Fenestration Products.</b> 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. *
<b>Fireplaces, Decorative Gas Appliances, and Gas Log:</b>	
§ 110.5(e):	<b>Pilot Light.</b> Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	<b>Closable Doors.</b> Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	<b>Combustion Intake.</b> 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 light-fitting damper or combustion-air control device.
§ 150.0(e)3:	<b>Flue Damper.</b> Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *
<b>Space Conditioning, Water Heating, and Plumbing System:</b>	
§ 110.0-§ 110.3:	<b>Certification.</b> 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):	<b>HVAC Efficiency.</b> Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	<b>Controls for Heat Pumps with Supplementary Electric Resistance Heaters.</b> 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):	<b>Thermostats.</b> All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	<b>Insulation.</b> 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:	<b>Isolation Valves.</b> Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.


5/6/22

2022 Single-Family Residential Mandatory Requirements Summary	
	
§ 110.5:	<b>Pilot Lights.</b> 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:	<b>Building Cooling and Heating Loads.</b> 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:	<b>Clearances.</b> 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:	<b>Liquid Line Drier.</b> Air conditioners and heat pump systems must be equipped with liquid line driers if required, as specified by the manufacturer's instructions.
§ 150.0(i)1:	<b>Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.</b> All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code. *
§ 150.0(i)2:	<b>Insulation Protection.</b> Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §102.3(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:	<b>Gas or Propane Water Heating Systems.</b> 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:	<b>Solar Water-heating Systems.</b> 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.
<b>Ducts and Fans:</b>	
§ 110.8(d)3:	<b>Ducts.</b> 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:	<b>CMC Compliance.</b> All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-2006-2006 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 1/2". 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:	<b>Factory-Fabricated Duct Systems.</b> Factory-fabricated duct systems must comply with applicable requirements for duct construction, connectors, and closures. Joints and seams of duct systems and their components must not be sealed with cloth backed rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	<b>Field-Fabricated Duct Systems.</b> 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:	<b>Backdraft Damper.</b> Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	<b>Gravity Ventilation Dampers.</b> 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:	<b>Protection of Insulation.</b> Insulation must be protected from damage due to sunlight, 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:	<b>Porous Inner Core Flex Duct.</b> 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:	<b>Duct System Sealing and Leakage Test.</b> 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:	<b>Air Filtration.</b> 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(k)1G:	<b>Screw based luminaires.</b> Screw based luminaires must contain lamps that comply with Reference Joint Appendix JAB. *
§ 150.0(k)1H:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1:	<b>Light Sources in Drawers, Cabinets, and Linen Closets.</b> 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:	<b>Interior Switches and Controls.</b> All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	<b>Interior Switches and Controls.</b> Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	<b>Accessible Controls.</b> Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	<b>Multiple Controls.</b> 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:	<b>Mandatory Requirements.</b> Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(k)2D:	<b>Energy Management Control Systems.</b> 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:	<b>Automatic Shutoff Controls.</b> 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:	<b>Dimmers.</b> 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:	<b>Independent controls.</b> 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:	<b>Residential Outdoor Lighting.</b> 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:	<b>Internally illuminated address signs.</b> Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	<b>Residential Garages for Eight or More Vehicles.</b> 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.
<b>Solar Readiness:</b>	
§ 110.10(a)1:	<b>Single-family Residences.</b> Single-family residences located in subdivisions with 10 or more single-family residences and where the application for a solar energy system 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:	<b>Minimum Solar Zone Area.</b> 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 60 square feet each for buildings with roof areas less than or equal to 10,000 square feet and 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:	<b>Azimuth.</b> 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:	<b>Shading.</b> 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:	<b>Shading.</b> 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:	<b>Structural Design Loads on Construction Documents.</b> 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):	<b>Interconnection Pathways.</b> 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):	<b>Documentation.</b> 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:	<b>Main Electrical Service Panel.</b> The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	<b>Main Electrical Service Panel.</b> 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."
<b>Electric and Energy Storage Ready:</b>	

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§ 150.0(n)13:	<b>Space Conditioning System Airflow Rate and Fan Efficacy.</b> 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. *
<b>Ventilation and Indoor Air Quality:</b>	
§ 150.0(o)1:	<b>Requirements for Ventilation and Indoor Air Quality.</b> 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:	<b>Central Fan Integrated (CFI) Ventilation Systems.</b> 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 and controlled per §150.0(o)1Biliiv. 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:	<b>Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses.</b> 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:	<b>Local Mechanical Exhaust.</b> 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)1Gvi, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H4:	<b>Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.</b> 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 duct 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:	<b>Field Verification and Diagnostic Testing.</b> 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 RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G.
<b>Pool and Spa Systems and Equipment:</b>	
§ 110.4(a):	<b>Certification by Manufacturers.</b> 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 MAEDS; 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 use electric resistance heating.
§ 110.4(b)1:	<b>Piping.</b> 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:	<b>Covers.</b> Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	<b>Directional Inlets and Time Switches for Pools.</b> 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:	<b>Pilot Light.</b> Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	<b>Pool Systems and Equipment Installation.</b> Residential pool systems or equipment must meet the specified requirements for pump sizing, low rate piping, filters, and valves.
<b>Lighting:</b>	
§ 110.9:	<b>Lighting Controls and Components.</b> All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	<b>Luminaire Efficacy.</b> 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:	<b>Screw based luminaires.</b> Screw based luminaires must contain lamps that comply with Reference Joint Appendix JAB. *
§ 150.0(k)1C:	<b>Recessed Downlight Luminaires in Ceilings.</b> 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:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1E:	<b>Blank Electrical Boxes.</b> 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:	<b>Lighting Integral to Exhaust Fans.</b> Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).
*Exceptions may apply.	

