

A SEWER PERMIT FROM CMSD IS REQUIRED FOR THIS PROJECT. PLEASE EMAIL ROBERT MORRIS AT RMORRIS@CMSDCA.GOV FOR REQUIREMENTS.

This Project will require a permit from Mesa Water District. Provide the Applicant with the requirements and have them contact johnr@mesawater.org to start Plan Check. Thank you.

FORHAM ADU

2450 FORDHAM DR. COSTA MESA, CA 92626

Please fill out and upload (or email to justin.arios@costamesaca.gov) responses to the Costa Mesa ADU Affordability Questionnaire (see attachments in TESSA)

PLEASE VIEW LINK BELOW TO VIEW MESA WATER SUBMITTAL REQUIREMENTS
<https://www.costamesaca.gov/home/showpublisheddocument/45337/63739302832880000>

Please update plans to reflect proposed ADU (Unit B). Please also pay invoice for change of address for proposed ADU.

ABBREVIATIONS				PROJECT DATA		PROJECT TEAM		DRAWING INDEX	
A/C	AIR CONDITIONING	IMP	INSULATED METAL PANEL	BUILDING INFORMATION		OWNERS: EFRAIN & ROSALVA RESENDIZ, ROSALVARESENDIZ9@YAHOO.COM		ARCHITECTURE	
AC	AIR CURTAIN	LAV	LAVATORY LOUVER	APN:	141-432-01	DESIGNER: RESI GROUP INC. MARIO HERNANDEZ MARIO@RESI-CO.COM 626.399.2389	REV. A1.0	DRAWING TITLE COVER SHEET	
AT	ACOUSTICAL CEILING TILE	L		TRACT:	2750	STRUCTURAL ENGINEER: MANUEL A. ESPINO, P.E. AMCE ENGINEERS & DEVELOPERS CMENDEZ@AMCEENG.COM 919.717.7255	REV. A2.0	SITE PLAN	
AFF	ABOVE FINISHED FLOOR			LOT:	24	TITLE 24: BUILD4T24 MINA MEHR BUILD4T24@GMAIL.COM 323.592.9285	REV. A3.0	PROPOSED ROOF, REFLECTED CEILING & FLOOR PLAN	
ALUM	ALUMINUM	MAX	MECHANICAL	LOT SIZE:	7,700 S.F.		REV. A4.0	PROPOSED EXTERIOR ELEVATIONS	
ARCH	ARCHITECTURAL	MECH	METAL	EXISTING MAIN DWELLING	1291 S.F.		REV. A4.1	PROPOSED SECTIONS & ISOMETRIC VIEWS	
B	BOLLARD	MTL	MFR	YEAR:	1956		REV. A5.0	TANKLESS WATER HEATER SPECIFICATIONS	
BGP	BOLLARD GOAL POST	MTL	MFR	TYPE OF CONSTRUCTION:	WOOD		REV. A5.1	MINI SPLIT SPECIFICATIONS	
BLDG	BUILDING	MH	MOP HOLDER	FIRE SPRINKLERS:	NO		REV. A6.0	ELECTRICAL DIAGRAM	
BLK'G	BLOCKING	MIN	MINIMUM	ZONING:	R-1		REV. A6.2	PLUMBING DIAGRAM	
BTW	BETWEEN	MWO	MICROWAVE OVEN	NUMBER OF STORIES:	1		REV. G1.0	GENERAL NOTES	
CAB	CABINET	N/A	NOT APPLICABLE	BEDROOMS / BATHS:	3 / 2		REV. G1.1	GREEN BUILDING NOTES	
CA	COMPRESSED AIR	(N)	NEW	PARKING TYPE:	ATTACHED GARAGE		REV. G1.2	GREEN BUILDING NOTES	
CLG	CEILING	NIC	NOT IN CONTRACT	PARKING SPACES:	2		REV. S101	GENERAL NOTES	
CLO.	CLOSET	NTS	NOT TO SCALE	REFRIGERATOR/			REV. S102	GENERAL NOTES & TYPICAL DETAILS	
CLR	CLEAR			REFRIGERATION			REV. S102.1	GENERAL NOTES & TYPICAL DETAILS	
CMU	CONCRETE MASONRY UNIT	OC	ON CENTER	ROOF MATERIAL:	TILE		REV. S102.2	TYPICAL DETAILS	
CO	CLEAN OUT (PLUMBING)	/	OVER	HEATING & A/C:	CENTRAL		REV. S103	FOUNDATION PLAN, SECTION & DETAILS	
CONC	CONCRETE			WATER & SEWER:	YES		REV. S104	STRUCTURAL DETAIL	
CONST.	CONSTRUCTION	P.LAM	PLASTIC LAMINATE	COUNTY:	ORANGE		REV. S105	FRAMING PLANS & SECTION	
CONT.	CONTINUOUS	PLYWD	PLYWOOD	AREA CALCULATION:			REV. S106	STRUCTURAL DETAILS & SECTION	
CONTR.	CONTRACTOR	PT	PAPER TOWEL DISPENSER	(E) MAIN DWELLING	1291 S.F.		REV. T24.1	ENERGY FORMS	
CORR.	CORRIDOR	PTW	PRESSURE TREATED WOOD	(N) PROPOSED DETATCH ADU	500 S.F.		REV. T24.2	ENERGY FORMS	
CPT	CARPET	R.		TOTAL:	1,791 S.F.				
CT	CERAMIC TILE			LOT COVERAGE:	24%				
D	DRYER	REQ'D	REQUIRED	SPECIFICATION SUMMARY FOR ADU					
DF	DRINKING FOUNTAIN	RD	ROOF DRAIN	WATER HEATER: NEW 40 GAL HEAT PUMP WATER HEATER H (HPWH) (RHEEM XE40T10H45U0) -- 15k BTU / HR -- UNIFORM ENERGY FACTOR (UEF) 3.1					
DS	DOWNSPOUT	RDO	ROOF DRAIN OVERFLOW	HVAC: NEW MINI SPLIT -- HEATING, 7.5 HSPF2 -- COOLING, 14.3 SEER2, 11.7 EER2 -- DUCTLESS					
DSN	DOWNSPOUT NOZZLE	RE:	REFER TO	QUALITY INSULATION INSTALLATION (QII): YES					
DV	DRYER VENT	RO	ROUGH OPENING	WALLS: R-21 in 2x6					
DW	DISHWASHER	S/A	SUPPLY AIR	WINDOWS & GLASS DOORS: U-Factor 0.30 -- SHGC 0.23					
(E)	EXISTING	SC	SOLID CORE	ROOF: ATTIC, R-38 (CEILING JOISTS) W/ R-19 BELOW ROOF DECK (RAFTERS)					
EP	ELECTRICAL PANEL	SD	SOAP DISPENSER	PV: NONE REQUIRED; MINIMUM CALCULATED TO BE LESS THAN 1.8 KWDC					
EQ	DRAWINGS	SIM	SIMILAR	HERS FEATURE SUMMARY					
EQUIP	EQUAL EQUIPMENT	SLD	SLOT DRAIN	THE FOLLOWING IS A SUMMARY OF THE FEATURES THAT MUST BE FIELD VERIFIED BY A CERTIFIED HER'S RATER AS A CONDITION FOR MEETING THE MODELED ENERGY PERFORMANCE FOR THIS COMPUTER ANALYSIS. ADDITIONAL DETAIL IS PROVIDED IN PAGE T1.0. REGISTERED CF2Rs AND CF3Rs ARE REQUIRED TO BE COMPLETED IN THE HER'S REGISTRY.					
EW	EMERGENCY EYE-WASH W/ SHOWER	SOD	SCUPPER OVERFLOW DRAIN	• QUALITY INSULATION INSTALLATION (QII)					
		SRD	SCUPPER ROOF DRAIN	• INDOOR AIR QUALITY VENTILATION					
		SS	STAINLESS STEEL	• KITCHEN RANGE HOOD					
		SSB	STAINLESS STEEL BOLLARD	• VERIFIED HEAT PUMP RELATED HEATING CAPACITY					
		SUSP	SUSPENDED STEEL						
FCO	FLOOR CLEAN-OUT	STL							
FD	FLOOR DRAIN								
FE	FIRE EXTINGUISHER								
FEC	FIRE EXTINGUISHER CABINET	T	THERMOSTAT						
FFE	FINISH FLOOR ELEVATION	TD	TRENCH DRAIN						
FFE	FOOT FOAM SPRAYER	TEL	TELEPHONE						
FIN	FINISHED	TP	TOILET PAPER DISPENSER						
FO	FINISHED OPENING	TYP	TYPICAL						
FOC	FACE OF CONCRETE	T.O.	TOP OF...						
FOF	FACE OF FINISH	T.O.D	TOP OF DRAIN						
FOM	FACE OF MASONRY	UC	UNCASED EVAPORATOR COIL						
FOS	FACE OF STUD	UNO	UNLESS NOTED OTHERWISE						
FURR	FURRED, FURRING								
GA	GAUGE	VCT	VINYL COMPOSITION TILE						
GB	GRAB BAR	VIF	VERIFY IN FIELD						
GWB	GYPSUM WALL BOARD	W	WASHER						
GYP.BD.	GYPSUM BOARD	W/	WITH						
GALV.	GALVANIZED	W/O	WITHOUT						
HB	HOSE BIB	WD	WOOD						
HC	HANDICAPPED	WH	WATER HEATER						
HD	HUB DRAIN	WS	WATER STATION						
HDR	HAND DRYER								
HDWR	HARDWARE								
HM	HOLLOW METAL								
HPW	HOT WATER								
HS	HOSE STATION								
HVAC	HEATING, VENTILATING, & AIR CONDITIONING								
HWS	HAND WASH STATION								
HY	WATER HYDRANT								

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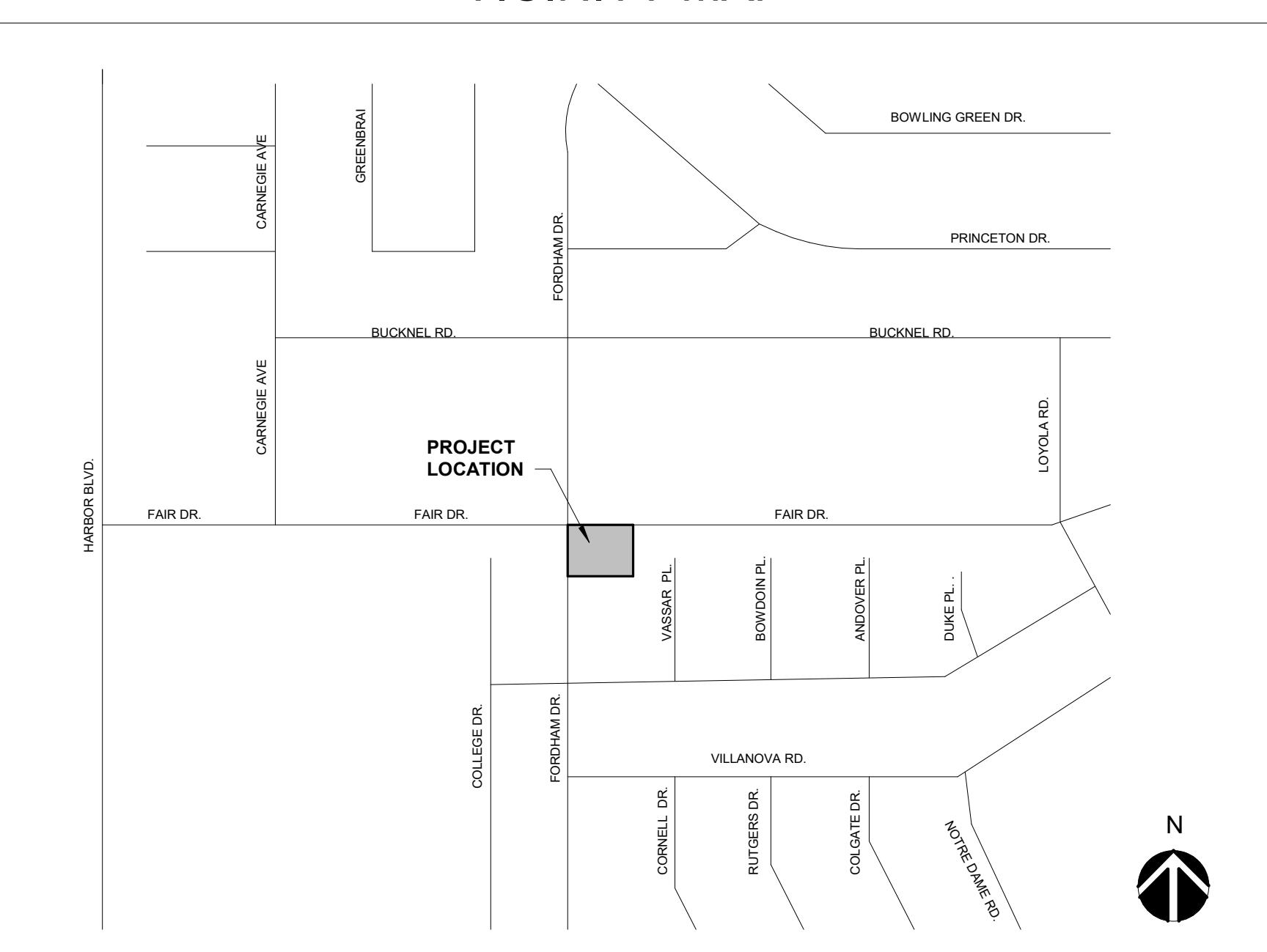
PROJECT:
FORHAM ADU

2450 FORDHAM DR.
COSTA MESA, CA 92626

DATE: 07/28/25
PROJECT NO: 25005
DRAWN BY: MH

REVISION DATE

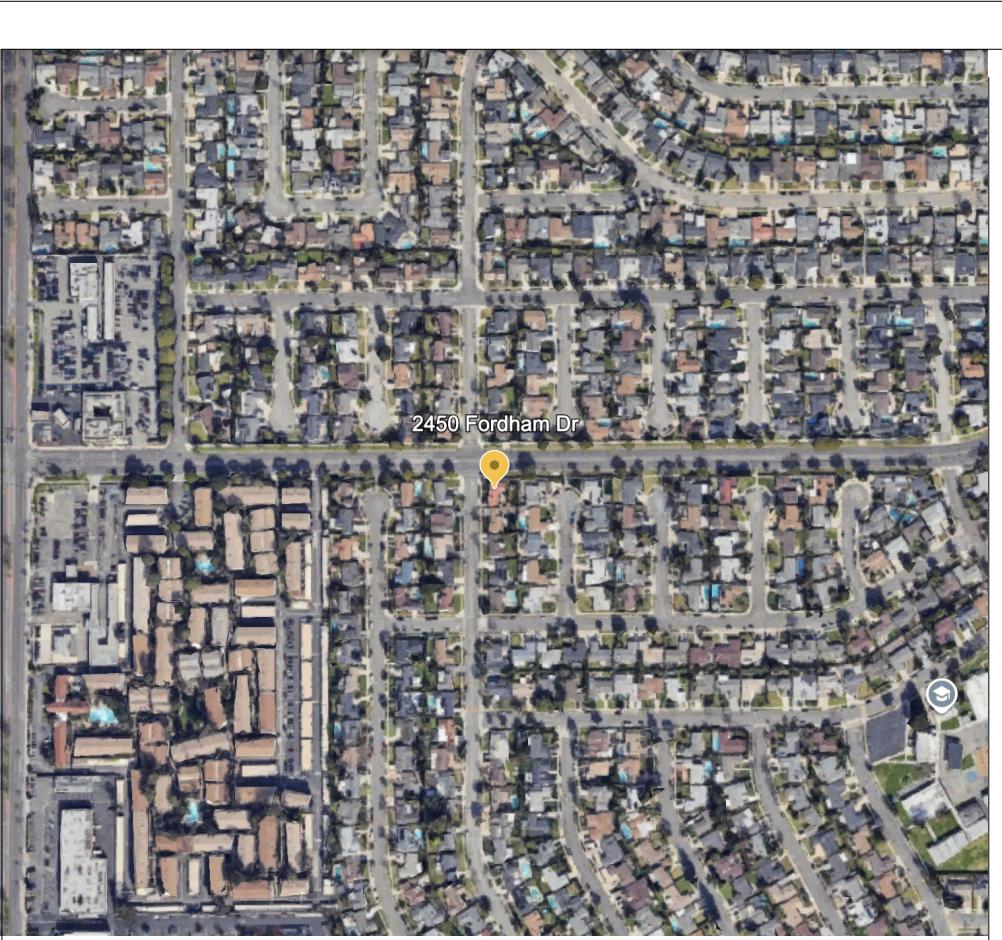
NOTES:



A1.0

DRAWN BY: MH

SCALE: 1" = 1'-0"



VICINITY MAP

SEWER NOTE:
Verify the presence of an (E) 4 inch diameter sewer lateral and replace if the size is not adequate. The 4 inch diameter sewer lateral is the minimum required size for residential buildings with more than three water closets.

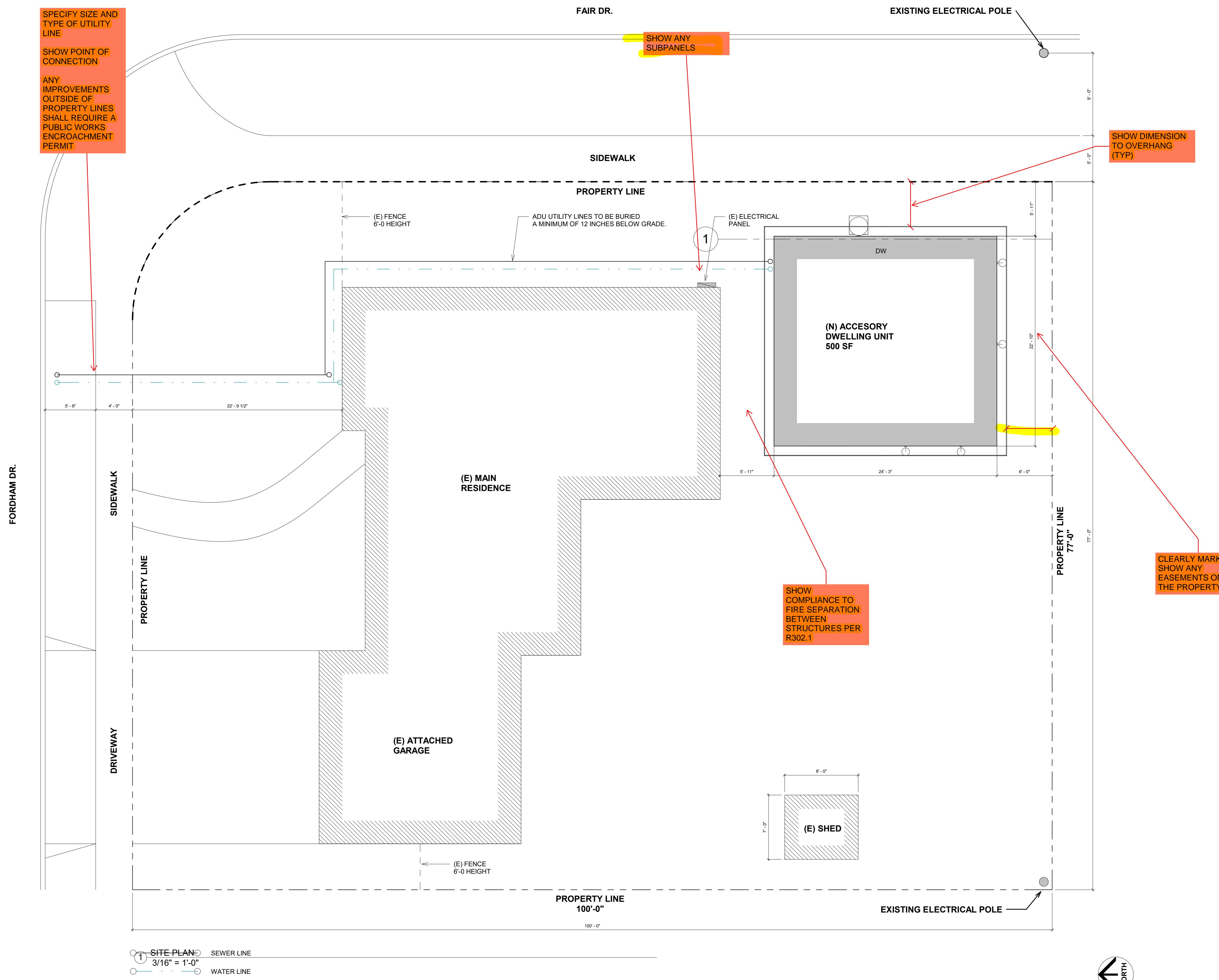
Please update the plans to the existing and proposed mailbox location for the project.

- 1- SHOW ALL PROPERTY LINE DIMENSIONS
- 2- SHOW ALL EASEMENTS ON PROPERTY. NO STRUCTURE / EAVE SHALL ENCROACH INTO THE EASEMENTS
- 3- SHOW ALL PUBLIC RIGHT OF WAY DIMENSIONS
-CURB FACE TO PROPERTY LINE
-STREET CENTERLINE TO PROPERTY LINE
- 4- SHOW EXISITING CITY TREE , WATER METER LOCATION, MAILBOX , FIRE HYDRANT, STORM DRAINS, CURB RAMPS, STOP SIGNS AND LIGHT POLE
- 5- PROVIDE WATER, SEWER AGENCY APPROVALS. IF EITHER AGENCY REQUIRES UPGRADES BEYOND THE PROPERTY LINE AN ENCROACHMENT PERMIT WILL NEED TO BE OBTAINED PRIOR BUILDING PERMIT ISSUANCE
- 6- ADD PUBLIC WORKS GENERAL NOTES
- 7- REMOVE BRICK WITHIN THE PUBLIC RIGHT OF WAY AND COMPLY WITH STREETSCAPE AND MEDIAN DEVELOPMENT STD 3.0

PUBLIC WORKS GENERAL NOTES

1. PUBLIC WORKS INSPECTION IS REQUIRED PRIOR TO ISSUANCE OF BUILDING FINAL. AT THE TIME OF INSPECTION, IF ANY OF EXISTING PUBLIC IMPROVEMENTS SURROUNDING THE SITE IS DAMAGED; NEW CURB& GUTTER AND STREET PAVEMENT WILL BE REQUIRED.

2. AN APPROVED ENCROACHMENT PERMIT IS REQUIRED FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY FROM PUBLIC WORKS.





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PROJECT: **FORDHAM ADU**

**2450 FORDHAM DR.
COSTA MESA, CA 92626**

DATE:	12/30/24
PROJECT NO.:	25005
RAWN BY:	Author
VISION	DATE

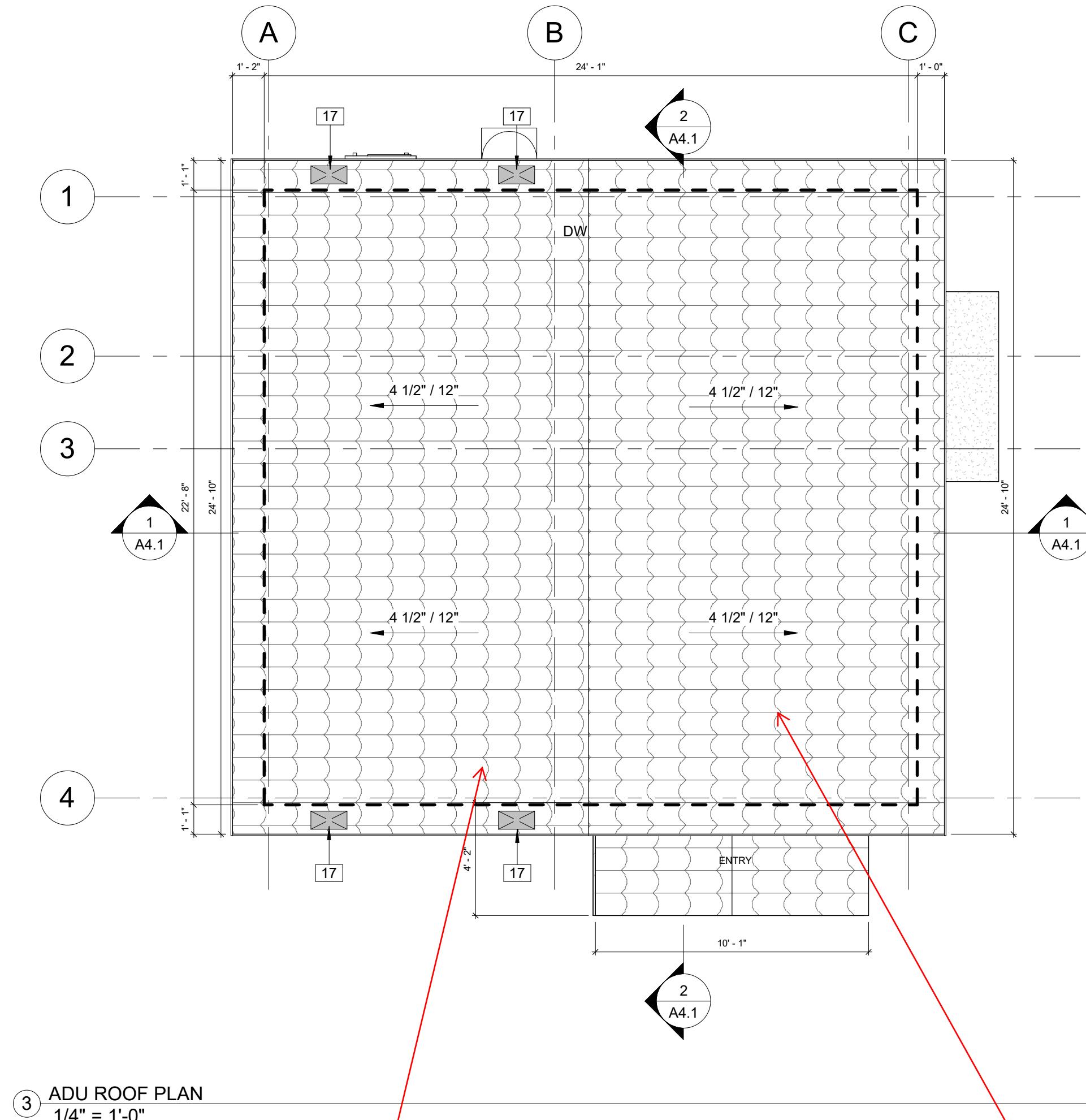
NOTES:

SITE PLAN

SCALE: 3/16" = 1'-0"

A2.0

DRAWN BY: Author



(3) ADU ROOF PLAN
1/4" = 1'-0"

ATTIC VENTILATION CALCULATION
205 SF / 150 = 1.36 SQUARE FEET NEEDED
1.36 x 144 = 195.84 SQUARE INCHES NEEDED
EAVE VENT AREA: 4 OF 16"x8" EAVE VENTS. TOTAL 200 SQUARE INCHES

SPECIFY ROOFING MATERIAL.
PROVIDE ICC OR SIM APPROVAL REPORT NUMBER.
SPECIFY MAX PSF FOR TILE ROOFING
COOL ROOF REQUIRED PER CF1R

WALL TYPE

NEW WALL 8" WALL
INSIDE FINISH: GYPSUM BOARD
CAVITY / FRAME: R-21 / X6 STUDS AT 16 O.C.
EXTERIOR FINISH: 3 COAT STUCCO

WINDOW & DOOR NOTES

- FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING.
- DOOR SWING DIRECTION PER PLAN.
- DIMENSIONS DO NOT INCLUDE DOOR FRAME, U.N.O.
- PROVIDE SUITABLE ISOLATOR BETWEEN DIS-SIMILAR METALS (I.E. ALUMINUM & STEEL).
- REFER TO SPECIFICATIONS FOR HARDWARE SETS, DOOR AND WINDOW MANUF., AND PRODUCT INFO.
- ALL GLAZING IN DOORS (IF APPLICABLE) SHALL BE TEMPERED.
- ALL WINDOWS (U.N.O.) SHALL BE GLAZED PER TITLE 24 REQUIREMENTS.
- ALL MANUFACTURED WINDOWS SHALL HAVE A LABEL ATTACHED CERTIFIED BY THE NATIONAL FENESTRATION RATING COUNCIL (NFRC) AND SHOWING COMPLIANCE WITH THE TITLE 24 ENERGY REPORT.
- TEMPERED GLASS AT THE FOLLOWING LOCATIONS REQUIRING SAFETY GLAZING:
 - GLAZING IN SWINGING, SLIDING, AND BI-FOLD DOORS (CRC R308.4.1).
 - GLAZING WITHIN 60 INCHES - VERTICALLY AND HORIZONTALLY - OF SHOWERS, BATHTUBS, HOT TUBS, SWIMMING POOLS, AND SAUNAS (CRC R308.4.5).
- PER CBC SECTION 92.1.708A.2, EXTERIOR WINDOWS, EXTERIOR GLAZED SHALL COMPLY WITH THE FOLLOWING:
 - MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING, AND WHERE ANY GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN INTERLOCK AREA, AND BE CERTIFIED TO AAMA/WDMA/CSA 101/1.S.2/A440.
- PER CBC SECTION 92.1.708A.3, EXTERIOR DOORS SHALL BE CONSTRUCTED WITH A NONCOMBUSTIBLE CLADDING MATERIAL OR BE CONSTRUCTED WITH A SOLID CORE, STILES/RAILS NO LESS THAN 1-3/8" THICK, AND PANELS NO LESS THAN 1-1/4" THICK, EXCEPT FOR THE EXTERIOR PERIMETER OF THE PANEL THAT SHALL BE ERMITTED TO TAPER TO THE TONGUE NO LESS THAN 3/8" THICK.
- PER CBC SECTION 92.1.708A.2, GLAZED DOORS TO BE CONSTRUCTED WITH MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE CONFORMING TO SECTION 2406.

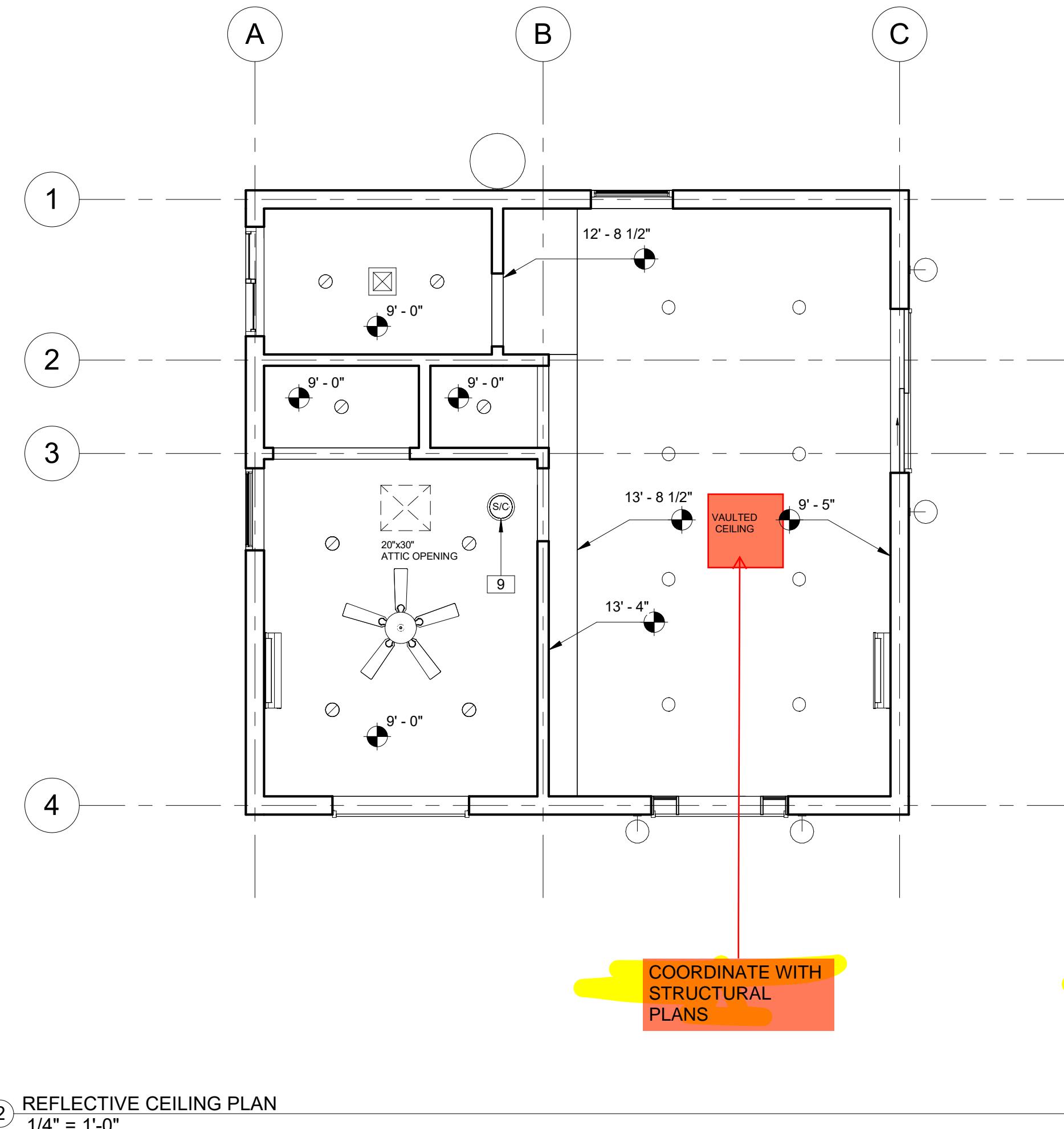
RESIDENTIAL GREEN BUILDING COMMENTS:

- SHOWERHEADS: 1.8 GPM @ 80 PSI
- LAVATORY FAUCETS: RESIDENTIAL 1.2 GPM @ 60 PSI
- KITCHEN FAUCETS: 1.8 GPM @ 60 PSI
- GRAVITY TANK-TYPE WATER CLOSETS: 1.28 GALLONS PER FLUSH.
A. INCLUDES SINGLE DUAL FLUSH WATER CLOSETS WITH AN EFFECTIVE FLUSH OF 1.28 GALLONS OR LESS. SINGLE FLUSH TOILETS - THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS. THE EFFECTIVE FLUSH VOLUME IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH. FLUSH VOLUMES WILL BE TESTED IN ACCORDANCE WITH ASME A112.19.2 AND ASME A112.19.14.
B. LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM @ 20 PSI.

