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GENERAL NOTES

1. AN APPROVED SEISMIC GAS SHUTOFF VALVE WILL BE INSTALLED ON THE FUEL GAS LINE ON THE DOWN STREAM SIDE OF THE UTILITY METER AND BE RIGIDLY CONNECTED TO THE EXTERIOR OF THE BUILDING OR STRUCTURE CONTAINING THE FUEL GAS PIPING.
2. ALL CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND AMENDMENTS.
3. THE CONTRACTOR SHALL EXAMINE AND BECOME FAMILIAR WITH ALL CONTRACT DOCUMENTS, SURVEY THE PROPERTY AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND SCOPE OF WORK. ALL COST SUBMITTED SHALL BE BASED ON A THROUGH KNOWLEDGE OF ALL WORK AND MATERIALS REQUIRED. ANY DISCREPANCY AND/OR UNCERTAINTY AS TO WHAT MATERIALS OR PRODUCT IS TO BE USED SHOULD BE VERIFIED WITH THE OWNER OR ENGINEER OF RECORD.
4. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE.
5. IN THE EVENT A DISCREPANCY IS FOUND IN THE CONTRACT DOCUMENTS, THE OWNER AND THE DESIGNER/ENGINEERS SHALL BE NOTIFIED, IN WRITING, IMMEDIATELY.
6. DEMOLITION CONTRACTOR SHALL RELOCATE REUSABLE MATERIALS TO DESIGNATED SALVAGE AREA, NON-USABLE MATERIALS SHALL BE PLACED APPROPRIATELY IN REFUSE BIN AND SHALL BE COVERED AT NIGHT AND DURING RELATIVE HIGH WINDS, RAIN, ETC...REFUSE BIN SHALL BE COVERED DURING TRANSFER TO AND FROM DUMP SITE. CONTRACTOR TO
BE LIABLE FOR REFUSE SPILLING. ALL DEBRIS TO BE HAULED AWAY AND CLEAN-UP SHALL BE COMPLETED TO BROOM FINISH. EXISTING MATERIALS AND/OR STRUCTURE TO REMAIN SHALL BE PROTECTED FROM DUST, PAINT CHIPPING, ETC.... BY USE OF PLASTIC OR WHATEVER IS REQUIRED FOR PROPER PROTECTION. EXISTING STRUCTURES SHALL HAVE BRACING AND
SHORING AS REQUIRED TO PROTECT THE EXISTING STRUCTURE. PROVIDE DE-WATERING FACILITIES FOR CONSTRUCTION AS REQUIRED. COORDINATE AS-BUILT INFORMATION, STRUCTURAL, ETC. TO DESIGNER/ENGINEER AS REQUIRED.
7. THE DISCHARGE OF POLLUTANTS TO ANY STORM DRAINAGE SYSTEM IS PROHIBITED. NO SOID WASTE, PETROLEUM BYPRODUCTS, SOIL PARTICULATE, CONSTRUCTION WASTE MATERIALS, OR WASTEWATER GENERATED ON CONSTRUCTION SITES OR BY CONSTRUCTION ACTIVITIES SHALL BE PLACED, CONVEYED OR DISCHARGED INTO THE STREET, GUTTER
OR STORM DRAIN SYSTEM.
8. THE CONSTRUCTION SHALL NOT RESTRICT A FIVE-FOOTCLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUTION FACILITIES (POWER POLES, PULLBOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, PPURTENANCES, ETC.) OR TO THE LOCATION OF THE HOOK-UP. THE CONSTRUCTION SHALL NOT BE WITHIN TEN FEET OF ANY
POWER LINES WHETHER OR NOT THE LINES ARE LOCATED ON THE PROPERTY. FAILURE TO COMPLY MAY CAUSE CONSTRUCTION DELAYS AND/OR ADDITIONAL EXPENSES.
9. WHEN UTILITIES METER ALTERATION / RELOCATION OCCUR, INSTALLATION PROCEDURES SHALL BE VERIFIED AND APPROVED BY THE BUILDING INSPECTOR PRIOR TO INSTALLATION.
10. BUILDINGS SHALL BE PROVIDED WITH APPROVED ADDRESS IDENTIFICATION IN ACCORDANCE WITH SECTION R319 OF THE 2022 CALIFORNIA RESIDENTIAL CODE.
11. THE FINISH GRADE AND IMPERVIOUS SURFACES SHALL DRAIN AWAY FROM THE FOUNDATION WALLS AT A MINIMUM SLOPE OF 2% OR SHALL FALL 6 INCHES WITHIN THE FIRST TEN FEET WHERE POSSIBLE.
12. A FOUNDATION FORMS CERTIFICATION THAT IS CERTIFIED BY A LICENSED LAND SURVEYOR WILL BE REQUIRED TO BE PROVIDED TO THE BUILDING INSPECTOR AT THE FIRST FOOTING INSPECTION.

SITE PLAN NOTES

THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN 1 UNIT VERTICAL IN 20 UNITS HORIZONTAL (5-PERCENT SLOPE) FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE FACE OF THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A 5-PERCENT SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED NOT LESS THAN 2 PERCENT WHERE LOCATED WITHIN 10 FEET OF THE BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED NOT LESS THAN 2 PERCENT AWAY FROM THE BUILDING.

APPLICABLE CODE

LEGAL JURISDICTION : CITY OF CHULA VISTA, CA 91910

THE CURRENT PREVAILING BUILDING AND CONSTRUCTION CODES ARE AS FOLLOWS: 1

- 2025 CALIFORNIA RESIDENTIAL CODE
- 2025 CALIFORNIA FIRE CODE
- 2025 CALIFORNIA MECHANICAL CODE
- 2025 CALIFORNIA ELECTRICAL CODE
- 2025 CALIFORNIA PLUMBING CODE
- 2025 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS
- 2025 CALIFORNIA GREEN BUILDING STANDARDS CODE

REGULATION OF THE STATE AND LOCAL FIRE MARSHALS & CITY ORDINANCE **CHULA VISTA** AMENDMENTS AND MUNICIPAL CODE.

PROJECT DATA

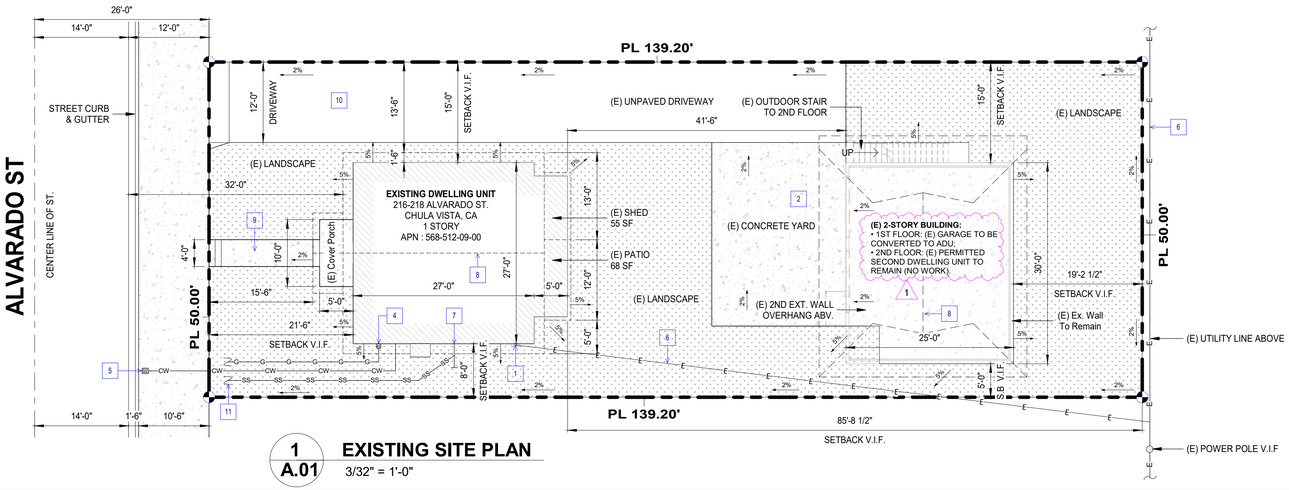
JURISDICTION HAVING AUTHORITY:	416-218 ALVARADO STREET, CHULA VISTA, SAN DIEGO, CA
ASSESSORS PARCEL NO. APN:	568-512-09-00
IN FLOOD ZONE FEMA SHFA'S:	FLOOD ZONE X
CONSTRUCTION TYPE:	V-B
BEDROOMS:	1 BEDROOM (ADU)
ZONING:	R-1 (SINGLE-FAMILY RESIDENCE ZONE)
OCCUPANCY GROUP:	R3/U
SPRINKLERS:	NO
NUMBER OF STORIES:	2 STORY (LOWER: GARAGE CONVERT TO NEW ADU, UPPER: EXISTING UNIT TO REMAIN)
BUILDING MAX HEIGHT:	22'-8" (NO CHANGE)
REQUIRED SETBACKS:	
REAR:	19' 2 1/2" (NO CHANGE, V.I.F)
SIDE:	5'-0" & 15'-0" (NO CHANGE, V.I.F)
TO (E) MAIN BUILDING :	46'- 6" (NO CHANGE, V.I.F)
SETBACKS INDICATE REQUIRED MINIMUM DISTANCE FROM PROPERTY LINES. CONTRACTOR TO VERIFY ON SITE.	
LOT SIZE :	7,201 SF (0.165 ACRE)
EXISTING BUILDING:	
EXISTING MAIN HOUSE:	846 SF (NO CHANGE)
EXISTING COVERED PORCH	49 SF (NO CHANGE)
EXISTING UPPER FLOOR UNIT	600 SF (NO CHANGE)
EXISTING GARAGE UNIT	600 SF (TO BE CONVERTED TO ADU)
NEW CONSTRUCTION:	
(N) CONVERSION ADU LIVING AREA	600 SF
TOTAL FLOOR AREA:	**846 SF + 600 SF + 600 SF= 2,646 SF**
TOTAL COVERAGE AREA :	NO CHANGE
MAXIMUM LOT COVERAGE:	45 %
TOTAL LOT COVERAGE:	**NO CHANGE**

SITE PLAN KEY NOTES

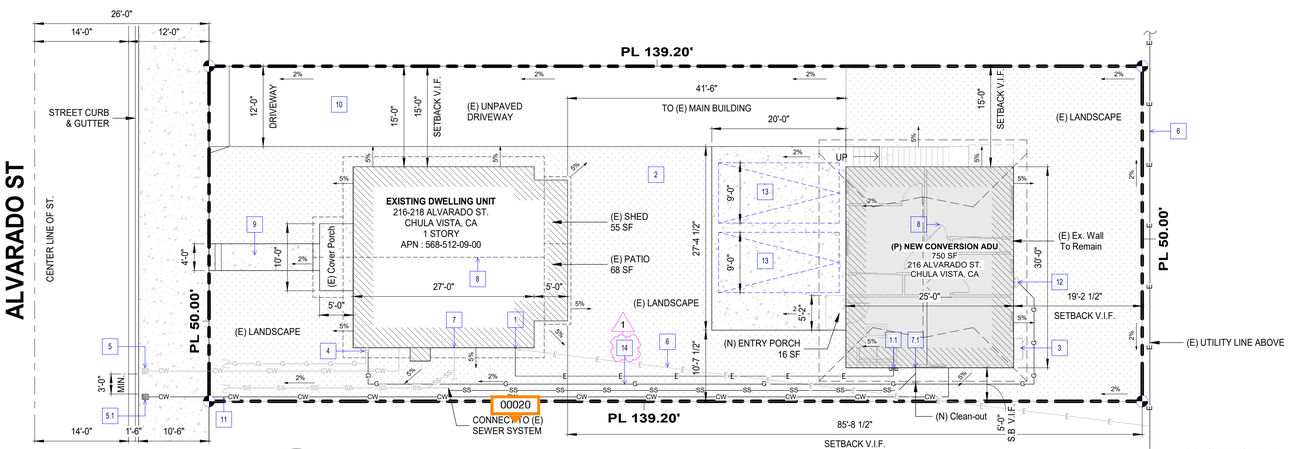
00003

1 EXISTING ELECTRICAL METER & PANEL.
2 (E) CONCRETE YARD
3 (N) MINI-SPLIT A/C UNIT ON PAD 3" MIN
4 (E) GAS METER 00002
5 EXISTING WATER METER, 1" MIN (V.I.F)
6 OVERHEAD ELECTRICAL SERVICE
7 (E) SEWER LINES, MIN. 4" DIA. PVC
8 ROOF LINE ABOVE ,TYP.
9 (E) CONCRETE WALKWAY
10 (E) UNPAVED DRIVEWAY
11 (E) MAIN CITY SEWER LINE CONNECTION

1.1 (N) 100 AMP ELECTRICAL SUBPANEL (125 AMP BUS BAR RATED) FOR ADU 1
5.1 NEW ADU WATER METER, 1" MIN PER CITY REQ.
7.1 (N) SEWER LINES, MIN. 4" DIA. PVC, SLOPE 1/4:12 FROM ADU CONNECT TO (E) MAIN HOUSE SEWER LINES SYSTEM V.I.F
12 (N) TANKLESS WATER HEATER
13 (N) OPEN PARKING SPACE 1
14 (N) 1" GAS PIPE CONNECTED TO MAIN HOUSE GAS METER.



1 A.01 **EXISTING SITE PLAN**
3/32" = 1'-0"

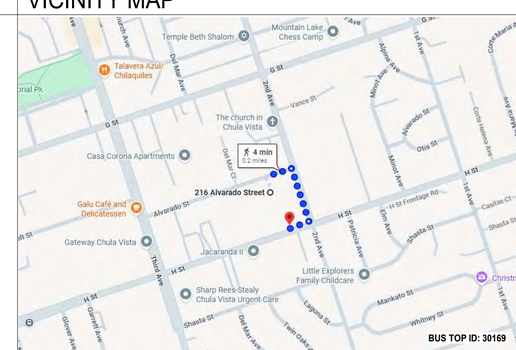


2 A.01 **PROPOSED SITE PLAN**
3/32" = 1'-0"

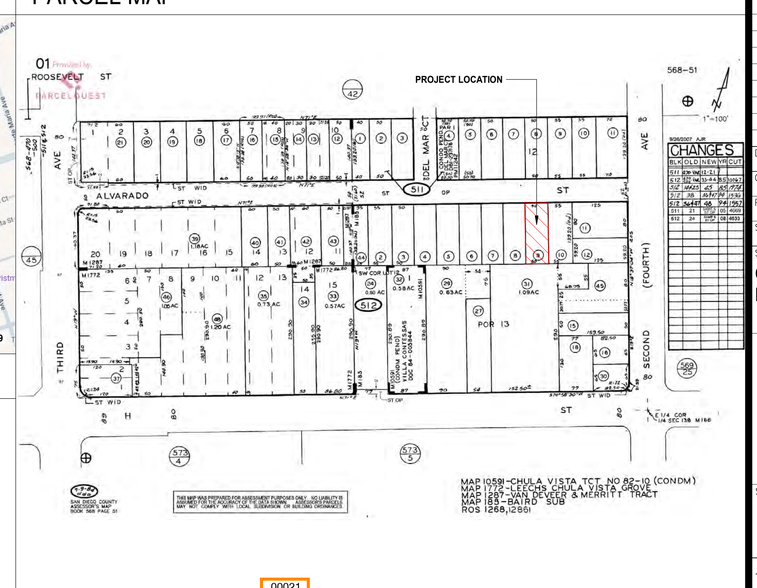
SITE LEGENDS

PROPERTY CORNER	
PROPERTY LINE	
CENTERLINE ROAD	
1" WATER SERVICE LINE PER CITY REQUIREMENTS	—CW—
4" SEWER LINE MIN. 1/4 :12 SLOPED PER CITY REQUIREMENTS	—SS—
1" GAS SUPPLY LINE	—G—
ELECTRICAL LINE	—E—
(E) SITE FLATWORK/ WALKWAY/PATIO	
LANDSCAPE	
EXISTING CONSTRUCTION TO BE DEMOLISHED	
DRAINAGE DIRECTION (PER SURVEYOR)	X%

VICINITY MAP



PARCEL MAP



00021

PROJECT DIRECTORY

APPLICANT	STRUCTURAL DESIGN
NAME: NAME ADDRESS: 216-218 ALVARADO ST, CHULA VISTA, CA 91910 PHONE: 000-000-0000	NAME: KSU ENGINEERING ADDRESS: 3603 BAKER STREET, SAN DIEGO,CA 92117 PHONE: 619-737-2700
ARCHITECTURAL DESIGN	
NAME: KSU ENGINEERING ADDRESS: 3603 BAKER STREET, SAN DIEGO,CA 92117 PHONE: 619-737-2700	

SCOPE OF WORK

CONVERT EXISTING DETACHED GARAGE (ON GROUND FLOOR) INTO A NEW ACCESSORY DWELLING UNIT. PROPOSED 600 SF ADU WITH 2 BEDROOMS AND 2 BATHROOMS, INCLUDING MISCELLANEOUS MECHANICAL, ELECTRICAL, AND PLUMBING WORK.
THE UPPER FLOOR IS AN EXISTING PERMITTED SECOND DWELLING UNIT (2-BEDROOM UNIT) WHICH WILL REMAIN.

KSU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by
Checked by
Project Eng.
Scale

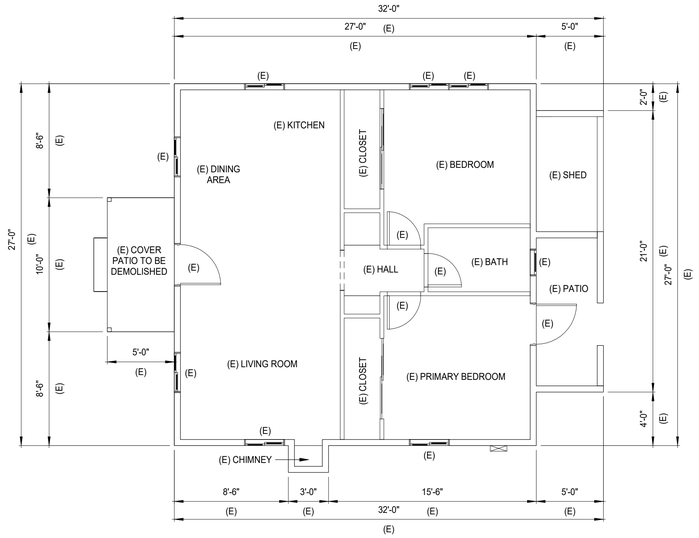
Sheet Name
COVER SHEET/ SITE PLAN

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

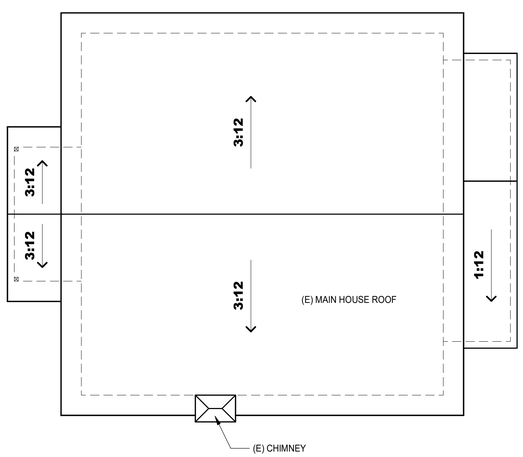
Sheet No
A.01

Date	Job No	Rev.
11-21-25		#

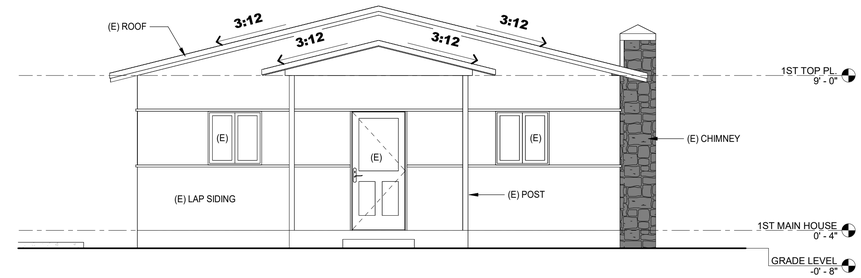
NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION



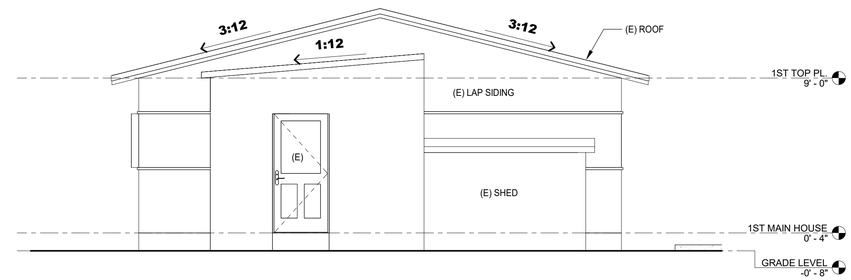
1 A.02 **EXITING MAIN HOUSE FLOOR PLAN**
3/16" = 1'-0"



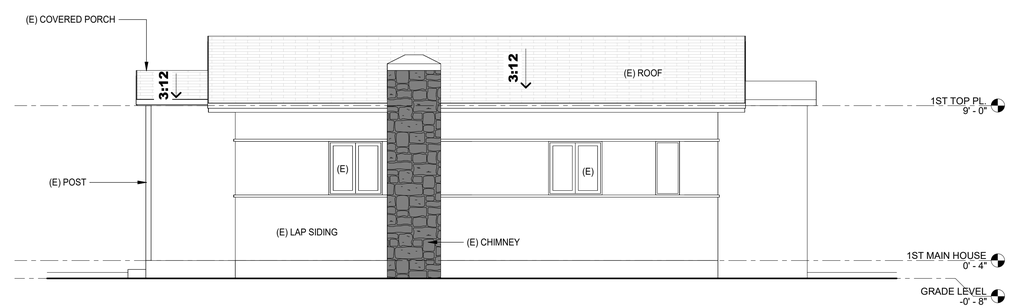
2 A.02 **EXITING MAIN HOUSE ROOF PLAN**
3/16" = 1'-0"



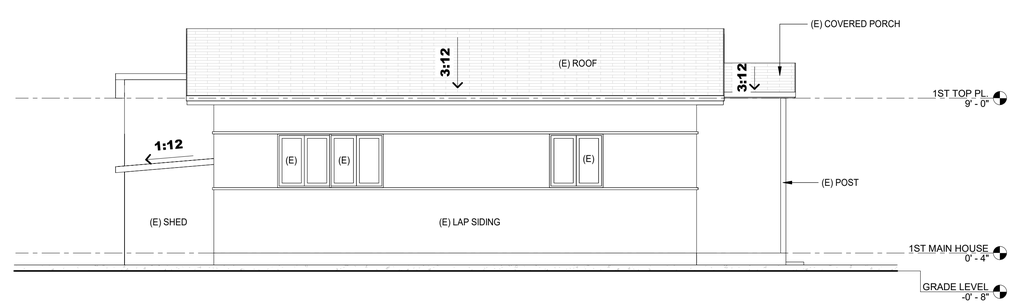
3 A.02 **EXISTING MAIN HOUSE_ NORTH WEST ELEVATION**
1/4" = 1'-0"



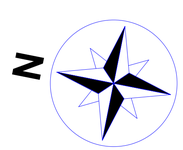
4 A.02 **EXISTING MAIN HOUSE_ SOUTH EAST ELEVATION**
1/4" = 1'-0"



5 A.02 **EXISTING MAIN HOUSE_ SOUTH WEST ELEVATION**
1/4" = 1'-0"



6 A.02 **EXISTING MAIN HOUSE_ NORTH EAST ELEVATION**
1/4" = 1'-0"



NOTES:

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2. EXISTING DRAWINGS ARE FOR REFERENCE ONLY, NOT FOR CONSTRUCTION

LEGEND:

	EXISTING CONSTRUCTION TO BE REMAINED
	EXISTING CONSTRUCTION TO BE DEMOLISHED
(E)	EXISTING CONSTRUCTION

DEMO EXTERIOR WALL TABLE	
EXISTING EXTERIOR WALL (LF')	100 FT
EXISTING TO REMAIN (LF')	81 FT
NEW EXTERIOR WALL (LF')	18 FT

KSU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
EXISTING MAIN HOUSE PLANS & ELEVATIONS

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
A.02

Date 11-21-25 | Job No | Rev. #

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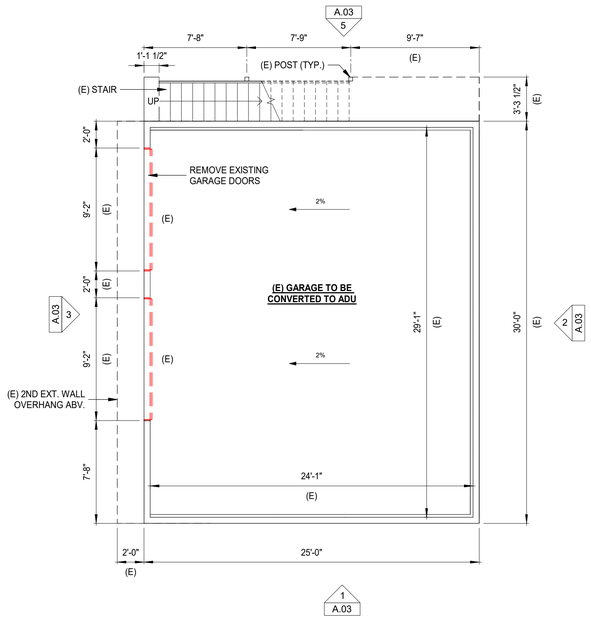
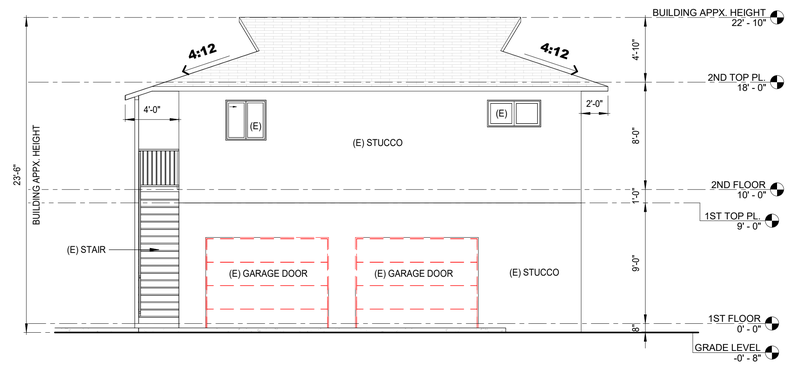
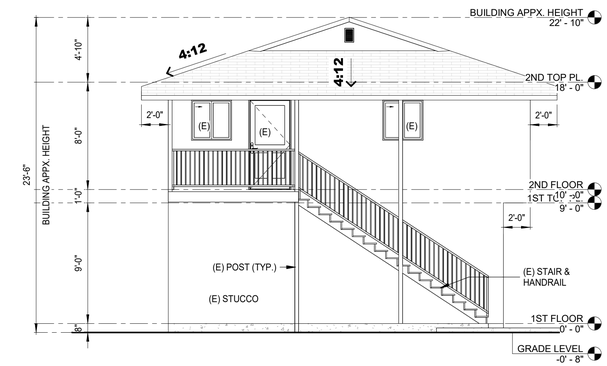