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§ 150.0(s):	<b>Energy Storage System (ESS) Ready.</b> All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backup 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):	<b>Heat Pump Space Heater Ready.</b> 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):	<b>Electric Cooktop Ready.</b> 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):	<b>Electric Clothes Dryer Ready.</b> 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.

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. 3431 DDN ARTURO DRIVE, CARLSBAD, CALIFORNIA 92010 (760) 635-2327 wayne@bear-techconsulting.com http://www.bear-techconsulting.com		
Project Name and Address		
ENCINITAS PRADU - STUDIO A ADU STUDIO A STREE ENCINITAS, CALIFORNIA 92024		
Project 23Q1019-SA.1-03	Sheet 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

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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 <sup>2</sup> )	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft <sup>2</sup> )	n/a	17	Fenestration Average U-factor	0.58
18	Total Cond. Floor Area (ft <sup>2</sup> )	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

Registration Number:

223-P010003962A-000-000-00000000-0000

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 11:17:51

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio B

Calculation Date/Time: 2023-01-09T11:17:14-08:00

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Calculation Description: Title 24 Analysis

Input File Name: 23Q1019-SB.1-03.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -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

Registration Number:

223-P010003962A-000-000-00000000-0000

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

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio B

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Calculation Description: Title 24 Analysis

Input File Name: 23Q1019-SB.1-03.ribd22x

ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> 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 <sup>3</sup> : PASS						
<sup>1</sup> Efficiency EDR includes improvements like a better building envelope and more efficient equipment						
<sup>2</sup> Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries						
<sup>3</sup> 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)						

Registration Number:

223-P010003962A-000-000-00000000-0000

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

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ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -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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CA Building Energy Efficiency Standards - 2022 Residential Compliance

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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.  
3431 DON ARTURO DRIVE,  
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http://www.beartechconsulting.com

Project Name and Address

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

Project

23Q1019-SB.1-03

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Date

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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ENERGY USE INTENSITY				
	Standard Design (kBtu/ft <sup>2</sup> - yr )	Proposed Design (kBtu/ft <sup>2</sup> - yr )	Compliance Margin (kBtu/ft <sup>2</sup> - yr )	Margin Percentage
North Facing				
Gross EUI <sup>1</sup>	53.5	49.66	3.84	7.18
Net EUI <sup>2</sup>	15.17	11.34	3.83	25.25
East Facing				
Gross EUI <sup>1</sup>	53.5	49	4.5	8.41
Net EUI <sup>2</sup>	15.17	10.68	4.49	29.6
South Facing				
Gross EUI <sup>1</sup>	53.5	49.23	4.27	7.98
Net EUI <sup>2</sup>	15.17	10.91	4.26	28.08
West Facing				
Gross EUI <sup>1</sup>	53.5	50.06	3.44	6.43
Net EUI <sup>2</sup>	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.				

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ZONE INFORMATION							
01	02	03	04	05	06	07	
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft <sup>2</sup> )	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 (ft <sup>2</sup> )	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
Name	Zone	Construction	Azimuth	Orientation	Area (ft <sup>2</sup> )	Skylight Area (ft <sup>2</sup> )	Roof Rise (x in 12)
Roof	ADU Studio B	_ROOF: SLPD. CLG.	0	Front	224	0	3
FENESTRATION / GLAZING							
01	02	03	04	05	06	07	08
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.
w5	Window	Front Wall	Front	0			1
w1	Window	Front Wall	Front	0			1
d1	Window	Front Wall	Front	0			1

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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 (%)
1.6	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.
<ul style="list-style-type: none"><li>• Whole house fan</li><li>• Exposed slab floor in conditioned zone</li><li>• Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)</li><li>• Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed</li></ul>

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
<ul style="list-style-type: none"><li>• Indoor air quality ventilation</li><li>• Kitchen range hood</li><li>• Whole house fan airflow and fan efficacy</li><li>• Verified SEER/SEER2</li><li>• Verified Refrigerant Charge</li><li>• Airflow in habitable rooms (SC3.1.4.1.7)</li><li>• Verified heat pump rated heating capacity</li><li>• Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)</li><li>• Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)</li></ul>

BUILDING - FEATURES INFORMATION						
01	02	03	04	05	06	07
Project Name	Conditioned Floor Area (ft <sup>2</sup> )	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

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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 (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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Project Name and Address
ENCINITAS PRADU - STUDIO B ADU STUDIO A STREE ENCINITAS, CALIFORNIA 92024

Project	Sheet
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01/11/2023	T-02
Scale	



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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	AOSmithFPTUS0	ADU Studio B	ADU Studio B	ADU Studio B

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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/R2)	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

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WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
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
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

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Calculation Description: Title 24 Analysis

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\*\*\*\*\*

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 mechanical 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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STUDIO A STREE  
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Project Name and Address

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

 Project  
 23Q1019-SB.1-03

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## CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

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## DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name:

Documentation Author Signature:

Wayne Seward

Wayne Seward

Company:

Signature Date:

Bear Technologies Consulting Inc.

