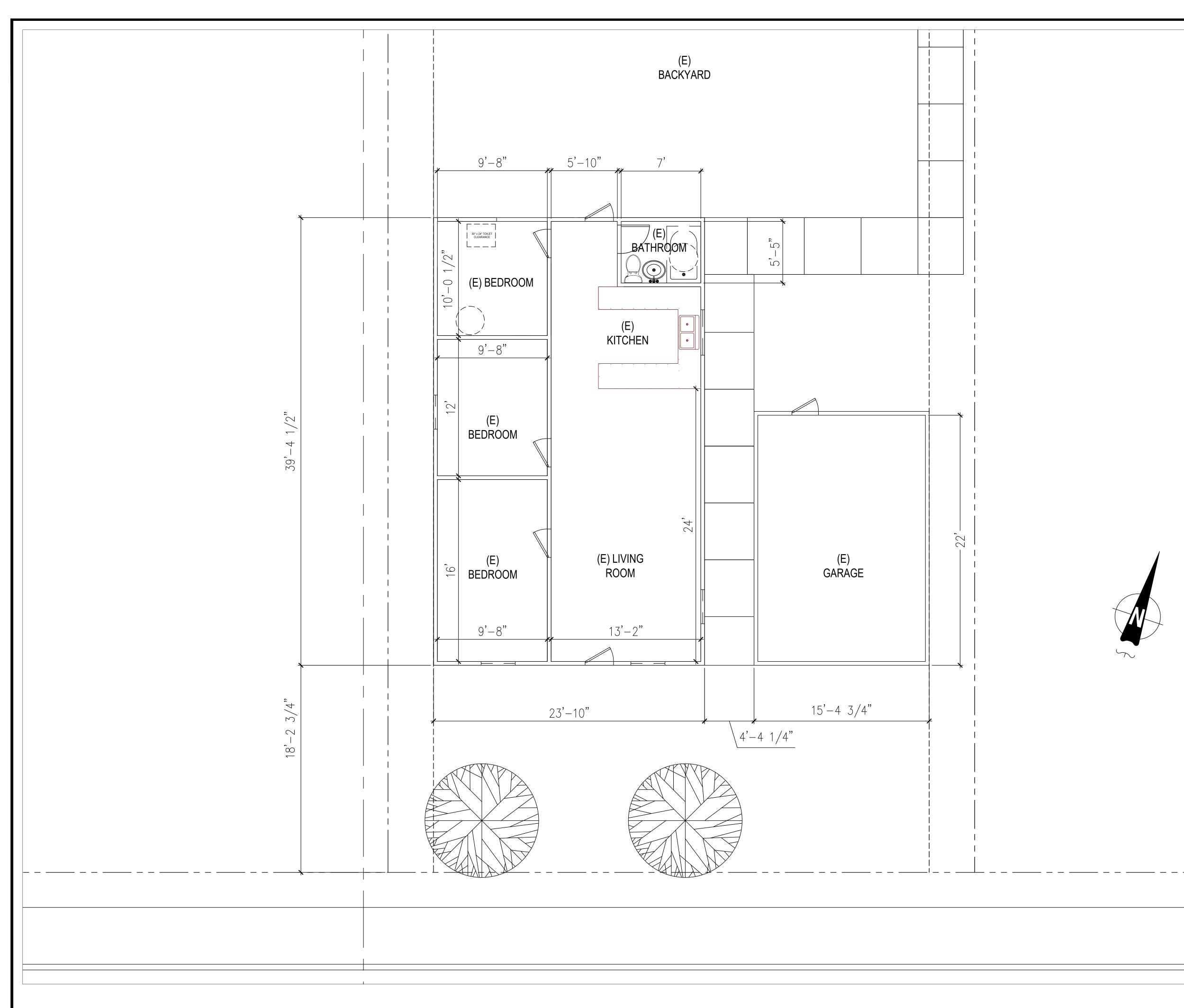
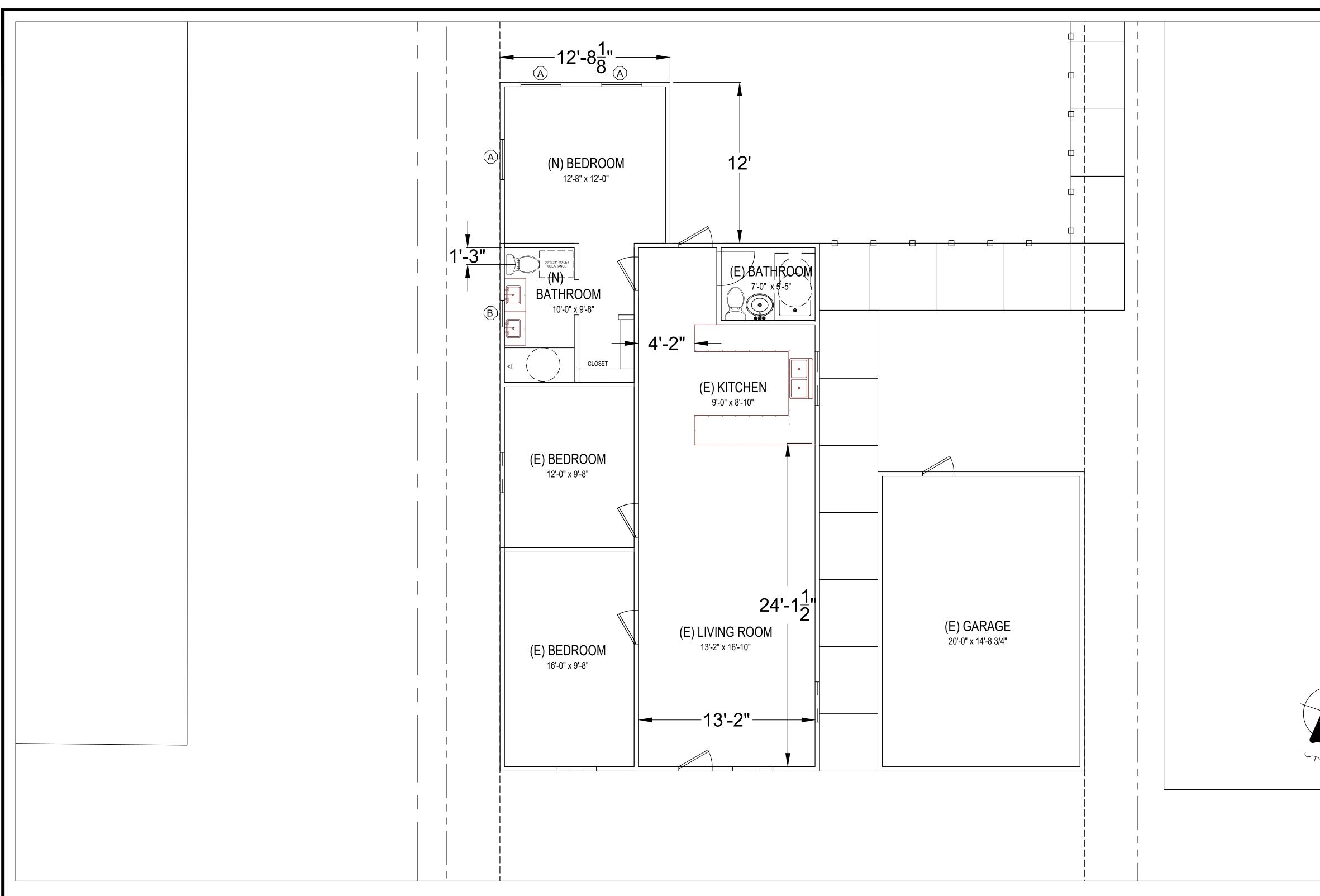


# $\frac{\text{EXISTING FLOOR PLAN}}{1/4" = 1'-0"}$



| FLOOR PLAN NOTES  |  |
|---|--|
| 1. EXTERIOR WALLS WITHIN 3 FEET OF PROPERTY LINE (SPRINKLERS) OR 5<br>FEET OF PROPERTY LINE (WITHOUT SPRINKLERS) REQUIRE 1-HOUR FIRE<br>RATING FOR EXPOSURE TO BOTH SIDES   | AZTEC DRAFTING   |
| <ol> <li>PROJECTIONS:         <ul> <li>PROHIBITED WITHIN 2 FEET OF PROPERTY LINE</li> <li>PROHIBITED WITHIN 2 FEET OF PROPERTY LINE</li> <li>THOUR FIRE RATING ON THE UNDERSIDE WITHIN 3FT OF PROPERTY LINE</li> <li>THOUR FIRE RATING ON THE UNDERSIDE WITHIN 5FT OF PROPERTY LINE</li> <li>WITHOUT SPRINKLERS)</li> </ul> </li> </ol> | & DESIGN<br>9119 JAMACHA RD, SUITE 115<br>SPRING VALLEY, CA 91977<br>CELL: 619-414-8506  |
| <ul> <li>3. OPENINGS:</li> <li>PROHIBITED WITHIN 3FT OF PROPERTY LINE</li> <li>MAXIMUM 25% OF WALL AREA WITHIN 5 FEET OF PROPERTY LINE<br/>(WITHOUT SPRINKLERS)</li> </ul>  | ED BY:<br>FTING<br>IGN<br>EL SOLIS<br>GMATL.COM  |
| <ul> <li>4. PENETRATIONS:</li> <li>- 1-HOUR FIRE-RATED PENETRATIONS OF WALLS WITHIN 3FT OF PROPERTY<br/>LINE (SPRINKLERS)</li> <li>- 1-HOUR FIRE-RATED PENETRATIONS OF WALLS WITHIN 5FT OF PROPERTY<br/>LINE (WITHOUT SPRINKLERS)</li> </ul>  | DRAWINGS PROVIDED<br>TEC DRAF<br>& DESI<br>ALL: LEEONEL28092A  |
| 5. CONCRETE LANDING WITH MIN 36" DEPTH AND A MAXIMUM OF 1-1/2" LOWER<br>THAN TOP OF DOOR THRESHOLD  |  |
|   |  |
|   | RTE<br>UNIT<br>1950  |
|   | JUAN MANUEL DIARTE<br>DETACH ADDITTIONAL DWELLING UNIT<br>1523 E 14th St, NATIONAL CITY CA 91950<br>APN: 557-342-09-00<br>UTILITY: SDG&E<br>AJH: NATIONAL CITY |
|   | MANUEL I<br>DITIONAL DWEL<br>b st, national cit<br>pn: 557-342-09-0<br>utility: sdg&e<br>ajh: national city  |
|   | MAN<br>MDIT10<br>4th St, N<br>APN: 55'<br>UTILF<br>AJH: NA   |
|   | UAN<br>TACH /<br>523 E 14  |
|   |  |
|   |  |
|   |  |
|   | EXISTING FLOOR PLAN  |
|   | <sup>R</sup>   |
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|   |  |
|   |  |
|   | REVISION           0         -         02/14/22  |
|   |  |
|   | PROJECT NO.<br>P013<br>SHEET NO.   |
|   |  |



| WINDOW SCHEDULE |               |         |          |       |  |  |  |
|-----------------|---------------|---------|----------|-------|--|--|--|
| MARK            | DIMENSION     | TYPE    | TEMPERED | NOTES |  |  |  |
| A               | 2'-0" x 3'-0" | SLIDING |          |       |  |  |  |
| B               | 2'-0" x 2'-0" | SLIDING |          |       |  |  |  |
| $\bigcirc$      |               |         |          |       |  |  |  |
| $\bigcirc$      |               |         |          |       |  |  |  |
|                 |               |         |          |       |  |  |  |
|                 |               |         |          |       |  |  |  |

#### EXTERIOR WINDOWS, EXTERIOR GLAZED DOORS, GLAZED OPENINGS WITHIN EXTERIOR DOORS, GLAZED OPENINGS WITHIN EXTERIOR GARAGE DOORS, AND EXTERIOR STRUCTURAL GLASS VENEER SHALL COMPLY WITH ONE OF THE FOLLOWING: (SELECT ONE)

A. MULTI-PANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING, AND WHERE ANY GLAZING FRAMES MADE OF VINYL MATERIALS SHALL HAVE WELDED CORNERS, METAL REINFORCEMENT IN INTERLOCK AREA, AND BE CERTIFIED TO AAMA/WDMA/CSA 101/I.S.2/A40

B. MINIMUM 20-MIN FIRE-RESISTANCE-RATED.C. MEET PERFORMANCE REQUIREMENTS OF SFM STANDARD 12-7A-2

## NEW ADDITION FLOOR PLAN

1/4" = 1'-0"

## EXTERIOR WALLS WITHIN 3 FEET OF PROPERTY LINE (SPRINKLERS) OR 5 FEET OF PROPERTY LINE (WITHOUT SPRINKLERS) REQUIRE 1-HOUR FIRE RATING FOR EXPOSURE TO BOTH SIDES

#### 2. PROJECTIONS:

- PROHIBITED WITHIN 2 FEET OF PROPERTY LINE
   1-HOUR FIRE RATING ON THE UNDERSIDE WITHIN 3FT OF PROPERTY LINE (SPRINKLERS)
- 1-HOUR FIRE RATING ON THE UNDERSIDE WITHIN 5FT OF PROPERTY LINE (WITHOUT SPRINKLERS)

#### 3. OPENINGS:

- PROHIBITED WITHIN 3FT OF PROPERTY LINE
   MAXIMUM 25% OF WALL AREA WITHIN 5 FEET OF PROPERTY LINE (WITHOUT SPRINKLERS)
- 4. PENETRATIONS:
- 1-HOUR FIRE-RATED PENETRATIONS OF WALLS WITHIN 3FT OF PROPERTY LINE (SPRINKLERS)
  - 1-HOUR FIRE-RATED PENETRATIONS OF WALLS WITHIN 5FT OF PROPERTY LINE (WITHOUT SPRINKLERS)
- 5. CONCRETE LANDING WITH MIN 36" DEPTH AND A MAXIMUM OF 1-1/2" LOWER THAN TOP OF DOOR THRESHOLD

## PLUMBING NOTES

- 1. MIN.  $\frac{1}{4}$ " PER FOOT SLOPE FOR WASTE PIPES PER SECTION 708 CPC
- 2. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH SECTIONS 701.0 AND 903.0 OF THE CALIFORNIA PLUMBING CODE.
- 3. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
- 4. EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN SIX(6) INCHES ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SERVED BEFORE OFFSETTING HORIZONTALLY OR BEFORE BEING CONNECTED TO ANY OTHER VENT.
- 5. ALL DRAINAGE WASTE AND VENT PIPE SHALL COMPLY WITH TABLE 703.2 CPC.
- SHOWER AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER SECTION 408.3 CPC.
- 7. TOILETS SHALL BE ULTRA-LOW FLUSH TYPE (1.28 G.P.F. MAX.)
- 8. EACH SHOWERHEAD SHALL NOT EXCEED A WATER FLOW OF 1.8 GPM.
- 9. KITCHEN SINK FAUCET SHALL NOT EXCEED A WATER FLOW 1.8 GPM.
- 10. EACH LAVATORY FAUCET SHALL NOT EXCEED A WATER FLOW OF 1.2 GPM.
- 11. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.



| DRAWINGS PROVIDED BY:<br>DRAWINGS PROVIDED BY:<br>AZTEC DRAFTING<br>& DESIGNER: LEEDONEL SOLIS<br>EMAIL: LEEDONEL SOLIS<br>EMAIL: LEEDONEL SOLIS<br>EMAIL: LEEDONEL SOLIS   |
|---|
| JUAN MANUEL DIARTE<br>DETACH ADDITIONAL DWELLING UNIT<br>1523 E 14th St, NATIONAL CITY CA 91950<br>APN: 557-342-09-00<br>UTILITY: SDG&E<br>AJH: NATIONAL CITY   |
| NEW ADDITION FLOOR PLAN   |
| $\begin{array}{ c c c }\hline \hline REVISION \\ \hline 0 & - & 02/14/22 \\ \hline & & \\ \hline & & \\ \hline \\ \hline \\ PROJECT NO. \\ \hline \\ P013 \\ \hline \\ SHEET NO. \\ \hline \\ $ |

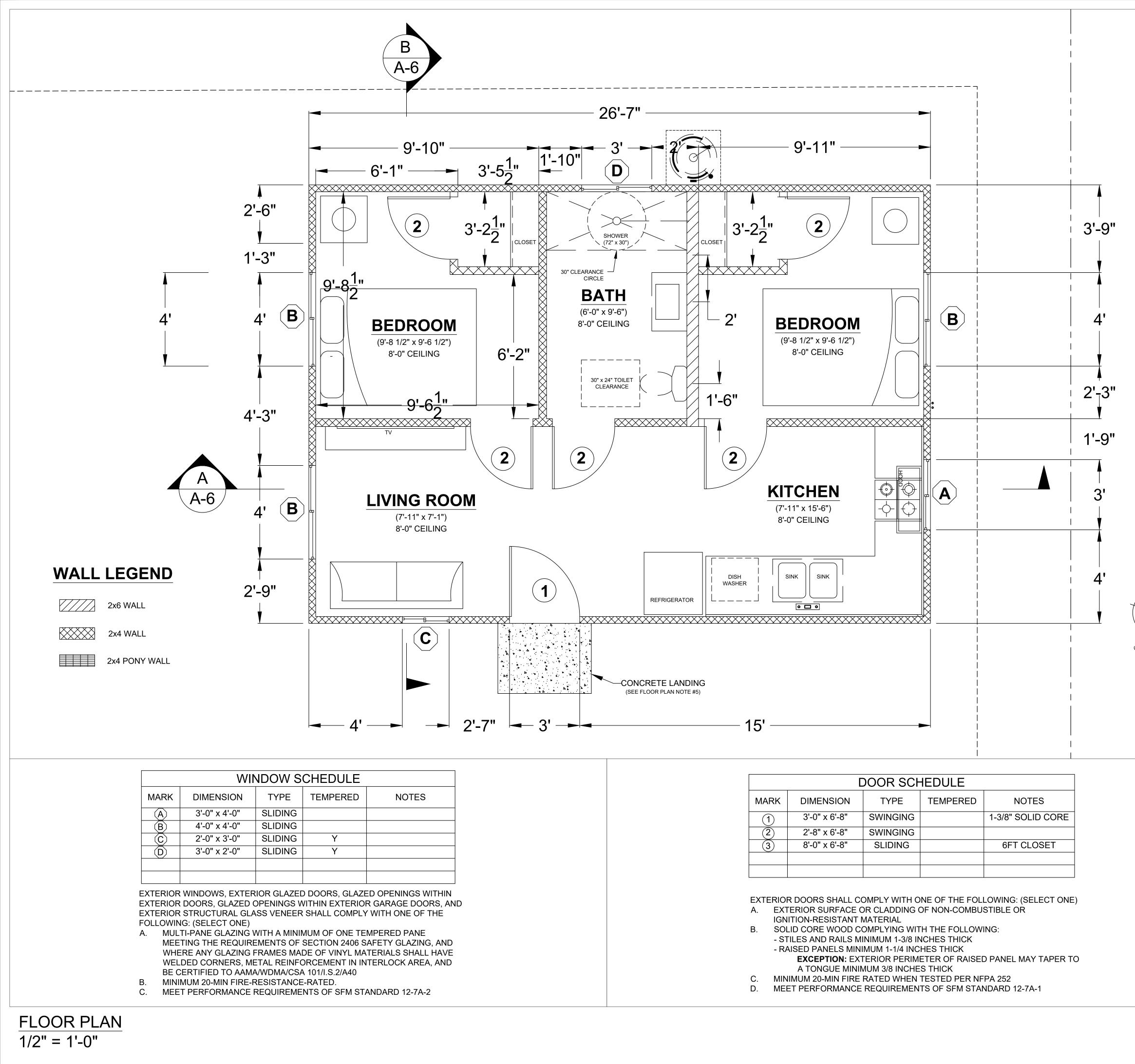
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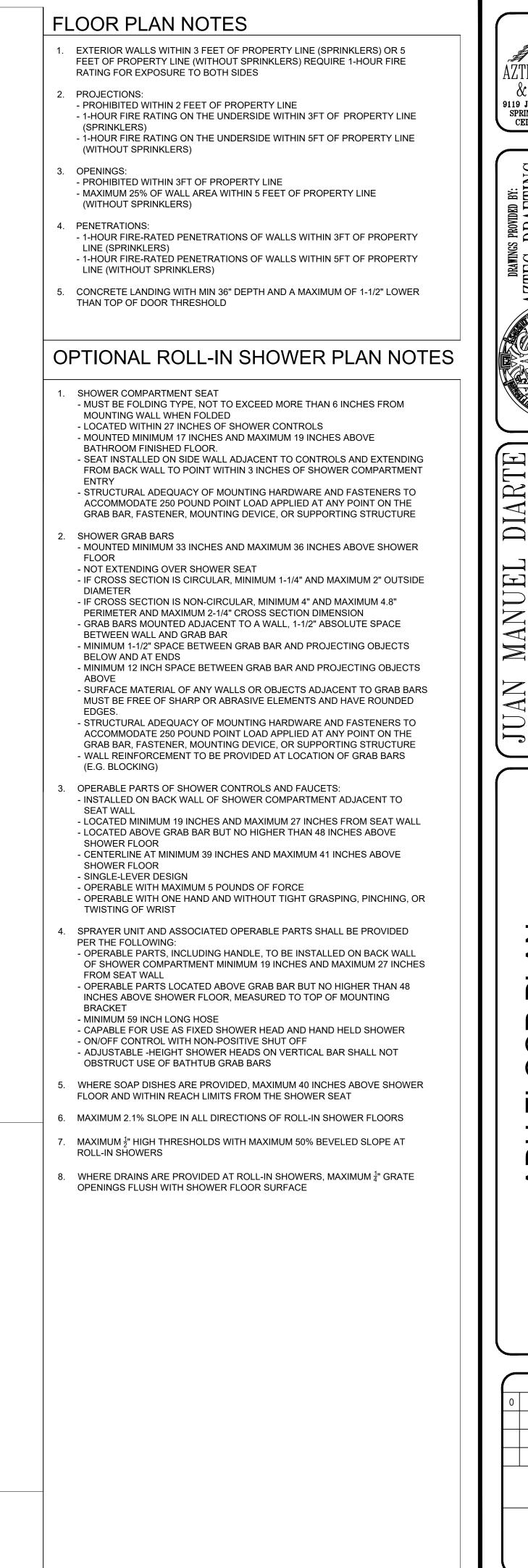
DESIGN

9119 JAMACHA RD, SUITE 115

SPRING VALLEY, CA 91977 CELL: 619-414-8506



| DOOR SCHEDULE |               |          |          |                   |  |
|---------------|---------------|----------|----------|-------------------|--|
| MARK          | DIMENSION     | TYPE     | TEMPERED | NOTES             |  |
| (1)           | 3'-0" x 6'-8" | SWINGING |          | 1-3/8" SOLID CORE |  |
| (2)           | 2'-8" x 6'-8" | SWINGING |          |                   |  |
| 3             | 8'-0" x 6'-8" | SLIDING  |          | 6FT CLOSET        |  |
|               |               |          |          |                   |  |
|               |               |          |          |                   |  |

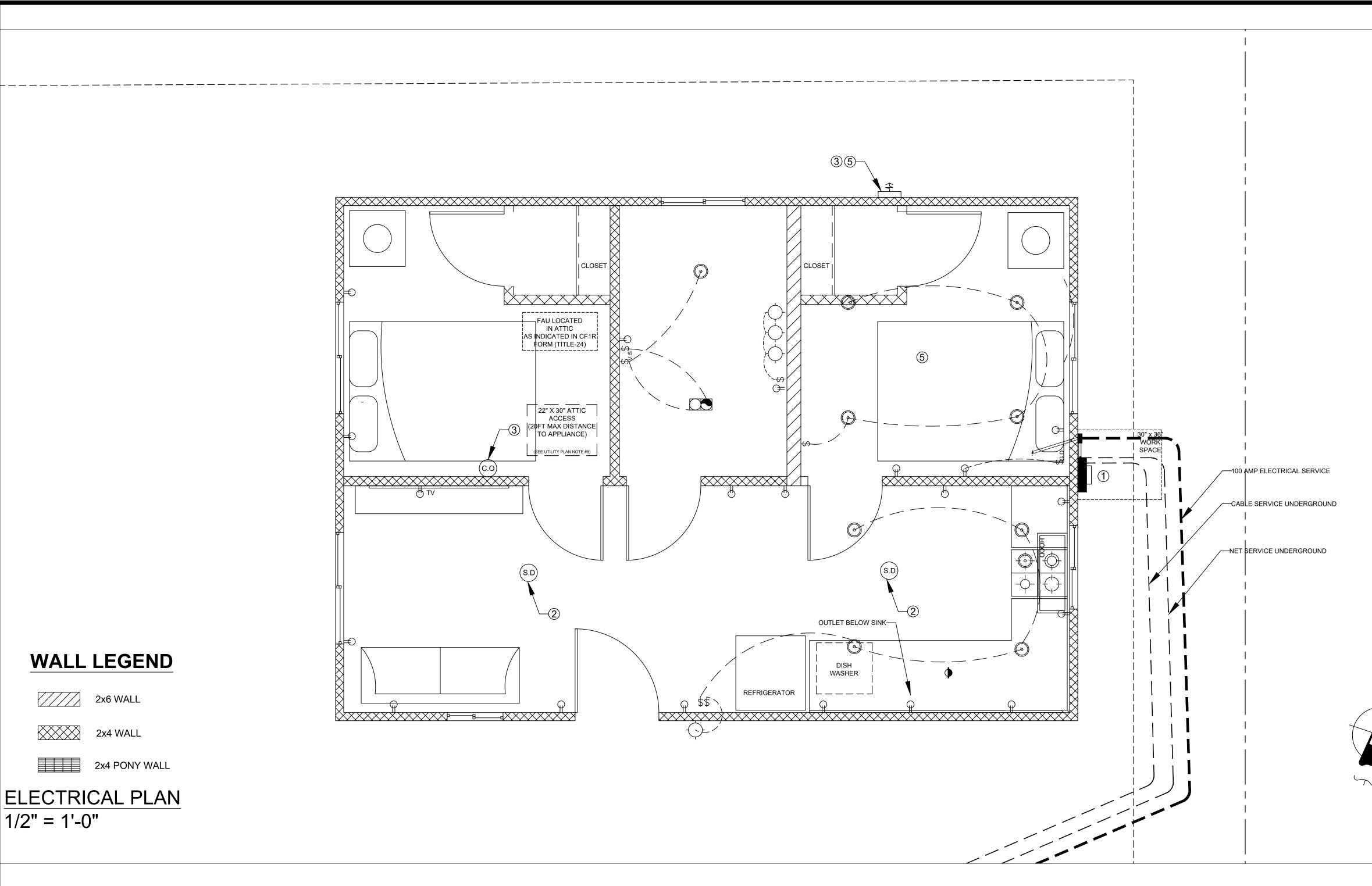


PROJECT NO. P013

SHEET NO.

