

| ABBREVIATIONS | | | |
|---------------|---------------------------|-----------|-------------------------------|
| AB | ANCHOR BOLT ABOVE | J-BOX JT | JUNCTIONBOX JOINT |
| AC | AIR CONDITIONING | | |
| ACOUST | ACOUSTICAL | LAM | LAMINATE |
| AD | ACCESS DOOR, AREA DRAIN | LOC | LOCATE |
| ADDL | ADDITIONAL | LWTW | LIGHTWEIGHT |
| AFF | ABOVE FINISHED FLOOR | | |
| AL | ALUMINUM | MAINT MAS | MAINTENANCE MASONRY |
| ALT | ALTERNATE | | |
| ALUM | ALUMINUM | MAT | MATERIAL |
| ANOD | ANODIZED | MATL | MATERIAL |
| APPD | APPROVED | MAX | MAXIMUM |
| APPROX | APPROXIMATE | MECH | MECHANICAL |
| ARCH | ARCHITECT | MET | METAL |
| AUTO | AUTOMATIC | MFG | MANUFACTURER |
| AVG | AVERAGE | MISC MO | MISCELLANEOUS MASONRY OPENING |
| | | QTY | QUANTITY |
| BDRM | BEDROOM | | |
| BEL | BELOW | NAT (N) | NATURAL NEW |
| BTWN | BETWEEN | NOM | NOMINAL |
| BLD | BUILDING | | |
| BLK | BLOCK | | |
| BLKG | BLOCKING | OC OD | ON CENTER OUTSIDE DIAMETER |
| CB | CATCH BASIN | OF | OUTSIDE FACE |
| CCW | COUNTER CLOCKWISE | OHF | OVER HEAD |
| CEM | CEMENT | OPNG | OPENING |
| CER | CERAMIC | OPP | OPPOSITE HAND |
| CFT | CUBIC FOOT | | |
| CIP | CAST-IN-PLACE | PLAM | PLASTICLAMINATE |
| CJ | CONTROL JOINT | PTTN | PARTITION |
| CL | CENTERLINE | PERP | PERPENDICULAR |
| CLG | CEILING | PLMBG | PLUMBING |
| CLR | CLEAR | PLTF | PLATFORM |
| CMU | CONCRETE MASONRY UNIT | PLWD | PLYWOOD |
| CONC | CONCRETE | PNT | PAINT |
| CONT | CONTINUOUS | PREFAB | PREFABRICATED |
| CPT | CARPET | | |
| DBL | DOUBLE | | |
| DEG | DEGREE | RA | RETURN AIR |
| DEM | DEMOLISH | RAD | RADIUS |
| DEMO | DEMOLITION | REBAR | REINFORCING BAR |
| DEPT | DEPARTMENT | REF | REFERENCE |
| DET | DETAIL | REQD | REQUIRED |
| DIAG | DIAGONAL | REV | REVISION |
| DIA | DIAMETER | RO | ROUGH OPENING |
| DIM | DIMENSION | RWD | REDWOOD |
| DN | DOWN | | |
| DTL | DETAIL | SCHED SC | SCHEDULE SOLID CORE |
| DWG | DRAWING | SECT | SECTION |
| DS | DOWNSPOUT | SF | SQIAREFOOT |
| EA | EACH | SHT | SHEET |
| EJ | EXPANSION JOINT | SIM | SIMILAR |
| ELECT | ELECTRICAL | SPECS | SPECIFICATIONS |
| ENGR | ENGINEER | SQ | SQUARE |
| EQ | EQUAL | SSTL | STAINLESS STEEL |
| EQUIP (E) | EQUIPMENT EXISTING | STD | STANDARD |
| | | STL | STEEL |
| | | STRUCT | STRUCTURAL |
| FDTN | FOUNDATION | | |
| FE | FIRE EXTINGUISHER | T&B | TOP AND BOTTOM |
| FEC | FIRE EXTINGUISHER CABINET | T&G | TONGUE & GROOVE |
| FF | FINISHED FLOOR | T&D | TO BE DETERMINED |
| FHC | FIRE HOSE CABINET | TD | TRENCH DRAIN |
| FLR | FLOOR | TRD | TREAD |
| FOS | FACE OF STUDS | TSLAB | TOP OF SLAB |
| FP | FIREPROOF | TS | TOP OF STEEL |
| FT | FEET | TW | TOP OF WALL |
| FTG | FOOTING | (TYP) | TYPICAL |
| GA | GAUGE | UL | UNDERWRITERS LAB |
| GALV | GALVANIZED | UNO | UNLESS NOTED OTHERWISE |
| GB | GYPSPUM BOARD | UON | UNLESS OTHERWISE NOTED |
| GC | GENERAL CONTRACTOR | | |
| GL | GLASS | VERT | VERTICAL |
| GRND | GROUND | VIF | VERIFY IN FIELD |
| GWB | GYPSPUM WALL BOARD | | |
| | | W/ | WITH |
| H | HIGH | W/O | WITHOUT |
| HORIZ | HORIZONTAL | WC | WATER CLOSET |
| HR | HOUR | WOOD | WOOD |
| | | WWM | WELDED WIRE MESH |
| ID | INSIDE DIAMETER | WP | WATERPROOF |
| IN | INCH | | |
| INFO | INFORMATION | | |

| SYMBOLS | | | |
|---------|------------------|--------|-------------------------|
| | DETAIL SYMBOL | ROOM # | ROOM IDENTIFICATION |
| | SECTION DETAIL | (A) | WINDOW NUMBER |
| | DOOR SYMBOL | (01) | DOOR NUMBER |
| | BUILDING SECTION | (A4) | PARTITION TYPE |
| | REVISION SYMBOL | (1) | REVISION SYMBOL |
| | ELEVATION SYMBOL | --- | BREAK LINE |
| | ELEVATION MARKER | ---- | HIDDEN OR OVERHEAD LINE |
| | DIMENSION LINE | ===== | ALIGNMENT |

| GENERAL NOTES | |
|---------------|--|
| 1. | THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE PREMISES AND SHALL BASE HIS BID ON THE EXISTING CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND FIELD CONDITIONS. |
| 2. | THE WORK INCLUDED UNDER THIS CONTRACT SHALL INCLUDE ALL LABOR, MATERIALS, TRANSPORTATION, TOOLS AND EQUIPMENT NECESSARY FOR THE CONSTRUCTION OF THE PROJECT, LEAVING ALL WORK READY FOR USE. |
| 3. | PRIOR TO CONSTRUCTION, DISCREPANCIES BETWEEN THE ARCHITECTURAL AND ENGINEERING DRAWINGS SHALL BE REPORTED TO THE ARCHITECT. |
| 4. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE APPLICABLE UNIFORM BUILDING CODE, HANDICAP ACCESS CODE AND ALL APPLICABLE ORDINANCES, INCLUDING STATE AND LOCAL BUILDING CODES AND REQUIREMENTS. |
| 5. | THESE PLANS INDICATE THE GENERAL EXTENT OF DEMOLITION AND NEW CONSTRUCTION NECESSARY FOR THE WORK, BUT ARE NOT INTENDED TO BE ALL INCLUSIVE. ALL DEMOLITION AND ALL NEW WORK NECESSARY TO ALLOW FOR A FINISHED JOB IN ACCORDANCE WITH THE INTENTION OF THESE DOCUMENTS SHALL BE INCLUDED REGARDLESS OF WHETHER SHOWN ON THE DRAWINGS OR IN THE NOTES. DO NOT DEMOLISH ANY ITEMS THAT APPEAR STRUCTURAL, UNLESS SPECIFICALLY INDICATED TO BE DEMOLISHED IN THE CONSTRUCTION DOCUMENT, WITHOUT PRIOR REVIEW AND WRITTEN APPROVAL BY THE ARCHITECT. |
| 6. | ANY ERRORS, OMISSIONS, AND CONFLICTS FOUND IN THESE CONSTRUCTION DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND OWNER FOR CLARIFICATION BEFORE PROCEEDING WITH WORK. |
| 7. | ALL DIMENSIONS ARE TO FACE OF FINISH UNLESS NOTED OTHERWISE. ALL DIMENSIONS SHALL BE VERIFIED. |
| 8. | THE CONTRACTOR SHALL CONFIRM IN WRITING APPROXIMATE ON-SITE DELIVERY DATES FOR ALL CONSTRUCTION ITEMS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS, AND SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY POSSIBLE DELAYS AFFECTING OCCUPANCY. |
| 9. | THE CONTRACTOR SHALL PROVIDE A SCHEDULE FOR CONSTRUCTION AS REQUIRED TO MEET THE OWNER'S PHASING REQUIREMENTS AND ULTIMATE COMPLETION DATE. |
| 10. | THE CONTRACTOR SHALL VERIFY THAT NO CONFLICTS EXIST IN THE LOCATION OF ANY AND ALL MECHANICAL, ELECTRICAL, TELEPHONE, LIGHTING, PLUMBING AND FIRE SPRINKLER WORK (INCLUDING PIPING, DUCTWORK AND CONDUIT) AND THAT ALL CLEARANCES FOR INSTALLATION AND MAINTENANCE ARE PROVIDED. |
| 11. | NO WORK DEFECTIVE IN CONSTRUCTION OR QUALITY OR DEFICIENT IN ANY REQUIREMENT OF THE CONTRACT DOCUMENTS WILL BE ACCEPTABLE IN CONSEQUENCE OF THE OWNER'S OR ARCHITECT'S FAILURE TO DISCOVER OR POINT OUT DEFICIENCIES OR DEFECTS DURING CONSTRUCTION. DEFECTIVE WORK REVEALED WITHIN THE TIME REQUIRED BY GUARANTEES SHALL BE REPLACED BY WORK CONFORMING TO THE INTENT OF THE CONTRACT. NO PAYMENT, EITHER PARTIAL OR FINAL, SHALL BE CONSTRUED AS ACCEPTANCE OF DEFECTIVE WORK OR IMPROPER MATERIALS. |
| 12. | THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING CONSTRUCTION AND SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGES CAUSED BY CONTRACTOR AND SUB-CONTRACTORS. |
| 13. | THE CONTRACTOR SHALL REVIEW, APPROVE, STAMP AND SUBMIT WITH REASONABLE PROMPTNESS AND IN SUCH SEQUENCE AS TO CAUSE NO DELAY IN THE WORK, PRODUCT DATA, SHOP DRAWINGS AND SAMPLES FOR THE PROJECT. |
| 14. | BY APPROVING, STAMPING AND SUBMITTING SHOP DRAWINGS, PRODUCT DATA AND SAMPLES, THE CONTRACTOR REPRESENTS THAT HE HAS DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS, AND FIELD CONSTRUCTION CRITERIA RELATED THERETO AND THAT HE HAS CHECKED AND COORDINATED THE INFORMATION WITHIN SUCH SUBMITTALS WITH THE REQUIREMENTS OF THE WORK AND CONTRACT DOCUMENTS. |
| 15. | THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ANY DEVIATION FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECT'S REVIEW OF THE SHOP DRAWINGS, PRODUCT DATA OR SAMPLES UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMISSION AND THE ARCHITECT HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION. |
| 16. | THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT THREE (3) PRINTS, TYPICALLY, OF EACH SHOP DRAWING SUBMITTAL PLUS THREE (3) COPIES OF EITHER PRODUCT DATA OR SAMPLES. |
| 17. | THE ARCHITECT ASSUMES NO RESPONSIBILITY FOR DIMENSIONS OR QUANTITIES ON REVIEWED SUBMITTALS. |
| 18. | SUBSTITUTIONS, REVISIONS AND/OR CHANGES MUST HAVE PRIOR WRITTEN APPROVAL BY THE ARCHITECT. |
| 19. | THE CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DOCUMENTS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION FOR USE BY ALL TRADES AND SHALL PROVIDE ALL SUBCONTRACTORS WITH CURRENT CONSTRUCTION DOCUMENTS AS REQUIRED. |
| 20. | THE CONTRACTOR SHALL PROVIDE COMPLETE PRODUCT DATA AND RELATED INFORMATION APPROPRIATE FOR THE OWNER'S MAINTENANCE AND OPERATION OF PRODUCTS FURNISHED UNDER THE CONTRACT. |
| 21. | WORK UNDER THIS CONTRACT SHALL BE WARRANTED BY THE CONTRACTOR AGAINST ALL DEFECTS FOR ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THE WORK OR DESIGNATED PORTIONS THEREOF OR FOR ONE (1) YEAR AFTER ACCEPTANCE BY THE OWNER OF DESIGNATED EQUIPMENT. IN THE CASE OF ITEMS REMAINING UNCOMPLETED AFTER THE DATE OF SUBSTANTIAL COMPLETION, THE ONE-YEAR WARRANTY PERIOD SHALL BE FROM DATE OF ACCEPTANCE OF SUCH ITEMS. |
| 22. | EACH TRADE SHALL EXAMINE THE PREMISES TO INSURE THAT CONDITIONS ARE APPROPRIATE FOR HIS WORK TO COMMENCE, PRIOR TO COMMENCING HIS WORK. AREAS NOT APPROPRIATE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. COMMENCING WORK IMPLIES ACCEPTANCE OF EXISTING CONDITIONS. |
| 23. | THE GENERAL CONTRACTOR SHALL ASSIST IN THE COORDINATION AND BE RESPONSIBLE FOR THE INSTALLATION OF N.I.C. ITEMS, INCLUDING BUT NOT LIMITED TO FURNITURE, EQUIPMENT, APPLIANCES, PLUMBING FIXTURES, DISHWASHERS, VOICE/DATA CABLING, TELEPHONE WORK, ETC. |
| 24. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE INSTALLATION AS REQUIRED FOR ACCESSORY ITEMS INCLUDING SINK, DISHWASHER, REFRIGERATOR, LAUNDRY EQUIPMENT, ETC. |
| 25. | ALL DRAWINGS AND NOTES ARE CONSIDERED COMPLEMENTARY, AND WHAT IS CALLED FOR BY EITHER WILL BE AS BINDING AS IF CALLED FOR BY ALL. ANY WORK SHOWN OR REFERRED TO ON ANY ONE SET OF DRAWINGS SHALL BE PROVIDED AS THOUGH SHOWN ON ALL RELATED DRAWINGS. |
| 26. | VERIFY ALL ARCHITECTURAL DETAILS AND COORDINATE DRAWINGS WITH STRUCTURAL AND MEP DRAWINGS BEFORE INITIATION OF ANY RELATED WORK. |
| 27. | ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, INDUSTRY AND BUILDING STANDARDS, AND CODE REQUIREMENTS. SEALANT, WEATHERSTRIPPING, AND FLASHING LOCATIONS IN DRAWINGS ARE NOT INTENDED TO BE INCLUSIVE. |
| 28. | LARGER SCALE DETAILED DRAWINGS SUPERCEDES SMALLER SCALED ELEVATION AND PLAN DRAWINGS. |

| PROJECT TEAM | |
|--|-------|
| OWNER | |
| NAME | _____ |
| ADDRESS | _____ |
| PHONE | _____ |
| ARCHITECT | |
| RUSSELL DAVIDSON ARCHITECTURE + DESIGN | |
| CONTACT: RUSSELL DAVIDSON | |
| 149 CROWN POINT CT, SUITE C | |
| GRASS VALLEY, CA 95945 | |
| T (530) 913-2370 | |
| STRUCTURAL ENGINEER | |
| JACKSON & SANDS ENGINEERING, INC. | |
| CONTACT: SEAN JACKSON | |
| 900 E MAIN, ST #102 | |
| GRASS VALLEY, CA 95945 | |
| T (530) 715-1184 | |
| MECHANICAL ENGINEER | |
| MELAS ENERGY ENGINEERING | |
| CONTACT: MICHAEL MELAS | |
| 547 UREN ST #1 | |
| NEVADA CITY, CA 95951 | |
| T (530) 265-2492 | |
| ENERGY ANALYSIS | |
| MELAS ENERGY ENGINEERING | |
| CONTACT: MICHAEL MELAS | |
| 547 UREN ST #1 | |
| NEVADA CITY, CA 95951 | |
| T (530) 265-2492 | |
| PREFABRICATED TRUSSES | |
| DIAMOND TRUSS INC. | |
| 12462 CHARLES DR. | |
| GRASS VALLEY, CA 95945 | |
| T (530) 743-7494 | |
| FIRE SPRINKLERS | |
| O'NEAL AND ASSOCIATES, INC. | |
| 11290 WEST LOST RIVER DR. | |
| BOISE, ID 83709 | |
| T (208) 863-9772 | |

| APPLICABLE CODES | |
|---|--|
| ALL CODES REFERENCED ARE TO BE USED AS AMENDED BY THE STATE OF CALIFORNIA AND LOCAL JURISDICTION. | |
| 2022 CALIFORNIA BUILDING CODE | |
| 2022 CALIFORNIA MECHANICAL CODE | |
| 2022 CALIFORNIA ELECTRICAL CODE | |
| 2022 CALIFORNIA PLUMBING CODE | |
| 2022 CALIFORNIA GREEN BUILDING CODE | |
| 2022 CALIFORNIA FIRE CODE | |
| 2022 CALIFORNIA ENERGY CODE | |

| MATERIAL SPECIFICATIONS | |
|-----------------------------------|-------|
| PROPOSED WUI COMPLIANT SIDING | _____ |
| CSFM/ASTM E2886 LISTING NUMBER(S) | _____ |
| PROPOSED WUI COMPLIANT DECKING | _____ |
| PROPOSED ROOF COVERING | _____ |
| IF METAL, PROVIDE ICC ES REPORT | _____ |
| AT TIME OF APPLICATION SUBMITTAL. | _____ |
| PROPOSED ROOF VENT PRODUCTS | _____ |
| CSFM LISTING NUMBER(S) | _____ |
| PROPOSED FIREPLACE/WOODSTOVE | _____ |

| PROJECT DATA | |
|--|----------|
| SITE DATA | |
| ADDRESS | _____ |
| A.P.N.: | _____ |
| ELEVATION: | _____ |
| SNOW LOAD: | _____ |
| WIND EXPOSURE: | _____ |
| CLIMATE ZONE: | _____ |
| FIRE HAZARD SEVERITY ZONE: | _____ |
| SUBJECT TO WUI REQUIREMENTS: | YES / NO |
| ZONING: | _____ |
| SITE AREA: | _____ |
| MAX. HEIGHT: | _____ |
| ALLOWABLE COVERAGE: | _____ |
| ACTUAL COVERAGE: | 963 SF |
| SETBACKS | _____ |
| FRONT: | _____ |
| INTERIOR: | _____ |
| EXTERIOR: | _____ |
| REAR: | _____ |
| BUILDING ANALYSIS | |
| OCC. GROUP: | R-3, U |
| CONST. TYPE: | V-B |
| FIRE SPRINKLERS: | YES* |
| *FIRE SPRINKLERS NOT REQUIRED IF PRIMARY RESIDENCE IS NOT EQUIPPED WITH AUTOMATIC FIRE SPRINKLERS | |
| AREAS: | |
| CONDITIONED (SFR): | 661 SF |
| GARAGE: | 661 SF |
| DECK/STAIRS: | 116 SF |
| FOOTNOTES | |
| 1. REFERENCES TO WUI REQUIREMENTS MAY BE IGNORED IF PROPERTY IS NOT LOCATED WITHIN WUI REGULATED AREAS | |
| 2. PLANS ARE VALID FOR SITES WITH A 3H:1V SLOPE OR FLATTER WITH SOILS SUITABLE TO BEAR LOADS FROM STRUCTURE. IF UNSUITABLE SOILS ARE ENCOUNTERED, NOTIFY THE E.O.R. IMMEDIATELY | |
| 3. ENERGY CALCULATIONS MUST BE CERTIFIED ON AN ADDRESS SPECIFIC BASIS. DO NOT BEGIN CONSTRUCTION UNLESS CERTIFIED ENERGY CALCULATIONS ARE PROVIDED FOR BUILDING SITE. | |
| 4. STRUCTURAL CALCULATIONS WERE COMPLETED USING A SNOW LOAD REDUCTION FOR A PARTIALLY SHELTERED ROOF. A PARTIALLY SHELTERED ROOF IS DEFINED AS ALL TYPES OF ROOFS EXCEPT WHEN EXPOSED ON ALL SIDES WITH NO SHELTER, ROOFS THAT HAVE SEVERAL LARGER PIECES OF MECHANICAL EQUIPMENT, PARAPETS EXTENDING PAST BALANCED SNOW HEIGHT, OR OTHER OBSTRUCTIONS. (7.3-1) ASCE 7-16. IF RESIDENCE LOCATION HAS A SHELTERED ROOF, IT WILL REQUIRE A STANDING SEAM METAL ROOF INSTALLATION WITH NO SNOW RETENTION DEVICES. A FULLY SHELTERED ROOF IS DEFINED AS ROOFS LOCATED TIGHT IN BETWEEN CONIFERS THAT ARE QUALIFIED AS OBSTRUCTIONS. (7.3-1) ASCE 7-16. AN EXAMPLE OF A SHELTERED ROOF WOULD HAVE DENSELY SPACED CONIFERS EXTENDING 100' ABOVE THE ROOF LINE WITHIN A 1000' RADIUS OR DENSELY SPACED CONIFERS 50' ABOVE ROOF LINE WITHIN A 500' RADIUS. | |
| 5. SOLAR OPTIONAL FOR CLIMATE ZONE 16 | |

| SCOPE OF WORK | |
|---|--|
| PROJECT CONSISTS OF A NEW 661 SF ACCESSORY DWELLING UNIT ABOVE A 2 CAR GARAGE | |

| SHEET INDEX | | |
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| | A1.3 | ROOF PLAN |
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| | A2.1 | BUILDING ELEVATIONS (490LB) |
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| | A5.2 | TYPICAL SIDING DETAILS |
| SCHEDULES | A6.0 | SCHEDULES |
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| | S2.0 | ROOF FRAMING |
| | S2.1 | ROOF FRAMING (490LB) |
| STRUCTURAL GENERAL | S3.0 | STRUCTURAL NOTES |
| | S3.1 | STRUCTURAL NOTES (490LB) |
| STRUCTURAL DETAILS | S4.0 | STRUCTURAL DETAILS |
| | S4.1 | STRUCTURAL DETAILS |
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| | S4.3 | STRUCTURAL DETAILS (490LB) |
| MECHANICAL | MP1.1 | MECHANICAL PLAN (490 LBS / ZONE 16 / GAS FURNACE W/ AC) |
| | MP1.2 | MECHANICAL PLAN (490 LBS / ZONE 16 / DUCTLESS HEAT PUMP) |
| | MP1.3 | MECHANICAL PLAN (ZONE 11 / GAS FURNACE W/ AC) |
| | MP1.4 | MECHANICAL PLAN (ZONE 11 / DUCTLESS HEAT PUMP) |
| | MP1.5 | MECHANICAL PLAN (ZONE 16 / GAS FURNACE W/ AC) |
| | MP1.6 | MECHANICAL PLAN (ZONE 16 / DUCTLESS HEAT PUMP) |
| ELECTRICAL | E1.0 | ELECTRICAL PLAN |
| TITLE 24 ENERGY REPORT | T24.1.1 | TITLE 24 ENERGY REPORT - C216 DUCTED HP 490LB |
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| | T24.2.1 | TITLE 24 ENERGY REPORT - C216 DUCTLESS HP 490LB |
| | T24.2.2 | TITLE 24 ENERGY REPORT - C216 DUCTLESS HP 490LB |
| | T24.3.1 | TITLE 24 ENERGY REPORT - C211 DUCTED HP |
| | T24.3.2 | TITLE 24 ENERGY REPORT - C211 DUCTED HP |
| | T24.4.1 | TITLE 24 ENERGY REPORT - C211 DUCTLESS HP |
| | T24.4.2 | TITLE 24 ENERGY REPORT - C211 DUCTLESS HP |
| SOLAR | PV0.1 | PV ARRAY SITE PLAN |
| | PV0.2 | PV ARRAY LAYOUT |
| | PV0.3 | PV SINGLE LINE DIAGRAM |
| | PV0.4 | PV ARRAY DETAILS |
| | PV0.5 | PV LABELS / SPEC SHEETS |
| FIRE SPRINKLERS | FP1 | AUTOMATIC FIRE PROTECTION |



RUSSELL DAVIDSON
ARCHITECTURE + DESIGN




BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER: _____
 ADDRESS: _____
 APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |
| | | |

TITLE SHEET

T1.0



**BID SET
NOT FOR CONSTRUCTION**

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1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |
| | | |

GENERAL NOTES

General notes based on the 2022 California Building Standard Codes. This is not an all inclusive list of code requirements specific to the project. Reference applicable sheets and specific areas of the plans for locations of fixtures/equipment, structural components, structural design criteria, building finishes and other components specific to the project construction.

greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor, or fan speed control. (California Energy Code 150(k)18)

Radiant barrier shall be installed, and it shall also be installed on all gable ends per the manufacturer's specifications.