NOTE:
ALL SHOWERS & TUB/SHOWER WALLS SHALL BE CONSTRUCTED OF SMOOTH, HARD, NONABSORBENT SURFACES (E.G., CERAMIC TILE OR FIBERGLASS) OVER A MOISTURE RESISTANT UNDERLAYMENT (E.G., CEMENT, FIBER CEMENT, OR GLASS MAT GYPSUM BACKER) TO A HEIGHT OF 72 INCHES ABOVE THE DRAIN INLET. [CRC R307.2 AND R702.3.7]

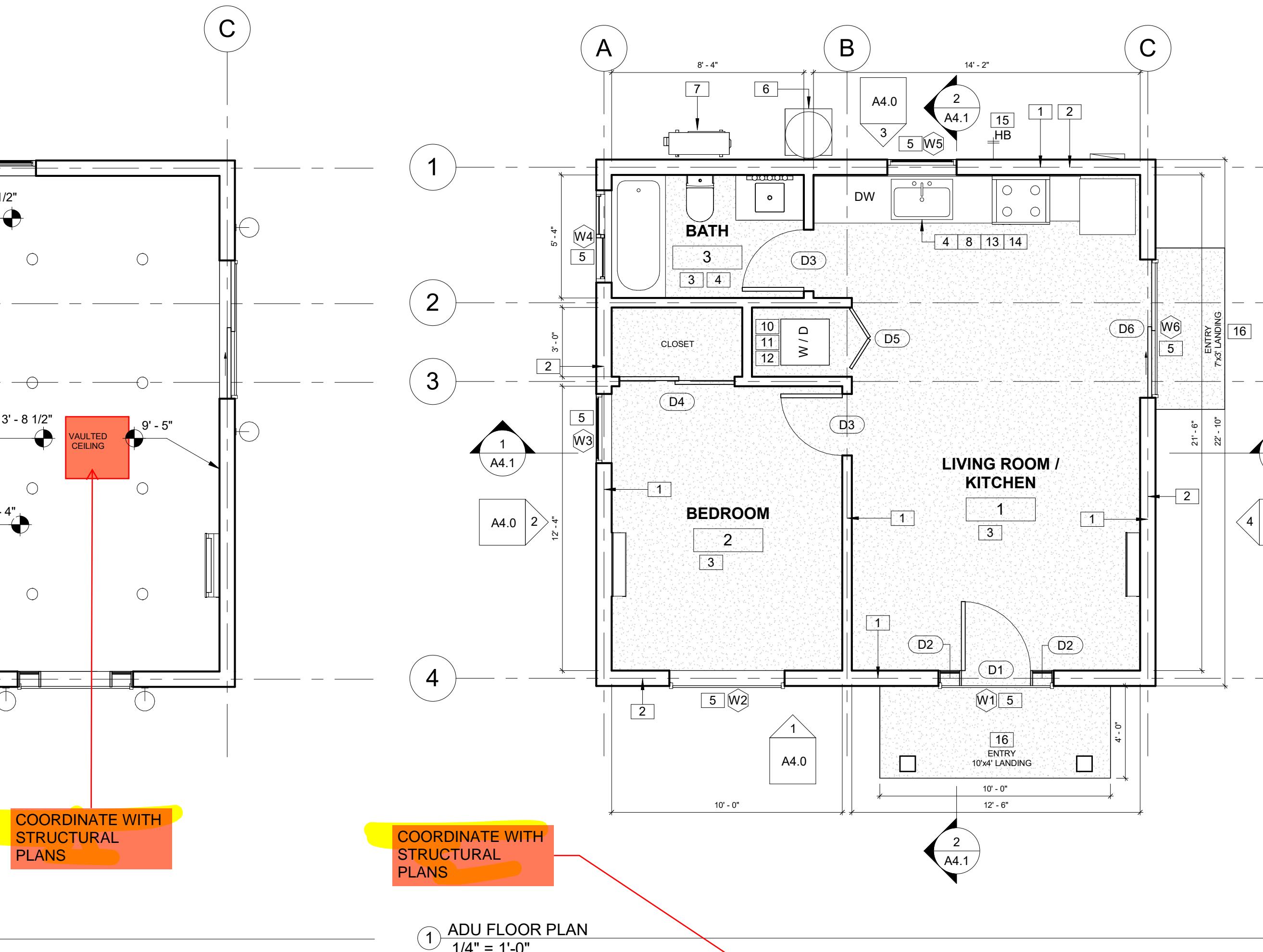
ADU AGING-IN DESIGN NOTES:

- R327.1.1: REINFORCEMENT FOR GRAB BARS- AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH SECTION R327.
- R327.1.2: ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS- ALL CONTROLS INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48" MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15" MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR.
- R327.1.3 INTERIOR DOORS, EFFECTIVE JULY 1, 2024, AT LEAST ONE BATHROOM AND ONE BEDROOM ON THE ENTRY LEVEL SHALL PROVIDE A DOORWAY WITH A NET CLEAR OPENING OF NOT LESS THAN 32 INCHES (812.8 MM), MEASURED WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM THE CLOSED POSITION.
- R327.1.4: DOORBELL BUTTONS OR CONTROLS, SHALL NOT EXCEED 48" ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY.



(2) REFLECTIVE CEILING PLAN
1/4" = 1'-0"

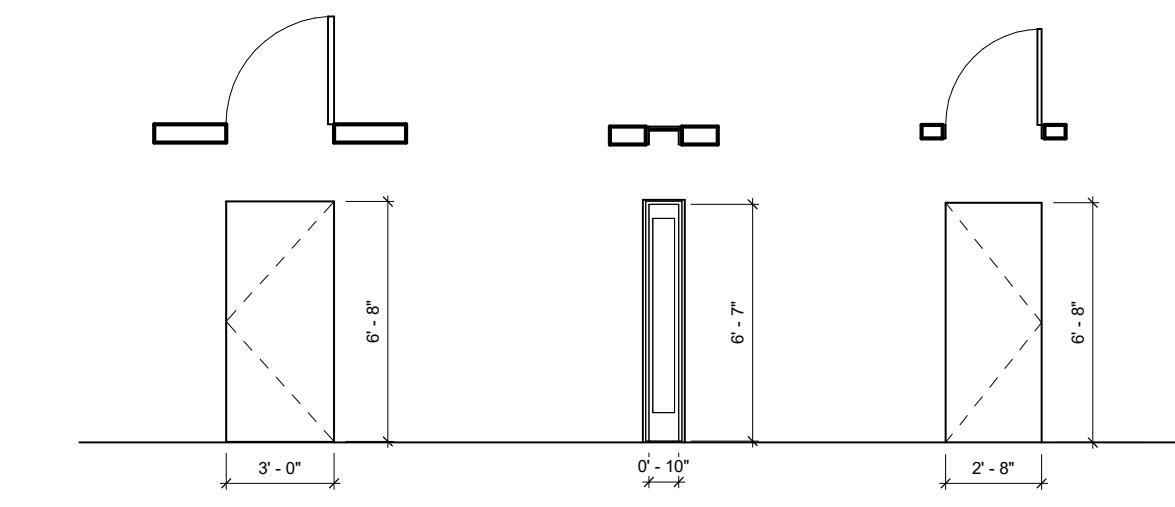
SHOW HOW
VAULTED AREA IS
VENTILATED
(CROSS
VENTILATION WITH
MIN 1" AIR GAP)
OR SPECIFY AND
SHOW
COMPLIANCE TO
UNVENTED
ASSEMBLY



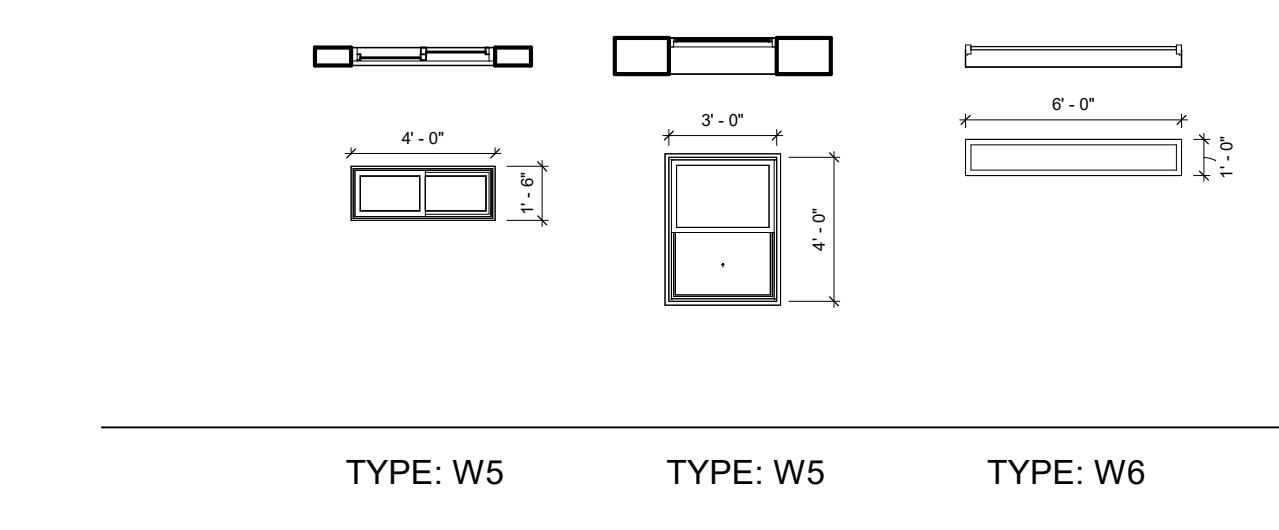
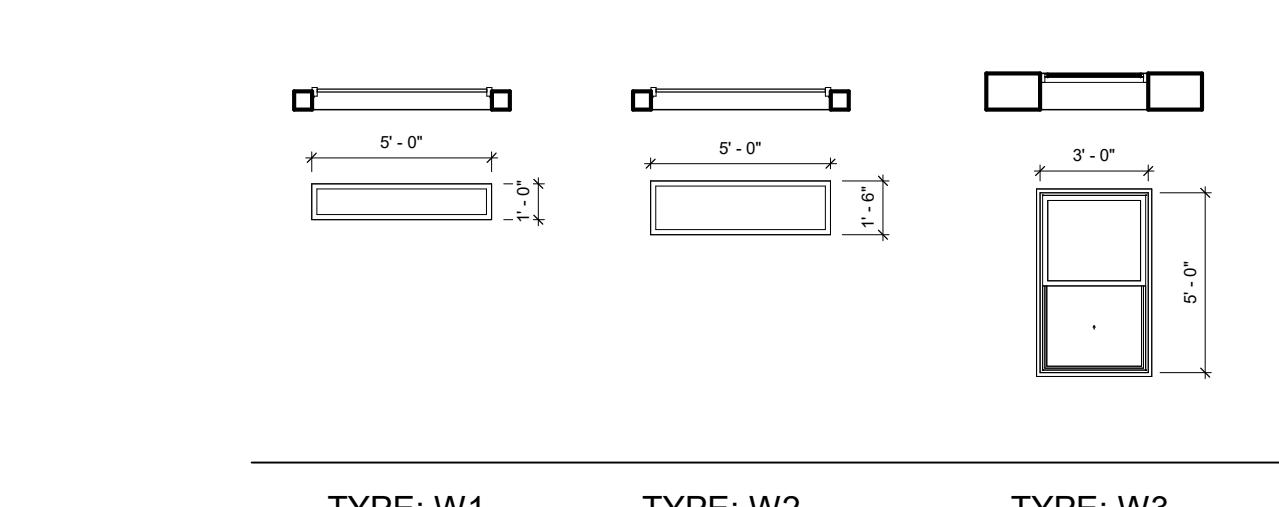
(1) ADU FLOOR PLAN
1/4" = 1'-0"

KEYNOTE LEGEND	
KEYNOTE VALUE	KEYNOTE TEXT
1	NEW 5/8" GYPSUM BOARD AT INTERIOR WALLS, CAVITY / FRAME: R-21 INSULATION / X6 EXTERIOR FINISH: 3 COAT STUCCO
2	NEW EXTERIOR STUCCO EXTERIOR WALL TEXTURE AND COLOR TO MATCH EXISTING MAIN HOUSE, SELECTED BY OWNER
3	NEW FLOORING TO BE SELECTED BY OWNER
4	NEW PLUMBING FIXTURES TO BE SELECTED BY OWNER
5	NEW DOOR AND WINDOW SIZES TO BE SELECTED BY OWNER
6	NEW ELECTRIC WATER HEATER, REFER TO SHEET A5.0 FOR SPECIFICATIONS
7	NEW DUCTLESS MINISPLIT UNIT & CONDENSER REFER TO SHEET A1.1 FOR SPECIFICATIONS
8	NEW UPPER AND LOWER CABINETS TO BE SELECTED BY OWNER
9	NEW SMOKE & CARBON DETECTOR AT BEDROOM
10	DRYER EXHAUST DUCT SHALL BE OF RIGID METAL, WITH A DIAMETER NOT LESS THAN 4 INCHES. THE THICKNESS NOT LESS THAN 0.016 OF AN INCH, AND NOT TO EXCEED A COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14 FEET INCLUDING TWO 90-DEGREE ELBOW, UNLESS MANUFACTURER'S INSTALLATION INSTRUCTIONS DIRECT OTHERWISE. CMC 504.2.2.1
11	NEW DRYER
12	NEW WASHER
13	NEW ELECTRIC RANGE
14	NEW KITCHEN MECHANICAL RANGE HOOD CAPABLE OF 100 CFM (HERS VERIFIED), VERTICAL CLEARANCE ABOVE THE COOKING TOP SHALL NOT BE LESS THAN 30 INCHES
15	NEW ADU HOSE BID
16	NEW DOOR LANDINGS FOR ALL EXTERIOR DOORS TO COMPLY WITH SECTION 311.3 CRC
17	PROVIDED NEW 8X16" SOFFIT VENT 18 CORROSION RESISTANT ALUMINUM, TO BE SELECTED BY OWNER

DOOR SCHEDULE					
MARK	WIDTH	HEIGHT	COUNT	U-FACTOR-DOOR	SHGC-DOOR
D1	3' - 0"	6' - 8"	1		
D2	0' - 10"	6' - 7"	2	0.3	0.23
D3	2' - 8"	6' - 8"	2		
D4	5' - 0"	6' - 8"	1		
D5	3' - 0"	6' - 8"	1		
D6	6' - 0"	6' - 8"	1	0.3	0.23



WINDOW SCHEDULE						
MARK	WIDTH	HEIGHT	COUNT	U-FACTOR	SHGC	TYPE
W1	5' - 0"	1' - 0"	1	0.3	0.23	FIXED
W2	5' - 0"	1' - 6"	1	0.3	0.23	FIXED
W3	3' - 0"	5' - 0"	1	0.3	0.23	DOUBLE HUNG
W4	4' - 0"	1' - 6"	1	0.3	0.23	SLIDER
W5	3' - 0"	4' - 0"	1	0.3	0.23	DOUBLE HUNG
W6	6' - 0"	1' - 0"	1	0.3	0.23	FIXED



PROPOSED ROOF, REFLECTED CEILING & FLOOR PLAN

SCALE: As indicated

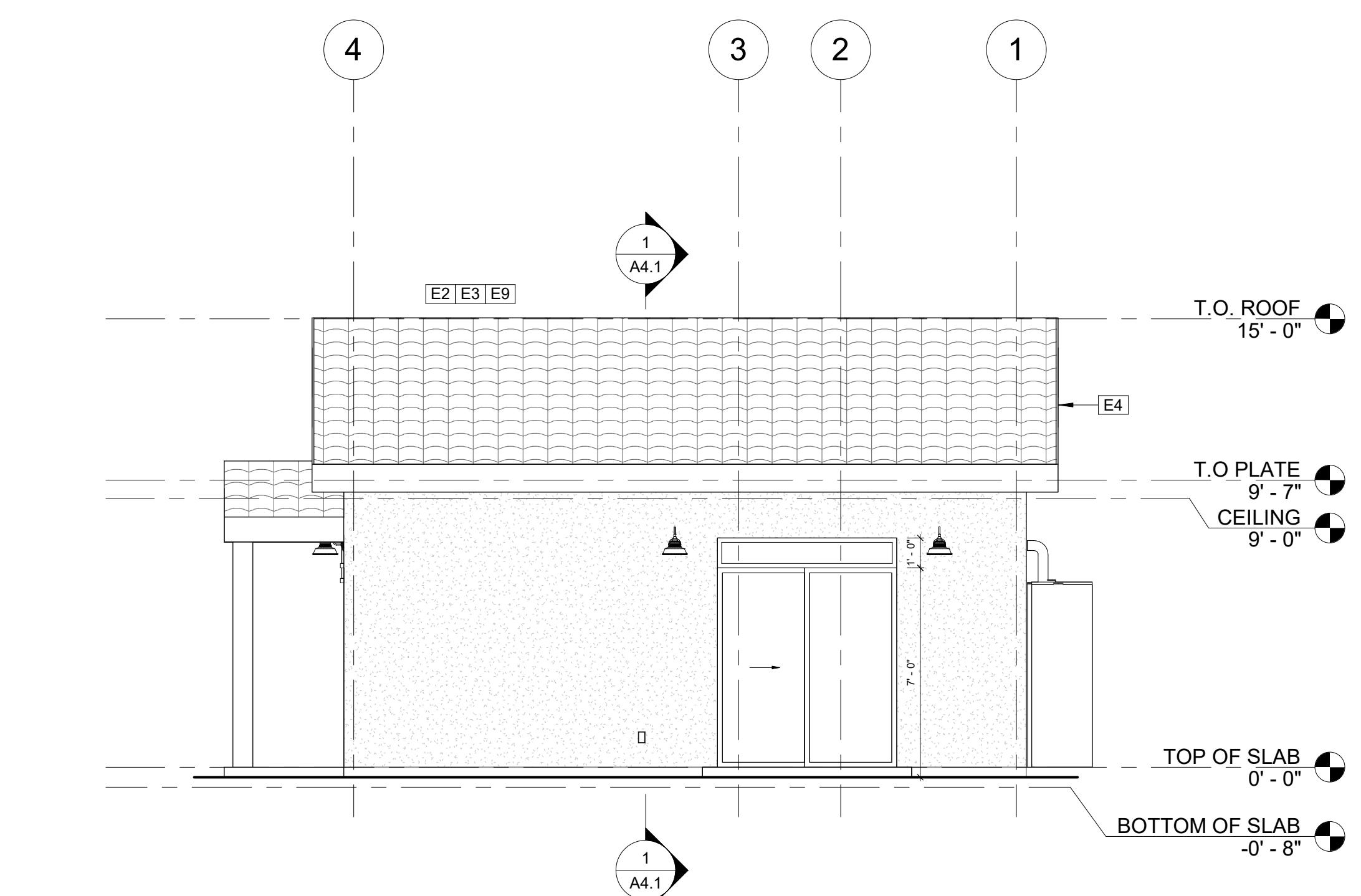
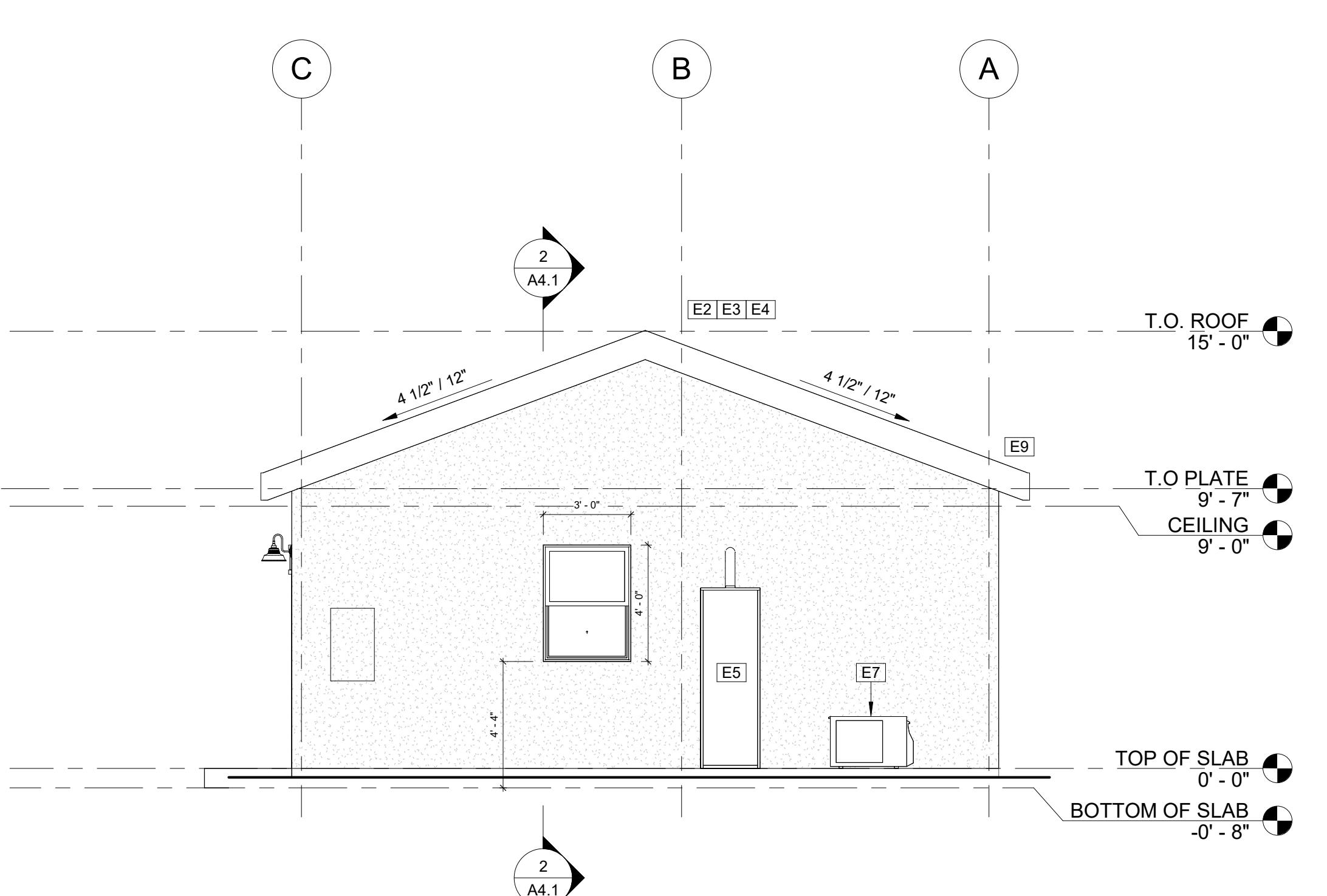
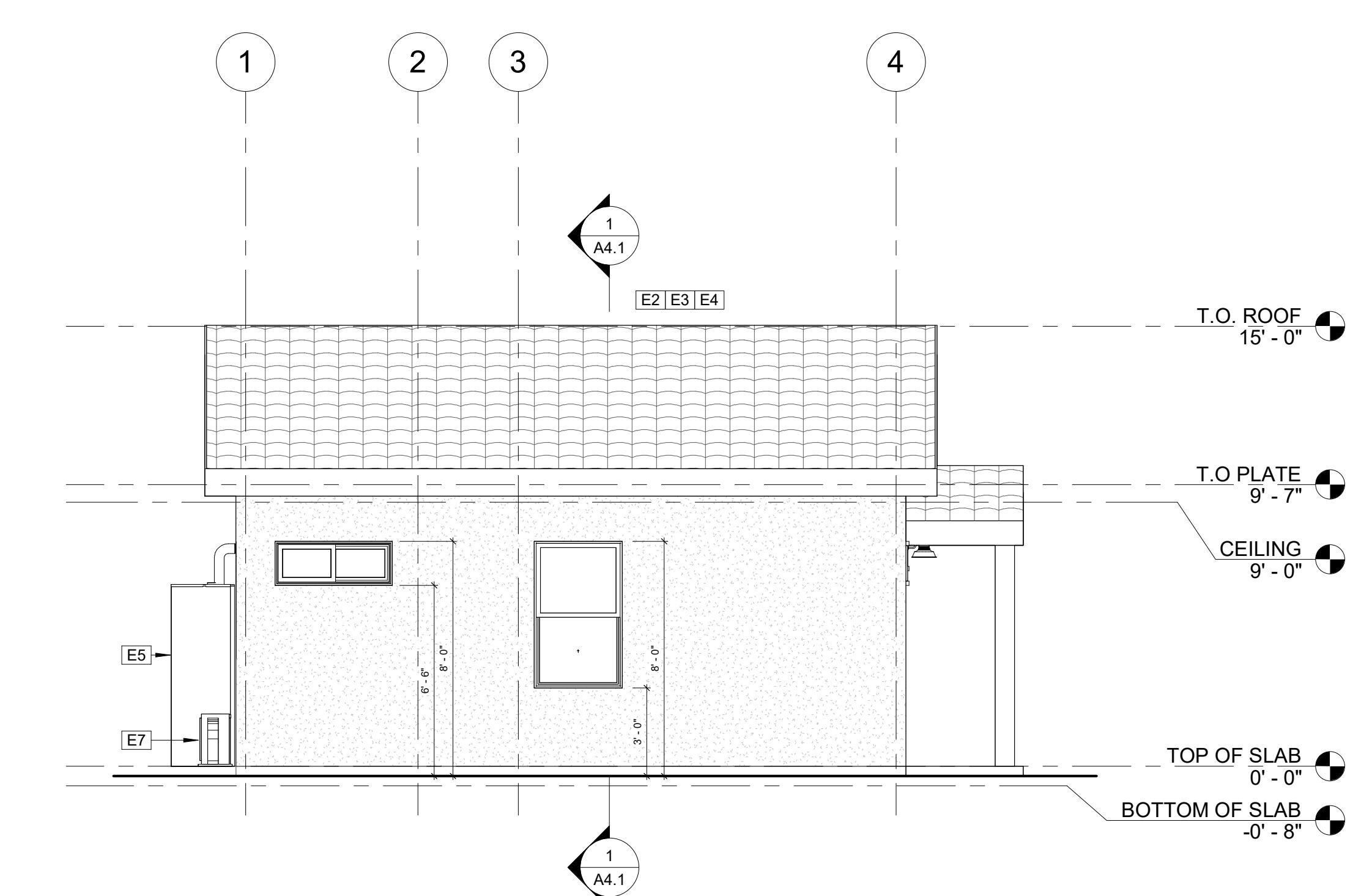
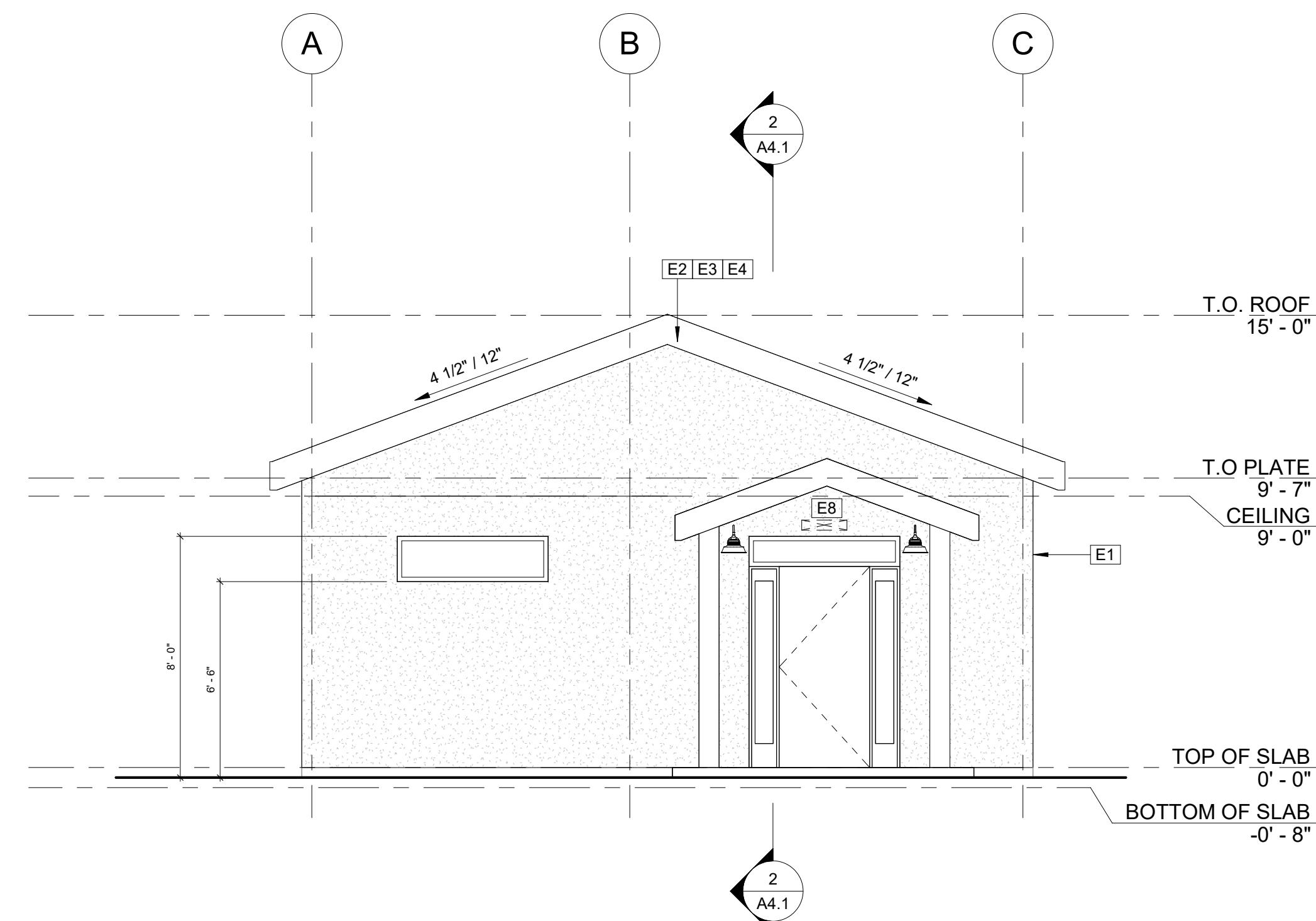
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DRAWN BY: Author

KEYNOTE LEGEND

KEYNOTE VALUE	KEYNOTE TEXT
E1	NEW EXTERIOR FINISH TO BE STUCCO, COLOR & TEXTURE TO MATCH EXISTING MAIN RESIDENCE SELECTED BY OWNER
E2	NEW ROOF TO BE ROOF TILE & MATCH EXISTING MAIN RESIDENCE TO BE SELECTED BY OWNER
E3	NEW 8' FIBER CEMENT FACIA TRIM TO MATCH EXISTING MAIN RESIDENCE SELECTED BY OWNER
E4	NEW WATER HEATER LOCATION, PROVIDED BY THE OWNER
E5	NEW ELECTRICAL SUB-PANEL, PROVIDED BY THE OWNER
E7	LOCATION OF SEPARATE ADDRESS TO BE 4 INCHES IN HEIGHT
E8	R-19 INSULATION AT ATTIC ROOF
E9	R-38 INSULATION AT CEILING BELOW ATTIC ROOF