A-J



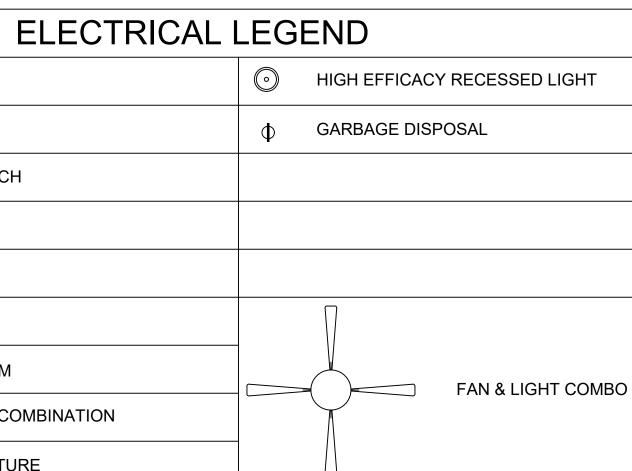


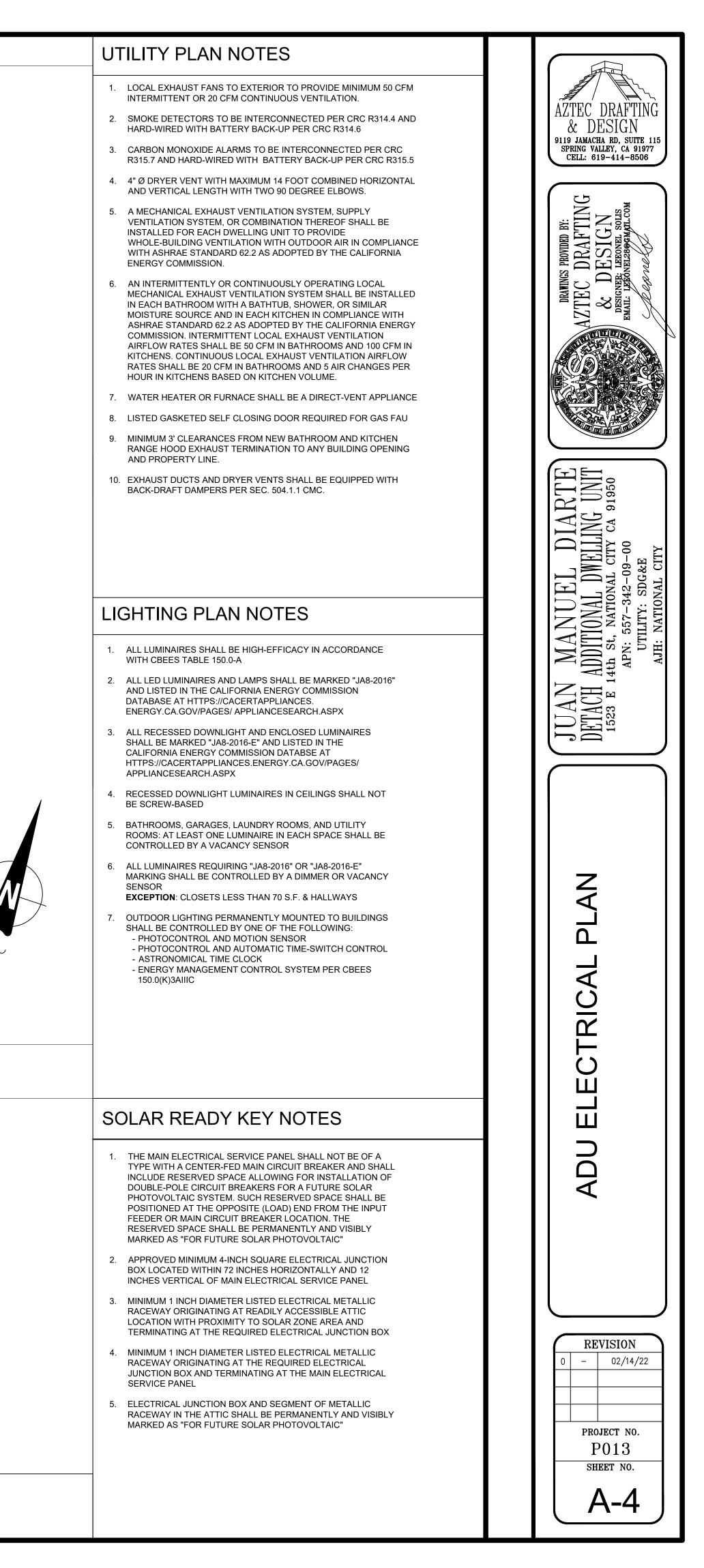
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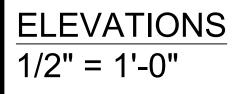
| 2x6 WALL      |
|---------------|
| 2x4 WALL      |
| 2x4 PONY WALL |

## ELECTRICAL PLAN 1/2" = 1'-0"

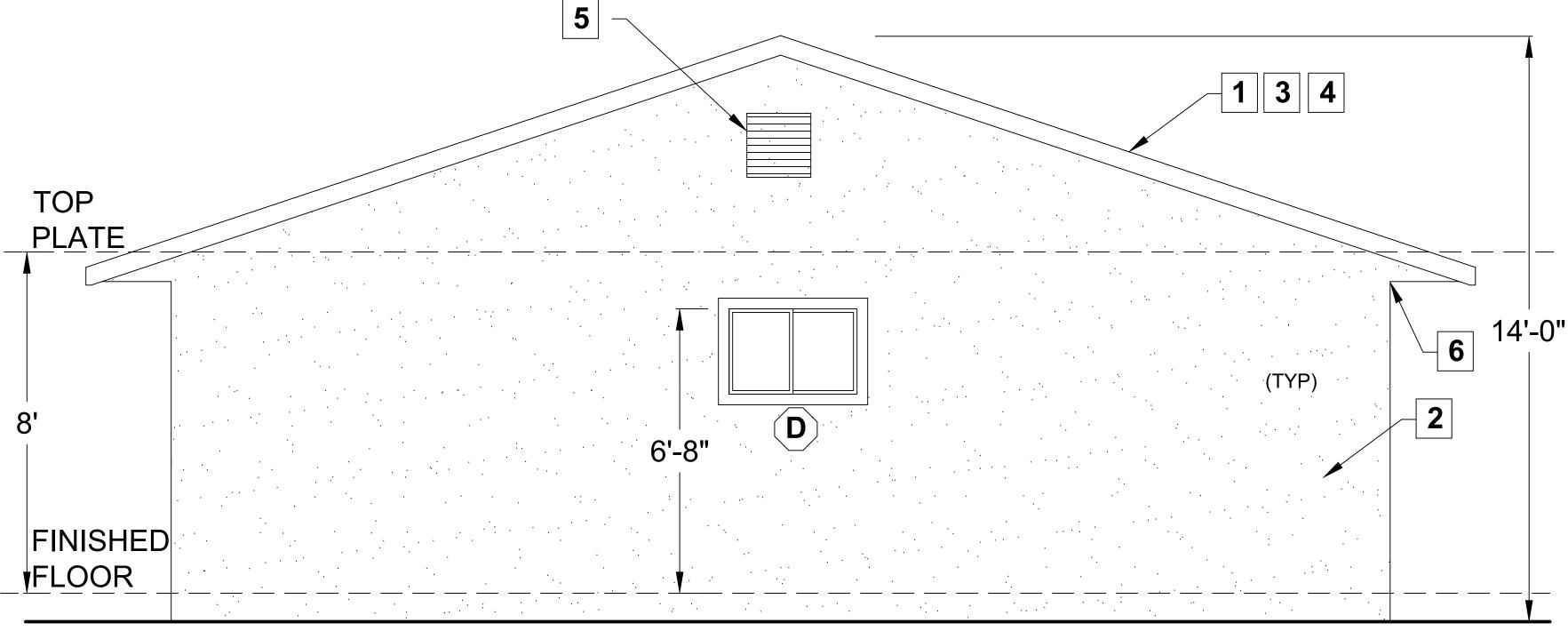
DUPLEX OUTLET WALL SWITCH GARBAGE DISPOSAL SWITCHVACANCY SENSOR S<sub>v.s</sub> 4" DIA DRYER VENT S.D SMOKE DETECTOR CARBON MONOXIDE ALARM (c.o) EXHAUST FAN AND LIGHT COMBINATION HIGH EFFICACY LIGHT FIXTURE

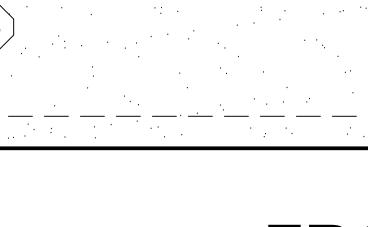




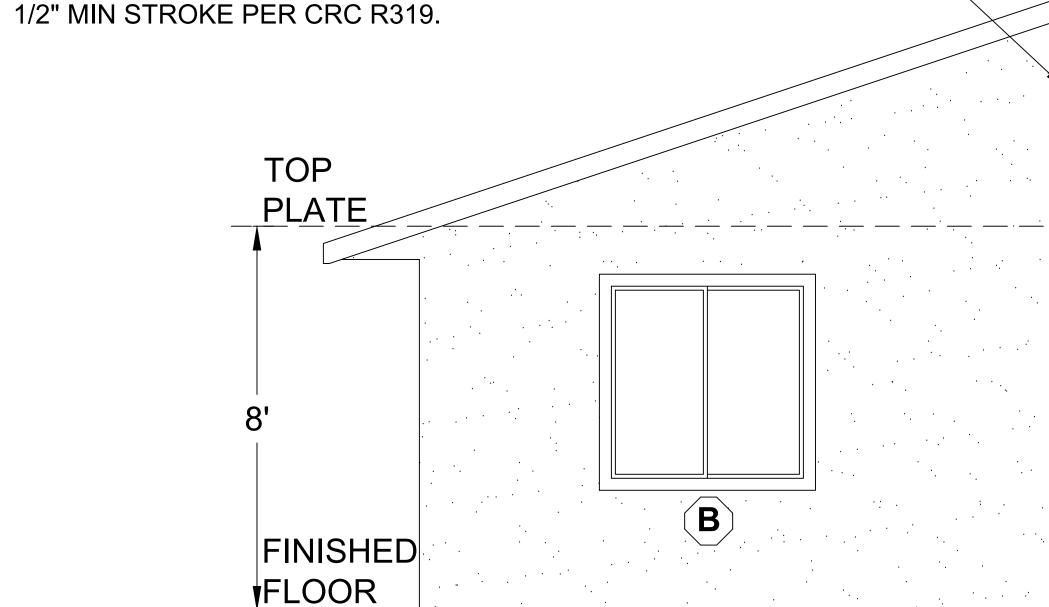








5



NOTE: CLEARLY VISIBLE ADDRESS

NUMBER WITH 4" TALL LETTERS,

WITH 4" TALL LETTERS, WITH A

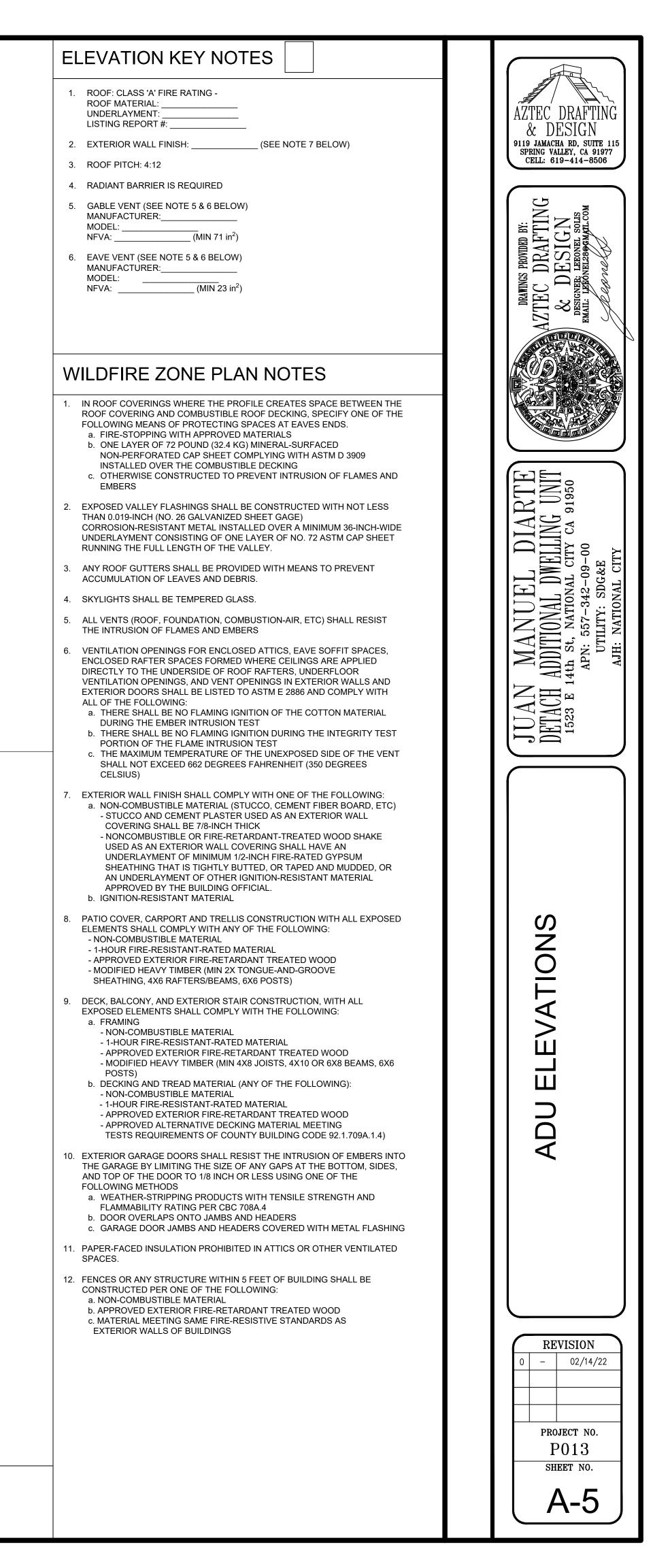
# 3 4 14'-0" 6 (TYP) 2 6'-8" C

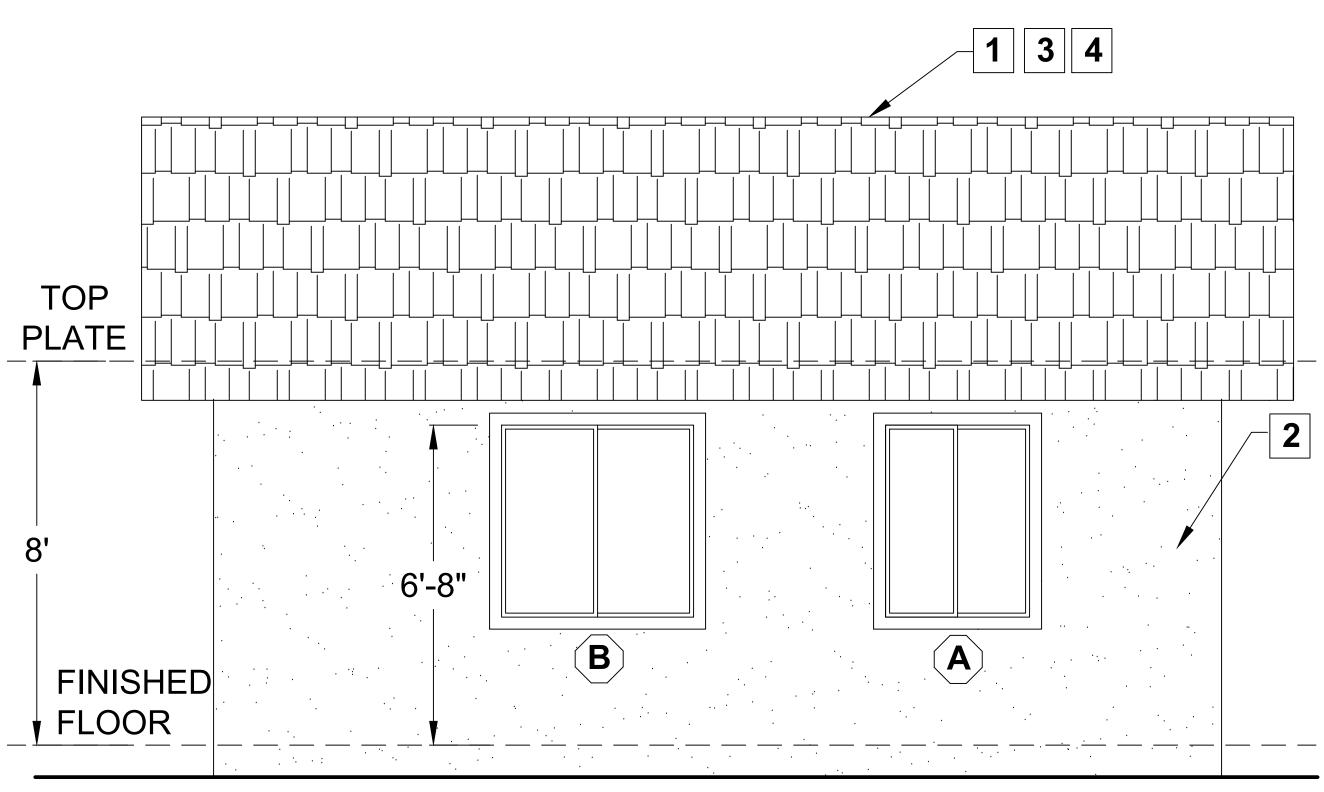
**FINISHED GRADE** 

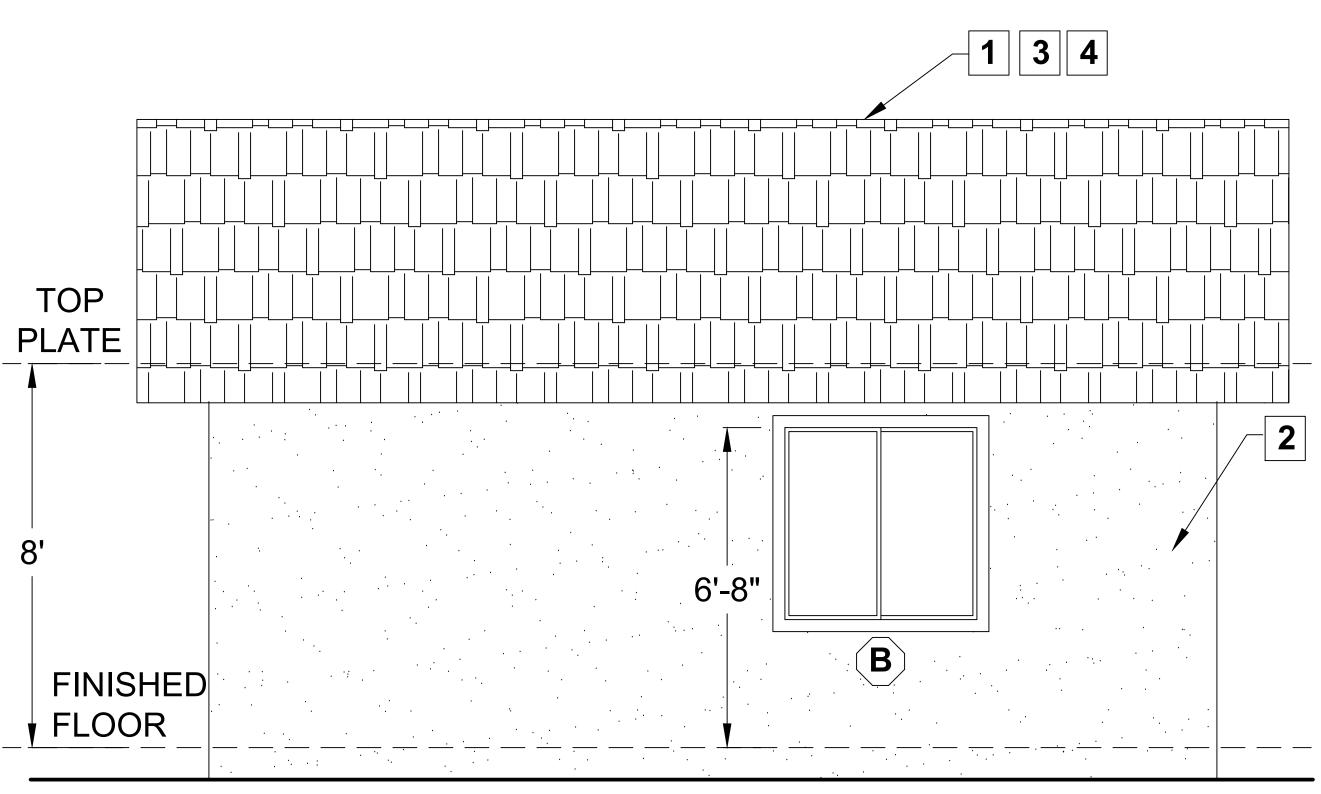
# FRONT

## **FINISHED GRADE**

# BACK







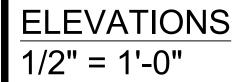
FINISHED GRADE

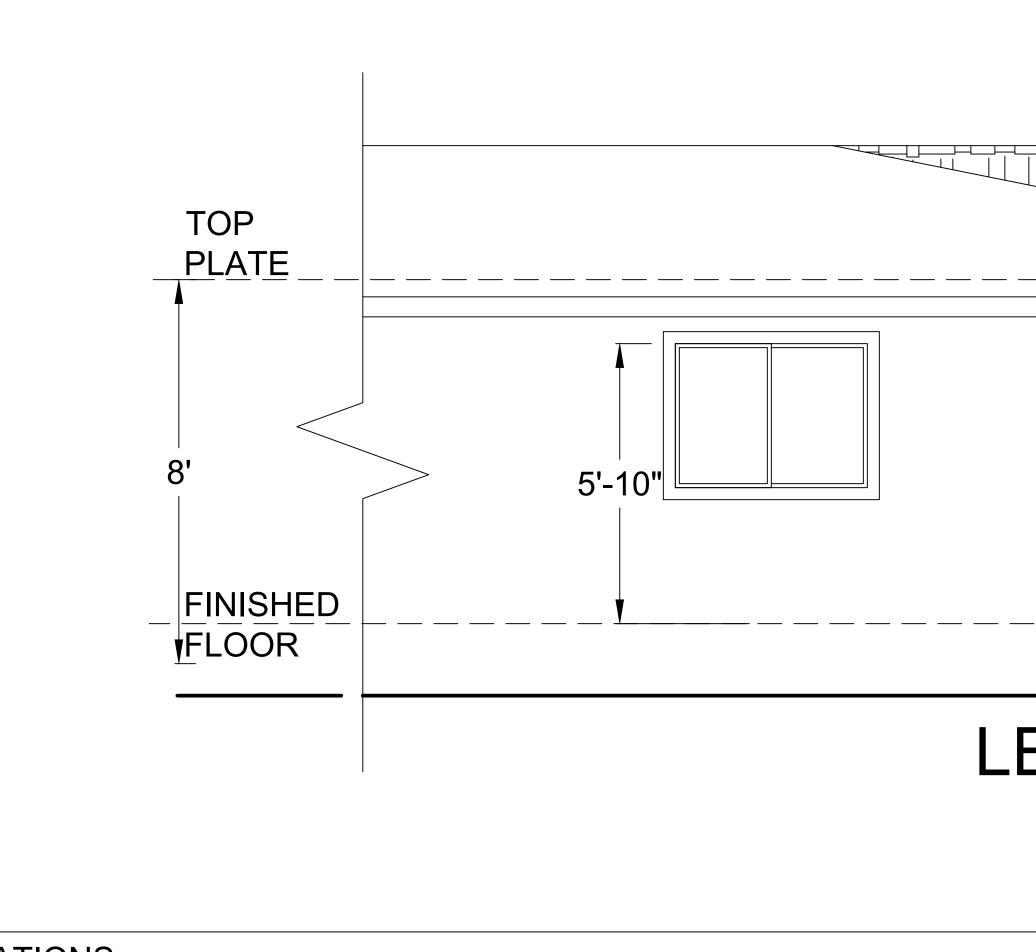
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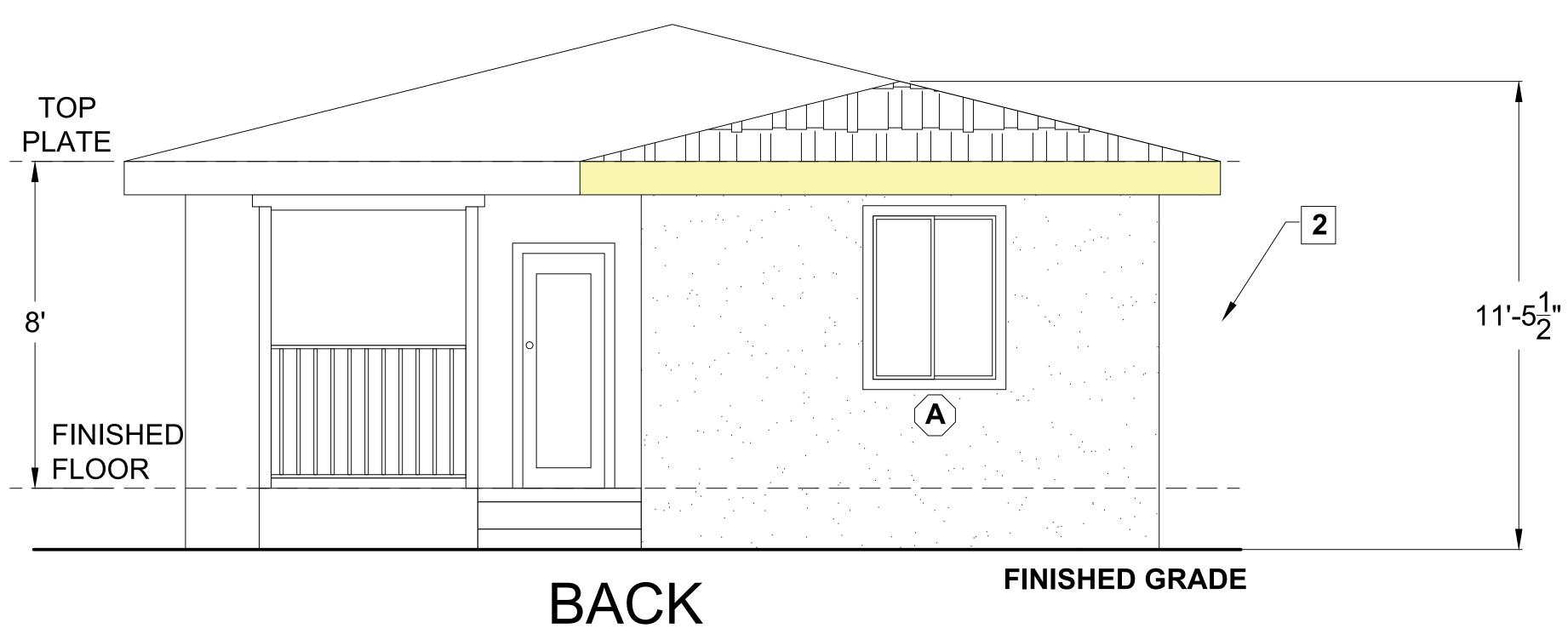
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# FINISHED GRADE

| :           | SEE SHEET A3 FOR KEY NOTES  |   |
|-------------|---|---|
|             |   | AZTEC DRAFTIN<br>& DESIGN<br>9119 JAMACHA RD, SUITE<br>SPRING VALLEY, CA 9197<br>CELL: 619-414-8506   |
| 1. I<br>F   | LDFIRE ZONE PLAN NOTES  | DRAMINGS PROVIDED BY:<br>DRAMINGS PROVIDED BY:<br>A ZTEC DRAFTING<br>& DESIGNER: LEEONEL SOLLS<br>DESIGNER: LEEONEL SOLLS<br>DESIGNER: LEEONEL SOLLS  |
| 2           | <ul> <li>a. FIRE-STOPPING WITH APPROVED MATERIALS</li> <li>b. ONE LAYER OF 72 POUND (32.4 KG) MINERAL-SURFACED<br/>NON-PERFORATED CAP SHEET COMPLYING WITH ASTM D 3909<br/>INSTALLED OVER THE COMBUSTIBLE DECKING</li> <li>c. OTHERWISE CONSTRUCTED TO PREVENT INTRUSION OF FLAMES AND<br/>EMBERS</li> <li>EXPOSED VALLEY FLASHINGS SHALL BE CONSTRUCTED WITH NOT LESS</li> </ul>   | CTE<br>UNIT<br>1950   |
| (<br>(      | EXPOSED VALLEY FLASHINGS SHALL BE CONSTRUCTED WITH NOT LESS<br>THAN 0.019-INCH (NO. 26 GALVANIZED SHEET GAGE)<br>CORROSION-RESISTANT METAL INSTALLED OVER A MINIMUM 36-INCH-WIDE<br>JNDERLAYMENT CONSISTING OF ONE LAYER OF NO. 72 ASTM CAP SHEET<br>RUNNING THE FULL LENGTH OF THE VALLEY.   | DIAF<br>ILING<br>TY CA 9  |
|             | ANY ROOF GUTTERS SHALL BE PROVIDED WITH MEANS TO PREVENT<br>ACCUMULATION OF LEAVES AND DEBRIS.  | EL<br>DWF<br>NAL C<br>SDG&E   |
| 4. 8        | SKYLIGHTS SHALL BE TEMPERED GLASS.  |   |
|             | ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC) SHALL RESIST<br>THE INTRUSION OF FLAMES AND EMBERS  | NNI<br>NON<br>557-  |
| E<br>N<br>E | <ul> <li>VENTILATION OPENINGS FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES,<br/>ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED</li> <li>DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDERFLOOR</li> <li>VENTILATION OPENINGS, AND VENT OPENINGS IN EXTERIOR WALLS AND</li> <li>EXTERIOR DOORS SHALL BE LISTED TO ASTM E 2886 AND COMPLY WITH</li> <li>ALL OF THE FOLLOWING: <ul> <li>a. THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER INTRUSION TEST</li> <li>b. THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME INTRUSION TEST</li> <li>c. THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662 DEGREES FAHRENHEIT (350 DEGREES CELSIUS)</li> </ul> </li> </ul> | JUAN MA<br>DETACH ADDI<br>1523 E 14th St<br>UT  |
| 7. E        | <ul> <li>EXTERIOR WALL FINISH SHALL COMPLY WITH ONE OF THE FOLLOWING:</li> <li>a. NON-COMBUSTIBLE MATERIAL (STUCCO, CEMENT FIBER BOARD, ETC)</li> <li>STUCCO AND CEMENT PLASTER USED AS AN EXTERIOR WALL<br/>COVERING SHALL BE 7/8-INCH THICK</li> <li>NONCOMBUSTIBLE OR FIRE-RETARDANT-TREATED WOOD SHAKE<br/>USED AS AN EXTERIOR WALL COVERING SHALL HAVE AN<br/>UNDERLAYMENT OF MINIMUM 1/2-INCH FIRE-RATED GYPSUM<br/>SHEATHING THAT IS TIGHTLY BUTTED, OR TAPED AND MUDDED, OR<br/>AN UNDERLAYMENT OF OTHER IGNITION-RESISTANT MATERIAL<br/>APPROVED BY THE BUILDING OFFICIAL.</li> <li>IGNITION-RESISTANT MATERIAL</li> </ul>   |   |
|             | PATIO COVER, CARPORT AND TRELLIS CONSTRUCTION WITH ALL EXPOSED<br>ELEMENTS SHALL COMPLY WITH ANY OF THE FOLLOWING:<br>- NON-COMBUSTIBLE MATERIAL<br>- 1-HOUR FIRE-RESISTANT-RATED MATERIAL<br>- APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD<br>- MODIFIED HEAVY TIMBER (MIN 2X TONGUE-AND-GROOVE<br>SHEATHING, 4X6 RAFTERS/BEAMS, 6X6 POSTS)  | IONS  |
|             | <ul> <li>DECK, BALCONY, AND EXTERIOR STAIR CONSTRUCTION, WITH ALL</li> <li>EXPOSED ELEMENTS SHALL COMPLY WITH THE FOLLOWING: <ul> <li>a. FRAMING</li> <li>NON-COMBUSTIBLE MATERIAL</li> <li>1-HOUR FIRE-RESISTANT-RATED MATERIAL</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>MODIFIED HEAVY TIMBER (MIN 4X8 JOISTS, 4X10 OR 6X8 BEAMS, 6X6 POSTS)</li> </ul> </li> <li>b. DECKING AND TREAD MATERIAL (ANY OF THE FOLLOWING):</li> </ul>   | ELEVATION   |
|             | <ul> <li>NON-COMBUSTIBLE MATERIAL</li> <li>1-HOUR FIRE-RESISTANT-RATED MATERIAL</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>APPROVED ALTERNATIVE DECKING MATERIAL MEETING<br/>TESTS REQUIREMENTS OF COUNTY BUILDING CODE 92.1.709A.1.4)</li> </ul>  |   |
| /           | EXTERIOR GARAGE DOORS SHALL RESIST THE INTRUSION OF EMBERS INTO<br>THE GARAGE BY LIMITING THE SIZE OF ANY GAPS AT THE BOTTOM, SIDES,<br>AND TOP OF THE DOOR TO 1/8 INCH OR LESS USING ONE OF THE<br>FOLLOWING METHODS<br>a. WEATHER-STRIPPING PRODUCTS WITH TENSILE STRENGTH AND<br>FLAMMABILITY RATING PER CBC 708A.4<br>b. DOOR OVERLAPS ONTO JAMBS AND HEADERS   |   |
| 11. F       | c. GARAGE DOOR JAMBS AND HEADERS COVERED WITH METAL FLASHING<br>PAPER-FACED INSULATION PROHIBITED IN ATTICS OR OTHER VENTILATED   |   |
| 9<br>12. F  | SPACES.<br>FENCES OR ANY STRUCTURE WITHIN 5 FEET OF BUILDING SHALL BE<br>CONSTRUCTED PER ONE OF THE FOLLOWING:<br>a. NON-COMBUSTIBLE MATERIAL<br>b. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD   |   |
|             | c. MATERIAL MEETING SAME FIRE-RESISTIVE STANDARDS AS<br>EXTERIOR WALLS OF BUILDINGS   | $\begin{array}{c c} \hline REVISION \\ \hline 0 & - & 02/14/22 \\ \hline & & \\ \hline \hline & & \\ \hline \hline & & \\ \hline \hline & & \\ \hline \hline \\ \hline & & \\ \hline \hline \\ \hline & & \\ \hline \hline \hline \\ \hline \hline \hline \hline \\ \hline \hline$ |