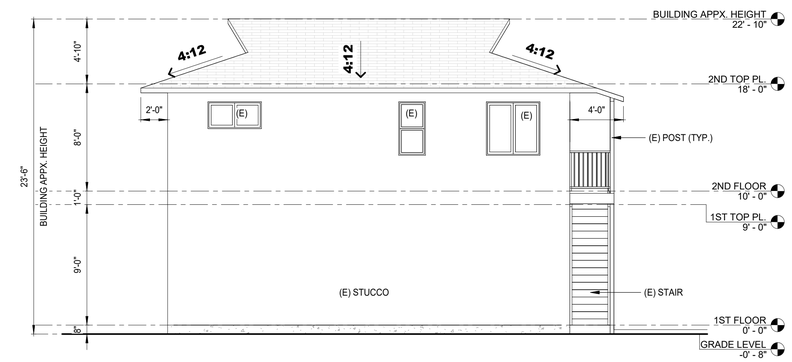
7 A.03 **(E) GARAGE FLOOR PLAN (1ST)**
3/16" = 1'-0"



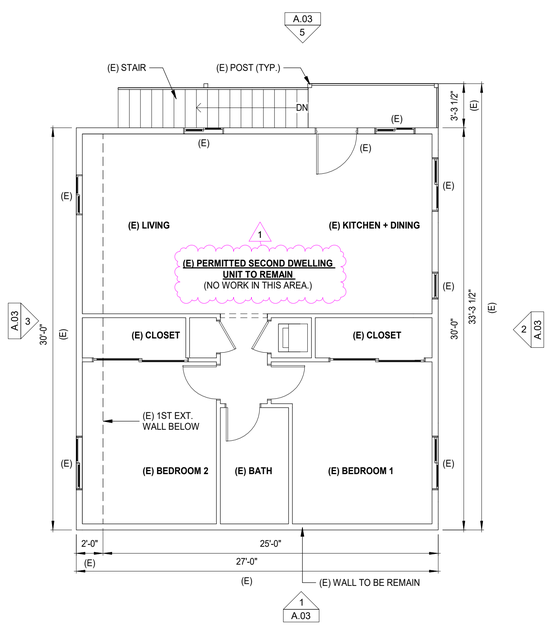
3 A.03 **(E) 2-STORY UNIT- NORTH WEST ELEVATION**
3/16" = 1'-0"



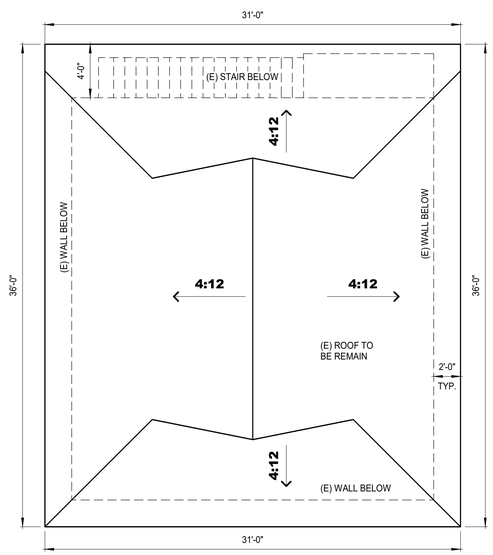
5 A.03 **(E) 2-STORY UNIT - NORTH EAST ELEVATION**
3/16" = 1'-0"



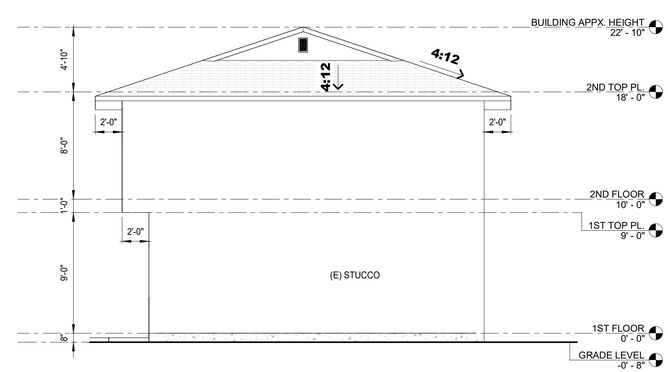
2 A.03 **(E) 2-STORY UNIT- SOUTH EAST ELEVATION**
3/16" = 1'-0"



6 A.03 **(E) SECOND DWELLING UNIT(2ND NO CHANGE)**
3/16" = 1'-0"



4 A.03 **EXISTING ROOF PLAN (NO CHANGE)**
3/16" = 1'-0"



1 A.03 **(E) 2-STORY UNIT- SOUTH WEST ELEVATION**
3/16" = 1'-0"

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LEGEND:

	EXISTING CONSTRUCTION TO BE REMAINED
	EXISTING CONSTRUCTION TO BE DEMOLISHED
(E)	EXISTING CONSTRUCTION

N

KU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
EXISTING 2-STORY BUILDING PLANS & ELEVATIONS

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
A.03

Date	Job No	Rev.
11-21-25		#

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AGING-IN-PLACE AND FALL PREVENTION

R327.1.1 REINFORCEMENT FOR GRAB BARS
AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH REINFORCEMENT INSTALLED IN ACCORDANCE WITH THIS SECTION. WHERE THERE IS NO BATHROOM ON THE ENTRY LEVEL, AT LEAST ONE BATHROOM ON THE SECOND OR THIRD FLOOR OF THE DWELLING SHALL COMPLY WITH THIS SECTION.

1. REINFORCEMENT SHALL BE SOLID LUMBER OR OTHER CONSTRUCTION MATERIALS APPROVED BY THE ENFORCING AGENCY.

2. REINFORCEMENT SHALL NOT BE LESS THAN 2 BY 8 INCH (51 MM BY 203 MM) NOMINAL LUMBER. [11/2 INCH BY 71/4 INCH (38 MM BY 184 MM) ACTUAL DIMENSION] OR OTHER CONSTRUCTION MATERIAL PROVIDING EQUAL HEIGHT AND LOAD CAPACITY. REINFORCEMENT SHALL BE LOCATED BETWEEN 32 INCHES (812.8 MM) AND 39 1/4 INCHES (997 MM) ABOVE THE FINISHED FLOOR FLUSH WITH THE WALL FRAMING.

3. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ONE SIDE WALL AND THE BACK WALL.

4. SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED.

5. BATHTUB AND COMBINATION BATHTUB/SHOWER REINFORCEMENT SHALL BE CONTINUOUS ON EACH END OF THE BATHTUB AND THE BACK WALL. ADDITIONALLY, BACK WALL REINFORCEMENT FOR A LOWER GRAB BAR SHALL BE PROVIDED WITH THE BOTTOM EDGE LOCATED NO MORE THAN 6 INCHES (152.4 MM) ABOVE THE BATHTUB RIM.

EXCEPTIONS:
1. WHERE THE WATER CLOSET IS NOT PLACED ADJACENT TO A SIDE WALL CAPABLE OF ACCOMMODATING A GRAB BAR, THE BATHROOM SHALL HAVE PROVISIONS FOR INSTALLATION OF FLOOR-MOUNTED, FOLDAWAY OR SIMILAR ALTERNATE GRAB BAR REINFORCEMENTS APPROVED BY THE ENFORCING AGENCY.

2. REINFORCEMENT SHALL NOT BE REQUIRED IN WALL FRAMING FOR PRE-FABRICATED SHOWER ENCLOSURES AND BATHTUB WALL PANELS WITH INTEGRAL FACTORY- INSTALLED GRAB BARS OR WHEN FACTORY-INSTALLED REINFORCEMENT FOR GRAB BARS IS PROVIDED.

3. SHOWER ENCLOSURES THAT DO NOT PERMIT INSTALLATION OF REINFORCEMENT AND/OR GRAB BARS SHALL BE PERMITTED, PROVIDED REINFORCEMENT FOR INSTALLATION OF FLOOR-MOUNTED GRAB BARS OR AN ALTERNATE METHOD IS APPROVED BY THE ENFORCING AGENCY.

4. BATHTUBS WITH NO SURROUNDING WALLS, OR WHERE WALL PANELS DO NOT PERMIT THE INSTALLATION OF REINFORCEMENT SHALL BE PERMITTED, PROVIDED REINFORCEMENT FOR INSTALLATION OF FLOOR-MOUNTED GRAB BARS ADJACENT TO THE BATHTUB OR AN ALTERNATE METHOD IS APPROVED BY THE ENFORCING AGENCY.

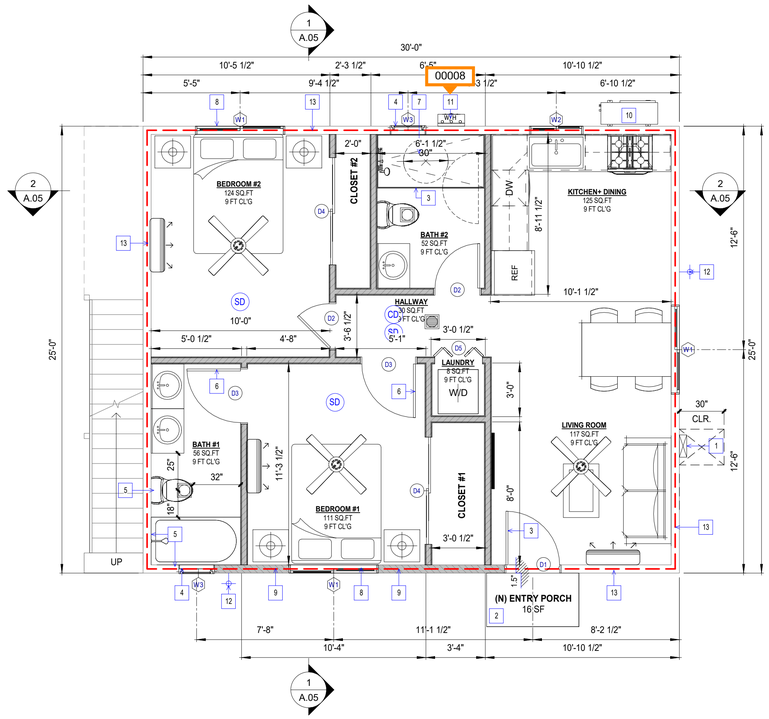
5. REINFORCEMENT OF FLOORS SHALL NOT BE REQUIRED FOR BATHTUBS AND WATER CLOSETS INSTALLED ON CONCRETE SLAB FLOORS.

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; OR, IN THE CASE OF A TWO- OR THREE-STORY SINGLE FAMILY DWELLING, ON THE SECOND OR THIRD FLOOR OF THE DWELLING IF A BATHROOM OR BEDROOM IS NOT LOCATED ON THE ENTRY LEVEL.

R327.1.4 DOORBELL BUTTONS
DOORBELL BUTTONS OR CONTROLS, WHEN INSTALLED, SHALL NOT EXCEED 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. WHERE DOORBELL BUTTONS INTEGRATED WITH OTHER FEATURES ARE REQUIRED TO BE INSTALLED ABOVE 48 INCHES (1219.2 MM) MEASURED FROM THE EXTERIOR FLOOR OR LANDING, A STANDARD DOORBELL BUTTON OR CONTROL SHALL ALSO BE PROVIDED AT A HEIGHT NOT EXCEEDING 48 INCHES (1219.2 MM) ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON OR CONTROL.

FLOOR PLAN KEY NOTES:

1. (N) 100 AMP ELECTRICAL SUBPANEL (125 AMP BUS BAR RATED) FOR ADU
2. LANDING. 1 1/2" BELOW THRESHOLD.MINIMUM 36" IN DEPTH.MIN. 2% SLOPE AWAY FROM BLDG.
3. TEMPERED GLASS
4. OBSCURED, TEMPERED GLASS
5. 2x8 BACKING FOR FUTURE GRAB BAR INSTALLATION, SEE NOTE ON "AGING-IN PLACE"
6. 32" MIN. CLR. INTERIOR DOOR SEE NOTE ON "AGING-IN PLACE"
7. SHOWER COMPARTMENT REGARDLESS OF SHAPE, HAVING A MIN. OF INTERIOR FLOOR AREA OF 1024 SQUARE IN., AND ALSO CAPABLE OF ENCOMPASSING 30 IN CIRCLE
8. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET. THE NET CLEAR HEIGHT OF THE OPENING SHALL BE NOT LESS THAN 24" AND THE NET CLEAR WIDTH SHALL BE NOT LESS THAN 20". THE BOTTOM OF THE CLEAR OPENING SHALL NOT BE GREATER THAN 44" MEASURED FROM THE FLOOR. CRC R310.2.1 & R310.2.2
9. INFILL EXISTING GARAGE DOOR OPENING WITH NEW WOOD-FRAMED WALL
10. (N) MINI SPLIT HVAC UNIT ON 3" THIK. CONCRETE PAD.
11. (N) GAS TANKLESS WATER HEATER RE199EN, OUTDOOR, 199,000 BTU, UEF 0.82 (PER TITLE 24 CALCULATIONS). SEE PLUMBING FOR ISOLATION VALVES AND SERVICE VALVES AT HOT AND COLD WATER CONNECTIONS.
12. (N) HOSE-BIBB LOCATION
13. EXISTING WALL TO BE UPGRADED TO 1-HOUR FIRE-RATED (WALL SUPPORTING RATED ASSEMBLIES). SEE DETAIL 1/A.08.



1 A.04 **PROPOSED CONVERSION ADU FLOOR PLAN**
1/4" = 1'-0"

FLOOR PLAN NOTES

1. VERIFY ALL APPLIANCE EQUIPMENT AND FIXTURE DIMENSIONS AND INSTALLATION REQUIREMENTS PRIOR TO CASEWORK FABRICATION INSTALLATION.

2. FINISH END WALLS OF CABINETS FLANKING OPENING TO MATCH CABINET FACE. PRIME & PAINT EXPOSED GYP. BD. WALL TO MATCH WALLS. INSTALL MATCHING BASE BD.

3. EXTEND FLOORING UNDER APPLIANCES RESTING ON FLOOR.

4. SHOWER COMPARTMENTS AND WALLS ABOVE BATH TUBS WITH INSTALLED SHOWER HEADS SHALL BE FINISHED WITH A SMOOTH, NON-ABSORBENT SURFACE TO A HEIGHT NOT LESS THAN 72 INCHES ABOVE THE DRAIN INLET.

5. OFFSET ALL IMMEDIATELY ADJACENT DOOR OPENINGS 4" FROM PERPENDICULAR WALL, UNO.

6. CEILING HEIGHTS INDICATED ARE MEASURED FROM FINISH FLOOR TO BOTTOM OF CEILING FINISH.

7. SMOKE DETECTORS WILL BE PROVIDED PER CHAPTER 3 CRC. THE SMOKE DETECTOR WILL BE HARD WIRED WITH BATTERY BACK-UP AND LOCATED (1) IN EACH BEDROOM, HALLWAYS OUTSIDE BEDROOMS, AND ON EACH STORY. SMOKE DETECTOR ALARM SOUND MUST BE AUDIBLE IN SLEEPING AREAS WHICH MAY REQUIRE INTERCONNECTED SMOKE DETECTORS WITHIN THE UNIT. SEE PLANS FOR LOCATIONS. INSTALL AND LOCATE PER MFGR. LISTED REQUIREMENTS.

8. PROVIDE CARBON MONOXIDE DETECTOR ALARMS ON CEILINGS OR WALLS OUTSIDE SLEEPING ROOMS PER CHAPTER 3 CRC. CARBON MONOXIDE DETECTOR SHALL BE INTERCONNECTED SUCH THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL ALARM.

9. BATHROOM FANS MUST BE ENERGY STAR W/ HUMIDISTAT CONTROLLER AND MUST BE DUCTED TO THE EXTERIOR OF THE BUILDING

10. PROVIDE BACKING FOR ALL ACCESSORIES, FIXTURES AND WINDOW COVERINGS.

11. PROVIDE TWO LAYERS OF GRADE D OR 60-MINUTE GRADE D PAPER OVER ALL WOOD BASE SHEATHING AT EXTERIOR WALLS.

12. PROVIDE LOW CONSUMPTION WATER CLOSETS FOR ALL NEW CONSTRUCTION. EXISTING SHOWER HEADS AND TOILETS MUST BE ADAPTED FOR LOW WATER CONSUMPTION.

13. EVERY SPACE INTENDED FOR HUMAN OCCUPANCY SHALL BE PROVIDED WITH A NATURAL LIGHT IN ACCORDANCE WITH SECTION R303.1 OR SHALL BE PROVIDE AN AVERAGE ILLUMINATION OF 6 FEET CANDLES OVER THE AREA OF THE ROOM AT A HEIGHT OF 30" ABOVE THE FLOOR LEVEL

14. GLAZING WHICH IS LESS THAN 60 INCHES FROM A FLOOR AND WITHIN A 24" ARC OF A DOORWAY'S VERTICAL EDGE MUST COMPLY WITH CH.3 CRC

15. DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14 FEET (4267 MM), INCLUDING TWO 90 DEGREE (1.57 RAD) ELBOWS. A LENGTH OF 2 FEET (610 MM) SHALL BE DEDUCTED FOR EACH 90 DEGREE (1.57 RAD) ELBOW IN EXCESS OF TWO.

16. ACCESS TO ATTIC AIR FURNACE MUST BE WITHIN 20' OF UNIT AND SHALL HAVE A CONTINUOUS SOLID WALKWAY AT LEAST 24" WIDE. A SWITCH CONTROL IS ALSO REQUIRED (CMC 304.4.1)

17. SMOKE DETECTOR SHALL BE INTERCONNECTED SUCH THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL ALARMS.

18. A MINIMUM OF 20 FT. FROM PERMANENT COOKING EQUIPMENT (OR 10' WITH PHOTO-ELECTRIC TYPE). PHOTO-ELECTRIC TYPE SMOKE DETECTOR IN KITCHEN AREA.

DOOR/WINDOW NOTES (AS APPLICABLE)

1. ALL DOORS AND WINDOWS SHALL MEET CITY'S SECURITY ORDINANCE.
2. ALL EXTERIOR DOORS & WINDOWS SHALL BE WEATHER TIED AND PROVIDE WITH INSECT SCREEN-METAL. DOORS & WINDOWS SHALL BE IN COMPLIANCE WITH ANSI. STD. A13 OR A1342.
3. THE MANUFACTURED WINDOWS AND SLIDING DOOR SHALL HAVE A LABEL ATTACHED CERTIFIED BY THE NATIONALS FENESTRATION RATING COUNCIL (NFRC) AND COMPLIANCE WITH THE ENERGY CALCULATIONS.
4. THE LOAD RESISTANCE OF GLASS UNDER UNIFORM LOAD SHALL BE DETERMINED IN ACCORDANCE WITH ASTM E1300.
5. ALL TEMPERED GLASS (T.G.) SHALL BE ACID-ETCHED, SAND-BLASTED, CERAMIC-FIRED, LASER-ETCHED, OR EMBOSSED PER CRC 2406.3.
6. GLAZING AND INSULATION SHALL CONFORM TO THE STATE ENERGY INSULATION STANDARD.
7. DEAD BOLT LOCKS ARE REQUIRED ON ALL EXTERIOR DOORS (INCLUDING HOUSE TO GARAGE)
8. GLAZING SHALL BE SAFETY GLAZING IF LESS THAN 72" ABOVE BATHROOM FINISH FLOOR
9. SLIDING GLASS DOORS AND WINDOWS LOCATED LESS THAN 16 FEET ABOVE ANY SURFACE AVAILABLE FOR USE BY THE PUBLIC SHALL BE CAPABLE OF BEING LOCKING SECURELY. MOVEABLE PANELS SHALL NOT BE EASILY REMOVED FROM THE FRAME.
10. ALL MAIN OR FRONT ENTRY TO DWELLINGS SHALL BE ARRANGED SO THAT THE OCCUPANT HAS A VIEW OF THE AREA IMMEDIATELY OUTSIDE WITHOUT OPENING DOOR. SUCH VIEW MAY BE POVIDED BY A DOOR VIEW, A VIEW PORT, WINDOW, OR OTHER OPENING.
11. ALL SWINGING DOORS SHALL BE EQUIPPED WITH A DEAD BOLT WITH A MINIMUM THROW OF 1 INCH AND AN EMBEDMENT OF NOT LESS THAN 5/8 INCH.
12. THE INACTIVE LEAF OF A PAIR OF DOORS AND THE UPPER LEAF OF DUTCH DOORS SHALL BE EQUIPPED WITH A DEAD BOLT.
13. NON-REMOVABLE PINS SHALL BE USED IN PIN TYPE HINGES WHICH ARE ACCESSIBLE FROM THE OUTSIDE WHEN THE DOOR IS CLOSED.
14. UNFRAMED GLASS DOORS SHALL BE FULLY TEMPERED GLASS NOT LESS THAN 1/2" THICK.
15. NARROW-FRAMED GLASS DOORS SHALL BE FULLY TEMPERED GLASS NOT LESS THAN 1/4" THICK.
16. ANY GLASS WHICH IS LOCATED WITHIN 40 INCHES OF THE BLOCKING DEVICE ON A DOOR SHALL BE FULLY TEMPERED, OR HAVE APPROVED METAL BARS, SCREENS OR GRILLS.
17. IT IS CONTRACTOR'S RESPONSIBILITY TO CONFIRM DOOR/WINDOW ROUGH OPENING DIMENSIONS WITH THE MANUFACTURE/SUPPLIER PRIOR TO BEGIN CONSTRUCTION
18. AUTOMATIC GARAGE DOOR OPENERS, IF PROVIDED, SHALL BE LISTED IN ACCORDANCE WITH UL 325. (R309.4)
19. EMERGENCY EGRESS:
    A. MIN. SET CLEAR OPENING OF 5.7 SQUARE FEET.
    B. MIN. SET CLEAR HEIGHT OF 24 INCHES.
    C. WINDOW SILL CLEAR OPENING EMERGENCY EGRESS NO MORE THAN 44 INCHES ABOVE THE FLOOR.

SYMBOL LEGEND:

- XX — DOOR TYPE, SEE SCHEDULE A.04
- XX — WINDOW TYPE, SEE SCHEDULE A.04
- XX — KEY NOTE
- 1.5" — STEP AT SLAB

LEGEND:

- WALL MOUNTED AIR HANDLER
- DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM (WALL-MOUNTED)
- LAUNDRY EXHAUST
- SD — SMOKE DETECTOR HARDWIRED w/ BATTERY BACK UP. PHOTO-ELECTRIC TYPE
- CD — CARBON MONOXIDE DETECTOR ALARM HARDWIRED w/ BATTERY BACK UP
- 1-HR FIRE RATED WALL
- ELECTRICAL METER/ PANEL PER KEYNOTE
- EXHAUST FAN SHALL BE ENERGY STAR RATED. CEILING MOUNTED LIGHT w/ VENT **100** CFM MIN. INTERMITTENT W/ HUMIDITY CONTROL PER CMC 402.5, BETWEEN 50%-80% SHALL BE DUCTED TO OUTSIDE THROUGH ROOF/ EXTERIOR WALL
- IAQ FAN: SEE T-24 FOR SELECTIONPANASONIC, WHISPERGREEN® SELSCT FAN, 50-80-110 SFM, MULTI-SPEED, MODEL FV-0511VKS2,0.5 SONE
- W/H — TANKLESS WATER HEATER
- KITCHEN EXHAUST FAN MIN. 100 CFM DUCTED TO OUTSIDE THROUGH ROOF OR EXTERIOR WALL

N

LEGEND:

- EXISTING CONSTRUCTION TO BE REMAINED
- NEW CONSTRUCTION

A - DOOR SCHEDULE

Type Mark	Width	Height	Head Height	Count	Door Type	Finish Comments
D1	3' - 0"	6' - 8"	6' - 8"	1	ENTRY DOOR	TEMPERED,32" CLR.
D2	2' - 6"	6' - 8"	6' - 8"	2	FLUSH SWING	
D3	3' - 0"	6' - 8"	6' - 8"	2	FLUSH SWING	32" CLR.
D4	6' - 0"	6' - 8"	6' - 8"	2	SLIDING CLOSET	
D5	2' - 8"	6' - 8"	6' - 8"	1	LOUVER DOOR	100 SQ.IN MIN

A - WINDOW SCHEDULE

Type Mark	Window Opening Width	Window Opening Height	Head Height	Count	Description	U-FACTOR	Comments
W1	5' - 0"	4' - 0"	6' - 8"	3	SLIDER, DOUBLE GLASS, VINYL	0.3/0.23	EGRESS ESCAPE AND RESCUE WINDOW
W2	3' - 0"	3' - 0"	6' - 8"	1	SLIDER, DOUBLE GLASS, VINYL	0.3/0.23	KITCHEN WINDOW
W3	2' - 0"	2' - 0"	6' - 8"	2	AWNING, DOUBLE GLASS, VINYL	0.3/0.23	TEMPERED, OBSCURED GLASS

A - ROOM SCHEDULE

Name	Area	Perimeter	Height	Comments
LIVING ROOM	117 SF	43' - 4 1/2"	9' CEILING	
KITCHEN+ DINING	125 SF	45' - 0"	9' CEILING	
HALLWAY	30 SF	24' - 3 1/4"	9' CEILING	
BATH #2	52 SF	29' - 2 1/2"	9' CEILING	
LAUNDRY	8 SF	11' - 7 3/4"	9' CEILING	
BEDROOM #1	111 SF	42' - 3 3/4"	9' CEILING	
BEDROOM #2	124 SF	44' - 9 1/2"	9' CEILING	
BATH #1	56 SF	32' - 5 3/4"	9' CEILING	
CLOSET #1	23 SF	21' - 9"	9' CEILING	
CLOSET #2	16 SF	21' - 0"	9' CEILING	

KU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
PROPOSED ADU FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER
SAN JEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
A.04

Date 11-21-25 | Job No | Rev. #

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

ELEVATION & SECTION NOTES

1. PROVIDE FIRE BLOCKING IN CONCEALED SPACES 10' O.C. HORIZONTAL, VERTICALLY AT THE CEILING AND FLOOR LEVELS, CONNECTIONS BETWEEN HORIZONTAL AND VERTICAL SPACES, CONCEALED SPACES BETWEEN STAIR AND LANDING, OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES, WIRES, CHIMNEYS AND FIREPLACES, CRC R302.11.
2. ALL WOOD FRAMING MEMBERS THAT REST ON CONCRETE OR MASONRY EXTERIOR FOUNDATION WALLS AND ARE LESS THAN 8" TO THE EXPOSED GROUND SHALL BE PRESSURE TREATED OR NATURALLY DURABLE TO DECAY, CRC R317.2(2).
3. CONTRACTOR TO INCLUDE ALL FINISH AND COLOR SPECIFIED BY OWNER AND INTERIOR DESIGNER.
4. CONTRACTOR TO VERIFY W/ OWNER'S INTERIOR DESIGNER FOR MATERIAL SELECTION AND COLOR PRIOR TO FINAL PRICING AND CONSTRUCTION.
5. MIN. 3/8" CDX PLYWOOD THROUGH-OUT @ OUTSIDE FACE OF WALL
6. ALL INTERIOR, DOOR, WINDOW SIDE, HEAD AND SILL TO BE MOLDING
7. EXTERIOR CONCRETE LANDING TO COMPLY 2022 CRC R311.3
   A. THERE SHALL BE A LANDING OR FLOOR ON EACH SIDE OF EACH EXTERIOR DOOR. THE WIDTH OF EACH LANDING SHALL BE NOT LESS THAN THE DOOR SERVED. EVERY LANDING SHALL HAVE A DIMENSION OF NOT LESS THAN 36 INCHES MEASURED IN THE DIRECTION OF TRAVEL. THE SLOPE AT EXTERIOR LANDINGS SHALL NOT EXCEED 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2 PERCENT).
   B. LANDINGS AT THE REQUIRED DOOR SHALL NOT MORE THAN 1 1/2 INCHES LOWER THAN THE TOP OF THE THRESHOLD. EXCEPTION: THE LANDING SHALL BE NOT MORE THAN 7 3/4 INCHES BELOW THE TOP OF THE THRESHOLD PROVIDED THE DOOR DOES NOT SWING OVER THE LANDING
8. BOTH THE ADU AND PRIMARY DWELLING ROOF MUST MATCH AND BE SUBSTANTIALLY SIMILAR IN DESIGN, PITCH, COLOR, MATERIAL, AND TEXTURE.