SPECIFY



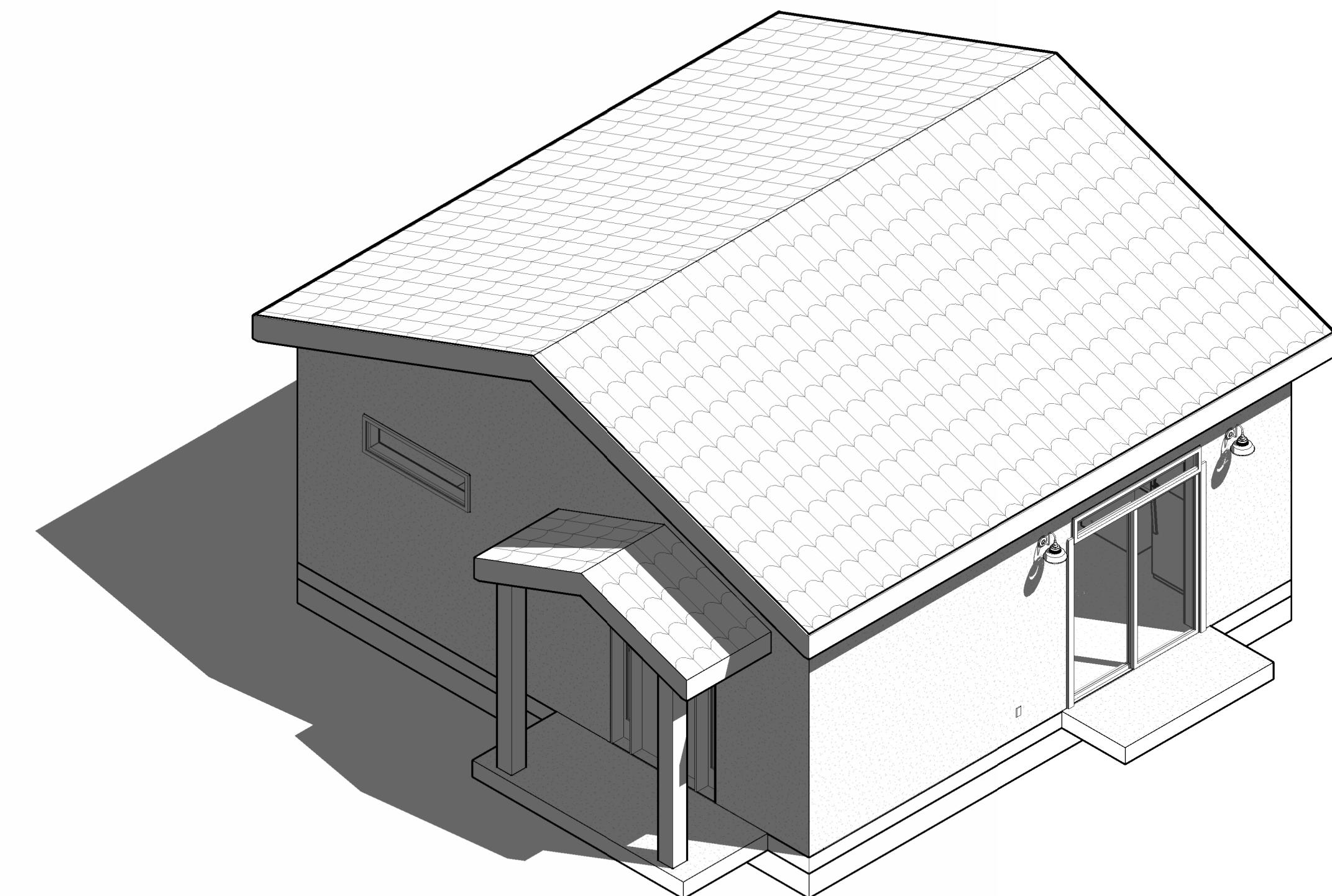
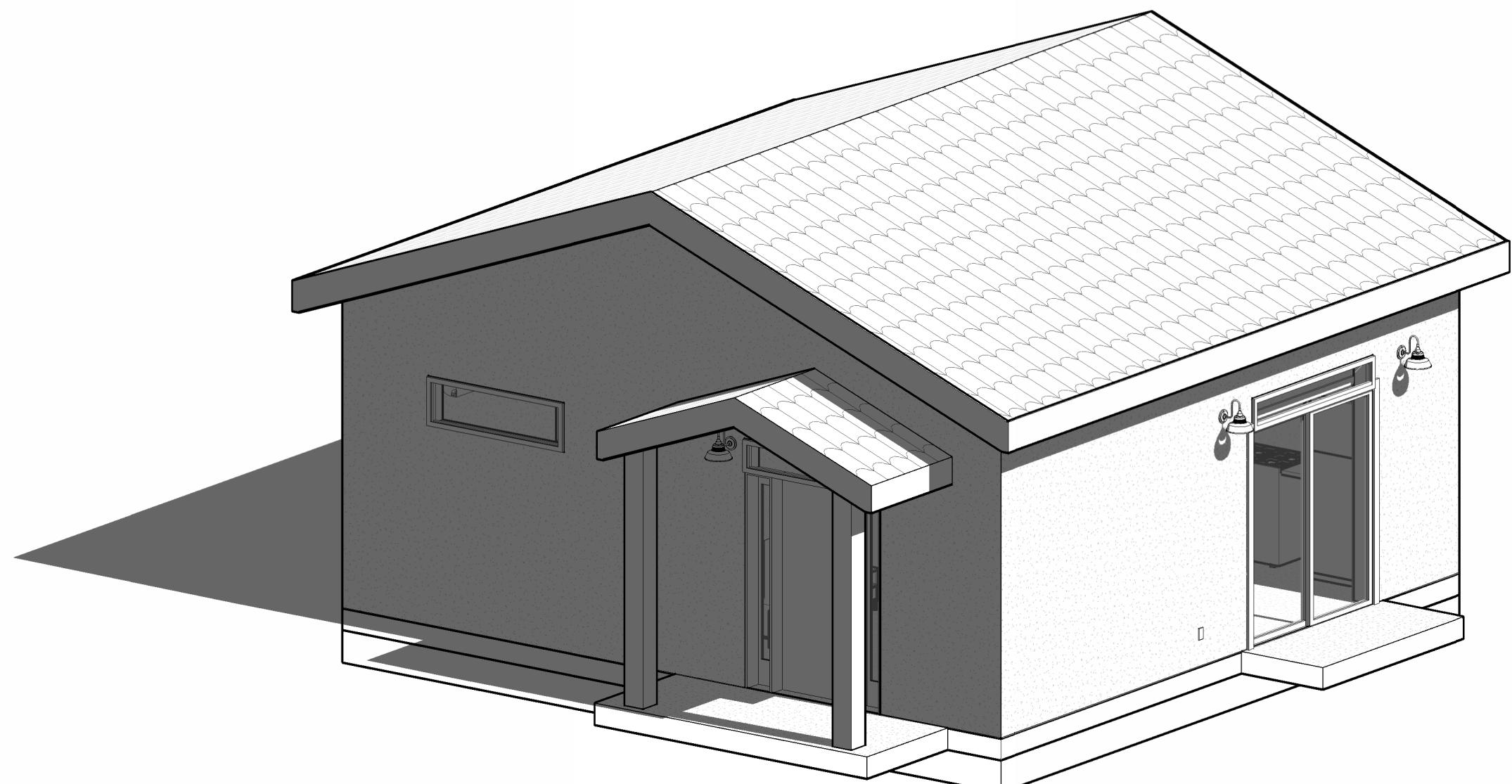
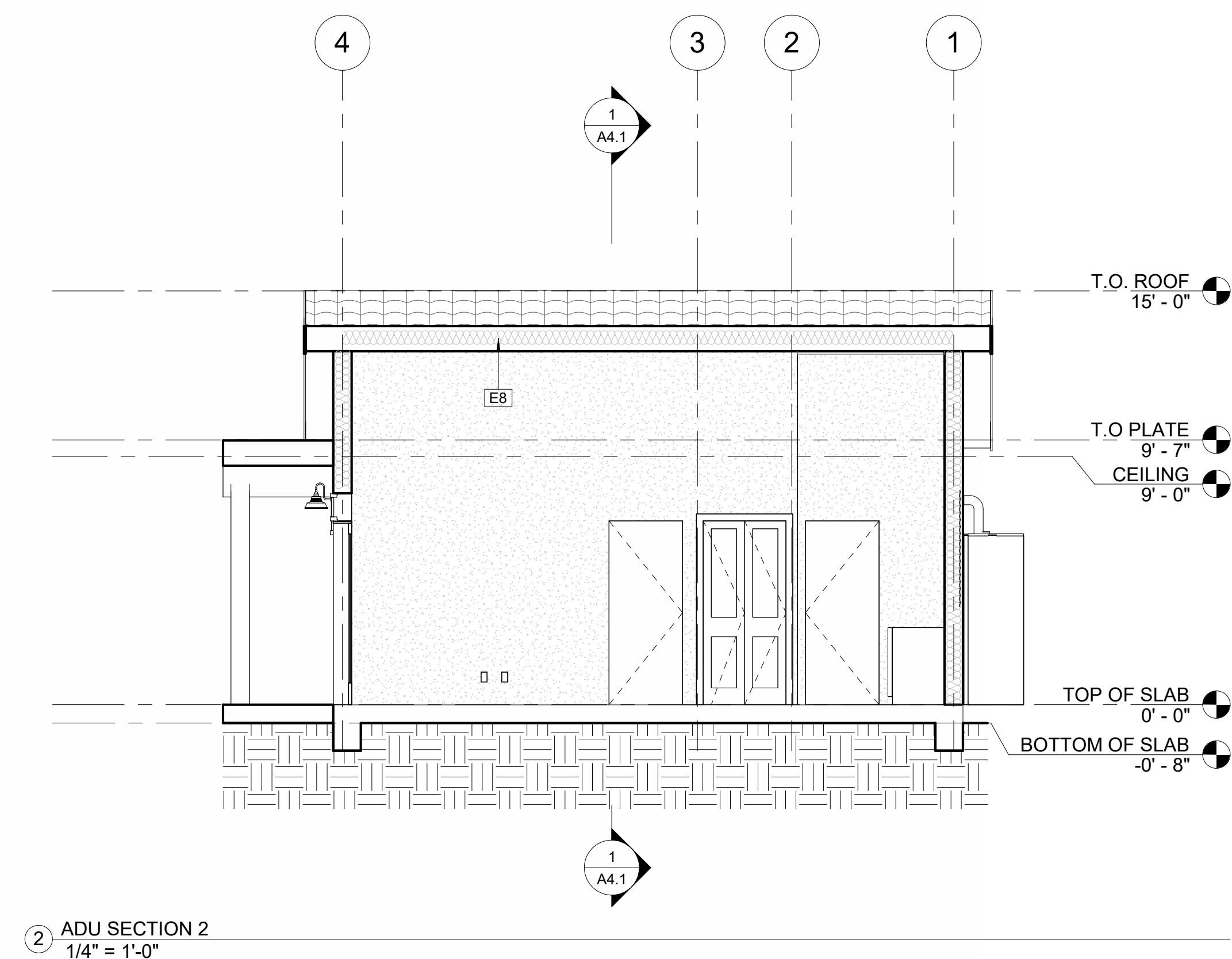
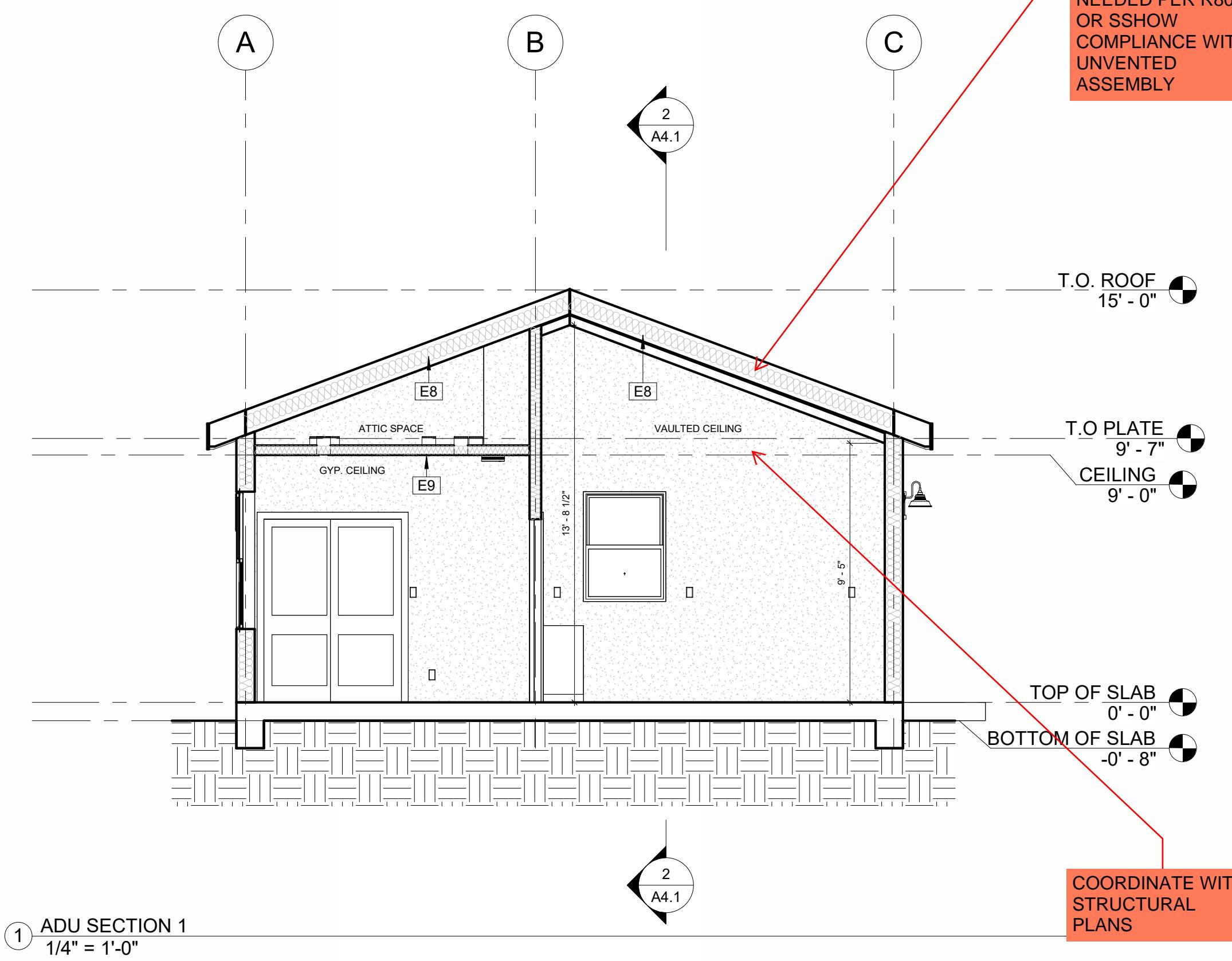
**PROPOSED
EXTERIOR
ELEVATIONS**

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

A4.0

DRAWN BY: Author

KEYNOTE LEGEND	
KEYNOTE VALUE	KEYNOTE TEXT
E8	R-19 INSULATION AT ATTIC ROOF
E9	R-38 INSULATION AT CEILING BELOW ATTIC ROOF



PROPOSED SECTIONS & ISOMETRIC VIEWS

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

A4.1

0 2'-0" 4'-0" 8'-0"
SCALE: 1/4" = 1'-0"

DRAWN BY: Author

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2430 E 4TH ST #152
LONG BEACH, CA 90814

PROJECT:
FORDHAM ADU

2450 FORDHAM DR.
COSTA MESA, CA 92626

DATE: 12/30/24
PROJECT NO: 25005
DRAWN BY: Author

REVISION DATE

NOTES:

Rheem
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Hybrid Electric Heat Pump Water Heaters
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Professional Prestige® ProTerra® Hybrid Electric Heat Pump is the most efficient Water heater available

Efficiency

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- ENERGY STAR® certified
- Title 24 Compliant (JA13 Ready)

Performance

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

Easy Installation

- Universal top and side water connections
- Quick access to electrical junction box
- Duct ready design
- Easily replaces a standard electric water heater

Integration

- Electronic control for easy temperature adjustment and mode management
- Audible alarm for service alerts
- Built-in WiFi-powered by EcoNet® and free mobile app allows users to control over water heater, allowing for customizable temperature, vacation settings, energy savings and system monitoring at home or away
- Demand Response Ready with built-in EcoPort® (CTA-2045 Port)
- Easily add leak detection and prevention with the leak sensor and shutoff valve kit (part SP21265A sold separately)

Operation Modes

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

Plus...

- Premium grade anode rod extends the life of the tank
- Dip tube diffuser reduces sediment improving efficiency and tank life
- 3/4" NPT water inlet and outlet; 3/4" condensate drain connection
- Incoloy stainless steel resistor elements
- Dry fire protection
- Easy access, top mounted washable air filter
- 2" Non-CFC foam insulation
- Enhanced flow bypass drain valve
- Temperature and pressure relief valve installed
- Design certified to NSF/ANSI 372 (Lead Content)
- 10-Year limited tank and parts warranty
- See Residential Warranty Certificate for complete information

Units must exceed AHRI test requirements and have been tested according to DOE procedures. Units must or exceed the stringency requirements of NAECA, ASHRAE standard 90, ICC Code and all state energy efficiency performance criteria.

EcoNet™
These products meet a subset of our industry-defined connectivity standards.

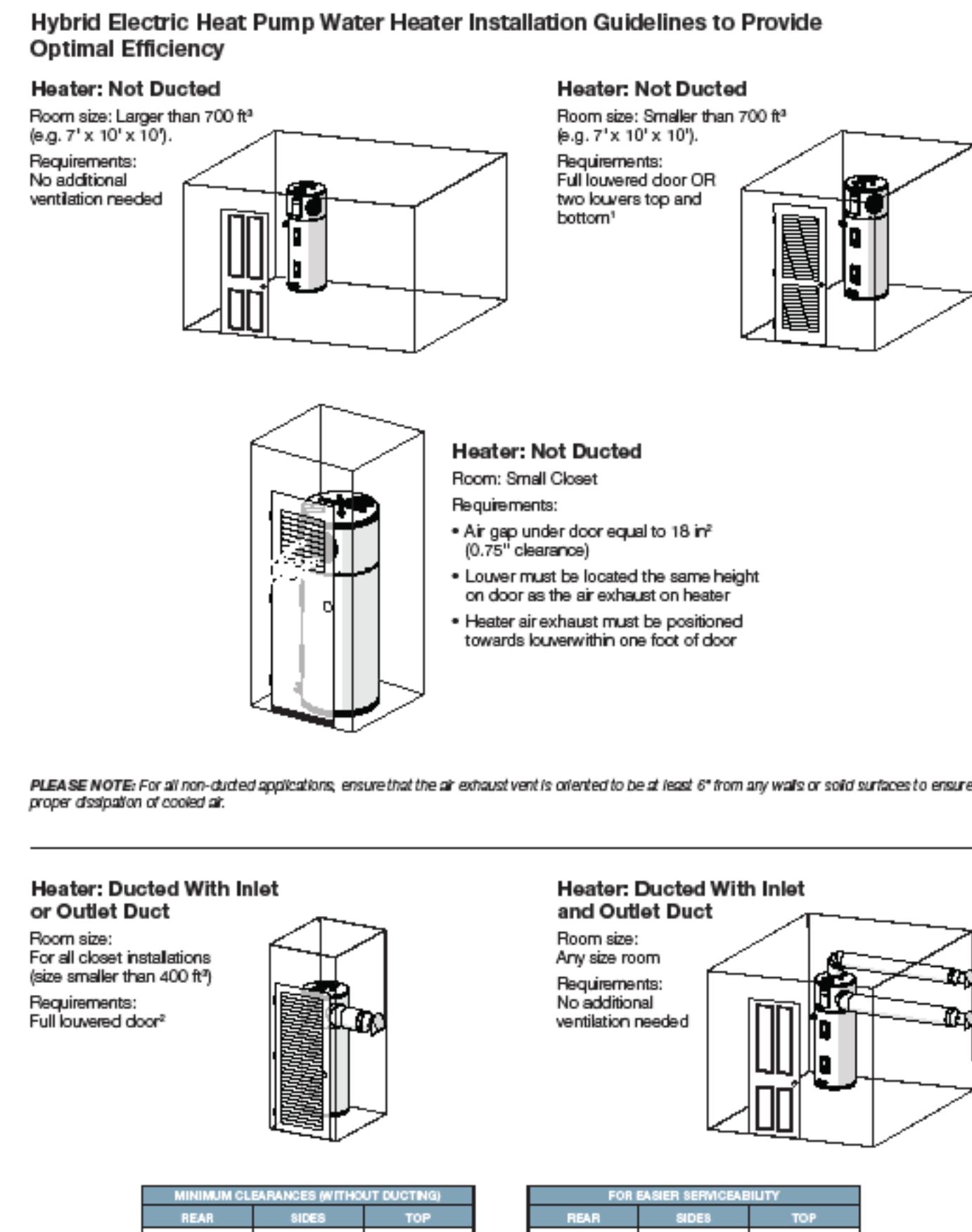
LEED Points = 5

W-A broadband internet connection required

See specifications chart on next page.

INTEGRATED HOME COMFORT

11/24 WP FORM NO. HP-400-HD SD REV 1



PLEASE NOTE: Heat pump water heater will operate in rooms less than 700 ft² down to 450 ft² but it reduces energy efficiency and reduced performance output. Reduced energy efficiency and performance has not been evaluated by Rheem Manufacturing and not recommended for optimal performance of the unit.

Minimum louver free opening area required for non-ducted room installation application will be 3.25 sq ft.

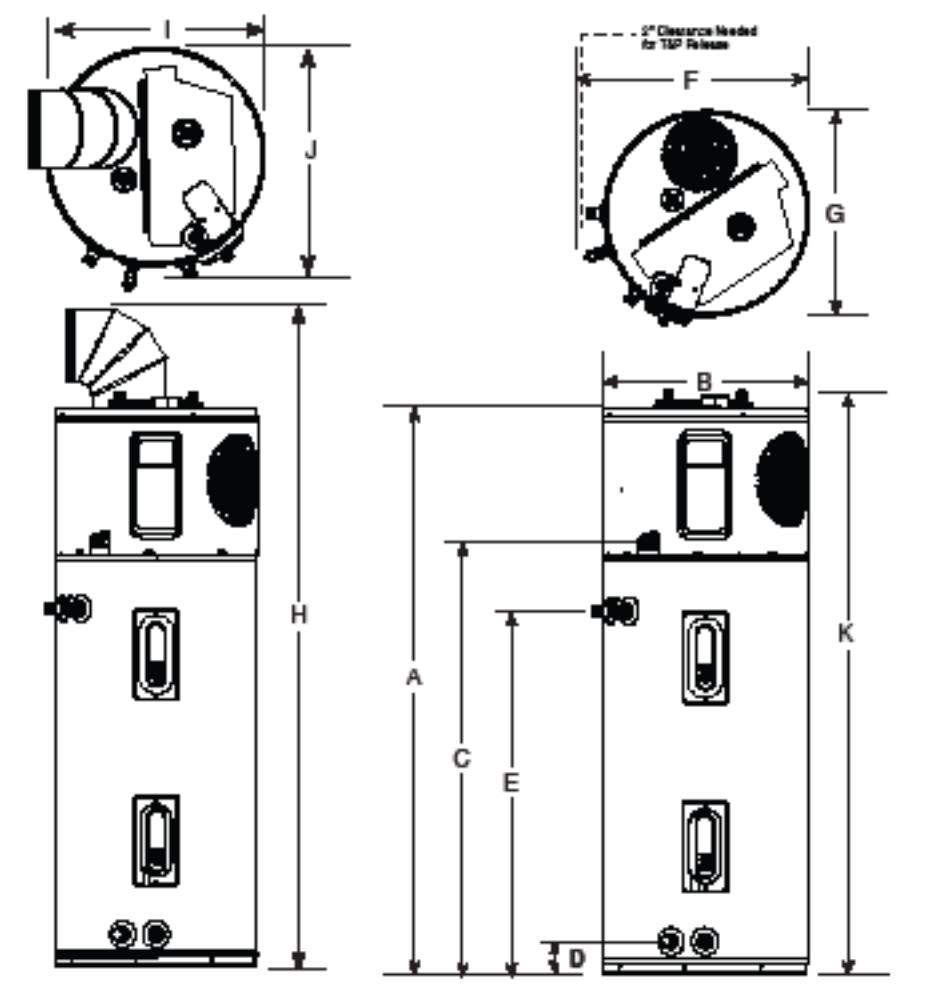
Minimum louver free opening area required for ducted closet installation application will be 2.9 sq ft.

Professional Prestige® ProTerra Hybrid Electric Heat Pump Specifications

Nominal Gallon Capacity	Rated Gallon Capacity	Model Number	Electrical Rating	Description		Energy Info		Features		Shipping Weight			
				Block	Element	Uniform Energy Factor	Compression Ratio	Fan RPM	Recovery Time in 6 in Hg	Element Wattage	Total Unit Wattage		
ProTerra 30 Amp													
40	30	PROPHB1T2 RH40-30	702300	30	3.05	1.05	65	27	4,000	5,000	21	188 lbs	
40	45	PROPHB1T2 RH40-30	702300	30	3.05	1.05	67	27	4,000	5,000	21	188 lbs	
65	65	PROPHB1T2 RH40-30	702300	30	4.05	1.05	100	74.6	27	4,000	6,000	21	240 lbs
80	72	PROPHB1T2 RH40-30	702344	30	5.05	1.05	107	27	4,000	6,000	21	261 lbs	
ProTerra 15 Amp													
40	30	PROPHB1T2 RH40-15	702300	15	3.45	1.05	105	46	3.8	2,250	2,250	15 lbs	
40	45	PROPHB1T2 RH40-15	702300	15	3.75	1.05	105	52	3.8	2,250	2,250	15 lbs	
65	65	PROPHB1T2 RH40-15	702300	15	3.95	1.05	105	54	3.8	2,250	2,250	15 lbs	
80	72	PROPHB1T2 RH40-15	702300	15	4.70	1.05	105	58	3.8	2,250	2,750	12 lbs	

Uniform Energy Factor and rated gallon capacity based on Department of Energy (DOE) requirements.

All units have Integrated WiFi control board.



Nominal Gallon Capacity	Model Number	Dimensions Shown in Inches										
		A	B	C	D	E	F	G	H	I	J	K
40	PROPHB1	82-9/16	25-1/4	47	3-9/16	50-9/16	25-3/16	20-1/2	75-7/8	20-1/4	2-3/4	84-19/16
40	PROPHB1	61-9/16	25-1/4	47	3-9/16	50-9/16	21-3/16	22-1/2	75-7/8	22-1/4	2-3/4	84-9/16
65	PROPHB1	94-9/16	25-1/4	49	3-9/16	42-3/16	20-1/2	24-9/16	81-9/16	24-1/4	2-3/16	86-13/16
80	PROPHB1	74-3/16	24-1/4	50	3-9/16	42-3/16	20-1/2	24-9/16	91	24-1/4	2-3/16	76-13/16

2



Hybrid Electric Heat Pump Accessories List

Part Number	Description	Use For
AP10134	Leak Sensor	Automatic detection of internal and external leaks
AB50018A	Shutoff Valve	Automatic shutoff of water supply to unit
SP20883	Vibration Isolation Kit	Installation on non-concrete floors
SP20884	8" Diameter UL Certified Termination Kit	Termination to the outside or to the attic with 8" diameter
SP20885	7" Diameter UL Certified Termination Kit	Termination to the outside or to the attic with 7" diameter
SP20886	6" Diameter UL Certified Termination Kit	Termination to the outside or to the attic with 6" diameter
SP20887	5" Diameter UL Certified Termination Kit	Termination to the outside or to the attic with 5" diameter
SP20888	8" Collar for Flex Venting	Exhaust only to the outside ducting configuration (no inlet duct)
SP20890	25' Flexible 8" Diameter Duct Kit	For up to 25' of ducting
SP20900	8" Rigid Elbow Duct Kit	Installation in tight places where space needs to be minimized
SP20882	Earthquake Isolation Kit	Metal band restraints for installation in seismic regions
FF-80	Little Flasher Water Heater Front Restraint	High strength soft woven restraints for installation in seismic regions
SP21265A	Kit - Automatic Shutoff Valve Assembly	Add leak detector, shutoff valve and S.O.V. extension hoses for top connection setup
	Leak Sensor	
	Shutoff Valve	
	Vibration Isolation Kit	
	8" Diameter UL Certified Termination Kit	
	7" Diameter UL Certified Termination Kit	
	6" Diameter UL Certified Termination Kit	
	5" Diameter UL Certified Termination Kit	
	8" Collar for Flex Venting	
	25' Flexible 8" Diameter Duct Kit	
	8" Rigid Elbow Duct Kit	
	Earthquake Isolation Kit	
	FR-80	
	Leak Sensor & Shutoff Valve Kit	

UPGRADE KIT (for ProTerra models without LeakGuard and Shutoff Valve) adds leak detector and shutoff valve to protect from water damage

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

Rheem Water Heating • 1115 Northmeadow Parkway, Suite 100
Roswell, Georgia 30076 • www.rheem.com

Rheem Canada Ltd./Ltd. • 102 Edgeware Road, Unit 1
Brampton, Ontario L6Y 0P6 • www.rheem.ca

INTEGRATED HOME COMFORT

11/24 WP FORM NO. HP-400-HD SD REV 1

4

SCALE:

A5.0

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TANKLESS WATER
HEATER
SPECIFICATIONS



Submittal Data Sheet
1.5-Ton Mini-Split with Heat Pump
FTX18BXVJURX18BXVJU

MODEL	INDOOR UNIT		FTX18BXVJU	
	OUTDOOR UNIT		RX18BXVJU	
	Cooling	Heating		
Rated Capacity (Min. ~ Max.)	kW	5.28 (2.02 - 5.86)	6.13 (1.70 - 7.03)	
	Btu/h	18000 (6900 - 20000)	21600 (5800 - 24000)	
Moisture Removal	gal/h		0.41	
Rated Running Current	A	6.39	7.71	
Rated Power Consumption	W	1440	1756	
EER2	Btu/h/W	12.5	N/A	
SEER2		20.0	N/A	
COP	W/W	N/A	3.60	
HSPF2		N/A	9.0	
Piping Connection	Liquid	inch (mm)	1/4" (6.35)	
s	Gas	inch (mm)	1/2" (12.70)	
Refrigerant	Type		R410A	
	Charge	lbs (kg)	3.20 (1.45)	
Max. Interunit Piping Length	ft (m)	98-1/2 (30)		
Max. Interunit Height Difference	ft (m)	65-5/8 (20)		
Chargeless	ft (m)	32-13/16 (10)		
Amount of Additional Charge of Refrigerant	oz/ft (g/m)	0.21 (20)		
INDOOR UNIT		FTX18BXVJU		
Front Panel Colour		WHITE		
Airflow Rate	Turbo	CFM	754	
	High	CFM	716	
	Medium	CFM	605	
	Low	CFM	467	
	Quiet	CFM	395	
Sound Pressure Level (H/M/L/Q)	dBA	49/44/38/33	49/42/37/33	
Fan	Type		CROSS FLOW	
	Drive		DIRECT	
	Speed		3 STEPS, QUIET, AUTO, TURBO	
Fan Motor	Type		DIRECT CURRENT	
	Motor Output	W	39	
	Running Current (Rated)	A	0.17	

Daikin Comfort Technologies North America, Inc 19001 Kermier Rd Waller TX 77484
Daikin City Generated Submittal Data www.daikincomfort.com or www.daikinac.com

(Daikin's products are subject to continuous improvements. Daikin reserves the right to modify product design, specifications, and information in this data sheet without notice and without incurring any obligations)