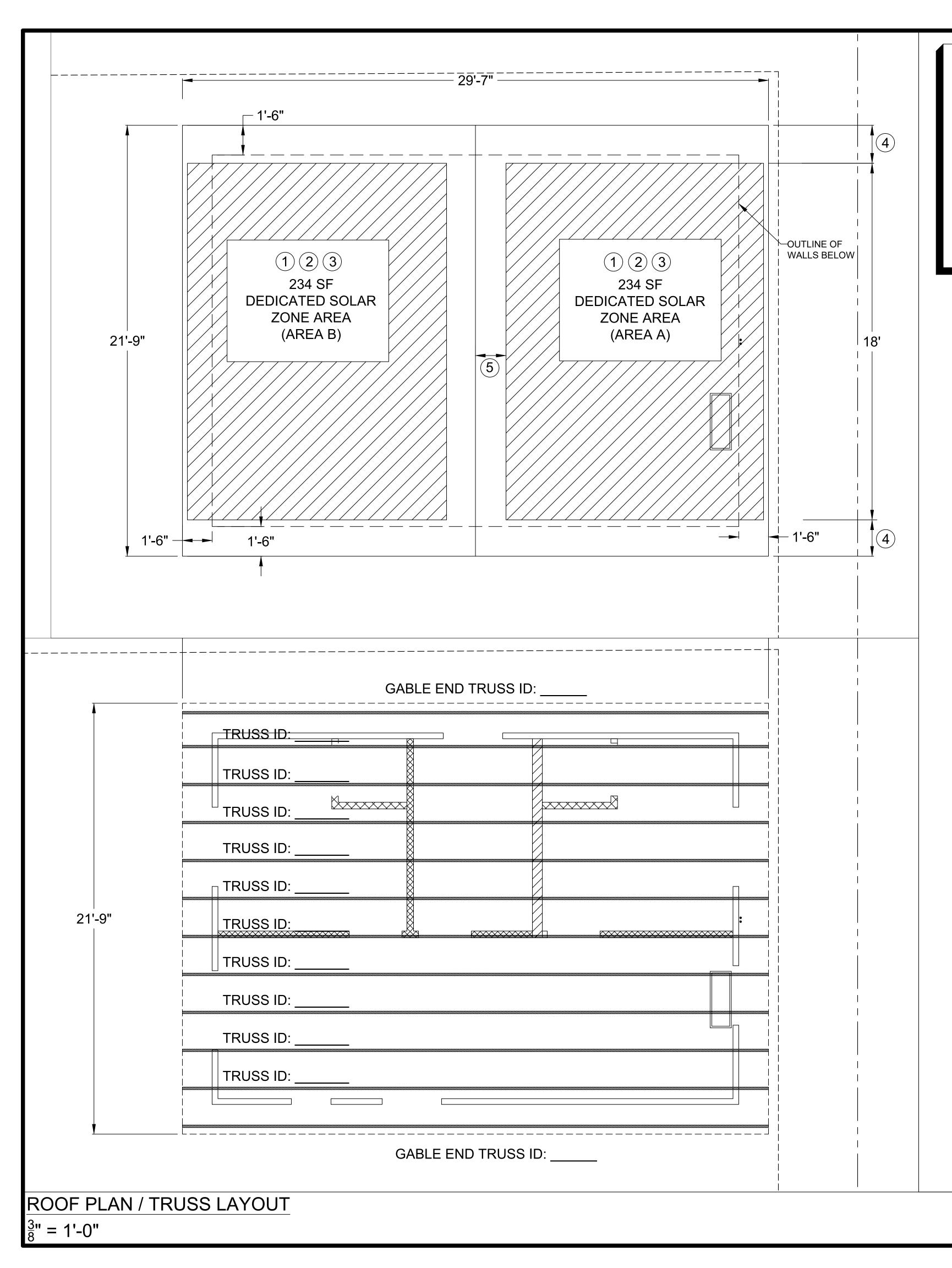


# LEFT

## FINISHED GRADE

1 3 4

| SEE SHEET A3 FOR KEY NOTES   | AZTEC DRAFTING<br>& DESIGN<br>9119 JAMACHA RD, SUITE 11<br>SPRING VALLEY, CA 91977<br>CELL: 619-414-8506   |
|--|--|
|  | CELL: 019-414-0000   |
| <ul> <li>WILDFIRE ZONE PLAN NOTES</li> <li>1. IN ROOF COVERINGS WHERE THE PROFILE CREATES SPACE BETWEEN THE ROOF COVERING AND COMBUSTIBLE ROOF DECKING, SPECIFY ONE OF THE FOLLOWING MEANS OF PROTECTING SPACES AT EAVES ENDS.</li> <li>a. FIRE-STOPPING WITH APPROVED MATERIALS</li> <li>b. ONE LAYER OF 72 POUND (32.4 KG) MINERAL-SURFACED NON-PERFORATED CAP SHEET COMPLYING WITH ASTM D 3909 INSTALLED OVER THE COMBUSTIBLE DECKING</li> <li>c. OTHERWISE CONSTRUCTED TO PREVENT INTRUSION OF FLAMES AND EMBERS</li> <li>2. EXPOSED VALLEY FLASHINGS SHALL BE CONSTRUCTED WITH NOT LESS THAN 0.019-INCH (NO. 26 GALVANIZED SHEET GAGE) CORROSION-RESISTANT METAL INSTALLED OVER A MINIMUM 36-INCH-WIDE UNDERLAYMENT CONSISTING OF ONE LAYER OF NO. 72 ASTM CAP SHEET RUNNING THE FULL LENGTH OF THE VALLEY.</li> </ul>  | DIARTE<br>DIARTE<br>LILING UNIT<br>TY CA 91950<br>00<br>TY CA 91950<br>00<br>TY CA 91950<br>DIARTE<br>DIARTOR PROVIDED BY:<br>RAMINGS PROVIDED B   |
| <ol> <li>ANY ROOF GUTTERS SHALL BE PROVIDED WITH MEANS TO PREVENT<br/>ACCUMULATION OF LEAVES AND DEBRIS.</li> </ol>  | EL<br>DWEL<br>NAL CIT<br>2-09-0  |
| 4. SKYLIGHTS SHALL BE TEMPERED GLASS.  | NUE<br>NATIONA<br>10NAL<br>NATIONA<br>557-342-<br>557-342-<br>LITY: SDC  |
| <ol> <li>ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC) SHALL RESIST<br/>THE INTRUSION OF FLAMES AND EMBERS</li> <li>VENTILATION OPENINGS FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES,<br/>ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED<br/>DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDERFLOOR<br/>VENTILATION OPENINGS, AND VENT OPENINGS IN EXTERIOR WALLS AND<br/>EXTERIOR DOORS SHALL BE LISTED TO ASTM E 2886 AND COMPLY WITH<br/>ALL OF THE FOLLOWING:         <ul> <li>a. THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL<br/>DURING THE EMBER INTRUSION TEST</li> <li>b. THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST<br/>PORTION OF THE FLAME INTRUSION TEST</li> <li>c. THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT<br/>SHALL NOT EXCEED 662 DEGREES FAHRENHEIT (350 DEGREES<br/>CELSIUS)</li> </ul> </li> </ol>   | JUAN MAN<br>DETACH ADDITIO<br>1523 E 14th St, NA<br>UTILIT   |
| <ul> <li>7. EXTERIOR WALL FINISH SHALL COMPLY WITH ONE OF THE FOLLOWING: <ul> <li>a. NON-COMBUSTIBLE MATERIAL (STUCCO, CEMENT FIBER BOARD, ETC)</li> <li>STUCCO AND CEMENT PLASTER USED AS AN EXTERIOR WALL COVERING SHALL BE 7/8-INCH THICK</li> <li>NONCOMBUSTIBLE OR FIRE-RETARDANT-TREATED WOOD SHAKE USED AS AN EXTERIOR WALL COVERING SHALL HAVE AN UNDERLAYMENT OF MINIMUM 1/2-INCH FIRE-RATED GYPSUM SHEATHING THAT IS TIGHTLY BUTTED, OR TAPED AND MUDDED, OR AN UNDERLAYMENT OF OTHER IGNITION-RESISTANT MATERIAL APPROVED BY THE BUILDING OFFICIAL.</li> <li>b. IGNITION-RESISTANT MATERIAL</li> </ul> </li> </ul>  | S  |
| <ol> <li>PATIO COVER, CARPORT AND TRELLIS CONSTRUCTION WITH ALL EXPOSED<br/>ELEMENTS SHALL COMPLY WITH ANY OF THE FOLLOWING:         <ul> <li>NON-COMBUSTIBLE MATERIAL</li> <li>1-HOUR FIRE-RESISTANT-RATED MATERIAL</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>MODIFIED HEAVY TIMBER (MIN 2X TONGUE-AND-GROOVE<br/>SHEATHING, 4X6 RAFTERS/BEAMS, 6X6 POSTS)</li> </ul> </li> </ol>   | EVATION  |
| <ul> <li>9. DECK, BALCONY, AND EXTERIOR STAIR CONSTRUCTION, WITH ALL<br/>EXPOSED ELEMENTS SHALL COMPLY WITH THE FOLLOWING: <ul> <li>a. FRAMING</li> <li>NON-COMBUSTIBLE MATERIAL</li> <li>1-HOUR FIRE-RESISTANT-RATED MATERIAL</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>MODIFIED HEAVY TIMBER (MIN 4X8 JOISTS, 4X10 OR 6X8 BEAMS, 6X6 POSTS)</li> </ul> </li> <li>b. DECKING AND TREAD MATERIAL (ANY OF THE FOLLOWING): <ul> <li>NON-COMBUSTIBLE MATERIAL</li> <li>1-HOUR FIRE-RESISTANT-RATED MATERIAL</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> </ul> </li> <li>b. DECKING AND TREAD MATERIAL (ANY OF THE FOLLOWING): <ul> <li>NON-COMBUSTIBLE MATERIAL</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>APPROVED ALTERNATIVE DECKING MATERIAL MEETING TESTS REQUIREMENTS OF COUNTY BUILDING CODE 92.1.709A.1.4)</li> </ul> </li> </ul> | ADDITION ELEV  |
| <ul> <li>10. EXTERIOR GARAGE DOORS SHALL RESIST THE INTRUSION OF EMBERS INTO<br/>THE GARAGE BY LIMITING THE SIZE OF ANY GAPS AT THE BOTTOM, SIDES,<br/>AND TOP OF THE DOOR TO 1/8 INCH OR LESS USING ONE OF THE<br/>FOLLOWING METHODS <ul> <li>a. WEATHER-STRIPPING PRODUCTS WITH TENSILE STRENGTH AND<br/>FLAMMABILITY RATING PER CBC 708A.4</li> <li>b. DOOR OVERLAPS ONTO JAMBS AND HEADERS</li> <li>c. GARAGE DOOR JAMBS AND HEADERS COVERED WITH METAL FLASHING</li> </ul> </li> </ul>  | ADD  |
| 11. PAPER-FACED INSULATION PROHIBITED IN ATTICS OR OTHER VENTILATED SPACES.  |  |
| <ul> <li>12. FENCES OR ANY STRUCTURE WITHIN 5 FEET OF BUILDING SHALL BE<br/>CONSTRUCTED PER ONE OF THE FOLLOWING: <ul> <li>a. NON-COMBUSTIBLE MATERIAL</li> <li>b. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD</li> <li>c. MATERIAL MEETING SAME FIRE-RESISTIVE STANDARDS AS<br/>EXTERIOR WALLS OF BUILDINGS</li> </ul> </li> </ul>  | $ \begin{array}{c c} \hline REVISION \\ \hline 0 & - & 02/14/22 \\ \hline & & \\ \hline & \hline $ |



## **ATTIC VENTILATION REQUIRED**

NET FREE CROSS VENTILATION AREA =  $\frac{1}{300}$ VENT AREA REQ'D = 600 ft<sup>2</sup> / 300 = 2 ft<sup>2</sup> x 144 = 288 in<sup>2</sup>

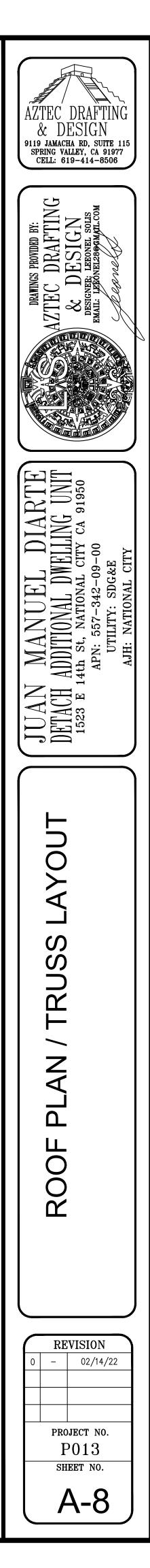
 $\frac{\text{GABLE END VENTS}}{\text{NFVA} = 71 \text{ in}^2}$   $\text{QTY} = \underline{2 \text{ VENTS}}$   $\text{VENT AREA PROVIDED} = 2 \text{ x } 71 \text{ in}^2 = 142 \text{ in}^2$ 

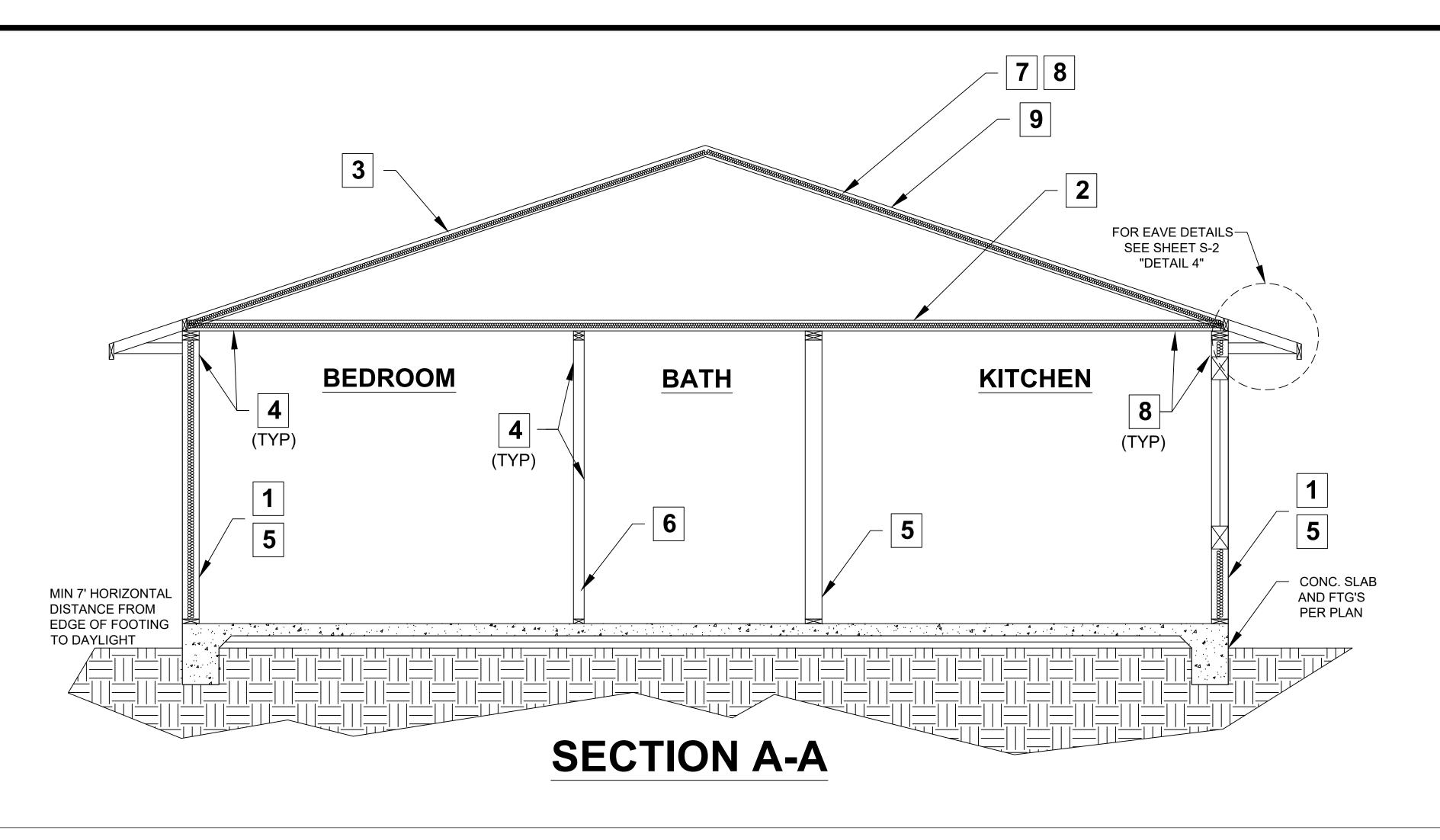
 $\frac{\text{EAVE VENTS}}{\text{NFVA: 23 in}^2}$   $\text{QTY} = \frac{8 \text{ VENTS}}{8 \text{ VENT AREA PROVIDED}} = 8 \times 23 \text{ in}^2 = 184 \text{ in}^2$ 

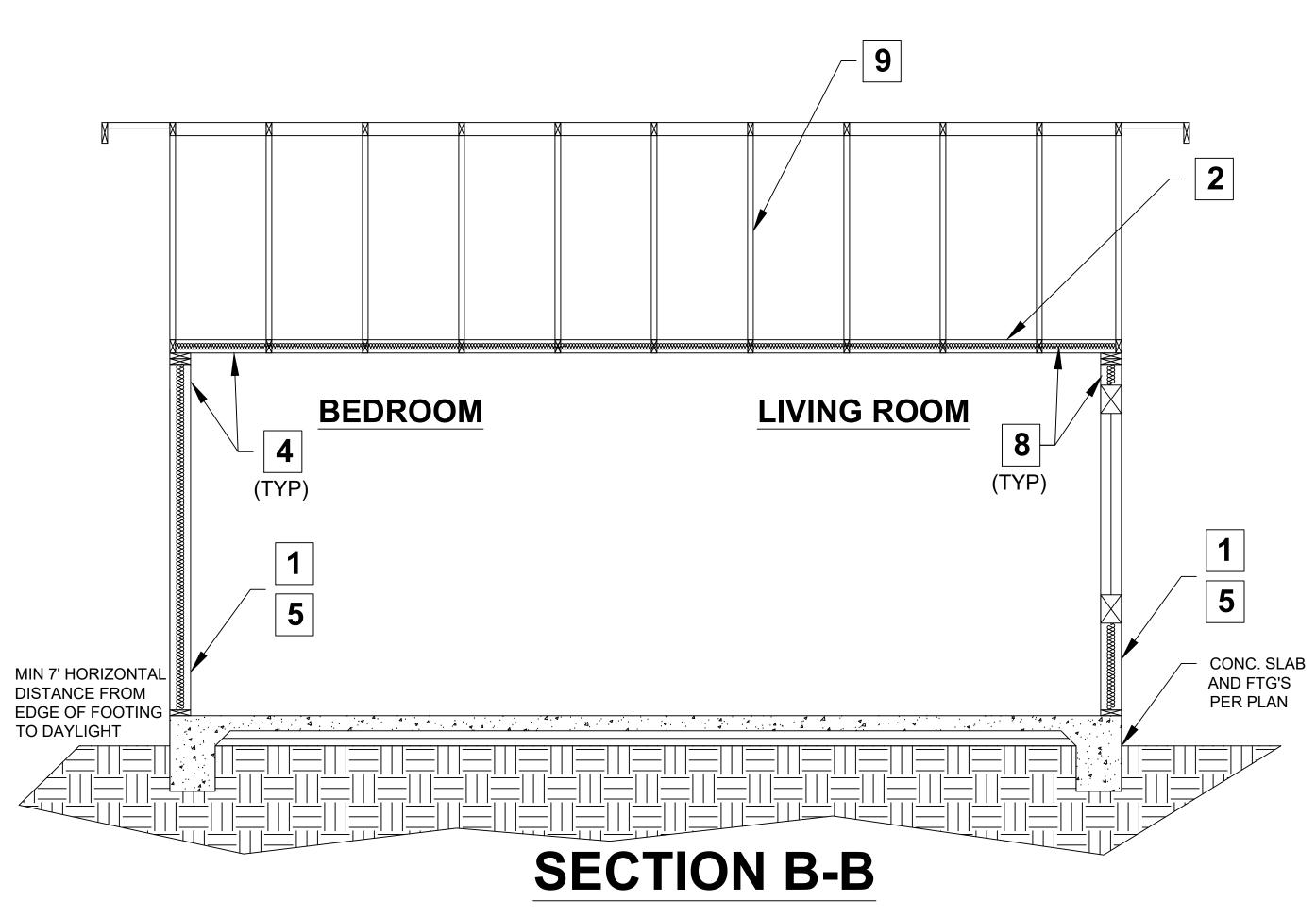
 $\frac{\text{TOTAL VENT AREA PROVIDED}}{(142 \text{ in}^2) + (184 \text{ in}^2) = 326 \text{ in}^2 > 288 \text{ in}^2}$ 



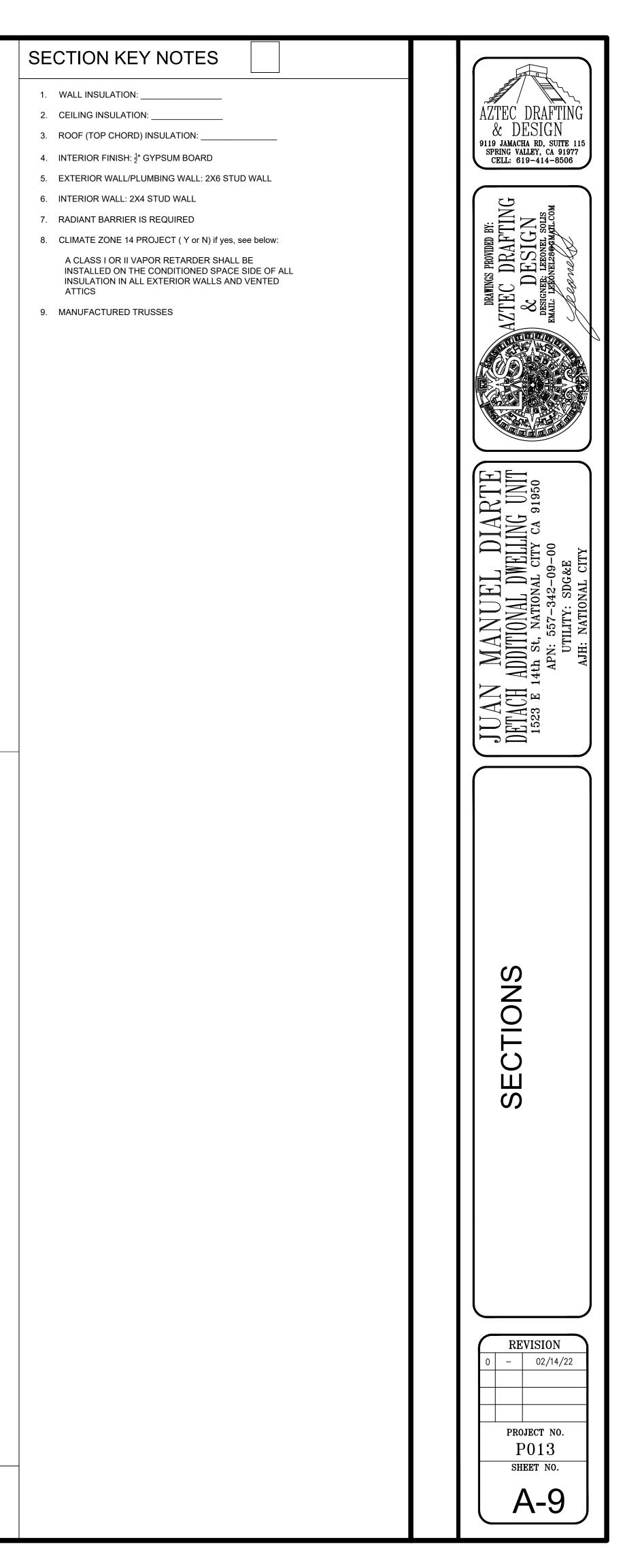
- 2. DEDICATED SOLAR ZONE AREA LOCATED BETWEEN 110 AND 270 DEGREES OF TRUE NORTH - USE AREA A OR B AS NEEDED.
- NO OBSTRUCTIONS INCLUDING VENTS, CHIMNEYS, SKYLIGHTS, ARCHITECTURAL FEATURES, ROOF-MOUNTED EQUIPMENT - LOCATED WITHIN SOLAR ZONE.
- 4. 3" MIN FIRE FIGHTER ACCESS
- 5. 1'-6" SMOKE VENTILATION SETBACK AT RIDGES

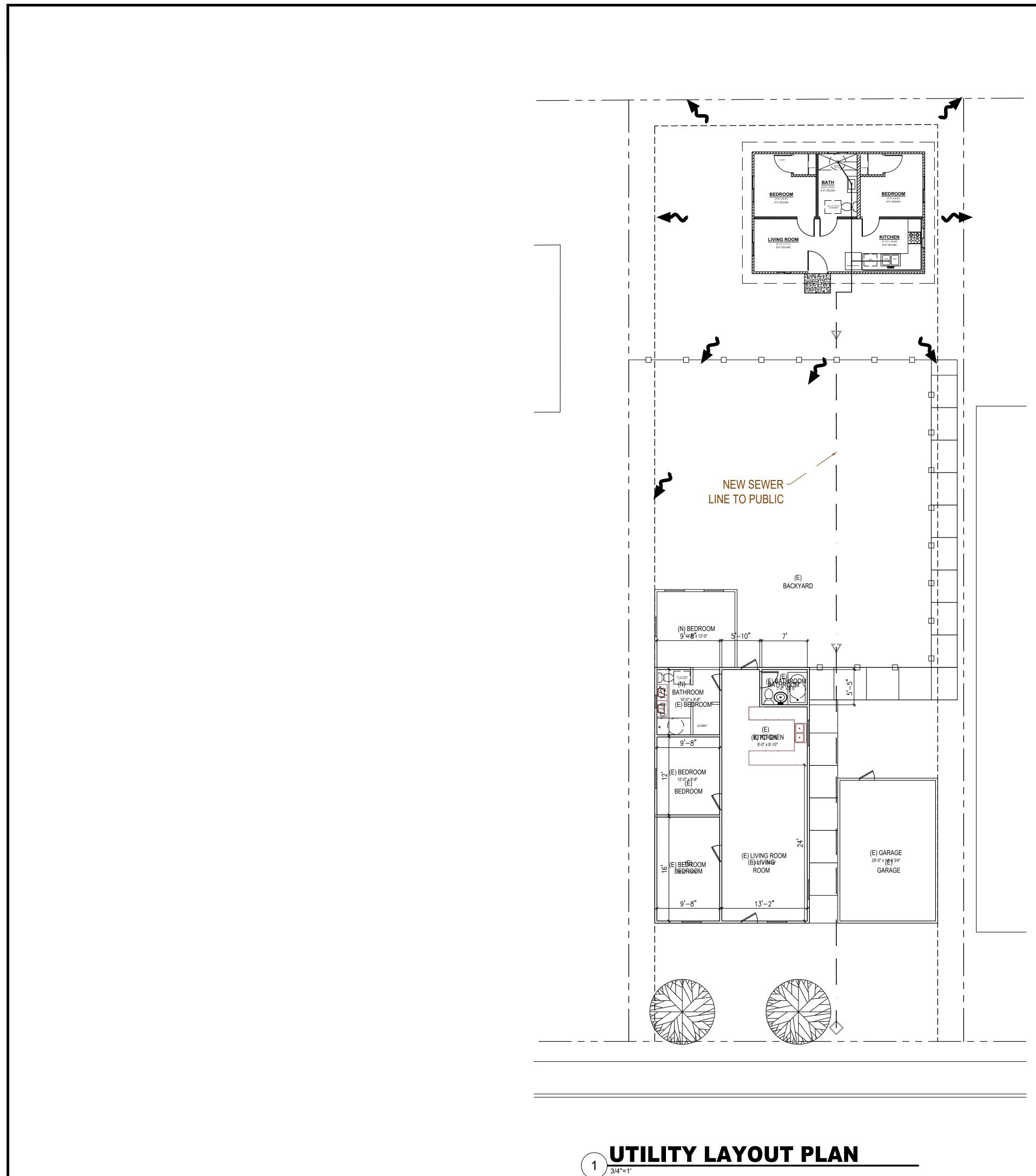






 $\frac{\text{SECTIONS}}{1/2" = 1'-0"}$ 





## PLUMBING NOTES

## MIN. $\frac{1}{4}$ " PER FOOT SLOPE FOR WASTE PIPES PER SECTION 708 CPC

2. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH SECTIONS 701.0 AND 903.0 OF THE CALIFORNIA PLUMBING CODE.

3. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.

EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN SIX(6) INCHES ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SERVED BEFORE OFFSETTING HORIZONTALLY OR BEFORE BEING CONNECTED TO ANY OTHER VENT.

5. ALL DRAINAGE WASTE AND VENT PIPE SHALL COMPLY WITH TABLE 703.2 CPC.

6. SHOWER AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER SECTION 408.3 CPC.

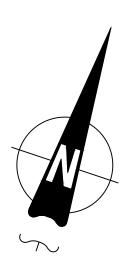
7. TOILETS SHALL BE ULTRA-LOW FLUSH TYPE (1.28 G.P.F. MAX.)