2023-01-11 09:13:09

Address:

CEA/HERS Certification Identification (If applicable):

3431 Don Arturo Drive

R19-04-30011

City/State/Zip:

Phone:

Carlsbad, CA 92010

760-635-2327

## RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- 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.
- 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.
- 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:

Responsible Designer Signature:

Bart M Smith

Bart M Smith

Company:

Date Signed:

DZN Partners

2023-01-11 10:42:50

Address:

License:

682 2nd Street

C-22557

City/State/Zip:

Phone:

Encinitas, CA 92024

760-753-2464


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\*Exceptions may apply.

## 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.

<b>Building Envelopes</b>	
§ 110.6(a)(1)	<b>Air Leakage.</b> 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-610, ASTM E283, or AIAA/WNACSSA 110.15.20442-2011.
§ 110.6(a)(6)	<b>Labeling.</b> Fenestration products and exterior doors must have a label meeting the requirements of § 110.11(a).
§ 110.6(b)	<b>Field fabricated exterior doors and fenestration products</b> must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6.A, 110.6.B, or 110.6.C for exterior doors. They must be caulked and/or weatherstripped.
§ 110.7	<b>Air Leakage.</b> All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, weatherstripped, or weatherstripped.
§ 110.8(a)(1)	<b>Insulation Certification by Manufacturers.</b> Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(a)(2)	<b>Insulation Requirements for Heated Slab Floors.</b> Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(b)	<b>Roofing Products Solar Reflectance and Thermal Emittance.</b> The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per § 110.11 when the installation of a cool roof is specified on the CDP.
§ 110.8(j)	<b>Radiant Barrier.</b> 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)	<b>Roof Deck, Ceiling and Rafter Roof Insulation.</b> Roof decks in newly constructed attics in climate zones 4 and 5-16 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 places insulation either above or below the roof deck or on top of a gabled ceiling.
§ 150.0(b)	<b>Loose-Fill Insulation.</b> Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c)	<b>Wall Insulation.</b> 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. On-slope 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)	<b>Raised-Floor Insulation.</b> Minimum R-19 insulation in raised wood framed floor or 0.037 minimum U-factor.
§ 150.0(e)	<b>Slab Edge Insulation.</b> Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without toppings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perms 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(f)	<b>Vapor Retarder.</b> 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(g).
§ 150.0(g)	<b>Vapor Retarder.</b> 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(h)	<b>Fenestration Products.</b> 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.
<b>Fireplaces, Decorative Gas Appliances, and Gas Log</b>	
§ 110.5(a)	<b>Pilot Light.</b> Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(a)(1)	<b>Closeable Doors.</b> Masonry or factory-built fireplaces must have a closeable metal or glass door covering the entire opening of the firebox.
§ 150.0(a)(2)	<b>Combustion Intake.</b> Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least one square inch in area and is equipped with a readily accessible, operable, and light-tight damper or combustion-air control device.
§ 150.0(b)	<b>Plus Damper.</b> Masonry or factory-built fireplaces must have a plus damper with a readily accessible control.
<b>Space Conditioning, Heating, Ventilation, and Air Conditioning (HVAC) Equipment, Water Heaters, Showers/Baths, and Other Regulated Appliances must be certified by the manufacturer to the California Energy Commission.</b>	
§ 110.6 110.3	<b>Certification.</b> Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showers/baths, and other regulated appliances must be certified by the manufacturer to the California Energy Commission.
§ 110.2(a)	<b>HVAC Efficiency.</b> Equipment must meet the applicable efficiency requirements in Table 110.2.A through Table 110.2.N.
§ 110.2(b)	<b>Controls for Heat Pumps with Supplementary Electric Resistance Heaters.</b> 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 run temperature for compression heating is higher for pressure heating than for supplementary heating; and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.
§ 110.2(c)	<b>Thermostats.</b> All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.
§ 110.3(a)(1)	<b>Insulation.</b> Unvented service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface must have no air leakage.
§ 110.3(a)(2)	<b>Isolation Valves.</b> Insulation on 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