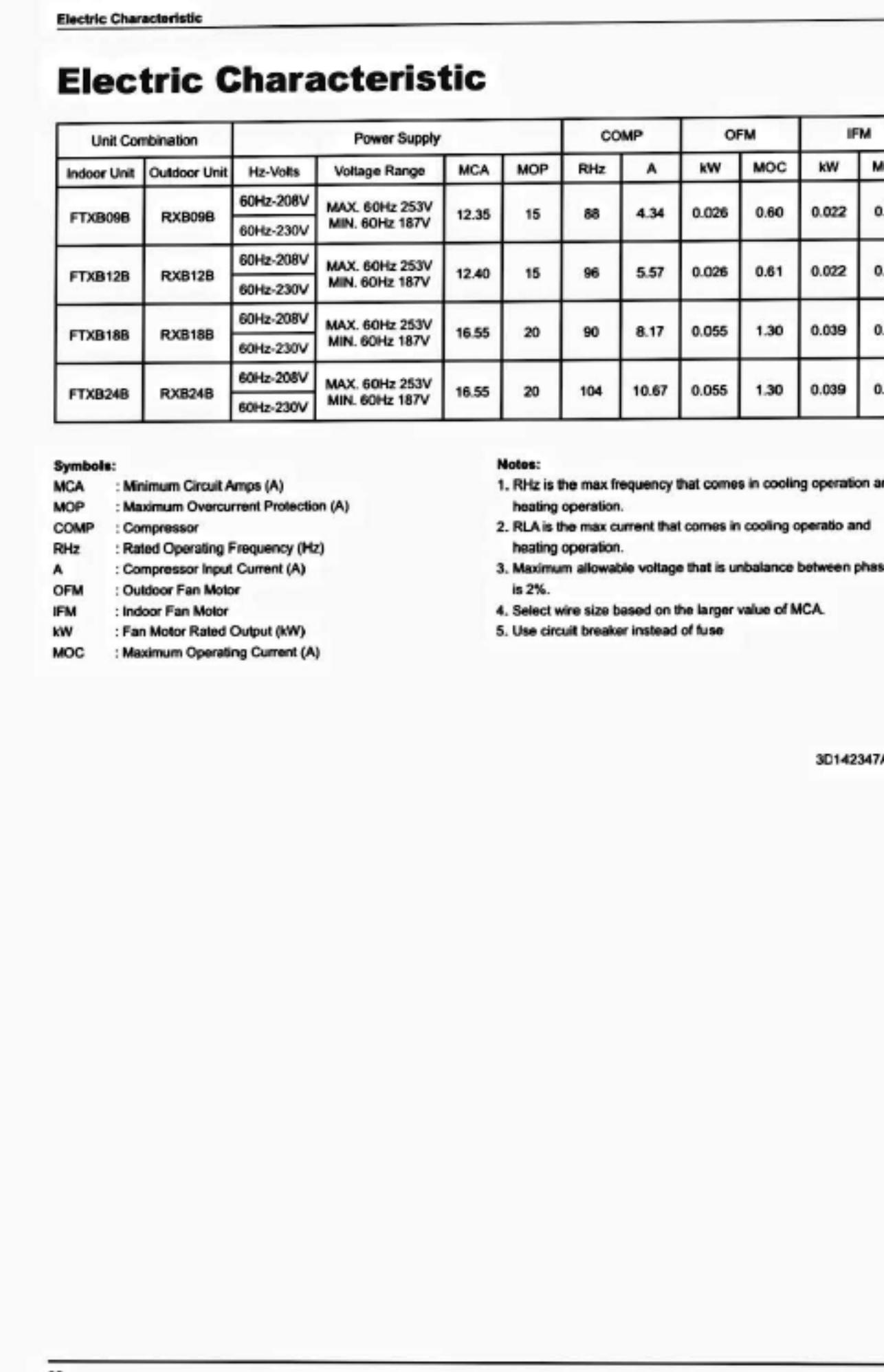
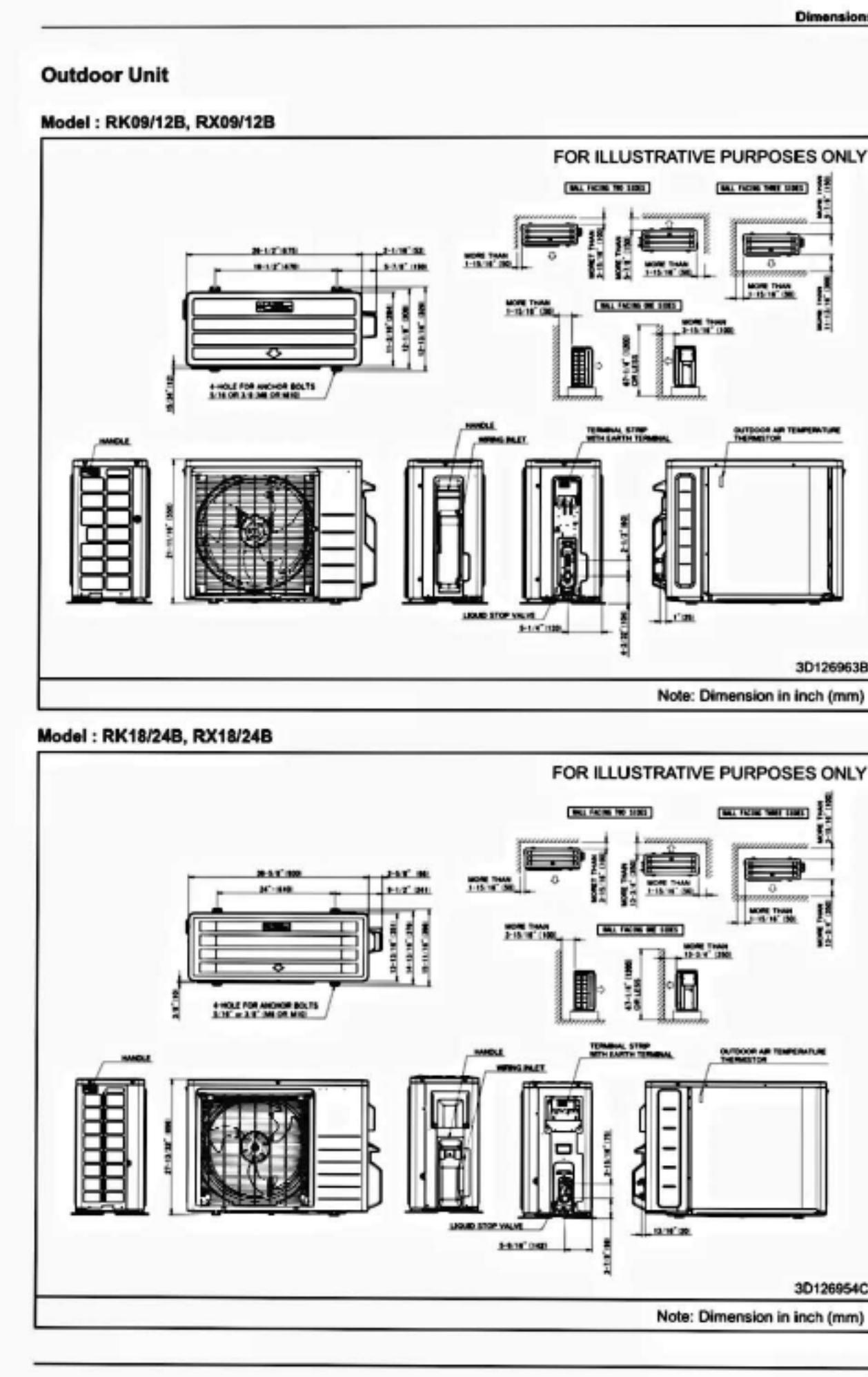
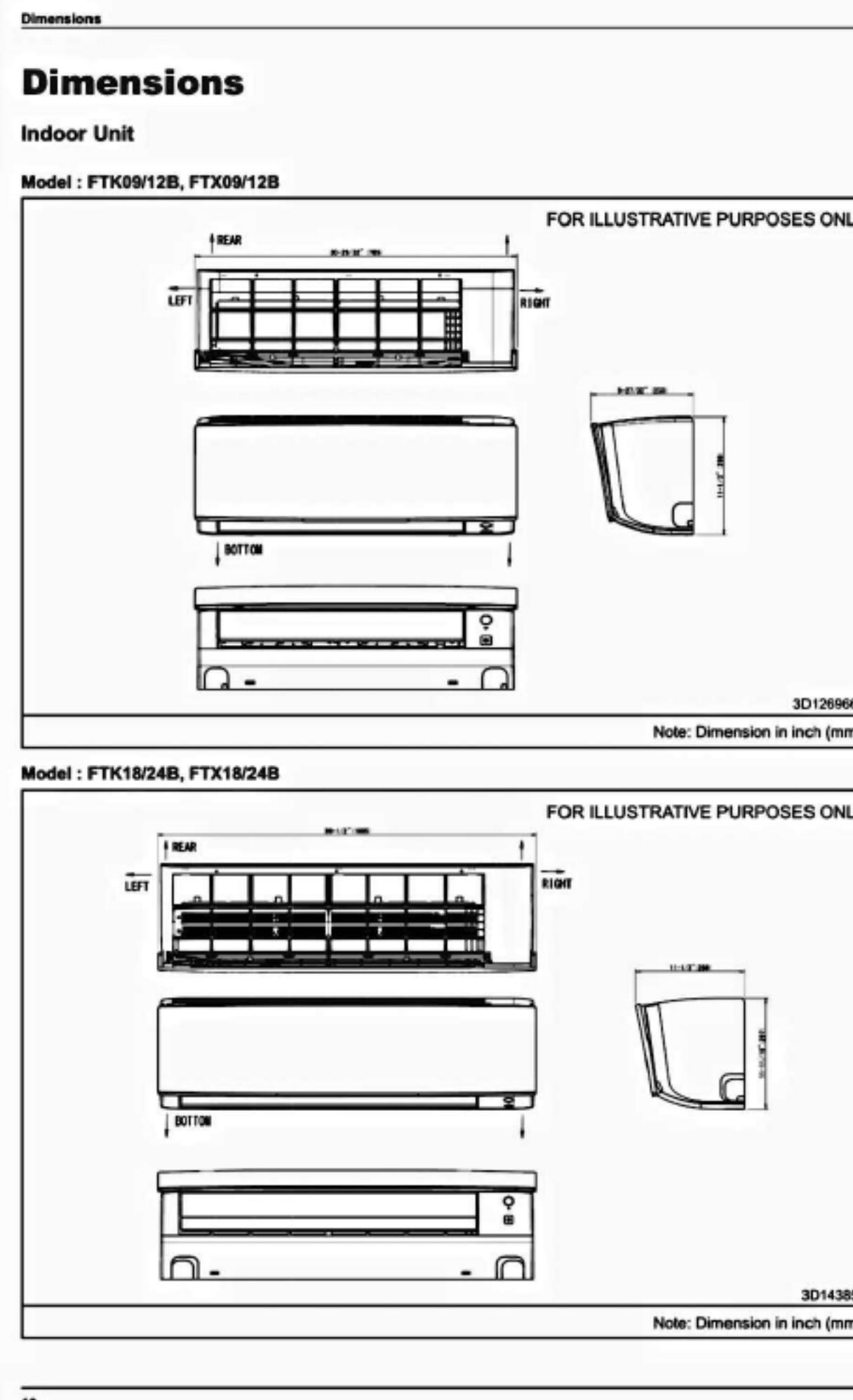
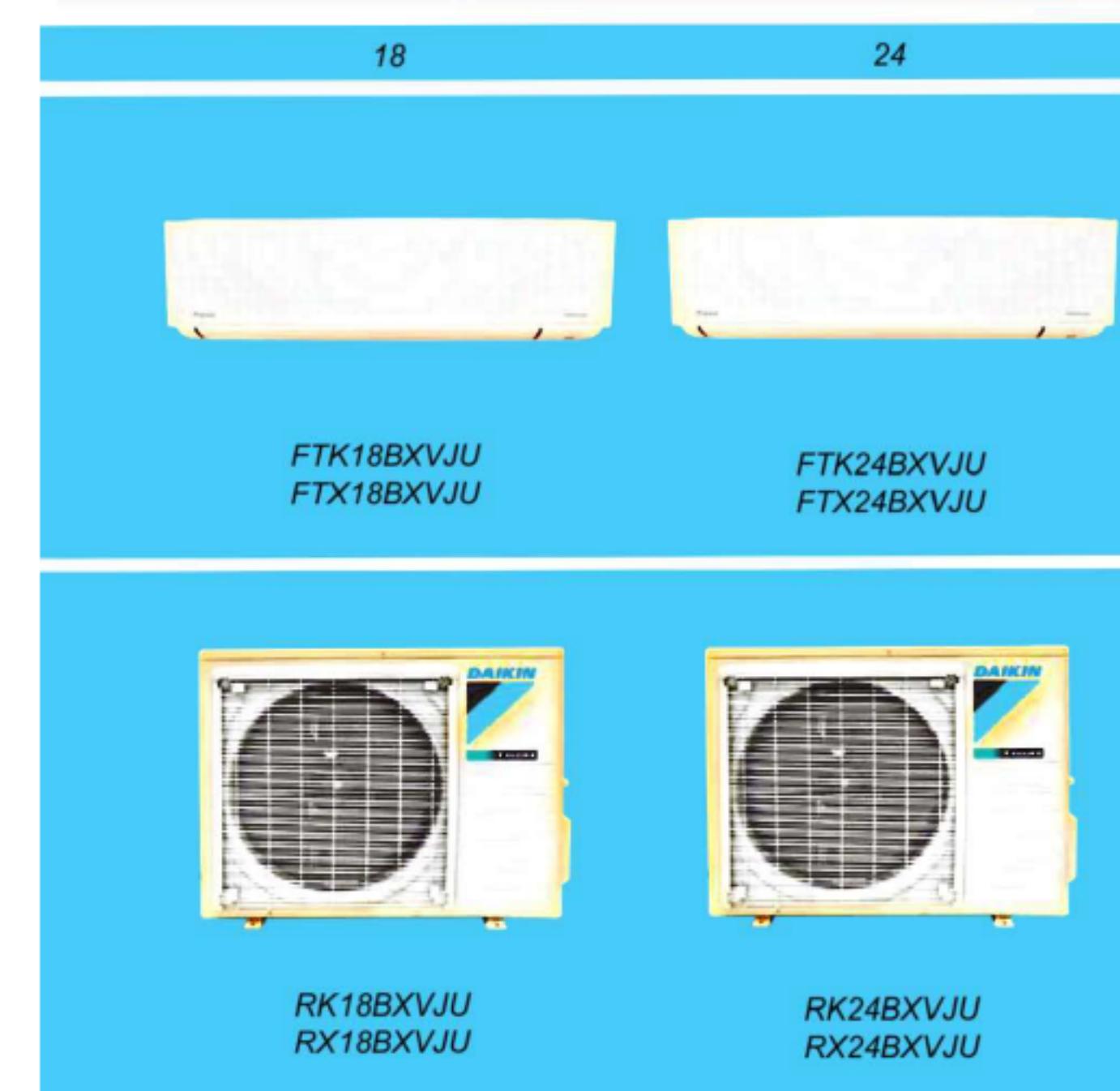
Submittal Data Sheet
1.5-Ton Mini-Split with Heat Pump
FTX18BXVJURX18BXVJU

	Power Consumption (Rated)	W	54
Air Direction Control		UP, DOWN, LEFT, RIGHT	
Air Filter		CATECHIN	
Dimensions (H x W x D)	inch (mm)	11-11/16 x 39-1/2 x 11-1/3 (297 x 1005 x 288)	
Packaged Dimensions (H x W x D)	inch (mm)	14-1/4 x 42-1/4 x 14-1/8 (362 x 1073 x 358)	
Weight	lbs (kg)	31 (14.0)	
Condensate Drain Size	inch (mm)	5/8 (16)	
OUTDOOR UNIT		RX18BXVJU	
Casing Colour		IVORY WHITE	
Airflow Rate	High	CFM	1987 1952
Sound Pressure Level	dBA		54
Fan	Type		PROPELLER
	Drive		DIRECT
Fan Motor	Type		DIRECT CURRENT
	Index of protection (IP)		23
	Insulation Grade		E
	Running Current (Rated)	A	1.30
	Power Consumption (Rated)	W	85
	Motor Output	W	55
	Poles		8
Compressor	Type		HERMETIC SWING
	Model		2Y147AKCX2A
	Oil type		DAPHNE FVC50K
	Oil amount	oz (cm³)	21.5 (650)
Heat Exchanger Type			FIN TUBE
Dimensions (H x W x D)	inch (mm)	27-13/32 x 36-5/8 x 13-13/16 (696 x 930 x 351)	
Weight	lbs (kg)	97 (44)	
COOLING		HEATING	
INDOOR: 80°FDB (26.7°CDB) / 67°FWB (19.4°CWB)		INDOOR: 70°FDB (21.1°CDB)	
OUTDOOR: 95°FDB (35°CDB)		OUTDOOR: 47°FDB (8.3°CDB) / 43°FWB (6.1°CWB)	

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Wall Mounted Cooling Only & Heatpump



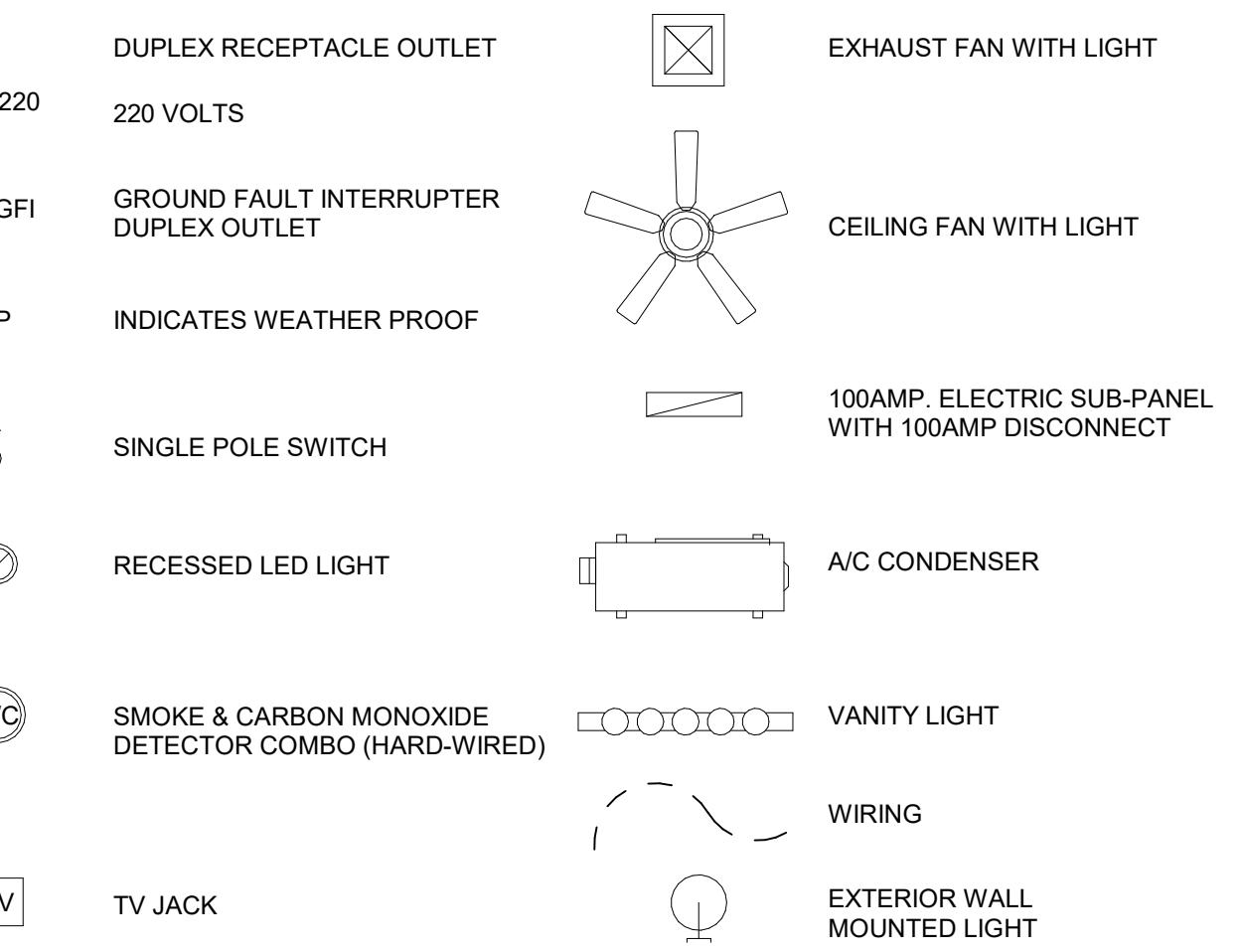
MINI SPLIT SPECIFICATIONS

SCALE:

A5.1

DRAWN BY: Author

ELECTRICAL PLAN LEGEND



ELECTRICAL NOTES:

LIGHTING NOTES:

1. LIGHTING SHALL PROVIDE NOT LESS THAN 215 LUX (20 FOOTCANDLES) AS MEASURED 30" ABOVE FLOOR.
2. ALL INSTALLED LUMINAIRES SHALL BE HIGH-EFFICACY IN ACCORDANCE WITH ES TABLE 150.0-A.
 - A. LUMINAIRES MUST HAVE A LABEL CERTIFIED FOR AIRTIGHT CONSTRUCTION.
 - B. LIGHT SOURCES THAT ARE NOT MARKED "JA8-2019-E" SHALL NOT BE INSTALLED IN ENCLOSED LUMINAIRES.
3. RECESSED CAN LIGHT FIXTURES SHALL BE IC LISTED, AIR-TIGHT LABELED, AND NOT BE EQUIPPED WITH A STANDARDS MEDIUM BASE SCREW SHELL LAMP HOLDER.
4. OUTDOOR LIGHTING FIXTURES THAT ARE ATTACHED TO A RESIDENTIAL BUILDING OR OTHER BUILDING IN THE SAME LOT, ARE REQUIRED TO BE HIGH EFFICACY, BE MANUALLY ON/OFF SWITCH CONTROLLED, HAVE A PHOTOCELL, AND EITHER A MOTION SENOR OR AN AUTOMATIC TIME SWITCH CONTROL.

POWER NOTES:

1. ALL ELECTRICAL WORK SHALL BE DESIGN PER 2022 CALIFORNIA ELECTRICAL CODE, 2022 NATIONAL ELECTRICAL CODE, AND 2022 BUILDING ENERGY EFFICIENCY STANDARDS.
2. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.
3. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.
4. ALL THE CONDUCTOR'S SPECIFIED IN THE PANEL SCHEDULES ARE GROUNDED SEPARATELY.
5. PURCHASE RTU WITH FACTORY INSTALLED DISCONNECT. COORDINATE PROPER RATING OF DISCONNECT WITH MANUFACTURER.
6. INSTALL WEATHERPROOF (WP), GFI PROTECTED, WEATHER RESISTANT RECEPTACLE OUTLETS ON THE ROOFTOP AND WITHIN 25 FT OF HEATING/AIR CONDITIONING AND IDENTIFIED AND LISTED AS "EXTRA DUTY" PER ARTICLE 406.9 (B)(1) & 406.4(D)(6)
7. ALL WORK PERFORMED SHALL COMPLY WITH ALL STATE AND LOCAL ALL ELECTRICAL CODES.
8. ALL BRANCH CIRCUIT BREAKERS SHALL BE 10,000 AIC RATING, U.N.O.
9. ALL THE HVAC UNITS ARE EQUIPPED WITH FACTORY INSTALLED DISCONNECT SWITCH UNLESS NOTIFIED OTHERWISE, COORDINATE WITH MANUFACTURE BEFORE INSTALLATION AND IN THE ABSENCE OF DISCONNECT SWITCH PROVIDE REQUIRED DISCONNECT AS PER NEC 430.104 AND 430.110.
10. THE BATHROOM CIRCUITING SHALL BE EITHER A 20-AMP. CIRCUIT DEDICATED TO EACH BATHROOM, OR AT LEAST ONE 20 AMP. CIRCUIT SUPPLYING ONLY BATHROOM RECEPTACLE OUTLETS PER CEC 210.11(C)(3).
11. ALL ELECTRICAL DEVICES INSTALLED IN DWELLINGS SHALL BE PROVIDED WITH ARC-FAULT PROTECTION OUTLETS (NOT JUST RECEPTACLES) LOCATED IN ROOMS DESCRIBED IN NEC 210.12(A): KITCHENS, LAUNDRY AREAS, FAMILY, LIVING, BEDROOMS, DINING, HALLS, ETC. CEC ARCTICLE 210 & 406.
12. ALL 120-VOLT, SINGLE-PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT KITCHENS, FAMILY ROOMS, SUNROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, AND SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS OR AREA SHALL BE PROTECTED BY ANY OF THE MEANS DESCRIBED IN 210.12(A)(1) THROUGH (6).
13. RECEPTACLE OUTLET LOCATIONS SHALL COMPLY WITH CEC ARTICLE 210.52.
14. INSTALL A MINIMUM OF 2 SMALL APPLIANCE BRANCH CIRCUITS WITHIN THE KITCHEN AND DINING AREAS PER CEC 210.11(O)(1) & 210.52(B).
15. ALL OUTLETS IN KITCHEN AND BATHROOMS SHALL BE GFI PER CEC 210.8.
16. ALL RECEPTACLES INSTALLED IN THE DWELLING SHALL BE TAMPER RESISTANT PER ARTICLE 210.52 & 550.13.
17. AT LEAST ONE ADDITIONAL 20-AMPERE BRANCH CIRCUIT SHALL BE PROVIDED TO SUPPLY THE LAUNDRY RECEPTACLE OUTLET(S) REQUIRED BY 210.52(F). THIS CIRCUIT SHALL HAVE NO OTHER OUTLETS IN ACCORDANCE WITH CEC ARTICLE 210.11(C)(2).

SMOKE & CARBON MONOXIDE NOTES:

1. SMOKE ALARMS SHALL BE INTERCONNECTED PER CRC R314.4.
SMOKE ALARMS SHALL BE HARD-WIRED WITH BATTERY BACK-UP, WITHOUT A DISCONNECTING SWITCH PER CRC R314.6 IN THE FOLLOWING LOCATIONS ON FLOOR PLANS OR UTILITY PLANS (CRC R314.3):
 - A. OUTSIDE EACH SEPARATE SLEEPING AREA IN IMMEDIATE VICINITY OF BEDROOMS
 - B. ON EACH STORY OF DWELLING
 - C. IN ANY BEDROOM WITH A FUEL-BURNING APPLIANCE LOCATED WITHIN THAT BEDROOM OR ITS ATTACHED BATHROOM
3. CARBON MONOXIDE DETECTOR SHALL BE INTERCONNECTED PER CRC R315.1.7 AND HARD-WIRED WITH BATTERY BACK-UP, WITHOUT A DISCONNECTING SWITCH PER CRC R315.5 - IN THE FOLLOWING LOCATIONS ON FLOOR PLANS OR UTILITY PLANS IN DWELLING UNITS WITH FUEL-BURNING APPLIANCES, FIREPLACE, OR AN ATTACHED GARAGE COMMUNICATING WITH THE DWELLING UNIT (CRC R315):
 - A. OUTSIDE EACH SEPARATE SLEEPING AREA IN IMMEDIATE VICINITY OF BEDROOMS
 - B. ON EACH STORY OF DWELLING
 - C. IN ANY BEDROOM WITH A FUEL-BURNING APPLIANCE LOCATED WITHIN THAT BEDROOM OR ITS ATTACHED BATHROOM.

MECHANICAL NOTES:

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

ADU AGING-IN DESIGN NOTES:

1. R327.1.1: REINFORCEMENT FOR GRAB BARS- AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH SECTION R327.
2. R327.1.2: ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS- ALL CONTROLS INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48" MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15" MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR.
3. R327.1.4: DOORBELL BUTTONS OR CONTROLS, SHALL NOT EXCEED 48" ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY.

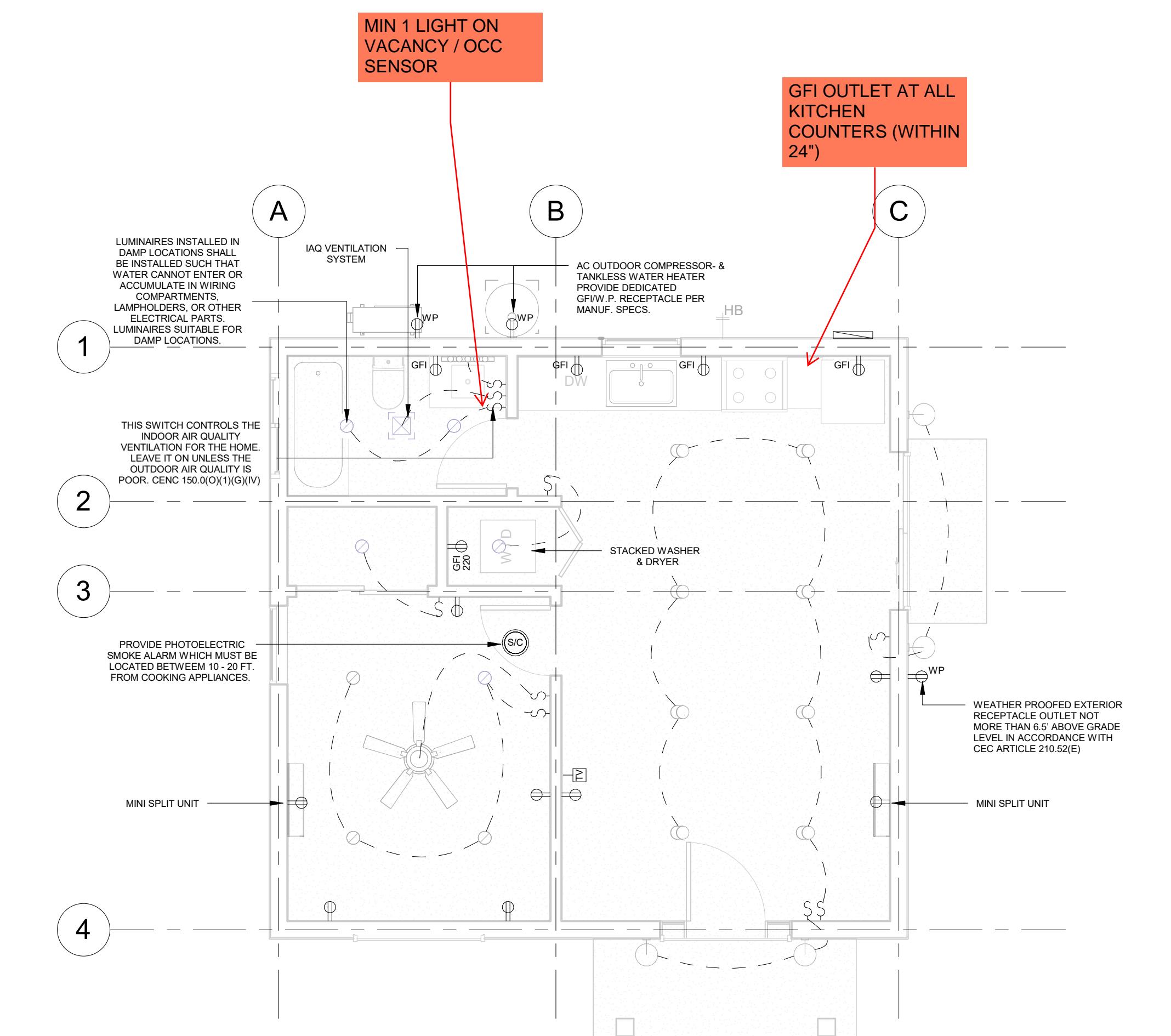
NOTES:

ALL SINGLE-FAMILY RESIDENCES THAT INCLUDE ONE OR TWO DWELLING UNITS SHALL MEET THE FOLLOWING. ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE (2022 CEC 150.0(S)):

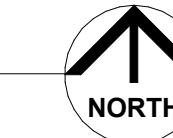
1. AT LEAST ONE OF THE FOLLOWING SHALL BE PROVIDED:
 - A. ESS READY INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED-UP CAPACITY OF 60 AMPS AND A MINIMUM OF FOUR ESS-SUPPLIED BRANCH CIRCUITS, OR
 - B. A DEDICATED RACEWAY FROM THE MAIN SERVICE TO A PANELBOARD (SUB-PANEL) THAT SUPPLIES THE BRANCH CIRCUITS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

DIMMERS:

LIGHTING IN HABITABLE SPACES, INCLUDING BUT NOT LIMITED TO LIVING ROOMS, DINING ROOMS, KITCHENS AND BEDROOMS, SHALL HAVE READILY ACCESSIBLE WALL-MOUNTED DIMMING CONTROLS THAT ALLOW THE LIGHTING TO BE MANUALLY ADJUSTED UP AND DOWN. [CEC 150.0(K)2A]



① ADU ELECTRICAL PLAN
1/4" = 1'-0"



ELECTRICAL DIAGRAM

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

A6.0

DRAWN BY: Author

LONG BEACH, CA | 562.766.1728
resistudios.com

248 E 4TH ST #75
LONG BEACH, CA 90814

PROJECT:
FORDHAM ADU
2450 FORDHAM DR.
COSTA MESA, CA 92626

DATE: 12/30/24
PROJECT NO: 25005
DRAWN BY:
Author

REVISION DATE

NOTES:

0 2'-0" 4'-0" 8'-0"
SCALE: 1/4" = 1'-0"

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

301.1 SCOPE Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.

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

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

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

301.2 Low-Rise and High-Rise Residential Buildings

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

SECTION 302 MIXED OCCUPANCY BUILDINGS

302.1 Mixed Occupancy Buildings In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Exceptions: [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable. [HCD] For the purposes of CALGreen, live/work units, complying with Section 508.5 of the California Building Code, shall not be considered mixed occupancies. Live/work units shall comply with Chapter 4 and Appendix A4, as applicable.

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES
Division 4.1 — Planning and Design
SECTION 4.102 DEFINITIONS

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

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

SECTION 4.106 SITE DEVELOPMENT

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

4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION Projects which disturb less than one acre or are part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

Retention basins of sufficient size shall be utilized to retain storm water on the site.

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.

Compliance with a lawfully enacted storm water management ordinance.

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

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

4.106.3 GRADING AND PAVING

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

1. Slopes

2. Water collection and disposal systems

3. French drains

4. Water retention gardens

5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 ELECTRIC VEHICLE (EV) CHARGING FOR NEW CONSTRUCTION

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

EXCEPTION: On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:

1. Where there is no local utility power supply or the local utility is unable to supply adequate power.

2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project.

2. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities.

4.106.4.1 NEW ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES WITH ATTACHED PRIVATE GARAGES. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous and enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

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

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

4.106.4.2 NEW MULTIFAMILY DWELLINGS, HOTELS AND MOTELS AND NEW RESIDENTIAL PARKING FACILITIES

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

4.106.4.2.1 MULTIFAMILY DEVELOPMENT PROJECTS WITH LESS THAN 20 DWELLING UNITS; AND HOTELS AND MOTELS WITH LESS THAN 20 SLEEPING UNITS OR GUEST ROOMS

The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

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

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

EXCEPTION: Areas of parking facilities served by parking lifts.

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

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

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

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

2. EV READY. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles.

For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.

EXCEPTION: Areas of parking facilities served by parking lifts.

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

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

4.106.4.2.2 MULTIFAMILY DEVELOPMENT PROJECTS WITH 20 OR MORE DWELLING UNITS, HOTELS AND MOTELS WITH 20 OR MORE SLEEPING UNITS OR GUEST ROOMS

The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.

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

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

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

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

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

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

EXCEPTION: Areas of parking facilities served by parking lifts.

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

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

4.106.4.2.2.1 Electric Vehicle Charging Stations (EVCS)

Electric vehicle charging stations required by Section 4.106.4.2.2.1, Item 3, shall comply with Section 4.106.4.2.2.1.

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

4.106.4.2.2.1 LOCATION

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

1. The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building.

EXCEPTION: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1 and Section 4.106.4.2.2.1, Item 3.

4.106.4.2.2.1.2 ELECTRIC VEHICLE CHARGING STATIONS (EVCS) DIMENSIONS

The charging spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 charging spaces, but not less than one, shall have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).

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

4.106.4.2.3 EV SPACE REQUIREMENTS

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

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

4.106.4.2.4 MULTIPLE EV SPACES REQUIRED

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

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

4.106.4.2.4.1 IDENTIFICATION

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

4.106.4.2.4.2 ELECTRIC VEHICLE READY SPACE SIGNAGE

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

4.106.4.3 ELECTRIC VEHICLE CHARGING FOR ADDITIONS AND ALTERATIONS OF PARKING FACILITIES SERVING EXISTING MULTIFAMILY BUILDINGS

When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of

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

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

PRODUCT-WEIGHTED MIR (PWWMR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWWMR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

Note: PWWMR is calculated according to equations found in CCR, Title 17, Section 94521(a).

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

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

4.503 FIREPLACES

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

SECTION 4.504 POLLUTANT CONTROL

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

At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris, which may enter the system.

TABLE 4.504.1

ADHESIVE VOC LIMIT1, 2 Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	VOC LIMIT
Indoor carpet adhesives	50
Carpel pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Drywall and panel adhesives	50
Cove base adhesives	50
Structural glazing adhesives	100
Single-ply roof membrane adhesives	50
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRAITE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

- If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.
- For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

TABLE 4.504.2

SEALANT VOC LIMIT Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
SPECIALTY PRIMERS	
Architectural	
Non Porous	250
Porous	775
Modified bituminous	500
Marine Deck	760
Other	750

4.504.2.1 ADHESIVES, SEALANTS AND CAULKS

Adhesives, sealants and caulk 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:

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

4.504.2.2 PAINTS AND COATINGS

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

4.504.2.3 AEROSOL PAINTS AND COATINGS

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

4.504.2.4 VERIFICATION

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

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

4.504.3 CARPET SYSTEMS

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

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

<https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IQ/Pages/VOC.aspx>

TABLE 4.504.3

VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS2, 3 Grams of VOC per Liter of Coating, Less Water and Less Exempt Compounds

COATING CATEGORY	VOC LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat-high gloss coatings	150
SPECIALTY COATINGS	
Aluminum roof coatings	400
Basement specialty coatings	400
Bituminous roof coatings	50
Bituminous roof primers	350
Bond breakers	350
Concrete curing compounds	350
Concrete/masonry sealers	100
Driveway sealers	50
Dry fog coatings	150
Faux finishing coatings	350
Fire resistive coatings	350
Floor coatings	100
Form-release compounds	250
Graphic arts coatings (sign paints)	500
High temperature coatings	420
Industrial maintenance coatings	250
Low solids coatings1	120
Magnesite cement coatings	450
Mastic texture coatings	100
Metallic pigmented coatings	500
Multicolor coatings	250
Pretreatment wash primers	420
Primers, sealers and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Rust preventative coatings	250
Shellacs	
Clear	730
Opaque	550
Specialty primers, sealers and undercoaters	100
Stains	250
Stone consolidants	450
Swimming pool coatings	340
Traffic marking coatings	100
Tub and tile refresh coatings	420
Waterproofing membranes	250
Wood coatings	275
Wood preservatives	350
Zinc-rich primers	340

- Grams of VOC per liter of coating, including water and including exempt compounds.
- The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.

3. Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.

4.504.3.1 CARPET CUSHION

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

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

<https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IQ/Pages/VOC.aspx>

4.504.3.2 CARPET ADHESIVE

All carpet adhesive shall meet the requirements of Table 4.504.1.

4.504.4 RESILIENT FLOORING SYSTEMS

Where resilient flooring is installed, at least 80 percent 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.

<https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IQ/Pages/VOC.aspx>

4.504.5 COMPOSITE WOOD PRODUCTS

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

4.504.2.1 ADHESIVES, SEALANTS AND CAULKS

Adhesives, sealants and caulk 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:

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

4.504.2.2 PAINTS AND COATINGS

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

4.504.2.3 AEROSOL PAINTS AND COATINGS

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

4.504.2.4 VERIFICATION

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

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

4.505 INTERIOR MOISTURE CONTROL

4.505.1 GENERAL

Buildings shall meet or exceed the provisions of the California Building Standards Code.