WILDLAND URBAN INTERFACE (WUI)
Exterior wall coverings shall be noncombustible, ignition resistant, heavy timber, log wall or fire resistive construction. (CRC R337.7)

Open/enclosed roof eaves and soffits, exterior porch ceilings, floor projections, under-floor areas and undersides of appendages to comply with ignition resistant construction requirements. (CRC R337.5-9)

Exterior wall coverings shall extend from the foundation to the roof and terminate at 2 inch nominal solid blocking between rafters and overhangs. (CRC R337.7.2)

Open/enclosed roof eaves and soffits, exterior porch ceilings, floor projections, under-floor areas and undersides of appendages to comply with ignition resistant construction requirements. (CRC R337.5-9)

Spaces created between roof coverings and roof decking shall be fire stopped by approved materials or have one layer of minimum 72lb mineral surfaced non-perforated cap sheet complying with ASTM D 3909. (CRC R337.5.2)

Indicate on the plans where valley flashing is installed, the flashing shall be not less than 26awg and installed over not less than one layer of minimum 72lb mineral surfaced non-perforated cap sheet complying with ASTM D 3909 and at least 36 inches wide running the full length. (CRC R337.5.3)

All vents are required to resist building penetration from the intrusion of flame and burning embers through the ventilation openings including crawlspace vents, gable end vents, eave vents, eave eaves, etc. Exception: Ridge vents and vents installed in a sloped roof.

Indicate on plans exterior glazing shall have a minimum of one-tempered pane, glass block, have a fire resistive rating of 20 minutes or be tested to meet performance requirements of SFM Standard 12-7A-2. (CRC R337.8.2)

Operable skylights shall be protected by a noncombustible mesh screen 1/8" max openings (R337.8.2.2)

Exterior doors including garage doors shall be noncombustible, ignition resistant material, minimum 1 3/8 inch solid core, minimum 20 minute fire resistive rating or shall be tested to meet the performance requirements of SFM Standard 12-7A-1. (CRC R337.8.3)

Garage door perimeter gap maximum 1/8". Metal flashing, jamb and header overlap, and weather-stripping meeting section requirements are permitted. (R337.8.4)

The walking surface material of decks, porches, balconies and stairs within 10ft of grade level shall be ignition resistant material, exterior fire-retardant treated wood or noncombustible material. (CRC R337.9)

GREEN BUILDING
Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site. (CGSBC 4.106.2)

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

All new residential construction with attached private garages shall have the following for electric vehicle (EV) charging stations (CGSBC 4.106.4):

- Install a minimum 1-inch conduit capable of supporting a 208/240V branch circuit to a suitable box location for EV charging. The other end shall terminate at the main service and/or subpanel.
- The main panel and/or subpanel shall be of sufficient size to install a 40-ampere dedicated branch circuit. The dedicated overcurrent protection space shall be labeled "EV CAPABLE".

Multiple shower heads serving a single shower shall have a combined flow rate of 1.6 gpm or the shower shall be designed to allow only one shower outlet to be in operation at a time. (CGSBC 4.303.1.3.2)

Residential projects with an aggregate landscape area equal to or greater than 500 square feet shall comply with either a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Automatic irrigation system controllers installed at time of final inspection shall have weather or soil based controllers and/or weather based controllers with rain sensors. Soil moisture based controllers are not required to have rain sensor input. (CGSBC 4.304)

Recycle and/or reuse a minimum of **65 percent** of nonhazardous construction and demolition waste. (CGSBC 4.408.2)

At time of final inspection, a building operation and maintenance manual, compact disc, etc shall be provided containing the following: (CGSBC 4.410)

- Directions that manual shall remain onsite for the life of the building
- Operation and maintenance instructions for equipment, appliances, roof/yard drainage, irrigation systems, etc.
- Information from local utility, water and waste recovery providers
- Public transportation and carpool options
- Material regarding importance of keeping humidity levels between 30-60 percent
- Information regarding routine maintenance procedures
- State solar energy incentive program information
- A copy of any required special inspection verifications that were required (if any)

Clearly note on the plans how the project will meet minimum pollutant control requirements for adhesives, sealants, caulks, paints, carpet, resilient flooring systems, etc. (CGSBC 4.504.4)

Duct openings related to HVAC systems shall be covered with tape, plastic, sheet metal or other methods to reduce the amount of water, dust and debris which may enter the system. (CGSBC 4.504.1)

MECHANICAL
All newly installed gas fireplaces shall be direct vent and sealed-combustion type. (CMC 912.2)

Any installed wood stove or pellet stove shall meet the U.S. EPA New Source Performance Standard emission limits and shall have a permanent label certifying emission limits.

Top of chimney must extend a minimum of 2 ft. above any part of the building within 10 ft. (CMC 802.5.4)

Fireplaces shall have closable metal or glass doors, have combustion air intake drawn from the outside and have a readily accessible flue damper control. Continuous burning pilot lights are prohibited. (California Energy Code 150.0(e))

Provide combustion air for all gas fired appliances per CMC Chapter 7.

Roof top equipment on roofs with over 4/12 slope shall have a level 30"x30" working platform. (CMC 304.2)

Exhaust ducts terminating to the outdoors shall be covered with a corrosion resistant screen N"-1/2" in opening size (not required for clothes dryers). (CMC 502.1)

Vent dryer to outside of building (not to under-floor area). Vent length shall be 14 ft. maximum. Shall terminate a minimum of 3' from the property line and any opening into the building. (CMC 504.4.2)

Heating system is required to maintain 68 degrees at 3 ft. above floor level and 2ft from exterior walls in all habitable rooms. (CRC R303.10)

TITLE 24 ENERGY
Provide compliance documentation for mandatory measures to shown throughout the plans. All ducts in conditioned spaces must include R-4.2 insulation. (California Energy Code 150.1(c)(3)) Minimum heating and cooling filter ratings shall be MERV 13. (California Energy Code 150.0(m)12)

Isolation water valves required for instantaneous water heaters 6.8&TU/hr and above. Valves shall be installed on both cold and hot water lines. Each valve will need a hose bib or other fitting allowing for flushing the water heater when the valves are closed. (California Energy Code 110.3(c)(6))

Energy storage system (ESS) ready. At least one of the following shall be provided:

- ESS ready interconnection equipment with a minimum backed-up capacity of 60 amps and a minimum of four ESS-supplied branch circuits, or
- A dedicated raceway from the main service panel to a panelboard (subpanel) that supplies the following branch circuits: refrigerator, lighting circuit near primary egress door, sleeping room receptacle and one additional.

The main panelboard shall have a minimum busbar rating of 225 amps. Space shall be reserved to allow future installation of a system isolation equipment/transfer switch within 3 feet of the main panelboard. Raceways shall be installed between the panelboard and the system isolation equipment to allow the connection of backup power source.

Heat pump space heater ready. Systems using a gas or propane furnace shall include a dedicated 240 volt branch circuit with 3 feet of the furnace. The branch circuit shall be rated at 30 amps minimum. The main electrical service shall have a reserved space to allow for the installation of a double pole circuit breaker. The reserved space shall be permanently marked as "For future 240V use". (California Energy Code 150.0(t))

Electric cooktop ready. Systems using a gas or propane cooktop shall include a dedicated 240 volt branch circuit with 3 feet of the cooktop. The branch circuit shall be rated at 50 amps minimum. The main electrical service shall have a reserved space to allow for the installation of a double pole circuit breaker. The reserved space shall be permanently marked as "For future 240V use". (California Energy Code 150.0(u))

Electrical clothes dryer ready. Systems using a gas or propane dryer shall include a dedicated 240 volt branch circuit with 3 feet of the clothes dryer. The branch circuit shall be rated at 30 amps minimum. The main electrical service shall have a reserved space to allow for the installation of a double pole circuit breaker. The reserved space shall be permanently marked as "For future 240V use". (California Energy Code 150.0(v))

ALL luminaires must be high efficacy. (California Energy Code 150.0(k)(1A))

Luminaires recessed in insulated ceilings must meet five requirements (California Energy Code 150.0(k)(1C)):

- They must be rated for direct insulation contact (IC).
- They must be certified as airtight (AT) construction.
- They must have a sealed gasket or caulking between the housing and ceiling to prevent flow of heated or cooled air out of living areas and into the ceiling cavity.
- They may not contain a screw base sockets
- They shall contain a IAS compliant light source

In bathrooms, garages, walk-in closet, laundry rooms, and utility rooms, at least on luminaire in each of these spaces shall be controlled by a vacancy sensor or occupant sensor provided the occupant sensor is initially programmed like a vacancy sensor (manual-on operation). (California Energy Code 150.0(k)(2))

Lighting in habitable spaces, including but not limited to living rooms, dining rooms, kitchens and bedrooms, shall have readily accessible dimming controls. (California Energy Code 150(k)2)

All exterior lighting shall be high efficacy, be controlled by a manual on/off switch and have one of the following controls (the manual switch shall not override the automatic control device) (150.0(k)(3A)):

- Photo-control and motion sensor
- Photo-control and automatic time switch control
- Astronomical time clock control turning lights off during the day

All high efficacy light fixtures shall be certified as "high-efficacy" light fixtures by the California Energy Commission.

Contractor shall provide the homeowner with a luminaire schedule giving the lamps used in the luminaires installed. (CGSBC 10-103(b))

The number of blank electrical boxes more than 5 feet above the finished floor shall not be

Carbon-monoxide alarms shall be installed in dwelling units with fuel-burning appliances or with attached garages (CRC R315):

- Outside of each separate sleeping area in the immediate vicinity of bedrooms
- On every level of a dwelling unit including basements
- Alterations, repairs, or additions exceeding 1,000 dollars (May be battery operated)

Smoke alarms shall be installed (CRC R314):

- In each room used for sleeping purposes.
- Outside of each separate sleeping area in the immediate vicinity of bedrooms.
- In each story, including basements.
- At the top of stairways between habitable floors where an intervening door or obstruction prevents smoke from reaching the smoke detector.
- Shall not be installed within 20ft horizontally of cooking appliances and no closer than 3ft to mechanical registers, ceiling fans and bathroom doors with a bathtub or shower unless this would prevent placement of a smoke detector (R314.3(d)).
- Alterations, repairs, or additions exceeding 1,000 dollars. (May be battery operated.)

All smoke and carbon-monoxide alarms shall be hardwired with a battery backup (smoke alarms shall have a 10-year sealed battery). (CRC R314.4 & R315.1.2)

Smoke detectors within 10 feet to 20 feet of the stove shall be ionization type with alarm silencing switch. (CRC R314.3.3)

All 15/20 ampere receptacles in wet locations shall have in-use (bubble) covers installed. All receptacles in wet locations shall also be listed weather-resistant type. (CEC 406.9(B)(1))

ENERGY STORAGE SYSTEMS
Energy storage systems shall only be installed in detached garages and accessory structures, attached garages, outdoor not less than 3' from door and windows and enclosed utility closets, basements, storage or utility closets within dwelling units with finished or noncombustible walls and ceiling. (CRC R328.4)

Individual ESS units shall have a maximum rating of 20 kWh. The aggregate rating of the ESS shall not exceed 40 kWh within utility closets, basements and storage or utility spaces, 80 kWh in attached or detached garages or detached accessory structures, 80 kWh on exterior walls and 80 kWh outdoors on the ground. (CRC R328.5)

Rooms and areas within structures in which ESS are installed shall be protected by smoke alarms. A heat detector shall be installed in locations within structures where smoke alarms cannot be installed based on their listing. (CRC R328.7)

ESS installed in locations subject to vehicle damage shall be provided with impact protection. (CRC R328.8)

PLUMBING
Underfloor cleanouts shall not be more than 5' from an underfloor access, access door or trap door. (CPC 707.9)

Kitchen sinks require a cleanout above the floor level of the lowest floor of the building.

ABS piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paints. (CPC 312.13)

PVC piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paint, .04" thick wrap or other protection from UV degradation. (CPC 312.14)

The entire floor space in a room containing a shower without thresholds shall be considered a "wet location" when using the CRC, CBC, and the CEC. (CPC 408.5)

Shower compartments, regardless of shape, shall have a minimum finished interior of 1024 square inches (32" by 32") and shall also be capable of encompassing a 30" circle. The required area and dimensions shall be measured at a height equal to the top of the threshold and shall be maintained to a point of not less than 70" above the shower drain outlet. (CPC 408.6) Provide curtain rod or door a minimum of 22" in width (CPC 408.5). Showers and tubs with showers requires a non-absorbent surface up to 6' above the floor. (CRC R307.2) Minimum shower receptor slope is 1/8" per foot. (CPC 408.8)

Show location and size of the water heater on plans. Provide pressure relief valve with drain to outside for water heater. (CPC 504.6) Provide seismic strapping in the upper & lower third of the water heater a minimum of 4" above controls. (CPC 507.2)

Water heaters using gas or propane shall designate a space 2.5 feet by 2.5 feet and 7 feet tall suitable for future installation of a heat pump water heater. Additional features are required. (California Energy Code 150.0(n))

Domestic hot water lines shall be insulated. Insulation shall be the thickness of the pipe diameter up to 2" in size and minimum 2" thickness for pipes larger than 2" in diameter. (CPC 609.12)

A 3-inch gravity drain shall be provided at the low-point of the space, installed which provides 1/4-inch per foot grade and terminate at an exterior point of the building protected from blockage. The opening shall be screened with a corrosion-resistant wire mesh with mesh openings of 1/4-inch in dimension. Lengths of the gravity drains over 10 feet in length shall be first approved by the Building Official. (L-V 8.8)

Water heaters located in attics, ceiling assemblies and raised floor assemblies shall show a water-tight corrosion resistant minimum 1 1/2" deep pan under the water heater with a minimum 1/4 inch drain to the exterior of the building. (CPC 507.5)

Water closets shall be located in a space not less than 30" in width (15" on each side) and 24" minimum clearance in front. (CPC 402.5)

Indicate on the plans that the maximum hot water temperature discharging from a bathtub or whirlpool bathtub filler shall not exceed 120 degrees F. (CPC 408.3.2)

Provide anti-siphon valves on all hose bibs. (CPC 603.5.7)

Floor drains shall be provided with a trap primer. (CPC 1007)

Clearly label on the plans the maximum water flow rates per the (CGSBC 4.303.1):

- Water Closets: 1.28gpf
- Urinals: .125gpf
- Kitchen Faucets: 1.8gpm @ 60psi
- Lavatory Faucets: 1.2gpm @ 60psi
- Showers/heads: 1.8gpm

Usable spaces underneath enclosed/unenclosed stairways shall be protected by a minimum of 1/2" gypsum board. (CRC R302.7)

Ramps serving the egress door shall have a slope of not more than 1 unit vertical in 12 units horizontal (8.3-percent slope). All other ramps shall have a maximum slope of 1 unit vertical in 8 units horizontal (12.5-percent slope). Exception: Where it is technically infeasible to comply because of site constraints, ramps shall have a slope of not more than 1 unit vertical in 8 units horizontal (12.5-percent slope) (CRC R311.8.1). Provide 3"x3" landings at the top and bottom of ramps, where doors open onto ramps, and where ramps change directions. (CRC R311.8.2)

DECKS
Guards are required if deck or floor is over 30" above grade, minimum 42" high, with openings treated or natural resistance to decay unless the pier/pedestals project 1" above concrete or 6" above earth and the earth is covered by an approved impervious moisture barrier. (CRC R317.1)(8)

Provide deck lateral load connections at each end of the deck and at deck intersections per CRC R507.9.2. Specify connectors with a minimum allowable stress design capacity of 1,500lbs and install with 24" of the end of the deck. 750lb rated devices are allowed (DTT12 as example) if located at 4 points along the deck.

Posts/columns shall be retained at the bottom end to prevent lateral displacement; clearly show approved post bases, straps, etc to achieve this per CRC R407.3

Joists, girders, structural blocking and support posts shall be of wood of natural resistance to decay or pressure-treated lumber when exposed to the weather. (CRC R317.1)(8)

ELECTRICAL
Never install electrical panels in closets of bathrooms. Maintain a clearance of 36" inches in front of panels, 30" wide or width of equipment and 6'-6" high for headroom. (CEC 110.26)

Provide a minimum 3 lug interconnect bonding busbar at the main electrical service. (CEC 250.94)

Provide a four-wire feed (two ungrounded conductors, one grounded conductor and an equipment grounding conductor) to all detached structures.

Provide electrical service load calculations for dwellings over 3,000 sq. ft. services 400 amperes or greater as determined by the Plans Examiner.

All automatic garage door openers that are installed in a residence shall have a battery backup function that is designed to operate when activated because of an electrical outage. (CRC 406.2.1)

A concrete-encased electrode (ufer) consisting of 20" of rebar or #4 copper wire placed in the bottom of a footing is required for all new construction. (CEC 250.52(A)(3)) Bond all metal gas and water pipes to ground. All ground clamps shall be accessible and of an approved type. (CEC 250.104)

All 15/20 ampere receptacles installed per CEC 210.52 including attached and detached garages and accessory buildings shall be listed tamper-resistant receptacles. (CEC 406.12)

All branch circuits supplying 15/20 ampere outlets in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, kitchens, laundry room or similar rooms/areas shall be protected by a listed combination type arc-fault circuit interrupter. (CEC 210.12)

Provide a minimum of one 20A circuit to be used for the laundry receptacle. (CEC 210.11(C)(2))

Provide a minimum of one 20A circuit for bathroom receptacle outlets. (CEC 210.11(C)(3))

Provide at least 1 outlet in basements, garages, laundry rooms, decks, balconies, porches and within 3' of the outside of each bathroom basin. (CEC 210.52 (D), (F) & (G))

Furnaces installed in attics and crawl spaces shall have an access platform (catwalk in attics), light switch and receptacle in the space. Provide a service receptacle for the furnace. (CEC 210.63)

All dwellings must have one exterior outlet at the front and the back of the dwelling. (CEC 210.52(E))

Provide a minimum of one 20A circuit for attached and detached garage outlets. The circuit shall supply no other receptacle outlet. Exception: Garage circuit may serve readily accessible outdoor receptacle outlets. (CEC 210.11(C)(4))

A minimum of 1 receptacle shall be provided for each car space. (210.52(G)(1))

At least one wall switched lighting outlet or fixture shall be installed in every habitable room, bathroom, hallways, stairways, attached garages and detached garages with electrical power, equipment spaces (attics, basements, etc). (CEC 210.70)

Kitchens, dining rooms, pantries, breakfast nooks, and similar areas must have a minimum of two 20A circuits. Kitchen, pantry, breakfast nooks, dining rooms, work surfaces and similar areas as counter outlets must be installed in every counter space 12" inches or wider, not greater than 4" o.c., within 24" inches of the end of any counter space and not higher than 20" above counter. (CEC 210.52 (C)) A minimum of 1 receptacle is required at each kitchen island as follows: one receptacle is required for first 9 ft two receptacles required for 10 ft - 27 ft three receptacles required for 28 ft - 47 ft and four receptacles required for 48 ft or more. (CEC 210.52(C)(1)) Island counter spaces shall have at least 1 receptacle outlet unless a range top or sink is installed than 2 receptacles may be required. 1 receptacle is required for peninsula counter spaces. Receptacles shall be located behind kitchen sinks if the counter area depth behind the sink is more than 12" for straight counters and 18" for corner installations. (CEC Figure 210.52(C)(1))

Receptacles shall be installed at 12" o.c. maximum in walls starting at 6' maximum from the wall end. Walls longer than two feet shall have a receptacle. Hallway walls longer than 10 ft. shall have a receptacle in hallways. (CEC 210.52(A))

Stairways with 6 or more risers shall have wall switch at each floor level at the stair landings. (CEC 210.70)(2)

Receptacles shall not be installed within or directly over a bathtub or shower stall. (CEC 406.9 (C)) Light pendants, ceiling fans, lighting tracks, etc shall not be located within 3ft horizontally and 8ft vertically above a shower and/or bathtub threshold. (CEC 410.10(D))

All lighting/fan fixtures located in wet or damp locations shall be rated for the application. (CEC 410.10)

GFCI outlets are required: for all kitchen receptacles that are designed to serve countertop surfaces, dishwashers, bathrooms, in under-floor spaces or below grade level, in unfinished basements, crawl space lighting outlets, in exterior outlets, within 6' of a laundry/utility/wet bar sinks, indoor damp locations, mud rooms, finished basements, laundry areas, and in all garage outlets including outlets dedicated to a single device or garage door opener. (CEC 210.8)

End bolts not less than 7 bolt diameters, nor more than 12" from ends of sill members. In SDC DO and above: Provide 3"x3"x0.225 plate washers on each bolt at braced or shear wall locations, standard cut washers shall be permitted for anchor bolts not located in braced/shear wall lines. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16" larger than the bolt diameter; the slot length shall not exceed 1 1/4", provided a standard cut washer is placed between the plate washer and the nut. (CRC R403.1.6.1 & R602.11.1)

CLEARANCES AND TREATMENT FOR WOOD FRAMING
All joists, girders, ledgers, structural blocking and support posts/column shall be wood of natural resistance to decay or pressure-treated lumber when exposed to the weather. (CRC R317.1)(8)

Columns in basements when supported on concrete pier or metal pedestals shall be pressure treated or natural resistance to decay unless the pier/pedestals project 1" above concrete or 6" above earth and the earth is covered by an approved impervious moisture barrier. (CRC R317.1)(9)

Columns in enclosed crawl spaces or unexcavated areas located within the periphery of the building shall be pressure treated or natural resistance to decay unless the column is supported by a concrete pier or metal pedestal of a height 8" or more and the earth is covered by an impervious moisture barrier. (CRC R317.1)(9)

FLOORS
Under-floor areas with storage, fuel fired equipment or electric-powered equipment with less than 2x10 solid joists shall be protected on the underside by half-inch sheetrock or a sprinkler system. (R302.13)

Balconies must be designed for a minimum live load of 60lbs per square foot. (CRC R-301.5)

WALLS
Specify post to beam connections. Positive connection shall be provided to ensure against uplift and lateral displacement. (CRC R502.6 & CRC 2304.1.7)

All fasteners used for attachment of siding & into pressure treated lumber shall be of a corrosion resistant type. (CRC R317.3)

Fire-block in concealed spaces of stud walls/partitions, vertically at ceiling/floor levels, & horizontally at 10ft. intervals. Fire-block at soffits, drop ceilings/similar locations & in concealed spaces at the top/bottom of stair stringers. (CRC R302.11)

Provide approved building paper under the building siding, and approved flashing at exterior openings. (CRC R703.2) Specify a minimum of 2 layers of Grade D paper under stucco and 2 layers of 15lb felt (or equivalent) under stone veneer.