§ 150.0(a)(1)	<b>Space Conditioning System Airflow Rate and Fan Efficiency.</b> 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 a 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficiency is 0.45 watts per CFM for gas furnace or boilers and 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow of 200 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficiency is 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.1.
<b>Ventilation and Indoor Air Quality</b>	
§ 150.0(a)(1)	<b>Requirements for Ventilation and Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(a)(1).</b>
§ 150.0(a)(1B)	<b>Central Fan Integrated (CFI) Ventilation Systems.</b> Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling and ventilation airflow required per § 150.0(a)(1C). A mechanical 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 and/or locked per § 150.0(a)(1B)(ii). CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the indoorized damper(s) for compliance with § 150.0(a)(1C).
§ 150.0(a)(1C)	<b>Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses.</b> Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(a)(1C).
§ 150.0(a)(1G)	<b>Local Mechanical Exhaust.</b> Kitchens and bathrooms must have local mechanical exhaust; nonresidential kitchens must have demand-controlled exhaust system meeting requirements of § 150.0(a)(1G). Nonresidential kitchens and bathrooms can use demand-controlled or continuous exhaust meeting § 150.0(a)(1G). Airflow must be measured by the installer per § 150.0(a)(1G), and rated for sound per § 150.0(a)(1G).
§ 150.0(a)(1H)	<b>Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.</b> The airflow required per § 150.0(a)(1C) must be measured by using a flow hood, flow gill, or other airflow measuring device at the fan inlet or outlet terminals/performance per Reference Residential Appendix RA3.7. Whole-dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 § 2 at no less than the minimum airflow rate required by § 150.0(a)(1C).
§ 150.0(a)(2)	<b>Field Verification and Diagnostic Testing.</b> Whole-dwelling unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficiency must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hood airflow must be verified per Reference Residential Appendix RA3.7.3 to confirm it is rated by AHJ or AHJM to comply with the airflow rates and sound requirements per § 150.0(a)(1G).
<b>Pool and Spa Systems and Equipment</b>	
§ 110.4(a)	<b>Certification by Manufacturers.</b> 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 NAEBS; 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)	<b>Piping.</b> 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 both or both connected to allow for future solar heating.
§ 110.4(b)(2)	<b>Covers.</b> Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)(3)	<b>Directional Intake and Time Switches for Pools.</b> Pools must have directional intake 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	<b>Pilot Light.</b> Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(a)	<b>Pool Systems and Equipment Installation.</b> Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.
<b>Lighting</b>	
§ 110.9	<b>Lighting Controls and Components.</b> All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.
§ 150.0(a)(1A)	<b>Luminaire Efficiency.</b> 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 for fire-fighters, and lighting integral to showers, cabinets, and fresh air ducts with an efficacy of at least 45 lumens per watt.
§ 150.0(a)(1B)	<b>Screw-based luminaires.</b> Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA6.
§ 150.0(a)(1C)	<b>Recessed Downlight Luminaires in Ceilings.</b> Luminaires recessed into ceilings must not contain screw-based systems, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(a)(1D)	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JA6 elevated temperature requirements, including mercury vapor lamps, must not be installed in enclosed or recessed luminaires.
§ 150.0(a)(1E)	<b>Blank Electrical Boxes.</b> The number of electrical boxes that are more than four feet above the finished floor and do not contain a luminaire or other device that has more than the number of conductors allowed in the box must be limited to one. These boxes must be labeled with a voltage warning, or fan speed control.
§ 150.0(a)(1F)	<b>Lighting Integral to Exhaust Fans.</b> Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(a)(1G).

§ 110.4(a)	<b>Certification by Manufacturers.</b> 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 NAEBS; 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)	<b>Piping.</b> 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 both or both connected to allow for future solar heating.
§ 110.4(b)(2)	<b>Covers.</b> Outdoor pools or spas that have a heat pump or gas heater must have a cover.
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§ 110.5	<b>Pilot Light.</b> Natural gas pool and spa heaters must not have a continuously burning pilot light.
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<b>Lighting</b>	
§ 110.9	<b>Lighting Controls and Components.</b> All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.
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§ 150.0(a)(1B)	<b>Screw-based luminaires.</b> Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA6.
§ 150.0(a)(1C)	<b>Recessed Downlight Luminaires in Ceilings.</b> Luminaires recessed into ceilings must not contain screw-based systems, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met.
§ 150.0(a)(1D)	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JA6 elevated temperature requirements, including mercury vapor lamps, must not be installed in enclosed or recessed luminaires.
§ 150.0(a)(1E)	<b>Blank Electrical Boxes.</b> The number of electrical boxes that are more than four feet above the finished floor and do not contain a luminaire or other device that has more than the number of conductors allowed in the box must be limited to one. These boxes must be labeled with a voltage warning, or fan speed control.
§ 150.0(a)(1F)	<b>Lighting Integral to Exhaust Fans.</b> Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(a)(1G).

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## 2022 Single-Family Residential Mandatory Requirements Summary