SYMBOL LEGEND:

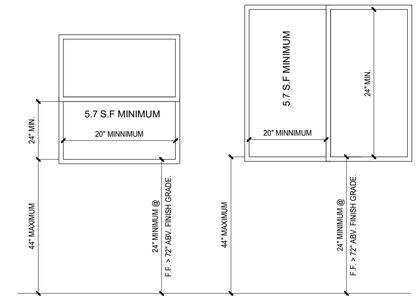
XX	DOOR ID, SEE SCHEDULE SHEET A.03
XX	WINDOW ID, SEE SCHEDULE SHEET A.03
XX	KEY NOTE ID, SEE KEYNOTE LEGEND
EE&RO	EGRESS ESCAPE AND RESCUE WINDOW

EMERGENCY EGRESS

1. WINDOW MANUFACTURER AND INSTALLER SHALL INSURE THAT ALL WINDOWS MEET OR EXCEED ALL EGRESS REQUIREMENTS OF CRC R310 & R312
2. ALL WINDOWS AND SLIDING GLASS DOORS SHALL BE INSTALLED PER AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION AAMA 2400=02 RECOMMENDATIONS "STANDARD PRACTICE FOR INSTALLATION OF WINDOWS WITH INTEGRAL MOUNTING FLANGES IN STUD FRAME CONSTRUCTION".
3. INSTALL AN ISOLATION MEMBRANE BELOW THE THRESHOLD OF ALL SLIDING GLASS DOORS THAT REST ON A CONCRETE SLAB.
4. ALL SEALANT SHALL BE OF HIGH QUALITY AND REVIEWED OFR COMPATIBILITY WITH ASPHALTIC MEMBRANES AND FLASHING MATERIAL.

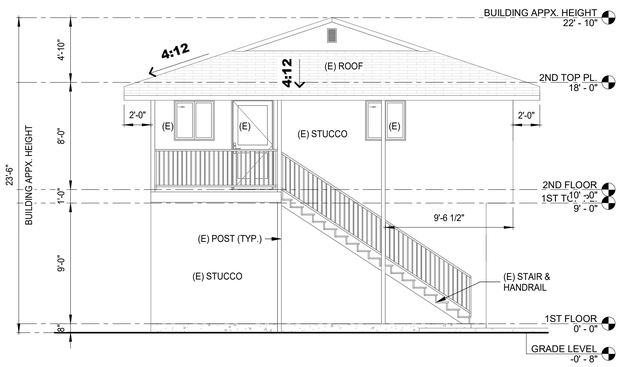
EGRESS REQUIREMENTS:

1. MIN. SET CLEAR OPENING OF 5.7 SQUARE FEET.
2. MIN. SET CLEAR HEIGHT OF 24 INCHES.
3. WINDOW SILL CLEAR OPENING EMERGENCY EGRESS NO MORE THAN 44 INCHES ABOVE THE FLOOR.

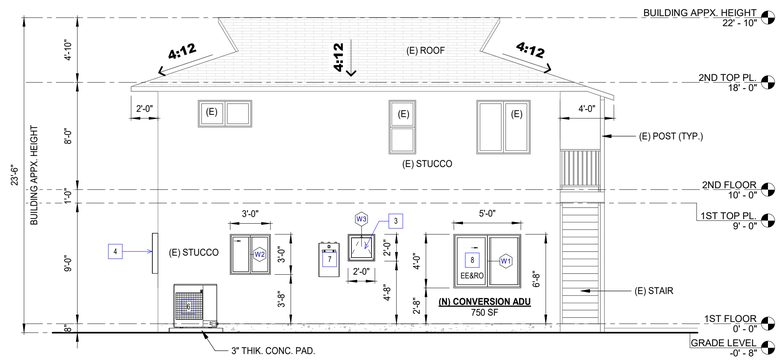


ELEVATION KEYNOTES

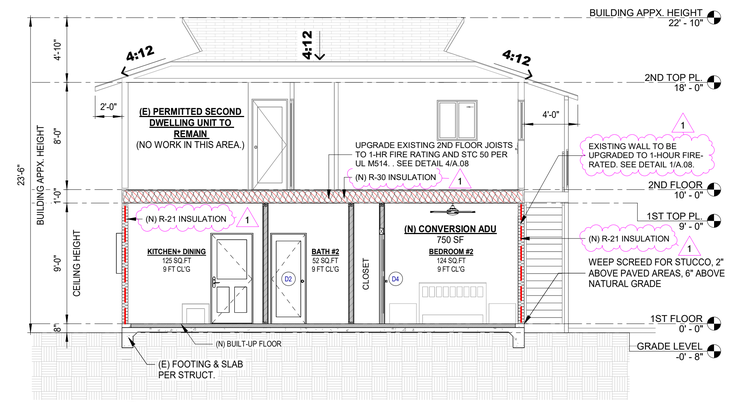
1. (N) STUCCO – COLORS TO MATCH EXISTING BUILDING
2. TEMP. GLASS
3. TEMP. OBSCURED GLASS
4. (N) 100 AMP ELECTRICAL SUBPANEL (125 AMP BUS BAR RATED) FOR ADU
5. CONCRETE LANDING. 1 1/2" BELOW THRESHOLD.MINIMUM 36" IN DEPTH.MIN. 2% SLOPE AWAY FROM BLDG.
6. PROPOSED MINI-SPLIT AC UNIT
7. PROPOSED TANKLESS WATER HEATER
8. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET. THE NET CLEAR HEIGHT OF THE OPENING SHALL BE NOT LESS THAN 24" AND THE NET CLEAR WIDTH SHALL BE NOT LESS THAN 20". THE BOTTOM OF THE CLEAR OPENING SHALL NOT BE GREATER THAN 44" MEASURED FROM THE FLOOR. CRC R310.2.1 & R310.2.2



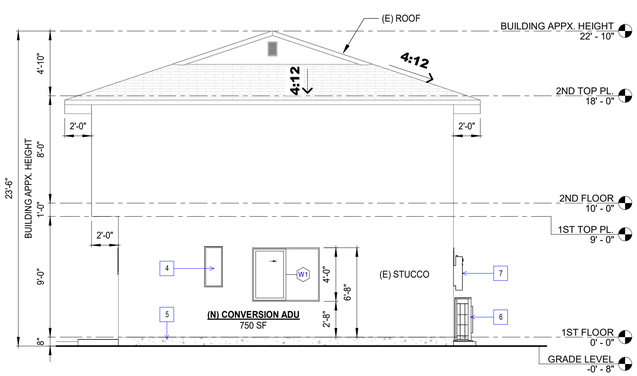
6 A.05 (P) 2-STORY UNIT - _ NORTH EAST ELEVATION
3/16" = 1'-0"



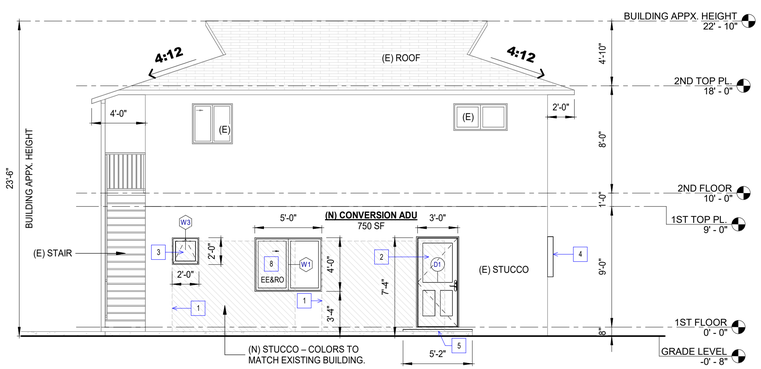
4 A.05 (P) 2-STORY UNIT- SOUTH EAST ELEVATION
3/16" = 1'-0"



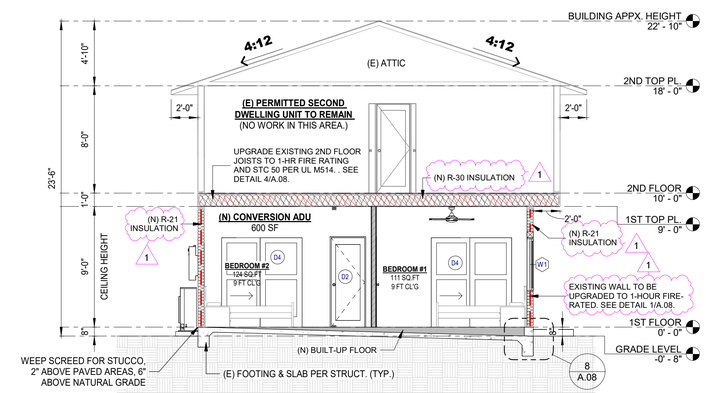
2 A.05 (P) CONVERSION ADU_ SECTION A-A
3/16" = 1'-0"



5 A.05 (P) 2-STORY UNIT- SOUTH WEST ELEVATION
3/16" = 1'-0"



3 A.05 (P) 2-STORY UNIT- NORTH WEST ELEVATION
3/16" = 1'-0"



1 A.05 (P) CONVERSION ADU_ SECTION B-B
3/16" = 1'-0"

LEGEND:

EXISTING CONSTRUCTION TO BE REMAINED

NEW CONSTRUCTION

KU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name

PROPOSED ADU ELEVATIONS & SECTIONS

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No

A.05

Date	Job No	Rev.
11-21-25		#

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

ELECTRICAL READY NOTE

1. A DEDICATED 240 VOLT BRANCH CIRCUIT WIRING SHALL BE INSTALLED WITHIN 3 FEET FROM THE COOKTOP/CLOTHES DRYER/ HEATER AND BE ACCESSIBLE WITH NO OBSTRUCTIONS. THE BRANCH CIRCUIT CONDUCTORS SHALL BE RATED AT (50 AMPS FOR COOKTOPS, 30 AMPS FOR DRYERS AND 30 AMPS FOR HEATERS) MINIMUM. THE BLANK COVER SHALL BE IDENTIFIED AS "240V READY". ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH CALIFORNIA ELECTRICAL CODE

2. THE MAIN ELECTRICAL SERVICE PANEL SHALL HAVE RESERVED SPACES TO ALLOW FOR THE INSTALLATION OF DOUBLE POLE CIRCUIT BREAKER FOR A FUTURE ELECTRIC COOKTOP/CLOTHES DRYER/ HEATER INSTALLATION. THE RESERVED SPACES SHALL BE PERMANENTLY MARK AS "FOR FUTURE 240V USE"

ELECTRICAL AGING-IN-PLACE

R327.1.2 ELECTRICAL RECEPTACLE OUTLET, SWITCH AND CONTROL HEIGHTS
ELECTRICAL RECEPTACLE OUTLETS, SWITCHES AND CONTROLS (INCLUDING CONTROLS FOR HEATING, VENTILATION AND AIR CONDITIONING) INTENDED TO BE USED BY OCCUPANTS SHALL BE LOCATED NO MORE THAN 48 INCHES (1219.2 MM) MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15 INCHES (381 MM) MEASURED FROM THE BOTTOM OF THE OUTLET BOX ABOVE THE FINISH FLOOR.

EXCEPTIONS:

1. DEDICATED RECEPTACLE OUTLETS; FLOOR RECEPTACLE OUTLETS; CONTROLS MOUNTED ON CEILING FANS AND CEILING LIGHTS; AND CONTROLS LOCATED ON APPLIANCES.

2. RECEPTACLE OUTLETS REQUIRED BY THE CALIFORNIA ELECTRICAL CODE ON A WALL SPACE WHERE THE DISTANCE BETWEEN THE FINISHED FLOOR AND A BUILT-IN FEATURE ABOVE THE FINISH FLOOR, SUCH AS A WINDOW, IS LESS THAN 15 INCHES (381 MM).

ELECTRICAL NOTES

1. ALL INSTALLED LUMINAIRES SHALL BE HIGH-EFFICACY IN ACCORDANCE WITH TABLE 150.0-A.

2. IN BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS, AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES SHALL BE CONTROLLED BY A VACANCY SENSOR OR OCCUPANT SENSOR PROVIDED THE OCCUPANT SENSOR IS INITIALLY PROGRAMMED
LIKE A VACANCY SENSOR (MANUAL-ON OPERATION). 150(K) 2I

3. LUMINAIRES RECESSED INTO CEILINGS SHALL MEET ALL THE FOLLOWING: LISTED FOR ZERO CLEARANCE INSULATION, LABELLED THAT CERTIFIES THE LUMINAIRE IS AIRTIGHT WITH A LEAKAGE LESS THAN 2.0CFM AT 75 PASCALS, SEALED WITH A GASKET OR
CAULK, ALLOW REPLACEMENT AND MAINTENANCE TO BE READILY ACCESSIBLE FROM BELOW THE CEILING WITHOUT CUTTING HOLES IN THE CEILING, SHALL NOT CONTAIN SCREW BASE SOCKETS, AND SHALL CONTAIN LIGHT SOURCES THAT COMPLY WITH JA8.

4. ALL OUTDOOR LIGHTING SHALL BE CONTROLLED BY A MANUAL ON AND OFF SWITCH
THAT DOES NOT OVERRIDE TO ON AND ONE OF THE FOLLOWING: CONTROLLED BY PHOTOCELL AND MOTION SENSOR, PHOTO CONTROL AND AUTOMATIC SWITCH CONTROL, ASTRONOMICAL TIME CLOCK, OR ENERGY MANAGEMENT CONTROL SYSTEM. CBEES 150(K)3

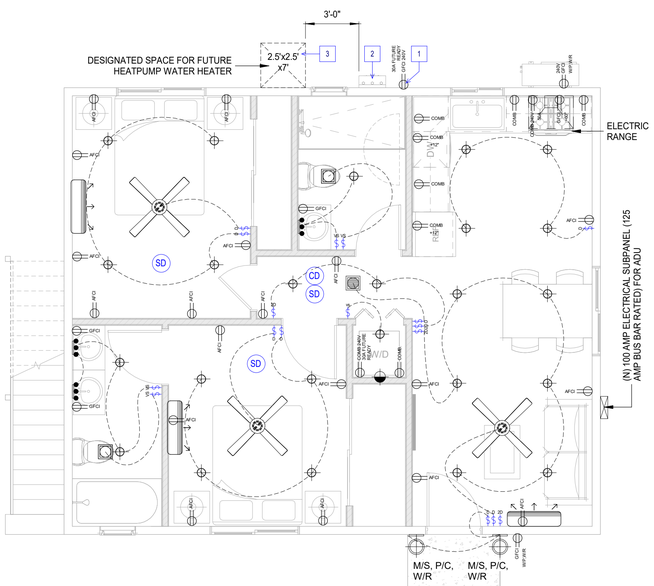
5. NO CONTROLS SHALL BYPASS A DIMMER OR VACANCY SENSOR FUNCTION WHERE THAT DIMMER OR VACANCY SENSOR HAS BEEN INSTALLED TO COMPLY WITH 150.0(K).

WATER HEATER KEYNOTES

1. A DEDICATED 125V, 30A (10 AWG COPPER BRANCH CIRCUIT) ELECTRICAL RECEPTACLE THAT IS WITHIN 3 FEET OF THE WATER HEATER AND ACCESSIBLE TO THE WATER HEATER WITH NO OBSTRUCTIONS. THERE SHALL BE A RESERVED SINGLE POLE BREAKER SPACE IN THE ELECTRICAL PANEL LABELED "FUTURE 240V USE". BOTH ENDS OF THE UNUSED CONDUCTOR SHALL BE LABELED WITH THE WORD "SPARE" AND BE ELECTRICALLY ISOLATED.

2. A CONDENSATE DRAIN THAT IS NO MORE THAN 2 INCHES HIGHER THAN THE BASE OF THE INSTALLED WATER HEATER, AND ALLOWS NATURAL DRAINING WITHOUT PUMP ASSISTANCE.

3. DESIGNATE A SPACE AT LEAST 2.5 FT. BY 2.5 FT. WIDE AND 7 FT. TALL SUITABLE FOR THE FUTURE INSTALLATION OF A HEAT PUMP WATER HEATER (HPWH).



1 / A.06 PROPOSED CEILING/ELECTRICAL FLOOR PLAN
1/4" = 1'-0"

LEGEND

- KITCHEN EXHAUST FAN MIN. 100 CFM DUCTED TO OUTSIDE THROUGH ROOF OR EXTERIOR WALL
- IAQ FAN: SEE T-24 FOR SELECTIONPANASONIC, WHISPERGREEN® SELSCT FAN, 50-80-110 SFM, MULTI-SPEED, MODEL FV-0511VKS2,0.5 SONE
- SD — SMOKE DETECTOR HARDWIRED w/ BATTERY BACK UP
- CD — CARBON MONOXIDE DETECTOR ALARM HARDWIRED w/ BATTERY BACK UP
- WALL MOUNTED AIR HANDLER
- DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM (WALL-MOUNTED)
- EXHAUST FAN SHALL BE ENERGY STAR RATED. CEILING MOUNTED LIGHT w/ VENT 100 CFM MIN. INTERMITTENT W/ HUMIDITY CONTROL PER CMC 402.5, BETWEEN 50%-80% SHALL BE DUCTED TO OUTSIDE THROUGH ROOF/EXTERIOR WALL
- CLOTHES DRYER MOISTURE EXHAUST DUCT (MIN. 4 INCH DIA.) TO THE OUTSIDE AND EQUIP WITH A BACK-DRAFT DAMPER. EXHAUST DUCT LENGTH IS LIMITED TO 14 FT. WITH 2 ELBOWS, THOUTH TO ROOF/WALL
- ELECTRICAL PANEL/METER PER KEYNOTE
- FAN & LIGHT COMBO
- VANITY LED LIGHT
- EXTERIOR WALL LED LIGHT W/PHOTO SENSOR
- L.E.D. RECESSED LIGHT FIXTURE
- SWITCH W/ MOTION SENSOR (VACANCY SENSOR)
- DIMMER SWITCH
- 2-WAY SWITCH
- AFCI — 110V DUPLEX OUTLET, GROUND FAULT CIRCUIT INTERRUPT (ENTIRE CIRCUIT)
- AFCI — 110V DUPLEX OUTLET, ARC FAULT CIRCUIT INTERRUPTER (ENTIRE CIRCUIT)
- COMB — 110V DUPLEX OUTLET WITH BOTH AFCI AND GFCI PROTECTED

M/S : MOTION SENSOR
P/C : PHOTO CELL
W/P : WEATHER - RESISTANT
W/R : WATER PROOF

ELECTRICAL NOTES

1. ALL WORK SHALL BE IN FULL ACCORDANCE WITH ALL APPLICABLE AND REGULATIONS OF GOVERNING AGENCIES AND SHALL COMPLY WITH THE REQUIREMENTS OF THE SERVING POWER AND TELEPHONE COMPANIES.

2. ELECTRICAL OUTLETS SHALL BE INSTALLED IN ACCORDANCE WITH NEC ARTICLE 210-52.

3. LIGHTING OUTLETS CONTROLLED BY A WALL SWITCH SHALL BE PROVIDED IN ACCORDANCE WITH NEC ARTICLE 210-70.

4. LIGHT FIXTURES INSTALLED IN CLOTHES CLOSET WILL COMPLY WITH NEC ARTICLE 410-8

5. ELECTRICAL SERVICE SIZE: 200 AMPS, MIN.

6. GFCI OUTLETS ARE REQUIRED: FOR ALL KITCHEN RECEPTACLES THAT ARE DESIGNED TO SERVE COUNTERTOP SURFACES, DISHWASHERS, BATHROOMS, IN UNDER-FLOOR SPACES OR BELOW GRADE LEVEL, IN UNFINISHED BASEMENTS, CRAWL SPACE LIGHTING OUTLETS; IN EXTERIOR OUTLETS, WITHIN 6' OF A LAUNDRY/UTILITY/WET BAR SINK, LAUNDRY AREAS, AND IN ALL GARAGE OUTLETS INCLUDING OUTLETS DEDICATED TO A SINGLE DEVICE OR GARAGE DOOR OPENER. (CEC 210.8). KITCHEN AND LAUNDRY RECEPTACLE SHALL BE BOTH AFCI AND GFCI PROTECTED.

7. OUTDOOR RECEPTACLES SHALL BE LOCATED PER CODE MINIMUM REQUIREMENTS, AND AFCI, GFCI, W.R., AND W.P. WITH A BUBBLE COVER.

8. PROVIDE ACCESSIBLE JUNCTION BOX AND WRING FOR GROUNDING MAIN ELECTRICAL SERVICE TO REINFORCING BAR IN CONCRETE FOOTING, PER ARTICLE 250.52-68 CEC 20' LONG # 4 REBAR MIN.

9. RECEPTACLES AND WALL SWITCHES SHALL BE INSTALLED NOT LESS THAN 15" MEASURED FROM BOTTOM OF IT TO FINISH FLOOR AND LOCATED NO MORE THAN AT 48" MEASURED FROM TOP OF RECEPTACLES AND WALL SWITCHES TO FINISH FLOOR IN VERTICAL DIRECTION, UNLESS OTHERWISE NOTED. (CBC 1136).

10. MAINTAIN THREE FEET CLEAR FROM FACE OF ELECTRICAL PANEL TO WALL ANY WALL SURFACE OR OBSTRUCTION.

11. RECESSED CAN LIGHT FIXTURES IN INSUTATED SPACES ARE TO BE IC/AT RATED.

12. PROVIDE RECEPTACLES AT 6' FROM CORNERS, 12' ON CENTER.

13. LAUNDRY AND BATHROOM EXHAUST FANS SHALL PROVIDE A MINIMUMOF 50 CFM.

14. ALL 120-VOLT, SINGLE PHASE, 15 AND 20 AMPERE BRANCH CIRCUIT IN KITCHEN, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECT BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER (AFCI) COMBINATION TYPE (CEC210.12).

15. OCCUPANCY SENSORS MUST HAVE NO MANUAL OVERRIDE, 30 MINUTES AND BE MICROWAVE / ULTRASONIC OR PASSIVE INFRA-RED TYPE.

16. PROVIDE COMBINATION SMOKE/ CARBON MONOXIDE DETECTORS IN EACH HALLWAY LEADING TO SLEEPING ROOMS, IN EACH SLEEPING ROOM, AT THE TOP OF STAIRS, AND IN EACH STORY. SMOKE DETECTORS SHALL NOT BE LOCATED IN KITCHEN, GARAGE, OR WITHIN 3 FEET OF DOORS TO KITCHEN OR BATHROOM OR SUPPLY AIR REGISTERS. DETECTORS HARD WIRED WITH BATTERY BACK-UP. DETECTORS TO BE INTERCONNECTED TO SOUND AT THE SAME TIME.

17. ALL 15A AND 20A RECEPTACLE OUTLETS SHALL BE LISTED TAMPERRESISTANT RECEPTACLES , ALL 15/20 AMPERE RECEPTACLES IN WET LOCATIONS SHALL HAVE IN-USE (BUBBLE) COVERS INSTALLED. ALL RECEPTACLES IN WET LOCATIONS SHALL ALSO BE LISTED WEATHER-RESISTANT TYPE GFCI. (CEC 406.9(B)(1))

18. ALL LIGHTS ARE HIGH EFFICACY

19. ALL RECEPTACLES REQUIRED GFCI SHALL BE COMBINATION OF AFCI, GFCI (CEC 210.52(E)(1))

20. LIGHT FIXTURES IN BATHROOMS, GARAGES, LAUNDRY ROOM AND UTILITY ROOMS SHALL BE HIGH EFFICACY. AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES SHALL BE CONTROLLED BY A VACANCY SENSOR.

21. RECESSED LIGHTS THAT ARE TO BE INSTALLED IN AN INSULATED CEILING OR CAVITY ARE REQUIRED TO HAVE A ZERO CLEARANCE INSULATION COVER (IC): BE CERTIFIED THAT THEY ARE TIGHT; AND SEALED WITH A GASKET OR CAULK BETWEEN THE THE HOUSING AND THE CEILING

22. AT LEAST ONE LIGHTING SHALL BE INSTALLED IN THE ATTIC.

23. A MINIMUM OF (1) 20-AMP CIRCUIT FOR BATHROOM(S) OUTLET. SUCH CIRCUIT SHALL HAVE NO OTHER OUTLETS. THIS CIRCUIT MAY SERVE MORE THAN ONE BATHROOM. 210-11(C)3)

24. PROVIDE GFCI RECEPTACLES AT BATHROOMS, KITCHEN COUNTERTOP SURFACES, LAUNDRY /WET BAR AREA WITHIN 6 FT FROM EDGE OF THE SINKS (CEC 210-8)

25. AT LEAST ONE LIGHT OUTLET, CONTROLLED BY A WALL SWITCH, SHALL BE INSTALLED IN EVERY HABITABLE ROOM, BATH ROOM, HALLWAY, GARAGE AND AT EACH OUT DOOR ENTRANCE.