8. EACH SHOWERHEAD SHALL NOT EXCEED A WATER FLOW OF 1.8 GPM.

9. KITCHEN SINK FAUCET SHALL NOT EXCEED A WATER FLOW 1.8 GPM.

10. EACH LAVATORY FAUCET SHALL NOT EXCEED A WATER FLOW OF 1.2 GPM.

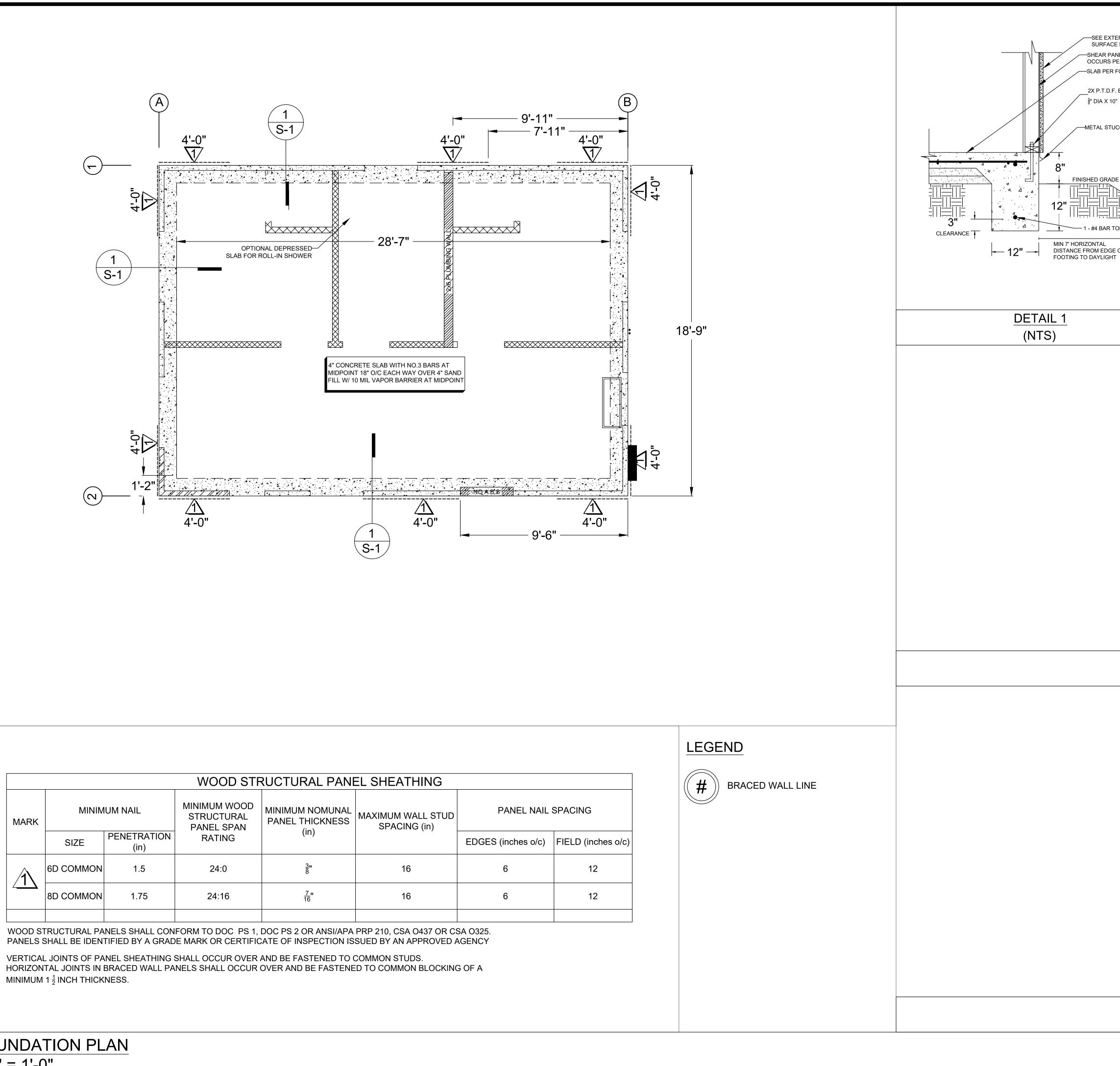
11. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY



| AZTEC DRAFTING<br>& DESIGN<br>9119 JAMACHA RD, SUITE 115<br>SPRING VALLEY, CA 91977<br>CELL: 619-414-8506   |  |
|---|--|
| DRATTICE PROVIDED BY:<br>DRATTICE DRAFTING<br>REALESTICE DRAFTING<br>REALESTICE DRAFTING<br>REALESTICE<br>REALESTICE<br>REALESTICE<br>REALESTICE<br>REALESTICE<br>REPORT SOLUTION |  |
| JL DIARTE<br>DWELLING UNIT<br>VAL CITY CA 91950<br>2-09-00<br>DG&E<br>AL CITY   |  |

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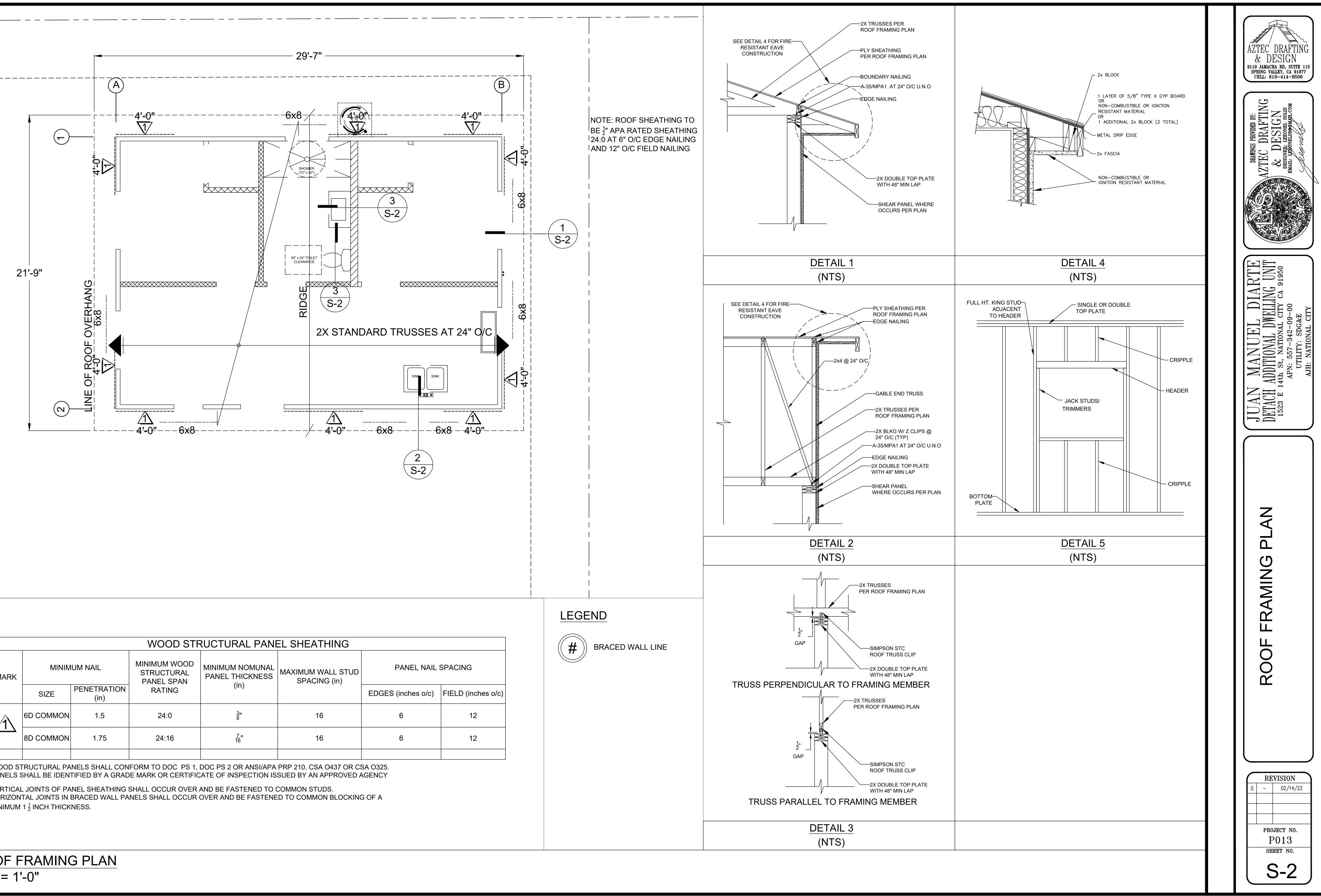


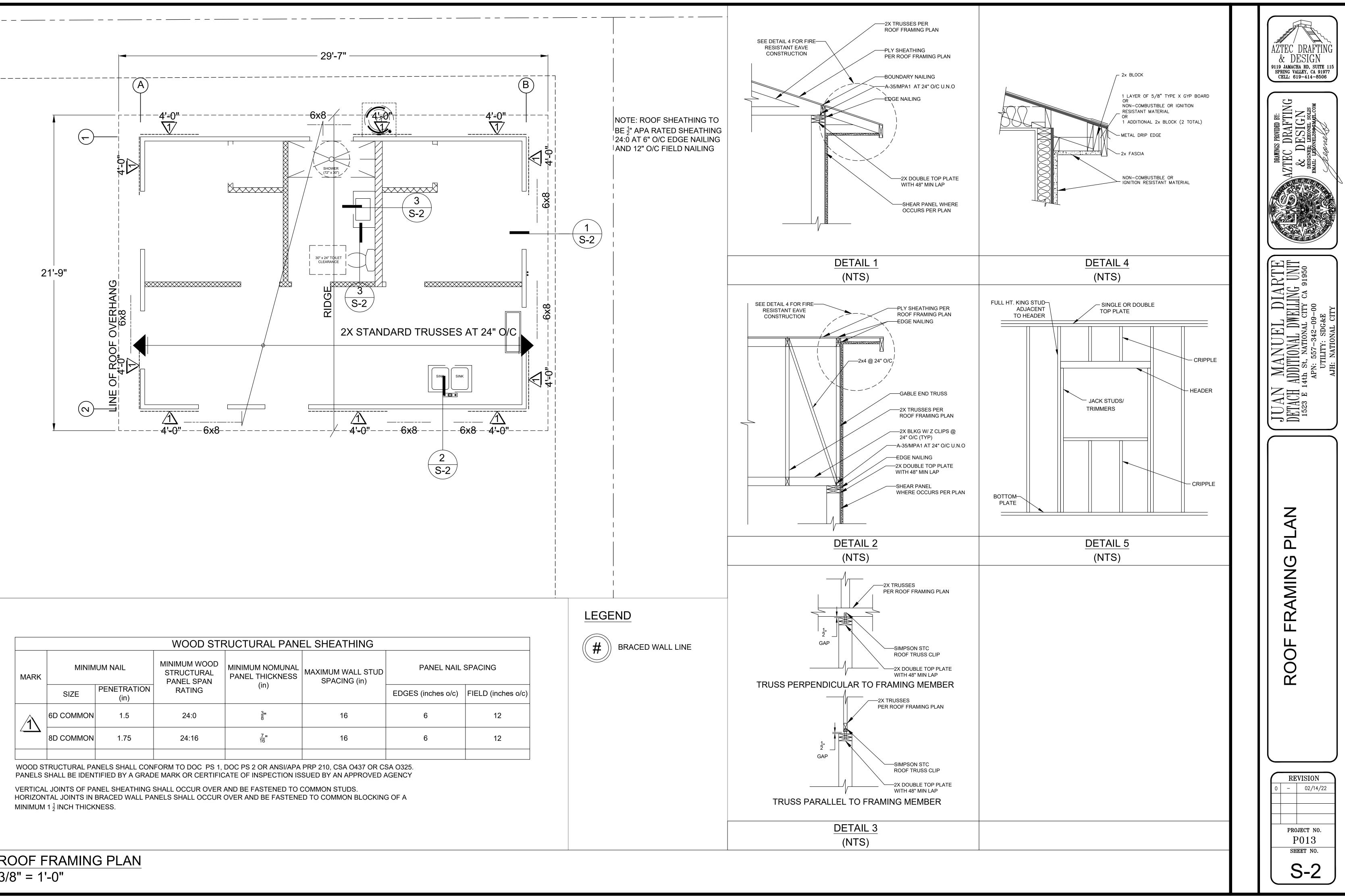
|      | WOOD STRUCTURAL PANEL SHEATHING |                     |  |                                   |         |                  |  |  |
|------|---------------------------------|---------------------|--|-----------------------------------|---------|------------------|--|--|
| MARK | MINIM                           | 1UM NAIL            | MINIMUM WOOD<br>STRUCTURAL<br>PANEL SPAN<br>RATING<br>MINIMUM NOMUNAL<br>PANEL THICKNESS<br>(in) | MAXIMUM WALL STUD<br>SPACING (in) | PANEL N |                  |  |  |
|      | SIZE                            | PENETRATION<br>(in) |  | (in)                              |         | EDGES (inches o/ |  |  |
|      | 6D COMMON                       | 1.5                 | 24:0   | <u>3</u> "<br>8                   | 16      | 6                |  |  |
|      | 8D COMMON                       | 1.75                | 24:16  | <u>7</u> "<br>16                  | 16      | 6                |  |  |
|      |                                 |                     |  |                                   |         |                  |  |  |

WOOD STRUCTURAL PANELS SHALL CONFORM TO DOC PS 1, DOC PS 2 OR ANSI/APA PRP 210, CSA O437 OR CSA O325. PANELS SHALL BE IDENTIFIED BY A GRADE MARK OR CERTIFICATE OF INSPECTION ISSUED BY AN APPROVED AGENCY

HORIZONTAL JOINTS IN BRACED WALL PANELS SHALL OCCUR OVER AND BE FASTENED TO COMMON BLOCKING OF A MINIMUM 1  $\frac{1}{2}$  INCH THICKNESS.

|  | FOUNDATION PLAN NOTES  |   |
|--|--|---|
| XTERIOR ELEVATION FOR<br>ACE FINISH<br>PANEL WHERE | 1. ALL ANCHORS BOLTS SHALL BE <sup>5</sup> / <sub>8</sub> " DIAMETER AND HAVE A MINIMUM<br>EMBEDMENT OF 7 INCHES INTO CONCRETE (UNO) AND NOT SPACED MORE<br>THAN 6 FEET APART                                |   |
| S PER PLAN<br>ER FOUNDATION PLAN                   | <ol> <li>2. 3"X3"X0.229" PLATE WASHERS SHALL BE USED ON EACH SILL PLATE<br/>ANCHOR BOLT</li> </ol>   | AZTEC DRAFTING<br>& DESIGN  |
| D.F. BOTTOM PLATE W/<br>10" A.B.'s AT 72" O/C      | 3. FOR STANDARD CUT WASHERS PLACED BETWEEN PLATE WASHER AND NUT, HOLE IN PLATE WASHER MAY BE DIAGONALLY SLOTTED WITH MAXIMUM $\frac{3}{16}$ " LARGER WIDTH THAN BOLT DIAMETER AND MAXIMUM 1-3/4" SLOT LENGTH | 9119 JAMACHA RD, SUITE 115<br>SPRING VALLEY, CA 91977<br>CELL: 619-414-8506                                       |
| TUCCO SCREED MIN 4" A.F.G.                         | <ol> <li>PROVIDE A MINIMUM OF TWO ANCHOR BOLTS PER SILL PLATE WITH ONE<br/>BOLT LOCATED MAXIMUM 12" AND MINIMUM 7 BOLT DIAMETERS FROM<br/>EACH END OF EACH SECTION.</li> </ol>                               | ID BY:<br>FTING<br>IGN<br>EL SOLIS<br>GMATLCOM  |
|  | <ol> <li>BOLTS LOCATED IN THE MIDDLE THIRD OF THE SILL PLATE WIDTH</li> <li>FASTENERS FOR PRESSURE-PRESERVATIVE TREATED AND FIRE</li> </ol>  | PRAVINGS PROVIDED<br>FC DRAF<br>C DESI<br>C DESI<br>ELEBONEL28004A  |
|  | RETARDANT TREATED WOOD SHALL BE HOT-DIPPED ZINC COATED GALVANIZED, STAINLESS STEEL OR COPPER   | DRAWIN<br>DRAWIN<br>C<br>DESIGNEH<br>AIL: LEE   |
|  | 7. NO LPG PIPING ASSEMBLIES ALLOWED IN OR BENEATH SLABS WITHIN THE<br>STRUCTURE  |   |
| R TOP & BOTTOM                                     |  |   |
|  |  |   |
|  |  | RTE<br>UNIT<br>91950  |
|  |  | ING   |
|  |  | MANUEL D<br>DDITIONAL DWELL<br>th st, national city<br>apn: 557-342-09-00<br>utility: sdg&e<br>ajh: national city |
|  |  | UE<br>NAL<br>NAL<br>7-342-<br>Y: SDC  |
|  |  | MANUEL I<br>DITTONAL DWEL<br>b st, national cit<br>vpn: 557-342-09-0<br>utility: sdg&e<br>ajh: national city      |
|  |  | AP<br>AP<br>AP  |
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|  |  | SHEET NO.   |
|  |  | <u>S-1</u>  |
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Applicable codes. All projects shall comply with the 2019 California Building Code (CBC) and/or California Residential Code (CRC), 2019 California Green Building Standards Code (CalGreen), 2019 California Electrical Code (CEC), 2019 California Mechanical Code (CMC), 2019 California Plumbing Code (CPC), 2019 California Fire Code (CFC), 2019 California Building Energy Efficiency Standards (CBEES), and all County of San Diego amendments.

#### A. Electrical, Plumbing, and Mechanical

- 1. Exterior lighting. All projects shall comply with the County of San Diego lighting ordinance.
- **GFCI outlets.** Ground Fault Circuit Interrupter (GFCI) outlets are required in bathrooms, at kitchen countertops, at laundry and wet bar sinks, in garages, in crawlspaces, in unfinished basements, and outdoors. (CEC 210.8)
- **3. AFCI outlets.** Electrical circuits in bedrooms, living rooms, dining rooms, dens, closets, hallways, or similar rooms must be protected by Arc Fault Circuit Interrupters (AFCI). (CEC 210.12)
- Luminaire requirements. Installed luminaires shall meet the efficacy and fixture requirements of CBEES 150.0(k).
- Smoke detectors in building remodels. Smoke detectors are required in each existing sleeping room, outside each separate sleeping area in the immediate vicinity of sleeping rooms, and on each story of a dwelling including basements. Battery-operated detectors are acceptable in existing areas with no construction taking place and in alterations not resulting in removal of interior wall or ceiling finishes and without access via an attic, crawl space, or basement. (CRC R314.3)
- Carbon monoxide detectors in building remodels. Carbon monoxide detectors are required outside each separate sleeping area in the immediate vicinity of sleeping rooms and on each story of a dwelling including basements. Battery-operated detectors are acceptable in existing areas with no construction taking place and in alterations not resulting in removal of interior wall or ceiling finishes and without access via an attic, crawl space, or basement. (CRC R315.3)
- Water heater seismic strapping. Minimum two 3/4-inch-by-24-gauge straps required around water heaters, with 1/4-inch-by-3-inch lag bolts attached directly to framing. Straps shall be at points within upper third and lower third of water heater vertical dimension. Lower connection shall occur minimum 4 inches above controls. (CPC 507.2)
- Gas appliances in garages. Water heaters and heating/cooling equipment capable of igniting flammable vapors shall be placed on minimum 18-inch-high platform unless listing report number provided showing ignition-resistant appliance. (CPC 507.13 and CMC 305.1)
- 9. Impact protection of appliances. Water heaters and heating/cooling equipment subject to vehicular impact shall be protected by bollards or an equivalent measure. (CPC 507.13.1 and CMC 305.11)
- **10. Water closet clearance.** Minimum 30-inch-wide by 24-inch-deep clearance required at front of water closets. (CPC 402.5)
- **11. Shower size.** Shower compartments shall have minimum area of 1024 square inches and be able to encompass a 30-inch-diameter circle. Shower doors shall have a minimum 22-inch unobstructed width. (CPC 408.5 and CPC 408.6)
- **12. Fireplace appliances.** Fireplaces with gas appliances are required to have the flue damper permanently fixed in the open position and fireplaces with LPG appliances are to have no 'pit' or 'sump' configurations. (CMC 303.7.1)
- 13. Chimney clearance. Minimum 2-foot chimney clearance required above building within 10-foot horizontally of chimney. The chimney shall extend minimum 3 feet above highest point where chimney passes through roof. (CRC R1003.9)

#### . Mechanical Ventilation and Indoor Air Quality (ASHRAE 62.2-2010)

- **Transfer air.** Ventilation air shall be provided directly from the outdoors and not as transfer air from adjacent dwelling units or other spaces, such as garages, unconditioned crawlspaces, or unconditioned attics. (CBEES 150.0(o))
- **Instructions and labeling.** Ventilation system controls shall be labeled and the home owner shall be provided with instructions on how to operate the system. (CBEES 150.0(o))
- 3. Combustion and solid-fuel burning appliances. Combustion appliances shall be properly vented and air systems shall be designed to prevent back drafting. (CBEES 150.0(o)
- **Garages.** The wall and openings between occupiable spaces and the garage shall be sealed. HVAC systems that include air handlers or return ducts located in garages shall have total air leakage of no more than 6% of total fan flow when measured at 0.1 in. w.c. using California Title 24 or equivalents. (CBEES 150.0(o))
- **Minimum filtration.** Mechanical systems supplying air to occupiable space through ductwork shall be provided with a filter having a minimum efficiency of MERV 6 or better. (CBEES 150.0(o))
- 6. Air inlets. Air inlets (not exhaust) shall be located away from known contaminants. (CBEES 150.0(o))
- Air moving equipment. Air moving equipment used to meet either the whole-building ventilation requirement or the local ventilation exhaust requirement shall be rated in terms of airflow and sound. (CBEES 150.0(o))
- **a.** All continuously operating fans shall be rated at a maximum of 1.0 sone.
- **b.** Intermittently operated whole-building ventilation fans shall be rated at a maximum of 1.0 sone
- c. Intermittently operated local exhaust fans shall be rated at maximum of 3.0 sone. d. Remotely located air-moving equipment (mounted outside of habitable spaces) need not meet sound requirements if at least 4 feet of ductwork between fan and intake grill.

#### D. Foundation and Underfloor

PDS 081 (REV. 01/01/2020)

- I. Foundation reinforcement. Continuous footings and stem walls shall be provided with a minimum two longitudinal No. 4 bars, one at the top and one at the bottom of the footing. (CRC R403.1.3.3)
- Shear wall foundation support. Shear walls shall be supported by continuous foundations. (CRC 403.1.2)
- **3.** Concrete slabs-on-grade. Slabs-on-grade shall be minimum 3-1/2-inches thick. (CRC R506.1)
  - Vapor retarder. A 6-mil polyethylene or approved vapor retarder with joints lapped minimum 6 inches shall be placed between a concrete slab-on-grade and the base course or subgrade. (CRC 506.2.3)
- Anchor bolts and sills. Foundation plates or sills shall be bolted or anchored to the foundation or foundation wall per the following (CRC R403.1.6 and CRC R602.11.1): **a.** Minimum 1/2-inch-diameter steel bolts
- **b.** Bolts embedded at least 7 inches into concrete or masonry
- c. Bolts spaced maximum 6 feet on center
- d. Minimum two bolts per plate/sill piece with one bolt located maximum 12 inches and minimum 7 bolt diameters from each end of each sill plate/piece
- e. Minimum 3-inch by 3-inch by 0.299-inch steel plate washer between sill and nut on each bolt
- **6.** Hold-downs. All hold-downs must be tied in place prior to foundation inspection. 7. Protection of wood against decay. Naturally durable or preservative-treated wood shall be provided in the following locations (CRC R317.1):
- a. All wood in contact with ground, embedded in concrete in direct contact with ground, or embedded in concrete exposed to weather
- b. Wood joists within 18 inches and wood girders within 12 inches of the exposed ground in crawl spaces shall be of naturally durable or preservative-treated wood
- c. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood
- **d.** Wood framing, sheathing, and siding on the exterior of the building and having clearance less than 6 inches from the exposed ground or less than 2 inches vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surface exposed to weather
- e. Sills and sleepers on concrete or masonry slab in direct contact with ground unless separated from such slab by impervious moisture barrier

- D. Foundation and Underfloor (Continued)
- f. Ends of wood girders entering masonry or concrete walls with clearances less than 1/2 29. Girders. Girders for single-story construction or girders supporting loads from a single inch on tops, sides, and ends **g.** Wood structural members supporting moisture-permeable floors or roofs exposed to
- weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier
- h. Wood furring strips or other wood framing members attached directly to interior of exterior concrete or masonry walls below grade except where vapor retarder applied between wall and furring strips or framing members
- 8. Underfloor ventilation. Underfloor areas shall have ventilation openings through foundation walls or exterior walls, with minimum net area of ventilation openings of 1 square foot for each 150 square feet of underfloor area. On such ventilating opening shall be within 3 feet of each corner of the building. (CRC R408.1)
- 9. Underfloor access. Underfloor areas shall be provided with a minimum 18-inch by 24-inch access opening. (CRC R408.4)

#### E. Wood Framing

- **1. Fastener requirements.** The number, size, and spacing of fasteners connecting wood members/elements shall not be less than that set forth in CRC Table R602.3(1). (CRC R502.9, CRC R602.3, and CRC R802.2)
- 2. Stud size, height, and spacing. The size, height, and spacing of studs shall be in accordance with CRC Table R602.3(5). (CRC R602.3.1)
- 3. Sill plate. Studs shall have full bearing on nominal 2-inch thick or larger sill plate with width at least equal to stud width. (CRC R602.3.4)
- center and the bearing studs below are spaced 24 inches on center, such members shall bear within 5 inches of the studs beneath. (CRC R602.3.3)
- 5. Drilling and notching of studs. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25% of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40% of a single stud width. Any stud may be bored or drilled, provided the diameter of the resulting hole is no more than 60% of the stud width, the edge of the hole is no more than 5/8 inch to the edge of the stud, and the hole is not located in the same section as a cut or notch. Studs located in exterior wall or bearing partitions drilled over 40% and up to 60% shall also be doubled with no more than two successive studs bored. (CRC R602.6)
- overlapping at corners and at intersections with other partitions. End joints in double top plates shall be offset at least 24 inches. Joints in plates need not occur over studs. Plates shall be minimum nominal 2 inches thick and have width at least equal to width of studs. (CRC R602.3.2)
- **Drilling and notching of top plate.** When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling, or notching of the top plate by more than 50% of its width, a galvanized metal tie not less than 0.054-inch thick and 1-1/2-inches wide shall be fastened across and to the plate at each side of the opening with not less than 8 10d nails having a minimum length of 1-1/2 inches at each side or equivalent. The metal tie must extend minimum 6 inches past the opening. (CRC R602.6.1)
- **Cripple walls.** Foundation cripple walls shall be framed of studs not less in size than the studding above. Cripple walls more than 4 feet in height shall have studs sized as required for an additional story. Cripple walls with stud height less than 14 inches shall be sheathed on at least one side with a wood structural panel fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple walls shall be supported on continuous foundations. (CRC R602.9)
- **10.** Wall bracing. Buildings shall be braced in accordance with the methods allowed per CRC R602.10.2, CRC R602.10.4, and/or CRC R602.10.5.
- 11. Braced wall line spacing. Spacing between braced wall lines shall not exceed 20 feet or alternate provisions of CRC R602.10.1.3. **12.** Shear wall cumulative length. The cumulative length of shear walls within each braced
- wall line shall meet the provisions of CRC Table R602.10.3(1) for wind loads and CRC Table R602.10.3(2) for seismic loads. (CRC R602.10.1.1)
- 13. Shear wall spacing. Shear walls shall be located not more than 25 feet on center. (CRC R602.10.2.2) **14.** Shear wall offset. Shear walls may be offset out-of-plan not more than 4 feet from the
- designated braced wall line and not more than 8 feet from any other offset wall considered part of the same braced wall line. (CRC R602.10.1.2) **15.** Shear wall location. Shear walls shall be located at the ends of each braced wall line or
- meet the alternate provisions of CRC R602.10.2.2. 16. Individual shear wall length. Shear walls shall meet minimum length requirements of CRC R602.10.6.5.1.
- **17.** Cripple wall bracing. Cripple walls shall be braced per CRC R602.10.11.
- **18. Shear wall and diaphragm nailing.** All shear walls, roof diaphragms, and floor diaphragms shall be nailed to supporting construction per CRC Table R602.3(1). (CRC R604 3
- 19. Shear wall joints. All vertical joints in shear wall sheathing shall occur over, and be fastened to, common studs. Horizontal joints in shear walls shall occur over, and be fastened to, minimum 1-1/2-inch-thick blocking. (CRC R602.10.10)
- 20. Framing over openings. Headers, double joists, or trusses of adequate size to transfer loads to vertical members shall be provided over window and door openings in load-bearing walls and partitions. (CBC 2304.3.2)
- 21. Joists under bearing partitions. Joists under parallel bearing partitions shall be of adequate size to support the load. Double joists, sized to adequately support the load, that are separated to permit the installation of piping or vents shall be full-depth solid-blocked with minimum 2-inch nominal lumber spaced at maximum 4 feet on center. Bearing partitions perpendicular to joists shall not be offset from supporting girders, walls, or partitions more than the joist depth unless such joists are of sufficient size to carry the additional load. (CRC R502.4)
- 22. Joists above or below shear walls. Where joists are perpendicular to a shear wall above or below, a rim joist, band joist, or blocking shall be provided along the entire length of the shear wall. Where joists are parallel to a shear wall above or below, a rim joist, end joist, or other parallel framing shall be provided directly above and/or below the shear wall. Where a parallel framing member cannot be located directly above and/or below the shear wall, full-depth blocking at 16-inch spacing shall be provided between the parallel framing members to each side of the shear wall. (CRC R602.10.8)
- 23. Floor member bearing. The ends of each floor joist, beam, or girder shall have minimum 1-1/2 inches of bearing on wood or metal and minimum 3 inches of bearing on masonry or concrete except where supported on a 1-inch-by-4-inch ribbon strip and nailed to the adjoining stud or by the use of approved joist hangers. (CRC R502.6)
- 24. Floor joist lap. Floor joists framing opposite sides over a bearing support shall lap minimum 3 inches and shall be nailed together within minimum 3 10d face nails. A wood or metal splice with strength equal to or greater than that provided by the lap is permitted. (CRC R502.6.1)
- **25. Floor joist-to-girder support.** Floor joists framing into the side of a wood girder shall be supported by approved framing anchors or on ledger strips minimum nominal 2 inches by 2 inches. (CRC R502.6.2)
- 26. Floor joist lateral restraint. Floor joists shall be supported laterally at ends and each intermediate support by minimum 2-inch full-depth blocking, by attachment to full-depth header, band joist, or rim joist, to an adjoining stud, or shall be otherwise provided with lateral support to prevent rotation. (CRC R502.7)
- **27. Floor joist bridging.** Floor joists exceeding nominal 2 inches by 12 inches shall be supported laterally by solid blocking, diagonal bridging (wood or metal), or a continuous 1-inch-by-3-inch strip nailed across the bottom of joists perpendicular to joists at maximum 8-foot intervals. (CRC R502.7.1)
- 28. Framing of floor openings. Openings in floor framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the floor joist. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joists and header joist shall be doubled and of sufficient cross section to support the floor joists framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)

- beams. (CRC R802.3)
- **4. Bearing studs.** Where joists, trusses, or rafters are spaced more than 16 inches on
- 6. Top plate. Wood stud walls shall be capped with a double top plate installed to provide
- **Top plate splices.** Top plate lap splices shall be face-nailed with minimum 8 16d nails on each side of splice. (CRC R602.10.8.1)

- - - fill framing.