Stucco shall have a minimum clearance of 2 inches and 2 inches to paved surfaces with an approved weep screed. (CRC R703.7.2.1) Masonry stone veneer shall be flashed beneath the first course of masonry and provided with weep holes immediately above the flashing. (CRC R703.8.5 and R703.8.6)

ROOF
Show minimum 22" x 30" access opening to attic. (CRC R807); may be required to be 30"x30" to remove the largest piece of mechanical equipment per the California Mechanical Code.

Roof drains/gutters required to be installed per the California Plumbing Code with leaf/debris protection also installed.

Roof construction and coverings shall comply with CRC Chapters 8, 9 and local ordinance. All roofing shall be tested/listed Class A minimum.

Asphalt shingles with sloped roofs 2/12 to 4/12 shall have two layers of underlayment applied per CRC R905.2.2.

GARAGE AND CARPORT
Garage shall be separated from the dwelling unit & attic area by 1/2 inch gypsum board applied to the garage side. Garage beneath habitable rooms shall be separated by not less than 5/8" type X gypsum board. Structure supporting floor/ceiling assemblies used for required separations shall have 1/2" gypsum board installed minimum. Door openings from the garage to the dwelling shall be solid wood/steel doors or homoxycom steel doors not less than 1 3/8" thick, or a 20-minute rated fire door. Doors shall be self-closing & self-latching. No openings directly into a sleeping room from the garage. When the dwelling and garage have fire sprinklers installed per R309.6 and R313, doors into the dwelling unit from the garage only need to be self-closing and self-latching. (CRC R302.5.1 & R302.6)

Ducts penetrating the garage to dwelling separation shall be a minimum of 26 gauge with no openings into the garage. (CRC R302.5.2)

Penetrations through the garage to dwelling separation wall (other than ducts as listed above) shall be fire-blocked per CRC section R302.11, Item 84.

Garage and carport floor surfaces shall be non-combustible material and slope to drain towards the garage door opening. (CRC R309.1)

Appliances and receptacles installed in garage generating a glow, spark or flame shall be located 18" above floor unless it is listed as flammable vapor ignition resistant. (CRC 305.1) Provide protective post or other impact barrier from vehicles. (CGS 305.1.1)

2022 CALIFORNIA GREEN BUILDING STANDARDS CODE

RESIDENTIAL MANDATORY MEASURES, SHEET 1 (January 2023)

**BID SET
NOT FOR CONSTRUCTION**

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

CGBSC

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| Y | N/A | RESPON PARTY | CHAPTER 3 GREEN BUILDING SECTION 301 GENERAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--------------------------|--|--|--|--|-------------------------|-----------------------------|------|---|------|-----------------------------|------|-----------------------------------|--|--------------|-----------|----------------------------|------------------|--------------------------------|---|---|------------------|-----------------|------------------|------------------|---------------|--------------|----------------|---------|-----------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>301.1 SCOPE. Buildings shall be designed to include the green building measures specified as mandatory in the application checklists contained in this code. Voluntary green building measures are also included in the application checklists and may be included in the design and construction of structures covered by this code, but are not required unless adopted by a city, county, or city and county as specified in Section 101.7.</p> <p>301.1.1 Additions and alterations. [HCD] The mandatory provisions of Chapter 4 shall be applied to additions or alterations of existing residential buildings where the addition or alteration increases the building's conditioned area, volume, or size. The requirements shall apply only to and/or within the specific area of the addition or alteration.</p> <p>The mandatory provision of Section 4.106.4.2 may apply to additions or alterations of existing parking facilities or the addition of new parking facilities serving existing multifamily buildings. See Section 4.106.4.3 for application.</p> <p>Note: Repairs including, but not limited to, resurfacing, restriping and repairing or maintaining existing lighting fixtures are not considered alterations for the purpose of this section.</p> <p>Note: On and after January 1, 2014, residential buildings undergoing permitted alterations, additions, or improvements shall replace noncompliant plumbing fixtures with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.</p> <p>301.2 LOW-RISE AND HIGH-RISE RESIDENTIAL BUILDINGS. [HCD] The provisions of individual sections of CALGreen may apply to either low-rise residential buildings high-rise residential buildings, or both. Individual sections will be designated by banners to indicate where the section applies specifically to low-rise only (LR) or high-rise only (HR). When the section applies to both low-rise and high-rise buildings, no banner will be used.</p> <p>SECTION 302 MIXED OCCUPANCY BUILDINGS</p> <p>302.1 MIXED OCCUPANCY BUILDINGS. In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> [HCD] Accessory structures and accessory occupancies serving residential buildings shall comply with Chapter 4 and Appendix A4, as applicable. [HCD] For purposes of CALGreen, live/work units, complying with Section 419 of the California Building Code, shall not be considered mixed occupancies. Live/Work units shall comply with Chapter 4 and Appendix A4, as applicable. <p>DIVISION 4.1 PLANNING AND DESIGN</p> <p>ABBREVIATION DEFINITIONS:</p> <p>HCD Department of Housing and Community Development BSC California Building Standards Commission DSA-SS Division of the State Architect, Structural Safety OSHPD Office of Statewide Health Planning and Development LR Low Rise HR High Rise AA Additions and Alterations N New</p> <p>CHAPTER 4 RESIDENTIAL MANDATORY MEASURES</p> <p>SECTION 4.102 DEFINITIONS</p> <p>4.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)</p> <p>FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar porous material used to collect or channel drainage or runoff water.</p> <p>WATTLES. Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.</p> <p>4.106 SITE DEVELOPMENT</p> <p>4.106.1 GENERAL. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.</p> <p>4.106.2 STORM WATER DRAINAGE AND RETENTION DURING CONSTRUCTION. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.</p> <ol style="list-style-type: none"> Retention basins of sufficient size shall be utilized to retain storm water on the site. Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency. Compliance with a lawfully enacted storm water management ordinance. <p>Note: Refer to the State Water Resources Control Board for projects which disturb one acre or more of soil, or are part of a larger common plan of development which in total disturbs one acre or more of soil.</p> <p>(Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html)</p> <p>4.106.3 GRADING AND PAVING. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to the following:</p> <ol style="list-style-type: none"> Swales Water collection and disposal systems French drains Water retention gardens Other water measures which keep surface water away from buildings and aid in groundwater recharge. <p>Exception: Additions and alterations not altering the drainage path.</p> <p>4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 or 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions: <ol style="list-style-type: none"> Where there is no local utility power supply or the local utility is unable to supply adequate power. Where there is evidence suitable to the local enforcing agency substantiating that additional utility infrastructure design requirements, directly related to the implementation of Section 4.106.4, may adversely impact the construction cost of the project. Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities. <p>4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous if enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.</p> <p>Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the proposed location of an EV charger at the time of original construction in accordance with the California Electrical Code.</p> <p>4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>4.106.4.2 New multifamily dwellings, hotels and motels and new residential parking facilities. When parking is provided, parking spaces for new multifamily dwellings, hotels and motels shall meet the requirements of Sections 4.106.4.2.1 and 4.106.4.2.2. Calculations for spaces shall be rounded up to the nearest whole number. A parking space served by electric vehicle supply equipment or designed as a future EV charging space shall count as at least one standard automobile parking space only for the purpose of complying with any applicable minimum parking space requirements established by a local jurisdiction. See Vehicle Code Section 22511.2 for further details.</p> <p>4.106.4.2.1 Multifamily development projects with less than 20 dwelling units; and hotels and motels with less than 20 sleeping units or guest rooms. The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.</p> <p>1. EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.</p> <p>The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> When EV chargers (Level 2 EVSE) are installed in a number equal to or greater than the required number of EV capable spaces. When EV chargers (Level 2 EVSE) are installed in a number less than the required number of EV capable spaces, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed. <p>Notes:</p> <ol style="list-style-type: none"> Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use. <p>2. EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.</p> <p>Exception: Areas of parking facilities served by parking lifts.</p> <p>4.106.4.2.2 Multifamily development projects with 20 or more dwelling units, hotels and motels with 20 or more sleeping units or guest rooms. The number of dwelling units, sleeping units or guest rooms shall be based on all buildings on a project site subject to this section.</p> <p>1. EV Capable. Ten (10) percent of the total number of parking spaces on a building site, provided for all types of parking facilities, shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE. Electrical load calculations shall demonstrate that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at a minimum of 40 amperes.</p> <p>The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the California Electrical Code.</p> <p>Exception: When EV chargers (Level 2 EVSE) are installed in a number greater than five (5) percent of parking spaces required by Section 4.106.4.2.2, Item 3, the number of EV capable spaces required may be reduced by a number equal to the number of EV chargers installed over the five (5) percent required.</p> <p>Notes:</p> <ol style="list-style-type: none"> Construction documents shall show locations of future EV spaces. There is no requirement for EV spaces to be constructed or available until receptacles for EV charging or EV chargers are installed for use. <p>2. EV Ready. Twenty-five (25) percent of the total number of parking spaces shall be equipped with low power Level 2 EV charging receptacles. For multifamily parking facilities, no more than one receptacle is required per dwelling unit when more than one parking space is provided for use by a single dwelling unit.</p> <p>Exception: Areas of parking facilities served by parking lifts.</p> <p>3. EV Chargers. Five (5) percent of the total number of parking spaces shall be equipped with Level 2 EVSE. Where common use is provided, at least one EV charger shall be located in the common use parking area and shall be available for use by all residents or guests.</p> <p>When low power Level 2 EV charging receptacles or Level 2 EVSE are installed beyond the minimum required, an automatic load management system (ALMS) may be used to reduce the maximum required electrical capacity to each space served by the ALMS. The electrical system and any on-site distribution transformers shall have sufficient capacity to deliver at least 3.3 kW simultaneously to each EV charging station (EVCS) served by the ALMS. The branch circuit shall have a minimum capacity of 40 amperes, and installed EVSE shall have a capacity of not less than 30 amperes. ALMS shall not be used to reduce the minimum required electrical capacity to the required EV capable spaces.</p> <p>4.106.4.2.2.1 Electric vehicle charging stations (EVCS). Electric vehicle charging stations required by Section 4.106.4.2.2, Item 3, shall comply with Section 4.106.4.2.2.1.</p> <p>Exception: Electric vehicle charging stations serving public accommodations, public housing, motels and hotels shall not be required to comply with this section. See California Building Code, Chapter 11B, for applicable requirements.</p> <p>4.106.4.2.2.1.1 Location. EVCS shall comply with at least one of the following options:</p> <ol style="list-style-type: none"> The charging space shall be located adjacent to an accessible parking space meeting the requirements of the California Building Code, Chapter 11A, to allow use of the EV charger from the accessible parking space. The charging space shall be located on an accessible route, as defined in the California Building Code, Chapter 2, to the building. <p>Exception: Electric vehicle charging stations designed and constructed in compliance with the California Building Code, Chapter 11B, are not required to comply with Section 4.106.4.2.2.1.1 and Section 4.106.4.2.2.1.2, Item 3.</p> <p>4.106.4.2.2.1.2 Electric vehicle charging stations (EVCS) dimensions. The charging spaces shall be designed to comply with the following:</p> <ol style="list-style-type: none"> The minimum length of each EV space shall be 18 feet (5486 mm). The minimum width of each EV space shall be 9 feet (2743 mm). One in every 25 charging spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm). A surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction. <p>4.106.4.2.2.1.3 Accessible EV spaces. In addition to the requirements in Sections 4.106.4.2.2.1.1 and 4.106.4.2.2.1.2, all EVSE, when installed, shall comply with the accessibility provisions for EV chargers in the California Building Code, Chapter 11B. EV ready spaces and EVCS in multifamily developments shall comply with California Building Code, Chapter 11A, Section 1109A.</p> <p>4.106.4.2.3 EV space requirements.</p> <p>1. Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous if enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere 208/240-volt minimum dedicated branch circuit, including branch circuit overcurrent protective device installed, or space(s) reserved to permit installation of a branch circuit overcurrent protective device.</p> <p>Exception: A raceway is not required if a minimum 40-ampere 208/240-volt dedicated EV branch circuit is installed in close proximity to the location of the EV space, at the time of original construction in accordance with the California Electrical Code.</p> <p>2. Multiple EV spaces required. Construction documents shall indicate the raceway termination point and the location of installed or future EV spaces, receptacles or EV chargers. Construction documents shall also provide information on amperage of installed or future receptacles or EVSE, raceway method(s), wiring schematics and electrical load calculations. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>4.106.4.3 Electric vehicle charging for additions and alterations of parking facilities serving existing multifamily buildings. When new parking facilities are added, or electrical systems or lighting of existing parking facilities are added or altered and the work requires a building permit, ten (10) percent of the total number of parking spaces added or altered shall be electric vehicle charging spaces (EV spaces) capable of supporting future Level 2 EVSE.</p> <p>Notes:</p> <ol style="list-style-type: none"> Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use. <p>DIVISION 4.2 ENERGY EFFICIENCY</p> <p>4.201 GENERAL</p> <p>4.201.1 SCOPE. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.</p> <p>DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION</p> <p>4.303 INDOOR WATER USE</p> <p>4.303.1 WATER CONSERVING PLUMBING FIXTURES AND FITTINGS. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the sections 4.303.1.1, 4.303.1.2, 4.303.1.3, and 4.303.1.4.</p> <p>Note: All noncompliant plumbing fixtures in any residential real property shall be replaced with water-conserving plumbing fixtures. Plumbing fixture replacement is required prior to issuance of a certificate of final completion, certificate of occupancy, or final permit approval by the local building department. See Civil Code Section 1101.1, et seq., for the definition of a noncompliant plumbing fixture, types of residential buildings affected and other important enactment dates.</p> <p>4.303.1.1 Water Closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.</p> <p>Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.</p> <p>4.303.1.2 Urinals. The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.</p> <p>4.303.1.3 Showerheads.</p> <p>4.303.1.3.1 Single Showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.</p> <p>4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all the showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to only allow one shower outlet to be in operation at a time.</p> <p>Note: A hand-held shower shall be considered a showerhead.</p> <p>4.303.1.4 Faucets.</p> <p>4.303.1.4.1 Residential Lavatory Faucets. The maximum flow rate of residential lavatory faucets shall not exceed 1.2 gallons per minute at 60 psi. The minimum flow rate of residential lavatory faucets shall not be less than 0.8 gallons per minute at 20 psi.</p> <p>4.303.1.4.2 Lavatory Faucets in Common and Public Use Areas. The maximum flow rate of lavatory faucets installed in common and public use areas (outside of dwellings or sleeping units) in residential buildings shall not exceed 0.5 gallons per minute at 60 psi.</p> <p>4.303.1.4.3 Metering Faucets. Metering faucets when installed in residential buildings shall not deliver more than 2.0 gallons per cycle.</p> <p>4.303.1.4.4 Kitchen Faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.</p> <p>Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.</p> <p>4.303.1.4.5 Pre-rinse spray valves. When installed, shall meet the requirements in the California Code of Regulations, Title 20 (Appliance Efficiency Regulations), Sections 1605.1 (h)(4) Table H-2, Section 1605.3 (h)(4)(A), and Section 1607 (d)(7) and shall be equipped with an integral automatic shutoff.</p> <p>FOR REFERENCE ONLY: The following table and code section have been reprinted from the California Code of Regulations, Title 20 (Appliance Efficiency Regulations), Section 1605.1 (h)(4) and Section 1605.3 (h)(4)(A).</p> <table border="1"> <thead> <tr> <th colspan="2">TABLE H-2 STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019</th> </tr> <tr> <th>PRODUCT CLASS [spray force in ounce force (ozf)]</th> <th>MAXIMUM FLOW RATE (gpm)</th> </tr> </thead> <tbody> <tr> <td>Product Class 1 (≤ 5.0 ozf)</td> <td>1.00</td> </tr> <tr> <td>Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf)</td> <td>1.20</td> </tr> <tr> <td>Product Class 3 (> 8.0 ozf)</td> <td>1.28</td> </tr> </tbody> </table> <p>Title 20 Section 1605.3 (h)(4)(A): Commercial pre-rinse spray valves manufactured on or after January 1, 2006, shall have a minimum spray force of not less than 4.0 ounces-force (ozf) [113 grams-force (gf)]</p> <p>4.303.2 Submeters for multifamily buildings and dwelling units in mixed-used residential-commercial buildings. Submeters shall be installed to measure water usage of individual rental dwelling units in accordance with the California Plumbing Code.</p> <p>4.303.3 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code.</p> <p>NOTE: THIS TABLE COMPLETES THE DATA IN SECTION 4.303.1, AND IS INCLUDED AS A CONVENIENCE FOR THE USER.</p> <table border="1"> <thead> <tr> <th colspan="2">TABLE - MAXIMUM FIXTURE WATER USE</th> </tr> <tr> <th>FIXTURE TYPE</th> <th>FLOW RATE</th> </tr> </thead> <tbody> <tr> <td>SHOWER HEADS (RESIDENTIAL)</td> <td>1.8 GMP @ 80 PSI</td> </tr> <tr> <td>LAVATORY FAUCETS (RESIDENTIAL)</td> <td>MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI</td> </tr> <tr> <td>LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS</td> <td>0.5 GPM @ 60 PSI</td> </tr> <tr> <td>KITCHEN FAUCETS</td> <td>1.8 GPM @ 60 PSI</td> </tr> <tr> <td>METERING FAUCETS</td> <td>0.2 GAL/CYCLE</td> </tr> <tr> <td>WATER CLOSET</td> <td>1.28 GAL/FLUSH</td> </tr> <tr> <td>URINALS</td> <td>0.125 GAL/FLUSH</td> </tr> </tbody> </table> | TABLE H-2 STANDARDS FOR COMMERCIAL PRE-RINSE SPRAY VALVES MANUFACTURED ON OR AFTER JANUARY 28, 2019 | | PRODUCT CLASS [spray force in ounce force (ozf)] | MAXIMUM FLOW RATE (gpm) | Product Class 1 (≤ 5.0 ozf) | 1.00 | Product Class 2 (> 5.0 ozf and ≤ 8.0 ozf) | 1.20 | Product Class 3 (> 8.0 ozf) | 1.28 | TABLE - MAXIMUM FIXTURE WATER USE | | FIXTURE TYPE | FLOW RATE | SHOWER HEADS (RESIDENTIAL) | 1.8 GMP @ 80 PSI | LAVATORY FAUCETS (RESIDENTIAL) | MAX. 1.2 GPM @ 60 PSI MIN. 0.8 GPM @ 20 PSI | LAVATORY FAUCETS IN COMMON & PUBLIC USE AREAS | 0.5 GPM @ 60 PSI | KITCHEN FAUCETS | 1.8 GPM @ 60 PSI | METERING FAUCETS | 0.2 GAL/CYCLE | WATER CLOSET | 1.28 GAL/FLUSH | URINALS | 0.125 GAL/FLUSH |
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| URINALS | 0.125 GAL/FLUSH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <p>4.304 OUTDOOR WATER USE</p> <p>4.304.1 OUTDOOR POTABLE WATER USE IN LANDSCAPE AREAS. Residential developments shall comply with a local water efficient landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.</p> <p>NOTES:</p> <ol style="list-style-type: none"> The Model Water Efficient Landscape Ordinance (MWELO) is located in the California Code Regulations, Title 23, Chapter 2.7, Division 2. MWELO and supporting documents, including water budget calculator, are available at: https://www.water.ca.gov/ <p>DIVISION 4.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</p> <p>4.406 ENHANCED DURABILITY AND REDUCED MAINTENANCE</p> <p>4.406.1 RODENT PROOFING. Annual spaces around pipes, electric cables, conduits or other openings in soffit/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or a similar method acceptable to the enforcing agency.</p> <p>4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</p> <p>4.408.1 CONSTRUCTION WASTE MANAGEMENT. Recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4, or meet a more stringent local construction and demolition waste management ordinance.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Excavated soil and land-clearing debris. 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 enforcing agency may make exceptions to the requirements of this section when isolated jobsites are located in areas beyond the haul boundaries of the diversion facility. <p>4.408.2 CONSTRUCTION WASTE MANAGEMENT PLAN. Submit a construction waste management plan in conformity with Items 1 through 5. The construction waste management plan shall be updated as necessary and shall be available during construction for examination by the enforcing agency.</p> <ol style="list-style-type: none"> 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. Specify if construction and demolition waste materials will be sorted on-site (source separated) or bulk mixed (single stream). Identify diversion facilities where the construction and demolition waste material collected will be taken. Identify construction methods employed to reduce the amount of construction and demolition waste generated. Specify that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both. <p>4.408.3 WASTE MANAGEMENT COMPANY. Utilize a waste management company, approved by the enforcing agency, which can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with Section 4.408.1.</p> <p>Note: The owner or contractor may make the determination if the construction and demolition waste materials will be diverted by a waste management company.</p> <p>4.408.4 WASTE STREAM REDUCTION ALTERNATIVE [LR]. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 3.4 lbs./sq.ft. of the building area shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.</p> <p>4.408.4.1 WASTE STREAM REDUCTION ALTERNATIVE. Projects that generate a total combined weight of construction and demolition waste disposed of in landfills, which do not exceed 2 pounds per square foot of the building area, shall meet the minimum 65% construction waste reduction requirement in Section 4.408.1.</p> <p>4.408.5 DOCUMENTATION. Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 4.408.2, Items 1 through 5, Section 4.408.3 or Section 4.408.4.</p> <p>Notes:</p> <ol style="list-style-type: none"> Sample forms found in "A Guide to the California Green Building Standards Code (Residential)" located at www.hcd.ca.gov/CALGreen.html may be used to assist in documenting compliance with this section. Mixed construction and demolition debris (C & D) processors can be located at the California Department of Resources Recycling and Recovery (CalRecycle). <p>4.410 BUILDING MAINTENANCE AND OPERATION</p> <p>4.410.1 OPERATION AND MAINTENANCE MANUAL. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:</p> <ol style="list-style-type: none"> Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure. Operation and maintenance instructions for the following: <ol style="list-style-type: none"> Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment. Roof and yard drainage, including gutters and downspouts. Space conditioning systems, including condensers and air filters. Landscape irrigation systems. Water reuse systems. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption, including recycle programs and locations. Public transportation and/or carpool options available in the area. 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. Information about water-conserving landscape and irrigation design and controllers which conserve water. Instructions for maintaining gutters and downspouts and the importance of diverting water at least 5 feet away from the foundation. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around the building. Information about state solar energy and incentive programs available. A copy of all special inspections verifications required by the enforcing agency or this code. Information from the Department of Forestry and Fire Protection on maintenance of defensible space around residential structures. Information and/or drawings identifying the location of grab bar reinforcements. <p>4.410.2 RECYCLING BY OCCUPANTS. Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible area(s) that serves all buildings on the site and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals, or meet a lawfully enacted local recycling ordinance, if more restrictive.</p> <p>Exception: Rural jurisdictions that meet and apply for the exemption in Public Resources Code Section 42649.82 (b)(2)(A) et seq. are not required to comply with the organic waste portion of this section.</p> <p>DIVISION 4.5 ENVIRONMENTAL QUALITY</p> <p>SECTION 4.501 GENERAL</p> <p>4.501.1 Scope The provisions of this chapter shall outline means of reducing the quality of air contaminants that are odorous, irritating and/or harmful to the comfort and well being of a building's installers, occupants and neighbors.</p> <p>SECTION 4.502 DEFINITIONS</p> <p>5.102.1 DEFINITIONS The following terms are defined in Chapter 2 (and are included here for reference)</p> <p>AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.</p> <p>COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber, as specified in California Code of regulations (CCR), title 17, Section 93120.1.</p> <p>DIRECT-VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