26. EXTERIOR LIGHTING MOUNTED ON BUILDING TO BE HIGH EFFICACY AND CONTROLLED BY MANUAL ON/OFF SWITCH MOTION SENSOR WITHOUT OVERRIDE OR BYPASS SWITCH THAT DISABLES MOTION SENSOR AND:

A. PHOTO-CONTROL NOT HAVING AN OVERRIDE OR BYPASS SWITCH THAT DISABLES PHOTO-CONTROL

B. ASTRONOMICAL TIME CLOCK NOT HAVING OVERRIDE OR BYPASS SWITCH THAT DISABLES ASTRONOMICAL CLOCK

C. ENERGY MANAGEMENT CONTROL SYSTEM (EMC5) NOT HAVING OVERRIDE OR BYPASS SWITCH THAT ALLOWS LUMINAIRES TO BE ALWAYS ON

D. RATED FOR WET LOCATIONS

27. THE MINIMUM SIZE GROUND WIRE SHALL BE #8 CU OR #6 AL.

28. ALL SERVICES SHALL BE GROUNDED WITH A CONCRETE ENCASED ELECTRODE OR A GROUND ROD AND BONDED TO THE COLD WATER PIPE (INCLUDING GAS PIPING AT NEW ADDITION AREA)

KSU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by
Checked by
Project Eng.
Scale

Sheet Name
PROPOSED CEILING/ ELECTRICAL PLAN

REGISTERED PROFESSIONAL ENGINEER
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Exp. 6/30/2026
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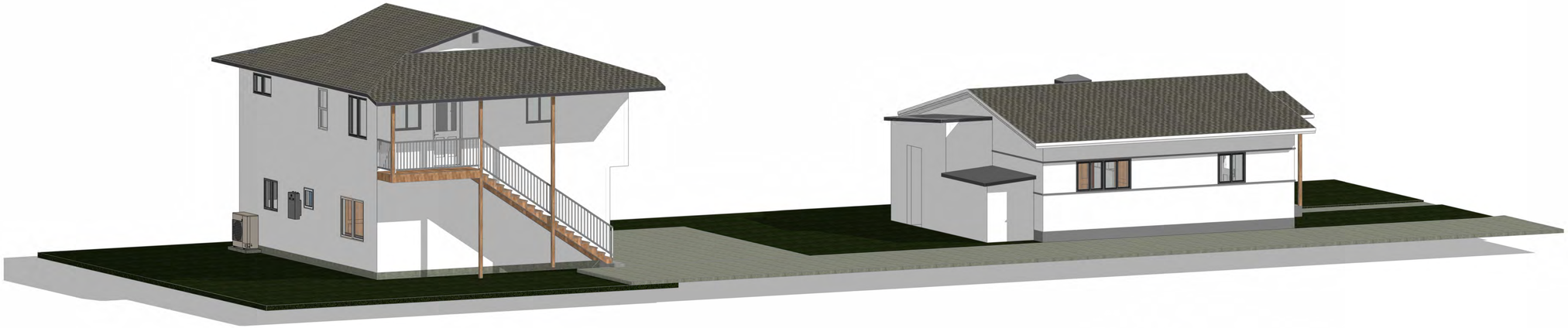
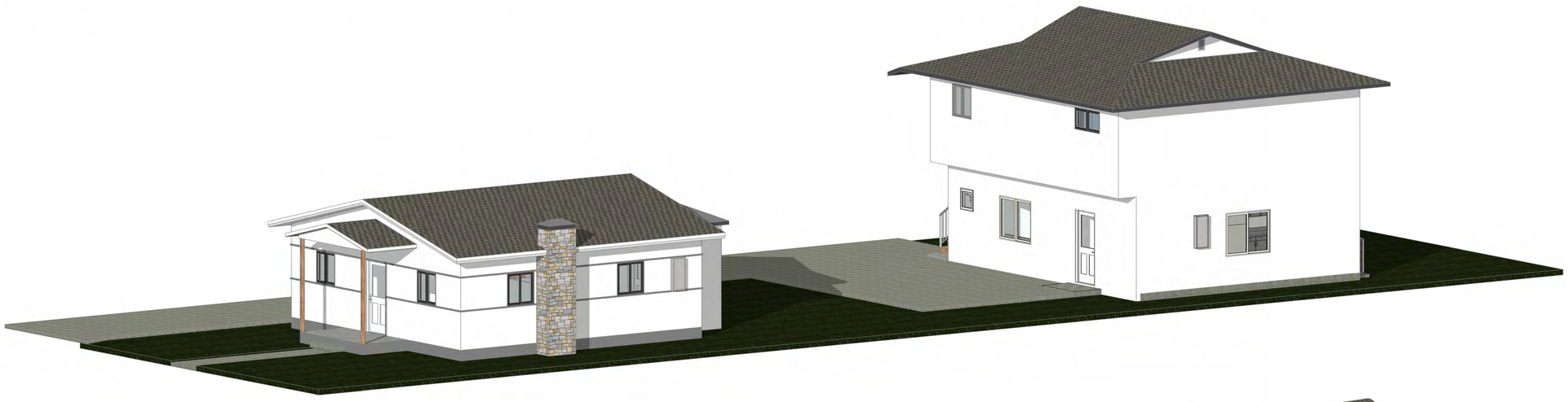
STATE OF CALIFORNIA

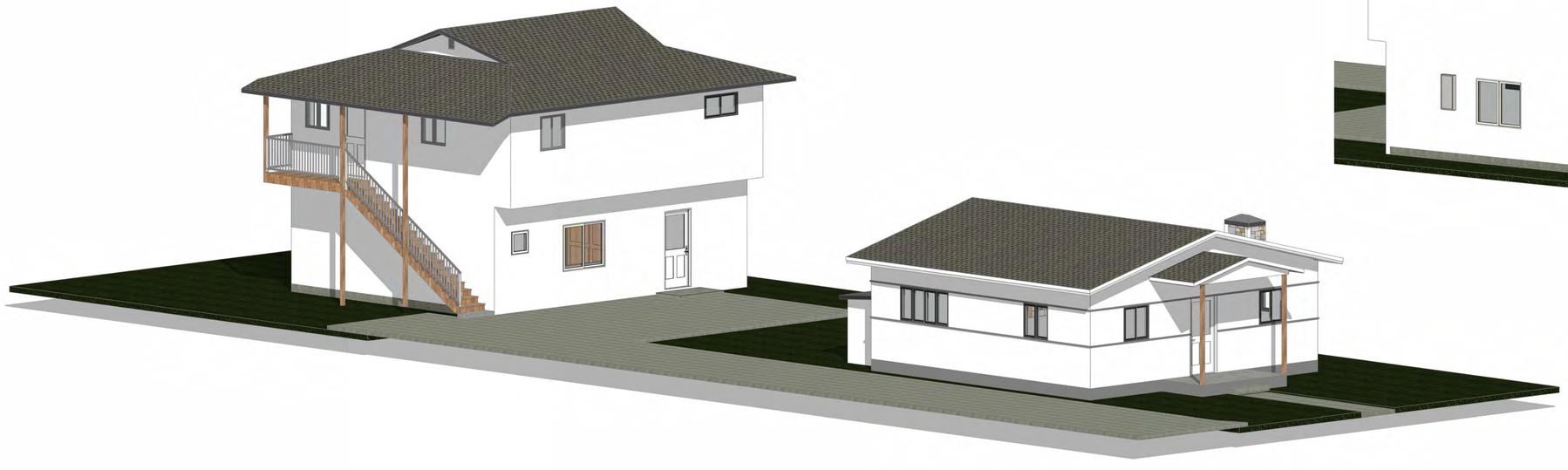
Sheet No
A.06

Date	Job No	Rev.
11-21-25		#

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION







KSU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name

3D VIEW

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Sheet No

A.07

Date	Job No	Rev.
11-21-25		#

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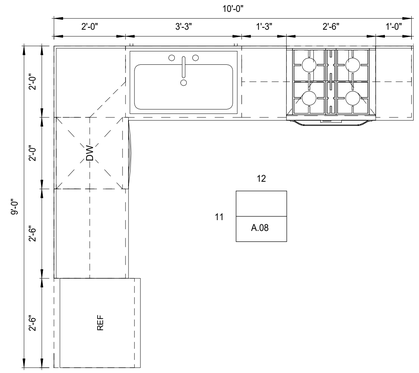
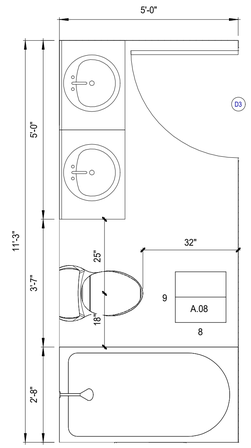
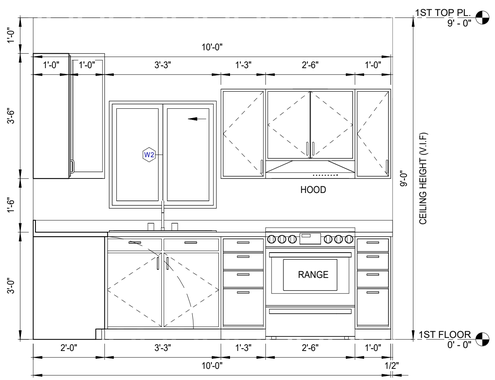


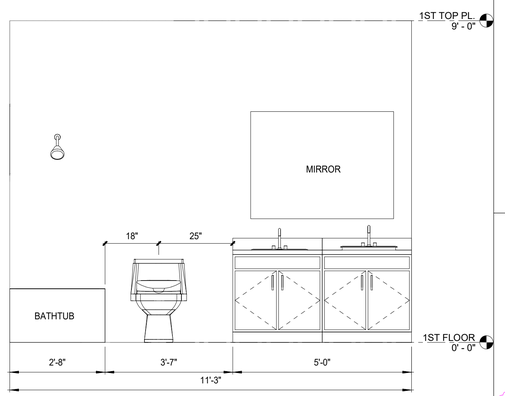
A / A.08 KITCHEN FLOOR PLAN
1/2" = 1'-0"



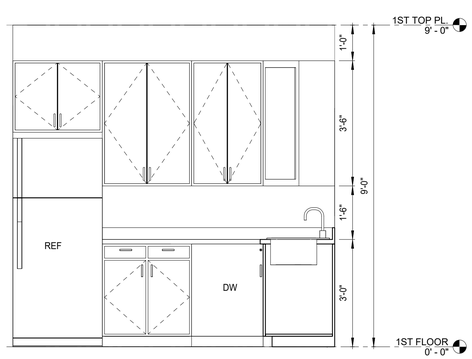
B / A.08 BATHROOM #1 FLOOR PLAN
1/2" = 1'-0"



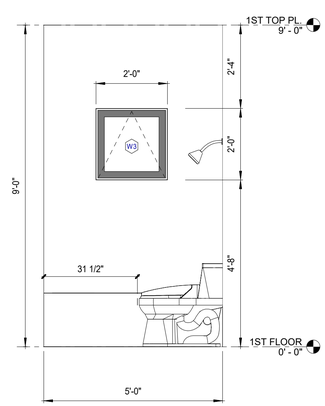
C / A.08 KITCHEN ELEVATION 1
1/2" = 1'-0"



E / A.08 BATHROOM #1_ ELEVATION 1
1/2" = 1'-0"



D / A.08 KITCHEN ELEVATION 2
1/2" = 1'-0"



F / A.08 BATHROOM #1_ ELEVATION 2
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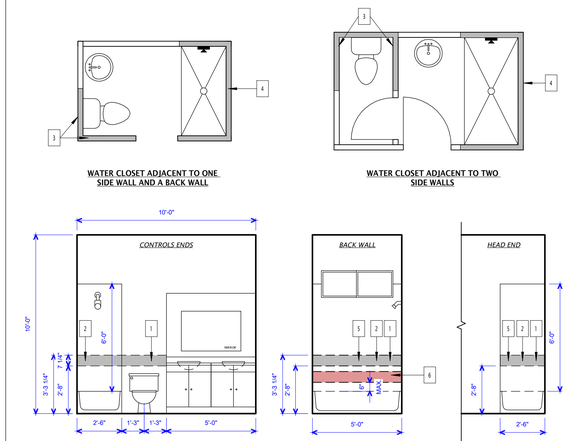
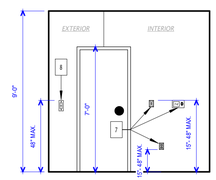


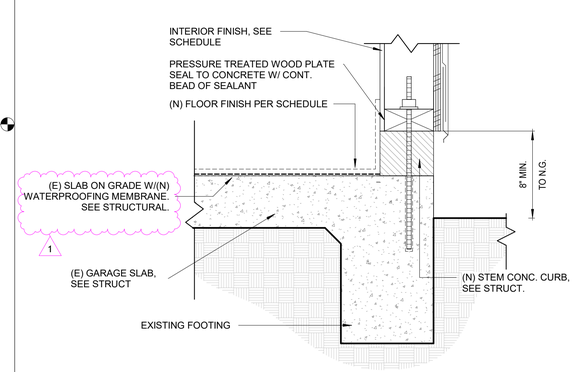


HEIGHTS FOR ELECTRICAL RECEPTACLE OUTLETS, SWITCHES, DOORBELL BUTTONS, INCLUDING HVAC CONTROLS

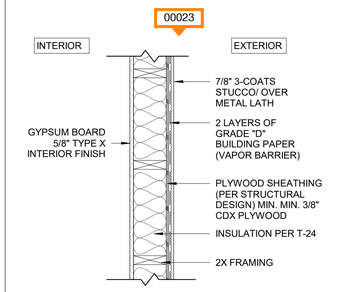
1. 2" X 8" NOMINAL SOLID LUMBER.
2. REINFORCEMENT SHALL BE LOCATED BETWEEN 32" AND 39 1/4" ABOVE THE FINISHED FLOOR FLUSH WITH THE WALL FRAMING.
3. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ON ONE SIDE WALL AND THE BACK WALL. R327.1.1.
4. SHOWER REINFORCEMENT SHALL BE CONTINUOUS WHERE WALL FRAMING IS PROVIDED. R327.1.1.
5. REINFORCEMENT FOR BATHTUB AND COMB. OF BATHTUB/SHOWER SHALL BE CONTINOUS WHERE WALL FRAMING IS PROVIDED. R327.1.1.
6. ADDITIONAL 2 X 8 REINFORCING FOR LOWER GRAB BAR WITH BOTTOM EDGE LOCATED NO MORE THAN 6 INCHES ABOVE THE BATHTUB RIM. CRC R327.1.1
7. ELECTRICAL RECEPTACLE OUTLETS, SWITCHES AND CONTROLS (INCLUDING HVAC) SHALL BE LOCATED NO MORE THAN 48" MEASURED FROM THE TOP OF THE OUTLET BOX AND NOT LESS THAN 15" MEASURE FROM THE BOTTOM OF THE OUTLET BOX.
8. DOORBELL BUTTONS OR CONTROLS, WHEN INSTALLED, SHALL NOT EXCEED 48" ABOVE EXTERIOR FLOOR OR LANDING, MEASURED FROM THE TOP OF THE DOORBELL BUTTON ASSEMBLY. CRC R327.1.4

NOTE: INFORMATION AND/OR DRAWING IDENTIFYING THE LOCATION OF GRAB BAR REINFORCEMENT SHALL BE PLACED IN THE OPERATION AND MAINTENANCE MANUAL IN ACCORDANCE WITH THE CALIFORNIA GREEN BUILDING STANDARD CODE, CHAPTER 4, DIVISION 4.4

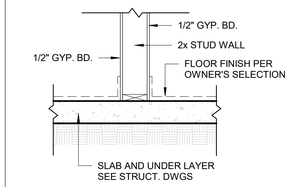
AGING IN PLACE RQMT'S PER CRC 327 N/A **9**



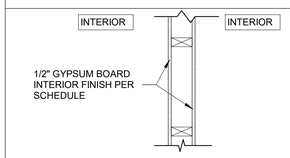
(E) SLAB W/ (N) W.P. MEMBRANE N/A **8**



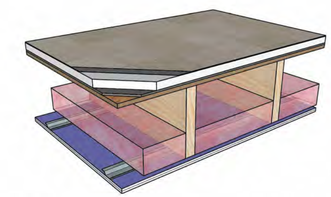
1-HR FIRE RATED WALL N/A **1**



NON-BEARING WALL N/A **2**

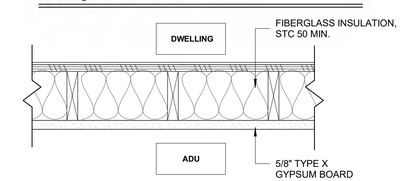


INTERIOR WALL N/A **3**



STC-58 **NGC 5018018**
IIC-60 **NGC 7018008**

Framing:	2x10 wood joists, 16" o.c.
Insulation:	3-1/2" glass fiber
Floor:	Vinyl tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 5/8" plywood
Ceiling:	3/4" SoundBreak XP Ceiling Board on RC-1
UL Design:	M514 - 1 hour

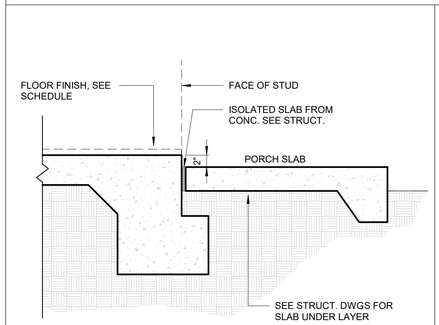


WOOD JOIST, GYPSUM WALLBOARD
ONE LAYER OF 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE SHALL BE INSTALLED PERPENDICULAR TO THE CEILING FRAMING AND SHALL BE FASTENED AT MAXIMUM 6 INCHES O.C. BY MIN. I 7/8 INCHES 6D COATED NAILS OR EQUIVALENT DRYWALL SCREWS

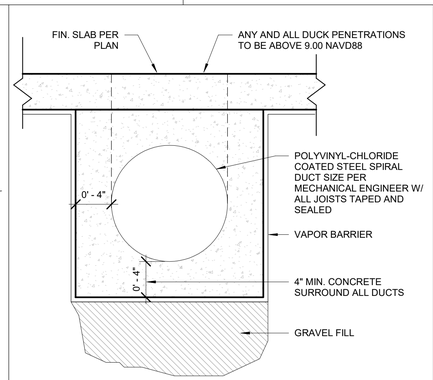
REQ'D FIRE BARRIER CRC SEC. R302.6

OCCUPANCY SEPARATION

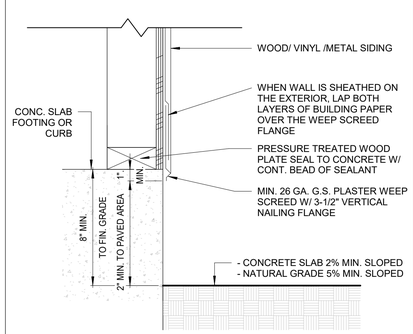
ADU–UPPER UNIT FLOOR N/A **4**



HOUSE TO PORCH N/A **7**



UNDER SLAB DUCT SYSTEM N/A **6**



WEEP SCREET DETAIL N/A **5**

KSU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by
Checked by
Project Eng.
Scale

Sheet Name
ARCHITECTURAL DETAILS

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
A.08

Date	Job No	Rev.
11-21-25		#

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

NOTE
C: CONTRACTOR
A: ARCHITECT
E: ENGINEER
O: OWNER

AIA California

2025 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 1

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

CHAPTER 3
GREEN BUILDING
SECTION 301 GENERAL

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

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

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

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

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

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

SECTION 302 MIXED OCCUPANCY BUILDINGS

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

DIVISION 4.1 PLANNING AND DESIGN

ABBREVIATION DEFINITIONS:

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

CHAPTER 4
RESIDENTIAL MANDATORY MEASURES

SECTION 4.102 DEFINITIONS
4.102.1 DEFINITIONS
The following terms are defined in Chapter 2 *(and are included here for reference)*

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

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

4.106 SITE DEVELOPMENT
Y ☐ C **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.

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

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

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

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

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

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

Exception: Additions and alterations not altering the drainage path.

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

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

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

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

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

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

☐ ☐ **4.106.4.2.1 Reserved.**

☐ ☐ **4.106.4.2.2 Multifamily dwellings, hotels and motels**

1. EV ready parking spaces with receptacles.

a. Multifamily parking facilities with assigned parking. Where dwelling units are provided with assigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided at an assigned parking space for each dwelling unit.

1. Where the total number of dwelling units exceeds the number of assigned parking spaces, all assigned parking spaces shall be provided with one low power Level 2 EV charging receptacle.

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

b. Multifamily parking facilities with unassigned parking. Where dwelling units are provided with unassigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided at an unassigned parking space for each dwelling unit.

1. Where the total number of dwelling units exceeds the number of unassigned parking spaces, all unassigned parking spaces shall be provided with one low power Level 2 EV charging receptacle.

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

3. Multifamily parking facilities with assigned and unassigned parking. Where multifamily buildings are provided with both assigned and unassigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided for each dwelling unit at either the assigned or unassigned parking space, but not both.

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

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

e. Receptacle configurations. 208/240V EV charging receptacles shall comply with one of the following configurations:
1. For 20-ampere receptacles, NEMA 6-20R
2. For 30-ampere receptacles, NEMA 14-30R
3. For 50-ampere receptacles, NEMA 14-50R

☐ Y **2. EV ready parking spaces with EV chargers**

a .Multifamily parking facilities with unassigned or common use parking. In addition to the low power Level 2 EV charging receptacle requirements of Section 4.106.4.2.2 (1), twenty-five (25) percent of unassigned or common use parking spaces not already provided with low power Level 2 EV charging receptacles, pursuant to Section 4.106.4.2.2 (1), shall be equipped with Level 2 EV chargers and shall be made available for use by all residents or guests.

b. EV charger connectors. EV chargers shall be equipped with J1772 or J3400 connectors.

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

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

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

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

EVCS spaces shall be designed to comply with the following:

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

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

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

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

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

☐ ☐ **4.106.4.2.3 Reserved.**

☐ ☐ **4.106.4.2.4 Reserved.**

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

☐ Y **4.106.4.2.6 Hotels and motels.**

☐ Y **1. EV ready parking spaces with receptacles.**

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

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

b. Receptacle configurations. 208/240V EV charging receptacles shall comply with one of the following configurations:
1.For 20- ampere receptacles, NEMA 6-20R
2.For 30- ampere receptacles, NEMA 14-30R
3.For 50- ampere receptacles, NEMA 14-50R2.

☐ Y **2. EV Ready parking spaces with EV chargers.**

a. Hotels and motels. Twenty-five (25) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers.

b. EV charger connectors. EV chargers shall be equipped with J1772 or J3400 connectors.

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

☐ Y **c. An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS.** The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.

☐ Y **4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multi-family buildings, hotels and motels.**
When existing parking facilities are altered or new parking spaces are added to existing parking facilities, and the work requires a building permit, each parking space added or altered shall have access to either a low power Level 2 EV charging receptacle or Level 2 EV charger, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency.

Exception: Where work requiring a permit is being performed for the installation of 120-volt electrical receptacle(s) for level 1 EV charging.

☐ ☐ **4.106.4.4 Bicycle parking.** Bicycle parking shall comply with Sections 4.106.4.4.1 through 4.106.4.4.3.

☐ Y **4.106.4.4.1 Short-term bicycle parking for multifamily buildings, hotels and motels.** Provide on-site bicycle parking at a ratio of one parking space for every 10,000 square feet, but not less than two spaces. Short-term bicycle parking shall be located within 200 feet of building entrances, and readily visible to passers-by. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to:
1.Permanently anchored bicycle parking devices, racks, or lockers in an unsheltered, open area.
2.Covered or uncovered enclosures with permanently anchored bicycle parking devices or racks.

☐ Y **4.106.4.4.2 Long-term bicycle parking for multifamily buildings.**
Provide on-site bicycle parking at a ratio of one parking space for every two dwelling units. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to:
1. Covered, lockable enclosures with permanently anchored bicycle parking devices or racks.
2. Lockable bicycle storage rooms with permanently anchored bicycle parking devices or racks.
3. Lockable, weatherproof, permanently anchored bicycle lockers.

☐ Y **4.106.4.4.3 Long-term bicycle parking for hotel and motel buildings.**
Provide one on-site long-term bicycle parking space for every 25,000 square feet, but not less than two. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to:
1. Covered, lockable enclosures with permanently anchored bicycle parking devices or racks.
2. Lockable bicycle storage rooms with permanently anchored bicycle parking devices or racks.
3. Lockable, weatherproof, permanently anchored bicycle lockers.

DIVISION 4.2 ENERGY EFFICIENCY

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

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

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

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

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

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

Y ☐ C, E **4.303.1.2 Urinals.** The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

Y ☐ C, E **4.303.1.3 Showerheads.**

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

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

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

Y ☐ C, E **4.303.1.4 Faucets.**

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

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

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

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

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

Y ☐ C, E **4.303.1.4.5 Pre-rinse spray valves.**
When installed, commercial pre-rinse spray values shall meet the requirements in the California Plumbing Code, Section 420.3.

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

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

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

NOTES:

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

DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

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

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

Exceptions:

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

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

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

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

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

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

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

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

Notes:

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

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

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

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY

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

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

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

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

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

DISCLAIMER: *THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

KU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by
Checked by
Project Eng.
Scale

Sheet Name
CALGREEN CODE

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
A.09

Date 11-21-25 | Job No | Rev. #

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

2025 CALIFORNIA GREEN BUILDING STANDARDS CODE
RESIDENTIAL MANDATORY MEASURES, SHEET 2

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

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O^3/g ROC).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

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

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

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

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

4.503 FIREPLACES

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

4.504 POLLUTANT CONTROL

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

M ☐ C **4.504.2 FINISH MATERIAL POLLUTANT CONTROL.** Finish materials shall comply with this section.

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

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and tricloroethylene), except for aerosol products, as specified in Subsection 2 below.
2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of *California Code of Regulations*, Title 17, commencing with section 94507.

M ☐ C **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.