# R502.8.1)

#### **46.** Fireblocking. Fireblocking shall be provided in the following locations (CRC R302.11 and CRC R1003.19):

#### E. Wood Framing (Continued)

floor shall not be less than 4 inches by 6 inches for spans 6 feet or less, provided that girders are spaced not more than 8 feet on center. Other girders shall be designed to support the loads specified in the CBC. Girder end joints shall occur over supports. When a girder is spliced over a support, an adequate tie shall be provided. The ends of beams or girders supported on masonry or concrete shall not have less than 3 inches of bearing. (CBC 2308.7)

**30.** Ridges, hips, and valleys. Rafters shall be framed to a ridge board or to each other with a gusset plate as a tie. Ridge boards shall be minimum 1-inch nominal thickness and not less in depth than the cut end of the rafter. At all valley and hips, there shall be a valley or hip rafter not less than 2-inch nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. Where the roof pitch is less than 3:12 slope (25% gradient), structural members that support rafters and ceilings joists, such as ridges, hips, and valleys, shall be designed as

**31.** Ceiling joist and rafter connections. Ceiling joists and rafters shall be nailed to each other per CRC Table R802.5.1(9), and the rafter shall be nailed to the wall top plate per CRC Table R602.3(1). Ceiling joists shall be continuous or securely joined per CRC Table R802.5.1(9) where they meet over interior partitions and are nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to rafters. Where ceiling joists are not connected to the rafters at the wall top plate, joists connected higher in the attic shall be installed as rafter ties, or rafter ties shall be installed to provide a continuous tie. Where ceiling joists are not parallel to rafters, rafter ties shall be installed. Rafter ties shall be minimum 2 inches by 4 inches nominal, installed per CRC Table R802.5.1(9), or connections of equivalent capacities shall be provided. Where ceilings joists or rafter ties are not provided, the ridge formed by these rafters

shall be supported by a wall or engineer-designed girder. (CRC R802.3.1) **32.** Ceiling joists lapped. Ends of ceiling joists shall be lapped minimum 3 inches or butted over bearing partitions or beams and toenailed to the bearing element. Where ceiling joists provide resistance to rafter thrust, lapped joists shall be nailed together per CRC Table R602.3(1) and butted joists shall be tied together in a manner to resist such thrust. (CRC R802.3.2)

33. Collar ties. Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the attic space. Collar ties shall be a minimum 1 inch by 4 inches nominal and spaced at maximum 4 feet on center. (CRC R802.3.1)

**34. Purlins.** Purlins installed to reduce the span of rafters shall be sized not less than the required size of the rafters they support. Purlins shall be continuous and shall be supported by 2-inch-by-4-inch nominal braces installed to bearing walls at a minimum 45-degree slope from horizontal. The braces shall be spaced maximum 4 feet on center with a maximum 8-foot unbraced length. (CRC R802.5.1)

35. Roof/ceiling member bearing. The ends of each rafter or ceiling joist shall have not less than 1-1/2 inches of bearing on wood or metal and not less than 3 inches of bearing on masonry or concrete. (CRC R802.6)

36. Roof/ceiling member lateral support. Roof framing members and ceiling joists with a nominal depth-to-thickness ratio exceeding 5:1 shall be provided with lateral support at points of bearing to prevent rotation. (CRC R802.8)

**37.** Roof/ceiling bridging. Rafters and ceiling joists with a nominal depth-to-thickness ratio exceeding 6:1 shall be supported laterally by solid blocking, diagonal bridging (wood or metal), or a continuous 1-inch-by-3-inch wood strip nailed across the rafters or ceiling joists at maximum 8-foot intervals. (CRC R802.8.1)

38. Framing of roof/ceiling openings. Openings in roof and ceiling framing shall be framed with a header and trimmer joists. When the header joist span does not exceed 4 feet, the header joist may be a single member the same size as the ceiling joist or rafter. Single trimmer joists may be used to carry a single header joist located within 3 feet of the trimmer joist bearing. When the header joist span exceeds 4 feet, the trimmer joists and header joist shall be doubled and of sufficient cross section to support the ceiling joists or rafters framing into the header. Approved hangers shall be used for the header-joist-to-trimmer-joist connections when the header joist span exceeds 6 feet. Tail

joists over 12 feet long shall be supported at the header by framing anchors or on ledger strips minimum 2 inches by 2 inches. (CRC R502.10)

**39.** Roof framing above shear walls. Rafters or roof trusses shall be connected to top plates of shear walls with blocking between the rafters or trusses. (CRC R602.10.8) 40. Roof diaphragm under fill framing. Roof plywood shall be continuous under California

41. Roof diaphragm at ridges. Minimum 2-inch nominal blocking required for root diaphragm nailing at ridges.

42. Blocking of roof trusses. Minimum 2-inch nominal blocking required between trusses at

ridge lines and at points of bearing at exterior walls. **43. Truss clearance**. Minimum 1/2-inch clearance required between top plates of interior non-bearing partitions and bottom chords of trusses.

44. Drilling, cutting, and notching of roof/floor framing. Notches in solid lumber joists, rafters, blocking, and beams shall not exceed one-sixth the member depth, shall be not longer than one-third the member depth, and shall not be located in the middle one-third of the span. Notches at member ends shall not exceed one-fourth the member depth. The tension side of members 4 inches or greater in nominal thickness shall not be notched except at member ends. The diameter of holes bored or cut into members shall not exceed one-third the member depth. Holes shall not be closer than 2 inches to the top or bottom of the member or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2 inches to the notch. (CRC

### 45. Exterior landings, decks, balconies, and stairs. Such elements shall be positively

anchored to the primary structure to resist both vertical and lateral forces or shall be designed to be self-supporting. Attachment shall not be accomplished by use of toenails or nails subject to withdrawal. (CRC R311.3)

**a.** In concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs, as follows:

#### i. Vertically at the ceiling and floor levels ii. Horizontally at intervals not exceeding 10 feet

**b.** At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, and cove ceilings

c. In concealed spaces between stair stringers at the top and bottom of the run

d. At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion

### e. At chimneys and fireplaces per item E.49

f. Cornices of a two-family dwelling at the line of dwelling-unit separation

47. Fireblocking materials. Except as otherwise specified in items E.48 and E.49, fireblocking shall consist of the following materials with the integrity maintained (CRC R302.11.1):

### **a.** Two-inch nominal lumber

**b.** Two thicknesses of one-inch nominal lumber with broken lap joints

c. One thickness of 23/32-inch wood structural panel with joints backed by 23/32-inch wood structural panel

d. One thickness of 3/4-inch particleboard with joints backed by 3/4-inch particleboard

#### e. 1/2-inch gypsum board **f.** 1/4-inch cement-based millboard

g. Batts or blankets of mineral or glass fiber of other approved materials installed in such a manner as to be securely retained in place. Batts or blankets of mineral or glass fiber or other approved non-rigid materials shall be permitted for compliance with the 10-foot horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs. Unfaced fiberglass batt insulation used as fireblocking shall fill the entire cross-section of the wall cavity to a minimum height of 16 inches measured vertically. When piping, conduit, or similar obstructions are encountered, the insulation shall be packed tightly around the obstruction. Loose-fill insulation material shall not be used as a fireblock unless specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot

48. Fireblocking at openings around vents, pipes, ducts, cables, and wires at ceiling and floor level. Such openings shall be fireblocked with an approved material to resist the free passage of flame and products of combustion. (CRC R302.11)

#### E. Wood Framing (Continued)

49. Fireblocking of chimneys and fireplaces. All spaces between chimneys and floors and ceilings through which chimneys pass shall be fireblocked with noncombustible material securely fastened in place. The fireblocking of spaces between chimneys and wood joists, beams, or headers shall be self-supporting or be placed on strips of metal or metal lath laid across the spaces between combustible material and the chimney. (CRC R1003.19)

- **50. Draftstopping.** In combustible construction where there is usable space both above and below the concealed space of a floor/ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1000 square feet. Draftstopping shall divide the concealed space into approximately equal areas. Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping shall be provided in floor/ceiling assemblies under the following circumstances (CRC R302.12):
- **a.** Ceiling is suspended under the floor framing
- **b.** Floor framing is constructed of truss-type open-web or perforated members 51. Draftstopping materials. Draftstopping shall not be less than 1/2-inch gypsum board, 3/8-inch wood structural panels, or other approved materials adequately supported. Draftstopping shall be installed parallel to the floor framing members unless otherwise approved by the building official. The integrity of draftstops shall be maintained. (CRC R302.12.1)
- **52.** Combustible insulation clearance. Combustible insulation shall be separated minimum 3 inches from recessed luminaires, fan motors, and other heat-producing devices. (CRC R302.14)

#### F. General Material Specifications

- Lumber. All joists, rafters, beams, and posts 2-inches to 4-inches thick shall be No. 2 grade Douglas Fir-Larch or better. All posts and beams 5 inches and thicker shall be No. 1 grade Douglas Fir-Larch or better. Studs not more than 8 feet long shall be stud-grade Douglas Fir-Larch or better when supporting not more than one floor, roof, and ceiling. Studs longer than 8 feet shall be No. 2 grade Douglas Fir-Larch or better
- 2. Concrete. Concrete shall have a minimum compressive strength of 2,500 psi at 28 days and shall consist of 1 part cement, 3 parts sand, 4 parts 1-inch maximum size rock, and not more than 7-1/2 gallons of water per sack of cement. (CRC R402.2)
- Mortar. Mortar used in construction of masonry walls, foundation walls, and retaining walls shall conform to ASTM C 270 and shall consist of 1 part portland cement, 2-1/4 to 3 parts sand, and 1/4 to 1/2 part hydrated lime. (CBC 2103.2)
- **Grout**. Grout shall conform to ASTM C 476 and shall consist of 1 part portland cement, 1/10 part hydrated lime, 2-1/4 to 3 parts sand, and 1 to 2 parts gravel. Grout shall attain a minimum compressive strength of 2,000 psi at 28 days. (CBC 2103.3)
- Masonry. Masonry units shall comply with ASTM C 90 for load-bearing concrete masonry units. (CBC 2103.1)
- 6. **Reinforcing steel.** Reinforcing steel used in construction of reinforced masonry or concrete structures shall be deformed and comply with ASTM A 615. (CBC 2103.4)
- 7. Structural steel. Steel used as structural shapes such as wide-flange sections, channels, plates, and angles shall comply with ASTM A36. Pipe columns shall comply with ASTM A53. Structural tubes shall comply with ASTM A500, Grade B.
- Fasteners for preservative-treated wood. Fasteners for preservative-treated and fire-retardant-treated wood - including nuts and washers -- shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. (CRC R317.3.1) Exception: 1/2-inch diameter or greater steel bolts
- **Exception:** Fasteners other than nails and timber rivets may be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum
- **Exception:** Plain carbon steel fasteners acceptable in SBX/DOT and zinc borate preservative-treated wood in an interior, dry environment
- 9. Fasteners for fire-retardant-treated wood. Fasteners for fire-retardant-treated wood used in exterior applications or wet or damp locations shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. (CRC R317.3.3)

#### G. Roofing and Weatherproofing

- 1. Roof covering. All roof covering shall be installed per applicable requirements of CBC 1507. Roof coverings shall be at least Class A rated in accordance with ASTM E 108 or UL 790, which shall include coverings of slate, clay or concrete roof tile, exposed concrete roof deck, ferrous or copper shingles or sheets. (County Building Code 92.1.1505.1)
- . Roof flashing. Flashing shall be installed at wall and roof intersections, at gutters, wherever there is a change in roof slope or direction, and around roof openings. Where flashing is of metal, the metal shall be corrosion-resistant with a thickness of not less than 0.019 inch (No. 26 galvanized sheet). (CRC R903.2.1)
- **3.** Crickets and saddles. A cricket or saddle shall be installed on the ridge side of any chimney or penetration more than 30 inches wide as measured perpendicular to the slope. Cricket or saddle covering shall be sheet metal or the same material as the roof covering. (CRC R903.2.2)
- Water-resistive barrier. A minimum of one layer of No. 15 asphalt felt shall be attached to studs or sheathing of all exterior walls. Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer minimum 2 inches. Where joints occur, felt shall be lapped minimum 6 inches. The felt shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to maintain a weather-resistant exterior wall envelope. (CRC R703.2)
- Wall flashing. Approved corrosion-resistant flashing shall be applied shingle fashion at the following locations to prevent entry of water into the wall cavity or penetration of water to the building structural framing components (CRC R703.8):
- a. Exterior door and window openings, extending to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage
- **b.** At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings
- **c.** Under and at the ends of masonry, wood, or metal copings and sills
- **d.** Continuously above all projecting wood trim
- e. Where exterior porches, decks, or stairs attach to a wall or floor assembly of wood-frame construction
- **f.** At wall and roof intersections
- **g.** At built-in gutters
- 6. Dampproofing. Dampproofing materials for foundation walls enclosing usable space below grade shall be installed on the exterior surface of the wall, and shall extend from the top of the footing to finished grade. (CRC R406.1)
- Weep screed. A minimum 0.019-inch (No. 26 galvanized sheet gage), corrosion-resistant weep screed or plastic weep screed with a minimum vertical attachment flange of 3-1/2 inches shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 92. The weep screed shall be placed a minimum 4 inches above the earth or 2 inches above paved areas and shall be of a type allowing trapped water to drain to the exterior of the building. (CRC R703.7.2.1)

#### H. Grading and soils

- 1. Grading permit. Grading permit required if volume of earth moved exceeds 200 cubic yards or if any cuts or fills exceed 8 feet in height/depth. (County Grading Ordinance 202)
- **Compaction report.** Compaction report required for fill material 12 inches or more in depth. (CBC 1803.5.8)

#### I. Green Building Standards Code (CALGreen) Requirements

Applicability. CalGreen residential mandatory measures shall apply to every newly constructed building or structure and within any addition or alteration increasing a building's conditioned area, volume, or size. (CalGreen 101.3, CalGreen 301.1.1) Exception: All residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures per CalGreen 301.1.1 and CalGreen 4.303.1

#### I. (CALGreen) Requirements (Continued) Water conserving plumbing fixtures and fittings. Plumbing fixtures and fittings shall

- comply with the following per CalGreen 4.303.1: a. Water closets: Maximum 1.28 gallons per flush b. Urinals: Maximum 0.5 gallons per flush
- c. Single showerheads: Maximum flow rate of 2.0 gallons per minute at 80 psi
- gallons per minute at 80 psi
- flow rate of 0.8 gallons per minute at 20 psi f. Kitchen faucets: Maximum flow rate of 1.8 gallons per minute at 60 psi Exception: Temporary increase allowed to maximum 2.2 gallons per minute at 60 psi if faucet defaults back to maximum 1.8 gallons per minute at 60 psi 3. Irrigation controllers. Automatic irrigation system controllers for landscaping shall
- comply with the following (CalGreen 4.304.1): a. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. **b.** Weather-based controllers without integral rain sensors or communication systems
- that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input. Joints and openings. Openings in the building envelope separating conditioned space
- from unconditioned space needed to accommodate utility and other penetrations must be sealed in compliance with the California Energy Code. (CALGreen 4.406.1) Exception: Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such opening with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.
- 5. Construction waste reduction, disposal, and recycling. Reduce and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition debris. (CALGreen 4.408.1)
- Exception: Excavated soil and land-clearing debris **Exception:** 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 The County of San Diego, Department of Public Works, Construction & Demolition (C&D) Facilities Guide is online at:
- http://www.sdcounty.ca.gov/dpw/recycling/Files/Construction\_Guide\_SJ8\_Pgs\_1-27.pdf. 6. Construction waste management plan. A construction waste management plan shall be prepared and available on site during construction. Documentation demonstrating FASTENER SCHEDULE FOR STRUCTURAL MEMBERS compliance with the plan shall be accessible during construction for the enforcing agency. (CALGreen 4.408.2) The plan:
- a. 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 b. Specify if construction and demolition waste materials will be sorted on-site
- (source-separated) or bulk mixed (single stream) c. Identify diversion facilities where the construction and demolition waste materials will
- be taken d. Identify construction methods employed to reduce the amount of construction and
- demolition waste generated e. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both
- **Operation and maintenance manual.** Prior to final inspection, a manual, compact disc,
- web-based reference, or other acceptable media which includes all of the following shall be placed in the building (CALGreen 4.410.1): **a.** Directions to owner or occupant that manual shall remain with the building throughout the life cycle of the structure
- **b.** Operation and maintenance instructions for the following: i. Equipment and appliances, including water-saving devices and systems, HVAC system, photovoltaic systems, water-heating systems and other major appliances and
- equipment. ii. Roof and yard drainage, including gutters and downspouts. iii. Space conditioning systems, including condensers and air filters.
- iv. Landscape irrigation systems. v. Water reuse systems.
- **c.** Information from local utility, water, and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations. **d.** Public transportation and/or carpool options available in the area.
- e. 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. f. Information about water-conserving landscape and irrigation design and controllers
- which conserve water

the requirements of this program).

(Specification 01350).

Schools program

million (CALGreen 4.504.5):

a. Hardwood plywood veneer core

b. Hardwood plywood composite core

d. Medium-density fiberboard (MDF)

e. Thin MDF (5/16 inch or less)

01350)

c. Particle board

c. NSF/ANSI 140 at the Gold level.

g. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation.

d. Multiple showerheads serving one shower: Maximum combined flow rate of 2.0

e. Lavatory faucets: Maximum flow rate of 1.2 gallons per minute at 60 psi, minimum

- **h.** Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building, etc.
- **i.** Information about state solar energy and incentive programs available. j. A copy of all special inspection verifications required by the enforcing agency or code.
- 8. Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other
- methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system. (CALGreen 4.504.1) Adhesives, sealants, caulks, paints, and coatings pollutant control. Adhesives (including carpet adhesives), sealants, caulks, paints, and coatings shall comply with
- VOC limits per CALGreen 4.504.2. Verification of compliance shall be provided at the request of the enforcing agency. (CALGreen 4.504.2.1)
- 10. Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the following (CALGreen 4.504.3): a. Carpet and Rug Institute's Green Label Plus Program (all carpet cushion must meet
- **b.** California Department of Public Health Standard Practice for the testing of VOCs
- d. Scientific Certifications Systems Indoor Advantage<sup>™</sup> Gold.
- **11. Resilient flooring systems.** At least 80 percent of the floor area receiving resilient flooring shall comply with one of or more of the following (CALGreen 4.504.4):
- a. VOC emission limits defined in the Collaborative for High Performance Schools (CHPS) High Performance Products Database b. Products compliant with CHPS criteria certified under the Greenguard Children &
- c. Certification under the Resilient Floor Covering Institute (RFCI) FloorScore program d. Meet 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 1.1, February 2010 (also known as Specification
- 12. Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.) by or before the dates specified in those sections, as shown in CalGreen Table 4.504.5. The following limits are in parts per
  - 0.05 0.05 0.09 0.11 0.13

#### I. (CALGreen) Requirements (Continued)

**13. 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 (CALGreen 4.505.3):

- **a.** Moisture content shall be determined with either a probe-type or contact-type moisture meter.
- **b.** Moisture readings shall be taken at a point 2 feet to 4 feet from the grade
- stamped end of each piece to be verified.
- c. 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 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.
- 14. Bathrooms with a bathtub and/or shower shall be mechanically ventilated per the following (CalGreen 4.506.1):
- **a.** Fans shall be ENERGY STAR compliant and ducted to terminate outside **b.** Unless functioning as a component of a whole-house ventilation system, fans
- shall have humidity controls capable of adjustment manually or automatically -- between a relative humidity range of 50% to 80%.
- **15. Heating and air-conditioning system design.** Heating and air-conditioning systems shall be sized, designed, and have their equipment selected using the following methods (CALGreen 4.507.2):
- a. The heat loss and heat gain is established according to ANSI/ACCA 2 Manual J, ASHRAE handbooks, or other equivalent design software or methods.
- **b.** Duct systems are sized according to ANSI/ACCA 1 Manual D 2009, ASHRAE handbooks, or other equivalent design software or methods.
- c. Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods

## **TABLE R602.3(1)**

- OF FASTENER SPACING AND LOCATIO Toe nail between ceiling joists or rafters to top plate td common (2<sup>1</sup>/<sub>2</sub>" × 0.131") Od box (3" × 0.128"); or Per joist, toe nail sung joist not attached to parallel rafter, laps over partitions [see Sections R802.3.1, R802.3.2 and Table 802.5.1(9),  $x^{3} \times 0.128$ ,  $x^{3} \times 0.128$ , or 3-16d common  $(3^{3} x^{3} \times 0.128)$ ; or 4-10d box  $(3^{3} \times 0.128)$ ; or 3-16d common  $(3^{3} x^{3} \times 0.128)$ ; or Face nail Celling joist attached to parallel rafter (heel joint) [see Sections R802.3.1 and R802.3.2 and Table R803 51 (201) Table R802.5.1(9) Face nail 10d box (3" x 0.128"); Collar tie to rafter, face nail or  $1V_a$  "  $\times$  20 ga. ridge strap to Face nail each rafter n (3" × 0.148"); or Od common nails (3" × 0.148") toe nails on one side and 1 toe na Rafter or roof truss to plate 10d box (3" × 0.128"); or Toe nail oof rafters to ridge, valley or hip rafters or roo to minimum 2" ridge beam End nail .0d box (3" × 0.128"); or 24" o.c. face nail id to stud (not at braced wall pane 10d box  $(3'' \times 0.128'')$ ; or 16" o.c. face nail 12" o.c. face nail Stud to stud and abutting studs at i (at braced wall panels) 16" o.c. face nail o.c. each edge face nai 16d common (31/2" × 0.1 Built-up header (2" to 2" header with 1/2" spacer) o.c. each edge face nail Toe nail Continuous header to stud 16" o.c. face nail Top plate to top plate 10d box (3"×0.128"); o: 12" o.c. face nail Double top plate splice for SDCs A-D  $_2$  with seismic braced wall line spacing  $<25^\prime$ e of end joint) Double top plate splice SDCs D<sub>0</sub>, D<sub>1</sub>, or D<sub>2</sub>; and braced 12-16d (3<sup>1</sup>/<sub>2</sub>"×0.135") ITEM DESCRIPTION OF BUILDING ELEMENTS NUMBER AND TYPE OF FASTENER<sup>4, b, o</sup> SPACING AND LOCATION Bottom plate to joist, rim joist, band joist or ach 16" o.c. face nail Bottom plate to joist, rim joist, band joist o 6d common (3<sup>1</sup>/<sub>2</sub> " × 0.131" nails each 16" o.c. face n blocking (at braced wall panel) 4 each 16" o.c. face nail Toe nail (3"×0.128"); o Top or bottom plate to stud End nail d box (3" × 0.128"); Face nail Top plates, laps at corners and intersection Face nail brace to each stud and plate common (2½ "× 0.131") d box (3 "× 0.128"); or 1"×6" sheathing to each bearing Face nail 20 1"×8" and wider sheathing to each bearing Wider than 1" Face nail 4-8d box (21/," × 0.113" Joist to sill, top plate or girder Toe nail Od box (3 " × 0.128 "); or 4" o.c. toe nail Rim joist, band joist or blocking t plate (roof applications also) 6" o.c. toe nail 1" × 6" subfloor or less to each joist Face nail ITEM DESCRIPTION OF BUILDING ELEMENTS NUMBER AND TYPE OF FASTENE SPACING AND LOCATION 24 2" subfloor to joist or girde Blind and face nai 2" planks (plank & beam-floor & ro At each bearing, face nail 6 Band or rim joist to joist End nail  $3^{*} \times 14$  ga. staples,  $7_{16}^{*}$  cro each layer as follows: 32 20d common (4" x 0,192"); or op and bottom and sta o.c. face nail at top a 10d box (3" × 0.128"); or gered on opposite sides nail at ends and at each sp 28 Ledger strip supporting joists or rafters u each joist or rafter, face n od box (3" × 0.128"); or Each end, toe nai 2-10d (3" × 0.12 PACING OF FASTENER DESCRIPTION OF BUILDING ELEMENTS NUMBER AND TYPE OF FASTENER<sup>4, 5, 4</sup> Edges Intermedi (inches)\* supports (inches Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard [see Table R602.3(3) for wood structural panel exterior wall sheathing to wall sheathing to framing 30 3/."-1/." ommon nail (2 common (3" × 0.148") nail; or 32 17,"-17; Other wall sheathing<sup>a</sup> 1/2" structural cellulosic fiberboar  $1^{3}$ , " galvanized roofing nail, " $7_{16}$ " head diameter, or 1" crown staple 16 ga., 1" <sup>5</sup>/<sub>32</sub> " structural cellulosic fiberboard sheathing 2" galvanized roofing nail; staple gal 2" long; 11/4" screws, Type W or S 5 1/2" gypsum sheathing <sup>5</sup>/<sub>3</sub>" gypsum sheathing anels, combination subfloor underlayment to fram d deformed (2 " × 0.120 ") nail; o 374" and less
- $\begin{array}{c} \hline common (2^{1}j_{2}^{*} \times 0.131^{*}) \text{ nail; o} \\ \hline deformed (2^{1}j_{2}^{*} \times 0.120^{*}) \text{ nail} \\ \hline od common (3^{*} \times 0.148^{**}) \text{ nail; } \\ \hline \text{8d deformed } (2^{1}j_{2}^{*} \times 0.120^{*}) \text{ nail} \end{array}$ 8 7/2"-1" 0 11/8"-11/4 TABLE R602.3(1)—continued FASTENING SCHEDULE Nails are smooth-common, box or deformed sharks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum warage bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch bat tot larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
- b. Staples are 16 gage wire and have a minimum ?/ w-inch on diameter crown width. . Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.
   e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
- speed is 130 mph or less, nails for attaching al panel roof sheathing to gable end wall framing shall be spaced nches on center. Where the ultimate design wind speed is greater than 130 mph, nails for attaching panel roof sheathing to intermediate support paced 6 inches on center for minimum 48-inch distance from ridges, caves and gable end walls; and 4 inches on center to gable end wall framing. Gynsum sheathing shall conform to ASTM C1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTI present or fastening and the set of the set
- arted by framing members or solid blocking. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.

6 12

THESE ARE MINIMUM REQUIREMENTS AND

SHALL NOT SUPERSEDE MORE RESTRICTIVE

SPECIFICATIONS ON THE PLANS OR AS

REQUIRED BY APPLICABLE CODE.