§ 110.5	<b>Pilot Lights.</b> 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(a)(1)	<b>Building Cooling and Heating Loads.</b> Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume, the SHADNA Residential Comfort System Installation Standards Manual, or the ASHRAE Manual J using design conditions specified in § 110.0(a)(2).
§ 150.0(a)(3A)	<b>Clearances.</b> Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the bottom of any drain.
§ 150.0(a)(3B)	<b>Field Line Drive.</b> 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(a)(1)	<b>Water Piping, Solar Water-Heating System Piping, and Space Conditioning System Line Insulation.</b> All domestic hot water piping must be insulated as specified in § 609.11 of the California Plumbing Code.
§ 150.0(a)(2)	<b>Insulation Protection.</b> Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by § 150.3(b). Insulation exposed to weather must be water resistant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and overhead 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-combustible casing or sleeve.
§ 150.0(a)(1)	<b>Gas or Propane Water Heating Systems.</b> 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(a)(3)	<b>Solar Water-Heating Systems.</b> 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 a listing agency that is approved by the executive director.
<b>Ducts and Fans</b>	
§ 110.8(a)(3)	<b>Ducts.</b> 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(a)(1)	<b>CMC Compliance.</b> All air-distribution system ducts and plenums must meet CMC § 601.6.08.2 AND SHADNA-CDS-2008 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 cores of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable U, requirements, or aerosol sealed that meets UL 723. The combination of mastic and tape must be used to seal openings greater than 1/4", 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(a)(2)	<b>Factory-Fabricated Duct Systems.</b> 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 tape unless such tape is used in combination with mastic and draw bands.
§ 150.0(a)(3)	<b>Field-Fabricated Duct Systems.</b> Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive seals, mastic, sealants, and other requirements specified for duct construction.
§ 150.0(a)(4)	<b>Leak-Off Dampers.</b> Fan systems that exchange air between the conditioned space and outdoors must have leak-off or automatic dampers.
§ 150.0(a)(5)	<b>Gravimetric Ventilation Dampers.</b> Gravimetric ventilating systems serving conditioned space must have either automatic or readily accessible, elevated temperature requirements, including mercury vapor lamps, must not be installed in enclosed or recessed luminaires.
§ 150.0(a)(6)	<b>Control of Insulation.</b> Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind.
§ 150.0(a)(7)	<b>Insulation exposure 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 resistant and solar radiation-resistant coating.</b>
§ 150.0(a)(10)	<b>Porous Inner Core Flex Duct.</b> Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer space barrier.
§ 150.0(a)(11)	<b>Duct System Sealing and Leakage Test.</b> 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(a)(12)	<b>Air Filtration.</b> 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 be at least two inch deep or can be one inch deep per Equation 150.0.A. Clean-filter pressure drop and leakage must meet the requirements in § 150.0(a)(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 and to prevent air from bypassing the filter.

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## 2022 Single-Family Residential Mandatory Requirements Summary

§ 150.0(a)(1G)	<b>Screw-based luminaires.</b> Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA6.
§ 150.0(a)(1H)	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JA6 elevated temperature requirements, including mercury vapor lamps, must not be installed in enclosed or recessed luminaires.
§ 150.0(a)(1)	<b>Light Sources in Drawers, Cabinets, and Linen Closets.</b> Light sources installed in drawers, cabinets 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 on when the drawer, cabinet or linen closet is closed.
§ 150.0(a)(2A)	<b>Interior Switches and Controls.</b> All forward phase out dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(a)(2B)	<b>Interior Switches and Controls.</b> Exhaust fans must be controlled separately from lighting systems.
§ 150.0(a)(2C)	<b>Accessible Controls.</b> Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off.
§ 150.0(a)(2D)	<b>Multiple Controls.</b> Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(a)(2).
§ 150.0(a)(2E)	<b>Mandatory Requirements.</b> Lighting controls must comply with the applicable requirements of § 110.9.
§ 150.0(a)(2F)	<b>Energy Management Control Systems.</b> 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(a)(2).
§ 150.0(a)(2G)	<b>Automatic Shutoff Controls.</b> 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 outside doors and cabinets with cabinet fronts or doors must have controls that turn the light off when the drawer or cabinet is closed.
§ 150.0(a)(2H)	<b>Dimmers.</b> 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 out dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A.
§ 150.0(a)(2I)	<b>Independent controls.</b> Integrated lighting of exhaust fans must 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(a)(3A)	<b>Residential Outdoor Lighting.</b> 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 photo-cell 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(a)(4)	<b>Internally Illuminated Address Signs.</b> Internally illuminated address signs must either comply with § 140.3 or consume no more than 5 watts of power.
§ 150.0(a)(5)	<b>Nonstandard Lighting for Eight or More Vehicles.</b> 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.
<b>Solar Readiness</b>	
§ 110.10(a)(1)	<b>Single-Family Readiness.</b> 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(a)(1).
§ 110.10(a)(2)	<b>Minimum Solar Zone Area.</b> 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 Table 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 6 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(a)(3)	<b>Animals.</b> All sections of the solar zone located on steep-sloped roofs must have an animal restraint between 3



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

(Page 1 of 13)

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 (ft²)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U-factor	0.58
18	Total Cond. Floor Area (ft²)	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

Registration Number: 223-P010003966A-000-000-00000000-0000  
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

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

(Page 3 of 13)

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft² -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

Registration Number: 223-P010003966A-000-000-00000000-0000  
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

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

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ENERGY DESIGN RATINGS						
	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> 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 <sup>3</sup> : PASS						
<sup>1</sup> Efficiency EDR includes improvements like a better building envelope and more efficient equipment <sup>2</sup> Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries <sup>3</sup> 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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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Encinitas PRADU - Studio C

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ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft² -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft² -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft² -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft² -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

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R19-04-30011  
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TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