4.505.2 CONCRETE SLAB FOUNDATIONS

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

4.505.2.1 CAPILLARY BREAK

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

- A 4-inch-thick (101.6 mm) base of 1/2 inch (12.7

GENERAL NOTES:

- THE PROJECT SPECIFICATIONS (A BOOK OF SPECIFICATIONS WHEN PROVIDED) ARE A PART OF THE CONTRACT DOCUMENTS. IF THERE IS A DISCREPANCY FOUND BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, SPECIFICATIONS TAKE PRECEDENCE, HOWEVER THE MATTER SHALL BE PROMPTLY SUBMITTED TO THE SEOR FOR CLARIFICATIONS. ANY WORK PERFORMED BY THE CONTRACTOR WITHOUT SUCH A CLARIFICATION SHALL BE AT CONTRACTOR'S OWN RISK AND EXPENSE.
- EXAMINE THE STRUCTURAL DRAWINGS AND THE SPECIFICATIONS AND NOTIFY THE ENGINEER & CONTRACTING OFFICE OF ANY DISCREPANCIES IN ELEVATIONS, DIMENSIONS, AND SITE CONDITIONS INCLUDING ERRORS BEFORE PROCEEDING WITH ANY WORK. OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS (AND SPECIFICATIONS) SHALL BE RESOLVED IN WRITING WITH THE ENGINEER/ARCHITECT PRIOR TO START OF WORK.
- THE DRAWINGS (AND SPECIFICATIONS) REPRESENT THE COMPLETED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. PROVIDE ALL MEASURES AND MEANS NECESSARY TO PROTECT PERSONS AND THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT LIMITED TO BRACING, SHORING, ETC. OBSERVATION VISITS BY THE ARCHITECT OR ENGINEER DOES NOT INCLUDE REVIEW OF THESE MEASURES.
- TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE WHETHER SPECIFICALLY REFERENCED OR NOT.
- DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
- NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL MEMBERS UNLESS SPECIFICALLY DETAILED OR APPROVED THE ENGINEER & CONTRACTING OFFICER.
- REFER TO ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
 - SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, UNLESS OTHERWISE NOTED.
 - SIZE AND LOCATION OF INTERIOR AND EXTERIOR NON LOAD BEARING PARTITIONS.
 - SIZE AND LOCATION OF CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, RAMPS, CHAMFERS, GROOVES, INSERTS, ETC. EXCEPT AS SHOWN.
 - SIZE AND LOCATION OF FLOOR AND ROOF OPENINGS, EXCEPT AS SHOWN.
 - FLOOR AND ROOF FINISHES.
 - STAIR FRAMING AND DETAILS, EXCEPT AS SHOWN.
 - DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
- REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
 - PIPE RUNS, SLEEVES, HANGERS, TRENCHES, SLAB OPENINGS, ETC., EXCEPT AS SHOWN OR NOTED.
 - ELECTRICAL CONDUITS, BOXES, OUTLETS.
 - CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL AND PLUMBING.
 - SIZE AND LOCATION OF MACHINE AND EQUIPMENT BASES, ANCHOR BOLTS, ETC.
- ASTM REFERENCES ARE FROM THE LATEST ISSUE AND LATEST REVISION UNLESS OTHERWISE NOTED.
- INVESTIGATE THE SITE DURING CLEARING AND EXCAVATION FOR UNSUITABLE CONDITIONS, UNCONSOLIDATED AND UNDOCUMENTED PILLS, BURIED STRUCTURES, UTILITIES, ETC., AND IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY SITE CONDITIONS NOT REFLECTED ON THE DRAWINGS OR DIFFERENT FROM MAXIMUM OR MINIMUM DIMENSIONS INDICATED, INCLUDING CONFLICT IN GRADES, ADVERSE SOIL CONDITIONS, GROUNDWATER PRESENT, DEEPENED FOOTINGS, UNCOVERED AND UNEXPECTED UTILITY LINES, ETC.
- CONSTRUCTION MATERIALS, IF PLACED ON STRUCTURAL MEMBERS, SHALL BE SPREAD OUT SUCH THAT THE LOADING DOES NOT EXCEED THE DESIGN LIVE LOADS. PROVIDE SHORING AND BRACING WHERE CONSTRUCTION LOADING EXCEEDS THE DESIGN STRENGTH OF THE STRUCTURAL MEMBERS OR THE STRUCTURAL STRENGTH HAS NOT BEEN ATTAINED.
- DETERMINE THE LOCATION OF UTILITY SERVICES IN AREAS TO BE EXCAVATED BEFORE BEGINNING EXCAVATION. EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING. DAMAGE CAUSED AS A RESULT OF FAILING TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CAD DRAWING FILES ARE THE PROPERTY OF THE EOR AND WILL NOT BE RELEASED TO THE CONTRACTOR OR SUBCONTRACTOR FOR THEIR USE.
- STRUCTURAL DRAWINGS TO BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS.

STRUCTURAL STEEL:

- THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH "AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND STEEL CONSTRUCTION MANUAL AISC 360, LATEST ADOPTED EDITION. EXCEPT AS AMENDED IN IBC CHAPTER 22.
- THE SEISMIC DESIGN OF STEEL STRUCTURES SHALL BE IN ACCORDANCE WITH "AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS", INCLUDING ALL SUPPLEMENTS AISC 341 EXCEPT AS AMENDED IN IBC CHAPTER 22.
- ALL CONNECTIONS SHALL BE DETAILED IN ACCORDANCE WITH LATEST EDITION OF AISC "DETAILING FOR STEEL CONSTRUCTION". DESIGN CONNECTIONS FOR A MINIMUM OF 1/2 THE MAXIMUM TOTAL UNIFORM LOAD AS SHOWN IN TABLE 5-6 OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, LATEST EDITION.
- STEEL FURNISHED FOR STRUCTURAL LOAD-CARRYING PURPOSES SHALL BE PROPERLY IDENTIFIED FOR CONFORMITY TO THE SPECIFIED GRADES SHOWN BELOW AND IN ACCORDANCE WITH ASTM STANDARDS AND PROVISIONS OF IBC CHAPTER 22. STEEL THAT IS NOT READILY IDENTIFIABLE AS TO GRADE FROM MARKING AND TEST RECORDS SHALL BE TESTED TO DETERMINE CONFORMITY TO:

D. WIDE FLANGE	ASTM F992 (Fy=50 ksi)
A. ANGLES AND CHANNELS	ASTM A36 (Fy=50 ksi)
B. PLATES	ASTM A36 (Fy=36 ksi)
C. HSS (RECTANGULAR)	ASTM A500 (Fy=46 ksi)
E. ANCHOR BOLTS	ASTM F1554 GRADE 55
- ALL COLUMN ENDS TO BE MILLED.
- ALL EXTERIOR STRUCTURAL STEEL PERMANENTLY EXPOSED TO THE WEATHER SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. ZINC COATING SHALL CONFORM TO ASTM A123 (G-60 U.O.N.).
- ALL WELDING DONE AFTER GALVANIZING SHALL BE PROTECTED WITH TWO COATS OF "GALVALOV" OR EQUAL. CONTRACTOR TO USE VENTILATION WHILE PERFORMING THIS WORK AS REQUIRED BY OSHA.
- ALL STEEL FABRICATION SHALL BE PERFORMED IN AN APPROVED FABRICATION SHOP.
- STEEL FABRICATOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- ALL METAL ITEMS, INCLUDING CONNECTORS, EXPOSED TO THE WEATHER SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
- STRUCTURAL STEEL SHALL BE DELIVERED TO THE JOB SITE FREE OF EXCESSIVE RUST, MILL SCALE, GREASE, ETC.
- SUBMIT SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION FOR ALL STRUCTURAL STEEL MEMBERS AND ACCESSORIES. SHOP DRAWINGS SHALL INCLUDE CONNECTION DESIGN AND SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA.

FOUNDATION:

- FOUNDATION IS BASED ON AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF, TO BE CONFIRMED DURING CONSTRUCTION.
- GEOTECHNICAL REPORT AND ALL SUPPLEMENTAL REPORTS OR ADDENDA SHALL BE KEPT ON THE JOB SITE AT ALL TIMES.
- FOOTING DEPTHS SHOWN ARE A MINIMUM AND MAY REQUIRE DEEPENING PER DIRECTION OF THE GEOTECHNICAL ENGINEER.
- NOT USED.
- FOOTINGS SHALL BEAR ON FIRM UNDISTURBED OR COMPACTED SOIL PER RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
- GEOTECHNICAL ENGINEER SHALL VERIFY IN WRITING TO THE ARCHITECT/ENGINEER THAT THE SITE GRADING WORK COMPLIES WITH ALL OF THE RECOMMENDATIONS AND CONCLUSIONS OF THE GEOTECHNICAL REPORT. SUBMIT COMPACTION TEST REPORTS FOR ALL FILL BY A QUALIFIED TESTING LAB TO ARCHITECT/ENGINEER BEFORE FOUNDATION PLACEMENT. ALL LOOSE SOIL AND FILL DIRT SHALL BE COMPACTED PER GEOTECHNICAL REPORT AND TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER TO A MINIMUM OF 95% MAXIMUM DENSITY.
- THE FOOTING EXCAVATIONS SHALL BE KEPT FREE FROM LOOSE MATERIAL AND STANDING WATER AND SHALL BE NEAT AND TRUE TO LINE BEFORE ANY CONCRETE IS PLACE. EXCAVATIONS SHALL BE CHECKED AND APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER TO ENSURE COMPLIANCE WITH THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
- ALL SITE GRADING WORK SHALL BE PERFORMED UNDER THE DIRECT OBSERVATION OF THE GEOTECHNICAL ENGINEER. ANY DEVIATIONS IN SOIL CONDITIONS FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT ARE TO BE REPORTED TO THE ARCHITECT/ENGINEER & GEOTECHNICAL ENGINEER IMMEDIATELY.
- UTILITY TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED IN LAYERS TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER.
- ALL ABANDONED FOOTINGS, UTILITIES, ETC. THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.
- WALL FOOTINGS ARE CONTINUOUS POURED CONCRETE WITH CONTINUOUS REINFORCING PLACED 3" CLEAR OF BOTTOM AND SIDES.
- UNLESS OTHERWISE NOTED, WALL FOOTINGS ARE CENTERED UNDER WALLS AND COLUMN FOOTINGS UNDER COLUMNS.
- PROVIDE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN ALL GRADES.
- PROVIDE FOR DE-WATERING OF EXCAVATION FROM SURFACE, GROUND, AND OR SEEPAGE WATER.

STRUCTURAL WOOD:

- STRUCTURAL WOOD FOR LOAD-BEARING WALL STUDS AND SILL PLATES SHALL BE DOUGLASS FIR LARCH. ALL STRUCTURAL WOOD SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19%, UNLESS NOTED OTHERWISE. ALL STRUCTURAL LUMBER SHALL BE DOUGLASS FIR OF THE FOLLOWING GRADES CONFORMING TO STANDARDS GRADING RULES FOR WEST COAST LUMBER, NO. 10 F.L. LOC PS20. UNLESS NOTE OTHERWISE:

1.a. STUDS, RAFTERS, JOIST PLATES	No. 2
1.b. 4x6 / 8x BEAMS, STRINGERS AND HEADERS	No. 1 OR S.S.
1.c. POST AND TIMBERS	No. 1
1.d. STUDS	CONST. GRADE
1.e. BLOCKING AND STRIPPING	CONST. GRADE
- PLYWOOD SHEATHING:
 - a. ROOF SHEATHING SHALL BE CDX, UNLESS NOTES OTHERWISE.
 - b. USE EXTERIOR TYPE, MINIMUM C-C GRADE WHERE PLYWOOD IS EXPOSED TO WEATHER.
 - c. FLOOR SHEATHING SHALL BE CDX, UNLESS NOTED OTHERWISE.
 - d. ALL PLYWOOD SHALL CONFORM TO U.S. PRODUCT STANDARDS DOC PS1 OR PS2 APA RATED SHEATHING.
 - e. EACH SHEET OF PLYWOOD SHALL BE IDENTIFIED BY A REGISTERED STAMP OR BRAND OF THE DOUGLASS FIR PLYWOOD ASSOCIATION.
- ALL WOOD MEMBERS AND DECKING PERMANENTLY EXPOSED TO WEATHER, SILL PLATES, OR ANY WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
- STUDS OVER 10 FEET IN HEIGHT OR SUPPORTING 2 FLOORS AND ROOF MUST BE 2x6's AT 16" O.C. UNLESS NOTED OTHERWISE. STUDS GREATER THAN 16 FEET, SEE PLAN STUDS IN CRIPPLE WALLS LESS THAN 4 FEET IN HEIGHT MAY MATCH THE STUDS ABOVE.
- PROVIDE 2x SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT ALL SUPPORTS. BLOCKING SHALL BE ONE PIECE AND BE THE FULL DEPTH OF THE JOIST OR RAFTER.
- CROSS BRIDGING SHALL BE PROVIDED AT 8'-0" ON CENTER (MAXIMUM) FOR ALL JOISTS AND RAFTERS MORE THAN 8" DEEP.
- PROVIDE DOUBLE JOISTS UNDER PARTITION WALLS WHICH ARE PARALLEL TO THE DIRECTION OF THE JOIST.
- PROVIDE SOLID, FULL BLOCKING UNDER PARTITION WALLS WHICH ARE PERPENDICULAR TO THE DIRECTION OF JOISTS.
- TOP PLATE OF ALL STUD WALLS SHALL BE TWO PIECES. TOP PLATE SHALL BE THE SAME SIZE AS THE WALL STUDS. PROVIDE A 4"-0" SPICE LAP BETWEEN PLATES, NAILED WITH (12) 16d NAILS MINIMUM EACH SIDE OF TOP PLATE.
- ALL NAILS SHALL BE COMMON OR GALVANIZED BOX. NAILING SHALL BE PER CHAPTER 23 OF THE UNIFORM BUILDING CODE.
- BOLT HOLES IN WOOD SHALL BE 1/32" TO 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER. ALL BOLTS SHALL HAVE STANDARD CUT WASHER UNDER HEAD AND NUT UNLESS NOTED OTHERWISE. (11.1.2.2 NDS)
- ALL BOLTS SHALL BE RETIGHTENED PRIOR TO THE APPLICATION OF SHEATHING, PLASTER, ETC.
- WOOD MEMBERS SHALL NOT BE CUT FOR PLUMBING OR WIRING UNLESS DETAILED ON THE APPROVED SHOP DRAWINGS.
- NOTCHING:
 - a. BEARING WALL STUDS CANNOT BE NOTCHED MORE THAN 25% OF THEIR WIDTH.
 - b. BORED HOLES CANNOT HAVE A DIAMETER GREATER THAN 40% OF THE STUD WIDTH.
- PROVIDE FIRE STOPS AT ALL INTERSECTIONS OF STUD WALLS AT FLOOR / CEILING / ROOF. FIRE STOPS SHALL BE 2x NOMINAL THICKNESS OF WOOD AND SHALL BE THE FULL WIDTH OF THE ENCLOSED SPACE. PLACE FIRE STOPS AT A MAXIMUM SPACING OF 8'-0" IN EACH DIRECTION AND AT THE SAME LINES AS THE ADJACENT WALLS.
- LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM MATERIAL PROPERTIES: FLEXURAL STRENGTH (F_b) = 2,600 PSI, MODULUS OF ELASTICITY (E) = 2,000 KSI.
- PSL BEAMS SHALL HAVE THE FOLLOWING MINIMUM MATERIAL PROPERTIES: FLEXURAL STRENGTH (F_b) = 2,900 PSI; MODULUS OF ELASTICITY (E) = 2,200 KSI.
- LAG BOLTS: PROVIDE HOLE 40%-70% OF THREADED SHANK DIAMETER AND FULL DIAMETER FOR SMOOTH SHANK PORTION (2015 NDS)
- SOLID BLOCKING SHALL BE PROVIDED AT ALL HORIZONTAL JOINTS OCCURRING IN BRACED WALL PANELS
- FASTENERS, INCLUDING NUTS AND WASHERS, AND CONNECTORS IN CONTACT WITH PRESERVATIVE TREATED AND FIRE TREATED WOOD SHALL BE OF HOT DIPPED ZINC COATED GALV. STEEL, SILICON BRONZE OR COPPER. THE COATING WEIGHTS FOR ZINC COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTMA A 163. [CRC R317.3]

CONCRETE:

- CEMENT SHALL CONFORM TO ASTM C150, TYPE I / II
- AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C44, 1 1/2" MAXIMUM SIZE.
- ADMIXTURES MAY NOT BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER. ADMIXTURES USED TO INCREASE THE WORKABILITY OF THE CONCRETE SHALL NOT REDUCE THE STRENGTH OF CONCRETE. FLY ASH (POZZOLAN) IF PERMITTED BY SPECIFICATIONS SHALL NOT EXCEED 25% FOR SLAB ON GRADE AND 25% FOR ALL OTHER CONCRETE.
- THE MIX DESIGN, INCLUDING PROPORTIONS OF MATERIALS FOR A ONE YARD BATCH, SHALL BE SUBMITTED TO THE ENGINEER OF RECORD & CONTRACTING OFFICER FOR REVIEW PRIOR TO ORDERING CONCRETE.
- READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
- ALL REINFORCING BARS AND INSERTS SHALL BE SECURED IN PLACE PRIOR TO PLACING CONCRETE.
- CONDUTS EMBEDDED HORIZONTALLY IN THE SLAB SHALL HAVE AN OUTSIDE DIAMETER NO GREATER THAN 1/4 THE THICKNESS OF THE SLAB. CONDUIT SHALL NOT BE EMBEDDED IN A SLAB THAT IS LESS THAN 4 1/2" THICK, EXCEPT FOR LOCAL OFFSETS. MIN. CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 6".
- NON-STRUCTURAL STEEL MEMBERS EMBEDDED IN CONCRETE SHALL BE GALVANIZED OR PAINTED. ALL DAMAGED GALVANIZED AREAS SHALL BE REPAIRED PRIOR TO EMBEDMENT.
- ALL NORMAL WEIGHT CONCRETE SHALL HAVE A MAXIMUM DRY DENSITY OF 150 pcf. ALL LOW WEIGHT CONCRETE TO HAVE MAXIMUM DENSITY OF 115 pcf.
- ULTIMATE CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS.

	MIN. f'c
SLAB ON GRADE	2,500 psi
CONCRETE PAD FOOTINGS	2,500 psi
GRADE BEAMS	3,000 psi
PREFAB	3,000 psi
STRUCTURAL SLAB	3,000 psi
CONTINUOUS FOOTINGS	2,500 psi
RETAINING WALLS	2,500 psi
CAISSONS / PILES	3,000 psi
COLUMNS	3,000 psi

- PROVIDE CONSTRUCTION OR CONTROL JOINTS IN SLAB ON GRADE AS SHOWN ON PLANS UNLESS SPECIFIED OTHERWISE. LOCATION OF JOINTS NOT SPECIFICALLY INDICATED SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER & CONTRACTING OFFICER PRIOR TO PLACING REINFORCING STEEL.
- DRY PACK SHALL BE ONE PART CEMENT AND 2 3/4 PARTS SAND WITH JUST ENOUGH WATER TO HYDRATE CEMENT AND FORM A BALL SHOWING MOISTURE ON THE SURFACE WHEN SQUEEZED. IT SHALL BE RAMMED IN TIGHT TO MAXIMUM DENSITY ATTAINABLE, AND SHALL BE FROM A PRODUCT THAT SPECIFIES A MINIMUM STRENGTH AT 28 DAYS OF 5000 psi.
- NON-SHRINK GROUT SHALL BE FROM A PRODUCT THAT SPECIFIES A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 7,000 psi PER ASTM C109. GROUTING OF BASE PLATES PRIOR TO PLUMBING OF COLUMN IS NOT PERMITTED.
- PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC., SHALL BE FORMED WITH A 3/4" CHAMFER OR TOOLED EDGE, UNLESS OTHERWISE NOTED.
- ALL CONCRETE WHICH DURING THE LIFE OF THE STRUCTURE WILL BE SUBJECT TO FREEZING TEMPERATURES WHILE WET, SHALL HAVE A WATER CEMENT RATIO NOT EXCEEDING 0.45 BY WEIGHT AND SHALL CONTAIN ENTRAINED AIR PER ACI 614. SUCH CONCRETE SHALL INCLUDE EXTERIOR SLABS, PERIMETER FOUNDATIONS, EXTERIOR CURBS, ETC.

REINFORCING STEEL:

- DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, ACI 415-LATEST ADOPTED EDITION.
- ALL REINFORCING SHALL BE ADEQUATELY SUPPORTED TO PREVENT DISPLACEMENT BY CONCRETE PLACEMENT OR WORKERS.
- ALL REINFORCING BARS EXCEPT BARS TO BE WELDED SHALL CONFORM TO THE "STANDARD SPECIFICATION FOR DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT", ASTM A615 GRADE 60. BARS TO BE WELDED SHALL CONFORM TO ASTM A706.
- WELDING OF REINFORCING BARS TO BE IN ACCORDANCE WITH "STRUCTURAL WELDING CODE-REINFORCING STEEL", AWS D14. REINFORCING STEEL TO BE WELDED SHALL HAVE A MAXIMUM CARBON EQUIVALENT (CE) OF 0.75. SPECIAL INSPECTION IS REQUIRED. TESTING IS REQUIRED FOR ALL WELDS THICKER THAN 5/16".
- WHERE CONTINUOUS BARS ARE CALLED OUT IN FOOTINGS, SPLICES MAY BE USED. WHERE BARS ARE SHOWN SPLICED, THEY MAY RUN CONTINUOUS AT CONTRACTOR'S OPTION.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- UNLESS OTHERWISE SHOWN, WALL VERTICAL REINFORCING SHALL BE POSITIONED AT THE CENTER OF THE WALL.
- DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL REINFORCING.
- ALL REINFORCING BARS SHALL BE PROVIDED WITH THE FOLLOWING CONCRETE COVER:

9.1 CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....	3"
9.2 CONCRETE EXPOSED TO EARTH OR WEATHER	
NO. 6 THROUGH NO. 18 BAR.....	2"
NO. 5, W31 OR D31 WIRE AND SMALLER.....	1 1/2"
- CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:

NO. 14 AND NO. 18 BAR.....	1 1/2"
NO. 11 BAR AND SMALLER.....	3/4"
- SLAB ON GRADE REINFORCEMENT SHALL BE POSITIONED AT MID DEPTH.
- SHOP DRAWINGS FOR SIZE AND LAYOUT OF REINFORCING REBARS ARE REQUIRED.

TRUSSES:

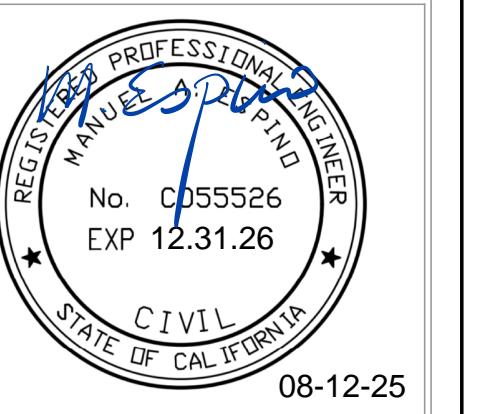
- FABRICATION AND ERECTION OF WOOD TRUSSES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AF&P'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, AND ANSI/TPI 1.
- TRUSS MANUFACTURER SHALL FURNISH SHOP DRAWINGS AND DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN CALIFORNIA. SHOP DRAWINGS SHALL INDICATE TRUSS END REACTIONS FOR CONNECTION VERIFICATION BY STRUCTURAL-ENGINEER-OF-RECORD.

ADHESIVE, ANCHOR RODS AND REBAR IN HARDENED CONCRETE (EPOXY ANCHORS):

- ALL ADHESIVE ANCHOR INSTALLATIONS SHALL COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND SPECIFICATIONS, INCLUDING ANY ICC-ES REPORTS.
- DUST SHALL BE BLOWN FROM THE HOLE WITH COMPRESSED AIR TO ENSURE PROPER ANCHOR SEATING DEPTH AND TO PROVIDE A CLEAN BONDING SURFACE. ADDITIONALLY, THE HOLE SHALL BE BRUSHED WITH A NYLON BRUSH THEN BLOWN AGAIN WITH COMPRESSED AIR.
- ADHESIVE SHALL ONLY BE APPLIED TO DRY SURFACES.
- BASE MATERIAL TEMPERATURE MUST BE 40°F OR ABOVE AT TIME OF INSTALLATION. FOR BEST RESULTS, MATERIAL SHOULD BE 70°F - 80°F.
- WHEN INSTALLING EPOXY ANCHORS INTO MASONRY, ANCHORS SHALL BE INSTALLED IN SOLID GROUTED CELLS ONLY.
- CHEMICAL ANCHOR SYSTEMS:
 1. CONCRETE. USE ONLY ADHESIVE ANCHOR SYSTEMS THAT HAVE BEEN ISSUED AN ICC-ES REPORT IN ACCORDANCE WITH PROVISIONS OF ICC-ES AC 308. ANCHOR SYSTEM SHOULD BE APPROVED FOR USE IN CRACKED CONCRETE AND SEISMIC DESIGN CATEGORIES AF PER SECTION 2.0 OF THE ICC-ES EVALUATION SERVICES REPORT. ANCHOR SYSTEM SHALL BE INSTALLED PER REQUIREMENTS OF THE ICC-ES EVALUATION SERVICES REPORT FOR SPECIFIC ANCHOR, AND AS REQUIRED BY THE MANUFACTURER.
- ANCHOR RODS:
 1. ALL RODS SHALL BE ASTM A36 THREADED RODS WITH ASTM A563 GRADE 'A' NUTS AND ASI B18.22.1 TYPE 'A' WASHERS. UNLESS OTHERWISE NOTED, ANCHORS DESIGNATED AS ASTM A193 GRADE B7 THREADED RODS SHALL USE ASTM A563 GRADE DH HEAVY HEX NUTS AND ASTM F436 WASHERS.
- REINFORCEMENT BARS: ASTM A615 GRADE 60 STEEL
- REMOVE GREASE, OIL, RUST AND ANY OTHER LAITANCE FROM RODS AND DOWELS PRIOR TO INSTALLATION.
- SPECIAL INSPECTION REQUIREMENTS WILL BE INDICATED BY SECTION 4.0 OF THE ICC-ES EVALUATION SERVICES REPORT. ANY SPECIAL INSPECTION SHALL VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, HOLE DIMENSIONS, ANCHOR SPACINGS, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE.
- CONTRACTOR'S OPTION TO USE OTHER MANUFACTURER'S PRODUCTS ONLY WITH PRIOR APPROVAL OF THE ENGINEER & CONTRACTING OFFICER. SUBMIT MANUFACTURER'S LITERATURE AND PRODUCT INSTALLATION FOR REVIEW.

UNIT MASONRY ASSEMBLIES:

- CONCRETE MASONRY UNITS (CMU) SHALL BE ERECTED AS LOAD BEARING CONCRETE MASONRY. COMPLY WITH ACI 530.1 "SPECIFICATIONS FOR MASONRY STRUCTURES" FOR MATERIALS, METHODS, WORKMANSHIP AND ERECTION.
- PROVIDE CONCRETE MASONRY UNIT (MIN. 1900 PSI) SO THAT CMU ASSEMBLY DEVELOPS A MINIMUM NET-AREA COMPRESSIVE STRENGTH (f'M) OF 1500 PSI AT 28 DAYS AND AS FOLLOWS:
 1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 WITH A MINIMUM AVERAGE NET-AREA COMPRESSIVE



08-12-25

REVISIONS
B1

NOTES
1. NOTCH & BORING NOT TO EXCEED IN SAME STUD SECTION
2. NO MORE THAN 2 SUCCESSIVE DOUBLE STUDS MAY HAVE 60% MAX BORED HOLES
3. NOTCHED & BORED % OF STUD
25% 2/8" 1 3/8"
40% 1 3/8" 2 1/8"
60% 2" 3 1/4"

NOTES
1. SEE NOTES FOR LOCATIONS
2. PROVIDE 3/8" EDGE DISTANCE FOR NAILS
3. FIELD NAILING (F.N.) @ 12" O.C.
4. NAILS SAME SIZE AS (E.N.)

NOTES
1. SEE NOTES FOR LOCATIONS
2. PROVIDE 3/8" EDGE DISTANCE FOR NAILS
3. FIELD NAILING (F.N.) @ 12" O.C.
4. NAILS SAME SIZE AS (E.N.)

NOTES

STRUCTURAL ABBREVIATIONS

GENERAL DESIGN INFORMATION

Building Code.....CBC 2022

Design Live Loads:
Roof.....20 psf
Ceiling.....20 psf

Superimposed Dead Loads:
Roof.....11 psf
Ceiling.....8 psf

WIND DESIGN DATA
Basic Wind Speed.....95 mph
Exposure Category.....B
Risk Category.....II
Wind Importance Factor.....1.0
Design Wind Speed.....19.80 psf

EARTHQUAKE DESIGN DATA
a. Seismic Importance Factor (I):.....1.0
b. Mapped Spectral Response Accelerations:
Ss.....1.342
S1.....0.481

c. Site Class:
d. Spectral Response accelerations
SDS.....1.074
SD1.....0.583

e. Seismic Design Category:
f. Basic Seismic Force Resisting System(s):
Bearing Wall Systems
Light framed walls sheathed with wood
structural panels rated for shear resistance

g. Design Base Shear:.....3,352 Kips
h. Total Weight of Building:.....20,290 Kips
i. Seismic Response Coefficient(s) Cs:.....0.1652
j. Response Modification Factor(s), R:.....6.5

k. Analysis Procedure Used: Equivalent Lateral Force Procedure

l. Redundancy Factor Used:.....1.3

Allowable Soil Bearing Value:.....1,500 psf

(T)

T & B

TOP AND BOTTOM

TEMP.

TEMPERATURE

RADIUS

REFERENCE

PIPE

REINFORCED CONCRETE PIPE

R.C.P.

REINFORCED CONCRETE

BLDG.

BUILDING

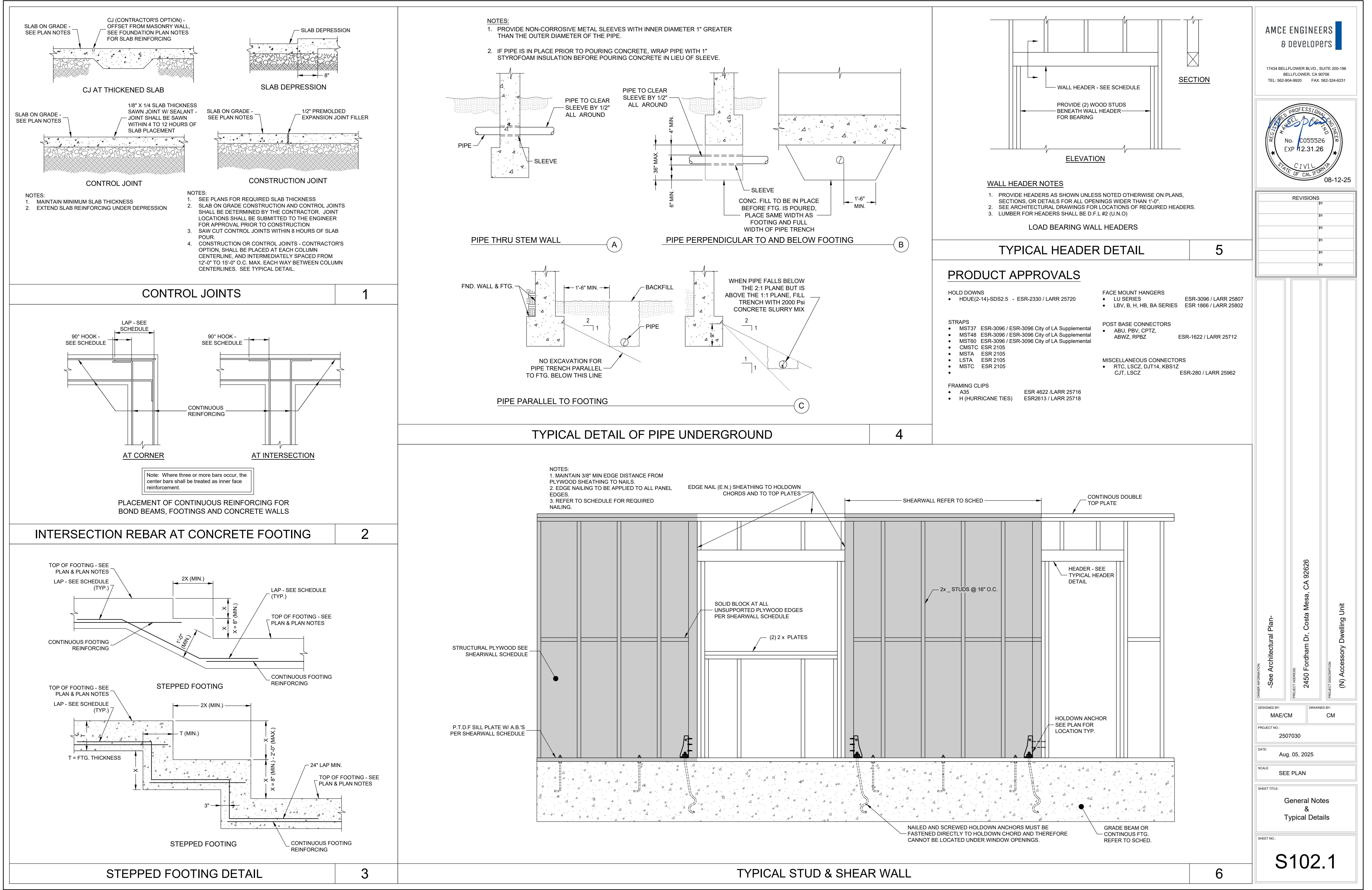
B.R.

BLOCK

BLK.