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Sheet Number



CF1R-PRF-01E

| NERAL INFORMATION   |   |  |  |  |   |   |
|---|---|--|--|--|---|---|
| 1   | e Proposed Detached ADU   |  |  |  |   |   |
|   | e Title 24 Analysis   |  |  |  |   |   |
|   | n 1523 E 14TH Street  |  |  |  |   |   |
|   | y National City   | 05   |  | Standards Version  | 2019                                    |   |
|   | e 91950   | 07   |  | Software Version   |   |   |
| 08 Climate Zon  |   | 09   | Front Orientat   | ion (deg/ Cardinal)  |   |   |
|   | e Single family   | 11   |  | er of Dwelling Units   |   |   |
|   | e NewConstruction   | 13   |  | mber of Bedrooms   |   |   |
| 14 Addition Cond. Floor Area (ft  |   | 15   |  | Number of Stories  |   |   |
|   |   |  | Fonostratio  |  |   |   |
| 16 Existing Cond. Floor Area (ft  |   | 17   |  | n Average U-factor   |   |   |
| 18 Total Cond. Floor Area (ft   |   | 19   |  | ing Percentage (%)   |   |   |
| 20 ADU Bedroom Cour   |   |  | ADU Conc   | ditioned Floor Area  | n/a                                     |   |
| 22 Is Natural Gas Available   | ? Yes   |  |  |  |   |   |
| OMPLIANCE RESULTS   |   |  |  |  |   |   |
| 01 Building Complies with Compute   | ar Performance  |  |  |  |   |   |
|   | res that require field testing and/or verific   | ation by a cor   | rtified UEDS rates under t   | the supervision of a   | CEC-approved H                          | EPS providor  |
|   | r more Special Features shown below   | ation by a cer   | runed HERS rater under i   | the supervision of a   | CEC-approved H                          | EKS provider.   |
|   |   |  |  |  |   |   |
| Registration Number:<br>222-P010074206A-000-000-000<br>CA Building Energy Efficiency Standards - 2019 Re  | oooo-oooo sidential Compliance Reg  | istration Date<br>port Version: 2<br>ema Version:      | 2022-04-18 12:12:54  |  | RS Provider:                            | CalCERT:<br>2022-04-18 12:09:41   |
| 222-P010074206A-000-000<br>CA Building Energy Efficiency Standards - 2019 Res<br>ERTIFICATE OF COMPLIANCE<br>roject Name: Proposed Detached ADU<br>alculation Description: Title 24 Analysis                                      | oooo-oooo sidential Compliance Reg  | oort Version: 2<br>ema Version:<br>Calcula             | 2022-04-18 12:12:54<br>2019.2.000  | Re<br>-04-18T12:08:31-0  | port Generated:                         |   |
| 222-P010074206A-000-000-000<br>CA Building Energy Efficiency Standards - 2019 Re<br>ERTIFICATE OF COMPLIANCE<br>roject Name: Proposed Detached ADU  | 0000-0000<br>sidential Compliance Rep<br>Sch  | oort Version: 2<br>ema Version:<br>Calcula<br>Input Fi | 2022-04-18 12:12:54<br>2019.2.000<br>rev 20200901<br>tion Date/Time: 2022-<br>ile Name: 1523 E 14TH  | Re<br>-04-18T12:08:31-0  | port Generated:                         | 2022-04-18 12:09:41<br>CF1R-PRF-<br>(Page 2 c                                       |
| 222-P010074206A-000-000-000<br>A Building Energy Efficiency Standards - 2019 Re<br>ERTIFICATE OF COMPLIANCE<br>roject Name: Proposed Detached ADU<br>alculation Description: Title 24 Analysis                                    | 0000-0000<br>sidential Compliance Rep<br>Sch  | oort Version: 2<br>ema Version:<br>Calcula             | 2022-04-18 12:12:54<br>2019.2.000<br>rev 20200901<br>tion Date/Time: 2022-<br>ile Name: 1523 E 14TH  | Re<br>-04-18T12:08:31-0<br>ł Street.ribd19x                              | port Generated:<br>7:00<br>Compliance M | 2022-04-18 12:09:41<br>CF1R-PRF-<br>(Page 2 c                                       |
| 222-P010074206A-000-000<br>A Building Energy Efficiency Standards - 2019 Res<br>RTIFICATE OF COMPLIANCE<br>oject Name: Proposed Detached ADU<br>Iculation Description: Title 24 Analysis<br>ERGY DESIGN RATING                    | 0000-0000<br>sidential Compliance Rep<br>Sch<br>Energ<br>Efficiency <sup>1</sup> (EDR)                          | oort Version: 2<br>ema Version:<br>Calcula<br>Input Fi | 2022-04-18 12:12:54<br>2019.2.000<br>rev 20200901<br>tion Date/Time: 2022-<br>ile Name: 1523 E 14TH  | Re<br>-04-18T12:08:31-0  | port Generated:<br>7:00<br>Compliance M | 2022-04-18 12:09:41<br>CF1R-PRF-<br>(Page 2 c                                       |
| 222-P010074206A-000-000<br>A Building Energy Efficiency Standards - 2019 Re<br>RTIFICATE OF COMPLIANCE<br>oject Name: Proposed Detached ADU<br>Iculation Description: Title 24 Analysis   | 0000-0000<br>sidential Compliance Rep<br>Sch  | oort Version: 2<br>ema Version:<br>Calcula<br>Input Fi | 2022-04-18 12:12:54<br>2019.2.000<br>rev 20200901<br>tion Date/Time: 2022-<br>ile Name: 1523 E 14TH  | Re<br>-04-18T12:08:31-0<br>ł Street.ribd19x                              | port Generated:<br>7:00<br>Compliance M | 2022-04-18 12:09:41<br>CF1R-PRF-<br>(Page 2 c                                       |
| 222-P010074206A-000-000<br>A Building Energy Efficiency Standards - 2019 Res<br>RTIFICATE OF COMPLIANCE<br>Dject Name: Proposed Detached ADU<br>Iculation Description: Title 24 Analysis<br>ERGY DESIGN RATING                    | 0000-0000<br>sidential Compliance Rep<br>Sch<br>Energ<br>Efficiency <sup>1</sup> (EDR)                          | oort Version: 2<br>ema Version:<br>Calcula<br>Input Fi | 2022-04-18 12:12:54<br>2019.2.000<br>rev 20200901<br>tion Date/Time: 2022-<br>ile Name: 1523 E 14TH  | Re<br>-04-18T12:08:31-0<br>ł Street.ribd19x                              | port Generated:<br>7:00<br>Compliance M | 2022-04-18 12:09:41<br>CF1R-PRF-<br>(Page 2 c                                       |
| 222-P010074206A-000-000<br>A Building Energy Efficiency Standards - 2019 Res<br>RTIFICATE OF COMPLIANCE<br>oject Name: Proposed Detached ADU<br>Iculation Description: Title 24 Analysis<br>ERGY DESIGN RATING<br>Standard Design | 0000-0000<br>sidential Compliance Rep<br>Sch<br>Energe<br>Efficiency <sup>1</sup> (EDR)<br>65.4<br>63.4<br>RESU | Calculat<br>Input Fi<br>/ Design Ratin                 | 2022-04-18 12:12:54<br>2019.2.000<br>rev 20200901<br>tion Date/Time: 2022-<br>ile Name: 1523 E 14TH<br>ngs<br>Total <sup>2</sup> (EDR)<br>28.4<br>26.4 | Re<br>-04-18T12:08:31-0<br>H Street.ribd19x<br>Efficiency <sup>1</sup> ( | port Generated:<br>7:00<br>Compliance M | 2022-04-18 12:09:41<br>CF1R-PRF-<br>(Page 2 c<br>argins<br>Total <sup>2</sup> (EDR) |

|                          |                                      | 11/1/       |                | ENERGY USE SUMMA  |          |                  |               |                      |                    |                      |                               |    |    |
|--------------------------|--------------------------------------|-------------|----------------|-------------------|----------|------------------|---------------|----------------------|--------------------|----------------------|-------------------------------|----|----|
| Er                       | nergy Use (kTDV/ft <sup>2</sup> -yr) | 1 AN        | Standard Desig |                   | Proposed | Design           |               | Compliance           | Margin             | Percent Im           | provement                     |    |    |
|                          | Space Heating                        |             | 0.37           | SPR               | 1.01     |                  | EK            | -0.64                |                    | -1                   | 73                            |    |    |
|                          | Space Cooling                        |             | 25.16          |                   | 28.0     | 9                |               | -2.93                |                    | -1:                  | 1.6                           |    |    |
|                          | IAQ Ventilation                      |             | 6.32           |                   | 6.32     | 2                |               | 0                    |                    | (                    | )                             |    |    |
|                          | Water Heating                        |             |                |                   | 35.5     | 1                |               | 10.01                |                    | 2                    | 2                             |    |    |
| Self U                   | Utilization/Flexibility Cre          | edit        | n/a            | /a 0 0            |          | n/a              |               | 0                    |                    | 0                    |                               | n, | /a |
| Co                       | ompliance Energy Total               |             | 77.37 70.93    |                   |          | 6.44             |               | 8.3                  |                    |                      |                               |    |    |
| REQUIRED PV SYS          | TEMS - SIMPLIFIED                    |             |                |                   |          |                  |               |                      |                    |                      |                               |    |    |
| 01                       | 02                                   | 03          | 04             | 05                | 06       | 07               | 08            | 09                   | 10                 | 11                   | 12                            |    |    |
| DC System Size<br>(kWdc) | Exception                            | Module Type | Array Type     | Power Electronics | CFI      | Azimuth<br>(deg) | Tilt<br>Input | Array Angle<br>(deg) | Tilt: (x in<br>12) | Inverter Eff.<br>(%) | Annual<br>Solar Access<br>(%) |    |    |
| 1.79                     | NA                                   | Standard    | Fixed          | none              | true     | 150-270          | n/a           | n/a                  | <=7:12             | 96                   | 98                            |    |    |

| Registration Number:<br>222-P010074206A-000-000-0000000-0000          | Registration Date/Time:<br>2022-04-18 12:12:54             | HERS Provider:               | CalCERTS inc. |
|---|--|------------------------------|---------------|
| CA Building Energy Efficiency Standards - 2019 Residential Compliance | Report Version: 2019.2.000<br>Schema Version: rev 20200901 | Report Generated: 2022-04-18 | 12:09:41      |

CF1R-PRF-01E CERTIFICATE OF COMPLIANCE (Page 3 of 8) Project Name: Proposed Detached ADU Calculation Date/Time: 2022-04-18T12:08:31-07:00 Calculation Description: Title 24 Analysis Input File Name: 1523 E 14TH Street.ribd19x REQUIRED SPECIAL FEATURES The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis. Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed HERS FEATURE SUMMARY The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry Building-level Verifications: Indoor air quality ventilation Kitchen range hood Cooling System Verifications: -- None --Heating System Verifications: Verified heat pump rated heating capacity / HVAC Distribution System Verifications: -- None --Domestic Hot Water System Verifications: (PED-CC -- None --**BUILDING - FEATURES INFORMATION** 01 02 -03 04 05 06 07 Number of Water Number of Dwelling Number of Ventilation Project Name Conditioned Floor Area (ft<sup>2</sup>) Number of Bedrooms Number of Zones Units Cooling Systems Heating Systems Proposed Detached ADU 498 1 2 0 1 1 ZONE INFORMATION 01 03 04 05 06 07 02 HVAC System Name Avg. Ceiling Height Water Heating System 1 Water Heating System 2 Zone Name Zone Type Zone Floor Area (ft<sup>2</sup>) Detached ADU Zone 498 Conditioned New Minisplit1 8 DHW Sys 1 N/A

CERTIFICATE OF COMPLIANCE

| New Front Wall       Detached ADU Zone       R-15 Wall       162       Front       212.7       26       90         New Right Wall       Detached ADU Zone       R-15 Wall       72       Right       150       28       90         New Left Wall       Detached ADU Zone       R-15 Wall       72       Right       150       28       90         New Left Wall       Detached ADU Zone       R-15 Wall       252       Left       150       32       90         New Back Wall       Detached ADU Zone       R-15 Wall       342       Back       162       6       90         New Roof       Detached ADU Zone       R-30 Roof Attic       n/a       n/a       90       0/a       0/a       0/a       0/a       0/a       0/a         Number of Units       Mare       Mare       Mare       Mare       Name       Name       Name       Name       Name       Name       Name         Mare       Detached ADU Zone       R-30 Roof Attic       n/a       n/a       498       n/a  | CERTIFICATE OF COMI<br>Project Name: Propos<br>Calculation Descriptio | ed Detached ADU  |                              |                                   | Calculation Date/Tinnput File Name: 15 |                                |            | 7:00             |            | CF1R-PRF-01E<br>(Page 4 of 8) | CERTIFICATE OF CO<br>Project Name: Prop<br>Calculation Descrip | osed Detached AD         |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|---|---|--|------------------------------|-----------------------------------|--|--------------------------------|------------|------------------|------------|-------------------------------|--|--------------------------|------------------------|---------------------|-----------------|------------|------------|--|--|--|--|--|--|--|------------|--|------------|--|------------|--|------------|--|--|--|---|--|---|--|--|------|--|------------|--|------|----|-----------|---|-------------------|
|   |   | 02   | 03                           | 04                                | 05                                     | 06                             |            | 07               |            | 08                            |  | G SYSTEMS                | 02                     |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              |                                   |  |                                | 2) Wi      | ndow and Door    | ті         |                               | 01   |                          | 02                     |                     | 04              |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | New Front Wall  | Detached ADU Zone  | R-15 Wall                    | 162                               | Front                                  | _                              | Ale        |                  | Area (tt2) |                               | Alea (itz)   |                          | Alea (itz)             |                     | Alea (IIZ)      | Area (ft2) | Area (ft2) |  |  |  |  |  |  |  | Area (itz) |  | Area (ft2) |  | Area (112) |  | Area (ft2) |  |  |  | <u>                                      </u> |  | + |  |  | 1(2) |  | Area (ft2) |  | Name | Sy | stem Type | _ | Cooling U<br>Name |
|   |   |  |                              |                                   |  |                                |            |                  |            |                               | New Minisplit  | 1 Heat num               | on heating cooling     | Heat Pump           | Heat Pu         |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              |                                   |  |                                |            |                  |            |                               |  | 1 neat pui               | ip nearing cooling     | System 1            | System          |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              |                                   |  |                                |            |                  |            |                               | 01   | 02                       | 03                     | 04                  | 05              |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | ATTIC   |  |                              |                                   |  |                                |            |                  |            |                               | HVAC - HEAT PUMPS  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   | 02   | 03                           | 04                                | 05                                     | 06                             |            | 07               |            | 08                            | Name   | System Type              | Number of Units        |                     | Heating         |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   | and the second s | Туре                         | Roof Rise (x in 12)               | Roof Reflectance                       | Roof Emittanc                  | e R        | ladiant Barrier  | Co         | ool Roof                      |  | Ductless                 |                        |                     | Cap 47          |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  | Ventilated                   |                                   |  | -0.85                          | 1          | No               |            | No                            | Heat Pump System 1   |                          | 1) 1                   | 8.2                 | 6000            |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | FENESTRATION / GLAZIN   | NG   |                              |                                   |  |                                |            |                  |            |                               | HVAC HEAT PUMPS -  | HERS VERIFICATION        |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | 01  | 02   |                              |                                   | 06 07                                  | 08 09                          | 10         | 11 12            | 13         | 14                            | 01   | 02                       | 03                     |                     | 1 J 1 1 4       |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | Name  | Type   | Surface                      | Orientation Azin                  | nuth Width Heigh                       |                                | U-factor   |                  |            |                               | Name   | Verified Airflow         | Airflow Target         | Verified            | EER             |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              |                                   |  | + $+$ $+$                      |            |                  | +          |                               |  | Not Required             | 0                      | Not Req             | uired           |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              |                                   |  | + + +                          |            |                  |            |                               | I-ners-ncpump  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              |                                   |  |                                | 0.3        |                  |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| n           |   |  |                              |                                   |  | + + +                          |            |                  |            |                               | 01   | 02                       | 2                      | 03                  |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Arrent Linker     Selection of the selection of           |   |  |                              |                                   |  | + + +                          |            |                  |            |                               | Dwelling Unit  | IAQ C                    | CFM                    | IAQ Watts/CFM       | 1               |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Automa participation and partende and participation and participation and participati |   |  |                              |                                   |  |                                |            |                  |            |                               |  | <b>I</b>                 | ,                      | 0.35                |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | - 22  |  |                              | Report Ve                         | 2022-04-18<br>rsion: 2019.2.000        | 3 12:12:54                     |            |                  | 22-04-18   |                               | -  | 222-P010074206A-000      |                        | mpliance            |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Note Control         State  | Project Name: Propos  | ed Detached ADU  |                              |                                   | _                                      |                                |            | 7:00             |            |                               | Project Name: Prop   | osed Detached AD         |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | OPAQUE DOORS  |  |                              |                                   |  |                                |            |                  |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| 1         Non-model         Non-mo  | 0:  | 1  |                              |                                   |  |                                |            |                  |            |                               |  | -                        | ce documentation is    | s accurate and c    | omplete.        |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   |   |  |                              | -                                 |  |                                |            |                  |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Subset 1000   | 1   | -  | New Fro                      | nt vvali                          |  | 20                             |            | l                | 1.5        |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Imme         Imme <th< td=""><td>SLAB FLOORS</td><td></td><td>r</td><td></td><td></td><td>1</td><td></td><td></td><td>1</td><td></td><td>Address:</td><td></td><td></td><td></td><td></td></th<>  | SLAB FLOORS   |  | r                            |                                   |  | 1                              |            |                  | 1          |                               | Address:   |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Name         Annu         Name         Name <th< td=""><td>01</td><td>02</td><td>03</td><td>04</td><td></td><td></td><td>.  </td><td>07</td><td></td><td>08</td><td></td><td>Square #200</td><td></td><td></td><td></td></th<>  | 01  | 02   | 03                           | 04                                |  |                                | .          | 07               |            | 08                            |  | Square #200              |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| minute         minute         minute         minute         minute         minute           Additional Control (1996)         Additional  | Name  | Zone   | Area (ft <sup>2</sup> )      | Perimeter (ft)                    | -                                      |                                |            | arpeted Fraction | ·          | Heated                        |  | 37                       |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Control (Control (Contro)))))   | New Slab On Grade   | Detached ADU Zone  | 498                          | 0.1                               | none                                   | 0                              |            | 80%              |            | No                            |  |                          | /                      | State of California |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| N           | OPAQUE SURFACE CONS   | STRUCTIONS   |                              |                                   |  |                                |            |                  |            |                               | 1. I am eligible   | under Division 3 of the  | Business and Professio | ons Code to accep   | t responsibilit |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Control column         Column <th< td=""><td>-</td><td>~</td><td>03</td><td>04</td><td>05</td><td>06</td><td>07</td><td></td><td>08</td><td></td><td>3. The building</td><td>design features or syste</td><td>em design features ide</td><td>ntified on this Cer</td><td>tificate of Cor</td></th<>   | -   | ~  | 03                           | 04                                | 05                                     | 06                             | 07         |                  | 08         |                               | 3. The building  | design features or syste | em design features ide | ntified on this Cer | tificate of Cor |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Image: Note of the second of the se       | Construction Name   | Surface Type   |                              | Framing                           | Total Cavity                           |                                |            | Διερ             | mhly Lave  | irs                           | Responsible Designer Na  |                          | s submitted to the ent | orcement agency     | for approval v  |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| A 35 Yout       Date In Youts       Wood Frances and and a 244 B 26 In. 0. C.       R 4.3       New France (2000)       Head Franch Rest 30 cont Accounts         A 25 Yout       Date In Youts       Wood Franced       2.44 B 26 In. 0. C.       R 4.3       New France (2000)       Head Franch Rest 30 cont Accounts       New France (2000)         A 105 Nort Alex       Contract       2.44 B 26 In. 0. C.       R 40       New France (2000)       New France (20   |   |  |                              |                                   | R-value                                |                                | 0          |                  |            |                               |  | {                        | 1 AN                   |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Image: state in the s       | R-15 Wall   | Exterior Walls   | Wood Framed Wall             | 2x4@16 in. O. C.                  |  | DEK<br>None / None             | 0.095      |                  |            |                               |  |                          |                        | FI E                | K S             |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Atte - Interface         Ward Famel         Date of All Change         Date of All Chang   | 1 15 Wall   | Exterior Wails   | wood named wan               | 244 @ 10 m. 0. 0.                 |  | None / None                    | 0.000      |                  |            |                               |  | Square #200              |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Minimum 2000         All C Buch         Circling         All C Buch         Dial         Non-/ None         Code         Dial         None// None         Code         Dial         None         None// None         None   | Attic RoofDetached ADI  |  | Wood Framed                  |                                   |  |                                |            |                  |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| b. 3D Ref Att       Calling Telefort       Wedd Transfel<br>Calling       2x4 8 21 h. 0. C       h. 30       Now / Yoor       0.33       Chronology (mmm Hold 2) 2000<br>httds: minits/opgun Roard         Ab Bref Att       Calling Telefort       See 8 21 h. 0. C       h. 30       Now / Yoor       0.33       Chronology (mmm Hold 2) 2000<br>httds: minits/opgun Roard       Digital signals is possible in door for soon on<br>Registration Rumany         Abulating Tener (Marcon Rumany       Registration Rumany <td></td> <td>Attic Roofs</td> <td></td> <td>2x4 @ 24 in. O. C.</td> <td>R-0</td> <td>None / None</td> <td>0.644</td> <td>Siding/sh</td> <td>eathing/d</td> <td>ecking</td> <td>La Jolla, CA 920</td> <td>37</td> <td></td> <td></td> <td></td>  |   | Attic Roofs  |                              | 2x4 @ 24 in. O. C.                | R-0                                    | None / None                    | 0.644      | Siding/sh        | eathing/d  | ecking                        | La Jolla, CA 920   | 37                       |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| <ul> <li></li></ul>   |   | _  |                              |                                   |  |                                |            |                  |            | -                             |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Image: minite update     Image: minite update       Image: minite update     Ima  | R-30 Roof Attic   |  |                              | 2x4 @ 24 in. O. C.                | R-30                                   | None / None                    | 0.032      | Cavity / F       | rame: R-9. | 1/2x4                         |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Project Name: Project Databid PUTION:       Calculation Data/Filme: 202.04.1812.08:20.00000000000000000000000000000000  | - 22  |  |                              | Report Ve                         | 2022-04-18<br>rsion: 2019.2.000        | 3 12:12:54                     |            |                  | 22-04-18   |                               | Registration Provider  | responsibility for the a | ccuracy of the inform  | nation.             | ire the conte   |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Quality insulation Installation (QII)High R-value Spray Foam InsulationBuilding Envelope Air LeakageCFM 50Not RequiredNot Required $n/a$ $n/a$ WATER HEATING SYSTEMUNTER HEATING SYSTEMUNTER HEATING SYSTEM01020304050607NameSystem TypeDistribution TypeWater Heater Name (H)Solar Heating SystemCompact DistributionHERS VerificationDHW Sys 1Domestic Hot WaterStandard DistributionDHW Heater 1(1) $n/a$ $n/a$ $n/a$ $n/a$ 010203040506070899101112NameHeating<br>Tank VerificationTank Verification<br>(gal) $recoveringor Plotrecoveringor Plotrecoveringor Plotrecoveringor PlotTank Verificationor RecoveringNoneNone010203040506070899101112010203040506070807000001020304020606070800000001020304050606070800000001020304050606070800000000010203040506$  | Project Name: Propos<br>Calculation Descriptio                        | ed Detached ADU<br>n: Title 24 Analysis  |                              |                                   | -                                      |                                |            | 7:00             |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Not Required       Not Required       Not Required       n/a         WATER HEATING SYSTEMS       O       O2       O3       O4       O5       O6       O7         Name       System Type       Distribution Type       Water Heater Name (#)       Solar Heating System       Compact Distribution       HERS Verification         UHW Sys 1       Domestic Hot Water<br>(DHW)       Standard Distribution       DHW Heater 1 (1)       n/a       None       n/a         WATER HEATERS       Standard Distribution       DHW Heater 1 (1)       n/a       None       n/a         O1       O2       O3       O6       O7       O8       O9       10       11       12         Name       Belong<br>Element<br>Type       Tank Encore<br>(rga)       Encore<br>or Pick       Tank Encore<br>(not Pick)       Tank Type       If of<br>(not Pick)       On Pick       Standard Methods<br>Standard Methods       Standard Methods       Standard Methods         DHW Heater 1       Heat Pump       n/a       1       40       NEEA Reated       c= 12 kW       n/a       n/a       Refer Meater Methods       Dutside         MATER HEATING - HERS VERIFICATION       O3       O4       O6       O7       08       Refer Water Meater Me   |   | _  |                              | -                                 |  |                                |            |                  |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| 01020304050607NameSystem TypeDistribution TypeWater Heater Name (#)Solar Heating SystemCompact DistributionHERS VerificationDHW Sys 1Domestic Hot WaterStandard DistributionDHW Heater 1 (1) $n/a$ $n/a$ $n/a$ $n/a$ 0102030607080910111201020306070809101112NameHeating<br>Element<br>TypeTank Type $n/a$ Tank,<br>Energy<br>UnitsTank,<br>Energy<br>er PilotTank,<br>Energy<br>er Pilot1112DHW Heater 1 $heat Pump$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ DHW Heater 1 $heat Pump$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ DHW Heater 1 $heat Pump$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ O1020304 $< =12$ kW $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ DHW Heater 1 $heat Pump$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ $n/a$ O1020304 $< =12$ kW $n/a$ $06$ $07$ $06$ $07$ $08$ NamePipe InsulationParallel PipingCompact DistributionCompact DistributionCompact DistributionCompact Distribution $0$ DHW Heater 1 $heat$ Pump   | Not Re  | quired   | - · ·                        |                                   | -                                      |                                |            |                  |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| DHW Sys1     Domestic Hot Water<br>(DHW)     Standard Distribution<br>System     DHW Heater 1 (1)     n/a     None     n/a       WATER HEATERS  |   | 1  | 03                           | 04                                |  | 05                             |            | 06               |            | 07                            |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| DHW Sys 1     (DHW)     System     DHW Heater 1 (1)     n/a     None     n/a       WATER HEATERS       01     02     03     04     05     06     07     08     09     10     11     12       Name     Heating<br>Element     Tank Type     # of<br>Units     Tank<br>[gal)     Energy<br>Efficiency     Input Rating<br>Input Rating     Standby Loss<br>Standby Loss     1s Hr, Rating<br>or Recovery     NEEA Heat Pump     Tank Location or<br>Ambient Condition       DHW Heater 1     Heat Pump     n/a     1     40     NEEA Rated     <= 12 kW   | Name  | System Type  | Distribution Type            | Water Heater                      | r Name (#) S                           | olar Heating System            | m Comp     | act Distribution | HERS \     | /erification                  |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| MATER HEATERS         01       02       03       04       05       06       07       08       09       10       11       12         Name       Heating<br>Element<br>Type       Tank Type       # of<br>Units       Tank<br>Vol.       Energy<br>Factor or<br>(gal)       Input Ratin<br>Prior Piot       Standby loss<br>Recovery       1st Hr. Rating<br>or Recovery       NEEA Heat Pump<br>Brand or Model       Tank Location or<br>Ambient Condition         DHW Heater 1       Heat Pump       n/a       1       40       NEEA Rated       <= 12 kW   | DHW Sys 1   |  |                              | DHW Heat                          | er 1 (1)                               | n/a                            |            | None             |            | n/a                           |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| 01       02       03       04       05       06       07       08       09       10       11       12         Name       Heating<br>Element<br>Type       Tank Type       # of<br>Units       Tank<br>Vol.       Energy<br>Factor or<br>(gal)       Input Rating<br>OF Piot       Tank<br>Insulation<br>OF Piot       Tank<br>Insulation<br>OF Piot       Standby Los<br>OF Recovery       Ist Hr. Rating<br>OF Flow Rate       NEEA Heat Pump<br>OF Flow Rate       NEEA Heat Pump<br>Brand or Model       Tank Location or<br>Ambient Condition         DHW Heater 1       Heat Pump       n/a       1       40       NEEA Rated       <= 12 kW   |   |  |                              |                                   |  |                                |            | ļ                |            |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| NameHeating<br>Element<br>TypeTank Type# of<br>unitsTank<br>Vol.<br>(gal)Energy<br>Factor or<br>or PiotTank,<br>insulation<br>or PiotStandby Los<br>or PiotIst Hr. Rating<br>or PiovNEEA Heat Pump<br>Brand or ModelTank Location or<br>Ambient ConditionDHW Heater 1Heat Pump<br>n/a140NEEA Rated<= 12 kW  |   | ~  |                              |                                   |  | 00                             | 10         |                  |            | 12                            |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| DHW Heater 1Heat Pumpn/a140NEEA Rated $<= 12 \text{ kW}$ n/an/an/aRheem\XE40T10HS<br>45U0 (40 gal)OutsideWATER HEATING - HERS VERIFICATIONWATER HEATING - HERS VERIFICATIONO102030405060708NamePipe InsulationParallel PipingCompact Distribution<br>TypeRecirculation ControlCentral DHW<br>DistributionShower Drain Water<br>Heat Recovery  |   | Heating<br>Element Tank  | Type # of Tank<br>Unite Vol. | Energy<br>Factor or Factor or Pil | ating Insulation<br>ot R-value         | Standby Loss<br>or Recovery or | Hr. Rating | NEEA Heat Pump   |            | Location or                   |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| 0102030405060708NamePipe InsulationParallel PipingCompact Distribution<br>TypeRecirculation ControlCentral DHW<br>DistributionShower Drain Water<br>Heat Recovery   | DHW Heater 1  | Heat Pump n/   | a 1 40                       | NEEA Rated <= 12                  |  | n/a                            | n/a        |                  | s          | Outside                       |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Name     Pipe Insulation     Parallel Piping     Compact Distribution     Compact Distribution     Recirculation Control     Central DHW     Shower Drain Water       Heat Recovery     Heat Recovery   |   | r  | ſ                            |                                   |  |                                |            |                  | 1          |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| Name Pipe insulation Parallel Piping Compact Distribution Type Recirculation Control Distribution Heat Recovery   |   |  |                              |                                   |  |                                |            |                  | Shower     |                               |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
| DHW Sys 1 - 1/1 Not Required Not Required Not Required None Not Required Not Required Not Required  |   | ^<br>  |                              | Compact Distribution              | Туре                                   | Recirculation Co               | ontrol     | Distribution     | Heat       | t Recovery                    |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |
|   | DHW Sys 1 - 1/1   | Not Required   | Not Required                 | Not Required                      | None                                   | Not Require                    | d          | Not Required     | Not        | Required                      |  |                          |                        |                     |                 |            |            |  |  |  |  |  |  |  |            |  |            |  |            |  |            |  |  |  |   |  |   |  |  |      |  |            |  |      |    |           |   |                   |

CF1R-PRF-01E

Name

Heat Pump

System 1

05

Heating

6000

Heating Unit | Cooling Unit

| OPAQUE DOORS                  |            |          |
|-------------------------------|------------|----------|
| 0                             | 1          |          |
| Na                            | me         |          |
| 1                             | 1          |          |
| SLAB FLOORS                   |            | _        |
|                               |            | _        |
| 01                            | 0          | 2        |
| Name                          | Zo         | n        |
| New Slab On Grade             | Detached   | A        |
| OPAQUE SURFACE CON            | STRUCTIONS | 5        |
| 01                            |            | 1        |
| Construction Name             | Surf       | a        |
| R-15 Wall                     | Exte       | ri       |
| Attic RoofDetached AD<br>Zone | U Att      | ic       |
| R-30 Roof Attic               | Ceilir     | ng<br>at |
|                               |            |          |

| Registration Numbe   | r:                |
|----------------------|-------------------|
|                      | 222-P010074206    |
| CA Building Energy E | Efficiency Standa |

| -           | -            |       |    |
|-------------|--------------|-------|----|
| Calculation | Description: | Title | 24 |

222-P010074206A-000-000-0000000-0000

Registration Date/Time: 2022-04-18 12:12:54 Report Version: 2019.2.000 Schema Version: rev 20200901

HERS Provider: CalCERTS inc.

Report Generated: 2022-04-18 12:09:41



CalCERTS inc.