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

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

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

TABLE 4.504.1 - ADHESIVE VOC LIMIT[1,2]

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

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

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

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

TABLE 4.504.2 - SEALANT VOC LIMIT

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

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

TABLE 4.504.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS[1,2,3]

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

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

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

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

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

TABLE 4.504.5 - FORMALDEHYDE LIMITS[1]

MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

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

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

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

DIVISION 4.5 ENVIRONMENTAL QUALITY (continued)

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

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

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

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

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

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

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

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

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

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

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

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

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

4.505 INTERIOR MOISTURE CONTROL

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

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

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

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

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

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

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

4.506 INDOOR AIR QUALITY AND EXHAUST

M ☐ C, E **4.506.1 Bathroom exhaust fans.** Each bathroom shall be mechanically ventilated and shall comply with the following:

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

Notes:

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

4.507 ENVIRONMENTAL COMFORT

M ☐ C, E **4.507.2 HEATING AND AIR-CONDITIONING SYSTEM DESIGN.** Heating and air conditioning systems shall be sized, designed and have their equipment selected using the following methods:

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

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

CHAPTER 7
INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

702 QUALIFICATIONS

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

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

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

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

Notes:

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

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

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

703 VERIFICATIONS

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

DISCLAIMER: *THIS DOCUMENT IS PROVIDED AND INTENDED TO BE USED AS A MEANS TO INDICATE AREAS OF COMPLIANCE WITH THE CALIFORNIA GREEN BUILDING STANDARDS (CALGREEN) CODE. DUE TO THE VARIABLES BETWEEN BUILDING DEPARTMENT JURISDICTIONS, THIS CHECKLIST IS TO BE USED ON AN INDIVIDUAL PROJECT BASIS AND MAY BE MODIFIED BY THE END USER TO MEET THOSE INDIVIDUAL NEEDS. THE END USER ASSUMES ALL RESPONSIBILITY ASSOCIATED WITH THE USE OF THIS DOCUMENT, INCLUDING VERIFICATION WITH THE FULL CODE.*

KU ENGINEERING

ALVARADO ST. ADU

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Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
CALGREEN CODE

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
A.10

Date 11-21-25 | Job No | Rev. #

DESIGN CRITERIA

A. GENERAL

BUILDING CODE	2022 CBC
RISK CATEGORY	II

B. SOIL PARAMETERS

BASED ON PRESUMPTIVE LOAD-BEARING VALUES (TABLE 1806.2, CBC)

ALLOWABLE SOIL BEARING PRESSURE	1500 psf
ALLOWABLE PASSIVE PRESSURE	100 psf/ft

C. GRAVITY DESIGN PARAMETERS (psf)

LOAD	ROOF	FLOOR	CEILING	EXTERIOR WALL	INTERIOR WALL
DEAD	15	15	8	17	10
ROOF LIVE	20				
LIVE	-	40	10		

D. LATERAL DESIGN PARAMETERS

WIND PARAMETERS

EXPOSURE CATEGORY	C
DESIGN SPEED	96 mph

SEISMIC PARAMETERS

SEISMIC DESIGN CATEGORY	D
SEISMIC IMPORTANCE FACTOR, I_e	1
SITE CLASS	D-DEFAULT
SHORT PERIOD SPECTRAL ACCELERATION, S_s	1.07
1ST PERIOD SPECTRAL ACCELERATION, S_1	0.363
SHORT PERIOD ACCELERATION PARAMETER, S_{DS}	0.856
1 SECOND ACCELERATION PARAMETER, S_{D1}	0.469
MAIN LATERAL RESISTING SYSTEM	WOOD SHEARWALL
RESPONSE MODIFICATION FACTOR, R	6.5
SEISMIC RESPONSE COEFFECIENT, C_s	0.132
DESIGN BASE SHEAR $V = 0.7C_sW$	0.092W

GENERAL NOTES

1. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.
2. STRUCTURAL INFORMATION SHOWN ON FRAMING PLANS IS FOR THE MAIN STRUCTURAL ELEMENTS. NON-STRUCTURAL ELEMENTS SHALL BE CONSTRUCTED PER APPROVED CODE REQUIREMENTS.
3. DETAILS OF CONSTRUCTION NOT SHOWN SHALL BE OF SAME NATURE AS THOSE SHOWN FOR SIMILAR CONDITIONS. REFER TO THE TYPICAL DETAIL SHEETS FOR TYPICAL DETAILS OF CONSTRUCTION. TYPICAL DETAILS APPLY TO ALL CONSTRUCTION UNLESS SPECIFICALLY NOTED OR SHOWN OTHERWISE. WHERE CONDITIONS REQUIRE MODIFICATIONS OF A TYPICAL DETAIL, THE CONTRACTOR SHALL SUBMIT MODIFIED DETAIL FOR APPROVAL BY THE EOR TO FABRICATION AND INSTALLATION.
4. DO NOT USE SCALED DIMENSIONS, USE WRITTEN DIMENSIONS. WHERE NO DIMENSION IS PROVIDE, CONSULT THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK. FIELD MEASURE EXISTING DIMENSIONS NOT NOTED.
5. OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES, AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
6. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES BEFORE BEGINNING WORK. SPECIAL CARE SHALL BE TAKEN TO PROJECT UTILITIES THAT ARE TO REMAIN IN SERVICE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS.
8. DRAWINGS AND SPECIFICATIONS REPRESENT FINISHED STRUCTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO SHORING AND TEMPORARY BRACING. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO ENSURE SAFETY OF ALL PERSONS AND STRUCTURES AT THE SITE AND ADJACENT TO THE SITE. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT, ENGINEER OR CONSTRUCTION MANAGER SHALL NOT RELIEVE THE CONTRACTOR OF SUCH RESPONSIBILITY.
9. SPECIFICATIONS RELATED TO WATERPROOFING, INCLUDING BUT NOT LIMITED TO MEMBRANES, WATERSTOPS, SEALANTS, FLASHING, VAPOR BARRIER, ARE AS SPECIFIED BY ARCHITECT/WATER PROOFING CONSULTANT.
10. CONSTRUCTION MATERIALS SHALL BE DISTRIBUTED WHEN PLACED ON THE STRUCTURE SUCH THAT LOADS DO NOT EXCEED DESIGN LIVE LOADS OR RESULT IN AN UNBALANCED CONDITION.
11. APPROVAL FROM THE AUTHORITY HAVING JURISDICTION MUST BE OBTAINED PRIOR TO INSTALLATION OF ITEMS REQUIRING DEFERRED SUBMITTAL.
12. STRUCTURAL ELEMENTS INDICATED AS "BY OTHERS" ARE NOT INCLUDED IN THIS SCOPE OF WORK.
13. THE GENERAL CONTRACTOR SHALL PROVIDE SEPARATE SUBMITTALS FOR SUCH ELEMENTS TO THE ENGINEER OF RECORD FOR REVIEW. UPON EOR ACCEPTANCE, SUBMITTALS SHALL BE FORWARDED TO THE BUILDING DEPARTMENT FOR FINAL REVIEW AND APPROVAL.

CONCRETE NOTES

1. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 2500 PSI, U.N.O.
2. CONCRETE IS REINFORCED AND CAST-IN-PLACE, U.N.O. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.
3. ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF ACI318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND THE LATEST EDITION OF ACI117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".
4. NO MORE THAN ONE GRADE OF CONCRETE SHALL BE ON THE JOB SITE AT ANY ONE TIME.
5. CONCRETE MIXES SHALL BE PREPARED WITH TYPE II/V PORTLAND CEMENT CONFORMING TO ASTM C150.
6. CONCRETE MIX DESIGNS CONTAINING FLY ASH MAY BE USED WHERE CONCRETE IS NOT VISUALLY EXPOSED. FLY ASH SHALL CONFORM WITH ASTM C618 AND MAY REPLACE UP TO 20% PORTLAND CEMENT BY VOLUME.
7. CONCRETE MIX PROPORTIONING SHALL MEET STATISTICAL STRENGTH REQUIREMENTS OF ACI 301 AND ACI 214R. MIX DESIGNS SHOWING COMPLIANCE WITH STRENGTH REQUIREMENTS TO BE SUBMITTED TO E.O.R FOR REVIEW.
8. NORMAL WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C33. LIGHT WEIGHT CONCRETE AGGREGATES SHALL CONFORM TO ASTM C330.
9. CONCRETE STRENGTH TEST REPORTS SHALL BE IN COMPLIANCE WITH ACI 318 AND SHALL BE SUBMITTED TO E.O.R.
10. WATER USED IN MIXING CONCRETE SHALL CONFORM WITH ASTM C1602.
11. THOROUGHLY CLEAN AND ROUGHEN ALL HARDENED CONCRETE AND MASONRY SURFACES TO RECEIVE NEW CONCRETE. INTERFACE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4", U.O.N.

REINFORCING STEEL NOTES

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 FOR ALL SIZES.
2. ALL REINFORCING TO BE ACCURATELY AND SECURELY LOCATED PRIOR TO POURING CONCRETE.
3. ALL HORIZONTAL REINFORCEMENT TO HAVE MATCHING DOWELS AT CORNERS OF WALLS. ALL VERTICAL REINFORCEMENT TO HAVE MATCHING DOWELS TO FOOTING, U.O.N.
4. COVER SHALL BE: 3" CLEAR FOR CONCRETE CAST AGAINST EARTH, 2" CLEAR FOR CONCRETE EXPOSED TO MOISTURE BUT NOT CAST AGAINST EARTH, AND 1 1/2" FOR ALL OTHER CONDITIONS. (U.N.O)

FOUNDATION NOTES

1. REFER TO NOTE #1 UNDER REINFORCED CONCRETE FOR CONCRETE STRENGTH SPECIFICATIONS.
2. THE REQUIREMENTS OUTLINED IN CHAPTER 18 OF THE BUILDING CODE MUST BE ADHERED TO AS THE MINIMUM STANDARD UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED IN THE DRAWINGS OR TECHNICAL SPECIFICATIONS.
3. ALL CONCRETE SHALL MEET THE REQUIRED STRENGTH AND SLUMP PER STRUCTURAL DESIGN. WHEN EXPOSED TO SULFATE-CONTAINING SOLUTIONS, IT SHALL CONFORM TO ASTM C-150 TYPE V PORTLAND CEMENT AND COMPLY WITH CBC SECTION 1904 (ACI 318 SECTION 19.3.2.1). AGGREGATES MUST MEET ASTM C-33 STANDARDS, AND MIXING WATER MUST BE CLEAN AND POTABLE.
4. CONCRETE PLACEMENT MUST BE PERFORMED AS A CONTINUOUS OPERATION UNLESS OTHERWISE SPECIFIED. THE SLAB SURFACE SHALL BE CURED USING 'HUNTS' COMPOUND OR AN EQUIVALENT PRODUCT, OR BY OTHER METHODS IN ACCORDANCE WITH INDUSTRY BEST PRACTICES.
5. CALCIUM CHLORIDE-CONTAINING ADMIXTURES SHALL NOT BE USED IN THE CONCRETE MIX.
6. BEFORE PLACING CONCRETE, THE CONTRACTOR SHALL MOISTEN THE SAND/MEMBRANE UNDERLAYMENT TO ENSURE UNIFORM CURING. CONCRETE SLABS SHALL NOT BE POURED DURING OR IMMEDIATELY AFTER RAINFALL. THE SAND LAYER BENEATH VISQUEEN MUST NOT BE SATURATED AT THE TIME OF THE POUR, AND ANY STANDING WATER MUST BE REMOVED PRIOR TO PLACEMENT.
7. EXCAVATED FOOTING BOTTOMS MUST BE LEVEL, CLEAN, AND FREE OF LOOSE MATERIALS OR WATER BEFORE CONCRETE IS POURED. OVER-EXCAVATED AREAS MUST BE BACKFILLED WITH CONCRETE OR PROPERLY COMPACTED FILL. BACKFILLING SHOULD NOT OCCUR UNTIL THE SUPPORTING FOUNDATION, WALLS, AND SLAB HAVE REACHED ADEQUATE STRENGTH TO RESIST LATERAL SOIL PRESSURE.
8. FOOTINGS MUST REST ON UNDISTURBED NATIVE SOIL OR COMPACTED ENGINEERED FILL.
9. ALL EXCAVATIONS MUST BE PROPERLY BACKFILLED WITH NON-EXPANSIVE SOIL. HOWEVER, BACKFILL BEHIND RETAINING WALLS MUST ONLY BE PLACED AFTER THE CONCRETE OR MASONRY HAS REACHED ITS FULL DESIGN STRENGTH.
10. IF NO GEOTECHNICAL REPORT IS PROVIDED, IT IS THE RESPONSIBILITY OF THE LICENSED GENERAL CONTRACTOR OR OWNER-BUILDER TO VERIFY THAT THE STRUCTURE IS ENTIRELY SITUATED ON UNDISTURBED, NON-EXPANSIVE NATIVE SOIL. IF FILL, EXPANSIVE SOIL, OR ANY SIGNS OF GEOLOGICAL INSTABILITY ARE SUSPECTED, THE GEOTECHNICAL ENGINEER AND THE ENGINEER OF RECORD MUST BE CONSULTED TO MODIFY THE DESIGN ACCORDINGLY.
11. PRESATURATION REQUIREMENTS FOR SUBGRADE SOILS AND SETBACK DISTANCES FOR EXTERIOR FOOTINGS FROM DESCENDING SLOPES MUST BE FOLLOWED.
12. THE FINISHED GRADE AROUND THE PERIMETER OF THE SLAB SHALL BE CONSTRUCTED TO ENSURE THAT RAIN AND IRRIGATION WATER DRAINS AWAY FROM THE STRUCTURE.
13. SITE AND PAD PREPARATION, INCLUDING BUT NOT LIMITED TO GRADING, FILL COMPACTION, PRESATURATION, AND CONCRETE SLAB BASE PREPARATION, SHALL BE COMPLETED AS REQUIRED.
14. FOUNDATION DRAWINGS PREPARED BY THE ENGINEER OF RECORD REFLECT STRUCTURAL REQUIREMENTS. FOR DIMENSIONS, SLOPES, RECESSES, SHELVES, PATIOS, STOOPS, AND PORCHES NOT INDICATED IN THE FOUNDATION DRAWINGS, REFER TO THE ARCHITECTURAL PLANS. THE CONTRACTOR AND ARCHITECT MUST VERIFY ALL DIMENSIONS BEFORE CONSTRUCTION TO ENSURE PROPER FIT.
15. WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING SURFACE SHALL BE ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4".
16. GRADE BEAMS SHALL BE POURED MONOLITHICALLY ALONG THEIR ENTIRE LENGTH.
17. ALUMINUM CONDUIT, SLEEVES, AND EMBEDS ARE NOT PERMITTED IN CONCRETE.
18. NO PIPES OR CONDUITS SHALL PASS BENEATH ISOLATED COLUMN FOOTINGS OR CONTINUOUS WALL FOOTINGS UNLESS SPECIFICALLY DETAILED AND APPROVED BY THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING OFFICIAL.
19. ALL CONDUITS SHALL BE PLACED WITHIN THE MIDDLE ONE-THIRD OF THE SLAB THICKNESS. THE MAXIMUM CONDUIT DIAMETER SHALL BE 1-1/4", AND CONDUITS MUST BE SPACED AT LEAST 4 INCHES APART FROM EACH OTHER AND FROM REINFORCING STEEL UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
20. A MINIMUM OF ONE #4 REINFORCING BAR SHALL BE PROVIDED FOR ELECTRICAL GROUNDING, WITH THE LOCATION VERIFIED WITH THE ELECTRICAL CONTRACTOR.
21. ALL HOLDOWNS AND POST ANCHORS MUST BE SECURED IN PLACE PRIOR TO THE FOUNDATION INSPECTION.

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL MATERIALS AND FABRICATION MUST COMPLY WITH THE REQUIREMENTS SET FORTH IN CHAPTER 22 OF THE BUILDING CODE AND RELEVANT REFERENCED STANDARDS.
2. UNLESS OTHERWISE SPECIFIED, ALL STEEL SHALL BE COATED WITH A RUST-RESISTANT PRIMER AND MEET ASTM A36 (FY = 36 KSI) AT A MINIMUM. WIDE FLANGE (W) SHAPES MUST CONFORM TO ASTM A992 (FY = 50 KSI).
3. STEEL PIPES MUST COMPLY WITH ASTM A53, GRADE B, WITH A YIELD STRENGTH OF 35 KSI.
4. ROUND HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE B (FY = 42 KSI).
5. RECTANGULAR AND SQUARE HSS TUBING MUST COMPLY WITH ASTM A500, GRADE B (FY = 46 KSI).
6. HP SECTIONS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM A572, GRADE 50 (FY = 50 KSI).
7. ALL WELDING PROCEDURES AND MATERIALS FOR STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF SECTION 2204.1 OF THE BUILDING CODE. UNLESS SPECIFIED OTHERWISE, WELDING SHALL BE PERFORMED USING SHIELDED METAL ARC WELDING (SMAW) OR SUBMERGED ARC WELDING (SAW) PROCESSES WITH E70XX LOW-HYDROGEN ELECTRODES.
8. BOLTED CONNECTIONS FOR STEEL MEMBERS MUST COMPLY WITH ASTM A325N AND SECTION 2204.2 OF THE BUILDING CODE UNLESS OTHERWISE NOTED. BOLT HOLES SHALL BE DRILLED OR PUNCHED AND SHOULD BE 1/16" LARGER THAN THE BOLT DIAMETER.
9. ALL PREFABRICATED STEEL MOMENT FRAMES MUST BE SUPPLIED PER THE MANUFACTURER'S SPECIFICATIONS. THE MANUFACTURER SHALL SUBMIT SHOP DRAWINGS, DESIGN CALCULATIONS, AND APPROVED MOMENT FRAME TEST REPORTS (ICC, IAMPO, OR APPENDIX S TESTING FROM AISC SEISMIC PROVISIONS) TO THE ENGINEER OF RECORD FOR REVIEW.
10. STRUCTURAL WELDING AND STEEL FABRICATION MUST BE COMPLETED IN A SHOP APPROVED BY A SPECIAL INSPECTION AGENCY RECOGNIZED BY THE BUILDING OFFICIAL. ALL FIELD WELDING MUST BE PERFORMED BY A CERTIFIED WELDER, WITH CONTINUOUS INSPECTION BY A SPECIAL INSPECTOR. BOTH THE WELDER AND INSPECTOR MUST BE APPROVED BY THE BUILDING OFFICIAL.
11. NON-SHRINK GROUT MUST BE USED BENEATH BASE PLATES, WITH A COMPRESSIVE STRENGTH THAT MATCHES OR EXCEEDS THAT OF THE SUPPORTING CONCRETE OR MASONRY.

WOOD SPECIFICATIONS & NOTES

1. SAWN FRAMING LUMBER - DOUGLAS FIR-LARCH U.N.O:
   a. BEAMS/ POST/ RAFTERS & ALL OTHER STRUCTURAL FRAMING:
      - 2x, 4x MEMBERS: NO. 2
      - 6x, 8x MEMBERS: NO. 1
   b. STUDS: USE STUD GRADE IF HEIGHT UP TO 9'-0" AND NO. 2 IF TALLER THAN 9'-0".
   c. PLATES AND BLOCKING: NO. 2
   d. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY TO BE PRESSURE PRESERVATIVE TREATED.
   e. ALL FRAMING LUMBER SHALL HAVE 19% MAXIMUM MOISTURE CONTENT AT TIME OF INSTALLATION AND FABRICATION.
2. ENGINEERED LUMBER:
   ALL VERSA-LAM LAMINATED VENEER LUMBER MEMBERS (LVL) SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH ICC ES ESR-1040:
   a. BEAM/HEADERS WITH 1 3/4" WIDE: Fb = 2800 psi, Fv = 285 psi, E = 2.0E6 psi
   b. BEAM/HEADERS WITH 3 1/2" AND WIDER: Fb = 3100 psi, Fv = 285 psi, E = 2.0E6 psi
   c. RIMBOARD: Fb = 1750 psi, Fv = 225 psi, E = 1.3E6 psi
3. DIAPHRAGM (U.N.O. ON PLAN):
   a. ROOF SHEATHING: INSTALL 15/32" THICK APA-RATED EXP 1 PANELS WITH A MINIMUM SPAN RATING OF 32/16. FASTEN USING 8D COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND BEARING SUPPORTS, AND 12" O.C. AT INTERMEDIATE FRAMING.
   b. FLOOR SHEATHING: INSTALL 23/32" APA-RATED STURD-I-FLOOR TONGUE-AND-GROOVE EXP 1 PANELS WITH A MINIMUM SPAN RATING OF 24" O.C. SECURE WITH 10D COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND BEARING SUPPORTS, AND 12" O.C. AT INTERMEDIATE FRAMING.
   c. INSTALLATION AND USAGE REQUIREMENTS SHALL COMPLY WITH NER-108.
   d. ALL STRUCTURAL GRADE PANELS SHALL BE IDENTIFIED WITH A CERTIFICATION MARK FROM AN APPROVED AGENCY: APA, PFS/TECO, OR PITTSBURG.
   e. ADHESIVES USED FOR SECURING FLOOR SHEATHING TO FRAMING MEMBERS SHALL MEET APA SPECIFICATION AFG-01.
   f. ROOF DIAPHRAGM NAILING MUST BE VERIFIED PRIOR TO CONCEALMENT. PLYWOOD FACE GRAIN SHALL BE INSTALLED PERPENDICULAR TO SUPPORTS. FLOORS SHALL UTILIZE TONGUE-AND-GROOVE PANELS OR BLOCKED EDGES. PANEL SPANS SHALL BE IN ACCORDANCE WITH TABLE 2304.8(1).
4. STRUCTURAL GLUED LAMINATED MEMBERS:
   a. ALL STRUCTURAL GLUED LAMINATED MEMBERS SHALL BE COMBINATION 24F-V4 DF/DF (24F-V8 DF/DF AT ALL CONTINUOUS OR CANTILEVER APPLICATIONS) FABRICATED AND ERECTED IN ACCORDANCE WITH ANSI/ASTM STANDARD A190.1 AND ASTM D3737.
   b. ADHESIVE SHALL BE EXTERIOR TYPE ADHESIVE MEETING REQUIREMENTS OF US COMMERCIAL STANDARD PS-56 AND ASTM D3737.
   c. THE FABRICATOR SHALL FURNISH AITC CERTIFICATES TO THE STRUCTURAL ENGINEER AND THE BUILDING INSPECTION DEPARTMENT PRIOR TO FRAMING INSPECTION.
5. ALL LEDGERS SHOULD BE SPLICED WITH ST22 STRAP, U.N.O.
6. THE FRAMING CONTRACTOR SHALL NOTIFY THE E.O.R. IN WRITING PRIOR TO CONSTRUCTION IF THE ROOFING DEAD LOAD EXCEEDS 10 PSF.
7. STUD WALLS PERPENDICULAR TO CONCRETE OR MASONRY WALLS SHALL BE SECURED USING 5/8" DIAMETER x 8" LONG A307 ANCHOR BOLTS AT THE TOP, MID-HEIGHT, AND BOTTOM.
8. INSTALL WINDOWS AND DOORS IN STUD WALLS ONLY AFTER DEAD LOADS HAVE BEEN APPLIED. PROVIDE A 1/2" SHIM GAP AT THE HEAD FOR SETTLEMENT TOLERANCE.
9. ALL POSTS SHALL BE CONTINUOUS FROM FOUNDATION TO ROOF. WHERE DISCONTINUITY OCCURS AT JOIST SPACES OR ABOVE BEAMS/HEADERS TO LOWER TOP PLATES, PROVIDE SOLID BLOCKING WITH STUD POSTS.
10. ALL VERTICAL PIPES PASSING THROUGH PLATES AND/OR SOLID RIM BEAMS SHALL BE DRILLED WITH CLEAN-CUT HOLES MAINTAINING A 1/16" TOLERANCE. NOTCHING OR CUTTING OF PLATES IS STRICTLY PROHIBITED.
11. BLOCKING AND BRIDGING – PROVIDE AS FOLLOWS:
    a. INSTALL 2X SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT ALL BEARING LOCATIONS.
    b. INSTALL 2X SOLID BLOCKING BETWEEN JOISTS AND RAFTERS AT SPACING NOT TO EXCEED 8'-0" ON CENTER, AND NOT MORE THAN 8'-0" FROM ANY SUPPORT.
    c. BLOCKING MAY BE OMITTED BETWEEN CEILING JOISTS AND RAFTERS THAT ARE 2X8 OR SMALLER.
12. FIELD-CUT ENDS, NOTCHES AND DRILLED HOLES OF PERSERVATIVE-TREATED WOOD SHALL BE TREATED IN THE FIELD.
13. BLOCKING FOR FASTNENING PANEL EDGES SHALL BE NOT LESS THAN UTILITY GRADE LUMBER. FIREBLOCKING SHALL BE OF ANY GRADE LUMBER. BLOCKING AND FIRE BLOCKING SHALL BE NO LESS THAN 2X NORMINAL SIZE.
14. EXTERIOR CRIPPLE WALLS WITH A STUD HEIGHT LESS THAN 14" SHALL BE CONTINUOUSLY SHEATHED ON ONE SIDE AND FASTENED TO BOTH THE TOP AND BOTTOM PLATES.

SHOP DRAWINGS NOTES

1. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS. THESE DRAWINGS WILL BE REVIEWED ONLY FOR GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS. SUCH REVIEW DOES NOT INDICATE THAT THE SHOP DRAWINGS ARE COMPLETE OR FREE OF ERRORS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF THE SHOP DRAWINGS. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM THE CONTRACT DRAWINGS SHALL BE CLOUDed. NONE OF THESE SHALL BE CONSIDERED APPROVED AFTER THE ENGINEER'S REVIEW UNLESS SPECIFICALLY NOTED OTHERWISE.
2. SHOP DRAWINGS SHALL NOT SUPERSEDE OR REPLACE THE ORIGINAL CONTRACT DRAWINGS. ANY ENGINEERING PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A LICENSED ENGINEER REGISTERED IN THE APPLICABLE JURISDICTION. ENGINEERING SYSTEM SOLUTIONS SHALL NOT BE RESPONSIBLE FOR THE ADEQUACY OF DESIGNS PERFORMED BY OTHERS.
3. SHOP DRAWINGS SHALL REFERENCE THE DATE AND DELTA (IF APPLICABLE) OF THE CONTRACT DRAWINGS.
4. THE ENGINEER OF RECORD'S (E.O.R.) REVIEW OF SHOP DRAWINGS IS LIMITED TO GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS. THE E.O.R. DOES NOT REVIEW OR VERIFY PRODUCT DESIGN, DIMENSIONS, OR QUANTITIES.

NAILING & HARDWARE NOTES

1. CONNECTORS FOR WOOD CONSTRUCTION NOTED ON PLANS AND DETAILS SHALL BE SIMPSON COMPANY STRONG-TIE CONNECTORS OR APPROVED EQUAL.
2. ALL JOIST HANGERS SHALL BE SIMPSON U HANGER, ALL BEAM HANGERS SHALL BE SIMPSON HU HANGERS U.N.O. ON PLAN OR DETAIL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.
3. ALL MACHINE BOLTS SHALL CONFORM TO ASTM A307.
4. TYPICALLY SILLS ON CONCRETE FOOTING SHALL BE ANCHORED WITH 5/8" DIAMETER X 12" MIN. LENGTH MACHINE BOLTS WITH 7" EMBEDMENT AT 72" O.C.. LOCATE BOLTS 6" MIN. AND 12" MAX. FROM EACH END OF EACH PLATE. THERE SHALL BE AT LEAST 2 BOLTS IN EACH PLATE.
5. AT SHEAR WALLS, ANCHOR BOLT SPACING NOT OVER 48" O.C. SEE SHEAR WALL SCHEDULE FOR SPECIFIC SPACING OF ANCHOR BOLTS WHICH MAY BE NOTED AS LESS THAN 48" O.C.. EDGE(S) OF PLATE WASHERS SHALL BE 1/2" MAX. FROM INSIDE FACE OF SHEAR PANEL(S).
6. ANCHOR BOLTS SHALL BE INSTALLED WITH PLATE WASHERS OF MIN. 3" SQ. x 0.229" THICK BETWEEN SILL PLATE AND NUT. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PATE WASHER AND THE NUT.
7. AT INTERIOR NON-SHEAR WALLS, USE SIMPSON PHNW SERIES 0.145 Ø PINS WITH A PENETRATION OF 1 1/4" INTO SLAB AT 16" O.C. TO BE INSTALLED IN ACCORDANCE WITH ICC ESR-2138.
8. WHERE NOTCHES FOR PIPES, ETC. , EXCEED 1/3 THE WIDTH OF THE SILL, PLACE A BOLT WITHIN 6" OF EACH SIDE OF NOTCH. TIEDOWN BOLTS SHALL NOT BE CONSIDERED AS SILL BOLTS.
9. BOLT HOLES IN WOOD AND STEEL SHALL BE THE DIAMETER OF THE BOLT PLUS 1/16"
10. FASTENERS, INCLUDING NUTS AND WASHERS, AND CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED AND FIRE-RETARDANT TREATED WOOD SHALL BE OF HOT-DIPPED, ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. STAPLES SHALL BE OF STAINLESS STEEL. COATING TYPES AND WEIGHTS FOR CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE IN ACCORDANCE WITH THE CONNECTOR MANUFACTURER'S RECOMMENDATIONS. INTHE ABSENCE OF MANUFACTURER'S RECOMMENDATIONS, NOT LESS THAN ASTM A653 TYPE G185 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED. FASTENERS IN CONTACT WITH FIRE-RETARDANT TREATED WOOD OTHER THAN NAILS, STAPLES AND TIMBER RIVETS SHALL BE PERMITTED TO BE OF MECHANICALLY DEPOSITED ZINC-COATED STEEL WITH COATING WEIGHTS IN ACCORDANCE WITH ASTM B695, CLASS 55 MIN.
11. ALL NAILS SHALL BE SINKER NAILS AND STAGGERED U.N.O., EXCEPT AS SHOWN IN NAILING SCHEDULE.
12. ALL DIAPHRAGM AND SHEAR WALL NAILING SHALL UTILIZE COMMON NAILS OR GALVANIZED BOX.
13. LAG SCREWS PER ANSI/ASME STANDARD B18.2.1 PROVIDE LEAD HOLE SAME DIAMETER AND DEPTH AS SHANK AND THEN DRILL HOLE 60%-70% OF SHANK DIAMETER FOR THREADED PORTIONS.