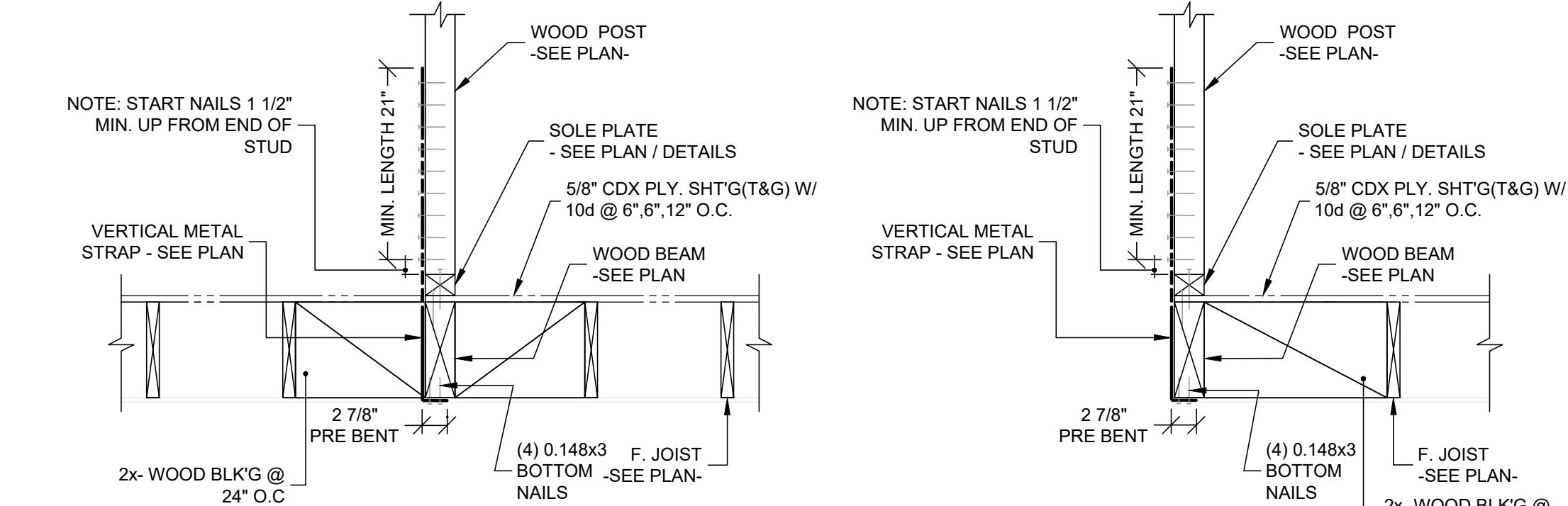
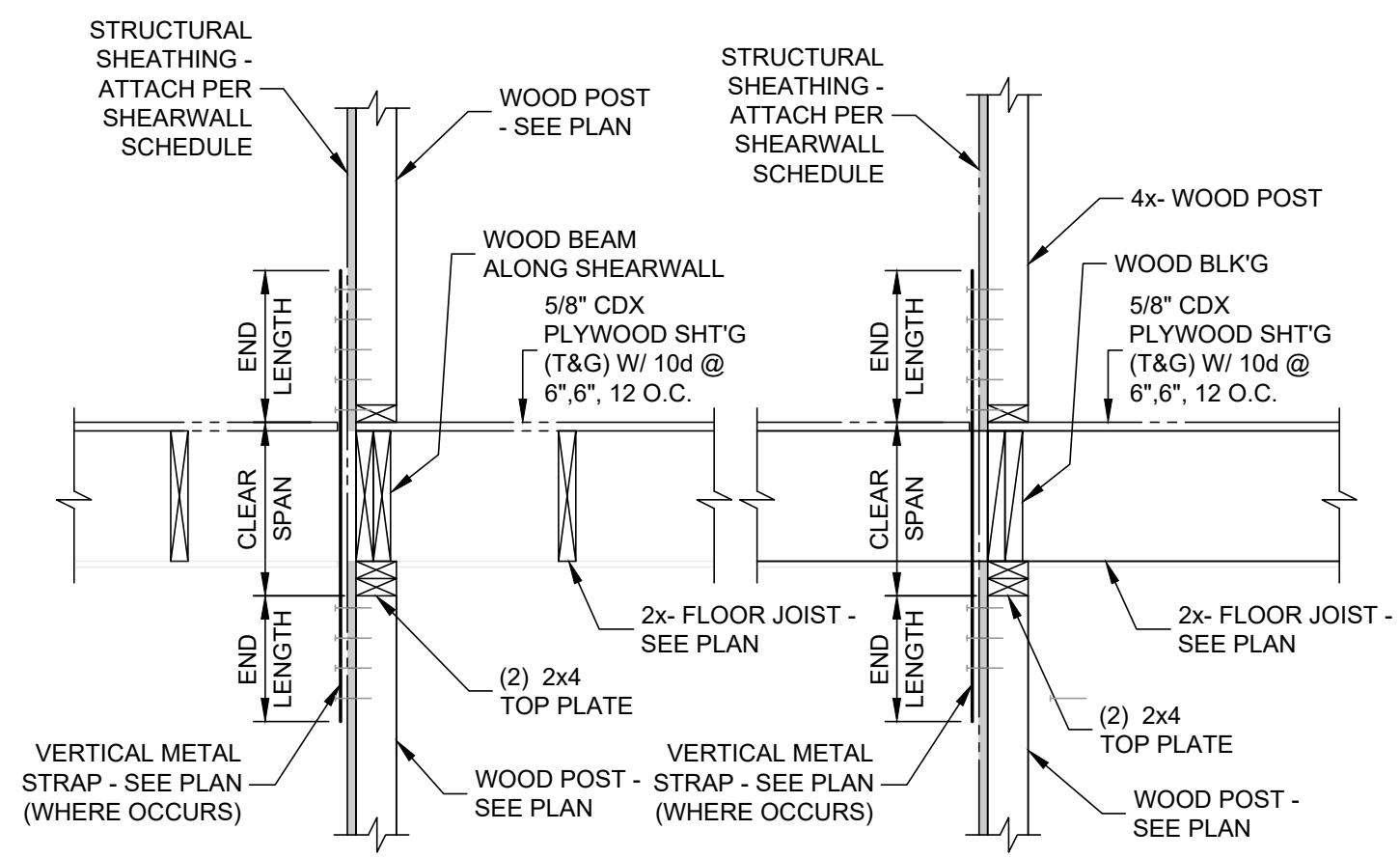
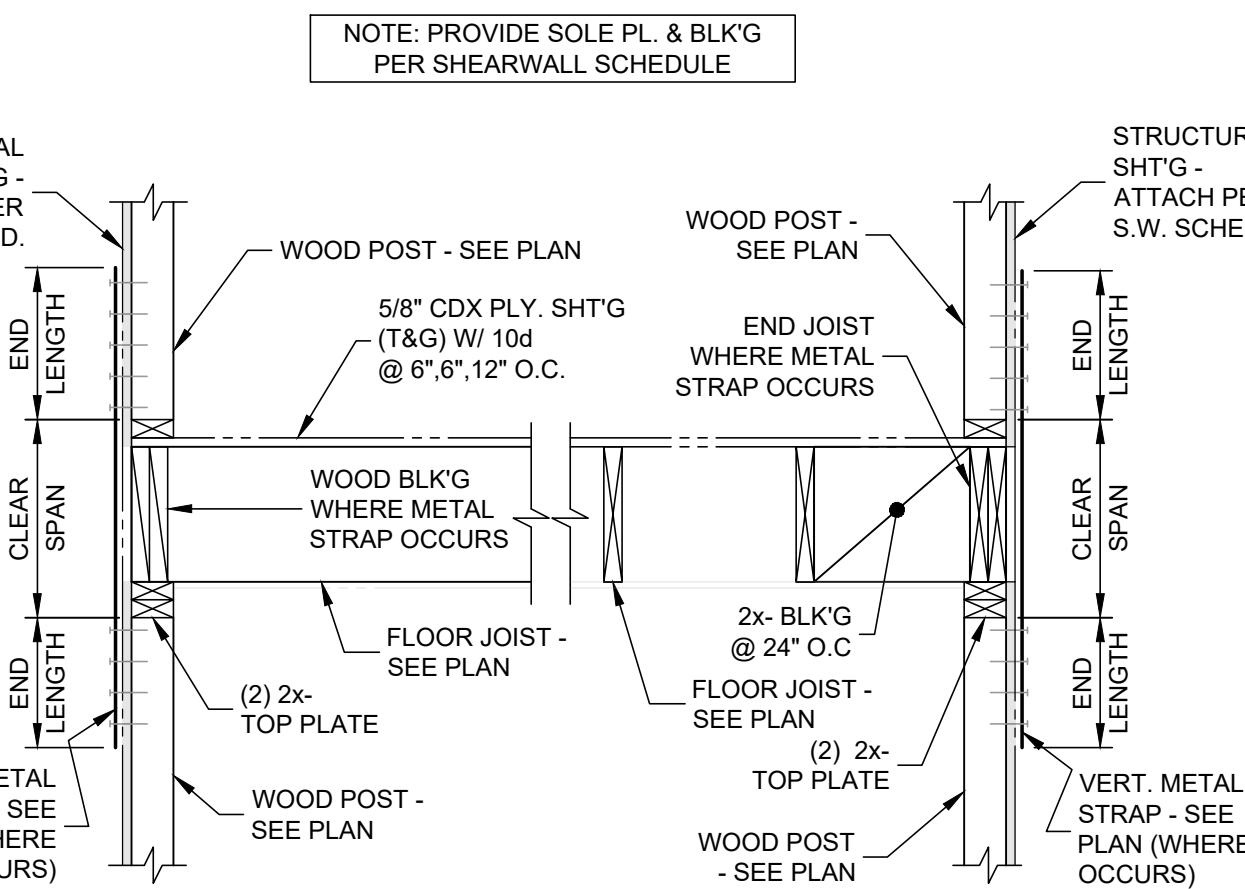
BORING

B.R.





REVISIONS
B1



MST HOLD DOWN (EXTERIOR)

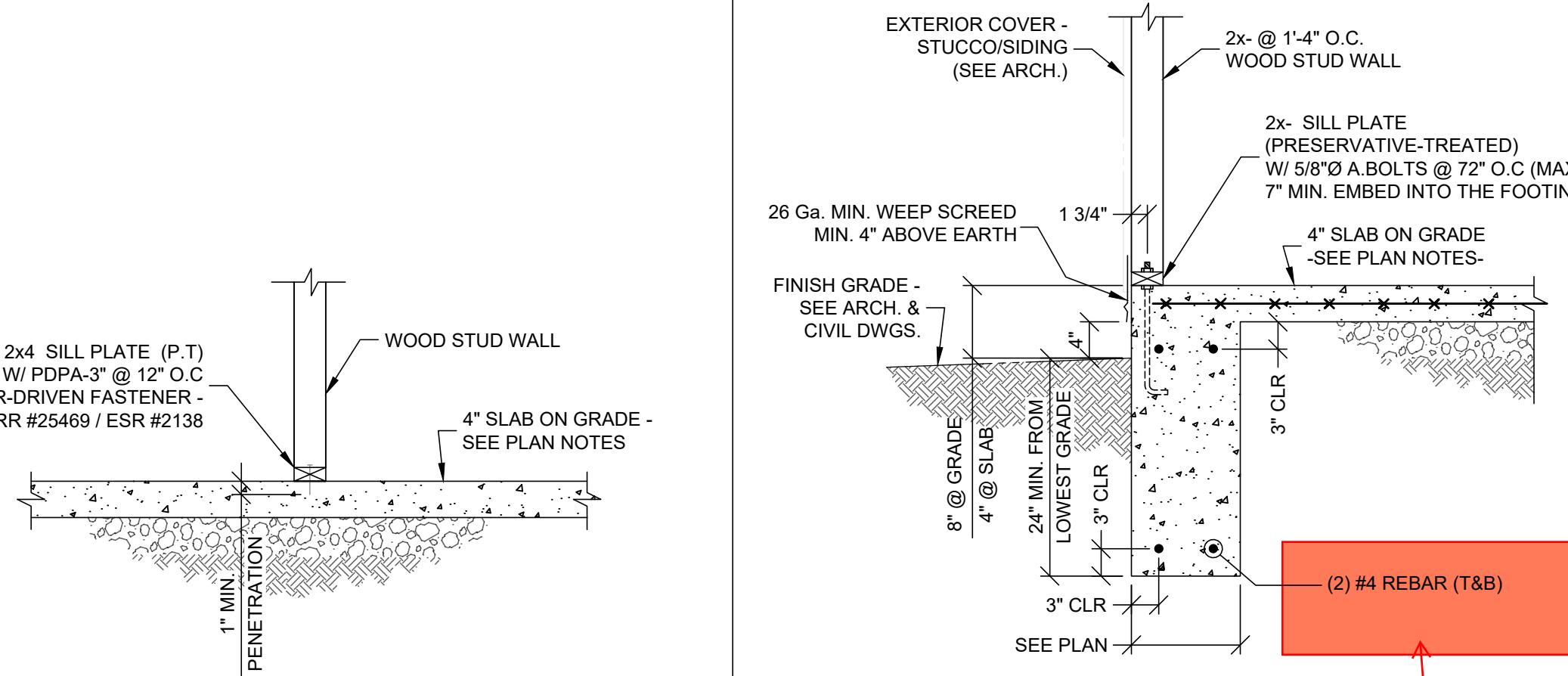
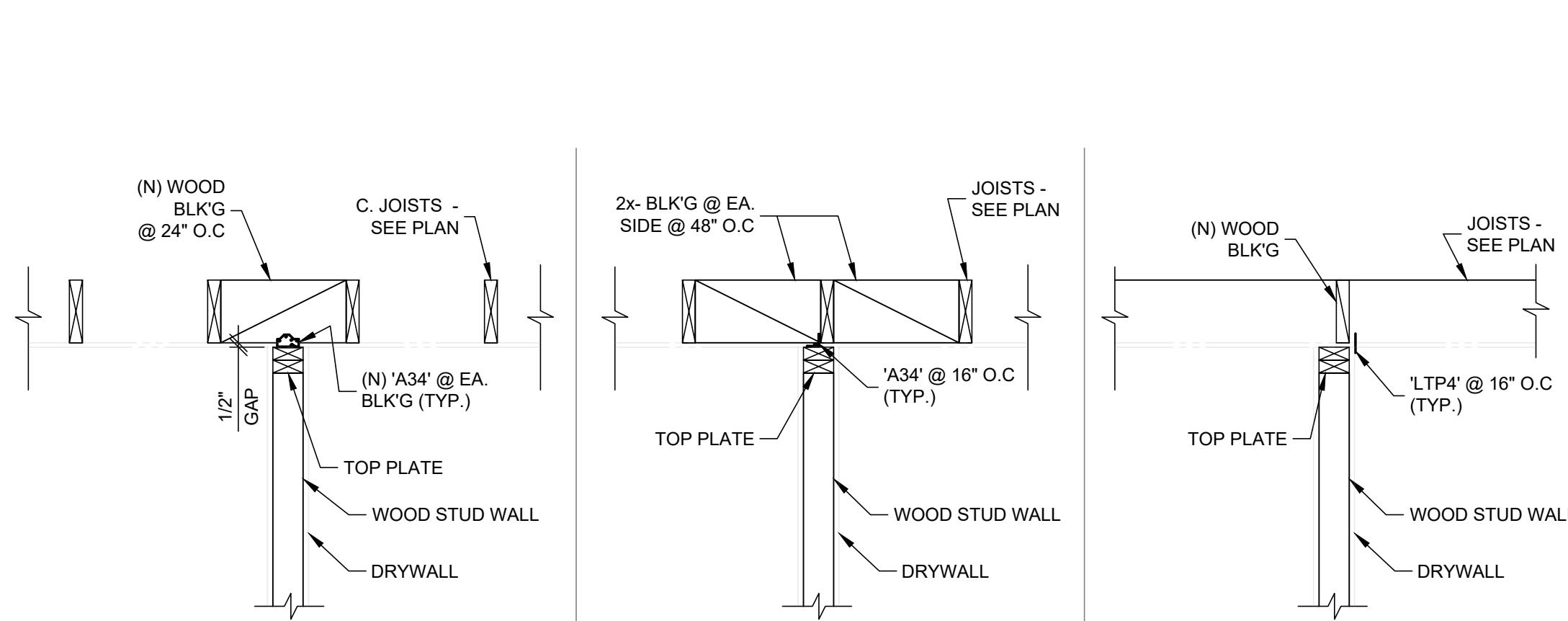
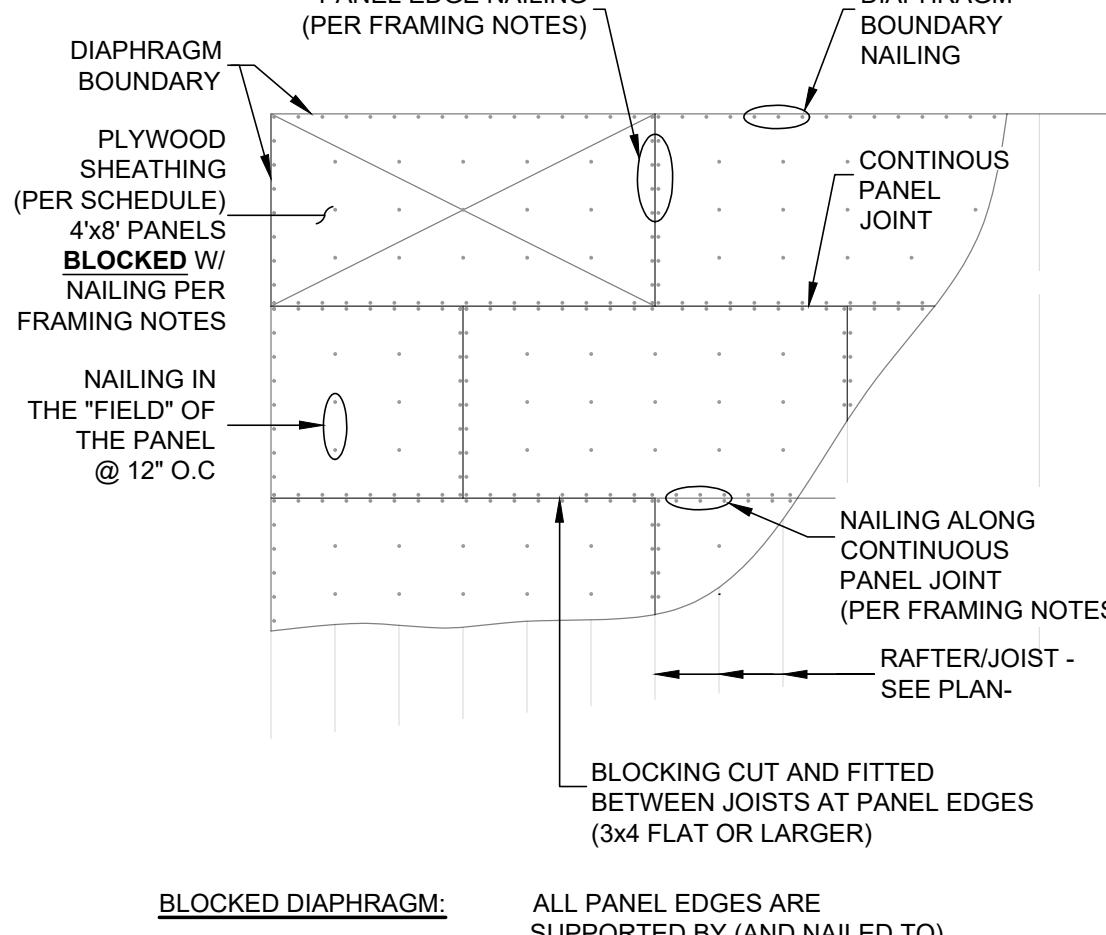
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MST HOLD DOWN (INTERIOR)

2

MSTC_B3 PRE-BENT METAL STRAP

3



BLOCKED DIAPHRAGM

4

NON-LOAD BEARING WALL FRAMING (1/2" GAP)

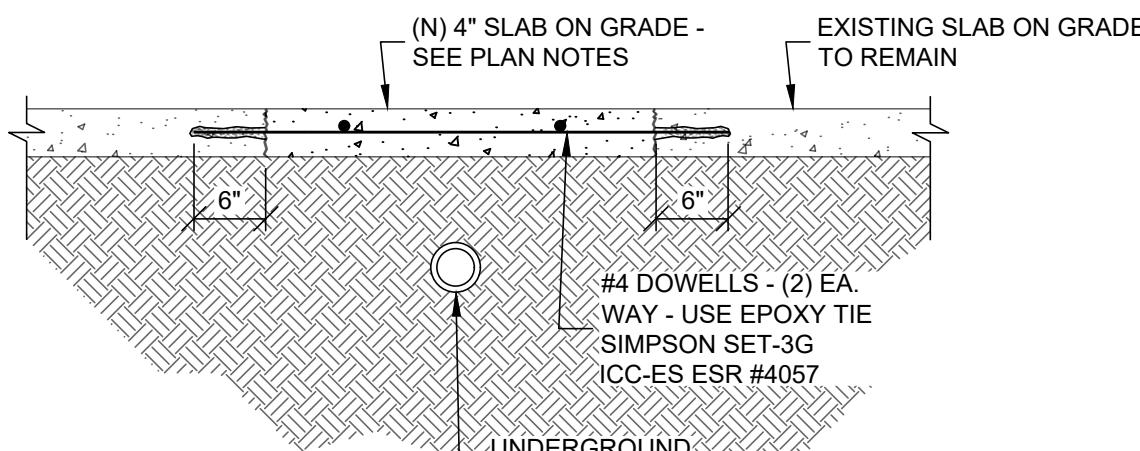
5

NON-LOAD BEARING WALL CONNECTION AT FOUNDATION

6

TYP. FOUNDATION DETAIL AT WALLS WITH NO SHEARWALLS

7



CONCRETE SLAB REPAIR

8

MIN 2#5 IN ABSENCE OF SOILS REPORT
See Architectural Plan-

OWNER INFORMATION	-See Architectural Plan-
PROJECT ADDRESS:	2450 Fordham Dr, Costa Mesa, CA 92626
PROJECT DESCRIPTION:	(N) Accessory Dwelling Unit
DESIGNED BY:	MAE/CM
DRAWN BY:	CM
PROJECT NO.:	2507030
DATE:	Aug. 05, 2025
SCALE:	SEE PLAN
SHEET TITLE:	Typical Details
SHEET NO.:	S102.2

GENERAL NOTES	
1. All material and workmanship shall conform to the drawing and specifications set forth.	
2. During the construction period, the contractor shall be responsible for the safety of the building.	
3. The contractor shall provide adequate shoring, bracing in accordance with all national, state, and local safety provisions. Any deviation must be approved prior to construction.	
4. All details designated as standard or typical shall be subject to review by the engineer of record.	
5. All information shown on the drawings relative to existing conditions is given as the best present knowledge, but without guarantee of accuracy. Where actual conditions conflict with the drawings, they shall be reported to the engineer of record so that the proper revisions may be made.	
6. Modifications of details of construction shall not be made without the written approval from the engineer of record.	
7. The plans and details were developed based on a visual field inspection conducted by the responsible Architect/Engineer or their representative, utilizing non-intrusive methods. Any concealed existing conditions will be presumed.	
8. Engineer of record must approve any changes during construction due to hidden or not readily observable field conditions.	
9. Contractor responsible for the construction of a wind or seismic force resisting system/component listed in the statement of special inspection shall submit a written statement of responsibility to the building and safety inspectors on the owner prior to the commencement of work on such system or component.	
10. The G.C. is responsible for providing temporary walls, shoring, bracing to support the structure for vertical and lateral loading, during construction.	
11. Verify all dimensions and on-site conditions prior to construction. Notify the Architect/EOR of any deviations from the plans. All changes must be approved by the responsible party before continuing construction.	
12. The design is based on limited available information and observations made during the site visit. Existing framing and foundation conditions that were not visible or accessible at the time of design may not be fully represented in the drawings. The engineering team is not responsible for concealed or undocumented conditions discovered during construction. It is the contractor's responsibility to verify all existing conditions the field prior to the start of demolition or construction activities and to notify the Engineer of Record of any discrepancies or unforeseen conditions. Additional structural observations may be required to assess such conditions and determine any necessary design modifications.	

PERIODIC SPECIAL INSPECTIONS	
1. Wood shear walls, Shear panels, and Diaphragms, including nailing, bolting, anchoring, and other fastening components of the seismic system, soil testing.	
2. Special inspection by a registered deputy inspector is required where the fastener spacing of the sheathing is 4 inches on center or less.	
3. All special inspector certifications are to be provided to the building official for review.	
4. All special inspection observation reports and testing results are to be provided to the city building official for review.	

CONTINUOUS SPECIAL INSPECTIONS	
1. Continuous special inspection by a registered deputy inspector is required for field welding, post-installed adhesive anchors installed horizontally or upwardly inclined to resist sustained tension loads, shotcrete placement, concrete strength $f_{c'}$ > 2,500 psi, sprayed-on fireproofing, engineered masonry, high-lift grouting, high load diaphragms and special moment-resisting concrete frames, and helical pile foundations.	

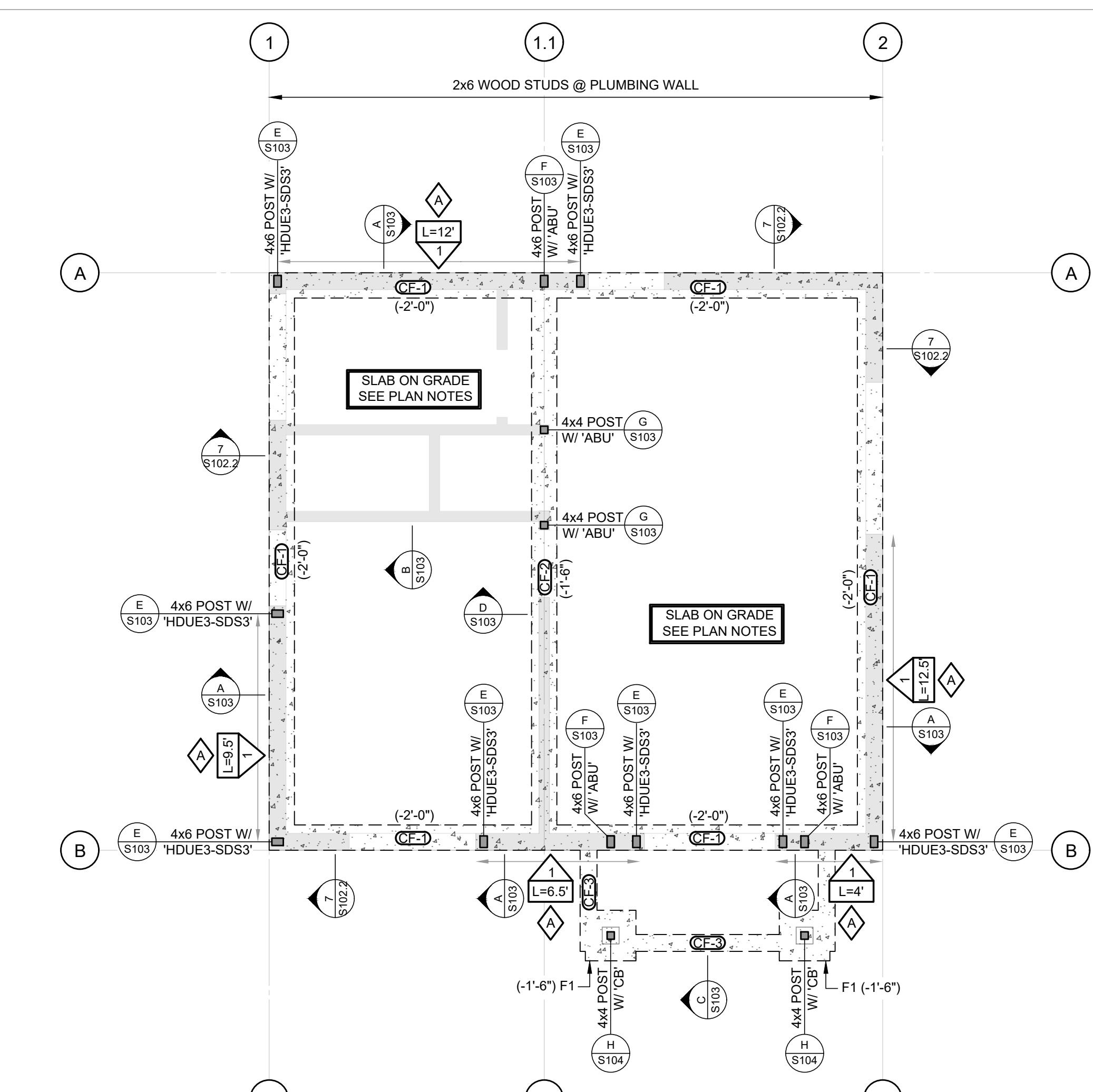
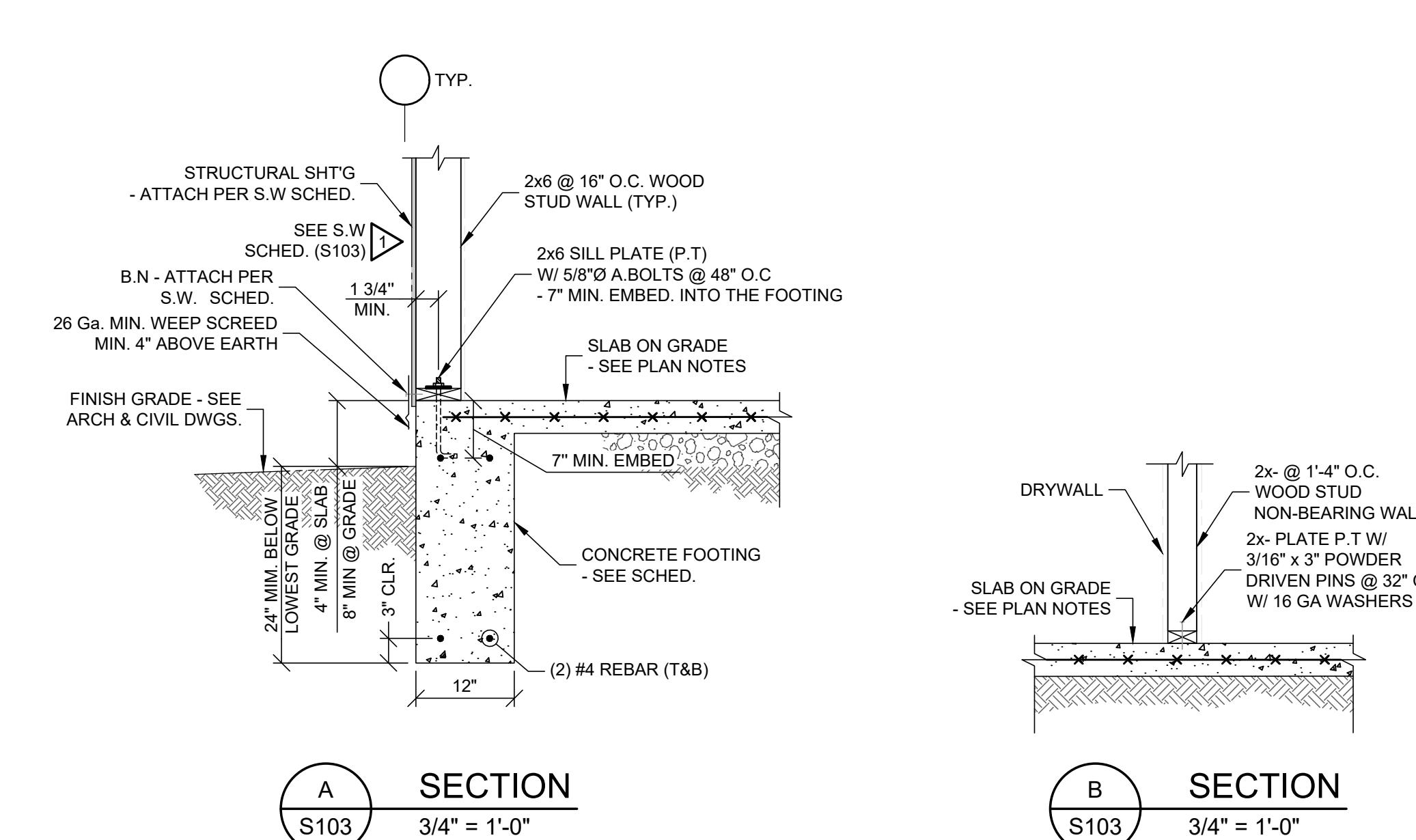
DEPUTY INSPECTION SCHEDULE	
1. Anchor Bolts into existing concrete footing (Epoxy)	
2. Hold down bolts into existing concrete footing (Epoxy)	
3. Shear panels where fastener spacing of the sheathing is 4 inches on center or less.	

SOILS / GEOTECHNICAL NOTES	
1. If adverse soils conditions are encountered, a soils investigations report may be required.	
2. Footings shall bear on firm undisturbed or compacted soil per recommendations of the geotechnical engineer (when soils report is available).	