Report Generated: 2022-04-18 12:09:41

Registration Date/Time: 2022-04-18 12:12:54 Report Version: 2019.2.000 Schema Version: rev 20200901

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 $\triangleleft$ 0 La Jolla, CA 5@gmail.com Ν ere Estudio75 ardo H. Pere re Suite#200 38 / t24.e75( Executive Square Suit (619) 274-2838 / t24 Ш S N 4

> 950 ~ σ Street California TH Sity, 4 U E 1 nal 1523 Nation

S Project Addres:

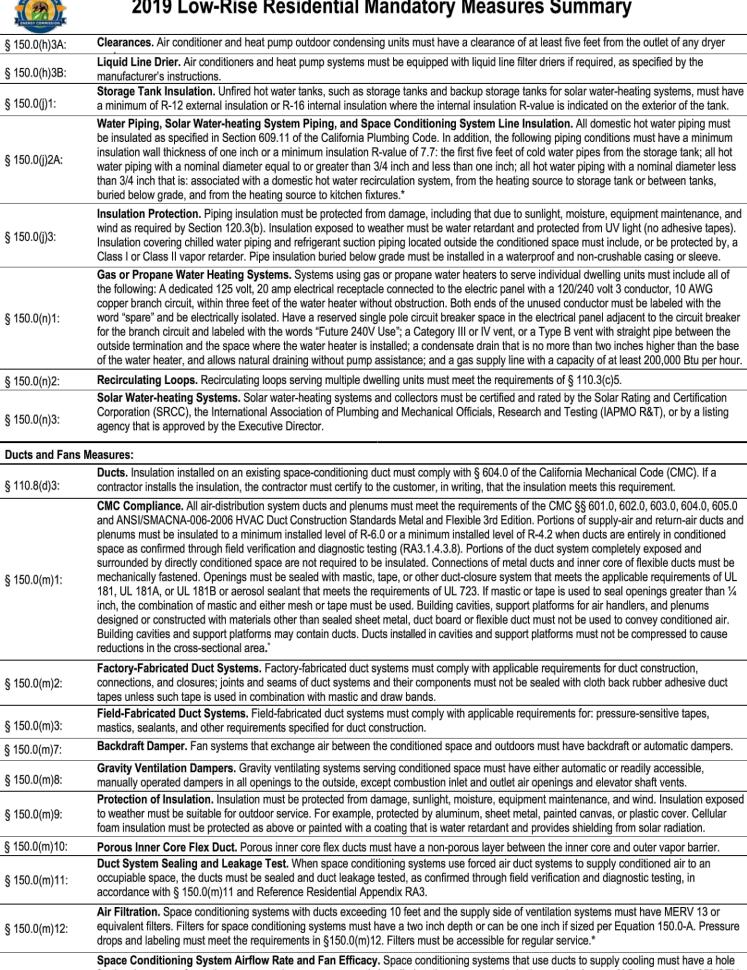
| RESID           | DENTIAL                    | MEAS         | URES S       | UMM      | ARY        |                    |                         |        |                                      |               | RMS-1             |
|-----------------|----------------------------|--------------|--------------|----------|------------|--------------------|-------------------------|--------|--------------------------------------|---------------|-------------------|
| Project Na      | <sup>me</sup><br>d Detache | d ADU        |              | Build    | ling Type  |                    | igle Fami<br>Iti Family |        | Addition Alone<br>Existing+ Additior | n/Alteration  | Date<br>4/18/2022 |
| Project Add     |                            | u / 12 0     |              | Calif    | iornia Ene | ergy Clima         |                         |        | Cond. Floor Area                     | Addition      | # of Units        |
| 1523 E          | 14TH Stree                 | et Nation    | al City      | C        | A Clim     | ate Zor            | ne 07                   |        | 498                                  | n/a           | 1                 |
| INSUL           | ATION                      |              |              |          |            | Area               |                         |        |                                      |               |                   |
| Constr          | uction T                   | уре          |              | Cav      | vity       | (ft <sup>2</sup> ) | S                       | pecia  | al Features                          |               | Status            |
| Wall            | Wood Framed                | d            |              | R 15     |            | 583                | }                       |        |                                      |               | New               |
| Door            | Opaque Door                | -            |              | - no ins | sulation   | 20                 | )                       |        |                                      |               | New               |
| Slab            | Unheated Sla               | b-on-Grade   |              | - no ins | sulation   | 498                | Perim                   | = 0'   |                                      |               | New               |
| Roof            | Wood Framed                | d Attic      |              | R 30     |            | 498                | }                       |        |                                      |               | New               |
|                 |                            |              |              |          |            |                    |                         |        |                                      |               |                   |
| FENES           | TRATION                    | 1            | Total Area:  | 72       | Glazing    | Percenta           | age: 1                  | 14.5%  | New/Altered Avera                    | ige U-Factor: | 0.30              |
| Orienta         | ation Ar                   | ea(ft²)      | U-Fac S      | SHGC     | Over       | hang               | Sidef                   | ins    | <b>Exterior Sha</b>                  | ades          | Status            |
| Front (S)       |                            | 6.0          | 0.300        | 0.23     | none       |                    | none                    |        | N/A                                  |               | New               |
| Right (E)       |                            | 28.0         | 0.300        | 0.23     | none       |                    | none                    |        | N/A                                  |               | New               |
| Left (W)        |                            | 32.0         | 0.300        | 0.23     | none       |                    | none                    |        | N/A                                  |               | New               |
| Rear (N)        |                            | 6.0          | 0.300        | 0.23     | none       |                    | none                    |        | N/A                                  |               | New               |
| HVAC            | SYSTEMS                    | 3            |              |          |            |                    |                         |        |                                      |               |                   |
| Qty. H          | leating                    |              | Min. Ef      | f Co     | oling      |                    | Min                     | ı. Eff | Ther                                 | mostat        | Status            |
|                 | Split Heat Pump            |              | 8.20 HSPF    | - Spli   | it Heat Ρι | Imp                | 14.0                    | SEER   | Setback                              |               | New               |
| HVAC<br>Locatio | DISTRIBU<br>on             | JTION<br>Hea | ting         | Co       | oling      | Duc                | ct Loca                 | ation  |                                      | uct<br>-Value | Status            |
| New Minisp      | olit                       |              | s / No Fan   | Duct     |            | nla                |                         |        | n                                    | la            | New               |
|                 | R HEATIN<br>Гуре           | G            | Gal          | llons    | Min.       | Eff                | Distri                  | butic  | on                                   |               | Status            |
| 1               | Heat Pump                  |              | 40           |          | 3.75       |                    | Standar                 | ď      |                                      |               | New               |
| EnergyPro       | 8.3 by Energy              | 'Soft User   | Number: 6441 | 1        |            |                    |                         |        |                                      |               | Page 11 of 16     |

2019 Low-Rise Residential Mandatory Measures Summary

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NOTE: Low-rise residential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. \*Exceptions may apply. (01/2020)

| (01/2020)         |  |
|-------------------|--|
| Building Envelop  | e Measures:  |
| § 110.6(a)1:      | Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*  |
| § 110.6(a)5:      | Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).  |
| § 110.6(b):       | Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*   |
| § 110.7:          | Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.   |
| § 110.8(a):       | Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).  |
| § 110.8(g):       | Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g).   |
| § 110.8(i):       | Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing<br>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):       | <b>Ceiling and Rafter Roof Insulation.</b> Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. 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 continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.* |
| § 150.0(b):       | Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.  |
| § 150.0(c):       | Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing o have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*  |
| § 150.0(d):       | Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*   |
| § 150.0(f):       | Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone withou facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).   |
| § 150.0(g)1:      | Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).  |
| § 150.0(g)2:      | Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.  |
| § 150.0(q):       | Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*  |
| Fireplaces, Decor | rative Gas Appliances, and Gas Log Measures:   |
| § 110.5(e)        | Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.  |
| § 150.0(e)1:      | Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.   |
| § 150.0(e)2:      | Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*   |
| § 150.0(e)3:      | Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*   |
| Space Conditioni  | ng, Water Heating, and Plumbing System Measures:   |
| § 110.0-§ 110.3:  | Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*   |
| § 110.2(a):       | HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*   |
| § 110.2(b):       | <b>Controls for Heat Pumps with Supplementary Electric Resistance Heaters.</b> Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*   |
| § 110.2(c):       | Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*   |
| § 110.3(c)4:      | Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.  |
| § 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.  |
| § 110.5:          | Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour ); and pool and spa heaters.  |
| § 150.0(h)1:      | Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook,<br>Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards<br>Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.  |



§ 150.0(m)13:

| Requirements for               | Ventilation and Indoor Air Quality:   |
|--------------------------------|---|
| § 150.0(o)1:                   | Requirements for Ventilation and<br>and Acceptable Indoor Air Quality in  |
| § 150.0(o)1C:                  | Single Family Detached Dwelling<br>other dwelling units, occupiable space<br>determined by ASHRAE 62.2 Section  |
| § 150.0(o)1E:                  | Multifamily Attached Dwelling Uni<br>accordance with Equation 150.0-B a<br>system is not used, all units in the bu<br>(0.2 inch water) per square foot of d |
| § 150.0(o)1F:                  | Multifamily Building Central Venti<br>ventilation airflow for each dwelling u<br>within 20 percent of the unit with the                                     |
| § 150.0(o)1G:                  | Kitchen Range Hoods. Kitchen ran  |
| § 150.0(o)2:                   | Field Verification and Diagnostic<br>Appendix RA3.7. A kitchen range hor<br>rated by HVI to comply with the airflo  |
| Pool and Spa Syst              | tems and Equipment Measures:  |
| § 110.4(a):                    | Certification by Manufacturers. Arr<br>that complies with the Appliance Effi<br>without adjusting the thermostat sett<br>resistance heating.*               |
| § 110.4(b)1:                   | Piping. Any pool or spa heating sys<br>dedicated suction and return lines, or   |
| § 110.4(b)2:                   | Covers. Outdoor pools or spas that  |
| § 110.4(b)3:                   | Directional Inlets and Time Switch<br>will allow all pumps to be set or prog  |
| § 110.5:                       | Pilot Light. Natural gas pool and sp  |
| § 150.0(p):                    | Pool Systems and Equipment Inst<br>rate, piping, filters, and valves.*  |
| Lighting Measures              | 8:  |
| § 110.9:                       | Lighting Controls and Componen<br>of § 110.9.*  |
| § 150.0(k)1A:                  | Luminaire Efficacy. All installed lun   |
| § 150.0(k)1B:                  | Blank Electrical Boxes. The number<br>other device must be no greater that<br>fan speed control.  |
| § 150.0(k)1C:                  | Recessed Downlight Luminaires i<br>labeling; air leakage; sealing; mainte   |
| § 150.0(k)1D:                  | Electronic Ballasts for Fluorescer<br>output frequency no less than 20 kH   |
| § 150.0(k)1E:                  | Night Lights, Step Lights, and Pat<br>controlled by vacancy sensors provide   |
| § 150.0(k)1F:                  | Lighting Integral to Exhaust Fans<br>must meet the applicable requireme   |
| § 150.0(k)1G:                  | Screw based luminaires. Screw ba  |
| § 150.0(k)1H:                  | Light Sources in Enclosed or Rec<br>temperature requirements, including   |
| § 150.0(k)11:                  | Light Sources in Drawers, Cabine<br>comply with Table 150.0-A or be cor<br>more than 150 lumens, and are equi   |
| § 150.0(k)2A:                  | Interior Switches and Controls. Al  |
| § 150.0(k)2B:                  | Interior Switches and Controls. Ex  |
|                                | Interior Switches and Controls. Lig   |
| § 150.0(k)2C:                  | turned ON and OFF.*   |
| § 150.0(k)2C:<br>§ 150.0(k)2D: | turned ON and OFF.*<br>Interior Switches and Controls. Co   |
|                                | turned ON and OFF.*   |
| § 150.0(k)2A:<br>§ 150.0(k)2B: | Interior Switches and Controls  |

## 2019 Low-Rise Residential Mandatory Measures Summary

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  $\leq 0.45$  watts per CFM for gas furnace air handlers and  $\leq 0.58$  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.\*

### 2019 Low-Rise Residential Mandatory Measures Summary

Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation Residential Buildings subject to the amendments specified in § 150.0(o)1.

Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with aces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates ons 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.

its. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced uilding must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa welling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.

ilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be e lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance. nge hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.

Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential ood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is ow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.

ny pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency iciency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater tting; a permanent weatherproof plate or card with operating instructions; and must not use electric

stem or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or or built-in or built-up connections to allow for future solar heating.

have a heat pump or gas heater must have a cover.

hes for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that grammed to run only during off-peak electric demand periods.

pa heaters must not have a continuously burning pilot light.

stallation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow

its. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements

minaires must meet the requirements in Table 150.0-A. per of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or an the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or

in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) tenance; and socket and light source as described in § 150.0(k)1C. nt Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an

th Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be ded they are rated to consume no more than 5 watts of power and emit no more than 150 lumens. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) ents of § 150.0(k).\*

ased luminaires must contain lamps that comply with Reference Joint Appendix JA8.\*

cessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated g marking requirements, must not be installed in enclosed or recessed luminaires.

ets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to ntrolled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no ipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.

Exhaust fans must be controlled separately from lighting systems.\* ighting must have readily accessible wall-mounted controls that allow the lighting to be manually

ontrols and equipment must be installed in accordance with manufacturer's instructions. ontrols must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to

ighting controls must comply with the applicable requirements of § 110.9.



#### 2019 Low-Rise Residential Mandatory Measures Summa

| ENERGY COMMISSION |  |
|-------------------|--|
| § 150.0(k)2G:     | Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.  |
| § 150.0(k)2H:     | Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.   |
| § 150.0(k)2I:     | Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.   |
| § 150.0(k)2J:     | Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for<br>dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*   |
| § 150.0(k)2K:     | Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.  |
| § 150.0(k)3A:     | <b>Residential Outdoor Lighting.</b> For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMCS.  |
| § 150.0(k)3B:     | Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.  |
| § 150.0(k)3C:     | Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.  |
| § 150.0(k)4:      | Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).  |
| § 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<br>applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.   |
| § 150.0(k)6A:     | Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior<br>common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that<br>building must be comply with Table 150.0-A and be controlled by an occupant sensor.  |
| § 150.0(k)6B:     | Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must:<br>i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and<br>ii. Lighting installed in corridors and stainwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.   |
| Solar Ready Build | lings:   |
| § 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) through § 110.10(e).   |
| § 110.10(a)2:     | Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).   |
| § 110.10(b)1:     | Minimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.* |
| § 110.10(b)2:     | Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.   |
| § 110.10(b)3A:    | Shading. The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.*   |
| § 110.10(b)3B:    | Shading. Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.*  |
| § 110.10(b)4:     | Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.  |
| § 110.10(c):      | Interconnection Pathways. The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.   |
| § 110.10(d):      | <b>Documentation.</b> A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(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"  |

### HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Proposed Detached ADU System Name New Minisplit ENGINEERING CHECKS SYSTEM LOAD COIL COOLING PEAK Number of Systems CFM Sensible Latent Heating System 218 4,710 6.000 Total Room Loads Output per System 6.000 Return Vented Lighting Total Output (Btuh) **Return Air Ducts** Output (Btuh/sqft) Cooling System Return Fan Ventilation Output per System 6,000 Total Output (Btuh) Supply Fan Total Output (Tons) **Supply Air Ducts** Total Output (Btuh/sqft) 996.0 TOTAL SYSTEM LOAD 4,710 Total Output (sqft/Ton) Air System HVAC EQUIPMENT SELECTION CFM per System Heatpump Minisplit 6K Btus 5,871 Airflow (cfm) Airflow (cfm/sqft) Airflow (cfm/Ton) 0.0% Total Adjusted System Output 5,871 Outside Air (%) 0.00 (Adjusted for Peak Design conditions) Outside Air (cfm/sqft) Aug 3 P TIME OF SYSTEM PEAK Note: values above given at ARI conditions HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak) 36 °F 68 °F 105 °F Outside Air 0 cfm Heating Coil 68 °F COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak) 75 / 61 ºF 55 / 54 ºF 82 / 68 °F Outside Air 0 cfm Cooling Coil 47.0% 75 / 62 °F

#### ol requirements if it: § 130.4; meets the

| Date<br>4/2 | 18/2022  |
|-------------|--|
| Floor       |  |
| COIL H      | IG PEAK  |
|             | Sensible   |
| 104         | 4,159  |
|             |  |
| ·           | 0  |
| 0           | 0  |
|             | 0  |
|             | 0  |
|             |  |
|             | 4,159  |
|             |  |
|             | 4,806  |
| -           | 4,000  |
|             |  |
|             | 4,806  |
| <b></b>     |  |
|             | Jan 1 AM   |
| DOM         | ↓<br>05 °F<br>58 °F  |
|             |  |
|             |  |
| DOM         | / 54 °F<br>/ 62 °F<br>⊥  |
|             | 4/<br>Floor<br>COIL H<br>CFM<br>104<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 |



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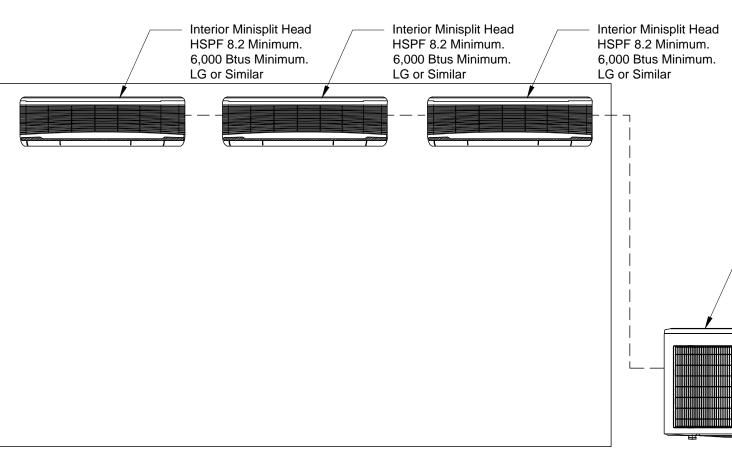
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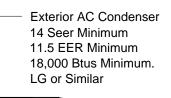
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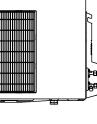
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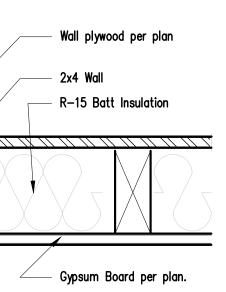
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#### MINISPLIT DETAIL - 2x4 Wall No radiant barrier required) \_\_\_\_\_ R-30 Batt insulation **INSULATION AT ROOF ATTIC INSULATION AT EXTERIOR WALL** PANASONIC FV-0511VH1 Specification Submittal Data / Panasonic Ventilation Fan/Heater Description: Ventilating fan/heater shall be low noise ceiling Grille -Attractive design using Poly Pro material. mount type rated for continuous run. Fan/heater shall -Attaches directly to housing with torsion springs. be certified by the Home Ventilating Institute (HVI). -Circulation grille with built-in diffuser for higher Heating elements shall be included. Evaluated by output velocity and directional heat throw. Inderwriters Laboratories and conform to both UL and cUL safety standards. Fan/heater is not intended Heater **Certificate of Product Ratings** -1600W Positive Temperature Coefficient (PTC) for installation over a tub/shower enclosure. heater for greater safety and reliability. Motor/Blower -Heater is self-limiting. As it approaches designed plans accordingly -Enclosed brushless ECM motor technology rated operating temperature, the electrical consumption automatically decreases, which prevents for continuous run. -------Fan ventilation rates shall be manually adjustable overheating. AHRI Certified Reference Number : 8552226 Date : 02-07-2020 Model Status : Active for 50-80-110 CFM. -Power rating shall be 120 volts and 60 Hz. Warranty: -6 years ECM Motor, 5 years LED, 3 years all other -Motor equipped with thermal-cutoff fuse. Brand Name : RHEEM -Removable with permanently lubricated plug-in parts. Model Number : RTG-95DVLN-1 Architectural Specifications: -Minimum 20 Amp dedicated circuit required. Ventilation fan/heater combination shall be ceiling Rated as follows in accordance with Department of Energy (DOE) Water Heater test procedures as published in the latest edition of the mount, with built-in speed selector. Select from Housing: 50/80/110 CFM and no more than <0.3/<0.3/0.7 Code of Federal Regulations, 10 CFR Part 430 and subject to verification of rating accuracy by AHRI-sponsored, independent, third party -26 gauge Zinc-Aluminum-Magnesium (ZAM) sone as certified by the Home Ventilating Institute (HVI) at 0.1 static pressure in inches water gauge testing: -Integrated dual 4" or 6" diameter duct adapter. (w.g.), with 51/82/112 CFM and no more than -Built-in back draft damper. 0.8/1.0/1.5 sone as certified by HVI at 0.25 w.g., -Built-in metal flange provides blocking for Max GPM : 5.0 and no less than 53/82/110 CFM at 0.375 w.g. penetrations through drywall as an Air Barrier, Power Consumption shall be no greater than and assists with the decrease in leakage in the Uniform Energy Factor : 0.82 4.7/7.7/12 watts at 0.1 w.g., 8.6/13.3/19.0 watts at building envelope during blower door testing. 0.25 w.g., and 12.3/18.2/26.0 watts at 0.375 w.g. -Building Envelope during blower door testing. The following data is for reference only and is not certified by AHRI Energy efficiency shall be no less than 10.6/10.4/9.2 -Suitable for installation in ceilings insulated up to CFM/watt at 0.1 w.g. 5.9/6.2/5.9 CFM/watt at 0.25, and 4.3/4.5/4.0 CFM/Watt at 0.375 w.g. Power Energy Source : Natural Gas -Articulating and expandable installation bracket up rating shall be 120v/60Hz. Minimum 20 Amp dedicated circuit required. Duct diameter shall be Heater Type : Instantaneous inclusive of an integrated dual 4" or 6" duct adapter. Also suitable for installation in ceilings insulated up to Usage Bin : High Usage R60. Fan/heater is not intended for installation over a Nominal Capacity (gal) : 0 WhisperWarm DC FV-0511VH1 4" 4" 4" DOE Rated Storage Volume (gal) : 0 0.25 0.375 0.1 0.25 0.375 0.1 0.25 0.375 Static Pressure in inches w.g. Air Volume (CFM) 0 80 82 82 50 51 53 Input (MBtu/h) : 199.9 <0.3 1.0 - <0.3 0.8 Noise (sones) 0.7 1.5 <sup>'</sup> 13.3 18.2 4.7 8.6 12 19.0 26.0 Recovery Efficiency, (%): 84 Power Consumption (watts) Energy Efficiency (CFM/Watt) 9.2 5.9 4 10.4 6.2 4.5 10.6 5.9 4.3 haracteristics (HVI tested data Heat Traps : No with 4" Duct) 861 1090 1249 736 1008 1173 638 930 1 Speed (RPM) 0.24 0.37 0.49 0.16 0.26 0.35 0.10 0.18 0.25 directional heat throw. Current (amps) MAX. Current (amps) 0.50 Power Rating (V/Hz) 120/60 Motor Type ECM N/A - No ESTAR category for fan/heater ENERGY STAR rated -Industry research indicates static pressure in typical installations ranges from 0.20" to 0.375" ---HVI testing and certification based on 4" duct. GAS TANKLESS WATER HEATER IAQ FAN (HERS VERIFICATION REQUIRED)



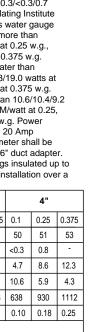




| REQUIRED PV SYS          | TEMS - SIMPLIFIED |             |            |                   |      |                  |               |                      |                    |                      |                               |
|--------------------------|-------------------|-------------|------------|-------------------|------|------------------|---------------|----------------------|--------------------|----------------------|-------------------------------|
| 01                       | 02                | 03          | 04         | 05                | 06   | 07               | 08            | 09                   | 10                 | 11                   | 12                            |
| DC System Size<br>(kWdc) | Exception         | Module Type | Array Type | Power Electronics | CFI  | Azimuth<br>(deg) | Tilt<br>Input | Array Angle<br>(deg) | Tilt: (x in<br>12) | Inverter Eff.<br>(%) | Annual<br>Solar Access<br>(%) |
| 1.79                     | NA                | Standard    | Fixed      | none              | true | 150-270          | n/a           | n/a                  | <=7:12             | 96                   | 98                            |



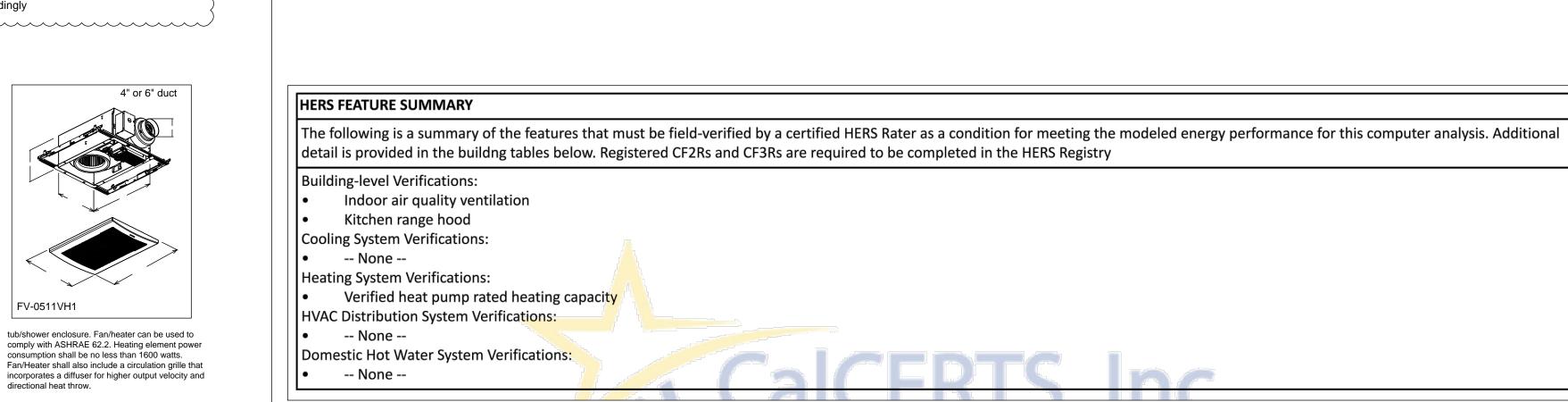
Continuous exhaust system: IAQ fan shall run continuously and has max 1 sone noise level. Continuous exhaust systems require HERS blower door testing to show no more than 0.3 cfm/sq ft leakage base upon the envelope surface area per section 150.0(o)1E BEES. Please note on



4" or 6" duct V-0511VH1 tub/shower enclosure. Fan/heater can be used to comply with ASHRAE 62.2. Heating element power consumption shall be no less than 1600 watts. Fan/Heater shall also include a circulation grille that

> ECM Motor Technology: When the fan senses static pressure its speed is automatically increased to ensure that the desired CFM is not compromised, which allows the fan to perform as rated.

## **REQUIRED PV SYSTEMS**

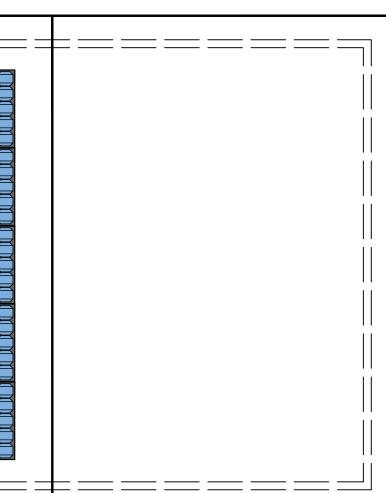


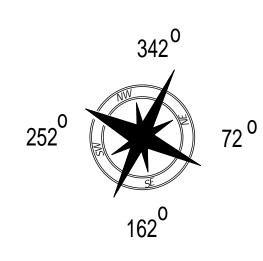
### XXXXX YYYYY <u>X X X X X</u> YYYY XXXXX LILL \_\_\_\_\_

# ENERGY EFFICIENCY HERS VERIFICATION



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1950 σ street California S S S 4TH City, E 1 nal 1523 Nation S Project Addres:

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| CERTIFICATE OF COMPLIANCE<br>Project Name: Addition<br>Calculation Description: Title 24 Analysis<br>GENERAL INFORMATION  |  | <b>Calculation Date/Time:</b> 2022-10-<br>Input File Name: 1523 E 14th St              |  | CF1R-PRF-01E<br>(Page 1 of 7)   | CERTIFICATE<br>Project Nam<br>Calculation I<br>OPAQUE SUR | e: Addition<br>Description: 1 | Title 24 Analysis           |   |  | Calculation Date/Tir<br>Input File Name: 15                   |                                   |          | 00   | CF1R-PRF-01E<br>(Page 4 of 7)            |
|---|--|--|--|---|---|-------------------------------|-----------------------------|---|--|---|-----------------------------------|----------|--|--|
| 01 Project Name Addi  | ition  |  |  |   | 01  |                               | 02                          | 03  | 04   | 05  | 06                                | 07       |  | 08                                       |
| 02 Run Title Title  | · · ·  |  |  |   | Construction  | on Name                       | Surface Type                | Construction Type                                   | Framing  | Total Cavity  | Interior / Exterior<br>Continuous | U-factor | Asserr                                     | bly Layers                               |
| 03 Project Location 1523<br>04 City Nation  |  | 05 Sta   | ndards Version 2019                              |   |   |                               |                             |   |  | R-value   | R-value                           |          |  |  |
| 06 Zip code 9195  |  |  | ftware Version EnergyPro 8.3                     |   | R-15  | Wall                          | Exterior Walls              | Wood Framed Wall                                    | 2x4 @ 16 in. O. C.                                       | R-15  | None / None                       | 0.095    |  | n: Gypsum Board<br>ame: R-15 / 2x4       |
| 08 Climate Zone 7   |  |  | (deg/ Cardinal) 162                              |   |   |                               |                             |   |  |   |                                   |          | Exterior Finis                             | sh: 3 Coat Stucco                        |
| 10         Building Type         Single           12         Project Scope         Additional Additiona Additiona Additional Additiona Additional Additional Additiona A |  |  | Dwelling Units 1<br>er of Bedrooms 3             |   | R-0 V   | Vall                          | Interior Walls              | Wood Framed Wall                                    | 2x4 @ 16 in. O. C.                                       | R-O   | None / None                       | 0.277    |  | n: Gypsum Board<br>ne: no insul. / 2x4   |
| 14         Addition Cond. Floor Area (ft²)         152  |  | 15 Nu  | mber of Stories 1                                |   |   |                               |                             |   |  |   |                                   |          | Other Side Fini                            | ish: Gypsum Board                        |
| 16 Existing Cond. Floor Area (ft <sup>2</sup> ) 704   |  | 17 Fenestration A  | verage U-factor 0.3                              |   |   |                               |                             | Wood Framed   |  |   |                                   |          |  | oof (Asphalt Shingle)<br>Jeck: Wood      |
| 18 Total Cond. Floor Area (ft <sup>2</sup> ) 856  |  |  | Percentage (%) 31.58%                            |   | Attic RoofAd  | dition Zone                   | Attic Roofs                 | Ceiling   | 2x4 @ 24 in. O. C.                                       | R-0   | None / None                       | 0.644    | Siding/shea                                | athing/decking<br>ne: no insul. / 2x4    |
| 20         ADU Bedroom Count         n/a           22         Is Natural Gas Available?         Yes   |  | 21 ADU Conditio  | ned Floor Area n/a                               |   |   |                               |                             |   |  |   |                                   |          |  | ace: Carpeted                            |
|   |  |  |  |   | R-19 Floor C  | Crawlspace                    | Floors Over<br>Crawlspace   | Wood Framed Floor                                   | 2x6 @ 16 in. O. C.                                       | R-19  | None / None                       | 0.049    | Floor D                                    | Deck: Wood<br>athing/decking             |
| ddition Alone Project Analysis Parameters 01  | 02   | 03 04  | 05   | 06  |   |                               | clawispace                  |   |  |   |                                   |          |  | ame: R-19 / 2x6                          |
|   |  | al Area (ft2) Existing Bedroo  |  | Total Bedrooms  | B 20 B-   | - 6 Attain                    | Ceilings (below             | Wood Framed   | 2-4 @ 24 := 0.6  | B 20  | Nene (Nene                        | 0.022    |  | oists: R-20.9 insul.                     |
| 704   | 152  | 856 2  | 1  | 3   | R-30 Rod  | of Attic                      | attic)                      | Ceiling   | 2x4 @ 24 in. O. C.                                       | R-30  | None / None                       | 0.032    |  | me: R-9.1 / 2x4<br>n: Gypsum Board       |
|   |  |  |  |   |   |                               | VEDIFICATION                |   |  |   |                                   |          |  |  |
| MPLIANCE RESULTS<br>01 Building Complies with Computer Perfo  | ormance  |  |  |   | BOILDING EN   | VELOPE - HEKS                 | VERIFICATION                | 02  | 2  |   | 03                                |          | 04   | • • • • • • • • • • • • • • • • • • •    |
| 02 Building does not require field testing of   |  |  |  |   | Quality   | Insulation Ins                | tallation (QII)             | High R-value Spray                                  | Foam Insulation  | Building Enve   | lope Air Leakage                  |          | CFM  |  |
| 03 Building does not incorporate Special F  | eatures  |  |  |   |   | Not Requir                    | ed                          | Not Re  | quired   | Not F   | lequired                          |          | n/a  | а  |
| Registration Number:<br>CA Building Energy Efficiency Standards - 2019 Residentia   | al Compliance Rep                              | istration Date/Time:<br>port Version: 2019.2.000<br>ema Version: rev 20200901          | HERS Provider:<br>Report Generated               | : 2022-10-07 10:33:46   | Registration I<br>CA Building E<br>CERTIFICATE            | inergy Efficienc              |                             | esidential Compliance                               | Report Ve  | ion Date/Time:<br>ersion: 2019.2.000<br>/ersion: rev 20200901 |                                   |          | S Provider:<br>ort Generated: 2022         |  |
| RTIFICATE OF COMPLIANCE<br>oject Name: Addition<br>Ilculation Description: Title 24 Analysis  |  | <b>Calculation Date/Time:</b> 2022-10-<br>Input File Name: 1523 E 14th St              |  | CF1R-PRF-01E<br>(Page 2 of 7)   | Project Nam   | e: Addition                   | Title 24 Analysis           |   |  | Calculation Date/Tir<br>Input File Name: 15                   |                                   |          | 00   | CF1R-PRF-01E<br>(Page 5 of 7)            |
|   | ENERGY   | ( USE SUMMARY  |  |   | WATER HEATI   | NG SYSTEMS                    |                             |   |  |   |                                   |          |  |  |
| Energy Use (kTDV/ft <sup>2</sup> -yr)   | Standard Design                                | Proposed Design  | Compliance Margin                                | Percent Improvement   | 01  |                               | 02                          | 03  | 04   |   | 05                                |          | 06   | 07                                       |
| Space Heating   | 0  | 0  | 0  | · ·   | Nam   |                               | System Type                 | Distribution Type                                   |  | r Name (#) S  | olar Heating System               | n Compa  | ct Distribution                            | HERS Verification                        |
| Space Cooling   | 69.39  | 61.2   | 8.19   | 11.8  | DHW S   | iys 1                         | Domestic Hot Water<br>(DHW) | Standard Distributio<br>System                      | DHW Heat   | ter 1 (1)   | n/a                               |          | None                                       | n/a                                      |
| IAQ Ventilation   | 0<br>145.7                                     | 0<br>145.7   | 0  | 0   |   |                               |                             | 1   | 1  |   |                                   |          |  |  |
| Water Heating<br>Self Utilization/Flexibility Credit  | 145.7<br>n/a                                   | 0  | 0  | n/a   | WATER HEATE   | r                             | 02 04                       | 05 06   | 07 08  |   | 10 11                             |          | 12   | 13 14                                    |
| Compliance Energy Total   | 215.09   | 206.9  | 8.19   | 3.8   | 01  | 02                            | 03 04                       | 05 06   | 07 08<br>Tank  | 09  | 10 11                             | L        | 12   | 13 14                                    |
| UIRED SPECIAL FEATURES<br>following are features that must be installed as condit<br>NO SPECIAL FEATURES REQUIRED   | tion for meeting the modeled energy            | y performance for this computer analysis.  |  |   | Name  | Heating<br>Element<br>Type    | Tank Type # o<br>Unit       | f Tank Energy<br>Vol. Factor or<br>(gal) Efficiency | Input Rating Insulation<br>or Pilot R-value<br>(Int/Ext) | Loss or Rat   | st Hr.<br>ing or<br>w Rate        | at Pump  | Fank Location<br>or Ambient S<br>Condition | Verified<br>Status Existing<br>Condition |
| IS FEATURE SUMMARY<br>following is a summary of the features that must be fi  |  |  | energy performance for this con                  | nputer analysis. Additional   | DHW<br>Heater 1<br>WATER HEATI                            | Gas<br>NG - HERS VER          | n/a 1                       | 50 0.64-EF  | <= 75 0<br>kBtu/hr                                       | 82  | n/a n/a                           | a        | n/a E                                      | xisting n/a                              |
| tail is provided in the buildng tables below. Registered (<br>ilding-level Verifications:   | CF2Rs and CF3Rs are required to be o           | completed in the HERS Registry   |  |   | 01  |                               | 02                          | 03  | 04   | 05  | 06                                |          | 07   | 08                                       |
| None<br>oling System Verifications:   |  |  |  |   | Name  | e                             | Pipe Insulation             | Parallel Piping                                     | Compact Distribution                                     | Compact Distribution<br>Type                                  | Recirculation Cor                 | ntroll   | Central DHW<br>Distribution                | Shower Drain Water<br>Heat Recovery      |
| None<br>ating System Verifications:   |  |  |  |   | DHW Sys 1   | L - 1/1                       | Not Required                | Not Required  | Not Required   | None  | Not Required                      | d        | Not Required                               | Not Required                             |
| None<br>AC Distribution System Verifications:   |  |  |  |   | SPACE CONDI   | TIONING SYST                  | EMS                         |   |  |   |                                   |          |  |  |
| None<br>mestic Hot Water System Verifications:  |  |  |  |   |   | 01                            | 02                          | 03  | 04   | 05 06   | 07                                | 08       | 09 1                                       | .0 11                                    |
| None  |  |  |  |   |   |                               |                             | Heating U   | nit Cooling Unit _                                       | Distributi  | on Required                       |          | Verified Hea                               |  |
| NE INFORMATION  |  |  |  |   | N   | ame                           | System Ty                   | ype Name  | Name Fa  | n Name Name   | Thermostat<br>Type                | Status   | Existing Equip<br>Condition Cou            |  |
| 01 02   | 03   | 04 05  | 06   | 07  |   | u                             | Heating and cool            | ing system Heating                                  |  |   |                                   |          |  |  |
| Zone Name Zone Type   |  | Floor Area (ft <sup>2</sup> ) Avg. Ceiling Heigh                                       |  | Water Heating System 2  | Wall  | Heater1                       | other                       | - · I Compone                                       | nt Component HV  | 'AC Fan 1 n/a   | n/a                               | Existing | NA 1                                       | 1 1                                      |
| Addition Zone Conditioned stration Number: uilding Energy Efficiency Standards - 2019 Residentia  | al Compliance Rep                              | 152 8<br>istration Date/Time:<br>port Version: 2019.2.000<br>ema Version: rev 20200901 | DHW Sys 1<br>HERS Provider:<br>Report Generated  | N/A   | Registration I<br>CA Building E                           |                               | ry Standards - 2019 Re      | esidential Compliance                               | Report Ve  | ion Date/Time:<br>ersion: 2019.2.000<br>/ersion: rev 20200901 |                                   |          | S Provider:<br>ort Generated: 2022         | 2-10-07 10:33:46                         |
| TIFICATE OF COMPLIANCE<br>ect Name: Addition<br>ulation Description: Title 24 Analysis  |  | <b>Calculation Date/Time:</b> 2022-10-<br>Input File Name: 1523 E 14th St              |  | CF1R-PRF-01E<br>(Page 3 of 7)   |   | e: Addition<br>Description: 1 | Fitle 24 Analysis           |   |  | Calculation Date/Tir<br>Input File Name: 15                   |                                   |          | 00   | CF1R-PRF-01E<br>(Page 6 of 7)            |
| QUE SURFACES 01 02 03   | 04 05  | 06 07  | 08 09  | 9 10  | HVAC - HEATII   | NG UNIT TYPE                  | ,<br>                       | 02  | , 1  |   | 03                                | 1        | 04   |  |
| Name Zone Construction  |  | Window and Doo   |  |   |   | 01<br>Name                    |                             | 02<br>System  |  |   | 03<br>er of Units                 |          | 04<br>Heating Ef                           |  |
| Left Wall Addition Zone R-15 Wall   | 252 Left                                       | Gross Area (ft <sup>-</sup> ) Area (ft2)<br>96 16                                      | 90 Exten   |   |   | leating Compo                 | nent 1                      | Gas wall  |  |   | 1                                 |          | AFUE                                       | •  |
| Back Wall Addition Zone R-15 Wall<br>Back Wall Addition Zone R-15 Wall  | 252 Left<br>342 Back                           | 101 32   | 90 Exten<br>90 nor                               |   |   |                               |                             |   |  |   |                                   |          |  |  |
| Right Wall Addition Zone R-15 Wall  | 72 Right                                       | 96 0   | 90 nor   |   | HVAC - COOLI  |                               |                             |   |  |   |                                   |          |  |  |
| terior Wall Addition Zone R-0 Wall<br>Roof Addition Zone R-30 Roof Att  | n/a n/a<br>ic n/a n/a                          | 70 0<br>152 n/a  | n/a<br>n/a                                       | New   | 01  |                               | 02                          | 03  | 04   | 05  | 06<br>Zapally Control             |          | 07<br>Mulit-speed                          | 08                                       |
| aised Floor Addition Zone R-19 Floor Crawls   |  | 152 n/a  | n/a n/a  | New   | Name  |                               | System Type                 | Number of Units                                     | Efficiency EER/CEER                                      | Efficiency SEER   | Zonally Control                   | lied     | Compressor                                 | HERS Verification                        |
|   | · · · ·  |  |  |   | Cooling Com   | ponent 1                      | No Cooling                  | 1   | n/a  | n/a   | Not Zonal                         |          | Single Speed                               | n/a                                      |
| 01 02   | 03 04  | 05 06  | 07   | 08  | HVAC - FAN S  |                               |                             |   |  |   |                                   |          |  |  |
| Name Construction   | Type Roof Rise (x                              | in 12) Roof Reflectance Roof Emi   | tance Radiant Barrier                            | Cool Roof   |   |                               | 01<br>lame                  |   | 02<br>Туре   |   | 03<br>Fan Power (Watts/           | /CFM)    |  | 04<br>Name                               |
| tic Addition Zone Attic RoofAddition Zone   | Ventilated 4                                   | 0.08 0.75  | 5 No   | No  |   |                               | AC Fan 1                    |   | HVAC Fan   |   | 0.58                              |          |  | n/a                                      |
| STRATION / GLAZING  |  |  |  |   |   | 1117                          |                             |   |  |   | 0.00                              |          |  |  |
| 01 02<br>Name Type 9  | 03 04<br>Surface Orientation<br>.eft Wall Left | Azimuth (ft) (ft) Mult. (fi  | ea<br><sup>2</sup> ) U-factor U-factor Source SH | 12     13     14       IGC     SHGC<br>Sourc<br>e     Exterior<br>Shading       .23     NFRC     Bug Screen |   |                               |                             |   |  |   |                                   |          |  |  |
|   | ack Wall Back<br>Back Wall Back                | 342         1         1           342         1         1                              |  | .23 NFRC Bug Screen<br>.23 NFRC Bug Screen  |   |                               |                             |   |  |   |                                   |          |  |  |

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Schema Version: rev 20200901

HERS Provider: Report Generated: 2022-10-07 10:33:46

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Registration Number:

|                     |                        |                    | Calculation Date/Tir    | ne: 2022-10-07T10                            | 0:33:30-07: | 00 (Page 4 of   |
|---------------------|------------------------|--------------------|-------------------------|--|-------------|---|
| Analysis            |                        | I                  | Input File Name: 152    | 23 E 14th St Addr                            | ibd19x      |   |
|                     |                        |                    |                         |  |             |   |
| 02                  | 03                     | 04                 | 05                      | 06   | 07          | 08  |
| асе Туре            | Construction Type      | Framing            | Total Cavity<br>R-value | Interior / Exterior<br>Continuous<br>R-value | U-factor    | Assembly Layers   |
| ior Walls           | Wood Framed Wall       | 2x4 @ 16 in. O. C. | R-15                    | None / None                                  | 0.095       | Inside Finish: Gypsum Board<br>Cavity / Frame: R-15 / 2x4<br>Exterior Finish: 3 Coat Stucco                             |
| ior Walls           | Wood Framed Wall       | 2x4 @ 16 in. O. C. | R-0                     | None / None                                  | 0.277       | Inside Finish: Gypsum Board<br>Cavity / Frame: no insul. / 2x4<br>Other Side Finish: Gypsum Board                       |
| c Roofs             | Wood Framed<br>Ceiling | 2x4 @ 24 in. O. C. | R-0                     | None / None                                  | 0.644       | Roofing: Light Roof (Asphalt Shingle)<br>Roof Deck: Wood<br>Siding/sheathing/decking<br>Cavity / Frame: no insul. / 2x4 |
| ors Over<br>wlspace | Wood Framed Floor      | 2x6 @ 16 in. O. C. | R-19                    | None / None                                  | 0.049       | Floor Surface: Carpeted<br>Floor Deck: Wood<br>Siding/sheathing/decking<br>Cavity / Frame: R-19 / 2x6                   |
| gs (below<br>attic) | Wood Framed<br>Ceiling | 2x4 @ 24 in. O. C. | R-30                    | None / None                                  | 0.032       | Over Ceiling Joists: R-20.9 insul.<br>Cavity / Frame: R-9.1 / 2x4<br>Inside Finish: Gypsum Board                        |
| ATION               |                        |                    |                         |  |             |   |
|                     | 02                     |                    |                         | 03   |             | 04  |
| (QII)               | High R-value Spray     | Foam Insulation    | Building Enve           | lope Air Leakage                             |             | CFM50   |
|                     | Not Req                | uired              | Not F                   | lequired                                     |             | n/a   |

| CERTIFICATE OF COMPLIANCE   |                   |
|---|-------------------|
| Project Name: Addition  | С                 |
| Calculation Description: Title 24 Analysis  | Ir                |
| DOCUMENTATION AUTHOR'S DECLARATION STATEMENT  |                   |
| 1. I certify that this Certificate of Compliance documentation is accura  | ite and complete. |
| Documentation Author Name:  | D                 |
| Ricardo Perez   |                   |
| Company:  | Si                |
| Estudio 75  |                   |
| Address:  | CI                |
| 4275 Executive Square, Suite 200  |                   |
| City/State/Zip:   | PI                |
| La Jolla, CA 92037  |                   |
| RESPONSIBLE PERSON'S DECLARATION STATEMENT  |                   |
| I certify the following under penalty of perjury, under the laws of the State of O  | California:       |
| 1. I am eligible under Division 3 of the Business and Professions Code  |                   |
| <ol> <li>I certify that the energy features and performance specifications in</li> </ol>  |                   |
| <ol> <li>The building design features or system design features identified o<br/>calculations, plans and specifications submitted to the enforcement</li> </ol> |                   |
| Responsible Designer Name:  | Re                |
| Leeonel Solis   |                   |
| Company:  | Da                |
| Aztec Drafting & Design   |                   |
| Address:  | Li                |
| 9119 Jamacha Rd, Suite 115  |                   |
| City/State/Zip:   | PI                |
| Spring Valley, CA 91977   |                   |
| 1   |                   |

| Report Version: | 2019.2.000 |
|-----------------|------------|

### RESIDENTIAL MEASURES SUMMARY

Registration Number:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

| Project Na<br>Addition |   | Building Type            | e IZ Singl<br>□ Multi      |        |                               | n/Alteration    | Date<br>10/7/2022 |
|------------------------|---|--------------------------|----------------------------|--------|-------------------------------|-----------------|-------------------|
| Project Ad<br>1523 E   | <sup>dress</sup><br>14th Street National City | California En<br>CA Clim | ergy Climate<br>ate Zone   |        | Total Cond. Floor Area<br>152 | Addition<br>152 | # of Units<br>1   |
| INSUL/<br>Constr       | ATION<br>ruction Type                         | Cavity                   | Area<br>(ft <sup>2</sup> ) | S      | pecial Features               |                 | Status            |
| Wall                   | Wood Framed                                   | R 15                     | 80                         |        |                               |                 | New               |
| Wall                   | Wood Framed                                   | R 15                     | 165                        |        |                               |                 | New               |
| Demising               | Wood Framed                                   | - no insulation          | 70                         |        |                               |                 | Existing          |
| Roof                   | Wood Framed Attic                             | R 30                     | 152                        | Cool R | oof                           |                 | New               |
| Floor                  | Wood Framed w/Crawl Space                     | R 19                     | 152                        |        |                               |                 | New               |
|                        |   |                          |                            |        |                               |                 |                   |

| FENESTRA    | TION                   | Total Area:       | 48    | Glazing Pe        | rcentage: | 31.6% Ne | w/Altered Av | erage U-Factor:  | 0.3   |
|-------------|------------------------|-------------------|-------|-------------------|-----------|----------|--------------|--|-------|
| Orientation | Area(ft <sup>2</sup> ) |                   | SHGC  | Overha            |           |          | xterior S    | the second s | Statu |
| Left (W)    | 16.0                   | 0.300             | 0.23  | none              | none      | ٨        | I/A          |  | New   |
| Rear (N)    | 32.0                   | 0.300             | 0.23  | none              | none      | ٨        | I/A          |  | New   |
|             |                        |                   |       |                   |           |          |              |  |       |
|             |                        |                   |       |                   |           |          |              |  |       |
| HVAC SYST   |                        | Min F             | ff Co | olina             |           | n Eff    | Th           | ermostat   | Statu |
| Qty. Heati  |                        | Min. E<br>70% AFU |       | ooling<br>Cooling |           | n. Eff   | Th<br>Setba  | ermostat   | Statu |

| Location      | Heating           | C0      | oling   | Duct Location  |
|---------------|-------------------|---------|---------|----------------|
| Wall Heater   | Ductless / No Fan | Duct    | less    | n/a            |
|               |                   |         |         |                |
|               |                   |         |         |                |
| WATER HEATING |                   |         |         |                |
| Qty. Type     | G                 | Sallons | Min. Ef | f Distribution |
|               |                   |         |         |                |

EnergyPro 8.3 by EnergySoft User Number: 6441

Registration Date/Time:

Report Generated: 2022-10-07 10:33:46

HERS Provider:

| CF1R-PRF-01           Calculation Date/Time: 2022-10-07T10:33:30-07:00         (Page 7 of 7           Input File Name: 1523 E 14th St Addribd19x  |
|---|
|   |
| Documentation Author Signature:<br>Ricardo Perez  |
| iignature Date:<br>10/7/2022  |
| CEA/ HERS Certification Identification (If applicable):<br>R19-19-30062   |
| Phone:<br>619 274-2838  |
| uilding design identified on this Certificate of Compliance.<br>npliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.<br>re consistent with the information provided on other applicable compliance documents, worksheets,<br>uilding permit application.<br>Responsible Designer Signature: |
| Leconsl Solis   |
| Date Signed:<br>10/7/2022   |
| icense:<br>Na   |
| Phone:<br>619 414-8506  |

Registration Date/Time: Report Version: 2019.2.000

RMS-1

Status

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Schema Version: rev 20200901

Report Generated: 2022-10-07 10:33:46

HERS Provider:

| Project Name<br>Addition   |            |  |                    |                |          |                  | )/7/20          |
|--|------------|--|--------------------|----------------|----------|------------------|-----------------|
| System Name<br>Wall Heater   |            |  |                    |                |          | Floor            | Area<br>152     |
| ENGINEERING CHECKS   |            | SYSTEM LOAD  |                    |                |          |                  | 152             |
| Number of Systems  | 1          |  | COII               | COOLING F      | FAK      | COIL H           | TG PF           |
| Heating System   |            | 1  | CFM                | Sensible       | Latent   | CFM              | Sens            |
| Output per System  | 35,000     | Total Room Loads   | 94                 |                | 105      | 47               |                 |
| Total Output (Btuh)  | 35,000     | Return Vented Lighting   |                    | 0              |          |                  |                 |
| Output (Btuh/sqft)   | 230.3      | Return Air Ducts   |                    | 0              |          |                  |                 |
| Cooling System   |            | Return Fan   |                    | 0              |          |                  |                 |
| Output per System  | 0          | Ventilation  | 0                  | 0              | 0        | 0                |                 |
| Total Output (Btuh)  | 0          | Supply Fan   |                    | 0              |          |                  |                 |
| Total Output (Tons)  | 0.0        | Supply Air Ducts   |                    | 0              |          |                  |                 |
| Total Output (Btuh/sqft)   | 0.0        |  |                    |                |          |                  |                 |
| Total Output (sqft/Ton)  | 0.0        | TOTAL SYSTEM LOAD  |                    | 2,020          | 105      |                  |                 |
| Air System   |            |  |                    | I              |          |                  |                 |
| CFM per System   | 0          | HVAC EQUIPMENT SELECTION   |                    |                |          |                  |                 |
| Airflow (cfm)  | 0          | Wall Heater  |                    | 0              | 0        |                  | 3               |
| Airflow (cfm/sqft)   | 0.00       |  |                    |                |          | -                |                 |
| Airflow (cfm/Ton)  | 0.0        |  |                    |                |          |                  |                 |
| Outside Air (%)  | 0.0%       | Total Adjusted System Output   |                    | 0              | 0        |                  | 3               |
| Outside Air (cfm/sqft)   | 0.00       |  |                    |                |          | L                |                 |
| Note: values above given at ARI  | conditions | TIME OF SYSTEM PEAK  |                    |                | Aug 3 PM |                  | Jar             |
|  |            | (Airstream Temperatures at Time o  |                    |                |          |                  |                 |
|  |            |  |                    |                |          |                  |                 |
| 36 ºF  | 68 ºF      | 105 ºF   |                    |                |          |                  |                 |
| 36 ₩   |            | 105 ≌⊢   | → <b> </b>         |                | 12       |                  | 7               |
| Outside Air  |            | 105 ºF   | →                  |                |          |                  | ļ               |
| - <b>&gt;.</b>   | Heating    |  | -                  |                |          | 1                | ↓<br>105 ºF     |
| Outside Air  |            |  | →                  |                |          |                  | ↓<br>105 ºF     |
| Outside Air  |            |  |                    |                | R        | DOM              | ↓<br>105 ºF     |
| Outside Air  |            |  | <b>→</b>           |                | RC       | ООМ              | 105 °F<br>68 °F |
| Outside Air<br>0 cfm   |            |  |                    |                | R        | ООМ              | 1               |
| Outside Air<br>0 cfm   |            |  |                    |                | R        | ООМ              | 1               |
| Outside Air<br>0 cfm<br>68 °F  | Heating    |  | → []]              | Peak)          | R        | ООМ              | 1               |
| Outside Air<br>0 cfm<br>68 °F  |            | Coil   | → []               | Peak)          | R        | ООМ              | 1               |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR                                       |            | Coil (Airstream Temperatures at Time of  | of Cooling         | Peak)          | R        | ООМ              | 1               |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F                         |            | Coil Coil (Airstream Temperatures at Time of 5/61 °F 55/54 °F  | →                  | Peak)          |          | ООМ              | 1               |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F<br>Outside Air          |            | Coil<br>(Airstream Temperatures at Time of 5/61 °F 55/54 °F<br>(Airstream Temperatures at Time of 5/61 °F 55/54 °F     | → []<br>of Cooling | Peak)          |          | DOM              | 68 °F<br>       |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F                         |            | Coil Coil (Airstream Temperatures at Time of 5/61 °F 55/54 °F  | →                  | Peak)          |          | 555              | 1               |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F<br>Outside Air          |            | Coil<br>(Airstream Temperatures at Time of 5/61 °F 55/54 °F<br>(Airstream Temperatures at Time of 5/61 °F 55/54 °F     | →                  | Peak)<br>47.09 |          | DOM              | 68 °F<br>       |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F<br>Outside Air          |            | Coil<br>(Airstream Temperatures at Time of 5/61 °F 55/54 °F<br>(Airstream Temperatures at Time of 5/61 °F 55/54 °F     | of Cooling         |                |          | DOM<br>55<br>DOM | 68 ⁰F           |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F<br>Outside Air<br>0 cfm |            | Coil<br>(Airstream Temperatures at Time of 5/61 °F 55 / 54 °F<br>(Airstream Temperatures at Time of 5/61 °F 55 / 54 °F | of Cooling         |                |          | DOM<br>55<br>DOM | 68 °F           |
| Outside Air<br>0 cfm<br>68 °F<br>COOLING SYSTEM PSYCHR<br>82 / 68 °F<br>Outside Air<br>0 cfm |            | Coil<br>(Airstream Temperatures at Time of 5/61 °F 55 / 54 °F<br>(Airstream Temperatures at Time of 5/61 °F 55 / 54 °F | of Cooling         |                |          | DOM<br>55<br>DOM | 68 °F           |

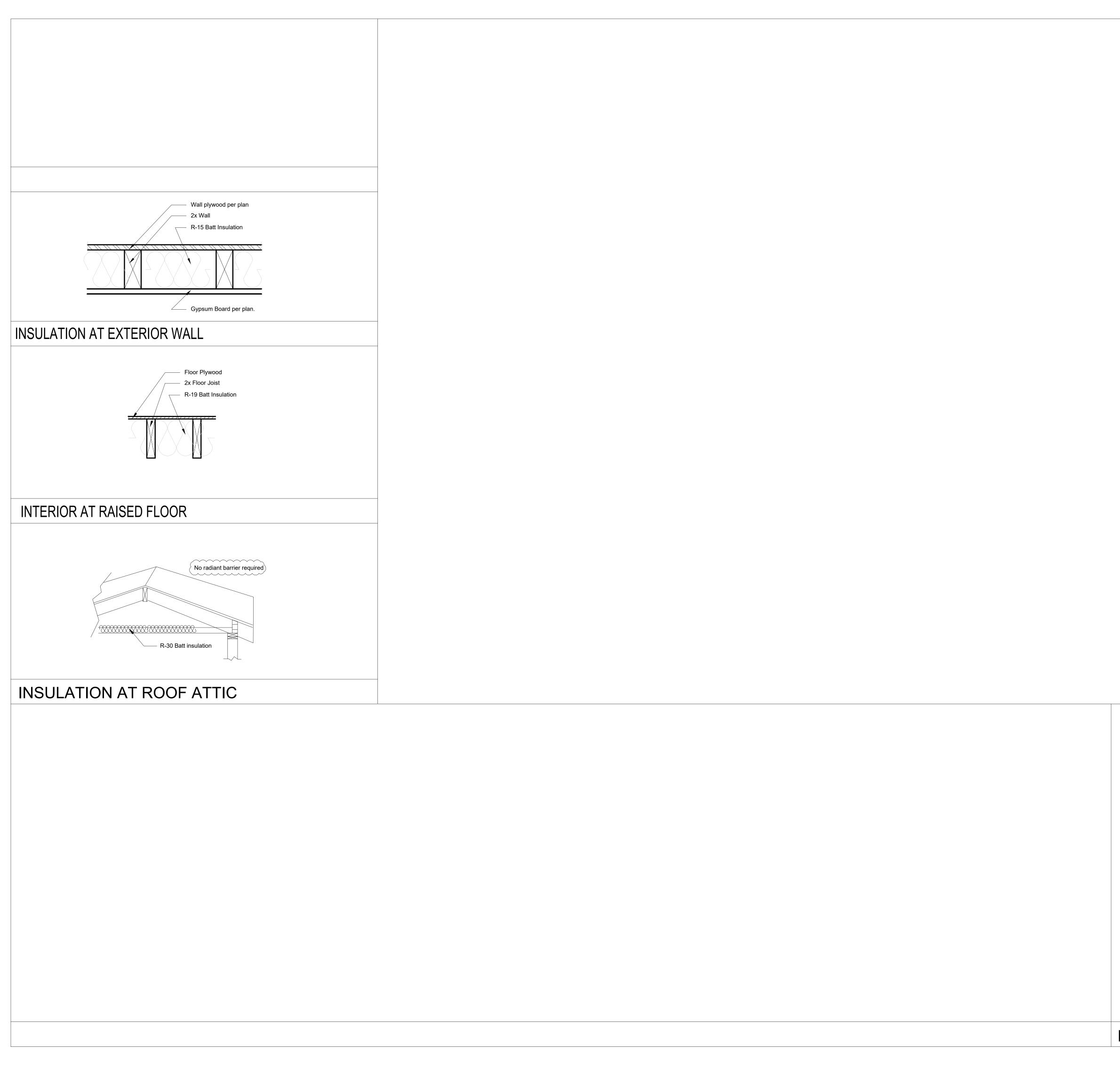


9203 Estudio75 Ricardo H. Perez Executive Square Suite#200 La Jolla, CA (619) 274-2838 / t24.e75@gmail.com CA Ш 75 42.

> 91950 , California ( Addition 1523 E 14th. S National City, (

> > Project Address

T05



| Estudio75<br>Ricardo H. Perez<br>4275 Executive Square Suite#200 La Jolla, CA 92037<br>(619) 274-2838 / t24.e75@gmail.com |
|---|
| Addition<br>1523 E 14th. St.<br>National City, California 91950   |
| Project<br>Address  |
| <b>T05</b>  |

| SHGC=.23 | SHGC=.23 | SHGC=.23 | SHGC=.23  |  |
|----------|----------|----------|-----------|--|
| ENERG    | Y EFFICI | ENCY HE  | ERS VERIF |  |

Skylight: U—Factor=.30

PROPERLY COMPLETED AND SIGNED CERTIFICATES OF INSTALLATION (CF2R FORMS) SHALL BE PROVIDED TO THE INSPECTOR IN THE FIELD. FOR PROJECTS REQUIRING HERS VERIFICATION, THE CF2R FORMS SHALL BE REGISTERED WITH A

CALIFORNIA-APPROVED HERS PROVIDER DATA REGISTRY.

DATA REGISTRY.

Windows: U-Factor=.30

PROPERLY COMPLETED CERTIFICATES OF VERIFICATION (CF3R FORMS) SHALL BE PROVIDED TO THE INSPECTOR IN THE FIELD FOR ITEMS REQUIRING HERS VERIFICATION. CF3R FORMS SHALL BE REGISTERED WITH A CALIFORNIA-APPROVED HERS PROVIDER

> French Door: Folding Door: U–Factor=.30 U–Factor=.30