No.	Revision/Issue	Date

Firm Name and Address  
  
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Project Name and Address  
ENCINITAS PRADU - STUDIO C ADU  
STUDIO A STREET  
ENCINITAS, CALIFORNIA 92024

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



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ENERGY USE INTENSITY				
	Standard Design (kBtu/ft <sup>2</sup> - yr )	Proposed Design (kBtu/ft <sup>2</sup> - yr )	Compliance Margin (kBtu/ft <sup>2</sup> - yr )	Margin Percentage
North Facing				
Gross EUI <sup>1</sup>	53.24	50.31	2.93	5.5
Net EUI <sup>2</sup>	15.16	12.23	2.93	19.33
East Facing				
Gross EUI <sup>1</sup>	53.24	49.78	3.46	6.5
Net EUI <sup>2</sup>	15.16	11.7	3.46	22.82
South Facing				
Gross EUI <sup>1</sup>	53.24	50.41	2.83	5.32
Net EUI <sup>2</sup>	15.16	12.33	2.83	18.67
West Facing				
Gross EUI <sup>1</sup>	53.24	50.83	2.41	4.53
Net EUI <sup>2</sup>	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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ZONE INFORMATION							
01	02	03	04	05	06	07	
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft <sup>2</sup> )	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 <sup>2</sup> )	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
Name	Zone	Construction	Azimuth	Orientation	Area (ft <sup>2</sup> )	Skylight Area (ft <sup>2</sup> )	Roof Rise (x in 12)
Roof	ADU Studio C	_ROOF: SLPD. CLG.	0	Front	224	0	6
FENESTRATION / GLAZING							
01	02	03	04	05	06	07	08
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.
w4	Window	Front Wall	Front	0			1
w1	Window	Front Wall	Front	0			1
d1	Window	Front Wall	Front	0			1

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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.											
<ul style="list-style-type: none"> <li>Whole house fan</li> <li>Exposed slab floor in conditioned zone</li> <li>Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)</li> <li>Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed</li> </ul>											
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.											
<ul style="list-style-type: none"> <li>Indoor air quality ventilation</li> <li>Kitchen range hood</li> <li>Whole house fan airflow and fan efficacy</li> <li>Verified SEER/SEER2</li> <li>Verified Refrigerant Charge</li> <li>Airflow in habitable rooms (SC3.1.4.1.7)</li> <li>Verified HSPF</li> <li>Verified heat pump rated heating capacity</li> <li>Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)</li> <li>Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)</li> </ul>											
BUILDING - FEATURES INFORMATION							06	07			
01	02	03	04	05	06	07	Number of Ventilation Cooling Systems	Number of Water Heating Systems			
Project Name	Conditioned Floor Area (ft <sup>2</sup> )	Number of Dwelling Units	Number of Bedrooms	Number of Zones							
Encinitas PRADU - Studio C	224	1	1	1			1	1			

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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 <sup>2</sup> )	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								05	06	07	08		
01	02	03	04	05	06	07	08	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated		
Name	Zone	Area (ft <sup>2</sup> )	Perimeter (ft)										
Slab On Grade	ADU Studio C	224	60					none	0	0%	No		
OPAQUE SURFACE CONSTRUCTIONS												07	08
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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TITLE 24, PART 6 ENERGY COMPLIANCE DOCUMENTATION

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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-02
Date 01/11/2023	
Scale	



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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

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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 R/3.3 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
SFan 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/t2)	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

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WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type
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
Name	System Type	Number of Units	Heating Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Cooling 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/SEER2	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

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

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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 mechanical 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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Project Name and Address

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STUDIO A STREE  
ENCINITAS, CALIFORNIA 92024