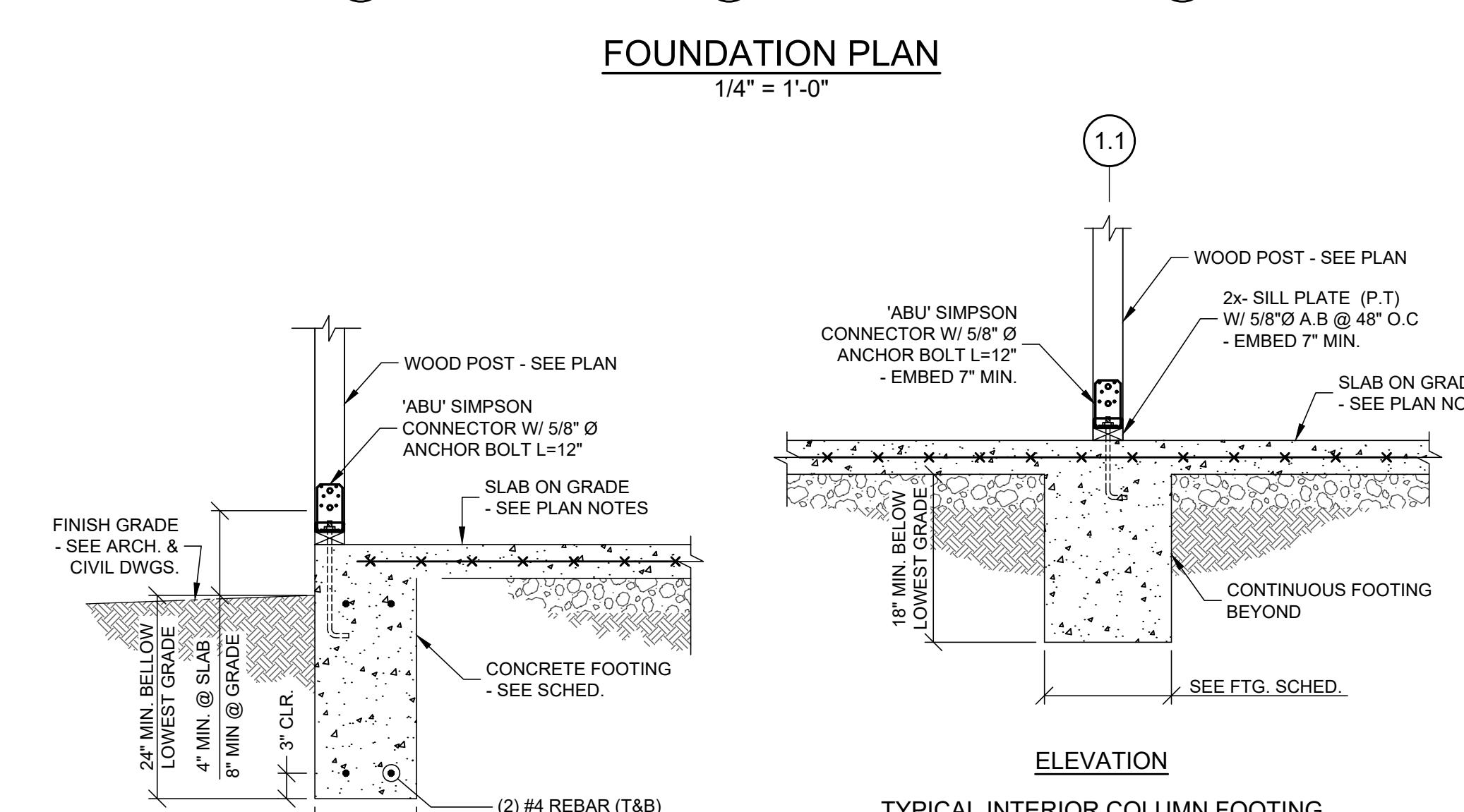
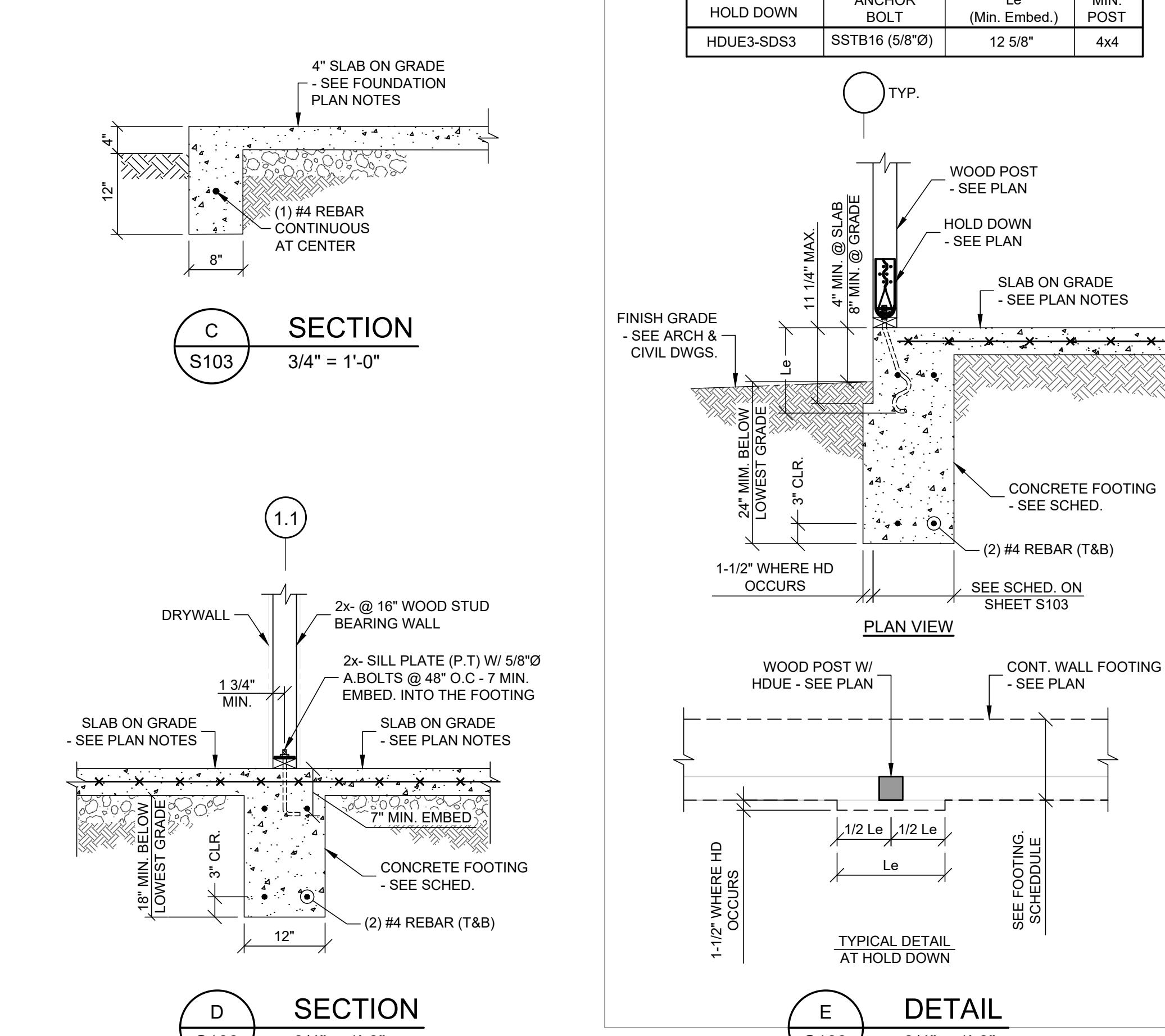
GENERAL PLAN NOTES	
1. Shearwall dimensions on structural plans are for shear wall length reference only. See architectural plans for overall wall construction lengths.	
2. All exterior dimensions on plans are to face of stucco, unless otherwise noted (See architectural plans).	
3. The count and location of rafter/joist members on plans are for reference only.	
4. All diaphragm & shearwall nailing shall utilize "common" nails with fullheads unless otherwise approved (CBC 2306.2)	
5. Fasteners in preservative-treated wood (i.e., anchor bolts, nails, screws etc.) shall be approved silicon bronze or copper, stainless steel, or hot-dipped zinc-coated steel. (CBC 2304.10.6)	

15 MIL VB IN ABSENCE OF SOILS REPORT

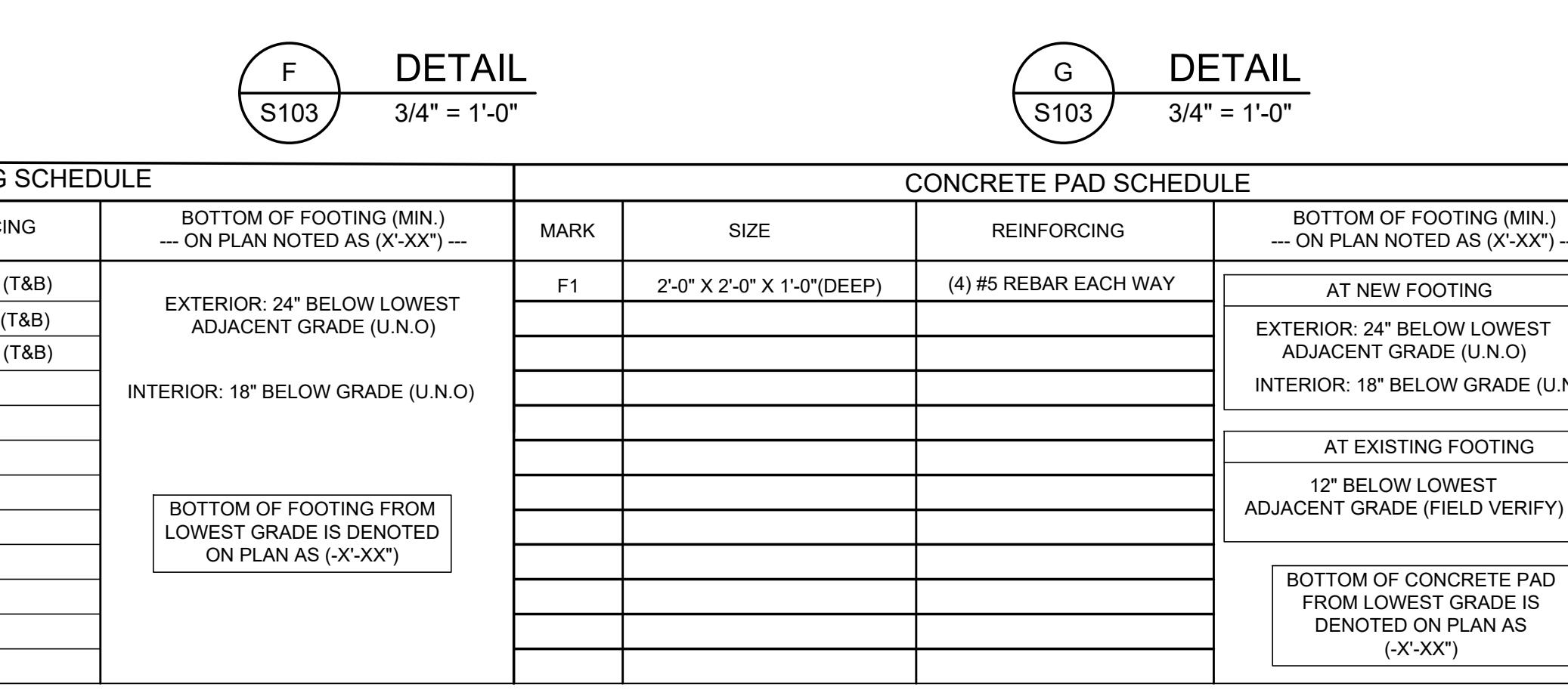
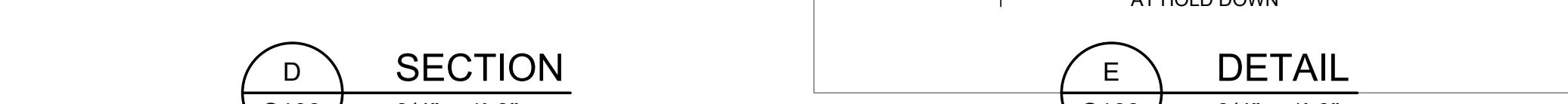
FOUNDATION PLAN NOTES	
1. Entire area shall receive 4" concrete slab on grade reinforced with #4 rebar spaced @ 16" o.c. Slab shall bear over two layers of a 2" fill of sand and a moisture barrier membrane (10 mil thick) sandwiched between the two layers of fill.	
2. The foundation and slab on grade (when applicable) shall be executed as a monolithic pour.	
3. Contractor shall coordinate top of footing elevations with architectural, mechanical, electrical, plumbing, and civil drawings. The Structural Engineer shall be notified of conflicts or discrepancies in top of footing elevations.	
4. Hold downs shall be finger tight & 1/16" turn just prior to covering the wall framing.	
5. Plate washers are required for all holdowns.	
6. Connector bolts into wood framing require steel plate washers in accordance with Table 2305.5 of the LA Building Code.	
7. All bolt holes shall be drilled 1/32" to 1/16" oversized. (11.1.2.2, NDS)	
8. Hold down hardware must be secured in place prior to foundation inspection.	
9. See Typical Construction Details on Sheet S102.	
10. All connectors called out on plan are manufactured by 'Simpson strong tie' Provided Simpson product or equivalent.	
11. Provide 'BC Hot Base' to all columns with no specified column base connector.	
12. Foundation bolts shall be embedded at least 7" into the concrete masonry spaced not more than 6'-0" o.c. - unless noted otherwise. (2) anchors per 12" o.c. ea. and located 4" to 12" from end of plate section. Provide washer size per provided plate washer table if provided otherwise.	
13. A monolithic pour is assumed at existing Foundation & Stab. Contractor must verify this condition exists. If the existing condition deviates from assumption, Engineer of Record must be notified.	
14. Engineer of record to verify existing footing conditions prior to placement of rebar.	
15. Provide corrosion resistant coating for all exterior exposed connectors & fasteners.	
16. Owner acknowledges possible upgrades to the existing foundation and concrete slab if found to have extensive damage at the time of construction.	



FOUNDATION PLAN
1/4" = 1'-0"



TYPICAL INTERIOR COLUMN FOOTING



REVISIONS
B1

OWNER INFORMATION	- See Architectural Plan-
PROJECT ADDRESS:	2450 Fordham Dr, Costa Mesa, CA 92626
PROJECT DESCRIPTION:	(N) Accessory Dwelling Unit

DESIGNED BY:	MAE/CM	DRAWN BY:	CM
PROJECT NO.:	2507030		
DATE:	Aug. 05, 2025		
SCALE:	SEE PLAN		
SHEET TITLE:	Foundation Plan, Sections & Details		
SHEET NO.:	S103		

SHEARWALL SCHEDULE	
WHERE ALLOWABLE SHEAR VALUES EXCEED 300 SF/FT, FOUNDATION SHEAR PLATES AND ALL FRAMING MEMBERS RECEIVING EDGE NAILS FROM ADJACENT PANELS SHALL NOT BE LESS THAN A 3 INCHES NOMINAL OR LARGER MEMBER.	
TYPE SHEAR	PANEL SHEATHING
LTP @ 16" O.C.	BLOCKING TO PLATE
1-16d @ 4" O.C. OR LTP4 @ 16" O.C.	PLATE TO BLOCKING
5/8" Ø A.B L=12" @ 48" O.C.	SILL PLATE TO FOUNDATION
SEE PLAN	HOLDDOWN
ON GRID LINES:	REMARKS

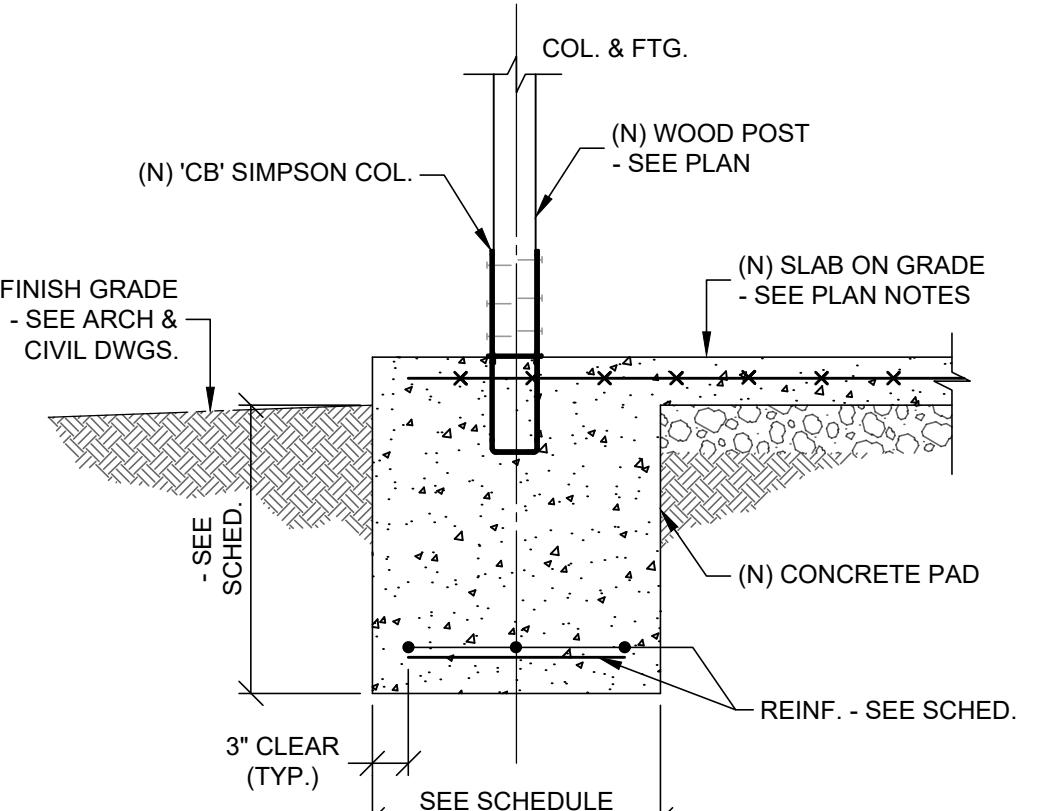
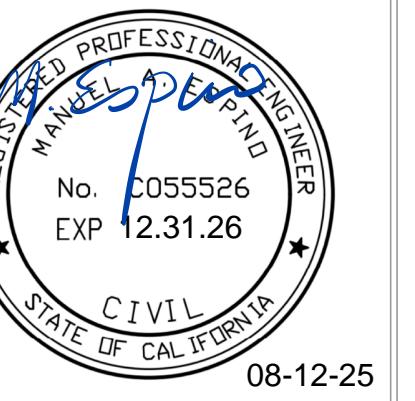
ANCHOR BOLT SCHEDULE					
MARK	ANCHOR BOLT	SPACING	EMBEDMENT		
A	5/8"Ø A.B	48" O.C.			
B	5/8"Ø A.B	32" O.C.			
C	5/8"Ø A.B	24" O.C.			
E	5/8"Ø A.B	16" O.C.			
F	5/8"Ø A.B	12" O.C.			
EX	1/2"Ø A.B (MIN.)	72" O.C. (MAX.)	FIELD VERIFY		

- Approved square plate washers shall be used with all anchor bolts:
 - 5/8" bolt: 3X3X1/4
 - 7/8" bolt: 3X3X5/16
 - 3/4" bolt: 3.5X3.5X3/8

S103

AMCE ENGINEERS
& DEVELOPERS

17434 BELLFLOWER BLVD., SUITE 200-196
BELLFLOWER, CA 90706
TEL: 562-904-9920 FAX: 562-324-6231



H DETAIL
S104 3/4" = 1'-0"

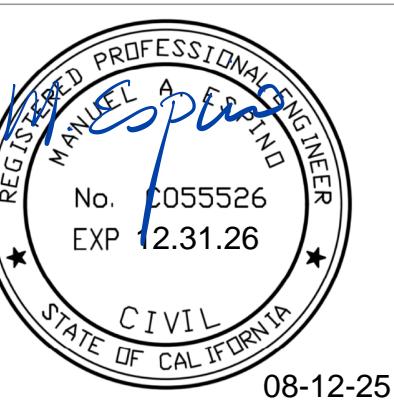
OWNER INFORMATION:
-See Architectural Plan-
PROJECT ADDRESS:
2450 Fordham Dr, Costa Mesa, CA 92626
PROJECT DESCRIPTION:
(N) Accessory Dwelling Unit

DESIGNED BY: MAE/CM DRAWN BY: CM
PROJECT NO.: 2507030
DATE: Aug. 05, 2025

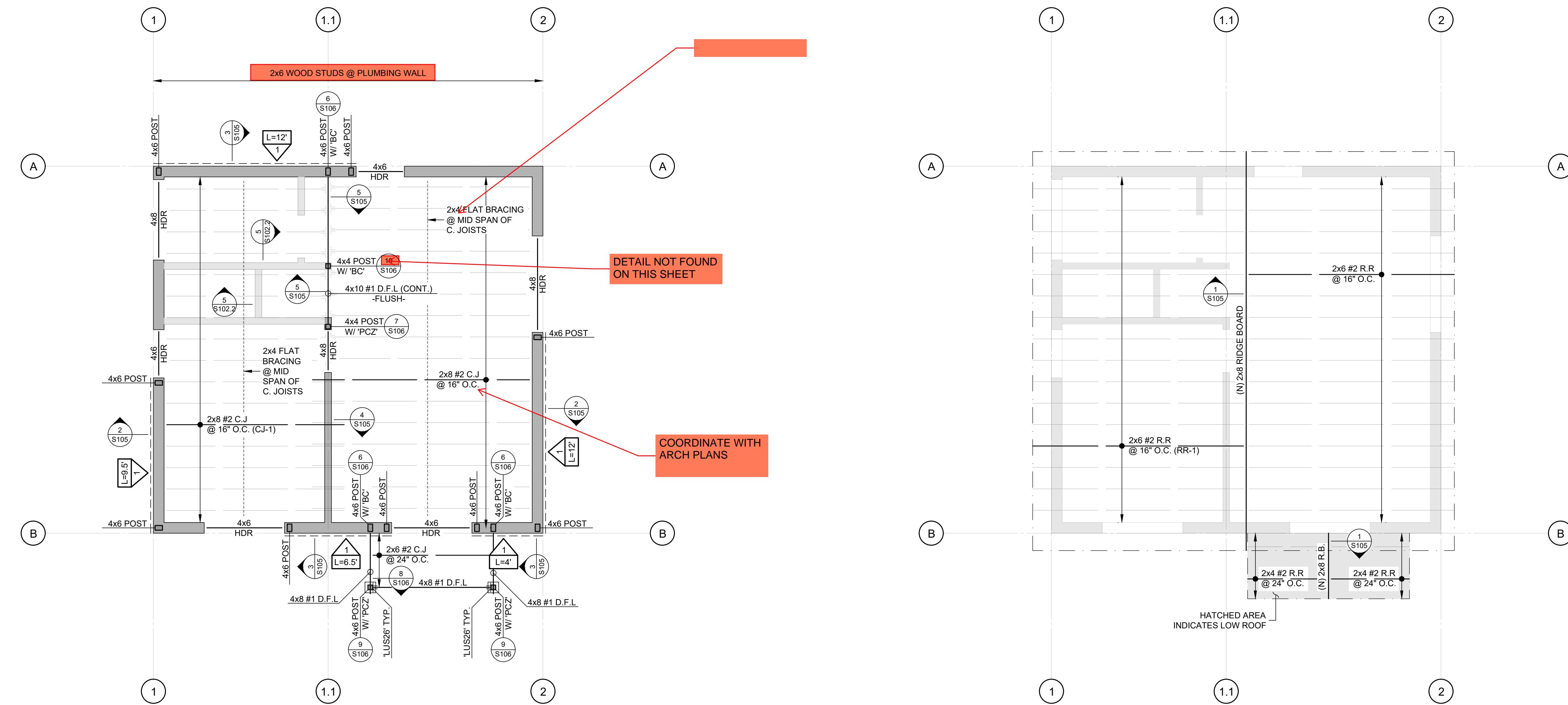
SCALE: SEE PLAN
SHEET TITLE: Structural Detail

SHEET NO.: S104

S104



REVISIONS
B1

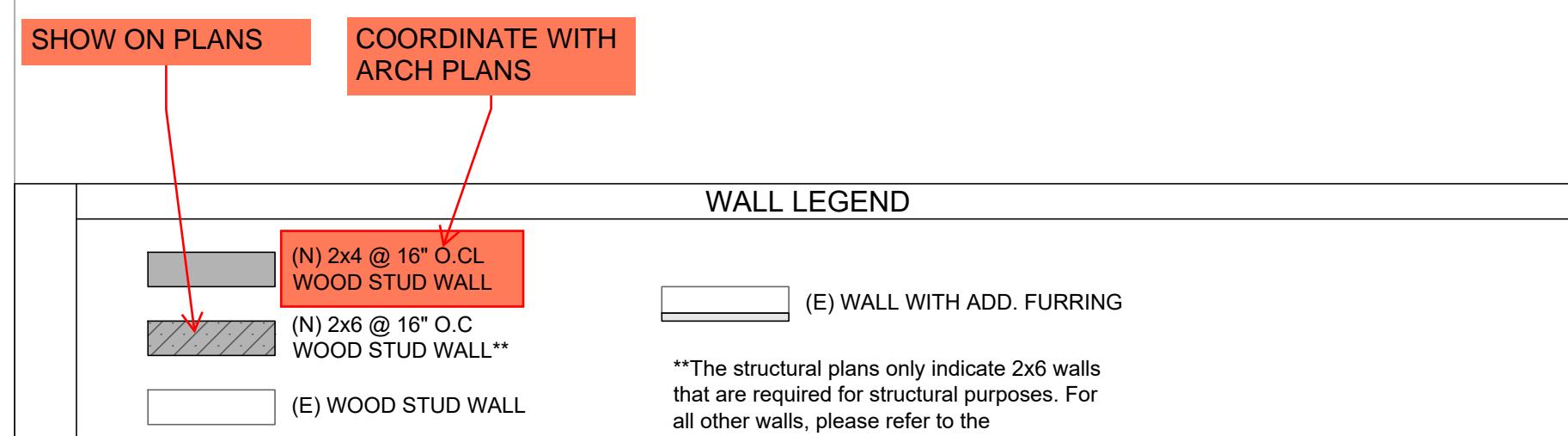


CEILING FRAMING PLAN

1/4" = 1'-0"

ROOF FRAMING PLAN

1/4" = 1'-0"

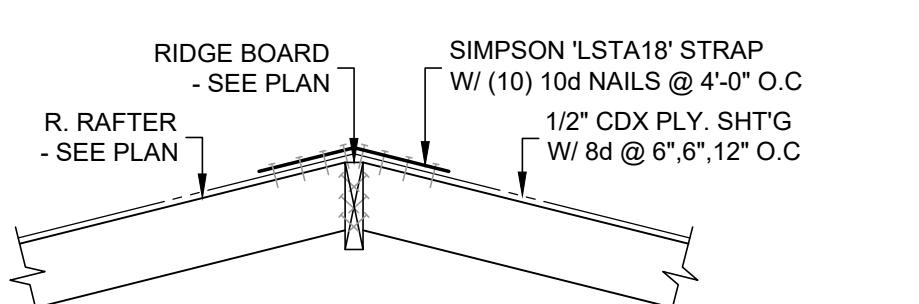


ROOF FRAMING PLAN NOTES

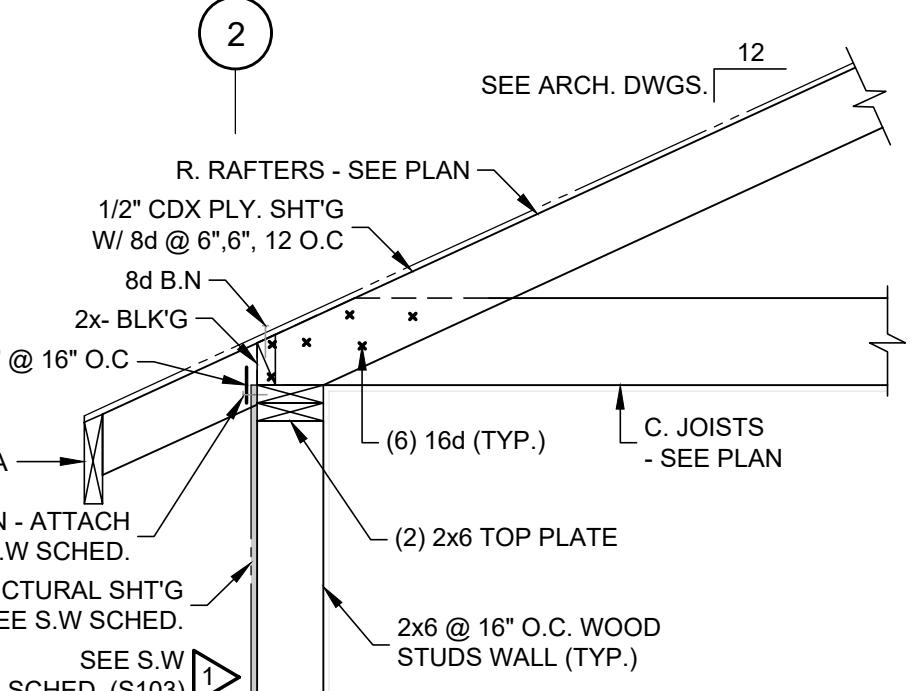
- Entire area shall receive 1/2" CDX Plywood structural sheathing. Unblocked (P.I = 32/16) - 8d nails at 6/6/12
- See Typical Construction Details on Sheet S102.
- See General Notes on Sheet S101-S102.

SHEARWALL SCHEDULE						
TYPE	PANEL SHEATHING	BLOCKING TO PLATE	PLATE TO BLOCKING	SILL PLATE TO FOUNDATION	HOLDDOWN	REMARKS
1/2" PLYWOOD STRUCT. 1W/8d @ 6" OR LTP4 @ 16" O.C.	1-16d @ 4" O.C. OR LTP4 @ 16" O.C.	5/8" # A.B L=12" @ 48" O.C.	SEE PLAN	SILL PLATE: 2x- ON GRID LINES:		

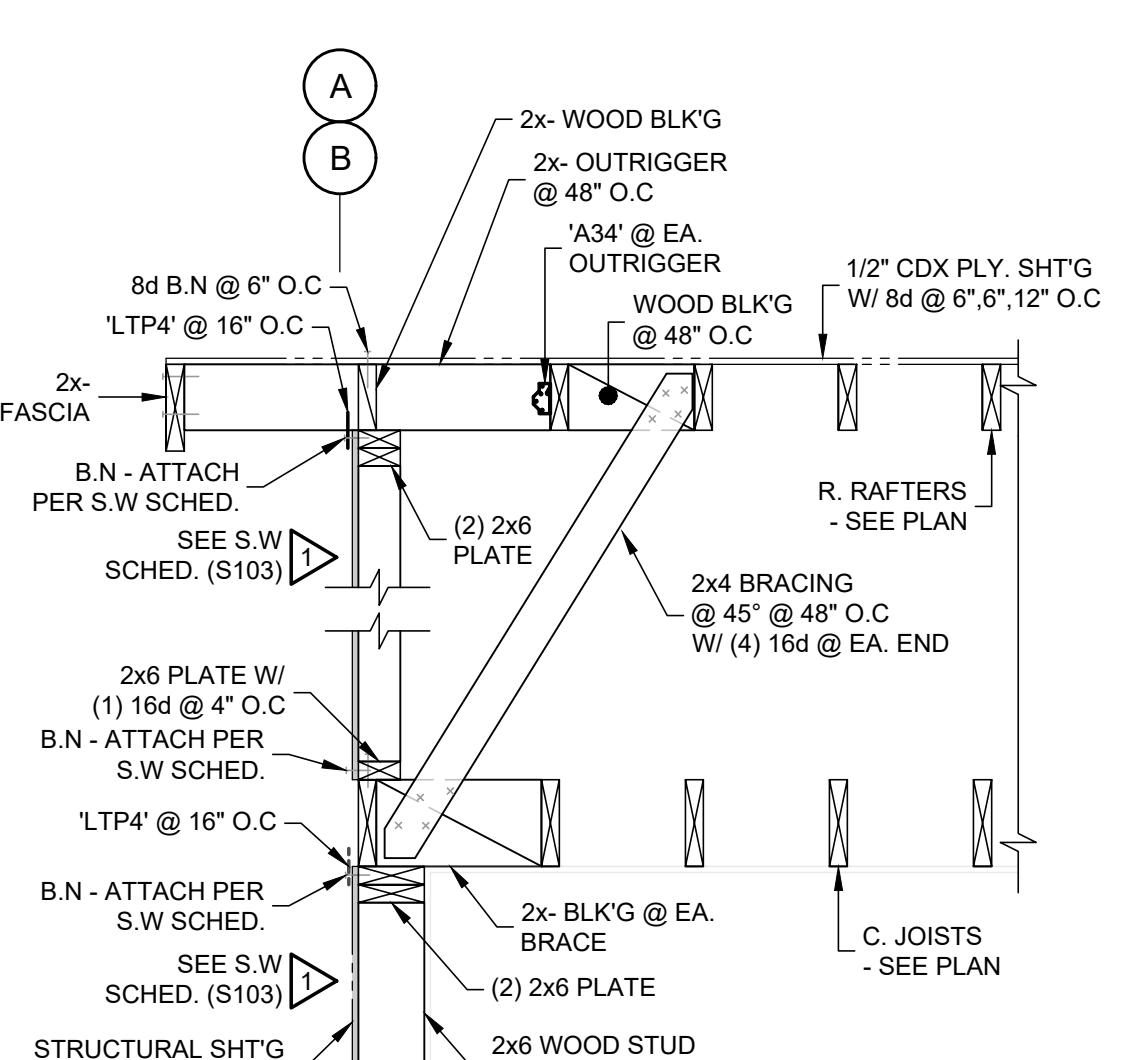
WHERE ALLOWABLE SHEAR VALUES EXCEED 300#, FOUNDATION SILL PLATES AND ALL FRAMING MEMBERS RECEIVING EDGE NAILS FROM ABUTTING PANELS, SHALL NOT BE LESS THAN A SINGLE 3 INCHES NOMINAL OR LARGER MEMBER.



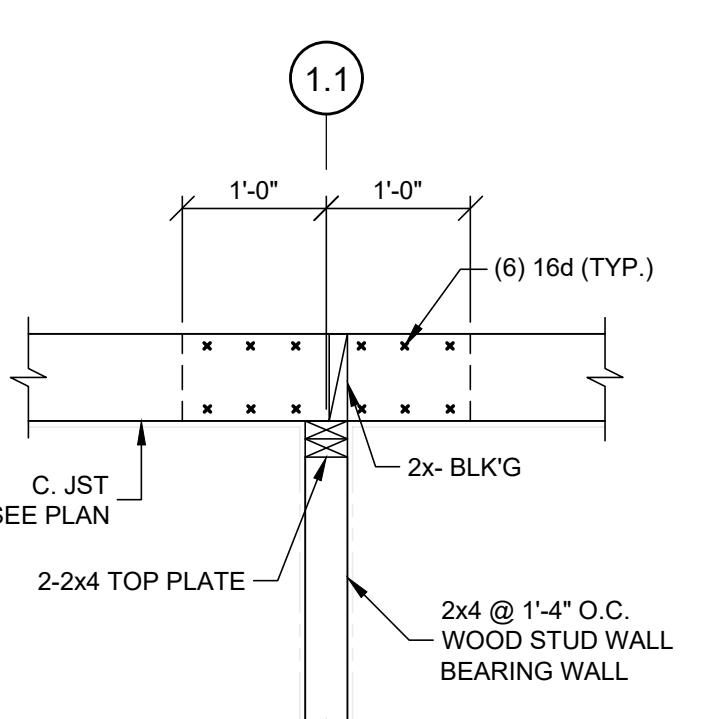
SECTION
3/4" = 1'-0"



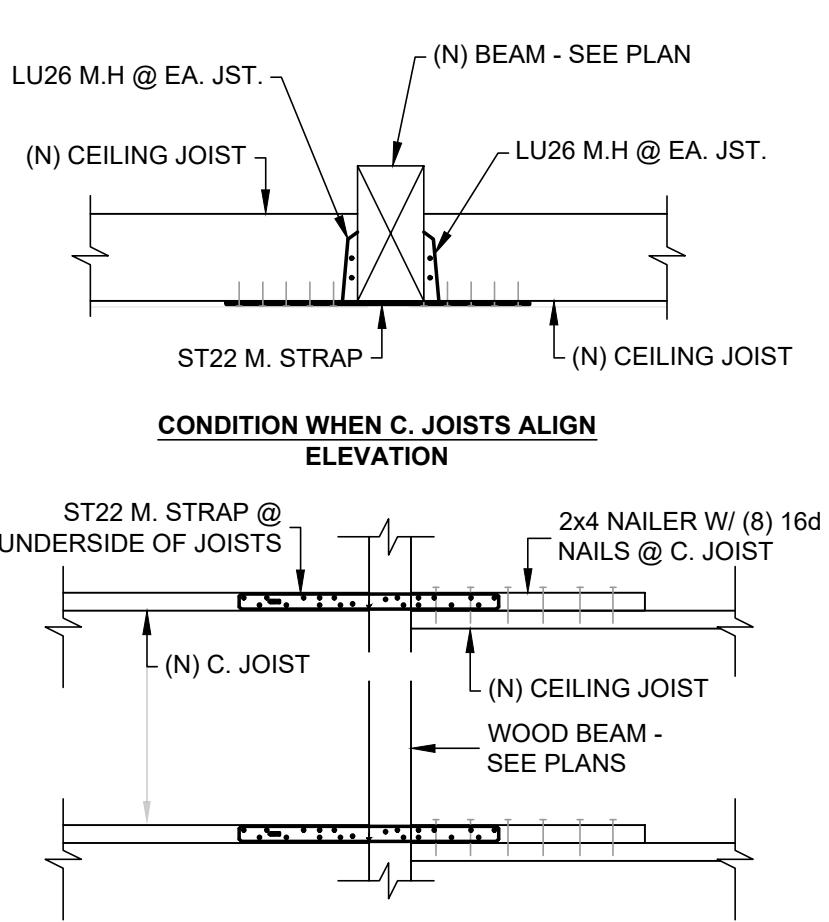
SECTION
3/4" = 1'-0"



SECTION
3/4" = 1'-0"



SECTION
3/4" = 1'-0"



SECTION
3/4" = 1'-0"

OWNER INFORMATION:
-See Architectural Plan-

PROJECT ADDRESS:
2450 Fordham Dr, Costa Mesa, CA 92626

PROJECT DESCRIPTION:
(N) Accessory Dwelling Unit

DESIGNED BY:
MAE/CM

DRAWN BY:
CM

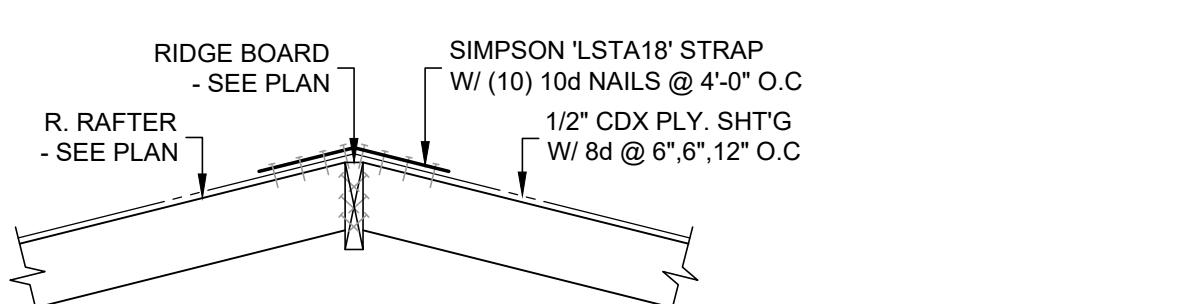
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2507030