2022 CBC TABLE 2304.10.2 FASTNING SCHEDULE

CONNECTION	NAILING	LOCATION
1. JOIST TO SILL OR GIRDER	3-8D	TOENAIL
2. BRIDGING TO JOIST	2-8D	TOENAIL EA. END
3. 1" x 6" SUBFLOOR OR LESS TO EACH JOIST	2-8D	FACE NAIL
4. WIDER THAN 1" x 6" SUBFLOOR TO EACH JOIST	3-8D	FACE NAIL
5. 2" SUBFLOOR TO JOIST OR GIRDER	2-16D	BLIND AND FACE NAIL
6. SOLE PLATE TO JOIST OR BLOCKING SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL	16D (BOX) AT 16" O.C. (3) 16D (BOX) AT 16"	TYPICAL FACE NAIL BRACED WALL PANELS
7. TOP PLATE TO STUD	2-16D	BLIND AND FACE NAIL
8. STUD TO SOLE PLATE 2x4 STUD 2x6 STUD 2x8 STUD	4-8D 2-16D 6-8D 4-16D 8-8D 6-16D	TOENAIL END NAIL TOENAIL END NAIL TOENAIL END NAIL
9. DOUBLE STUDS	16D (BOX) AT 24" O.C.	FACE NAIL
10. DOUBLED TOP PLATES DOUBLE TOP PLATES	16D (BOX) AT 16" O.C. 8-16D	TYPICAL FACE NAIL LAP SPLICE
11. BLOCKING BETWEEN JOIST OR RAFTERS TO TOP PLATE	3-8D	TOENAIL
12. RIM JOIST TO TOP PLATE	8D AT 6" O.C.	TOENAIL
13. TOP PLATES, LAPS AND INTERSECTIONS	2-16D	FACE NAIL
14. CONTINUOUS HEADER, TWO PIECES	16D	16" O.C. ALONG EDGE
15. CEILING JOISTS TO PLATE	3-8D	TOENAIL
16. CONTINUOUS HEADER TO STUD	4-8D	TOENAIL
17. CEILING JOISTS, LAPS OVER PARTITIONS	3-16D	FACE NAIL
18. CEILING JOISTS TO PARALLEL RAFTERS	3-16D	FACE NAIL
19. RAFTER TO PLATE	3-8D	TOENAIL
20. 1" DIAGONAL BRACE TO EACH STUD AND PLATE	2-8D	FACE NAIL
21. 1" x 8" SHEATHING TO EACH BEARING	3-8D	FACE NAIL
22. WIDER THAN 1" x 8" SHEATHING TO EACH BEARING	3-8D	FACE NAIL
23. BUILT-UP CORNER STUDS	16D	24" O.C. 16" O.C.
24. BUILT-UP GIRDER AND BEAMS	20D AT 32" O.C. 2-20D	FACE NAIL AT TOP & BOTTOM STAGGERED ON OPPOSITE SIDES FACE NAIL AT ENDS & ATEACH SPLICE
25. 2" PLANKS	16D	AT EACH BEARING
26. COLLAR TIE TO RAFTER	3-10D	FACE NAIL
27. JACK RAFTER TO HIP	3-10D 2-16D	TOENAIL FACE NAIL
28. ROOF RAFTER TO 2-BY RIDGE BEAM	2-16D 2-16D	TOENAIL FACE NAIL
29. JOIST TO BAND JOIST	3-16D	FACE NAIL
30. LEDGER STRIP	3-16D	FACE NAIL

NOTES: 1. COMMON NAILS SHALL BE USED (U.N.O.)
2. JOIST CAN BE EITHER SAWN LUMBER OR I-JOIST PER PLAN

SPECIAL INSPECTION:

1. SPECIAL INSPECTIONS SHALL BE CONDUCTED IN ACCORDANCE WITH CHAPTER 17 OF THE BUILDING CODE. REFER TO THE INSPECTION SCHEDULE BELOW - ONLY THE MARKED ITEMS ARE REQUIRED.
2. THE OWNER MUST HIRE ONE OR MORE QUALIFIED SPECIAL INSPECTORS TO OVERSEE CONSTRUCTION INSPECTIONS. THESE INSPECTORS MUST DEMONSTRATE COMPETENCY IN THEIR SPECIFIC FIELD OF INSPECTION TO THE SATISFACTION OF THE BUILDING OFFICIAL.
3. WHEN WORK IS PERFORMED AT AN APPROVED AND REGISTERED FABRICATION FACILITY, SPECIAL INSPECTIONS MAY NOT BE NECESSARY. APPROVED FABRICATORS MUST PROVIDE A COMPLIANCE CERTIFICATE FOR OFFSITE FABRICATION OF STRUCTURAL COMPONENTS SUCH AS PRECAST CONCRETE, GLUED LAMINATED TIMBER, AND STRUCTURAL STEEL.
4. INDEPENDENT SPECIAL INSPECTORS MUST CONDUCT ALL REQUIRED INSPECTIONS. SITE VISITS BY THE STRUCTURAL ENGINEER OR BUILDING OFFICIAL DO NOT REPLACE OR FULFILL THE SPECIAL INSPECTION REQUIREMENTS.
5. INSPECTION REPORTS SHALL BE SUBMITTED TO BOTH THE BUILDING OFFICIAL AND THE ENGINEER OF RECORD (E.O.R.). FINAL REPORTS FROM SPECIAL INSPECTORS MUST VERIFY THAT THE STRUCTURAL SYSTEM CONFORMS TO THE APPROVED DESIGN DOCUMENTS.
6. ENSURING THAT ALL REQUIRED INSPECTIONS ARE COMPLETED IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
7. WORK REQUIRING SPECIAL INSPECTION MUST BE REVIEWED BY THE DESIGNATED SPECIAL INSPECTOR BOTH DURING CONSTRUCTION AND UPON COMPLETION. CONTINUOUS INSPECTION REQUIRES FULL-TIME SUPERVISION, WHEREAS PERIODIC INSPECTION IS CONDUCTED INTERMITTENTLY.
8. FOR STRUCTURAL WOOD COMPONENTS, PERIODIC INSPECTIONS ARE REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS, DIAPHRAGMS, AND THEIR FASTENING SYSTEMS, INCLUDING NAILING, BOLTING, ANCHORING, AND CONNECTIONS OF SEISMIC FORCE-RESISTING ELEMENTS SUCH AS DRAG STRUTS, BRACES, AND HOLDOWNS. EXCEPTION: SPECIAL INSPECTION IS NOT NEEDED WHEN THE SHEATHING FASTENER SPACING EXCEEDS 4 INCHES ON CENTER. INSPECTIONS MUST TAKE PLACE BEFORE THE WORK IS COVERED.
9. THE SPECIAL INSPECTIONS LISTED ARE IN ADDITION TO THOSE PERFORMED BY THE BUILDING OFFICIAL. THIS LIST IS NOT EXHAUSTIVE.

INSPECTION SCHEDULE

INSPECTION ITEMS REQ'D	CODE REFERENCE
☑ STRUCTURAL WOOD (NOTE #8)	CBC 1705.12.1, 1705.13.2
☑ POST INSTALLED ANCHORS	CBC Table 1705.3.8, ICC APPROVAL
☑ EPOXY DOWELS	ESR 4057
☐ SOIL CONDITION (SOIL REPORT)	CBC Table 1705.6
☐ CONCRETE/SHOTCRETE WORK	CBC Table 1705.3
☐ REINFORCING STEEL	CBC Table 1705.2.2, 1705.3
☐ MASSONRY WORK	CBC 1705.4
☐ COLD FORMED STEEL	CBC 1705.12.2, 1705.13.3
☐ STRUCTURAL STEEL	CBC 1705.2
☐ STRUCTURAL STEEL WELDING	CBC 1705.2
☐ HIGH STRENGTH BOLTING	CBC 1705.2
☐ CAST IN PLACE DEEP FOUNDATION	CBC Table 1705.8
☐ HIGH-STRENGTH NON-SHRINK GROUT	CBC 1705.2, 1705.3

SHEET INDEX

S-0	GENERAL NOTES.
S-1	FRAMING PLAN.
SD.0	TYPICAL DETAILS.
SD.1	STRUCTURAL DETAILS.

REV.	DESCRIPTION	DATE
	FIRST ISSUE	11-25-2025
1	PLAN CHECK	04-17-2026

PROJECT:

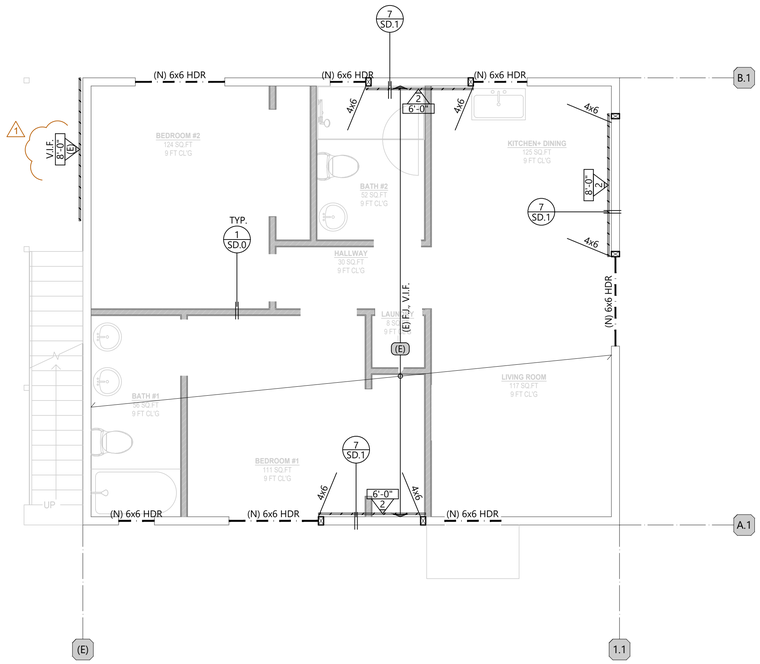
216-218 ALVARADO ST,
CHULA VISTA, CA 91910

SHEET TITLE:

GENERAL NOTES

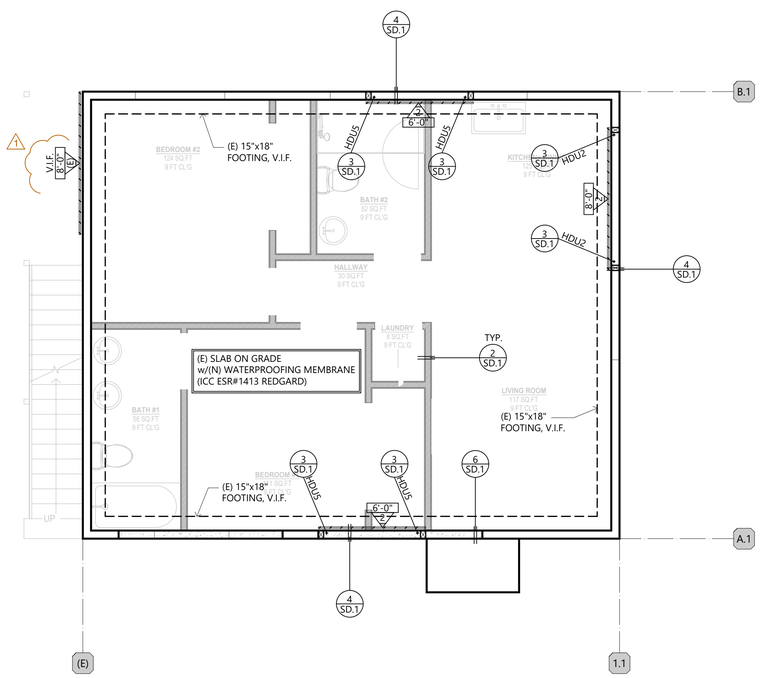
SHEET NUMBER:

S-0



FLOOR FRAMING PLAN

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



FOUNDATION PLAN

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

SHEAR WALL SCHEDULE

2022 CALIFORNIA BUILDING CODE

WALL TYPE	SHEATHING APA-RATED	BLK'G & STUD SIZE AT ADJ. PANEL EDGES	NAILING		SHEAR CLIPS (A35 OR LTP4)	SILL PLATE ATTACHMENT		ALLOWABLE SHEAR (PLF)
			EDGE (E.N.)	FIELD (F.N.)		FRAMED FLOOR	CONCRETE	
1	3/8" sheathing	2x	8d @ 6" O.C.	8d @ 12" O.C.	@ 24" O.C.	1/4"Øx6" SDS @ 16" O.C.	5/8" ø A.B. @ 48" O.C.	260
2	3/8" sheathing	3x	8d @ 4" O.C.	8d @ 12" O.C.	@ 16" O.C.	1/4"Øx6" SDS @ 12" O.C.	5/8" ø A.B. @ 42" O.C.	380
3	3/8" sheathing	3x	8d @ 3" O.C.	8d @ 12" O.C.	@ 8" O.C.	1/4"Øx6" SDS @ 8" O.C.	5/8" ø A.B. @ 36" O.C.	490
4	3/8" sheathing	3x	8d @ 2" O.C.	8d @ 12" O.C.	@ 8" O.C.	1/4"Øx6" SDS @ 6" O.C.	5/8" ø A.B. @ 24" O.C.	640
5	15/32" Struc. I	3x	10d @ 2" O.C.	10d @ 12" O.C.	@ 6" O.C.	1/4"Øx6" SDS @ 5" O.C.	5/8" ø A.B. @ 18" O.C.	870
3D	3/8" sheathing BOTH SIDES	3x	8d @ 3" O.C.	8d @ 12" O.C.	@ 4" O.C.	1/4"Øx6" SDS @ 4" O.C.	5/8" ø A.B. @ 18" O.C.	980
4D	3/8" sheathing BOTH SIDES	3x	8d @ 2" O.C.	8d @ 12" O.C.	@ 4" O.C.	1/4"Øx6" SDS @ 3" O.C.	5/8" ø A.B. @ 12" O.C.	1280
5D	15/32" Struc. I BOTH SIDES	3x	10d @ 2" O.C.	10d @ 12" O.C.	@ 3" O.C.	1/4"Øx6" SDS @ 2.5" O.C.	5/8" ø A.B. @ 9" O.C.	1740

NOTES:

(1) PROVIDE STAGGERED NAILING AT ALL PANEL EDGES. NAILS ARE MINIMUM 1/2" FROM PANEL EDGES & MINIMUM 3/8" FROM STUD EDGES.
(2) STUDS ARE SPACED @ 16" O.C. MAX., UNO.
(3) COMMON NAILS MUST BE USED WITH NO SUBSITUTION.
(4) FOR SHEARWALL TYPE 3D, 4D, 5D, SILL PLATE SHALL BE 3x MIN.

SHEARWALL NOTES

1. SEE SHEET S-0 FOR RELATED NOTES AND REFERENCES.
2. SHEAR WALLS CANNOT BE USED AS PLUMBING WALLS, UNLESS APPROVED BY E.O.R IN WRITING.
3. AT DOUBLE SIDED SHEAR WALLS, POST W/E.N. PER PLAN TO RECEIVE E.N. FROM BOTH SIDES.
4. WHEN MULTIPLE STUDS ARE USED INSTEAD OF A SINGLE POST, PLYWOOD SHEAR WALL TO BE NAILED TO ALL STUDS RECEIVING HOLDOWNS.
5. DO NOT BREAK SHEAR WALL AT PERPENDICULAR WALL LOCATIONS UNLESS SPECIFICALLY DETAILED ON PLANS. INSTALL SHEAR WALL PRIOR TO FRAMING OF PERPENDICULAR WALLS.
6. THE CONTRACTOR SHALL VERIFY THAT THE TOP OF HARDY FRAMES/STRONG WALLS ALIGNS WITH THE TOP PLATE HEIGHT SHOWN ON THE PLANS. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER OF RECORD.
7. ALL SHEAR PANELS SHALL HAVE CONTINUOUS SHEATHING MATERIAL FROM ONE END TO THE OTHER AND FROM PLATE TO PLATE AS SPECIFIED ON THE DRAWINGS. CONTRACTOR SHALL COORDINATE FRAMING SUCH THAT CONTINUITY OF SHEAR PANELS IS ASSURED.

FRAMING NOTES

1. SEE SHEET S-0 FOR RELATED NOTES AND REFERENCES.
2. SEE DETAIL 3/SD.0 FOR TYPICAL HEADER W/TRIMMER, U.N.O. ON PLAN.
3. ROOF WALL TOP PLATE SHOULD BE SPLICED PER DETAIL 2A/SD.0 U.N.O. ON PLANS.
4. TYPICAL STUD BEARING WALLS, 10 FT MAX HEIGHT, SHALL BE AS SCHEDULED BELOW. TYPICAL NON-BEARING WALLS, USE 2x4 UP TO 14 FT HEIGHT OR 2x6 UP TO 20 FT HEIGHT. FOR OTHER CONDITIONS, SEE CASE-BY-CASE DESIGN AND NOTES ON PLAN

STUD WALL SUPPORTING	MAX. STUD SPACING (INCHES)			
	2x4	2-2x4	2x6	2-2x6
ROOF ONLY	24	24	24	24
ONE FLOOR ONLY	24	24	24	24
ONE FLOOR & ROOF	16	24	24	24
TWO FLOOR & ROOF	12	16	16	24

5. TYPICAL CEILING JOISTS WITH DEAD LOAD DL = 8.0 psf, LIVE LOAD LL = 10.0 psf. FOR OTHER CONDITIONS, SEE CASE-BY-CASE DESIGN AND FRAMING SCHEDULE

C.J.	MAX CEILING JOIST SPACING (INCHES)							
	MAX SPAN (FT)							
	20'-0"	18'-0"	15'-3"	14'-0"	12'-0"	9'-9"	8'-6"	7'-6"
2x4	N/A	N/A	N/A	N/A	N/A	12	16	24
2x6	N/A	N/A	12	16	24	24	24	24
2x8	12	16	24	24	24	24	24	24

FOUNDATION NOTES

1. SEE SHEET S-0 FOR RELATED NOTES AND REFERENCES.
2. APPROVED PROPRIETARY ANCHORS SUCH AS MASA OR MASAP MAY BE USED WHERE PERMITTED, IN ACCORDANCE WITH ICC-ESR #2555. MAINTAIN MINIMUM 4" END DISTANCE
3. HOLD DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION
4. ALL HOLDOWNS AND POST ANCHORS TO BE INSTALLED ACCORDING TO MOST CURRENT SIMPSON STRONG TIE SPECIFICATIONS AND REQUIREMENTS OF ICC-ER REPORTS & SHALL BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION. DIMENSIONS ARE NOT FURNISHED TO SIMPSON HOLDOWNS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERINTENDENT, THE FRAMING CONTRACTOR AND THE CONCRETE CONTRACTOR TO LOCATE THESE ANCHORS IN THE EXACT LOCATION. REFER TO DETAILS FOR PROPER INSTALLATION.
5. HOLDOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE 0.229"X3" PLATE WASHERS ON THE POST OPPOSITE THE HOLDOWN AND HOLDOWN SHALL BE TIGHTENED TO FINGER TIGHT PLUS ONE HALF WRENCH TURN JUST PRIOR TO COVERING THE WALL FRAMING.

SYMBOLS LEGEND

X	DIRECTION OF FRAMING MEMBER PER SCHEDULE
	FRAMING AREA DIVISION
X/X	SHEAR PANEL LENGTH AND NUMBER. REFER TO SHEARWALL SCHEDULE FOR PANEL TYPE
	STRONG WALL OR HARDY FRAME
X	LINE OF LATERAL FORCE RESISTANCE, REFER TO E.O.R. CALCULATIONS
X	HEADER OR DROP BEAM PER PLAN
X	FLUSH BEAM PER PLAN
X	BEAM NUMBER, REFER TO E.O.R. CALCULATIONS
	POST OR TRIMMER AS NOTED POST OR TRIMMER FROM FLOOR ABOVE
X	KEY NOTE NUMBER
X/SD.X	DETAIL NUMBER DETAIL SHEET NUMBER
	DRAG DIRECTION
	(E) CONTINUOUS FOOTING
	(E) PAD
#X X	PAD ID, REFER TO E.O.R CALCULATIONS PAD NUMBER PER SCHEDULE
	DROP IN SLAB (VERIFY PRIOR TO CONSTRUCTION)
X	HOLDOWN TYPE, SEE 3/SD.1 FOR CONNECTION DETAIL (U.N.O.)

FRAMING SCHEDULE

MARK	MEMBER TYPE
(E)	EXISTING FRAMING

REV.	DESCRIPTION	DATE
	FIRST ISSUE	11-25-2025
1	PLAN CHECK	04-17-2026

PROJECT:

216-218 ALVARADO ST,
CHULA VISTA, CA 91910

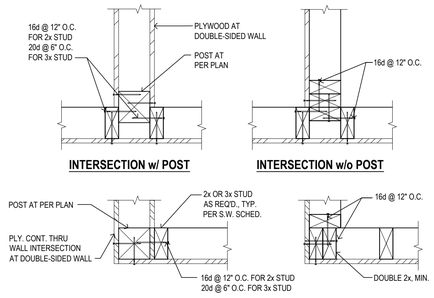
REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

SHEET TITLE:

FRAMING PLAN

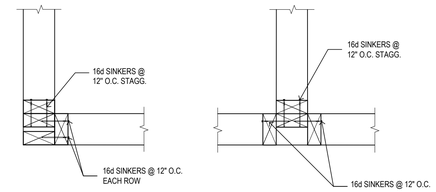
SHEET NUMBER:

S-1

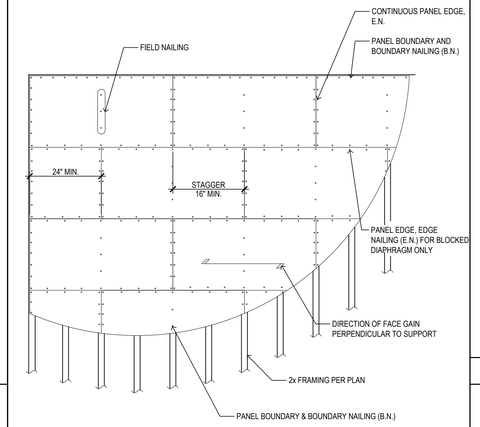


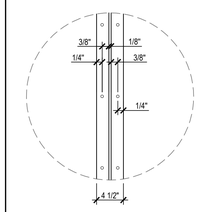
NOTE: SEE FRAMING PLAN FOR SHEAR WALL LOCATIONS, ORIENTATIONS AND SCHEDULE REFERENCES.

9 SHEARWALL AT INTERSECTION

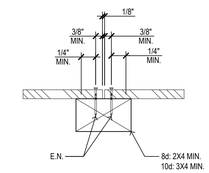


7 NON-SHEARWALL INTERSECTION





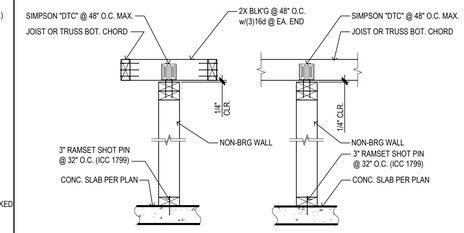
PANEL JOINT NAILING



BLOCKED DIAPHRAGM NAILING

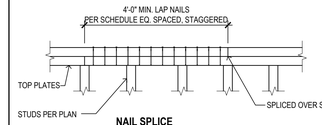
NOTES:
1. STAGGER JOINTS AS SHOWN.
2. MIN. SIZE OF SHEET SHALL BE 24" X 24".
3. NAILS SHALL BE DRIVEN TIGHT BUT SHALL NOT FRACTURE SURFACE OF SHEATHING.
4. TOLERANCE ON NAILING SHALL BE 3/4" W/ THE AVERAGE NAIL SPACING OVER ANY 4'-0" LENGTH BEING AT LEAST THAT NOTED ON THE PLAN.

5 TYPICAL DIAPHRAGM LAYOUT

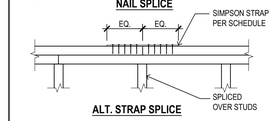


* PROVIDE ANCHOR 6" FROM ALL CORNERS AND SPLICES.
ALL INTERIOR NON-SHEAR WALLS TO BE SECURED WITH ICC-ESR APPROVED SHOT PINS WITH CADMIUM WASHERS AT 32" O.C. PER MANUF. SPECS., U.N.O.

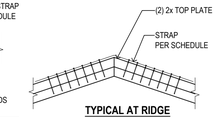
1 NON-BEARING WALL



NAIL SPLICE



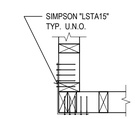
ALT. STRAP SPLICE



TYPICAL AT RIDGE

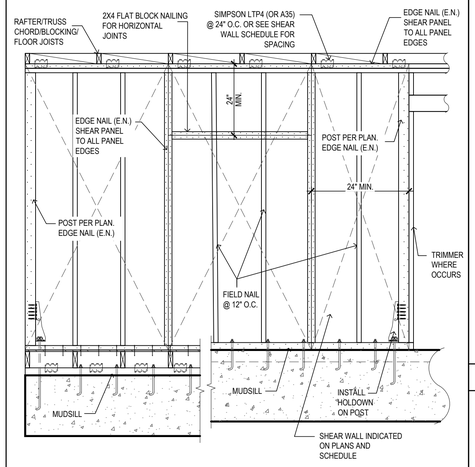
MARK	NAIL SPLICE		ALT. STRAP SPLICE
	NO. OF NAILS	MIN. LAP (FT)	
A	10	4	ST22
B	16	4	ST6224
C	22	6	ST6236
D	24	6	MST37
E	32	8	MST48
F	36	8	MST60
G	42	8	CMST12-72*

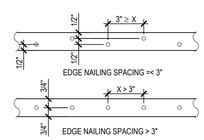
ALL NAILS ARE 16d SINKER OR 10d COMMON



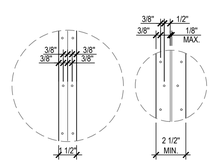
TYPICAL CORNER SPLICE

2 TYPICAL SPLICE TOP PLATE



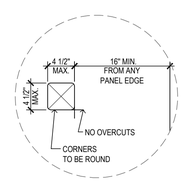


SILL NAILING

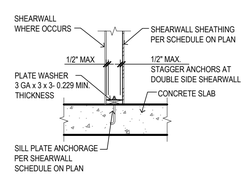


EDGE NAILING SPACING > 4" EDGE NAILING SPACING =< 4"

PANEL JOINT NAILING



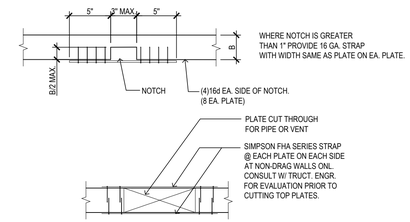
OPENING LIMITS



SILL ANCHORAGE

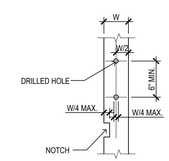
NOTES:
1. PROVIDE 3/8" EDGE DISTANCE FOR NAILS.
2. PROVIDE MIN. 2x BLK'G. @ ALL PLYWOOD EDGES OR AS NOTED IN SHEAR SCHEDULE.
3. STAGGER NAILS THAT ARE SPACED 2" O.C.
4. FOR SPECIFIC SHEARWALL CONDITIONS SEE PLAN & SCHEDULE.
5. NO CUTS OR HOLES IN SHEATHING WITHIN 16" OF CORNERS.
6. MAX. ACCUMULATED LENGTH OF OPENINGS SHALL NOT EXCEED 20% OF THE WALL LENGTH. MAX. LENGTH OF EA. OPENING IS 4 1/2" IN ANY DIRECTION.

8 TYPICAL SHEARWALL

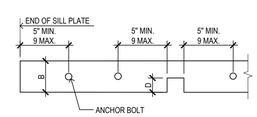


NOTE: NAIL FHA STRAP w/(4) 16d SINKER OR SHORT NAILS OR (4) 10d COMMON NAILS AT EACH END.