Project

23Q1019-SC.1-03

Date

01/11/2023

Scale

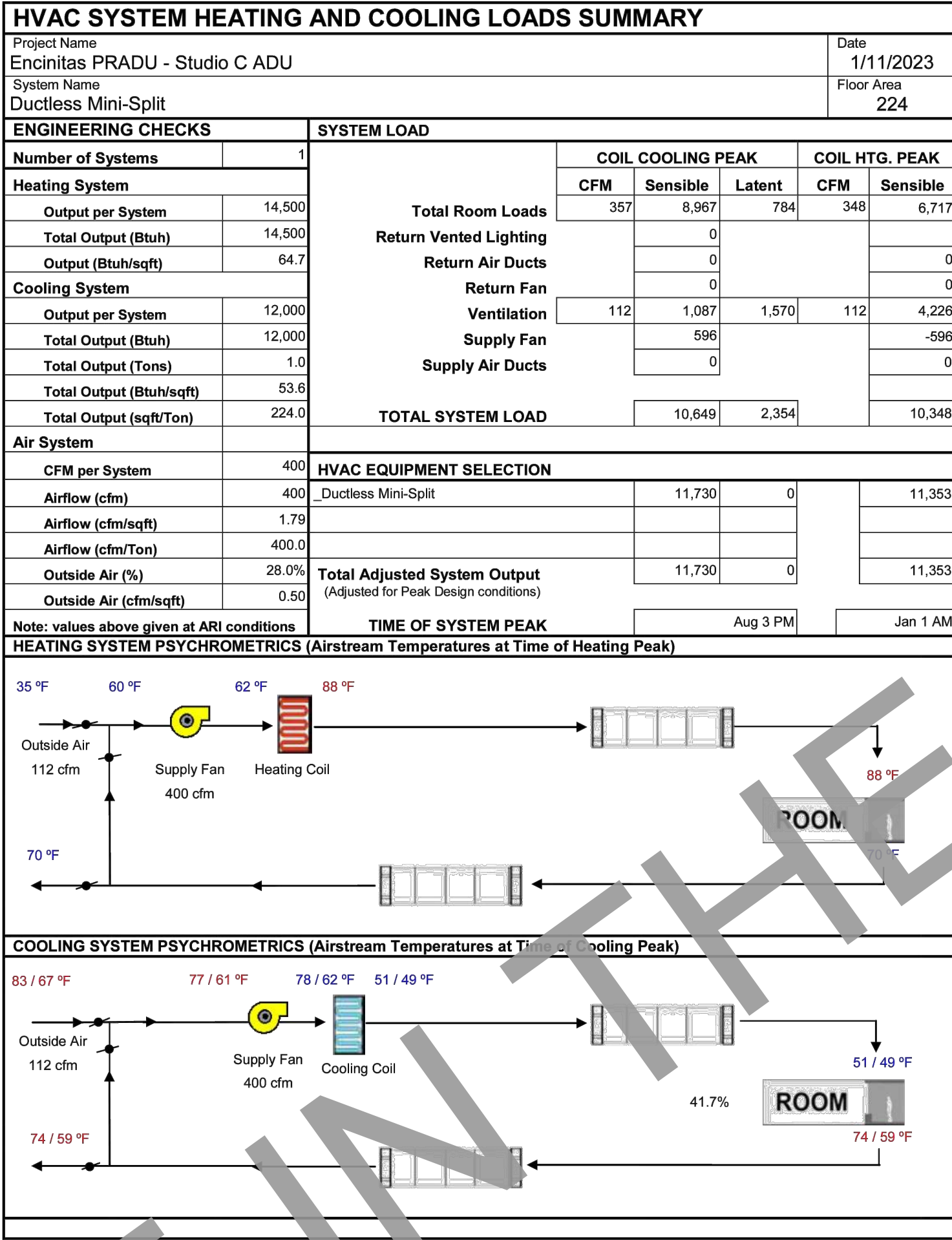
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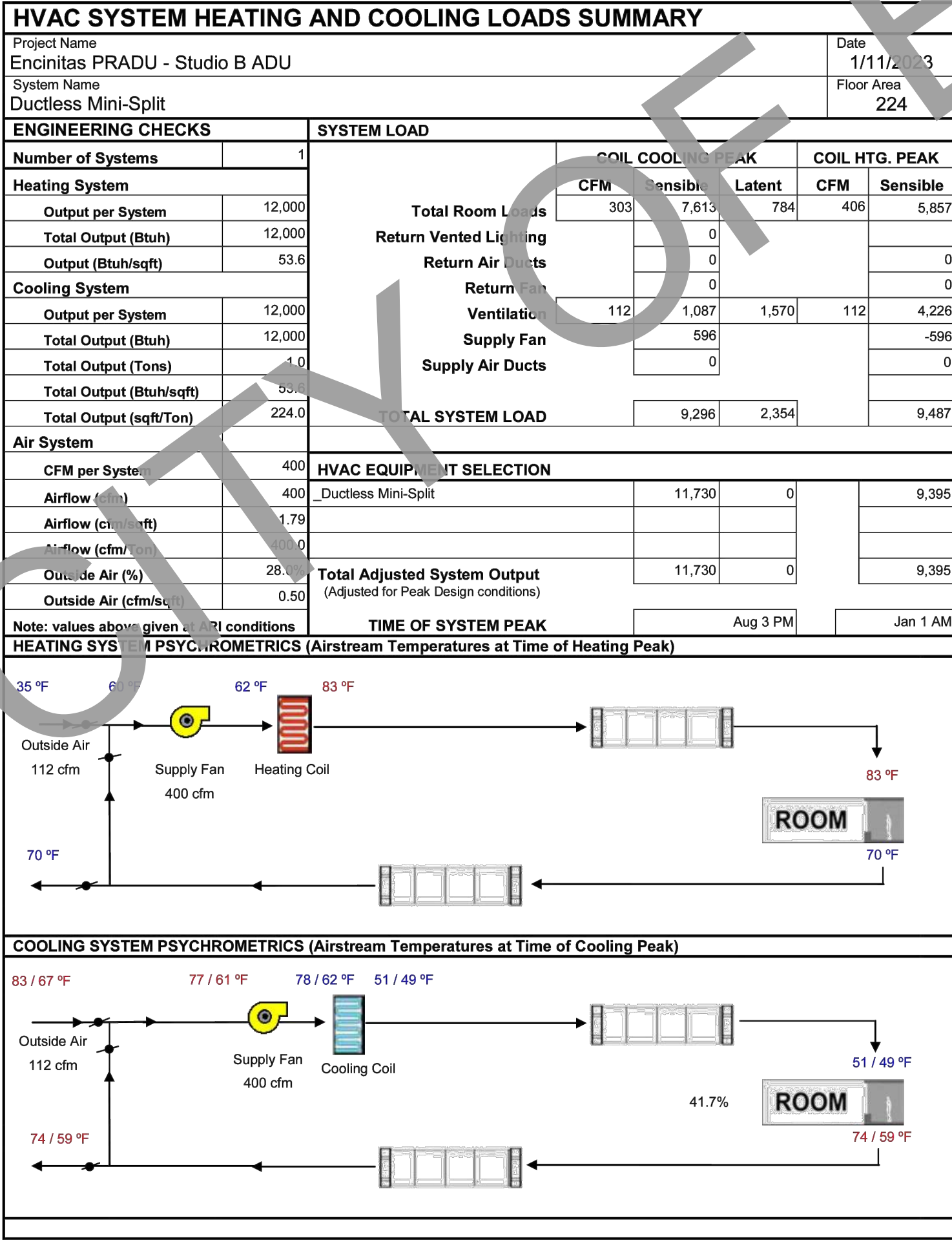