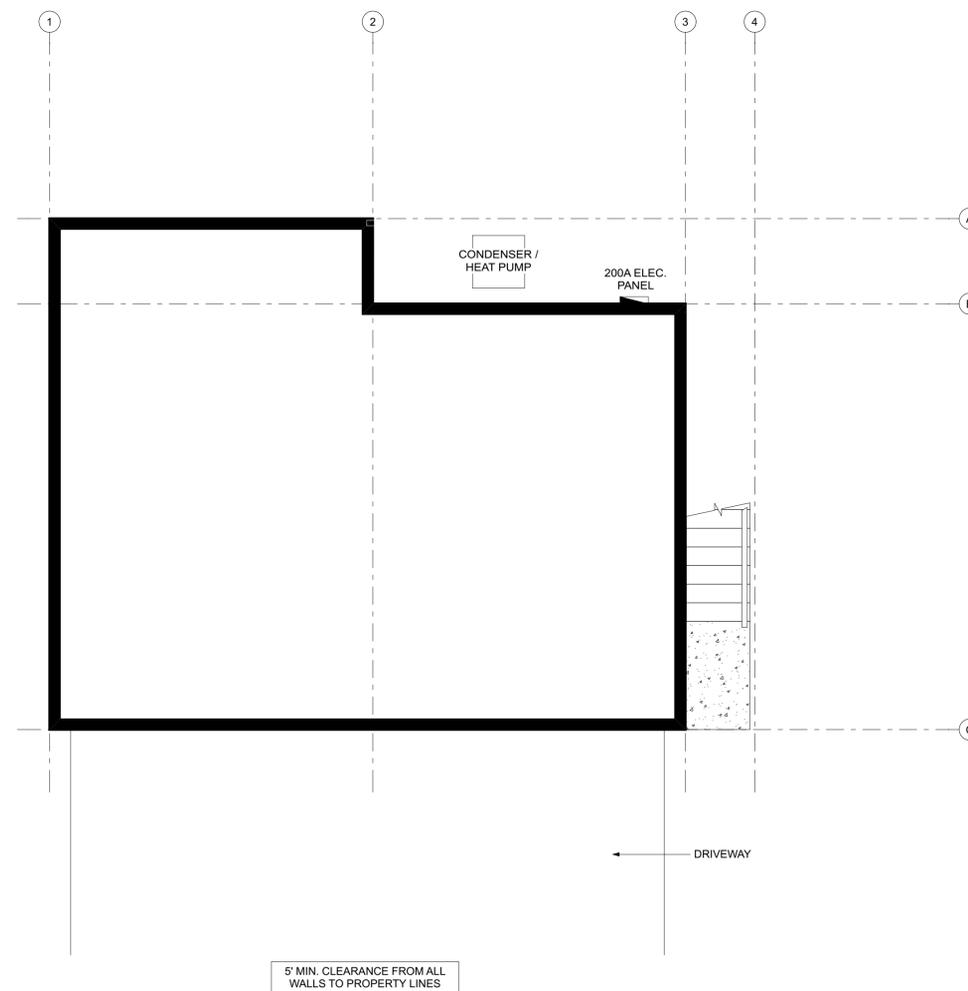
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1 SITE PLAN
SCALE: 1/4" = 1'-0"

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

SITE NOTES

- EXTERIOR WALLS OF ADU SHALL NOT BE INSTALLED CLOSER THAN 5' TO THE NEAREST PROPERTY LINE, CENTERLINE OF A STREET, ALLEY, OR PUBLIC WAY, OR TO AN IMAGINARY LINE BETWEEN TWO BUILDINGS ON THE LOT.
- SURFACE DRAINAGE SHALL BE DIVERTED TO A STORM SEWER CONVEYANCE OR OTHER APPROVED POINT OF COLLECTION THAT DOES NOT CREATE A HAZARD. LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL NOT FEWER THAN 6 INCHES WITHIN THE FIRST 10 FEET.

EXCEPTION: WHERE LOT LINES, WALLS, SLOPES OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES OF FALL WITHIN 10 FEET, DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED NOT LESS THAN 2 PERCENT AWAY FROM THE BUILDING.
- PROJECT WILL COMPLY WITH LOCAL AHJ STORM WATER REQUIREMENTS.

EXTERIOR WALL FIRE RATINGS - WITHOUT FIRE SPRINKLERS (CRC TABLE R302.1(1))

| EXTERIOR WALL ELEMENT | FIRE-RESISTANCE RATED | MINIMUM FIRE-RESISTANCE RATING | MINIMUM FIRE SEPARATION DISTANCE |
|-----------------------|---------------------------|---|----------------------------------|
| Walls | Fire-resistance rated | 1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.3 of the California Building Code with exposure from both sides | 0 feet |
| | Not fire-resistance rated | 0 hours | ≥ 5 feet |
| Projections | Not allowed | NA | < 2 feet |
| | Fire-resistance rated | 1 hour on the underside, or heavy timber, or fire-retardant-treated wood ¹ | ≥ 2 feet to + 5 feet |
| | Not fire-resistance rated | 0 hours | ≥ 5 feet |
| Openings in walls | Not allowed | NA | < 3 feet |
| | 25% maximum of wall area | 0 hours | 3 feet |
| Penetrations | Unlimited | 0 hours | 5 feet |
| | All | Comply with Section R302.4 | < 3 feet |
| | | None required | 3 feet |

- THE FIRE-RESISTANCE RATING SHALL BE PERMITTED TO BE REDUCED TO 0 HOURS ON THE UNDERSIDE OF THE EAVE OVERHANG IF FIREBLOCKING IS PROVIDED FROM THE WALL TOP PLATE TO THE UNDERSIDE OF THE ROOF SHEATHING.
- THE FIRE-RESISTANCE RATING SHALL BE PERMITTED TO BE REDUCED TO 0 HOURS ON THE UNDERSIDE OF THE RAKE OVERHANG WHERE GABLE VENT OPENINGS ARE NOT INSTALLED.

EXTERIOR WALL FIRE RATINGS - WITH FIRE SPRINKLERS (CRC TABLE R302.1(2))

| EXTERIOR WALL ELEMENT | FIRE-RESISTANCE RATED | MINIMUM FIRE-RESISTANCE RATING | MINIMUM FIRE SEPARATION DISTANCE |
|-----------------------|---------------------------|--|----------------------------------|
| Walls | Fire-resistance rated | 1 hour—tested in accordance with ASTM E119, UL 263 or Section 703.2.2 of the California Building Code with exposure from the outside | 0 feet |
| | Not fire-resistance rated | 0 hours | 3 feet* |
| Projections | Not allowed | NA | < 2 feet |
| | Fire-resistance rated | 1 hour on the underside, or heavy timber, or fire-retardant-treated wood ¹ | 2 feet* |
| | Not fire-resistance rated | 0 hours | 3 feet |
| Openings in walls | Not allowed | NA | < 3 feet |
| | Unlimited | 0 hours | 3 feet* |
| Penetrations | All | Comply with Section R302.4 | < 3 feet |
| | | None required | 3 feet* |
| Penetrations | All | None required | 3 feet |

- FOR RESIDENTIAL SUBDIVISIONS WHERE ALL DWELLINGS ARE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION R313, THE FIRE SEPARATION DISTANCE FOR EXTERIOR WALLS NOT FIRE-RESISTANCE RATED AND FOR FIRE-RESISTANCE-RATED PROJECTIONS SHALL BE PERMITTED TO BE REDUCED TO 0 FEET, AND UNLIMITED UNPROTECTED OPENINGS AND PENETRATIONS SHALL BE PERMITTED, WHERE THE ADJOINING LOT PROVIDES AN OPEN SETBACK YARD THAT IS 6 FEET OR MORE IN WIDTH ON THE OPPOSITE SIDE OF THE PROPERTY LINE.
- THE FIRE-RESISTANCE RATING SHALL BE PERMITTED TO BE REDUCED TO 0 HOURS ON THE UNDERSIDE OF THE EAVE OVERHANG IF FIREBLOCKING IS PROVIDED FROM THE WALL TOP PLATE TO THE UNDERSIDE OF THE ROOF SHEATHING.
- THE FIRE-RESISTANCE RATING SHALL BE PERMITTED TO BE REDUCED TO 0 HOURS ON THE UNDERSIDE OF THE RAKE OVERHANG WHERE GABLE VENT OPENINGS ARE NOT INSTALLED.

GENERIC SITE PLAN

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
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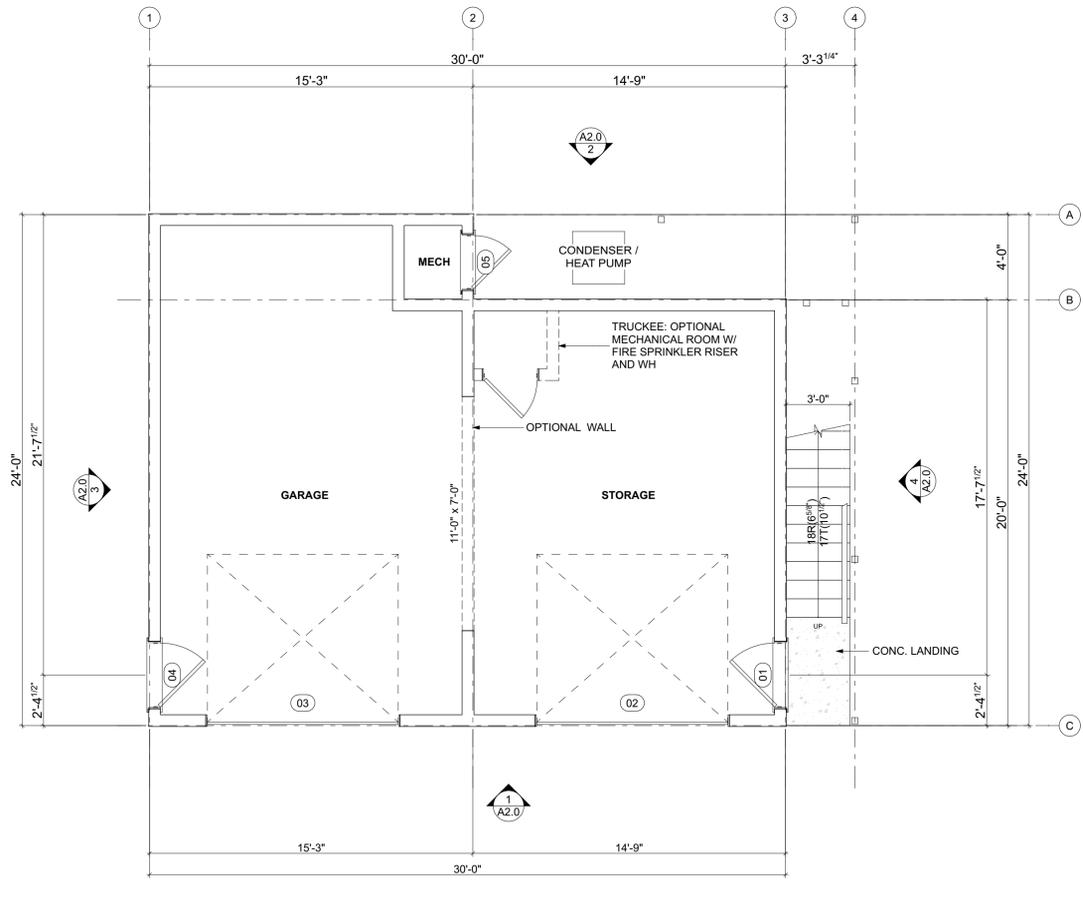
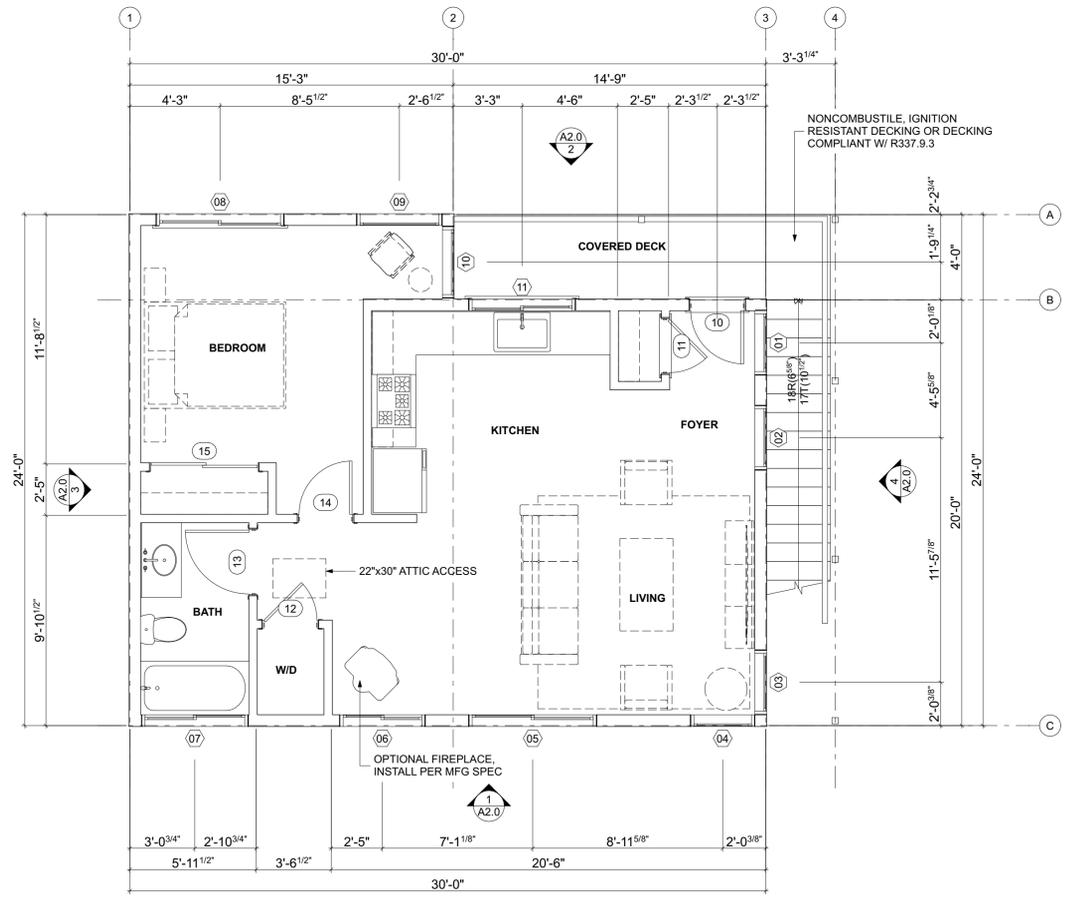
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1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____



PLAN NOTES

- ALL DIMENSIONS TO FACE OF FRAMING, U.N.O.
- ALL DOORS SHOULD BE 3 1/2" FROM NEAREST INTERSECTING WALL AT HINGED SIDE, U.N.O.
- WRITTEN DIMENSIONS TO PREVAIL OVER SCALING OF DRAWINGS. SUBCONTRACTOR TO VERIFY ALL DIM. PRIOR TO CONSTRUCTION 4. REFER TO PLANS FOR CLARIFICATION OF DIM.
- SEE SCHEDULE FOR DOOR AND WINDOW INFORMATION AND HEIGHTS X 1 DOOR SYMBOL WINDOW SYMBOL 1 KEYNOTE ELEVATION X'-X" MARKER DETAIL DRAWING REF. ELEVATION CALLOUT T TEMPERED GLASS
- SEE PLANS AND DETAILS FOR LOCATIONS, QUANTITY AND CONFIGURATION OF MISCELLANEOUS IRON AND STEEL WORK INCLUDING ASSORTED CLIPS, BRACKETS ANGLES, STRAPS, POST ANCHORS AND LIKE ITEMS. FURNISH AND INSTALL ALL SUCH ITEMS NECESSARY TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY DETAILED OR NOTED ON THE DRAWINGS. ALL EXTERIOR METAL AND HARDWARE IS TO BE GALVANIZED. STEEL IS TO BE ASTM A3.
- FRAMER IS TO LAYOUT CEILING JOISTS/ROOF BEAMS. CONTROL JOINTS EXPANSION EXHAUST FANS OR OTHER ELECTRICAL/ MECHANICAL FIXTURES.
- WOOD SOFFIT/CEILING, SIDING & TRIM ALL NAILS, FASTENERS AND HARDWARE MUST BE STAINLESS STEEL, NUMBER OR TOP-QUALITY, HOT-DIPPED GALVANIZED. STAPLES ARE NOT PERMITTED
- FLASHING AND SHEET METAL ALL FLASHING AND COUNTER FLASHING IS TO BE GALVANIZED AND INSTALLED AS PER SMACNA STANDARDS. ALL PROPOSED FLASHING AND SHEET METAL MATERIALS, GAUGE AND INSTALLATION IS TO BE IN ACCORDANCE WITH SMACNA MANUAL STANDARDS.
- A. MATERIALS FOR PLASTER IS TO BE THE STANDARD PRODUCTS OF RECOGNIZED MANUFACTURERS, AND SHALL BE AS MANUFACTURED BY US GYPSUM CO. OR APPROVED EQUAL.
- AT LEAST ONE BATHROOM ON THE ENTRY LEVEL SHALL BE PROVIDED WITH GRAB BAR REINFORCEMENT. REINFORCEMENT SHALL BE NOMINAL 2X8 LUMBER AND SHALL BE LOCATED BETWEEN 32 INCHES AND 39.5 INCHES ABOVE THE FINISHED FLOOR. WATER CLOSET REINFORCEMENT SHALL BE INSTALLED ON BOTH SIDE WALLS OF THE FIXTURE, OR ON THE SIDE WALL AND THE BACK WALL.
- ALL PLASTER CORNER BEADS, CASING RAFTERS TO ACCOMMODATE RECESSED LIGHTS MECHANICAL FIXTURES.
- WOOD SOFFIT/CEILING, SIDING & TRIM ALL NAILS, FASTENERS AND HARDWARE MUST BE STAINLESS STEEL, NUMBER OR TOP-QUALITY, HOT-DIPPED GALVANIZED. STAPLES ARE NOT PERMITTED
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- ANY INSTALLED GAS FIREPLACE SHALL BE A DIRECT-VENT SEALED-COMBUSTION TYPE. ANY INSTALLED WOODSTOVE OR PELLET STOVE SHALL COMPLY WITH U.S. EPA NEW SOURCE PERFORMANCE STANDARDS (NSPS) EMISSION LIMITS AS APPLICABLE, AND SHALL HAVE A PERMANENT LABEL INDICATING THEY ARE CERTIFIED TO MEET THE EMISSION LIMITS. WOODSTOVES, PELLET STOVES AND FIREPLACES SHALL ALSO COMPLY WITH APPLICABLE LOCAL ORDINANCES.

ROOF VENTING REQUIRED

ROOF NOTES
REFER TO TITLE SHEET T1 FOR ROOF AND VENT MATERIAL SPECIFICATIONS

ROOF VENTING
1 SF OF ROOF VENTING PER 150 SF OF ENCLOSED AREA OR ENCLOSED RAFTER AREA

FLOOR ENCLOSED RAFTER AREA = 798 SF
798 SF/150 SF = 5.3 SF
VENTILATION AREA REQUIRED = 5.3 SF (766 SQ. IN.)