DOUBLE TOP PLATE



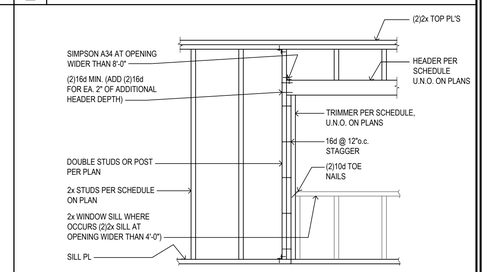
WOOD STUD



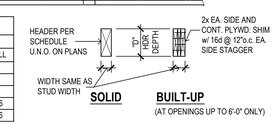
WHERE DEPTH OF NOTCH "D" IS GREATER THAN 1-1/2"
PROVIDE ANCHOR BOLT ON EA. SIDE OF NOTCH AS PER END REQMT.

SILL PLATE

6 STUD & PLATE NOTCHING/BORING DETAILS

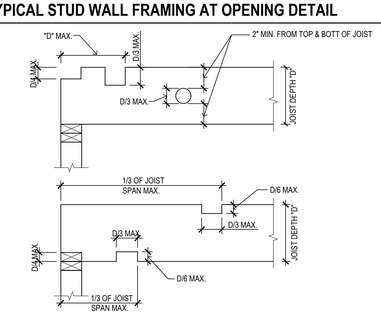


HEADER SCHEDULE			
OPENING WIDTH MAX.	MIN. NOMINAL HEADER "D"	TRIMMERS	
		4" WALL	6" WALL
4'-0"	4"	2x4	2x6
6'-0"	6"	2x4	2x6
8'-0"	8"	2-2x4	2x6
10'-0"	10"	2-2x4	2-2x6
12'-0"	12"	2-2x4	2-2x6



SOLID BUILT-UP
(AT OPENINGS UP TO 6'-0" ONLY)

3 TYPICAL STUD WALL FRAMING AT OPENING DETAIL



NOTES:
1. NOTCHES DEPTH PER DISTANCE FROM SUPPORT
   DEPTH OF JOIST: D/3 MAX.
   1/3 SPAN OF JOIST: D/6 MAX.
2. ALL NOTCHES/BORE TO BE WITHIN 1/3 SPAN FROM SUPPORTS (NOT AT CANTILEVER SUPPORT)
3. MAINTAIN MIN. 6" SPACING BETWEEN ANY NOTCHES/BORED HOLES

4 SAWN LUMBER CUTTING, NOTCHING & DRILLING

REV.	DESCRIPTION	DATE
	FIRST ISSUE	11-25-2025
1	PLAN CHECK	04-17-2026

PROJECT:

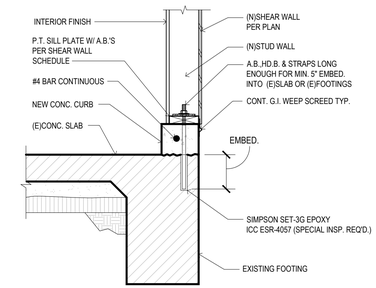
216-218 ALVARADO ST,
CHULA VISTA, CA 91910

SHEET TITLE:

TYPICAL DETAILS

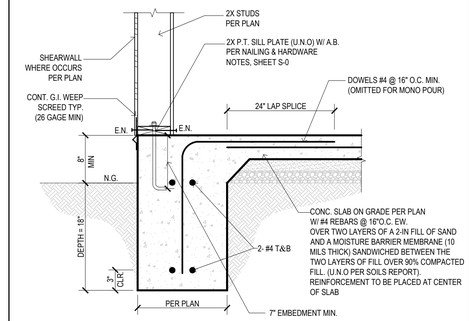
SHEET NUMBER:

SD.0



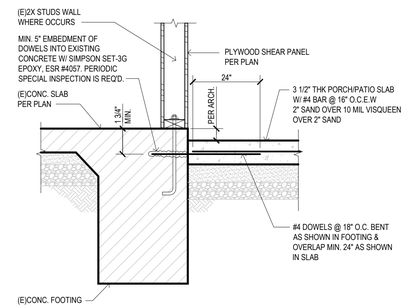
00022

5 **NEW CURB TO EXISTING FOOTING**

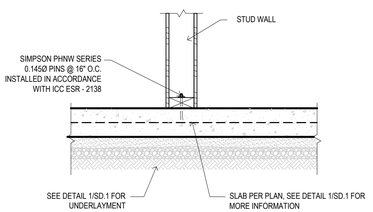


1 **TYPICAL EXTERIOR FOOTING**

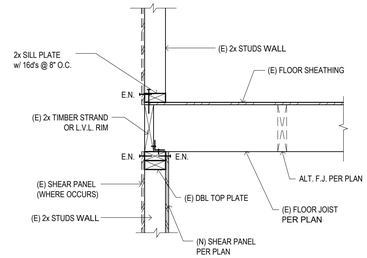
NSERTION SCALE: 1/12



6 **CONNECTION DETAIL**

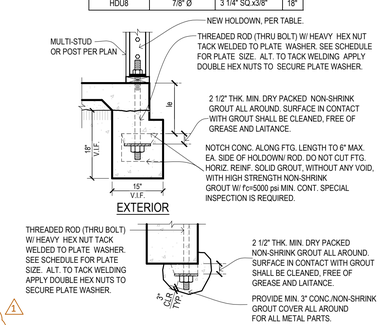


2 **NON - BEARING INTERIOR WALL**

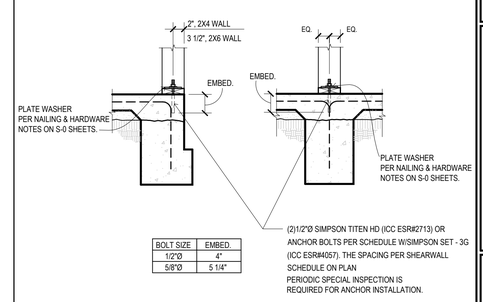


7 **SHEAR TRANSFER**

HD. REPLACE	ASTM-A36 ROD Ø	A36 PLATE WASHER	le
HDU2 & HDU5	5/8" Ø	2 1/2" SQ.x1/4"	18"
HDU8	7/8" Ø	3 1/4" SQ.x3/8"	18"



3 **HOLDOWN TO (E) EXTERIOR FOOTING**



BOLT SIZE	EMBED.
1/2"Ø	4"
5/8"Ø	5 1/4"

4 **ANCHOR BOLT TO EXISTING FOOTING**

REV.	DESCRIPTION	DATE
	FIRST ISSUE	11-25-2025
1	PLAN CHECK	04-17-2026

PROJECT:

216-218 ALVARADO ST,
CHULA VISTA, CA 91910

SHEET TITLE:

STRUCTURAL DETAILS

SHEET NUMBER:

SD.1

2025 CALGREEN RESIDENTIAL MANDATORY MEASURES
EFFECTIVE January 1, 2026

See specific referenced sections for complete details on CALGreen mandatory requirements.

2025 CALGREEN CODE

CHAPTER 1 – ADMINISTRATION

SECTION	REQUIREMENTS
	Scope
101.3.1	Applies to ALL newly constructed residential buildings: low-rise, high-rise, and hotels/motels.
102.3	Requires a completed Residential Occupancies Application Checklist or alternate method acceptable to the enforcing agency to be used for documentation of conformance.

CHAPTER 3 – GREEN BUILDING

SECTION	REQUIREMENTS
	Additions and alterations
301.1.1	• Applies to additions or alterations of residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. • Requirements only apply within the specific area of the addition or alteration. • Requirements for electric vehicle charging may apply to additions to or alterations of parking facilities for multifamily buildings. • Mandatory provisions of Section 4.106.4.2 may apply to additions and alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.
	Low-rise and high-rise residential buildings
301.2	Banners identify provisions applying to low-rise only [LR] or high-rise only [HR].

2025 CALGREEN RESIDENTIAL MANDATORY MEASURES
EFFECTIVE January 1, 2026

See specific referenced sections for complete details on CALGreen mandatory requirements.

2025 CALGREEN CODE

	Mixed occupancy buildings
302.1	Requires each portion of mixed occupancy buildings to comply with CALGreen measures applicable for the specific occupancy. **Exceptions:** • Accessory structures and accessory occupancies serving residential buildings to comply with Chapter 4 and Appendix A4, as applicable. • Live/work units complying with the California Building Code Section 508.5 shall not be considered a mixed occupancy. Live/work units are required to comply with Chapter 4 and Appendix A4, as applicable.

CHAPTER 4 – RESIDENTIAL MANDATORY MEASURES
DIVISION 4.1 – PLANNING AND DESIGN

SECTION	REQUIREMENTS
	Storm water drainage and retention during construction
4.106.2	Projects which disturb less than 1 acre of soil and are not part of a larger common plan of development shall manage storm water drainage during construction.
	Grading and paving
4.106.3	Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. **Exception:** Additions and alterations which do not alter the existing drainage path.

2025 CALGREEN RESIDENTIAL MANDATORY MEASURES
EFFECTIVE January 1, 2026

See specific referenced sections for complete details on CALGreen mandatory requirements.

2025 CALGREEN CODE

	Electric vehicle (EV) charging for new construction
4.106.4	• New construction shall comply with Section 4.106.4.1 or 4.106.4.2. • Electric vehicle supply equipment (EVSE) shall comply with the *California Electrical Code*. **Exceptions:** 1. On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following: 1.1. Where there is no local utility power supply, or the local utility is unable to supply adequate power. 1.2. Where local enforcing agency determines additional local utility infrastructure design requirements for implementation of Section 4.106.4, may adversely impact the construction cost of the project. 2. Accessory Dwelling Units and Junior Accessory Dwelling Units without additional parking facilities.
	EV charging: New 1- & 2-family dwellings/townhouses with attached private garages
4.106.4.1	• Install a listed raceway to accommodate a dedicated 208/240-volt branch circuit for each dwelling unit. • Raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). • Raceway shall originate at the main service or subpanel and terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. • Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces. • Service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device. **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*.

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	Identification
4.106.4.1.1	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."
	New multifamily dwellings, hotels and motels and new residential parking facilities
4.106.4.2	• Applies to all new multifamily dwelling units, hotels and motels and new residential parking facilities. • Shall meet the requirements of Section 4.106.4.2.2. • Calculations for spaces shall be rounded up to the nearest whole number. • A parking space served by electric vehicle supply equipment (EVSE) or designed as an EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.

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	New Multifamily dwellings, hotels and motels
4.106.4.2.2	1. **EV ready parking spaces with receptacles**. a. **Multifamily parking facilities with assigned parking**. Where dwelling units are provided with assigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided at an assigned parking space for each dwelling unit. 1. Where the total number of dwelling units exceeds the number of assigned parking spaces, all assigned parking spaces shall be provided with one low power Level 2 EV charging receptacle. **Exception**: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging. b. **Multifamily parking facilities with unassigned parking**. Where dwelling units are provided with unassigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided at an unassigned parking space for each dwelling unit. 1. Where the total number of dwelling units exceeds the number of unassigned parking spaces, all unassigned parking spaces shall be provided with one low power Level 2 EV charging receptacle. **Exception**: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging. c. **Multifamily parking facilities with assigned and unassigned parking**. Where multifamily buildings are provided with both assigned and unassigned parking spaces equal to or greater than the number of dwelling units, at least one low power Level 2 EV charging receptacle shall be provided for each dwelling unit at either the assigned or unassigned parking space, but not both. d. **Receptacle power source**. EV charging receptacles in multifamily parking facilities at assigned parking spaces shall be provided with a dedicated branch circuit connected to the dwelling unit's electrical panel, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency. **Exception**: Areas of parking facilities served by parking lifts, including but not limited to, automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of

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	supporting electric vehicle charging. e. Receptacle configurations. 208/240V EV charging receptacles shall comply with one of the following configurations: 1. For 20-ampere receptacles, NEMA 6-20R2. 2. For 30-ampere receptacles, NEMA 14-30R3. 3. For 50-ampere receptacles, NEMA 14-50R2. 2. **EV ready parking spaces with EV chargers**. a. **Multifamily parking facilities with unassigned or common use parking**. In addition to the low power Level 2 EV charging receptacle requirements of Section 4.106.4.2.2 (1), twenty-five (25) percent of unassigned or common use parking spaces not already provided with low power Level 2 EV charging receptacles, pursuant to Section 4.106.4.2.2 (1), shall be equipped with Level 2 EV chargers and shall be made available for use by all residents or guests. b. **Ev charger connectors**. EV chargers shall be equipped with J1772 or J3400 connectors. c. An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EV chargers shall have a capacity of not less than 30 amperes.
	EV charging stations (EVCS)
4.106.4.2.2.1	EVCS required by Section 4.106.4.2.2, Item 2 with EV chargers installed shall comply with Section 4.106.4.2.2.1.1. **Exception:** EVCS serving public accommodations, public housing motels and hotel shall not be required to comply with this section. See *California Building Code*, Chapter 11B, for applicable requirements.

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	EV charging stations (EVCS) dimensions
4.106.4.2.2.1.1	EVCS spaces with chargers installed; dimensions and location. Shall be designed to comply with the following: • Minimum length of each EVCS space shall be 18 feet. • Minimum width of each EVCS space shall be 9 feet. • One in every 25 EVCS, but not less than one, shall have an 8-foot minimum aisle. A 5-foot minimum aisle shall be permitted if the minimum width of the EV space is 12 feet. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083% slope) in any direction. These EVCS shall comply with at least one of the following options: 1. The EVCS space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space. 2. The EVCS space shall be located on an accessible route to the building, as defined in the *California Building Code*, Chapter 2. **Exception:** EVCS designed and constructed in compliance with the *California Building Code*, Chapter 11B, are not required to comply with Section 4.106.4.2.1.1 and Section 4.106.4.2.2, Item 3.
	Accessible electric vehicle charging station spaces
4.106.4.2.2.1.2	In addition to the requirement in Section 4.106.4.2.2.1.1, all EV chargers, where installed, shall comply with the accessibility provisions for EV chargers in the *California Building Code*, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with *California Building Code*, Chapter 11A, Section 1109A.
	EV ready space signage
4.106.4.2.5	EV 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.

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	Hotels and motels
4.106.4.2.6	1. **EV ready parking spaces with receptacles.** a. **Hotels and motels.** Forty (40) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. **Exception:** Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging. b. **Receptacle configurations.** 208/240V EV charging receptacles shall comply with one of the following configurations: 1. For 20- ampere receptacles, NEMA 6-20R 2. For 30- ampere receptacles, NEMA 14-30R 3. For 50- ampere receptacles, NEMA 14-50R 2. **EV ready parking spaces with EV chargers.** a. **Hotels and motels.** Twenty-five (25) percent of the total number of parking spaces shall be equipped with Level 2 EV chargers. b. **EV charger connectors.** EV chargers shall be equipped with J1772 or J3400 connectors. **Exception:** Areas of parking facilities served by parking lifts, including but not limited to automated mechanical-access open parking garages as defined in the California Building Code; or parking facilities otherwise incapable of supporting electric vehicle charging. c. An automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes and installed EV chargers shall have a capacity of not less than 30 amperes.

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	EV charging for additions and alterations of parking facilities serving existing multifamily buildings, hotels and motels.
4.106.4.3	When existing parking facilities are altered or new parking spaces are added to existing parking facilities, and the work requires a building permit, each parking space added or altered shall have access to either a low power Level 2 EV charging receptacle or Level 2 EV charger, unless determined as infeasible by the project builder or designer and subject to concurrence of the local enforcing agency. **Exception:** Where work requiring a permit is being performed for the installation of a 120-volt electrical receptacle(s) for level 1 EV charging.
	Bicycle Parking
4.106.4.4	**4.106.4.4. Bicycle parking.** Comply with sections 4.106.4.4.1 through 4.106.4.4.3. **4.106.4.4.1 Short-term bicycle parking for multifamily buildings, hotels and motels.** Provide on-site bicycle parking at a ratio of one parking space for every 10,000 square feet, but not less than two spaces. Short-term bicycle parking shall be located within 200 feet of building entrances, and readily visible to passers-by. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to: 1. Permanently anchored bicycle parking devices, racks, or lockers in an unsheltered, open area. 2. Covered or uncovered enclosures with permanently anchored bicycle parking devices or racks. **4.106.4.4.2 Long-term bicycle parking for multifamily buildings.** Provide on-site bicycle parking at a ratio of one parking space for every two dwelling units. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to: 1. Covered, lockable enclosures with permanently anchored bicycle parking devices or racks. 2. Lockable bicycle storage rooms with permanently anchored bicycle parking devices or racks. 3. Lockable, weatherproof, permanently anchored bicycle lockers. **4.106.4.4.3 Long-term bicycle parking for hotel and motel buildings.** Provide one on-site long-term bicycle parking space for every 25,000 square feet, but not less than two. Acceptable parking facilities shall be conveniently accessed from the street and may include, but not be limited to: 1. Covered, lockable enclosures with permanently anchored bicycle parking devices or racks. 2. Lockable bicycle storage rooms with permanently anchored bicycle parking

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	devices or racks. 3. Lockable, weatherproof, permanently anchored bicycle lockers.

DIVISION 4.2 – ENERGY EFFICIENCY

SECTION	REQUIREMENTS
	Scope
4.201.1 & 5.201.1	• Energy efficiency requirements for low-rise residential (single-family) (Section 4.201.1); and high-rise residential (multifamily) and hotels/motels (Section 5.201.1) are now in both residential and nonresidential chapters of CALGreen. • Standards for residential buildings do not require compliance with levels of minimum energy efficiency beyond those required by the 2022 *California Energy Code*.

DIVISION 4.3 – WATER EFFICIENCY AND CONSERVATION

SECTION	REQUIREMENTS
	Water conserving plumbing fixtures and fittings
4.303.1	Plumbing fixtures and fittings shall comply with the following: **4.303.1.1** – Water closets: ≤ 1.28 gal/flush. **4.303.1.2** – Wall mounted urinals: ≤ 0.125 gal/flush; all other urinals ≤ 0.5 gal/flush. **4.303.1.3.1** – Single showerheads: ≤ 1.8 gpm @ 80 psi. **4.303.1.3.2** – Multiple showerheads: combined flow rate of all showerheads controlled by a single valve shall not exceed 1.8 gpm @ 80 psi, or only 1 shower outlet is to be in operation at a time. **4.303.1.4.1** – Residential lavatory faucets: maximum flow rate ≤ 1.2 gpm @ 60 psi; minimum flow rate ≥ 0.8 gpm @ 20 psi. **4.303.1.4.2** – Lavatory faucets in common and public use areas of residential buildings: ≤ 0.5 gpm @ 60 psi. **4.303.1.4.3** – Metering faucets: ≤ 0.2 gallons per cycle. **4.303.1.4.4** – Kitchen faucets: ≤ 1.8 gpm @ 60 psi; temporary increase to 2.2 gpm allowed but shall default to 1.8 gpm. **4.303.1.4.5** – Pre-rinse spray valves: When installed, Commercial Pre-Rinse Spray Valves shall meet the requirements in the *California Plumbing Code, Section 420.3*.

KU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
CALGREEN REQUIREMENTS

REGISTERED PROFESSIONAL ENGINEER
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Sheet No
A.11

Date	Job No	Rev.
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4.303.2	**Submeters for multifamily buildings and dwelling units in mixed-use residential/commercial buildings**
	Submeters shall be installed to measure water usage on individual dwelling units in accordance with the *California Plumbing Code*.
4.303.3	**Standards for plumbing fixtures and fittings**
	Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code* and shall meet applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.
4.304.1	**Outdoor potable water use in landscape areas**
	New residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.

DIVISION 4.4 – MATERIAL CONSERVATION & RESOURCE EFFICIENCY

SECTION	REQUIREMENTS
4.406.1	**Rodent proofing**
	Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls shall be closed with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency to prevent passage of rodents.

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4.408.1	**Construction waste management**
	• Recycle and/or salvage for reuse a minimum of 65% of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance. Provide documentation to the enforcing agency per Section 4.408.5. **Exceptions:** 1. Excavated soil and land-clearing debris. 2. Alternative waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite. 3. The enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility.
4.408.2	**Construction waste management plan**
	Submit a construction waste management plan that meets Items 1 through 5.
4.408.3	**Waste management company**
	Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that diverted construction and demolition waste materials meet the requirements in Section 4.408.1.
4.408.4 & 4.408.4.1	**Waste stream reduction alternative**
	• Low-rise residential projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 3.4 pounds per square foot of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1. • Projects that generate a total combined weight of construction and demolition waste disposed in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.

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4.410.1	**Operation and maintenance manual**
	At the time of final inspection, a manual, compact disc, web-based reference, or other media acceptable to the enforcing agency which covers 12 specific subject areas shall be placed in the building.
4.410.2	**Recycling by occupants**
	Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and is identified for the depositing, storage, and collection of nonhazardous materials for recycling, including (at minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive. **Exception:** Rural jurisdictions that meet and apply for the exemption in *Public Resources Code* Section 42649.82 (a)(2)(A) et seq. are not required to comply with the organic waste portion of this section.

DIVISION 4.5 – ENVIRONMENTAL QUALITY

SECTION	REQUIREMENTS
4.503.1	**Fireplaces – 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 all applicable local ordinances.
4.504.1	**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 intake and distribution component openings shall be covered. Tape, plastic, Sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of water, dust and debris entering the system may be used.

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4.504.2.1	**Adhesives, sealants and caulks**
	Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Table 4.504.1 or 4.504.2, as applicable. Such products shall also comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products, as specified in Subsection 2. 2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than 1 pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of CCR, 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 Air Resources Board 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 & 4.504.2.4	**Aerosol paints and coatings**
	• Aerosol paints and coatings shall meet the Product-weighted MIR Limits for ROC in Section 94522(a)(2) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(e)(1) and (f)(1) of CCR, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District shall additionally comply with the percent VOC by weight of product limits of Regulation 8, Rule 49. • Documentation is required per Section 4.504.2.4.

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4.504.3	**Carpet systems**
	Carpet installed in the building interior shall meet the testing and product 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 (also known as Specification 01350).
4.504.3.1	**Carpet cushion**
	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 (also known as Specification 01350).
4.504.3.2	**Carpet adhesive**
	Carpet adhesives shall meet the requirements of Table 4.504.1.
4.504.4	**Resilient flooring systems**
	Where resilient flooring is installed, at least 80% of floor area receiving resilient flooring shall meet the requirements of the California Department of Public Health, "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers," Version 1.2, January 2017 (also known as Specification 01350).

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4.504.5 & 4.504.5.1	**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 the Air Resources Board's Air Toxics Control Measure for Composite Wood (CCR, Title 17, Section 93120 et seq.) as shown in Table 4.504.5. • Documentation is required per Section 4.504.5.1. • Definition of Composite Wood Products: Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" do not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists, or finger-joined lumber, all as specified in CCR, Title 17, Section 93120.1(a).
4.505.2	**Concrete slab foundations**
	Concrete slab foundations or concrete slab-on-ground floors required to have a vapor retarder by the *California Building Code*, Chapter 19, or the *California Residential Code*, Chapter 5, respectively, shall also comply with this section.
4.505.2.1	**Capillary break**
	A capillary break shall be installed in compliance with at least one of the following: 1. A 4-inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor retarder in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06. 2. Other equivalent methods approved by the enforcing agency. 3. A slab design specified by a licensed design professional.

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4.505.3	**Moisture content of building materials**
	Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be verified in compliance with the following: 1. Moisture content shall be determined with either a probe-type or a contact-type moisture meter. Equivalent moisture verification methods may be approved by the enforcing agency and shall satisfy requirements in Section 101.8. 2. Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified. 3. At least 3 random moisture readings shall be performed on wall and floor framing with documentation acceptable to the enforcing agency provided at the time of approval to enclose the wall and floor framing. Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Manufacturers' drying recommendations shall be followed for wet-applied insulation products prior to enclosure.
4.506.1	**Bathroom exhaust fans**
	Each bathroom shall be mechanically ventilated and shall comply with the following: 1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. 2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidity control. a. Humidity controls shall be capable of manual or automatic adjustment between a relative humidity range of ≤ 50% to a maximum of 80%. b. A humidity control may be a separate component to the exhaust fan and is not required to be integral or built-in. **Note:** For CALGreen, a bathroom is a room which contains a bathtub, shower, or tub/shower combination. Lighting integral to bathroom exhaust fans shall comply with *California Energy Code*.

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4.507.2	**Heating and air-conditioning system design**
	Heating and air-conditioning systems shall be sized, designed and equipment selected using the following methods: 1. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J – 2016 (*Residential Load Calculation*), ASHRAE handbooks or other equivalent design software or methods. 2. Duct systems are sized according to ANSI/ACCA 1 Manual D – 2016 (*Residential Duct Systems*), ASHRAE handbooks or other equivalent design software or methods. 3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S – 2014 (*Residential Equipment Selection*) or other equivalent design software or methods. **Exception:** Use of alternate design temperatures necessary to ensure the systems function are acceptable.

CHAPTER 7 – INSTALLER & SPECIAL INSPECTOR QUALIFICATIONS

SECTION	REQUIREMENTS
702.1	**Installer training**
	Heating, ventilation, and air conditioning (HVAC) system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a recognized training or certification program. Examples of acceptable HVAC training and certification programs include, but are not limited to, the following: 1. State certified apprenticeship programs. 2. Public utility training programs. 3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations. 4. Programs sponsored by manufacturing organizations. 5. Other programs acceptable to the enforcing agency.

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702.2	**Special inspection**
	When required by the enforcing agency, special inspectors must be qualified and able to demonstrate competence to the enforcing agency in the discipline in which they are inspecting.
703.1	**Documentation**
	Documentation of compliance shall include, but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the local enforcing agency. Other specific documentation or special inspections necessary to verify compliance are specified in appropriate sections of CALGreen.

KU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
CALGREEN REQUIREMENTS

REGISTERED PROFESSIONAL ENGINEER
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Sheet No
A.12

Date	Job No	Rev.
11-21-25		#

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

BUILDING ENERGY ANALYSIS REPORT

PROJECT:

216-218 ALVARADO ST
216-218 ALVARADO ST
CHULA VISTA, CA 91910

Project Designer:

STICKS AND STONES CONSTRUCTION
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Oceanside, CA 92054

Report Prepared by:

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3603 Baker Street
San Diego, CA 92117

Job Number:

Date:

4/23/2026

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2025 California Energy Code.

This program developed by EnergySoft, LLC – www.energysoft.com.