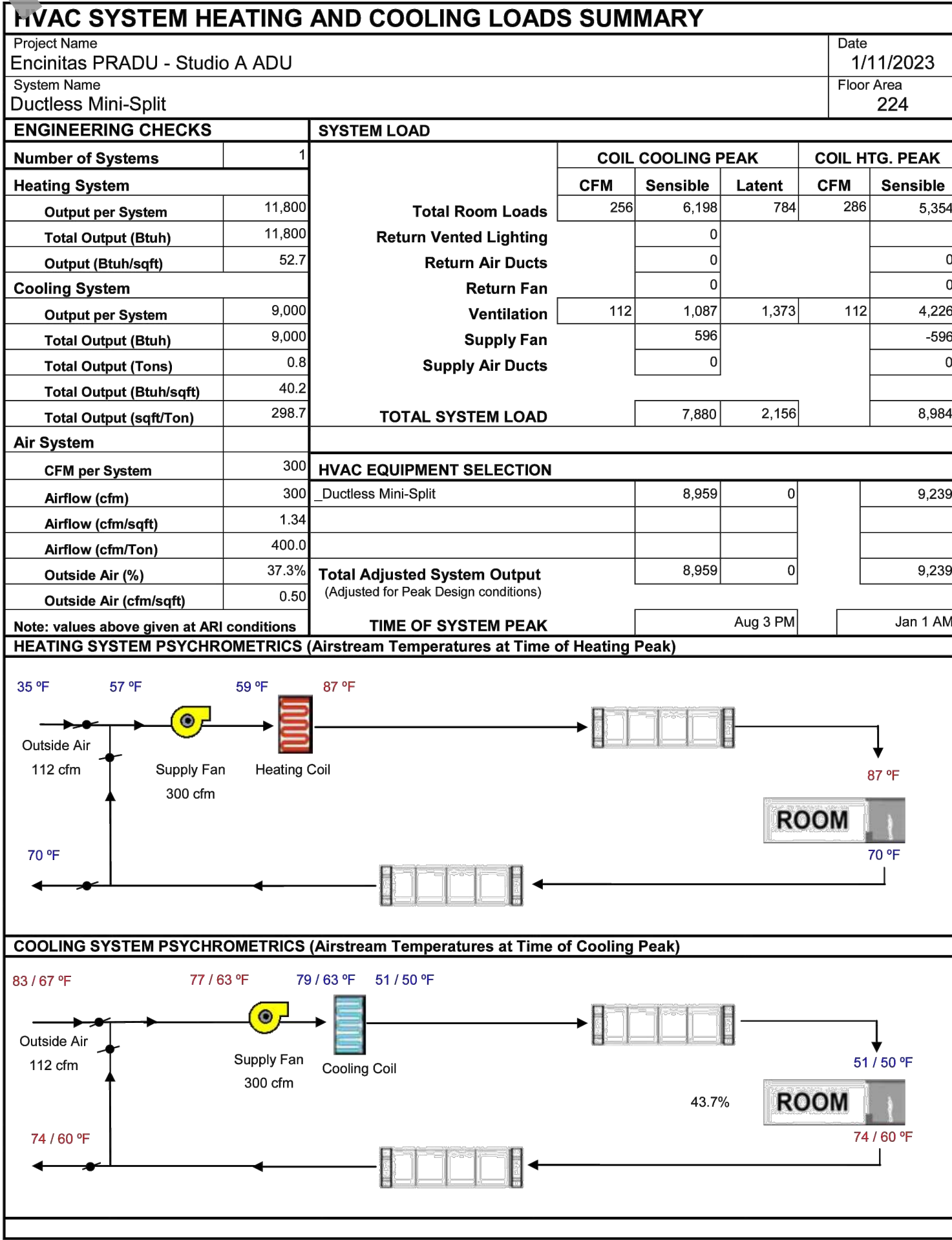




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STUDIO PRADU

CITY: ENCINITAS

JOB: 202241R

HVAC SYSTEM SUMMARIES

T-05