FLOOR PLAN

A1.0



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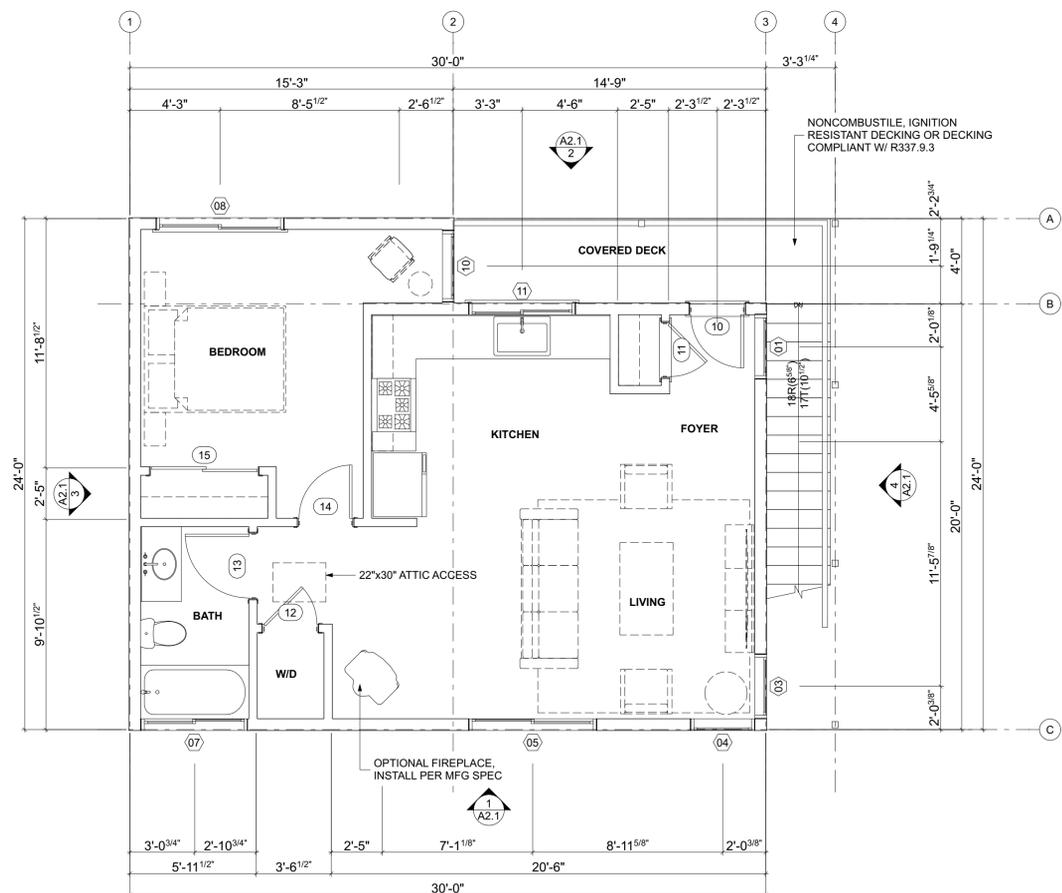
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1 BEDROOM (661 SF)

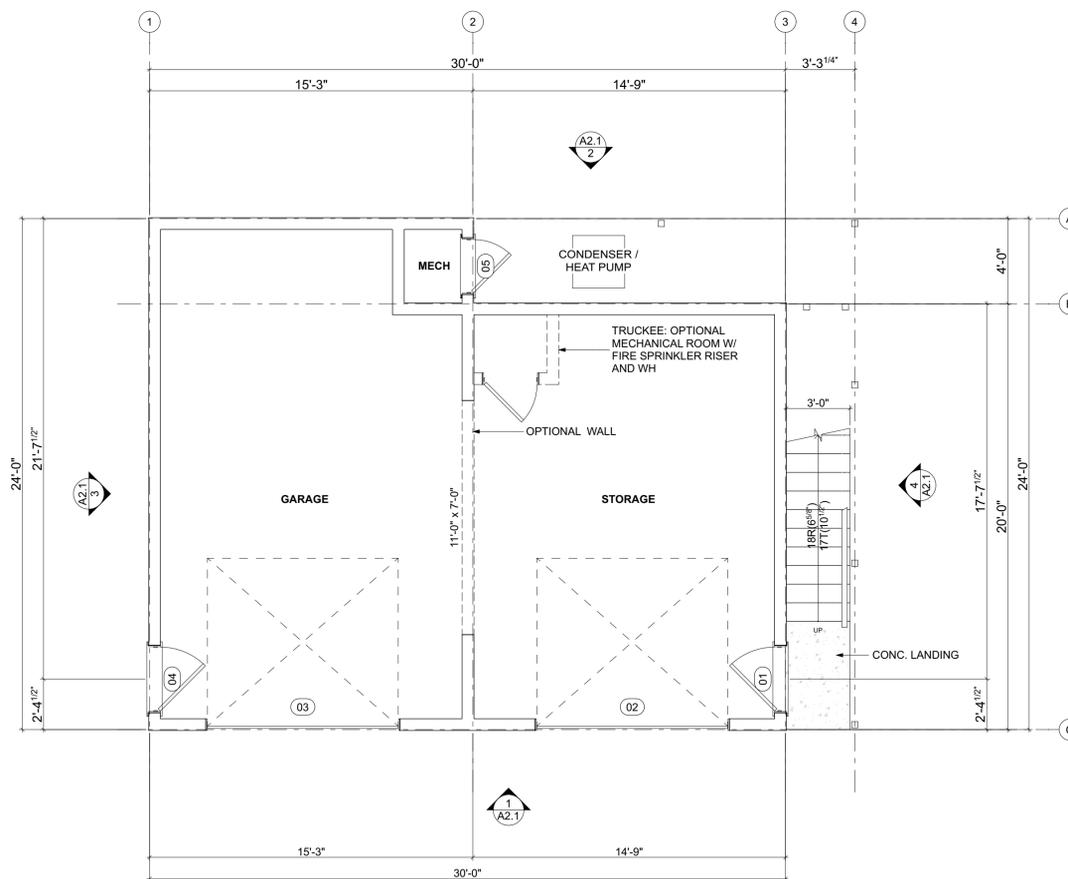
OWNER: ADDRESS: APN:

FLOOR PLAN (490LB)

A1.2



2 2ND FLOOR PLAN SCALE: 1/4" = 1'-0"



1 1ST FLOOR PLAN SCALE: 1/4" = 1'-0"

NOTES (ABOVE 4,000' ELEV.)

- 1. DIRECT-VENT APPLIANCES, EXIT TERMINALS, GAS VENTS, ETC. SHALL TERMINATE ABOVE THE ANTICIPATED SNOW DEPTH... 2. ABOVE 4,000 FEET ELEVATION ABOVE SEA LEVEL ALL DIRECT VENT APPLIANCES, EXIT TERMINALS, GAS VENTS, ETC. TERMINATION SHALL BE PROTECTED FROM CLOSURE AND SLIDING SNOW AND ICE BY THE USE OF FORMED METAL CRICKETS...

PLAN NOTES

- 1. ALL DIMENSIONS TO FACE OF FRAMING, U.N.O. 2. ALL DOORS SHOULD BE 3 1/2" FROM NEAREST INTERSECTING WALL AT HINGED SIDE, U.N.O. 3. WRITTEN DIMENSIONS TO PREVAIL OVER SCALING OF DRAWINGS. SUBCONTRACTOR TO VERIFY ALL DIM. PRIOR TO CONSTRUCTION 4. REFER TO PLANS FOR CLARIFICATION OF DIM.

ROOF VENTING REQUIRED

- ROOF NOTES REFER TO TITLE SHEET T1 FOR ROOF AND VENT MATERIAL SPECIFICATIONS ROOF VENTING 1 SF OF ROOF VENTING PER 150 SF OF ENCLOSED AREA OR ENCLOSED RAFTER AREA FLOOR ENCLOSED RAFTER AREA = 798 SF 798 SF/150 SF = 5.3 SF VENTILATION AREA REQUIRED = 5.3 SF (766 SQ. IN.)

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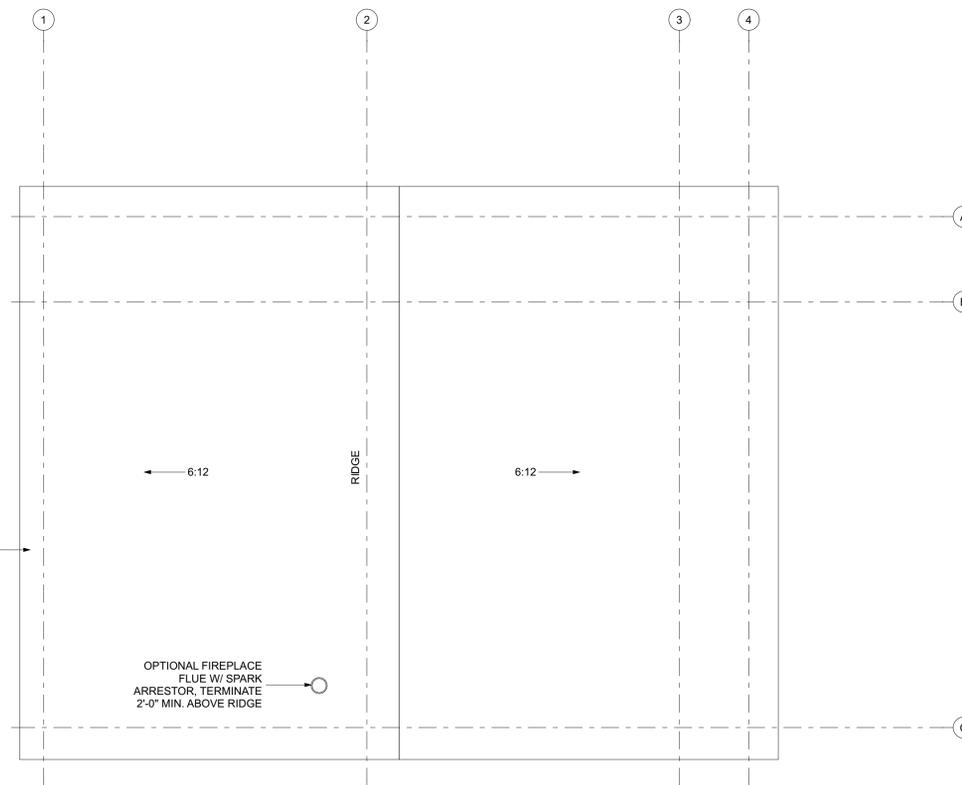
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1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____



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

ROOF VENTING REQUIRED

ROOF NOTES

A CLASS 'A' ROOF ASSEMBLY SHALL BE INSTALLED. IF THE APPLICANT DEVIATES FROM THE ROOF SPECIFICATIONS THE APPLICANT SHALL PROVIDE A COPY OF THE ICC/UL LISTING

ICC NUMBER _____
UL NUMBER _____

ROOF VENTING

1 SF OF ROOF VENTING PER 150 SF OF ENCLOSED AREA OR ENCLOSED RAFTER AREA

FLOOR ENCLOSED
RAFTER AREA = 798 SF

798 SF/150 SF = 5.3 SF

VENTILATION AREA REQUIRED = 5.3 SF (766 SQ. IN.)

NON VENTED ROOF

R806.5 UNVENTED ATTIC AND UNVENTED ENCLOSED RAFTER ASSEMBLIES

- A. IF INSULATION IS AIR-PERMEABLE AND IT IS INSTALLED DIRECTLY BELOW THE ROOF SHEATHING WITH RIGID BOARD OR SHEET INSULATION WITH A MINIMUM R-5 VALUE INSTALLED ABOVE THE ROOF SHEATHING, (OR)
- B. IF THE INSULATION IS AIR-IMPERMEABLE AND IS IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING, (OR)
- C. IF TWO LAYERS OF INSULATION ARE INSTALLED BELOW THE ROOF SHEATHING: AN AIR-IMPERMEABLE LAYER IN DIRECT CONTACT WITH THE UNDERSIDE OF THE ROOF SHEATHING AND AN ADDITIONAL LAYER OF AIR PERMEABLE INSULATION INSTALLED DIRECTLY UNDER THE AIR IMPERMEABLE INSULATION.
- D. WHERE PREFORMED INSULATION BOARD IS USED AS THE AIR-IMPERMEABLE INSULATION LAYER, IT SHALL BE SEALED AT THE PERIMETER OF EACH INDIVIDUAL SHEET INTERIOR SURFACE TO FORM A CONTINUOUS LAYER.

PLAN NOTES

1. ALL DIMENSIONS TO FACE OF FRAMING, U.N.O.
2. ALL DOORS SHOULD BE 3 1/2" FROM NEAREST INTERSECTING WALL AT HINGED SIDE, U.N.O.
3. WRITTEN DIMENSIONS TO PREVAIL OVER SCALING OF DRAWINGS. SUBCONTRACTOR TO VERIFY ALL DIM. PRIOR TO CONSTRUCTION 4. REFER TO PLANS FOR CLARIFICATION OF DIM.
4. SEE SCHEDULE FOR DOOR AND WINDOW INFORMATION AND HEIGHTS X 1 DOOR SYMBOL WINDOW SYMBOL 1 KEYNOTE ELEVATION 'X'-X' MARKER DETAIL DRAWING REF. ELEVATION CALLOUT T TEMPERED GLASS
5. SEE PLANS AND DETAILS FOR LOCATIONS, QUANTITY AND CONFIGURATION OF MISCELLANEOUS IRON AND STEEL WORK INCLUDING ASSORTED CLIPS, BRACKETS ANGLES, STRAPS, POST ANCHORS AND LIKE ITEMS. FURNISH AND INSTALL ALL SUCH ITEMS NECESSARY TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY DETAILED OR NOTED ON THE DRAWINGS. ALL EXTERIOR METAL AND HARDWARE IS TO BE GALVANIZED. STEEL IS TO BE ASTM A3.
6. FRAMER IS TO LAYOUT CEILING JOISTS/ROOF RAFTERS TO ACCOMMODATE RECESSED LIGHTS EXHAUST FANS OR OTHER ELECTRICAL/ MECHANICAL FIXTURES.
7. WOOD SOFFIT/CEILING, SIDING & TRIM ALL NAILS, FASTENERS AND HARDWARE MUST BE STAINLESS STEEL, NUMBER OR TOP-QUALITY, HOT-DIPPED GALVANIZED. STAPLES ARE NOT PERMITTED
8. INSULATION THERMAL INSULATION IS TO BE FOIL BACKED BATT INSULATION WITH AN R FACTOR NOT LESS THAN R-15 FOR WALLS AND AN R-30 FOR CEILINGS @ BATHROOMS, LAUNDRY ROOM AND MASTER BED/BATHROOMS ARE TO BE PROVIDED WITH SOUND INSULATION FLOOR, WALLS AND CEILING LOCATIONS AS MANUFACTURED BY JOHNS-MANVILLE FORMALDEHYDE FREE OR APPROVED EQUAL.
9. FLASHING AND SHEET METAL ALL FLASHING AND COUNTER FLASHING IS TO BE GALVANIZED AND INSTALLED AS PER SMACNA STANDARDS. ALL

PROPOSED FLASHING AND SHEET METAL MATERIALS, GAUGE AND INSTALLATION IS TO BE IN ACCORDANCE WITH SMACNA MANUAL STANDARDS.

- A. MATERIALS FOR PLASTER IS TO BE THE STANDARD PRODUCTS OF RECOGNIZED MANUFACTURERS, AND SHALL BE AS MANUFACTURED BY US GYPSUM CO. OR APPROVED EQUAL.
- B. ALL PLASTER CORNER BEADS, CASING BEADS, CONTROL JOINTS, EXPANSION SCREEDS AND ACCESSORIES ARE TO BE GALVANIZED PROVIDE CASING BEADS AT ALL JOINTS OF STUCCO TO DISSIMILAR SURFACES UNLESS OTHERWISE NOTED C. WHERE INDICATED ON THE DRAWINGS, PORTLAND CEMENT PLASTER IS TO BE HAND APPLIED (3) THREE COAT WORK, 7/8" THICK ON EXTERIOR SURFACES. THE COATS ARE TO CONSIST OF A SCRATCH (3/8" AND A TWO COAT FINISH (1/8" MIN.) COAT PROPORTIONED AND MIXED ADS RECOMMENDED BY THE CALIFORNIA LATHING AND PLASTERING CONTRACTORS ASSOCIATION.

ROOF PLAN

A1.3

| ID | NAME | DATE |
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| | SUBMITTAL | 3/30/23 |
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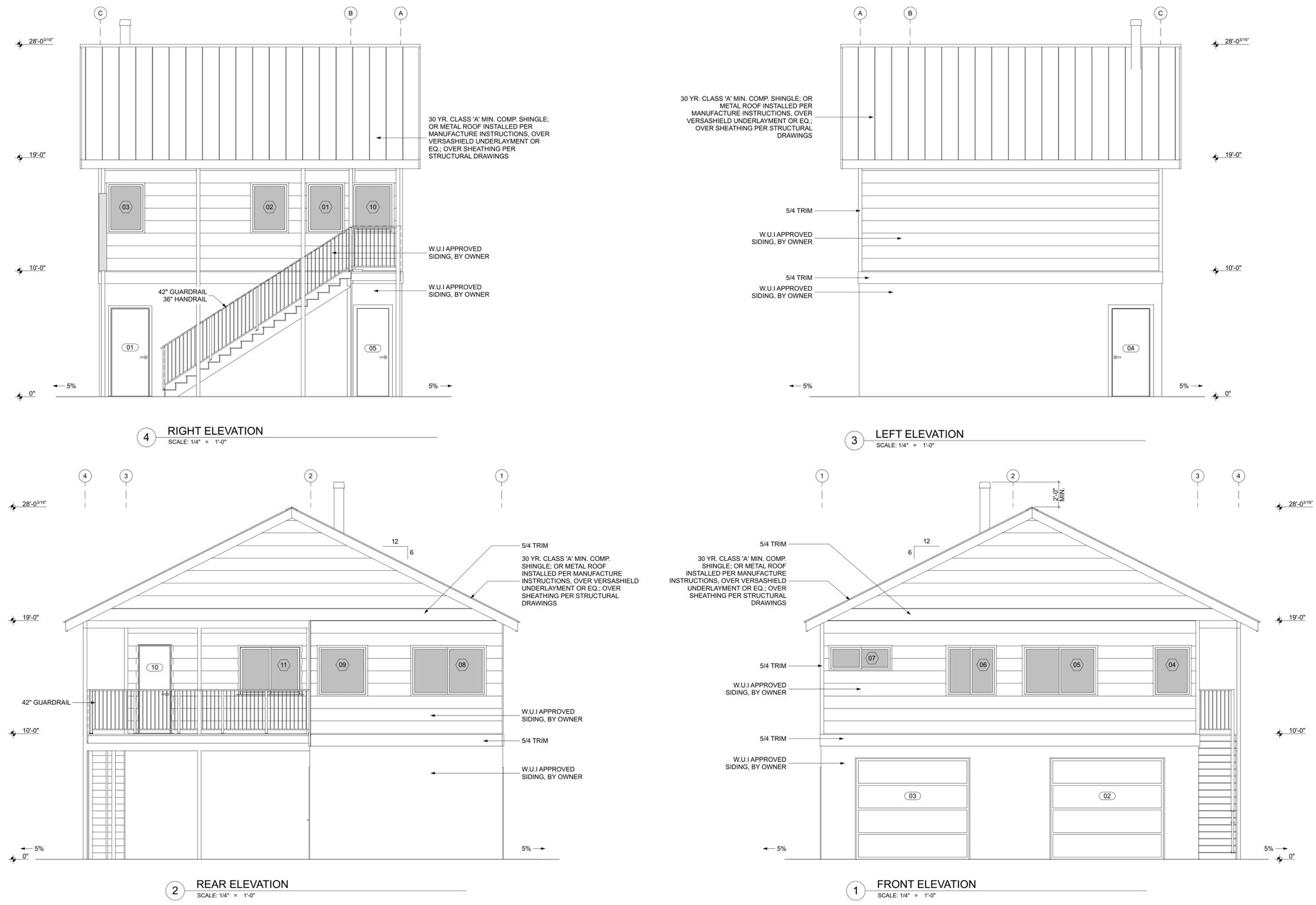
1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
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| | SUBMITTAL | 3/30/23 |
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BUILDING ELEVATIONS

A2.0



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

3 LEFT ELEVATION
SCALE: 1/4" = 1'-0"

2 REAR ELEVATION
SCALE: 1/4" = 1'-0"

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

GENERAL NOTES

- 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.
 - FIRE-STOPPING WITH APPROVED MATERIALS
 - ONE LAYER OF 72 POUND (32.4 KG) MINERAL-SURFACED NON-PERFORATED CAP SHEET COMPLYING WITH ASTM D 3909 INSTALLED OVER THE COMBUSTIBLE DECKING
 - OTHERWISE CONSTRUCTED TO PREVENT INTRUSION OF FLAMES AND EMBERS
- 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.
- ANY ROOF GUTTERS SHALL BE PROVIDED WITH MEANS TO PREVENT ACCUMULATION OF LEAVES AND DEBRIS.
- SKYLIGHTS SHALL BE TEMPERED GLASS.
- ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC) SHALL RESIST THE INTRUSION OF FLAMES AND EMBERS
- VENTILATION OPENINGS FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDERFLOOR VENTILATION OPENINGS, AND VENT OPENINGS IN EXTERIOR WALLS AND EXTERIOR DOORS SHALL BE LISTED TO ASTM E 2886 AND COMPLY WITH ALL OF THE FOLLOWING:
 - THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER INTRUSION TEST
 - THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME INTRUSION TEST
- THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662 DEGREES FAHRENHEIT (350 DEGREES CELSIUS)
- EXTERIOR WALL FINISH SHALL COMPLY WITH ONE OF THE FOLLOWING:
 - NON-COMBUSTIBLE MATERIAL (STUCCO, CEMENT FIBER BOARD, ETC)
 - STUCCO AND CEMENT PLASTER USED AS AN EXTERIOR WALL COVERING SHALL BE 7/8-INCH THICK 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 MUDDIED, OR AN UNDERLAYMENT OF OTHER IGNITION RESISTANT MATERIAL APPROVED BY THE BUILDING OFFICIAL
 - IGNITION-RESISTANT MATERIAL
- PATIO COVER, CARPORT AND TRELIS CONSTRUCTION WITH ALL EXPOSED ELEMENTS SHALL COMPLY WITH ANY OF THE FOLLOWING:
 - NON-COMBUSTIBLE MATERIAL
 - 1-HOUR FIRE-RESISTANT-RATED TREATED WOOD
 - APPROVED EXTERIOR FIRE-RETARDANT MATERIAL
 - MODIFIED HEAVY TIMBER (MIN 2X TONGUE-AND-GROOVE SHEATHING, 4X6 RAFTERS/BEAMS, 6X6 POSTS)
- DECK, BALCONY, AND EXTERIOR STAIR CONSTRUCTION, WITH ALL EXPOSED ELEMENTS SHALL COMPLY WITH THE FOLLOWING:
 - NON-COMBUSTIBLE MATERIAL
 - 1-HOUR FIRE-RESISTANT-RATED MATERIAL
 - APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD
 - MODIFIED HEAVY TIMBER (MIN 4X8 JOISTS, 4X10 OR 6X8 BEAMS, 6X6 POSTS)
- DECKING AND TREAD MATERIAL (ANY OF THE FOLLOWING):
 - NON-COMBUSTIBLE MATERIAL
 - 1-HOUR FIRE-RESISTANT-RATED MATERIAL
 - APPROVED EXTERIOR FIRE-RETARDANT MATERIAL MEETING TESTS REQUIREMENTS OF COUNTY BUILDING CODE 92.1.709A.1-4)
- EXTERIOR GARAGE DOORS SHALL RESIST THE INTRUSION OF EMBERS INTO THE GARAGE BY LIMITING THE SIZE OF ANY GAPS AT THE BOTTOM, SIDES, AND TOP OF THE DOOR TO 1/8 INCH OR LESS USING ONE OF THE FOLLOWING METHODS
 - WEATHER-STRIPPING PRODUCTS WITH TENSILE STRENGTH AND FLAMMABILITY RATING PER CBC 708A.4
 - DOOR OVERLAPS ONTO JAMBS AND HEADERS
 - GARAGE DOOR JAMBS AND HEADERS COVERED WITH METAL FLASHING
- PAPER-FACED INSULATION PROHIBITED IN ATTICS OR OTHER VENTILATED SPACES.
- FENCES OR ANY STRUCTURE WITHIN 5 FEET OF BUILDING SHALL BE CONSTRUCTED PER ONE OF THE FOLLOWING:
 - NON-COMBUSTIBLE MATERIAL
 - APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD
 - MATERIAL MEETING SAME FIRE-RESISTIVE STANDARDS AS EXTERIOR WALLS OF BUILDINGS
- METAL CHIMNEY SHALL BE BRACED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS



RUSSELL DAVIDSON ARCHITECTURE + DESIGN



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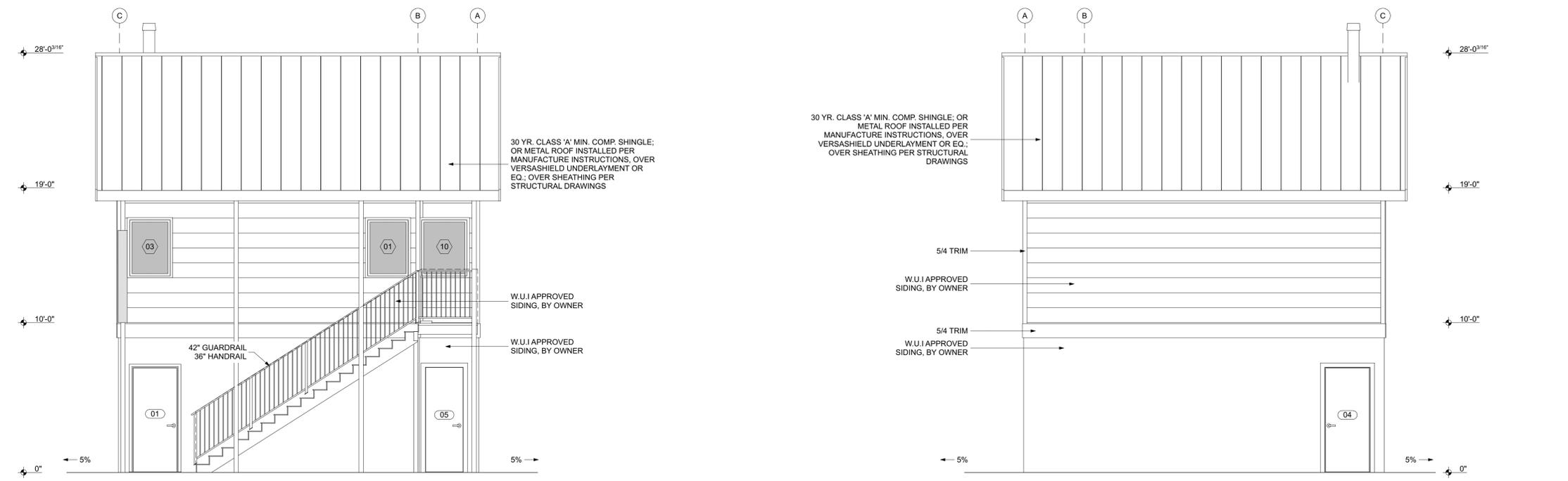
1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:

Table with 3 columns: ID, NAME, DATE. Row 1: SUBMITTAL, 3/30/23

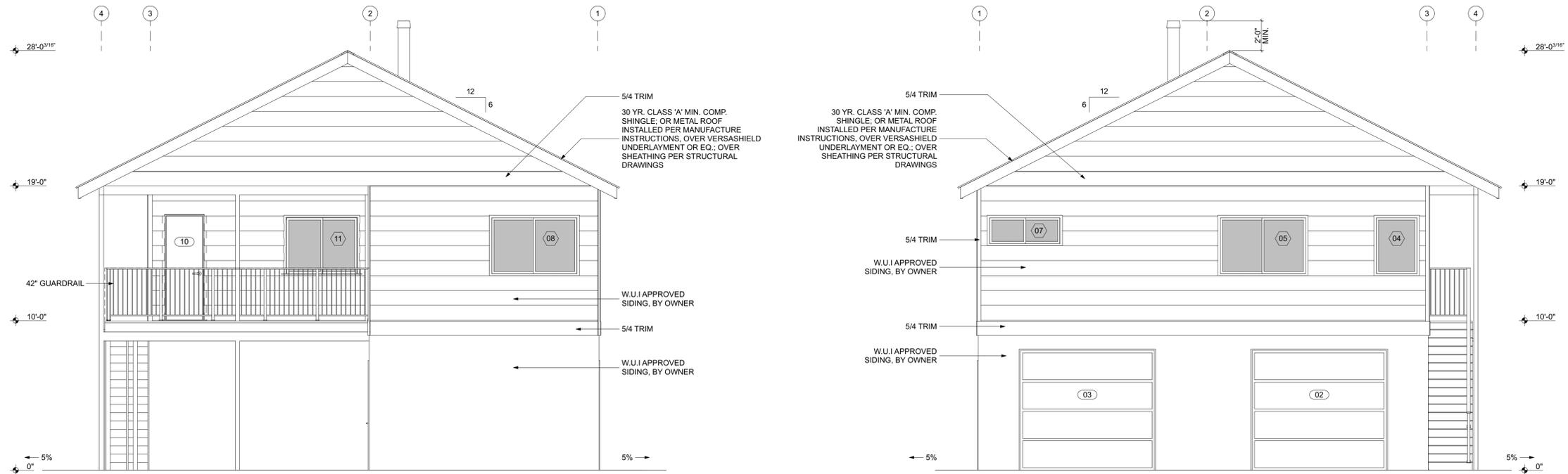
BUILDING ELEVATIONS (490LB)

A2.1



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

3 LEFT ELEVATION SCALE: 1/4" = 1'-0"



2 REAR ELEVATION SCALE: 1/4" = 1'-0"

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

GENERAL NOTES

- 1. IN ROOF COVERINGS WHERE THE PROFILE CREATES SPACE BETWEEN THE ROOF COVERING AND COMBUSTIBLE ROOF DECKING... 2. EXPOSED VALLEY FLASHINGS SHALL BE CONSTRUCTED WITH NOT LESS THAN 0.019-INCH (NO. 26 GALVANIZED SHEET GAGE) CORROSION-RESISTANT METAL... 3. ANY ROOF GUTTERS SHALL BE PROVIDED WITH MEANS TO PREVENT ACCUMULATION OF LEAVES AND DEBRIS... 4. SKYLIGHTS SHALL BE TEMPERED GLASS... 5. ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC) SHALL RESIST THE INTRUSION OF FLAMES AND EMBERS... 6. VENTILATION OPENINGS FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS... 7. EXTERIOR WALL FINISH SHALL COMPLY WITH ONE OF THE FOLLOWING: A. NON-COMBUSTIBLE MATERIAL (STUCCO, CEMENT FIBER BOARD, ETC) B. STUCCO AND CEMENT PLASTER USED AS AN EXTERIOR WALL COVERING SHALL BE 7/8-INCH THICK 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 MUDDIED, OR AN UNDERLAYMENT OF OTHER IGNITION RESISTANT MATERIAL APPROVED BY THE BUILDING OFFICIAL. B. IGNITION-RESISTANT MATERIAL C. THE MAXIMUM TEMPERATURE OF THE UNEXPOSED SIDE OF THE VENT SHALL NOT EXCEED 662 DEGREES FAHRENHEIT (350 DEGREES CELSIUS) 8. PATIO COVER, CARPORT AND TRELIS CONSTRUCTION WITH ALL EXPOSED ELEMENTS SHALL COMPLY WITH ANY OF THE FOLLOWING: A. NON-COMBUSTIBLE MATERIAL B. 1-HOUR FIRE-RESISTANT-RATED MATERIAL C. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD D. MODIFIED HEAVY TIMBER (MIN 2X TONGUE-AND-GROOVE SHEATHING, 4X6 RAFTERS/BEAMS, 6X6 POSTS) 9. DECK, BALCONY, AND EXTERIOR STAIR CONSTRUCTION, WITH ALL EXPOSED ELEMENTS SHALL COMPLY WITH THE FOLLOWING: A. NON-COMBUSTIBLE MATERIAL B. 1-HOUR FIRE-RESISTANT-RATED MATERIAL C. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD D. MODIFIED HEAVY TIMBER (MIN 4X8 JOISTS, 4X10 OR 6X8 BEAMS, 6X6 POSTS) 10. EXTERIOR GARAGE DOORS SHALL RESIST THE INTRUSION OF EMBERS INTO THE GARAGE BY LIMITING THE SIZE OF ANY GAPS AT THE BOTTOM, SIDES, AND TOP OF THE DOOR TO 1/8 INCH OR LESS USING ONE OF THE FOLLOWING METHODS A. WEATHER-STRIPPING PRODUCTS WITH TENSILE STRENGTH AND FLAMMABILITY RATING PER CBC 708A.4 B. DOOR OVERLAPS ONTO JAMBS AND HEADERS C. GARAGE DOOR JAMBS AND HEADERS COVERED WITH METAL FLASHING 11. PAPER-FACED INSULATION PROHIBITED IN ATTICS OR OTHER VENTILATED SPACES. 12. FENCES OR ANY STRUCTURE WITHIN 5 FEET OF BUILDING SHALL BE CONSTRUCTED PER ONE OF THE FOLLOWING: A. NON-COMBUSTIBLE MATERIAL B. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD C. MATERIAL MEETING SAME FIRE-RESISTIVE STANDARDS AS EXTERIOR WALLS OF BUILDINGS 13. METAL CHIMNEY SHALL BE BRACED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. 14. ABOVE 5000' ELEVATION, PLUMBING VENTS, B-VENTS, CHIMNEYS, AND MISCELLANEOUS OBSTRUCTIONS PROJECTING THROUGH THE ROOF SHALL BE PROTECTED FROM DAMAGE BY SLIDING SNOW OR ICE BY USING GUYS, FORMED METAL GUARDS, CRICKETS, OR SADDLES.



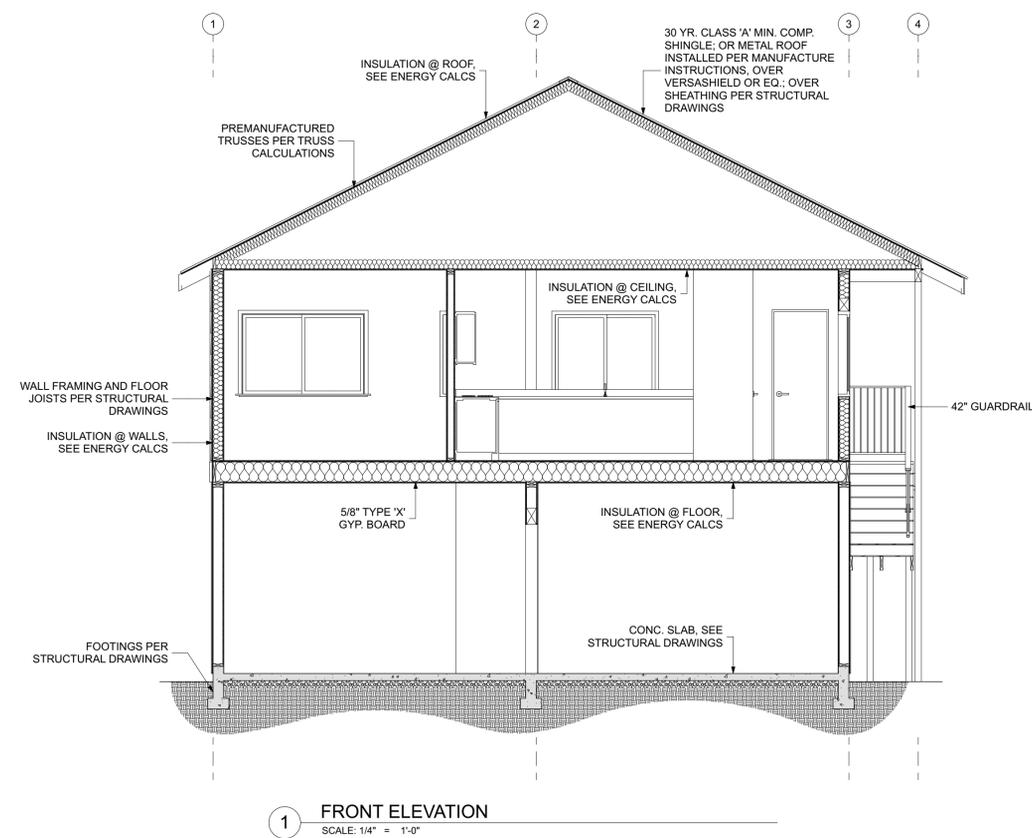
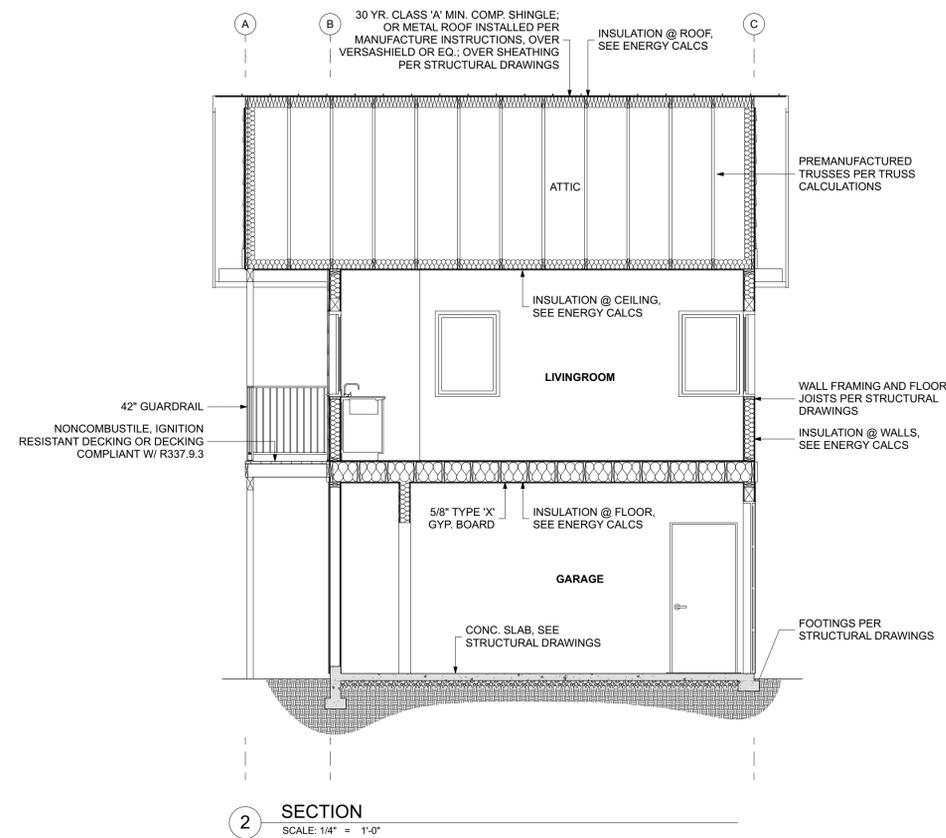
RUSSELL DAVIDSON
ARCHITECTURE + DESIGN



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

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

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

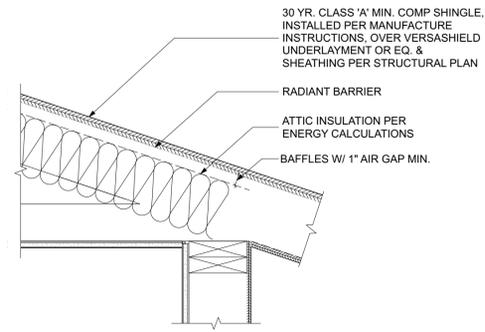
GENERAL NOTES

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.
 - A. FIRE-STOPPING WITH APPROVED MATERIALS
 - 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
 - C. OTHERWISE CONSTRUCTED TO PREVENT INTRUSION OF FLAMES AND EMBERS
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.
3. ANY ROOF GUTTERS SHALL BE PROVIDED WITH MEANS TO PREVENT ACCUMULATION OF LEAVES AND DEBRIS.
4. SKYLIGHTS SHALL BE TEMPERED GLASS.
5. ALL VENTS (ROOF, FOUNDATION, COMBUSTION-AIR, ETC) SHALL RESIST THE INTRUSION OF FLAMES AND EMBERS
6. VENTILATION OPENINGS FOR ENCLOSED ATTICS, EAVE SOFFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, UNDERFLOOR VENTILATION OPENINGS, AND VENT OPENINGS IN EXTERIOR WALLS AND EXTERIOR DOORS SHALL BE LISTED TO ASTM E 2886 AND COMPLY WITH ALL OF THE FOLLOWING:
 - A. THERE SHALL BE NO FLAMING IGNITION OF THE COTTON MATERIAL DURING THE EMBER INTRUSION TEST
 - B. THERE SHALL BE NO FLAMING IGNITION DURING THE INTEGRITY TEST PORTION OF THE FLAME INTRUSION TEST
7. EXTERIOR WALL FINISH SHALL COMPLY WITH ONE OF THE FOLLOWING:
 - A. NON-COMBUSTIBLE MATERIAL (STUCCO, CEMENT FIBER BOARD, ETC)
 - STUCCO AND CEMENT PLASTER USED AS AN EXTERIOR WALL COVERING SHALL BE 7/8-INCH THICK 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
 - B. IGNITION-RESISTANT MATERIAL
8. PATIO COVER, CARPORT AND TRELIS CONSTRUCTION WITH ALL EXPOSED ELEMENTS SHALL COMPLY WITH ANY OF THE FOLLOWING:
 - A. NON-COMBUSTIBLE MATERIAL
 - B. 1-HOUR FIRE-RESISTANT-RATED MATERIAL
 - C. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD
 - D. MODIFIED HEAVY TIMBER (MIN 2X TONGUE-AND-GROOVE SHEATHING, 4X6 RAFTERS/BEAMS, 6X6 POSTS)
9. DECK, BALCONY, AND EXTERIOR STAIR CONSTRUCTION, WITH ALL EXPOSED ELEMENTS SHALL COMPLY WITH THE FOLLOWING:
 - A. NON-COMBUSTIBLE MATERIAL
 - B. 1-HOUR FIRE-RESISTANT-RATED MATERIAL
 - C. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD
 - D. MODIFIED HEAVY TIMBER (MIN 4X8 JOISTS, 4X10 OR 6X8 BEAMS, 6X6 POSTS)
10. EXTERIOR GARAGE DOORS SHALL RESIST THE INTRUSION OF EMBERS INTO THE GARAGE BY LIMITING THE SIZE OF ANY GAPS AT THE BOTTOM, SIDES, AND TOP OF THE DOOR TO 1/8 INCH OR LESS USING ONE OF THE FOLLOWING METHODS
 - A. WEATHER-STRIPPING PRODUCTS WITH TENSILE STRENGTH AND FLAMMABILITY RATING PER CBC 708A.4
 - B. DOOR OVERLAPS ONTO JAMBS AND HEADERS
 - C. GARAGE DOOR JAMBS AND HEADERS COVERED WITH METAL FLASHING
11. PAPER-FACED INSULATION PROHIBITED IN ATTICS OR OTHER VENTILATED SPACES.
12. FENCES OR ANY STRUCTURE WITHIN 5 FEET OF BUILDING SHALL BE CONSTRUCTED PER ONE OF THE FOLLOWING:
 - A. NON-COMBUSTIBLE MATERIAL
 - B. APPROVED EXTERIOR FIRE-RETARDANT TREATED WOOD
 - C. MATERIAL MEETING SAME FIRE-RESISTIVE STANDARDS AS EXTERIOR WALLS OF BUILDINGS
13. METAL CHIMNEY SHALL BE BRACED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
14. ABOVE 5000' ELEVATION, PLUMBING VENTS, B-VENTS, CHIMNEYS, AND MISCELLANEOUS OBSTRUCTIONS PROJECTING THROUGH THE ROOF SHALL BE PROTECTED FROM DAMAGE BY SLIDING SNOW OR ICE BY USING GUYS, FORMED METAL GUARDS, CRICKETS, OR SADDLES.

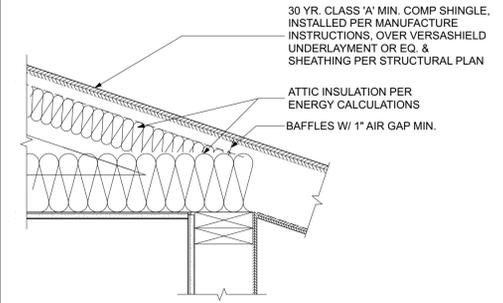
BUILDING SECTIONS

A3.0

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
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17 ROOF ASSEMBLY W/O RADIANT BARRIER
SCALE: 1 1/2" = 1'-0"



16 ROOF ASSEMBLY W/ RADIANT BARRIER
SCALE: 1 1/2" = 1'-0"

RUSSELL DAVIDSON
ARCHITECTURE + DESIGN

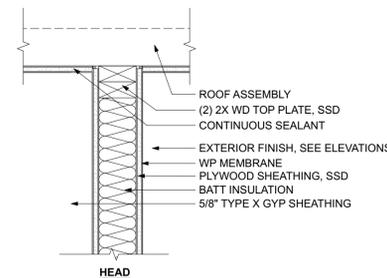
JACKSON & SANDS
ENGINEERING, Inc.



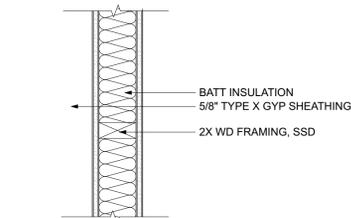
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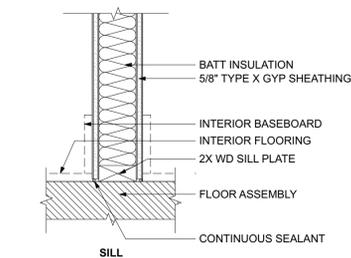
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HEAD



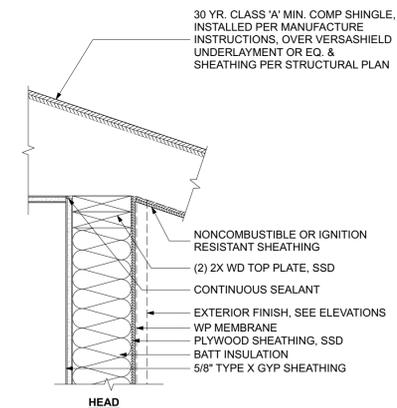
PLAN



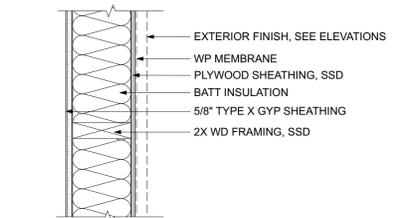
SILL

INTERIOR WALL TYPE 1

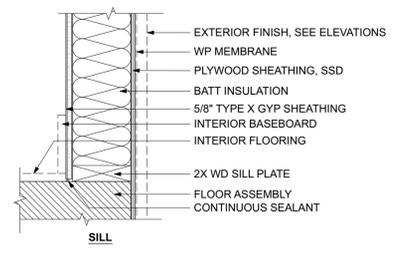
2 INTERIOR WALL ASSEMBLY
SCALE: 1 1/2" = 1'-0"



HEAD



PLAN



SILL

EXTERIOR WALL TYPE 1

1 EXTERIOR WALL ASSEMBLY
SCALE: 1 1/2" = 1'-0"

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
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TYPICAL WALL ASSEMBLY
DETAILS

A5.0



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ARCHITECTURE + DESIGN



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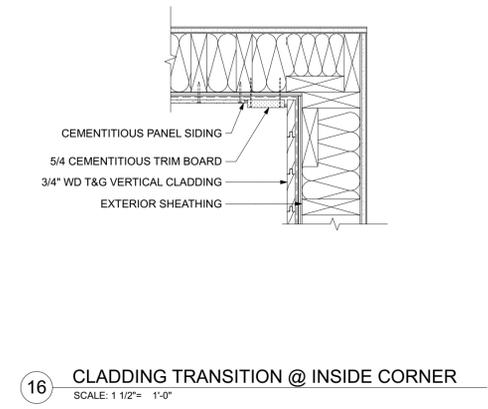
1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

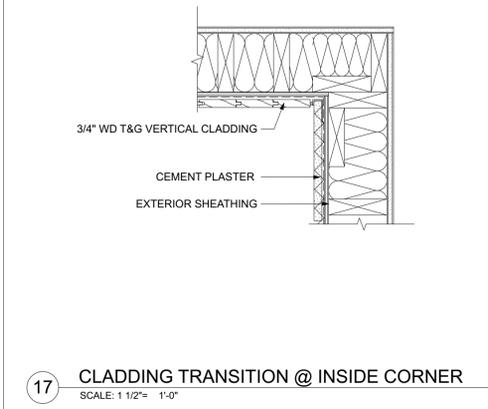
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TYPICAL SIDING DETAILS