DATE:
Aug. 05, 2025

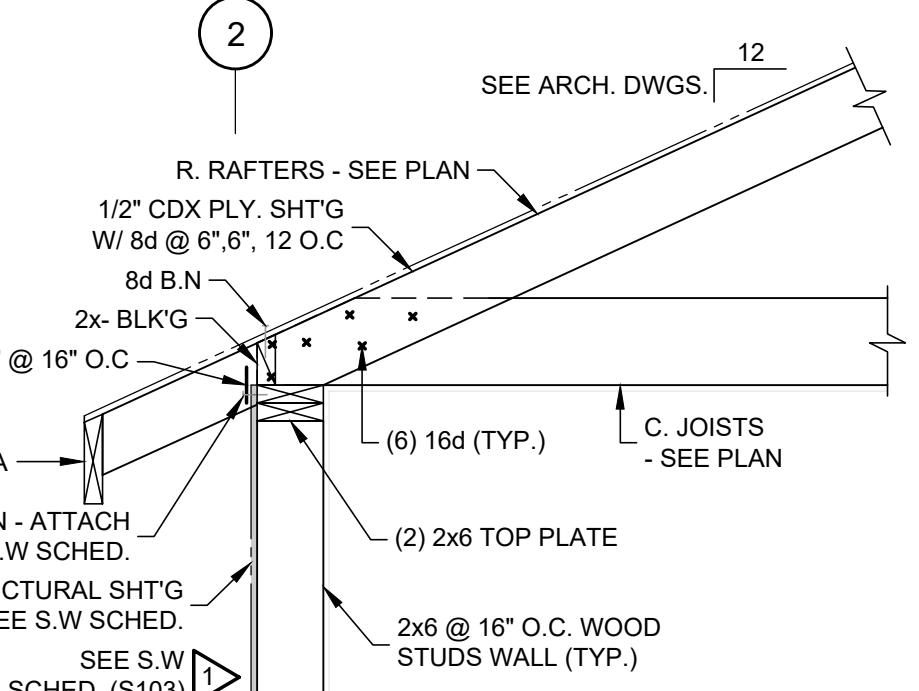
SCALE:
SEE PLAN

SHEET TITLE:
Framing Plans & Sections

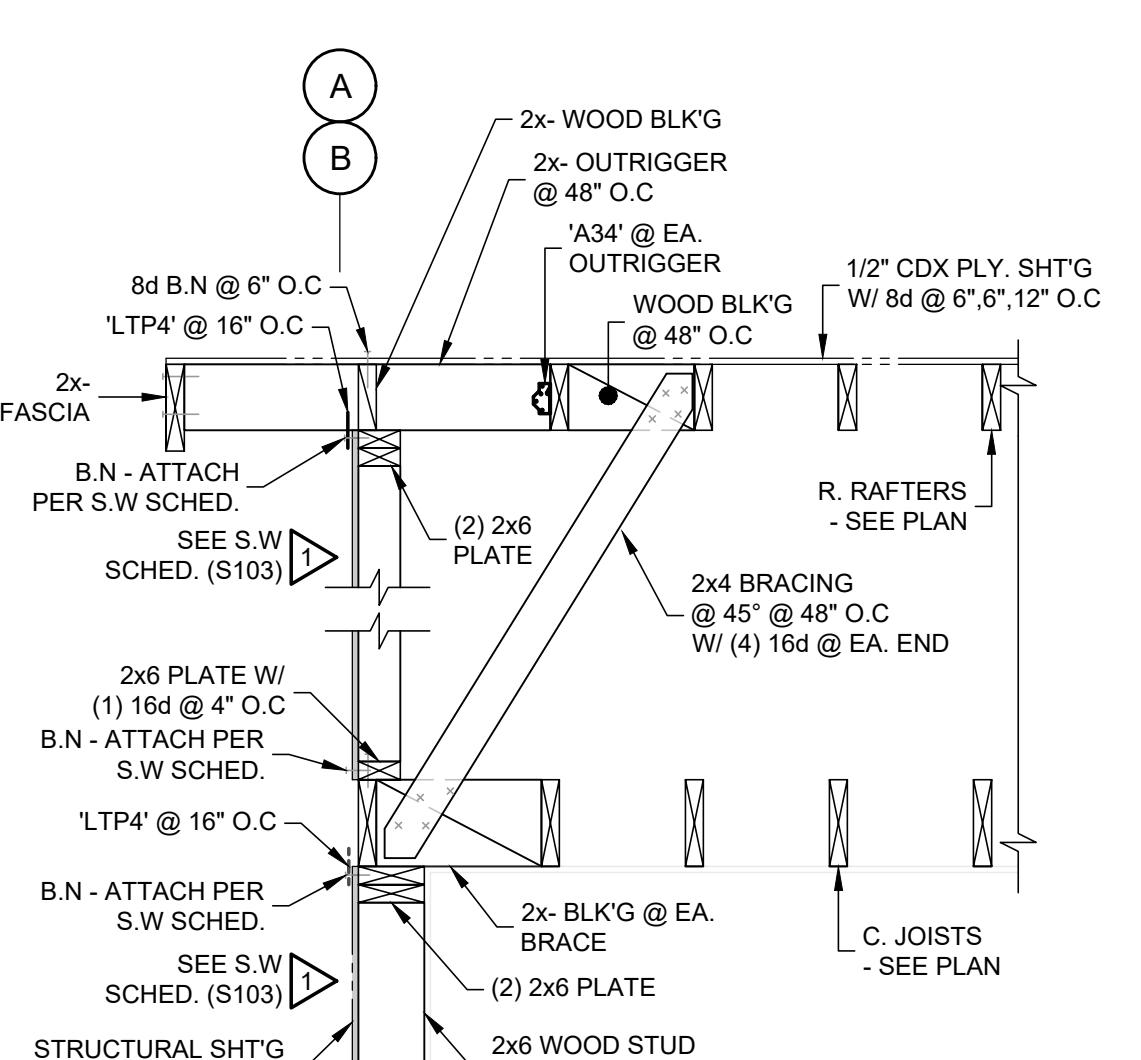
SHEET NO.:
S105



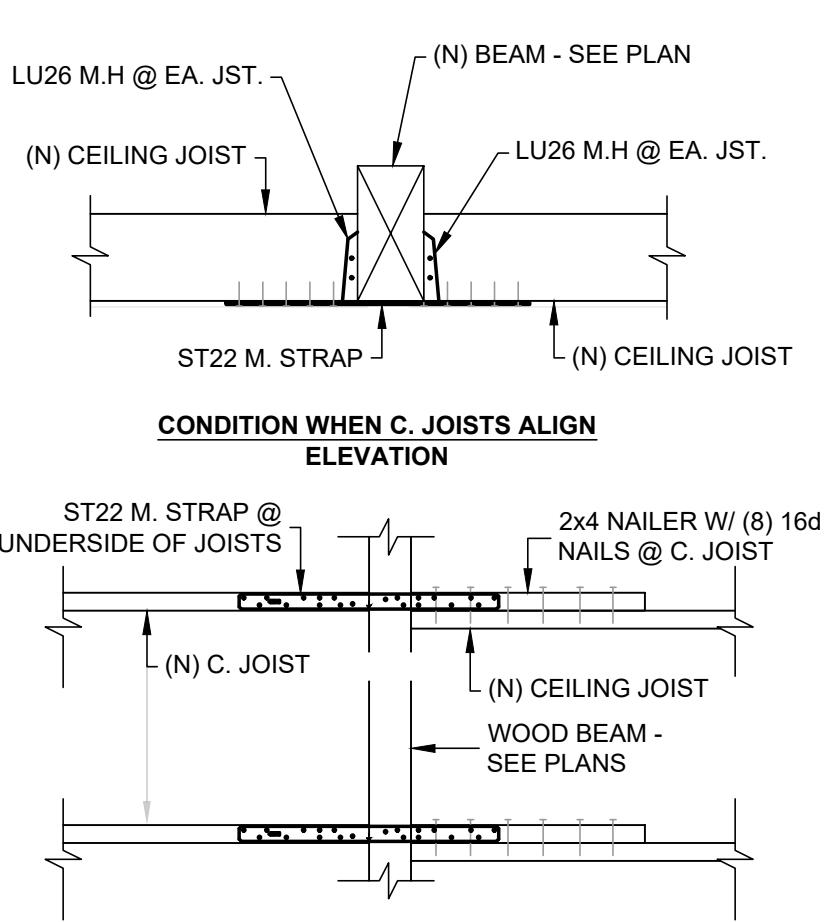
SECTION
3/4" = 1'-0"



SECTION
3/4" = 1'-0"



SECTION
3/4" = 1'-0"



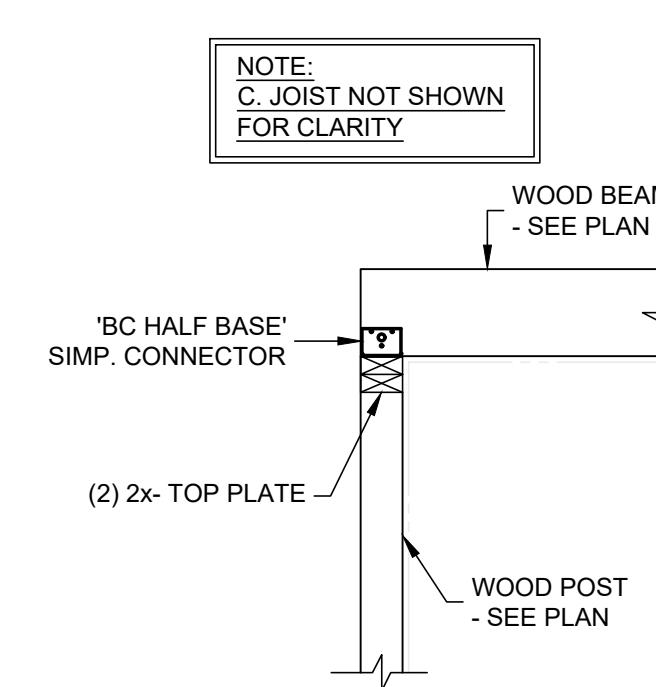
SECTION
3/4" = 1'-0"



REVISIONS	
	S106

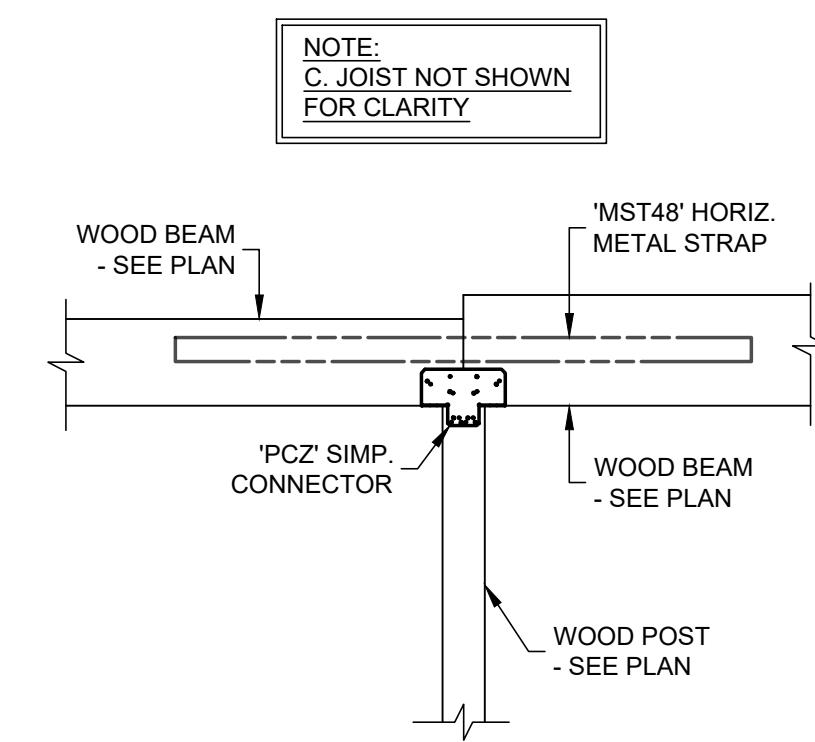
OWNER INFORMATION:	-See Architectural Plan-
PROJECT ADDRESS:	2450 Fordham Dr, Costa Mesa, CA 92626
PROJECT DESCRIPTION:	(N) Accessory Dwelling Unit

DESIGNED BY:	MAE/CM	DRAWN BY:	CM
PROJECT NO.:	2507030		
DATE:	Aug. 05, 2025		
SCALE:	SEE PLAN		
SHEET TITLE:	Structural Details & Section		
SHEET NO.:	S106		



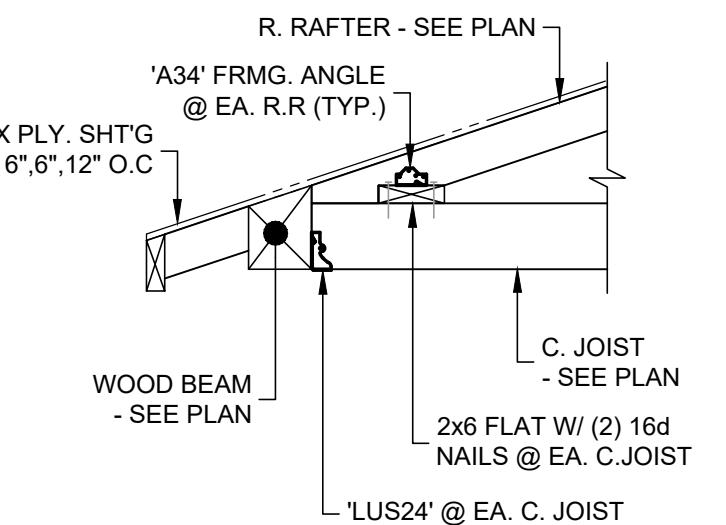
TYPICAL WOOD BEAM TO COLUMN CONNECTION
USING 'BC HALF BASE' CONNECTOR

6 S106 DETAIL
3/4" = 1'-0"



TYPICAL WOOD BEAM TO COLUMN CONNECTION
USING 'PCZ' CONNECTOR

7 S106 DETAIL
3/4" = 1'-0"



8 S106 SECTION
3/4" = 1'-0"

S106

DETACHED NEW ADU
2450 FORDHAM DR.
COSTA MESA, CA 92626

ENERGY FORMS

REV.	DATE	DESCRIPTION

SHEET
T24-A

<p>CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD Project Name: New Detached ADU Calculation Date/Time: 2025-08-24T14:34:27-07:00 [Page 1 of 10] Calculation Description: Title 24 Analysis Input File Name: Fardham R-21.wall.rbd2xx</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">GENERAL INFORMATION</td> </tr> <tr> <td>01</td> <td>Project Name</td> <td>New Detached ADU</td> </tr> <tr> <td>02</td> <td>Res Title</td> <td>Title 24 Analysis</td> </tr> <tr> <td>03</td> <td>Project Location</td> <td>2450 Fardham Dr.</td> </tr> <tr> <td>04</td> <td>City</td> <td>Costa Mesa</td> </tr> <tr> <td>05</td> <td>Zipcode</td> <td>92626</td> </tr> <tr> <td>06</td> <td>Software Version</td> <td>EnergyPro 9.4</td> </tr> <tr> <td>08</td> <td>Climate Zone</td> <td>6</td> </tr> <tr> <td>10</td> <td>Building Type</td> <td>Single Family</td> </tr> <tr> <td>12</td> <td>Project Scope</td> <td>Newly Constructed</td> </tr> <tr> <td>14</td> <td>Additional Cond. Floor Area (ft²)</td> <td>0</td> </tr> <tr> <td>16</td> <td>Existing Cond. Floor Area (ft²)</td> <td>n/a</td> </tr> <tr> <td>18</td> <td>Total Cond. Floor Area (ft²)</td> <td>500</td> </tr> <tr> <td>20</td> <td>ADU Bedroom Count</td> <td>n/a</td> </tr> <tr> <td>22</td> <td>Fuel Type</td> <td>Natural gas</td> </tr> <tr> <td colspan="3">COMPLIANCE RESULTS</td> </tr> <tr> <td>01</td> <td colspan="2">This building complies with computer performance.</td> </tr> <tr> <td>02</td> <td colspan="2">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.</td> </tr> <tr> <td>03</td> <td colspan="2">This building incorporates one or more special features shown below:</td> </tr> </table>	GENERAL INFORMATION		01	Project Name	New Detached ADU	02	Res Title	Title 24 Analysis	03	Project Location	2450 Fardham Dr.	04	City	Costa Mesa	05	Zipcode	92626	06	Software Version	EnergyPro 9.4	08	Climate Zone	6	10	Building Type	Single Family	12	Project Scope	Newly Constructed	14	Additional Cond. Floor Area (ft²)	0	16	Existing Cond. Floor Area (ft²)	n/a	18	Total Cond. Floor Area (ft²)	500	20	ADU Bedroom Count	n/a	22	Fuel Type	Natural gas	COMPLIANCE RESULTS			01	This 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:		<p>CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD Project Name: New Detached ADU Calculation Date/Time: 2025-08-24T14:34:27-07:00 [Page 2 of 10] Calculation Description: Title 24 Analysis Input File Name: Fardham R-21.wall.rbd2xx</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">ENERGY DESIGN RATINGS</td> </tr> <tr> <td rowspan="2"></td> <td colspan="3">Energy Design Ratings</td> <td colspan="3">Compliance Margins</td> </tr> <tr> <td>Source Energy (EDR1)</td> <td>Efficiency EDR (EDR/Efficiency)</td> <td>Total EDR (EDR/Total)</td> <td>Source Energy (EDR1)</td> <td>Efficiency EDR (EDR/Efficiency)</td> <td>Total EDR (EDR/Total)</td> </tr> <tr> <td>Standard Design</td> <td>95.8</td> <td>42.5</td> <td>35.7</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Proposed Design</td> <td>95.6</td> <td>59.2</td> <td>34.3</td> <td>0.2</td> <td>8.8</td> <td>1.4</td> </tr> <tr> <td colspan="7" style="text-align: center;">RESULT: PASS</td> </tr> <tr> <td colspan="7"> <small>Efficiency EDR includes improvements like a better building envelope and more efficient equipment. 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.</small> </td> </tr> <tr> <td colspan="7"> <small>• Standard Design PV Capacity: 1.51 kWdc • PV System resized to 1.51 kWdc (a factor of 1.00) to achieve Standard Design PV PV scaling</small> </td> </tr> </table>	ENERGY DESIGN RATINGS			Energy Design Ratings			Compliance Margins			Source Energy (EDR1)	Efficiency EDR (EDR/Efficiency)	Total EDR (EDR/Total)	Source Energy (EDR1)	Efficiency EDR (EDR/Efficiency)	Total EDR (EDR/Total)	Standard Design	95.8	42.5	35.7				Proposed Design	95.6	59.2	34.3	0.2	8.8	1.4	RESULT: PASS							<small>Efficiency EDR includes improvements like a better building envelope and more efficient equipment. 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Calculation Description: Title 24 Analysis	Input File Name: Fordham R-21 wall.ribd22x	
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		
1. I certify that this Certificate of Compliance documentation is accurate and complete.		
Documentation Author Name: Mina Mehr	Documentation Author Signature: Mina Mehr	
Company: Build4T24	Signature Date: 08/24/2025	
Address: P.O. BOX 6154	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip: Pomona, CA 91765	Phone: 323-592-9285	
RESPONSIBLE PERSON'S DECLARATION STATEMENT		
I certify the following under penalty of perjury, under the laws of the State of California:		
<ol style="list-style-type: none"> 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:	
Company:	Date Signed:	
Address:	License:	
City/State/Zip:	Phone: 424-272-6299	

RESIDENTIAL MEASURES SUMMARY						RMS-1
Project Name Forham ADU		Building Type	<input checked="" type="checkbox"/> Single Family <input type="checkbox"/> Addition Alone <input type="checkbox"/> Multi Family <input type="checkbox"/> Existing+ Addition/Alteration	Date 8/24/2025		
Project Address 2450 Fordham Dr. Costa Mesa		California Energy Climate Zone CA Climate Zone 06	Total Cond. Floor Area 500	Addition n/a	# of Units 1	
INSULATION						
Construction Type	Area Cavity (ft ²)	Special Features		Status		
Wall	Wood Framed	R 20	810	New		
Door	Opaque Door	R-5	21	New		
Roof	Wood Framed Attic	R 30	200	Cool Roof	New	
Slab	Unheated Slab-on-Grade	- no insulation	500	Perim = 94'	New	
Roof	Wood Framed Rafter	R 30	300	Cool Roof	New	
FENESTRATION						
Orientation	Area(ft ²)	Total Area: 100	Glazing Percentage: 19.9%	New/Altered Average U-Factor: 0.30		
		U-Fac	SHGC	Overhang	Sidefins	Exterior Shades
Rear (N)	12.0	0.300	0.23	none	none	N/A
Front (S)	18.5	0.300	0.23	none	none	N/A
Right (E)	48.0	0.300	0.23	none	none	N/A
Left (W)	21.0	0.300	0.23	none	none	N/A
HVAC SYSTEMS						
Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	Electric Heat Pump	9.00 HSPF2	Split Heat Pump	20.0 SEER2	Setback	New
HVAC DISTRIBUTION						
Location	Heating	Cooling	Duct Location	Duct R-Value	Status	
Mini Split HP	Ductless / No Fan	Ductless	n/a	n/a	New	
WATER HEATING						
Qty.	Type	Gallons	Min. Eff	Distribution	Status	
1	Heat Pump	40	3.00	Standard	New	

2022 Single-Family Residential Mandatory Requirements Summary

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

Building Envelope:

- § 110.6(a)1: Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/S.2/A440-2011.*
- § 110.6(a)5: Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-11(a).
- § 110.6(b): Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weatherstripped.*
- § 110.7: Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weatherstripped.
- § 110.8(a): Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGGS).
- § 110.8(g): Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g).
- § 110.8(i): Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CFIIR.
- § 110.8(j): Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified by the Department of Consumer Affairs.
- § 150.0(a): Roof Deck, Ceiling and Rafter Roof Insulation. Roof decks in newly constructed attics in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.164. 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 floor or ceiling which is sealed to limit infiltration and exfiltration,* as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.
- § 150.0(b): Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
- § 150.0(c): Wall Insulation. Minimum R-13 insulation in 2x6 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
- § 150.0(d): Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
- § 150.0(f): Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent, have a water vapor permeance no greater than 2.0 perm per inch, be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
- § 150.0(g)1: Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
- § 150.0(g)2: Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
- § 150.0(q): Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45, or area-weighted average U-factor of all fenestration must not exceed 0.45.
- Fireplaces, Decorative Gas Appliances, and Gas Log:**
- § 110.5(e): Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
- § 150.0(e)1: Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
- § 150.0(e)2: Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.
- § 150.0(e)3: Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
- Space Conditioning, Water Heating, and Plumbing System:**
- § 110.0-§ 110.3: Certification. Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.
- § 110.2(a): HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N.*
- § 110.2(b): Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone, and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*
- § 110.2(c): Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*
- § 110.3(c)3: Insulation. Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating.
- § 110.3(c)6: Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.

2022 Sing

Pilot Lights. Continuous (except appliances without spa heaters).*

Building Cooling and Heating. Equipment Volume, App Standards Manual; or th

§ 150.0(h)3A: Clearances. Air conditioners, dryers, liquid line drier, Air c manufacturer's instructions.

Water Piping. Solar V piping must be insulated.

Insulation Protection. maintenance, and wind adhesive tapes). Insulat include, or be protected non-crushable casing or

Gas or Propane Water designate a space at least plumbing requirements, more than 2' higher than

Solar Water-heating S Certification Corporation, R&T), or by a listing agency.

Ducts and Fans:

§ 110.8(d)3: Ducts. Insulation install contractor installs the in

CMC Compliance. All a Duct Construction Stand R-6.0 or higher, ducts do not require insulation sealed with mastic, tape. The combination of masonry, air handler sup flexible duct must not be these spaces must not be

§ 150.0(n)1: Factory-Fabricated Du connections, and closure duct tapes unless such

Field-Fabricated Duct mastics, sealants, and co

Backdraft Damper. Far dampers.

Gravity Ventilation Da manually operated dam

Protection of Insulatio Insulation exposed to w cover). Cellular foam ins

§ 150.0(m)10: Porous Inner Core Fib outer vapor barrier.

Duct System Sealing a occupiable space, the d accordance with Refer

Air Filtration. Space co or equivalent filters. Filter Clean-filter pressure drop racks or grilles must use filter.*

CA Building Energy Efficiency Standards - 2022 Residential Compliance

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2022 Single-Family Residential Mandatory Requirements Summary

<p>§ 150.0(m)13:</p> <p>Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 360 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. *</p>
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Ventilation and Indoor Air Quality:

<p>§ 150.0(o)1: Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1. *</p>
<p>§ 150.0(o)1B: Central Fan Integrated (CFI) Ventilation Systems. Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized camper(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)1Biii. 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.</p>
<p>§ 150.0(o)1C: Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses. Single-family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow specified in § 150.0(o)1Ciii. *</p>
<p>§ 150.0(o)1G: Local Mechanical Exhaust. Kitchens and bathrooms must have local mechanical exhaust; nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of §150.0(o)1Gi; enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting §150.0(o)1Gii-iv. Airflow must be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *</p>
<p>§ 150.0(o)1H&i: Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems. The airflow required per § 150.0(o)1 must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminals/grilles per Reference Residential Appendix RA3.7. Whole-Dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the maximum airflow rate required by § 150.0(o)1C.</p>
<p>§ 150.0(o)2: Field Verification and Diagnostic Testing. Whole-Dwelling Unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per §150.0(o)1G</p>

Pool and Spa Systems and Equipment:

<p>Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MAEDbS; an on/off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting, a permanent weatherproof plate or card with operating instructions, and must not use electric resistance heating. *</p>
<p>§ 110.4(b)1: Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.</p>
<p>§ 110.4(b)2: Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.</p>
<p>§ 110.4(b)3: Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.</p>
<p>§ 110.5: Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.</p>
<p>§ 150.0(p): Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.</p>

Lighting:

<p>§ 110.9: Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *</p>
<p>§ 150.0(k)1A: Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt.</p>
<p>§ 150.0(k)1B: Screw based Luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JAB. *</p>
<p>§ 150.0(k)1C: Recessed Downlight Luminaires in Ceilings. Luminaires recessed in 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.</p>
<p>§ 150.0(k)1D: Light Sources in Enclosed or Recessed Luminaires. 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.</p>
<p>§ 150.0(k)1E: Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.</p>
<p>§ 150.0(k)1F: Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).</p>

2022 Single-Family Residential Mandatory Requirements Summary

<p>§ 150.0(k)1G: Screw based Luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JAB. *</p>
<p>§ 150.0(k)1H: Light Sources in Enclosed or Recessed Luminaires. 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.</p>
<p>§ 150.0(k)1I: Light Sources in Drawers, Cabinets, and Linen Closets. Lamps and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, must not be installed in drawers, cabinets, and linen closets.</p>
<p>§ 150.0(k)2A: Interior Switches and Controls. All forward phase cut dimmers must be controlled by an occupancy or vacancy sensor.</p>
<p>§ 150.0(k)2B: Interior Switches and Controls. Exhaust fans must be controlled by an occupancy or vacancy sensor.</p>
<p>§ 150.0(k)2A: Accessible Controls. Lighting must have readily accessible wall switches and controls that are operable from a seated position.</p>
<p>§ 150.0(k)2B: Multiple Controls. Controls must not bypass a dimmer, occupancy, or power limit switch.</p>
<p>§ 150.0(k)2C: Mandatory Requirements. Lighting controls must comply with the requirements of the energy management control system.</p>
<p>§ 150.0(k)2D: Energy Management Control Systems. An energy management control system must be provided for each dwelling unit, and control requirements if it provides the functionality of the energy management control system.</p>
<p>§ 150.0(k)2E: Automatic Shutoff Controls. In bathrooms, garages, laundry rooms, and other areas where there is a risk of fire, automatic shutoff controls must be controlled by an occupancy or vacancy sensor providing opaque fronts or doors.</p>
<p>§ 150.0(k)2F: Dimmers. Lighting in habitable spaces (e.g., living rooms, dining rooms, etc.) must have controls that allow the lighting to be manually controlled.</p>
<p>§ 150.0(k)2K: Independent controls. Integrated lighting of exhaust fans shall be controlled by an occupancy or vacancy sensor. Shelves, lighting in display cabinets, and switched outlets must be controlled by an occupancy or vacancy sensor.</p>
<p>§ 150.0(k)3A: Residential Outdoor Lighting. For single-family residential buildings, other buildings on the same lot, must have a manual on/off switch or an astronomical time clock. An energy management control system may be used to meet these requirements.</p>
<p>§ 150.0(k)4: Internally Illuminated Address Signs. Internally illuminated address signs must be controlled by an occupancy or power limit switch.</p>
<p>§ 150.0(k)5: Residential Garages for Eight or More Vehicles. Lighting for nonresidential garages must meet the requirements of §§ 10.9.</p>

Solar Readiness:

<p>§ 110.10(a)1: Single-family Residences. Single-family residences located in subdivisions must meet the requirements of the energy management control system.</p>
<p>§ 110.10(b)1A: Minimum Solar Zone Area. The solar zone must have a minimum area of 10% of the roof area, and must be located in a manner that minimizes shading of the solar panel array. The solar zone must be located on the roof or overhang of the building and have a total area of at least 100 square feet for buildings with roof areas less than 1,000 square feet, and at least 10% of the roof area for buildings with roof areas greater than 1,000 square feet.</p>
<p>§ 110.10(b)2: Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented within 30 degrees of true south.</p>
<p>§ 110.10(b)3A: Shading. The solar zone must not contain any obstructions, including trees, shrubs, and other structures.</p>
<p>§ 110.10(b)3B: Shading. Any obstruction located on the roof or any other part of the building must be located at a horizontal distance of at least 10% of the height difference between the highest point of the solar zone and the lowest point of the solar zone, measured in the vertical plane.</p>
<p>§ 110.10(b)4: Structural Design Loads on Construction Documents. For a roof dead load and roof live load must be clearly indicated on the construction documents.</p>
<p>§ 110.10(c): Interconnection Pathways. The construction documents must show the pathway reserved for routing of conduit from the solar zone to the electrical service panel.</p>
<p>§ 110.10(d): Documentation. A copy of the construction documents or a copy of the plans must be provided to the occupant.</p>
<p>§ 110.10(e)1: Main Electrical Service Panel. The main electrical service panel must be located in a location that is accessible for future solar electric installation.</p>
<p>§ 110.10(e)2: Main Electrical Service Panel. The main electrical service panel must be located in a location that is accessible for future solar electric installation.</p>
<p>Electric and Energy Storage Ready: The building must be designed and constructed to accommodate the installation of electric vehicle charging stations, solar panels, and energy storage systems.</p>

5/6/22

5/6/22

2022 Single-Family Residential Mandatory Requirements Summary		5/6/22	5/6/22																																																																																																																																																									
<p>Energy Requirements Summary</p> <p>that comply with Reference Joint Appendix JAB.*</p> <p>separable light sources that are not compliant with the JAB must not be installed in enclosed or recessed luminaires.</p> <p>internal to drawers, cabinetry or linen closets are not required provided that they are rated to consume no more than 5 watts of power that automatically turn the lighting off when the drawer, cabinet or cabinet with LED light sources must comply with NEMA SSL 7A.</p> <p>ately from lighting systems.*</p> <p>med controls that allow the lighting to be manually turned on, or vacancy sensor function if the dimmer or sensor is installed</p> <p>able requirements of § 110.9.</p> <p>rol system (EMCS) may be used to comply with dimming, the specified control per § 110.9 and the physical controls specified</p> <p>utility rooms and walk-in closets, at least one installed luminaire with static-off functionality. Lighting inside drawers and cabinets with the drawer or door is closed.</p> <p>kitchens, and bedrooms) must have readily accessible wall-mounted up and down. Forward phase cut dimmers controlling LED light</p> <p>trolled independently from the fans. Lighting under cabinets or controlled separately from ceiling-installed lighting.</p> <p>outdoor lighting permanently mounted to a residential building, or to either a photocell and motion sensor or automatic time switch system that provides the specified control functionality and meets all</p> <p>signs must either comply with § 140.8 or consume no more than 5</p> <p>ial parking garages for eight or more vehicles must comply with the 130.1, 130.4, 140.6, and 141.0.</p> <p>ations with 10 or more single-family residences and where the deemed complete and approved by the enforcement agency, the requirements of § 110.10(b)-(e).</p> <p>area as described below. The solar zone must comply with listed in Title 24, Part 9 or other parts of Title 24 or any must be comprised of areas that have no dimension less than 5 as less than or equal to 10,000 square feet or no less than 100 feet. For single-family residences, the solar zone must be less than 250 square feet.*</p> <p>ust have an azimuth between 90-300° of true north.</p> <p>not limited to: vents, chimneys, architectural features, and roof</p> <p>g that projects above a solar zone must be located at least twice the obstruction and the horizontal projection of the nearest point of the</p> <p>the roof designated as a solar zone, the structural design loads for action documents.</p> <p>a location reserved for inverters and metering equipment and a interconnection with the electrical service; and for single-family cutting plumbing from the solar zone to the water-heating system. A document indicating the information from § 110.10(b)-(c) must be</p> <p>have a minimum busbar rating of 200 amps.</p> <p>have a reserved space to allow for the installation of a double pole circuit breaker permanently marked as "For Future Solar Electric."</p>	<p>2022 Single-Family Residential Mandatory Requirements Summary</p> <p>§ 150.0(s) Energy Storage System (ESS) Ready. All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 80 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.</p> <p>§ 150.0(l) Heat Pump Space Heater Ready. Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."</p> <p>§ 150.0(u) Electric Cooktop Ready. Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."</p> <p>§ 150.0(v) Electric Clothes Dryer Ready. Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready," and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."</p> <p>*Exceptions may apply.</p>	<p>HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY</p> <table border="1"> <tr> <td colspan="2">Project Name: Forham ADU</td> <td>Date: 8/24/2022</td> </tr> <tr> <td colspan="2">System Name: Mini Split HP</td> <td>Floor Area: 500</td> </tr> <tr> <td colspan="3">ENGINEERING CHECKS</td> </tr> <tr> <td colspan="3">SYSTEM LOAD</td> </tr> <tr> <td rowspan="2">Number of Systems</td> <td colspan="2">1</td> <td colspan="2">COIL COOLING PEAK</td> <td colspan="2">COIL HTG. 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DETACHED NEW ADU
2450 FORDHAM DR.
COSTA MESA, CA 92626

ENERGY FORMS

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SHEET
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