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GENERAL INFORMATION

01	Project Name	216-218 ALVARADO ST			
02	Run Title	Title 24 Analysis			
03	Project Location	216-218 ALVARADO ST			
04	City	CHULA VISTA	05	Standards Version	2025
06	Zip code	91910	07	Software Version	EnergyPro 10.0
08	Climate Zone	7	09	Front Orientation (deg/ Cardinal)	0
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	Newly Constructed Addition	13	Number of Bedrooms	2
14	Addition Cond. Floor Area (ft^2)	662	15	Number of Stories	1
16	Existing Cond. Floor Area (ft^2)	600	17	Fenestration Average U-factor	0.3
18	Total Cond. Floor Area (ft^2)	1262	19	Glazing Percentage (%)	11.63%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Fuel Type	Natural gas	23	No Dwelling Unit	No

ADDITION ALONE - Project Analysis Parameters

01	02	03	04	05	06
Existing Area (excl. new addition) (ft2)	Addition Area (excl. existing) (ft2)	Total Area (ft2)	Existing Bedrooms	Addition Bedrooms	Total Bedrooms
600	662	1262	0	2	2

COMPLIANCE RESULTS

Building Complies with Computer Performance
This building incorporates features that require field testing and/or verification by a certified ECC rater under the supervision of a CEC-approved ECC provider.
This building incorporates one or more Special Features shown below

REQUIRED SPECIAL FEATURES

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

- Ducts with high level of insulation
- Non-standard duct location (any location other than attic)
- Point of use

ECC FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified ECC Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the ECC Registry

- Kitchen range hood
- Minimum Airflow
- Verified EER/EER2
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Fan Efficacy Watts/CFM
- Verified HSPF2
- Verified heat pump rated heating capacity
- Duct leakage testing
- Ducts located entirely in conditioned space confirmed by duct leakage testing

Compliance Summary

	Long Term System Cost (LSC)[1]		Source Energy Use	Peak Cooling**
	Efficiency[2] ($\$/ft^2$-yr)	Total[3] ($\$/ft^2$-yr)	Total[3] ($kBtu/ft^2$-yr)	Electricity (kWh)
Standard Design	18.06			
Proposed Design	16.88			
Compliance Margins	1.18			
	Pass			

RESULT*: Complies

[1]Long-term System Cost (LSC) is a 30-year present value cost to California's energy system. LSC is not a predicted utility bill.
[2]Efficiency measures include energy efficient improvements such as better building envelope and more efficient mechanical equipment
[3]Total includes the sum of efficiency measures, solar photovoltaic (PV) measures and battery storage measures
* Building complies when Proposed Design is equal to or less than Standard Design in all applicable compliance categories
** Peak cooling target represents 110% of the standard design building peak cooling energy use.

Standard Design PV Capacity: 0.00 kWdc

LSC AND SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS

Energy Use	Standard Design Source Energy ($kBtu/ft^2$-yr)	Standard Design LSC[1] ($\$/ft^2$-yr)	Proposed Design Source Energy ($kBtu/ft^2$-yr)	Proposed Design LSC[1] ($\$/ft^2$-yr)	Compliance Margin Source ($kBtu/ft^2$-yr)	Compliance Margin LSC[1] ($\$/ft^2$-yr)
Space Heating	0	0.33	0	0.28	0	0.05
Space Cooling	0	1.05	0	0.69	0	0.36
IAQ Ventilation	0	0	0	0	0	0
Water Heating	0	16.68	0	15.91	0	0.77
Self Utilization/Flexibility Credit	n/a	n/a	n/a	0	n/a	0
Efficiency Compliance Total	0	18.06	0	16.88	0	1.18
Photovoltaics And Battery	n/a	n/a	n/a	0	n/a	0
Flexibility	n/a	n/a	n/a	n/a	n/a	n/a
Indoor Lighting	0	1.92	0	1.92	n/a	0
Appl. & Cooking	0	17.76	0	17.77	n/a	-0.01
Plug Loads	0	17.68	0	17.68	n/a	0
Outdoor Lighting	0	0.83	0	0.83	n/a	0
TOTAL COMPLIANCE	0	56.25	0	55.08	1.17	

ENERGY USE INTENSITY

	Standard Design ($kBtu/ft^2$ - yr)	Proposed Design ($kBtu/ft^2$ - yr)	Margin ($kBtu/ft^2$ - yr)	Margin Percentage
Gross EUI[1]	32.94	32.19	0.76	2.31
Net EUI[2]	32.94	32.18	0.76	2.31

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

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft^2)	Avg. Ceiling Height	Water Heating System 1	Status
ADU 1	Conditioned	Mini Split 11	662	9	DHW Sys 1	New

OPAQUE SURFACES SUMMARY

01	02	03	04	05	06	07	08	09	10
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status
Front Wall (W)	ADU 1	R-21 Wall	270	Right	113.25	20	90	none	New
Rear Wall (E)	ADU 1	R-21 Wall	90	Left	155.25	13	90	none	New
Side Wall (S)	ADU 1	R-21 Wall	180	Back	225	20	90	none	New
Front Wall (E)	ADU 1	R-21 Wall	90	Left	174.75	20	90	none	New
Rear Wall (W)	ADU 1	R-21 Wall	270	Right	156.75	20	90	none	New
Side Wall (N)	ADU 1	R-21 Wall	0	Front	108.75	0	90	none	New
Rear Wall (W) 2	ADU 1	R-21 Wall	270	Right	18	4	90	none	New
Rear Wall (N)	ADU 1	R-21 Wall	0	Front	116.25	0	90	none	New
Side Wall (E)	ADU 1	R-21 Wall	90	Left	114.75	20	90	none	New
Side Wall (W)	ADU 1	R-21 Wall	270	Right	114.75	0	90	none	New
Side Wall (S) 2	ADU 1>>ADU 1	R-21 Wall1	n/a	n/a	108.75	0	n/a		New

OPAQUE SURFACES SUMMARY

01	02	03	04	05	06	07	08	09	10
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window and Door Area (ft2)	Tilt (deg)	Wall Exceptions	Status
Front Wall (S)	ADU 1>>ADU 1	R-21 Wall1	n/a	n/a	116.25	16.66	n/a		New
Ceiling	ADU 1	R-30 Ceiling	n/a	n/a	332	n/a	n/a		New
Ceiling 2	ADU 1	R-30 Ceiling	n/a	n/a	190	n/a	n/a		New
Ceiling 3	ADU 1	R-30 Ceiling	n/a	n/a	190	n/a	n/a		New

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface	Orientation	Azimuth	Mult.	Area (ft^2)	U-factor	SHGC	Rating Source
Window	Window	Rear Wall (E)	Left	90	1	9	0.3	0.23	NFRC
Window 2	Window	Rear Wall (E)	Left	90	1	4	0.3	0.23	NFRC
Window 3	Window	Side Wall (S)	Back	180	1	20	0.3	0.23	NFRC
Window 4	Window	Rear Wall (W)	Right	270	1	20	0.3	0.23	NFRC
Window 5	Window	Rear Wall (W) 2	Right	270	1	4	0.3	0.23	NFRC
Window 6	Window	Side Wall (E)	Left	90	1	20	0.3	0.23	NFRC
Total North Facing Fenestration						0			
Total East Facing Fenestration						33			
Total South Facing Fenestration						20			
Total West Facing Fenestration						24			

OPAQUE DOORS

01	02	03	04	05
Name	Side of Building	Area (ft^2)	U-factor	NFRC Rating Req.
Door	Front Wall (W)	20	0.2	Yes
Door 2	Front Wall (E)	20	0.2	Yes
Door 3	Front Wall (S)	16.66	0.2	Yes

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value	Edge Insul. Depth	Heated
Slab-on-Grade	ADU 1	332	88	none	0	No
Slab-on-Grade 2	ADU 1	190	63.1	none	0	No
Slab-on-Grade 3	ADU 1	140	88.1	none	0	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08	09
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers	Non-Std Spray Foam
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 1 Coat Stucco	☐
R-21 Wall1	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.064	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Other Side Finish: Gypsum Board	☐

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08	09
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Interior / Exterior Continuous R-value	U-factor	Assembly Layers	Non-Std Spray Foam
R-30 Ceiling	Interior Ceiling	Wood Framed Ceiling	2x10 @ 16 in. O. C.	R-30	None / None	0.033	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 Ceiling Below Finish: Gypsum Board	☐

WATER HEATING SYSTEMS

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

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Heating Efficiency Type	Efficiency	Rated Input Type	Input Rating or Pilot	Tank Insulation R-value (mr/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	Tank Location
DHW Heater 1	Gas	Consumer Instantaneous	1	0	UEF	0.81	Btu/Hr	200000	0	n/a	n/a	

WATER HEATERS - HEAT PUMP

01	02	03	04	05	06	07	08	09	10
Name	# of Units	Tank Vol. (gal)	NEEA Heat Pump Brand	NEEA Heat Pump Model	Tank Location	Duct Inlet Air Source	Duct Outlet Air Source	UEF	JA13 Compliant
DHW Heater 1	1		Generic					0.81	☐

HVAC - HEAT PUMPS

01	02	03	04	05	06	06b	07	08	09	10	11	12	13
					Heating			Cooling					
Name	System Type	Number of Units	Heating Efficiency Type	HSPF/HSPF2 /COP	Cap 47	Cap 17	Backup	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER	Airflow Target	Fan Power (Watts/CFM)	Variable Speed
Heat Pump System 1	Central split HP	1	HSPF2	10.4	24000	22000	Electric	EER2/SEER2	25.2	13	0	0.58	☐

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
				Duct Ins. R-value	Duct Location	
Name	Type	Design Type	Supply/Return		Supply	Return
Air Distribution System 1	Conditioned space-entirely	Non-Verified	R 8		Conditioned Zone	Conditioned Zone

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Sanjeem Aziz	Documentation Author Signature: Signature Date: 04/22/2026
Company: KSU Engineering	CEA/HERS/ECC Certification Identification (if applicable):
Address: 3603 Baker St	Phone: 8087657215
City/State/Zip: San Diego, CA 92117	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. 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.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.

Responsible Designer Name: Sanjeem Aziz	Responsible Designer Signature: Date Signed: 04/22/2026
Company: KSU Engineering	License: C91279
Address: 3603 Baker St	Phone: 8087657215
City/State/Zip: San Diego, CA 92117	

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

KSU ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by

Checked by

Project Eng.

Scale

Sheet Name
TITLE 24

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
T24.1

Date	Job No	Rev.
11-21-25		#

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

2025 Single-Family Residential Mandatory Requirements Summary

NOTE: Single-family residential buildings subject to the Energy Code must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective sections for more information.

Space Conditioning, Water Heating, and Plumbing System:

§ 110.0-110.3:	**Certification.** Heating, ventilation, and air conditioning (HVAC) equipment, water heaters, 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 Tables 110.2-A through -L. *
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Heaters.** Heat pumps with supplementary heaters must have control requirements as specified in § 150.0(h)7 and § 150.0(i)2. *
§ 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.
§110.3(c)7:	**Backup Heat and Ventilation.** Air-source heat pump water heaters must have backup heat (internal or external) if inlet air is unconditioned, unless compressor cut-off temperature is below Heating Winter Median of Extremes from Reference Appendix JA2. Heat pump water heater installation space and/or communicating space(s) must meet minimum volume, ducting, and/or grille net free area by kBtu/h of compressor capacity.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without electrical supply voltage connection with pilot lights that consume less than 150 Btu/h); pool and spa heaters. *
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2. *
§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from any dryer outlet or vent.
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(h)5:	**System Selection.** Equipment sizing and selection must meet the cooling and heating loads of § 150.0(h)1 & 2, and systems must be sized per ACCA Manual S-2023 with no minimum cooling capacity. Furnace heating capacity must meet ACCA Manual S. Heat pump heating capacity must meet minimum CBC requirements without including supplementary heat with no limit on maximum heating capacity.
§ 150.0(h)6:	**Defrost.** Installer-adjustable defrost delay timers must be set to greater than or equal to 90 minutes. CF2R certification required. *
§ 150.0(h)7:	**Supplementary Heating Control Configuration:** Heat pumps with supplementary heating must have controls to lock supplementary heating above outside air temperature no greater than 35°F, allowed during defrost or emergency operation. CF2R certification required. *
§ 150.0(h)8:	**Sizing of Electric Resistance Supplementary Heat:** When heat pumps have electric resistance heat, the capacity of electric resistance heat must not exceed the heat pump nominal cooling capacity (at 95°F ambient conditions) multiplied by 2.7 kW per ton, rounded up to the closest kW.
§ 150.0(h)9:	**Capacity Variation with Third-party Thermostats:** For variable or multi-speed systems, the space conditioning system and thermostat must be capable of responding to heating and cooling loads by modulating system compressor speed and must meet thermostat requirements of § 150.0(i)2. CF2R certification required.
§ 150.0(i):	**Thermostat.** All heating or cooling systems including heat pumps which are not controlled by energy management control system (EMCS) must have setback thermostat. Additional requirements for thermostats that control heat pumps with supplemental heating include thermostat must display outdoor air temperature, must lock out supplementary heat when outdoor air temperature is above 35°F, and must notify when supplemental heat is in use.*
§ 150.0(j)1:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in § 609.12 of the California Plumbing Code. *
§ 150.0(j)2:	**Insulation Protection.** Piping insulation must be protected from damage, including from sunlight, moisture, equipment maintenance, and wind, as required by §120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must designate a space at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location; and a condensate drain no more than 2" higher than the base of the water heater
§ 150.0(n)2:	**Solar Water Heating Systems.** Solar water heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.

Ducts and Fans

§110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet CMC §§ 601.0-605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply- and return-air ducts and plenums must be insulated to R-6.0 or higher. Ducts located entirely in conditioned space as confirmed via field verification and diagnostic testing (RA3.1.4.3.8) do not require insulation; in dwelling units with attics, the ducts must be below the ceiling separating occupiable space from the attic. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets applicable UL requirements; or aerosol sealant that meets UL 723. The combination of mastic and either mesh or tape must be used to seal openings greater than ¼", if mastic or tape is used. Building cavities, air handler support

2025 Single-Family Residential Mandatory Requirements Summary

	platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Building cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(m)2:	**Factory-Fabricated Duct Systems** must comply with applicable requirements of UL 181 for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems** must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water retardant and solar radiation-resistant coating.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Flex ducts with porous inner cores must have a non-porous layer or air barrier between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth, or can be one inch if sized per Equation 150.0-A. Clean-filter pressure drop and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters and prevents air from bypassing the filter. *
§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3. *

Ventilation and Indoor Air Quality:

§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality.** All dwelling units shall meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in §150.0(o)1. *
§ 150.0(o)1B:	**Central Fan Integrated (CFI) Ventilation Systems.** Continuous operation of CFI air handlers used in CFI systems is not a permissible method to provide whole-dwelling unit ventilation airflow required per §150.0(o)1C. A motorized damper(s) shall 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&iv. CFI ventilation systems must have controls that track outdoor air ventilation run time, and either open or close the motorized damper(s) for compliance with §150.0(o)1C.
§ 150.0(o)1C:	**Whole-Dwelling Unit Mechanical Ventilation for Single-Family dwellings.** Single-family dwellings shall have mechanical ventilation specified in §150.0(o)1Ci and 150.0(o)1Civ.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 may reduce their required mechanical ventilation rates in accordance with §150.0(o)1Cii-iii.* Vertically attached dwelling units shall not reduce their minimum ventilation rates in accordance with §150.0(o)1Cii-iii.
§ 150.0(o)1G:	**Local Mechanical Exhaust.** Kitchens and bathrooms shall have local mechanical exhaust; nonenclosed kitchens shall have demand-controlled exhaust system meeting requirements of §150.0(o)1Giii, enclosed kitchens and bathrooms shall either use demand-controlled as specified in §150.0(o)1Giii or continuous exhaust as specified in §150.0(o)1Giv. Airflow shall be measured by the installer per §150.0(o)1Gv, and rated for sound per §150.0(o)1Gvi. *
§ 150.0(o)1H-J:	**Airflow Measurement, Sound Ratings, Label of Whole-Dwelling Unit Ventilation Systems.** The airflow required per §150.0(o)1C shall 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 shall be rated for sound per ASHRAE 62.2 §7.3 at no less than the minimum airflow rate required by §150.0(o)1C. Manual on-off switches must be labeled per §150.0(o)1J.
§ 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 shall be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods shall 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

Electric and Battery Energy Storage Ready:

§ 150.0(s):	**Battery Energy Storage System (BESS) Ready.** All single-family residences that include one or two dwelling units, which a load serving entity provides with electrical service for the dwelling unit that is greater than 125 amps, shall meet at least one of the following: Either BESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more BESS supplied branch circuits in §150.0(s)2, *or* a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(s)2; at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the BESS,

2025 Single-Family Residential Mandatory Requirements Summary

	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 feet of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source. *
§ 150.0(t):	**Heat Pump Space Heater Ready.** Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(u):	**Electric Cooktop Ready.** Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."
§ 150.0(v):	**Electric Clothes Dryer Ready.** Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready;" and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use."

Lighting:

§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, light sources, and luminaires must meet the applicable requirements of §110.9. *
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires and light sources must meet the requirements of Reference Joint Appendix JA8, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt; and ceiling fan kits subject to DOE's Appliance and Equipment Standards. *
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must not contain screw-based sockets, be airtight with air leakage rate < 2.0 cfm at 75 Pascals, and leak paths be sealed with a gasket or caulk. California Electrical Code Article 410.116 must also be met. *
§ 150.0(k)1D:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources installed in enclosed or recessed luminaires must meet the JA8 elevated temperature requirements, including marking requirements.
§ 150.0(k)1E:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device shall be no more than the number of bedrooms. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control.
§ 150.0(k)2A:	**Indoor Lighting Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off.
§ 150.0(k)2D:	**Controls Permitted.** An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per §110.9 and the physical controls specified in §150.0(k)2A. Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function installed to comply with §150.0(k)2.
§ 150.0(k)2E:	**Automatic Shutoff Controls.** In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic-off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed.
§ 150.0(k)2F:	**Dimmers.** Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down, except lighting integral to kitchen range hoods and bathroom exhaust fans, navigation lighting less than 5 watts, lighting internal to drawers, cabinetry with opaque fronts or doors and controlled by automatic-off controls, luminaires in a circuit with controlled lighting power less than 20 watts or controlled by an occupancy or vacancy sensor. Forward phase cut dimmers controlling LED light sources in these spaces must comply with NEMA SSL 7A. Lighting integrated with ceiling fan may be controlled via a remote control.
§ 150.0(k)2G:	**Independent Controls.** Lighting integral to exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting.
§ 150.0(k)3:	**Residential Outdoor Lighting.** Outdoor lighting permanently mounted to a single-family residential building or other buildings on the same lot must meet luminaire efficacy requirements of §150.0(k)1A, have a manual on/off switch and either a photocell and motion sensor, a photocell and automatic time switch, or an astronomical time clock. Controls that override to ON are not allowed, unless that override automatically returns the automatic control to its normal operation within 6 hours. An EMCS or other controls that provides the specified control functionality may be used but must meet all applicable requirements.
§ 150.0(k)4:	**Internally Illuminated Address Signs** must either comply with §140.8 or consume no more than 5 watts of power.
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.

2025 Single-Family Residential Mandatory Requirements Summary

Building Envelope:

§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283, or AAMA/WDMA/CSA 101/I.S.2/A440-2011. *
§110.6(a)2-4:	**U-factor, Solar heat gain coefficient, Visible transmittance.** The fenestration product and exterior door's U-factor and solar heat gain coefficient (SHGC) shall be rated in accordance with NFRC 100 and NFRC 200, or use the applicable defaults in Table 110.6-A and TABLE 110.6-B. The visible transmittance (VT) shall be rated in accordance with NFRC 200 or ASTM E972, for tubular daylighting devices VT shall be rated using NFRC 203. *
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of §10-111(a).
§ 110.6(b):	**Field-fabricated Exterior Doors and Fenestration** products must use U-factors from Table 110.6-A and solar heat gain coefficient (SHGC) values from Table 110.6-B. Must be caulked and/or weather-stripped. *
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather-stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of §110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Roof Deck, Ceiling, and Rafter Roof Insulation.** Roof decks in newly constructed attics above conditioned space in climate zones 4 and 8-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling; or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a roof or ceiling that 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-15 insulation in 2x4 inch wood framing wall or have a U-factor of 0.095 or less, or R-21 in 2x6 inch wood framing or have a U-factor of 0.069 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. *
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in wood framed raised-floor or 0.037 maximum U-factor. *
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet the following: water absorption rate no greater than 0.3 percent for insulation material alone without facings; water vapor permeance no greater than 2.0 perm per inch; 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 area-weighted average U-factor of 0.40. *

Solar Readiness:

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

2025 Single-Family Residential Mandatory Requirements Summary

§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from §110.10(b)-(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric."

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. *

Pool and Spa Systems and Equipment:

§ 110.4(a):	**Certification by Manufacturers.** Pool/spa heating equipment must be certified as compliant with Appliance Efficiency Regulations; have an externally mounted, readily accessible on-off switch that allows shutting off the heater without adjusting the thermostat; permanent, easily readable weatherproof plate or card with energy efficiency rating and operating instructions.
§ 110.4(b)1:	**Heating Equipment.** Pool/spa heating equipment must meet applicable standards, by fuel type.
§ 110.4(b)2:	**Piping.** At least 18 inches of horizontal or vertical pipe installed between the filter and the heater; or dedicated suction and return lines; or built-in or built-up connections installed to allow for the future addition of solar heating equipment.
§ 110.4(b)3:	**Covers.** Outdoor pools or spas with electric or gas heater must have a cover.
§ 110.4(b)4:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a permanently installed time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.4(c):	**Heat Source Sizing.** Pool/spa heating systems must be solar heating system with collector area of at least 60% of pool/spa surface area; heat pump sized per JA16.3; combination of solar and heat pump; or use 60% or more on-site renewable/recoverable energy. *
§ 110.4(d):	**Heat Pump Pool Heaters with Supplementary Heating.** Controls for such systems must limit supplementary heating when the heating load can be met by the heat pump alone.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Single-family pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.

*Exceptions may apply.

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name: 216-218 ALVARADO ST — Date: 4/23/2026
System Name: Mini Split 1 — Floor Area: 662

ENGINEERING CHECKS

Number of Systems	1
Heating System	
Output per System	24,000
Total Output (Btuh)	24,000
Output (Btuh/sqft)	36.3
Cooling System	
Output per System	24,000
Total Output (Btuh)	24,000
Total Output (Tons)	2.0
Total Output (Btuh/sqft)	36.3
Total Output (sqft/Ton)	331.0
Air System	
CFM per System	382
Airflow (cfm)	382
Airflow (cfm/sqft)	0.58
Airflow (cfm/Ton)	191.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

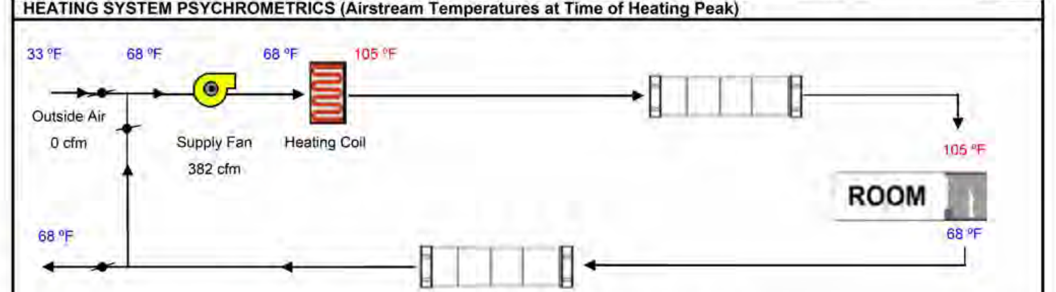
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	Sensible	Latent	CFM	Sensible
Total Room Loads	221	4,739	447	278	11,099
Return Vented Lighting					
Return Air Ducts		47			0
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		0			0
Supply Air Ducts		47			0
TOTAL SYSTEM LOAD		4,833	447		11,099

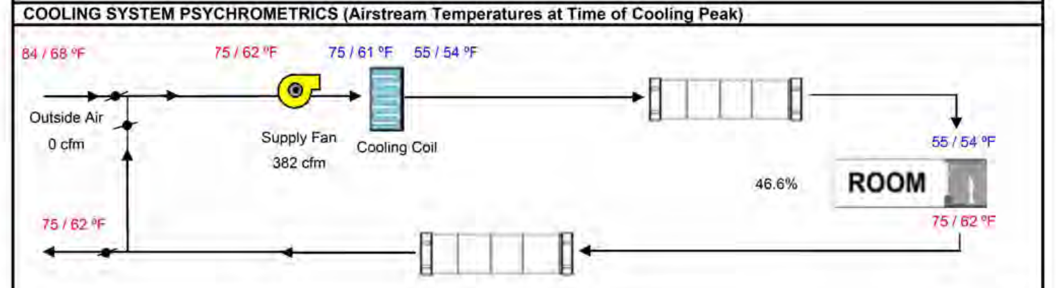
HVAC EQUIPMENT SELECTION

	Sensible	Latent	Sensible
Carrie 37MGRAQ24DA3	23,223	0	17,930
Total Adjusted System Output (Adjusted for Peak Design conditions)	23,223	0	17,930
TIME OF SYSTEM PEAK	Aug 3 PM		Jan 1 AM

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



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



ZONE LOAD SUMMARY

Project Name: 216-218 ALVARADO ST — Date: 4/23/2026
System Name: Mini Split 1 — Floor Area: 662

ZONE LOAD SUMMARY

		ZONAL SYSTEM						COOLING PEAK				HEATING PEAK	
ZONE NAME	SYSTEM NAME	Mult.	CFM	Sensible	Latent	Heating	OA CFM	Peak Hr	CFM	Sensible	Latent	CFM	Sensible
ADU 1		1.0					0	Aug 3 PM	221	4,739	447	278	11,099
			TOTALS	0	0	0	0	Aug 3 PM		4,739	447		11,099
										(BLOCK LOAD)			

ROOM LOAD SUMMARY

Project Name: 216-218 ALVARADO ST — Date: 4/23/2026
System Name: Mini Split 1 — Floor Area: 662

ROOM LOAD SUMMARY

			ROOM COOLING PEAK			COIL COOLING PEAK			COIL HTG. PEAK	
Zone Name	Room Name	Mult.	CFM	Sensible	Latent	CFM	Sensible	Latent	CFM	Sensible
ADU 1	Living Room	1	91	1,944	224	91	1,944	224	108	4,306
	Bedroom 1	1	75	1,608	128	75	1,608	128	83	3,315
	Bedroom 2	1	55	1,186	94	55	1,186	94	87	3,479
		PAGE TOTAL				221	4,739	447	278	11,099
		TOTAL *				221	4,739	447	278	11,099

* Total includes ventilation load for zonal systems.

K⚡U ENGINEERING

ALVARADO ST. ADU

216-218 ALVARADO STREET CHULA VISTA, CA

Revisions

	Date	Description
1	04-20-2026	Plan check

Drawn by
Checked by
Project Eng.
Scale

Sheet Name
RESIDENTIAL MEASURES SUMMARY

REGISTERED PROFESSIONAL ENGINEER
SANJEEM B. AZIZ
No. C91279
Exp. 6/30/2026
CIVIL
STATE OF CALIFORNIA

Sheet No
T24.2

Date: 11-21-25 — Job No — Rev. #

NOT FOR CONSTRUCTION - THIS PLAN IS FOR BUILDING DEPARTMENT REVIEW ONLY. SUBJECT TO REVISION

ROOM HEATING PEAK LOADS

Project Name: 216-218 ALVARADO ST | Date: 4/23/2026

ROOM INFORMATION		DESIGN CONDITIONS	
Room Name	Living Room	Time of Peak	Jan 1 AM
Floor Area	332.00 ft²	Outdoor Dry Bulb Temperature	33 °F
Indoor Dry Bulb Temperature	68 °F		

Conduction	Area		U-Value		ΔT °F		Btu/hr
R-21 Wall	440.5	X	0.0725	X	35	=	1,118
Insulated Door	20.0	X	0.2000	X	35	=	140
Single Family Cooling	33.0	X	0.3000	X	35	=	347
Slab-On-Grade	perim = 88.0	X	0.7300	X	35	=	2,248
		X		X		=	
		X		X		=	
		X		X		=