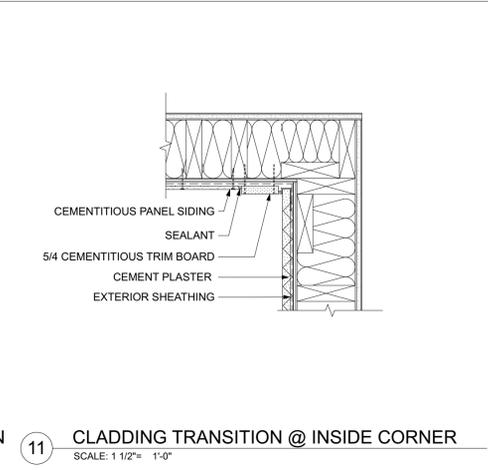
A5.1



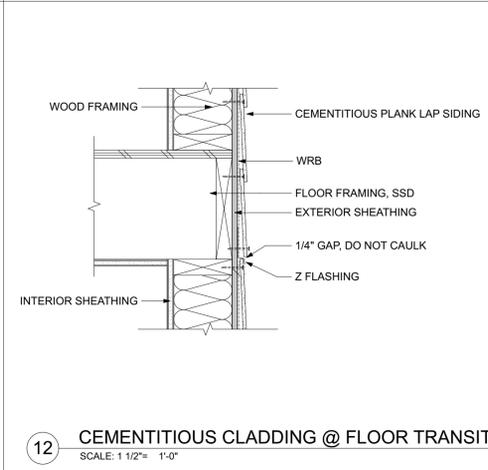
16 CLADDING TRANSITION @ INSIDE CORNER
SCALE: 1 1/2"= 1'-0"



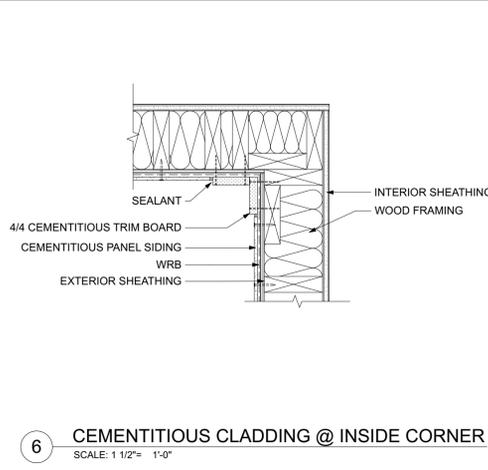
17 CLADDING TRANSITION @ INSIDE CORNER
SCALE: 1 1/2"= 1'-0"



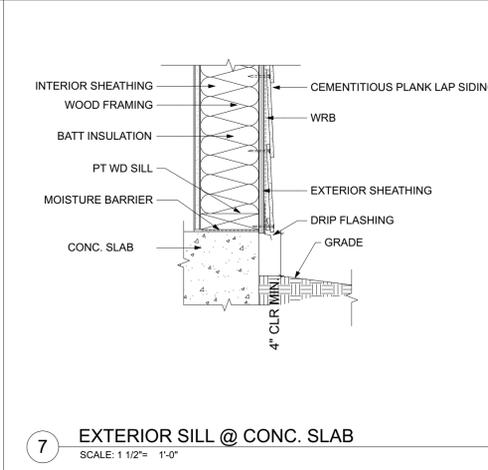
11 CLADDING TRANSITION @ INSIDE CORNER
SCALE: 1 1/2"= 1'-0"



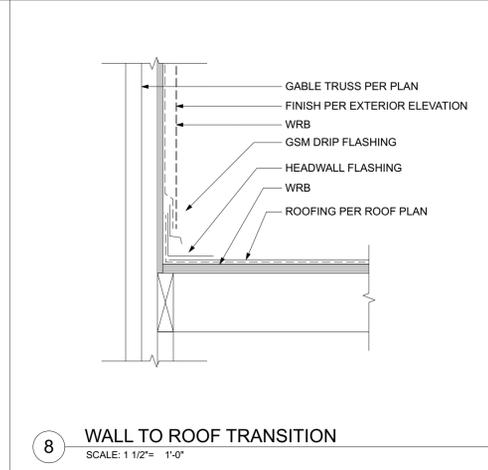
12 CEMENTITIOUS CLADDING @ FLOOR TRANSITION
SCALE: 1 1/2"= 1'-0"



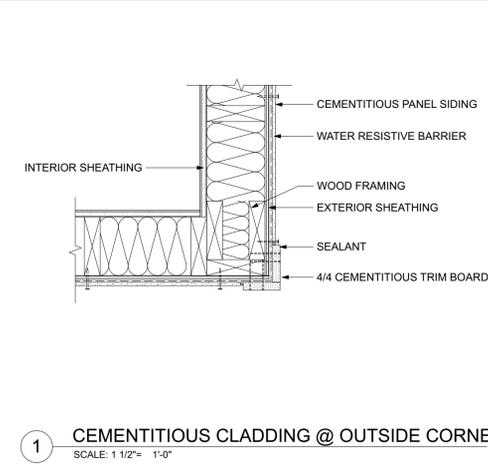
6 CEMENTITIOUS CLADDING @ INSIDE CORNER
SCALE: 1 1/2"= 1'-0"



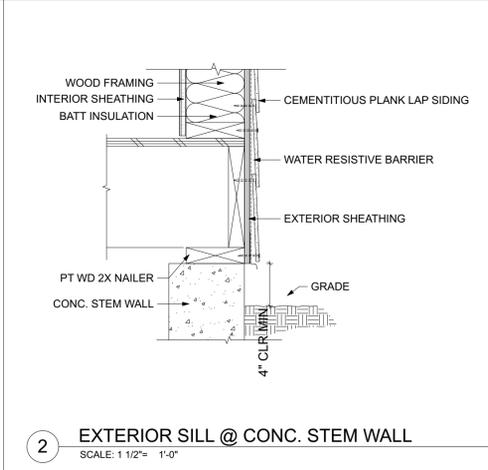
7 EXTERIOR SILL @ CONC. SLAB
SCALE: 1 1/2"= 1'-0"



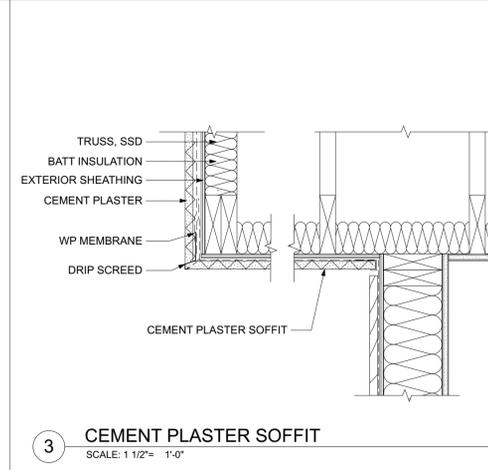
8 WALL TO ROOF TRANSITION
SCALE: 1 1/2"= 1'-0"



1 CEMENTITIOUS CLADDING @ OUTSIDE CORNER
SCALE: 1 1/2"= 1'-0"



2 EXTERIOR SILL @ CONC. STEM WALL
SCALE: 1 1/2"= 1'-0"



3 CEMENT PLASTER SOFFIT
SCALE: 1 1/2"= 1'-0"



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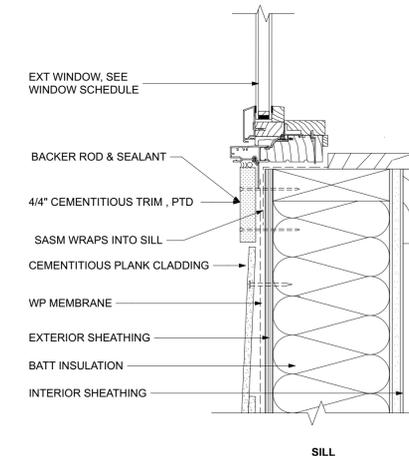
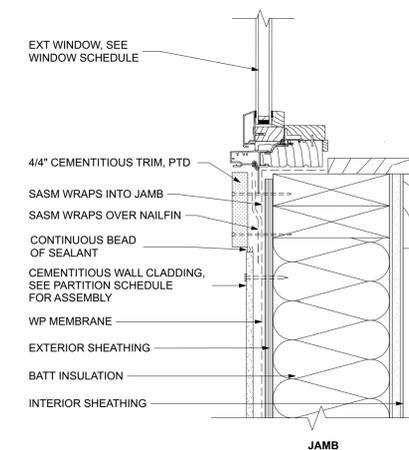
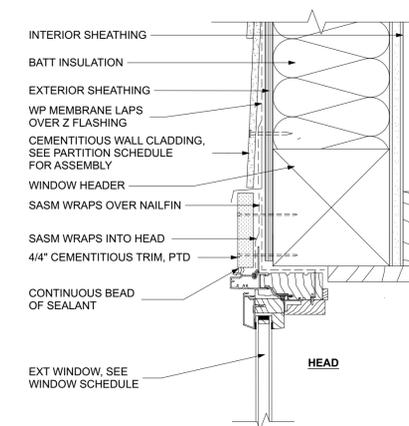
1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

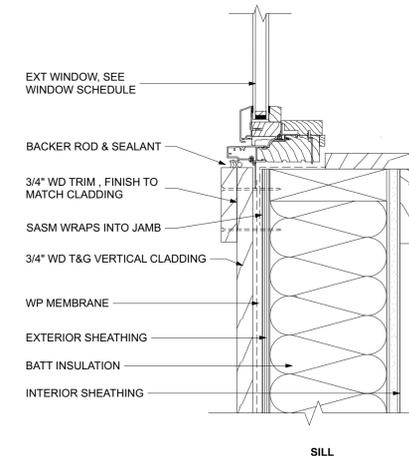
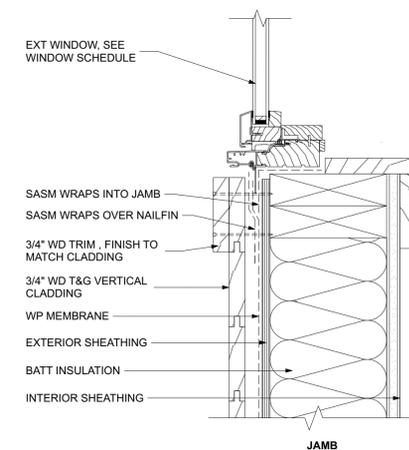
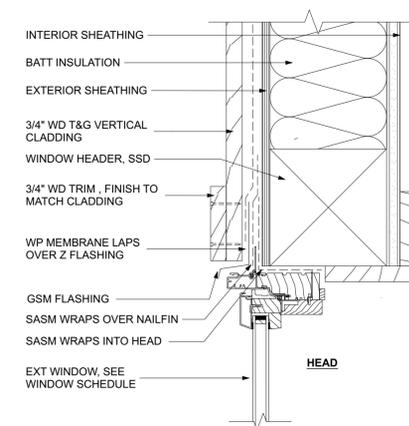
| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
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| | | |

TYPICAL SIDING DETAILS

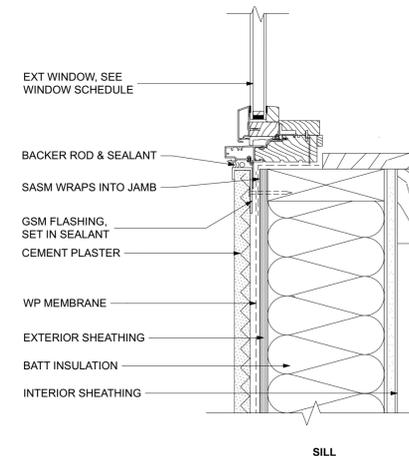
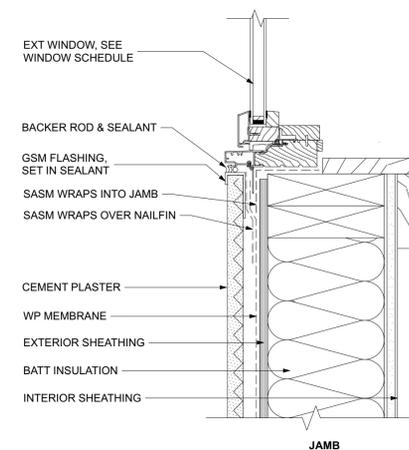
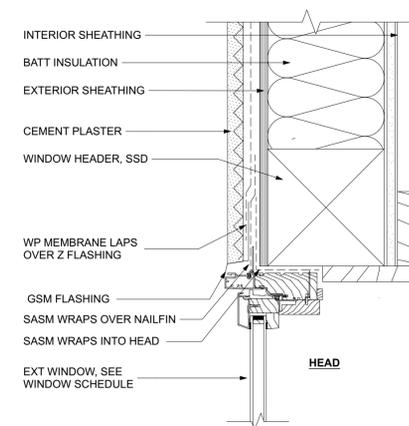
A5.2



1 WINDOW @ CEMENTITIOUS CLADDING
SCALE: 3" = 1'-0"

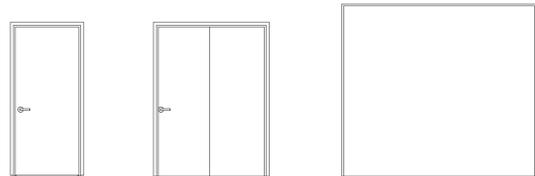


2 WINDOW @ WOOD CLADDING
SCALE: 3" = 1'-0"



3 WINDOW @ CEMENT PLASTER CLADDING
SCALE: 3" = 1'-0"

| DOOR SCHEDULE - 490 | | | | | | | | | | | | |
|---------------------|---------|----------|------|-------|-------|-----|----------|--------|----------|---------|-------------|-------|
| DOOR # | ROOM | LOCATION | TYPE | W | H | MFG | MATERIAL | FINISH | HARDWARE | CLOSURE | FIRE RATING | NOTES |
| 01 | STORAGE | EXT | A | 3'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 02 | STORAGE | EXT | C | 9'-0" | 8'-0" | | SC WOOD | | | N/A | UNRATED | |
| 03 | GARAGE | EXT | C | 9'-0" | 8'-0" | | SC WOOD | | | N/A | UNRATED | |
| 04 | GARAGE | EXT | A | 3'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 05 | MECH | EXT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 10 | FOYER | EXT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 11 | FOYER | INT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 12 | W/D | INT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 13 | BATH | INT | A | 3'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 14 | BEDROOM | INT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 15 | BEDROOM | INT | B | 5'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |



HINGED A 01, 04, 05, 10, 11, 12, 13, 14
 HINGED, DBL B 15
 GARAGE C 02, 03

4 DOOR TYPES
 SCALE: 1" = 1'-0"

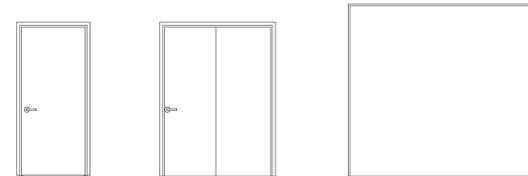
| ID | TYPE | W | H | HDR | MANUF. | MODEL | FINISH | | TEMPERING | NOTES |
|----|------|-------|-------|-------|--------|-------|----------|----------|--------------|-------|
| | | | | | | | EXTERIOR | INTERIOR | | |
| 01 | B | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, DUAL | |
| 03 | A | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 04 | A | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 05 | C | 6'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 07 | C | 5'-0" | 2'-0" | 7'-0" | | | | | TEMP, DUAL | |
| 08 | C | 6'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 10 | B | 3'-4" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 11 | C | 5'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |



CSMT A 03, 04
 FIXED B 01, 10
 SLIDER C 05, 07, 08, 11

3 WINDOW TYPES
 SCALE: 1" = 1'-0"

| DOOR SCHEDULE | | | | | | | | | | | | |
|---------------|---------|----------|------|-------|-------|-----|----------|--------|----------|---------|-------------|-------|
| DOOR # | ROOM | LOCATION | TYPE | W | H | MFG | MATERIAL | FINISH | HARDWARE | CLOSURE | FIRE RATING | NOTES |
| 01 | STORAGE | EXT | A | 3'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 02 | STORAGE | EXT | C | 9'-0" | 8'-0" | | SC WOOD | | | N/A | UNRATED | |
| 03 | GARAGE | EXT | C | 9'-0" | 8'-0" | | SC WOOD | | | N/A | UNRATED | |
| 04 | GARAGE | EXT | A | 3'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 05 | MECH | EXT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 10 | FOYER | EXT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 11 | FOYER | INT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 12 | W/D | INT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 13 | BATH | INT | A | 3'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 14 | BEDROOM | INT | A | 2'-6" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |
| 15 | BEDROOM | INT | B | 5'-0" | 7'-0" | | SC WOOD | | | N/A | UNRATED | |



HINGED A 01, 04, 05, 10, 11, 12, 13, 14
 HINGED, DBL B 15
 GARAGE C 02, 03

2 DOOR TYPES
 SCALE: 1" = 1'-0"

| ID | TYPE | W | H | HDR | MANUF. | MODEL | FINISH | | TEMPERED | NOTES |
|----|------|-------|-------|-------|--------|-------|----------|----------|--------------|-------|
| | | | | | | | EXTERIOR | INTERIOR | | |
| 01 | B | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, DUAL | |
| 02 | B | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 03 | A | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 04 | A | 3'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 05 | C | 6'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 06 | C | 4'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 07 | C | 5'-0" | 2'-0" | 7'-0" | | | | | TEMP, DUAL | |
| 08 | C | 6'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 09 | A | 4'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 10 | B | 3'-4" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |
| 11 | C | 5'-0" | 4'-0" | 7'-0" | | | | | TEMP, SINGLE | |



CSMT A 03, 04, 09
 FIXED B 01, 02, 10
 SLIDER C 05, 06, 07, 08, 11

1 WINDOW TYPES
 SCALE: 1" = 1'-0"

DOOR NOTES

- ALL GLASS IN DOORS SHALL BE TEMPERED. TEMPERED GLASS SHALL BE PERMANENTLY IDENTIFIED AND VISIBLE WHEN THE UNIT IS GLAZED.
- ALL GLAZING WILL BE INSTALLED WITH A CERTIFYING LABEL ATTACHED, SHOWING THE "U" VALUE.
- REFER TO FLOOR PLANS FOR DIRECTION OF DOOR SWING.
- DOORS SHALL MEET THE MINIMUM INFILTRATION REQUIREMENTS PER SECTION 116 E.E.S.
- VENTILATION SHALL COMPLY WITH C.B.C. 1203.4 AND R303.
- ALL EXTERIOR WINDOW AND EXTERIOR DOOR ASSEMBLIES TO HAVE AN STC RATING OF 36 OR GREATER.

- DOORS MAY OPEN TO THE EXTERIOR ONLY IF THE FLOOR OR LANDING IS NOT MORE THAN 112 INCH LOWER THAN THE DOOR THRESHOLD. SECTION R311.3.1 CRC
- GLAZED OPENINGS WITHIN EXTERIOR DOORS SHALL BE INSULATING-GLASS UNITS WITH A MINIMUM OF ONE TEMPERED PANE.

WINDOW NOTES

- SEE EXTERIOR ELEVATION FOR DIRECTION OF OPERATION OF WINDOWS (ALL OPERABLE WINDOWS TO HAVE SCREENS).
- ALL WINDOW DIMENSIONS PERTAIN TO ROUGH OPENINGS (R.O.), CONTRACTOR TO FIELD VERIFY ACTUAL DIMENSIONS FOR WINDOWS ALL GLAZING WILL BE INSTALLED WITH A CERTIFYING LABEL ATTACHED, SHOWING THE NFRC LABEL.
- ALL GLAZING SHALL BE SPECTRALLY SELECTIVE LOW E COATED TO MEET TITLE 24 ENERGY REQUIREMENTS.
- WINDOWS SHALL MEET THE MINIMUM INFILTRATION REQUIREMENTS PER SECTION 116 E.E.S.D
- VENTILATION SHALL COMPLY WITH C.B.C. 1203.4 AND R303

- EVERY SLEEPING ROOM SHALL HAVE ONE OPERABLE WINDOW FOR EMERGENCY ESCAPE OR RESCUE WITH A MIN. NET CLEAR OPENABLE AREA OF 5.7 SQ. FT. MIN. NET CLEAR OPENABLE HEIGHT OF 24" MIN., NET CLEAR WIDTH OF 20" AND A FIN. SILL HEIGHT OF NOT MORE THAN 44" A.F.F. PER CRC SECTION 3101
- ALL EXTERIOR WINDOW AND EXTERIOR DOOR ASSEMBLIES TO HAVE AN STC RATING OF 30 OR GREATER.
- TEMPERED GLASS SHALL BE PERMANENTLY IDENTIFIED AND VISIBLE WHEN THE UNIT IS GLAZED.

- EVERY SPACE INTENDED FOR HUMAN OCCUPANCY SHALL BE PROVIDED WITH NATURAL VENTILATION AND NATURAL LIGHT BY MEANS OF VENTILATION / ARTIFICIAL LIGHT. CBC SECTIONS 1203.4 AND 1205.1 AND R303
 - THE MINIMUM NET GLAZED AREA FOR NATURAL LIGHT SHALL NOT BE LESS THAN 8% OF THE FLOOR AREA OF THE ROOM SERVED. CBC SECTION 1205.2
 - THE MINIMUM OPENABLE AREA TO THE OUTDOORS FOR NATURAL VENTILATION SHALL BE 4% OF THE FLOOR AREA BEING VENTILATED. SECTION 1203.4
- EXTERIOR WINDOWS AND EXTERIOR GLAZED DOOR ASSEMBLIES SHALL BE CONSTRUCTED OF MULTIPANE GLAZING WITH ONE TEMPERED PANE, HAVE A FIRE RESISTANCE RATING OF 20 MINUTES OR MEET THE REQUIREMENTS OF SFM 12-7A-2.



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1 BEDROOM (661 SF)

OWNER: _____
 ADDRESS: _____
 APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

SCHEDULES

A6.0



RUSSELL DAVIDSON ARCHITECTURE + DESIGN



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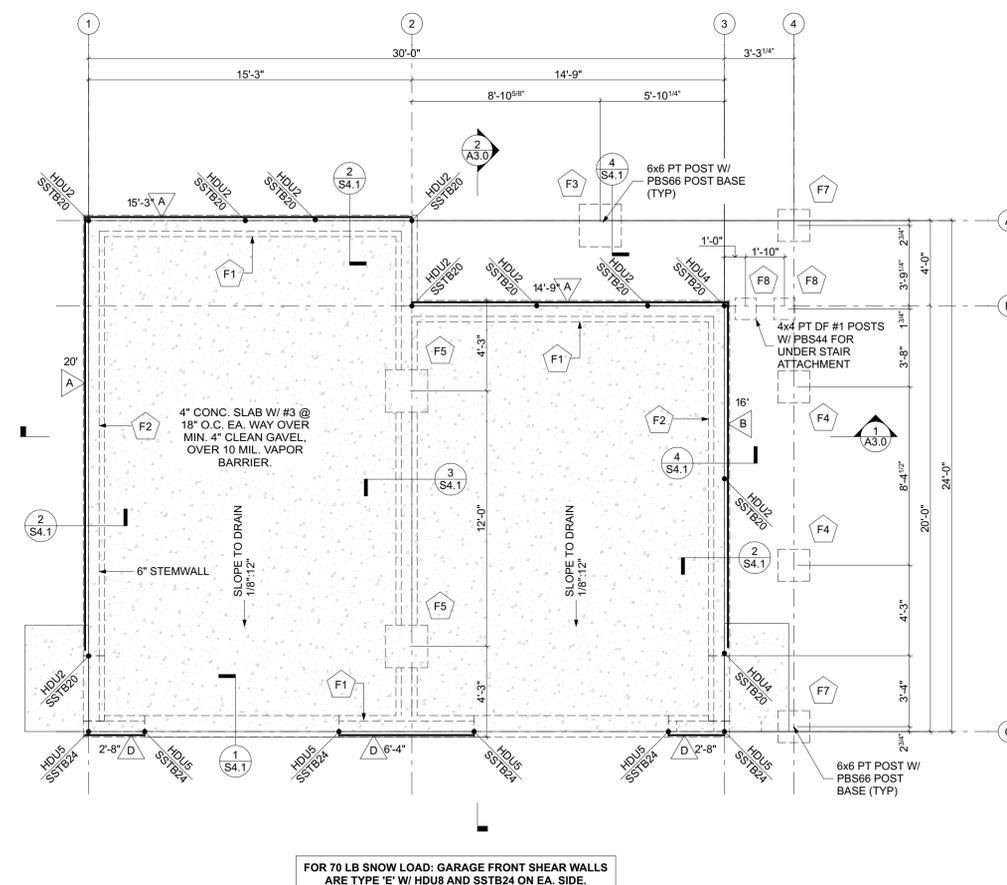
1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:

Table with 3 columns: ID, NAME, DATE. Row 1: SUBMITTAL, 3/30/23

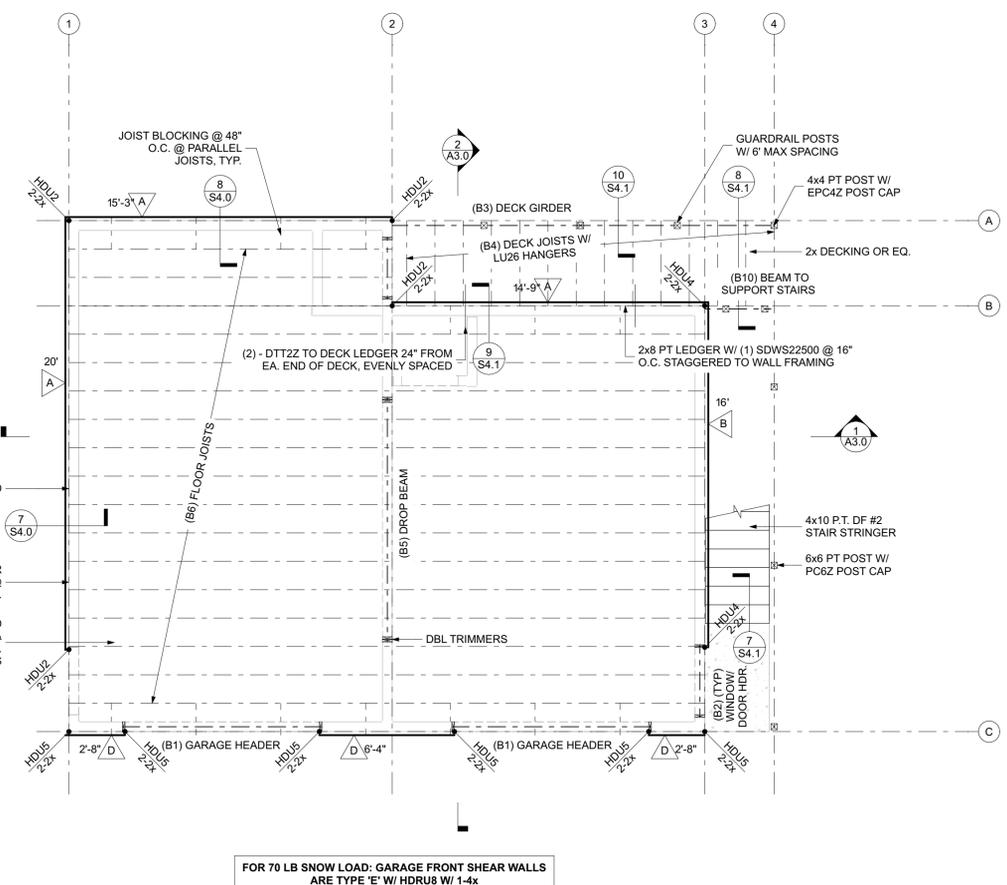
SLAB FOUNDATION PLAN

S1.0



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

FOR 70 LB SNOW LOAD: GARAGE FRONT SHEAR WALLS ARE TYPE 'E' W/ HDU8 AND SSTB24 ON EA. SIDE.



2 1ST FLOOR SHEAR & FRAMING PLAN SCALE: 1/4" = 1'-0"

FOR 70 LB SNOW LOAD: GARAGE FRONT SHEAR WALLS ARE TYPE 'E' W/ HDRU8 W/ 1-4x

BEAM SCHEDULE

Table with columns: #, DESCRIPTION, 30 LBS, 50 LBS, 70 LBS. Lists structural members B1 through B12 and their specifications.

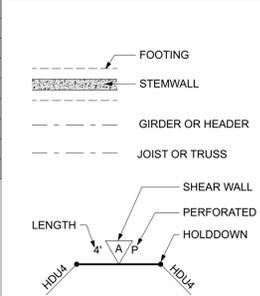
GENERAL NOTES

- 1. SSTB ANCHOR BOLTS ARE TO BE LOCATED PER MANUFACTURERS SPECS AND ARE THE RESPONSIBILITY OF THE FRAMING CONTRACTOR TO LOCATE...
2. BEAM SCHEDULE SHOWN ON SHEET S1.0, S2.0
3. SHEAR SCHEDULE SHOWN ON SHEET S3.0

FOUNDATION SCHEDULE

Table with columns: #, DESCRIPTION, 30 LBS, 50 LBS, 70 LBS. Lists foundation piers F1 through F8 and their specifications.

LEGEND





RUSSELL DAVIDSON ARCHITECTURE + DESIGN



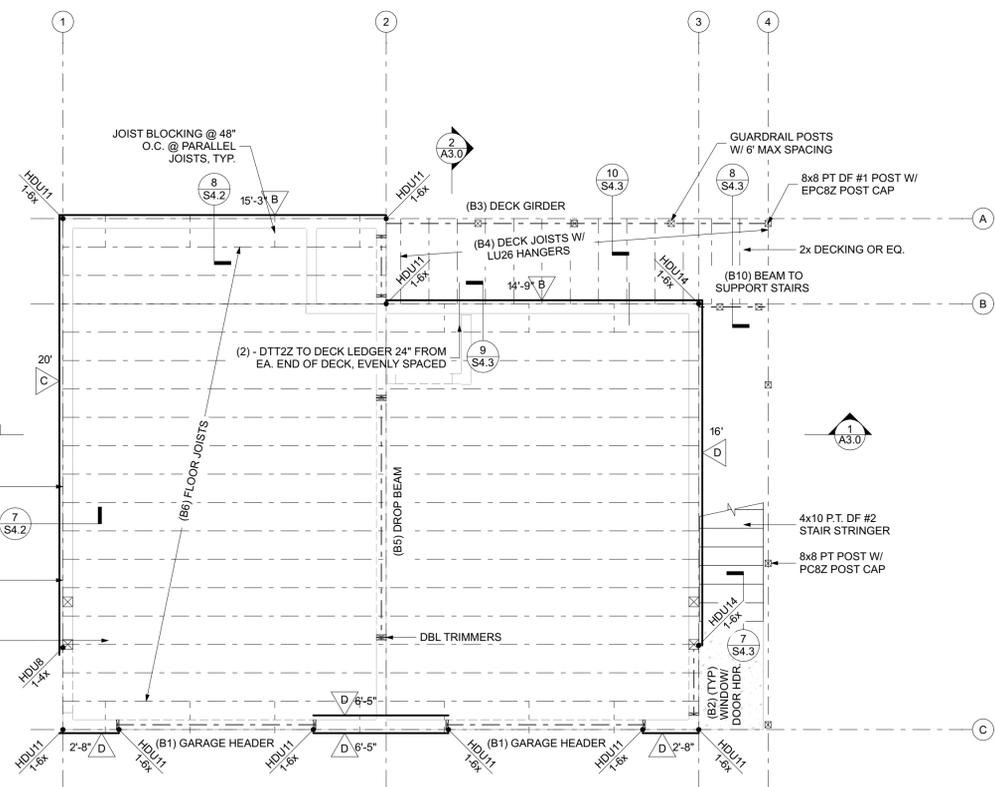
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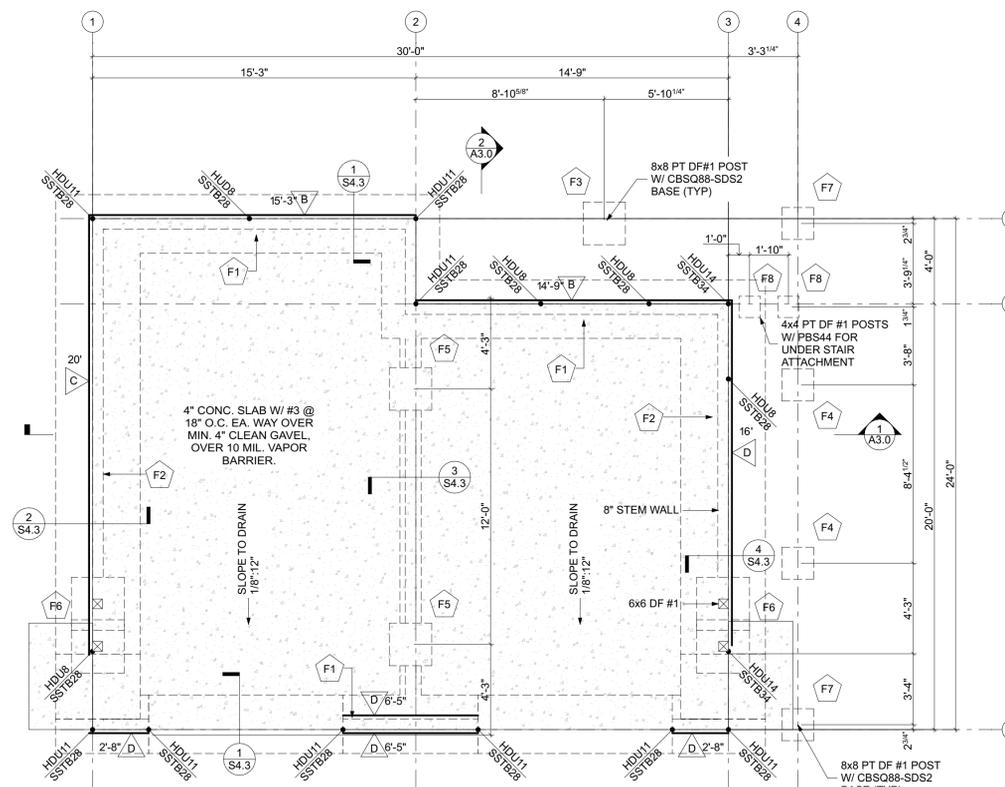
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1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:



2 1ST FLOOR SHEAR & FRAMING PLAN SCALE: 1/4" = 1'-0"



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

BEAM SCHEDULE

Table with 3 columns: #, DESCRIPTION, BEAM. Lists items B1 through B12 including Garage Header, Window/Door Header, Deck Girder, Deck Joists, Drop Beam, Floor Joists, Porch Beam Header, Window/Door Header, Porch Beam, Beam to Support Stairs, Stair Stringer, and Stair Tread.

GENERAL NOTES

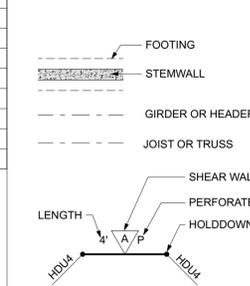
- 1. SSTB ANCHOR BOLTS ARE TO BE LOCATED PER MANUFACTURERS SPECS... 2. BEAM SCHEDULE SHOWN ON SHEET S2.0 3. SHEAR SCHEDULE SHOWN ON SHEET S3.0 4. WITHIN THE TAHOE/TRUCKEE REGION...

FOUNDATION SCHEDULE

Table with 3 columns: #, DESCRIPTION, SIZE (WIDTH x CONC THICKNESS x DEPTH EMBED INTO NATIVE SOIL). Lists items F1 through F8 including Perimeter and Piers.

* INCREASE DEPTH TO 24" MINIMUM FOR SITES LOCATED AT OR ABOVE 7000' ELEVATION.

LEGEND



SLAB FOUNDATION PLAN (490LB)

S1.1



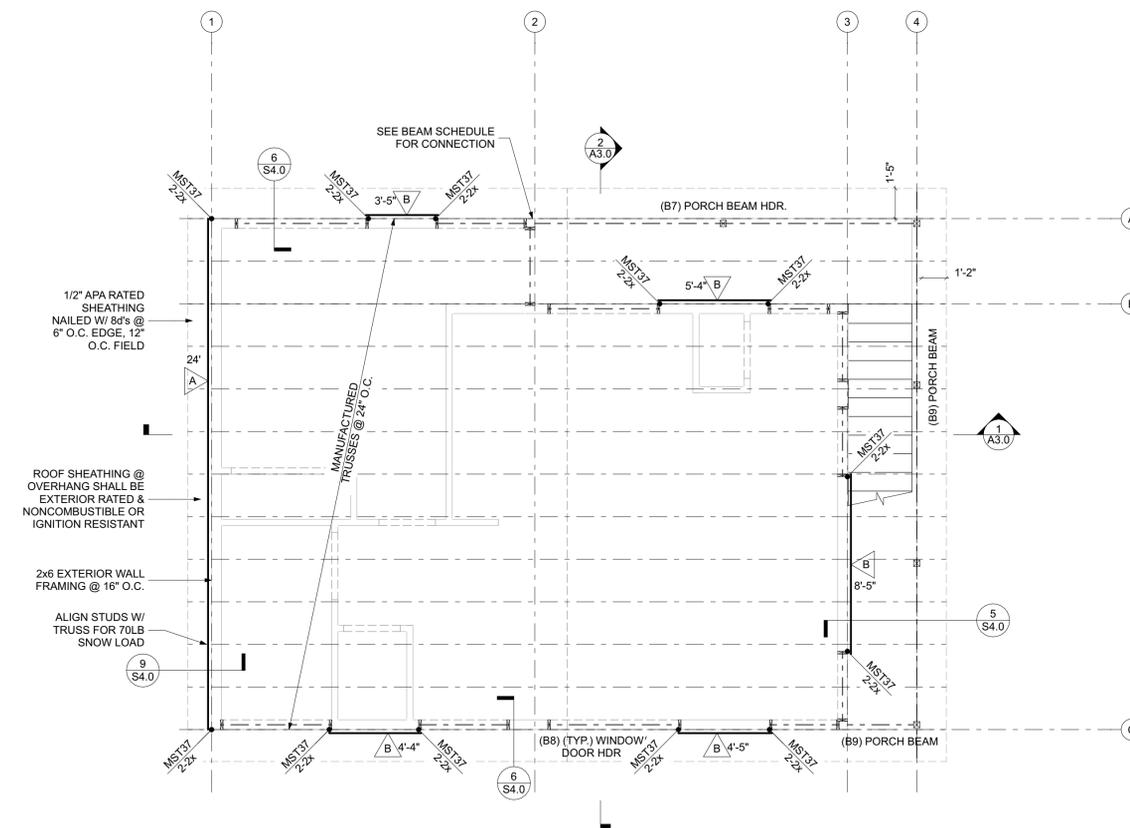
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1 2ND FLOOR SHEAR & ROOF FRAMING
SCALE: 1/4" = 1'-0"

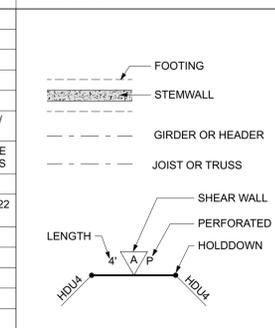
1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

BEAM SCHEDULE

| # | DESCRIPTION | SNOW LOAD | | |
|-----|------------------------|---|---|---|
| | | 30 LBS | 50 LBS | 70 LBS |
| B1 | GARAGE HEADER | 6x12 DF #1 | 6x12 DF #1 | 6x12 DF #1 |
| B2 | (TYP) WINDOW/DOOR HDR. | 6x8 DF #1 | 6x8 DF #1 | 6x8 DF #1 |
| B3 | DECK GIRDER | 4x8 PT DF #2 | 4x8 PT DF #2 | 4x8 PT DF #2 |
| B4 | DECK JOISTS | 2x6 PT DF #2 @ 16" O.C. W/ LU26 HANGERS | 2x6 PT DF #2 @ 16" O.C. W/ LU26 HANGERS | 2x6 PT DF #2 @ 16" O.C. W/ LU26 HANGERS |
| B5 | DROP BEAM | 5.25x11.875 LVL 2900-Fb-2.0E W/ HUC0612-SDS HANGERS | 5.25x11.875 LVL 2900-Fb-2.0E W/ HUC0612-SDS HANGERS | 5.25x11.875 LVL 2900-Fb-2.0E W/ HUC0612-SDS HANGERS |
| B6 | FLOOR JOISTS | 2x12 @ DF #2 @ 16" O.C. | 2x12 @ DF #2 @ 16" O.C. | 2x12 @ DF #2 @ 16" O.C. |
| B7 | PORCH BEAM HDR. | 4x8 DF #2 W/ HUC48 & ST22 STRAP FOR BEAM | 4x8 DF #2 W/ HUC48 & ST22 STRAP FOR BEAM | 4x10 DF #2 W/ HUC410 & ST22 STRAP FOR BEAM |
| B8 | (TYP) WINDOW/DOOR HDR | 6x8 DF #1 | 6x8 DF #1 | 6x8 DF #1 |
| B9 | PORCH BEAM | 4x8 DF #2 | 4x8 DF #2 | 4x8 DF #2 |
| B10 | BEAM TO SUPPORT STAIRS | 2-2x6 PT DF #2 | 2-2x6 PT DF #2 | 2-2x6 PT DF #2 |
| B11 | STAIR STRINGER | 4x10 PT DF #2 | 4x10 PT DF #2 | 4x10 PT DF #2 |
| B12 | STAIR TREAD | 2x6 PT DF #2 | 2x6 PT DF #2 | 2x6 PT DF #2 |

LEGEND



| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

ROOF FRAMING

S2.0



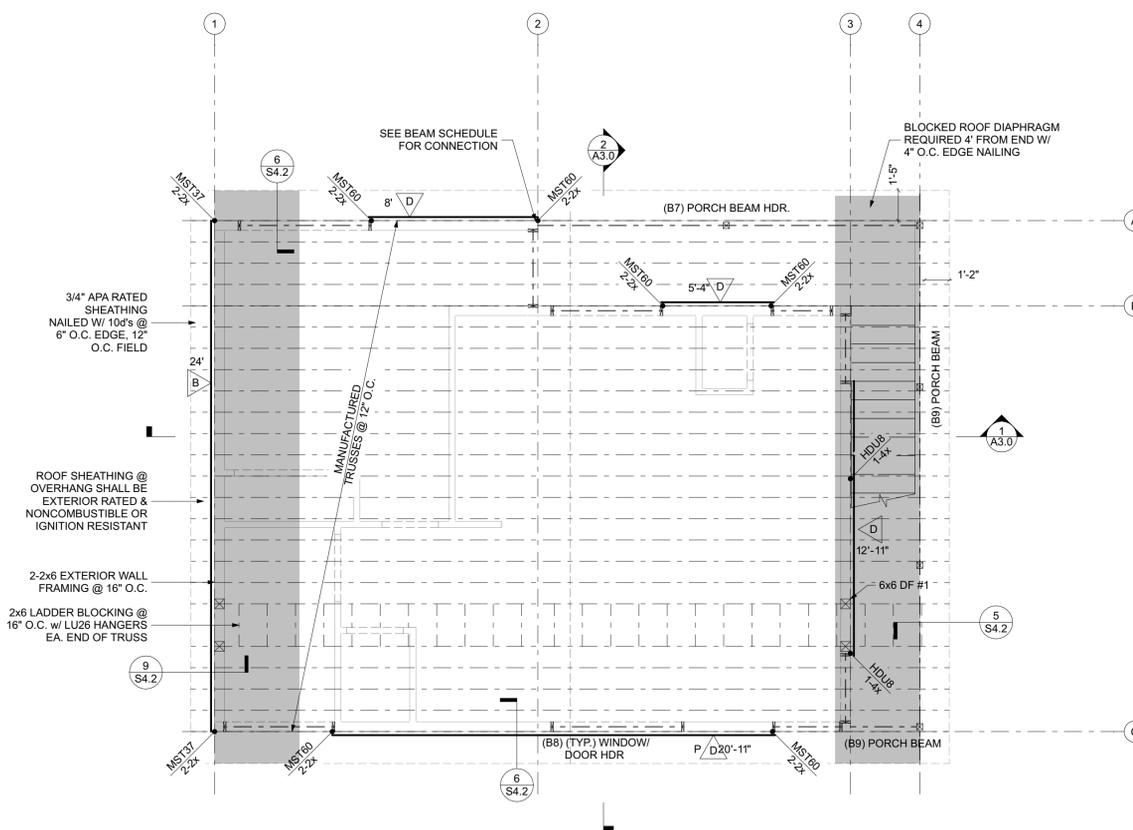
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1 2ND FLOOR SHEAR & ROOF FRAMING
SCALE: 1/4" = 1'-0"

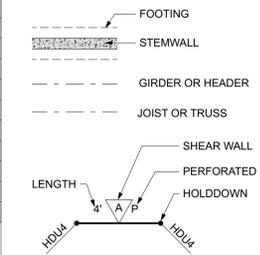
1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

BEAM SCHEDULE

| # | DESCRIPTION | BEAM |
|-----|------------------------|---|
| B1 | GARAGE HEADER | 5.25x11.875 LVL |
| B2 | (TYP) WINDOW/DOOR HDR. | 6x12 DF #1 |
| B3 | DECK GIRDER | 6x12 PT DF #1 |
| B4 | DECK JOISTS | 2x10 PT DF #2 @ 16" O.C. W/ LU210 HANGERS |
| B5 | DROP BEAM | 5.25x11.875 LVL 2900-Fb-2.0E W/ HUCQ612-SDS HANGERS |
| B6 | FLOOR JOISTS | 2x12 @ DF #2 @ 16" O.C. |
| B7 | PORCH BEAM HDR. | 5.25x11.875 LVL W/ HUC612 & ST6224 STRAP FOR BEAM |
| B8 | (TYP) WINDOW/DOOR HDR | 6x12 DF #1 |
| B9 | PORCH BEAM | 5.25x11.875 LVL |
| B10 | BEAM TO SUPPORT STAIRS | 4x8 PT DF #2 |
| B11 | STAIR STRINGER | 4x10 PT DF #1 |
| B12 | STAIR TREAD | 2x6 PT DF #2 |

LEGEND



| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

ROOF FRAMING (490LB)

S2.1

TABLE 2304.10.1
FASTENING SCHEDULE

| CONNECTION | FASTENING ^{a,m} | LOCATION |
|---|---|---------------------|
| 1. JOIST TO SILL OR GIRDER | 3-2d COMMON (2.5" X 0.131") | TOENAIL |
| 2. BRIDGING TO JOIST | 2-2d COMMON (2.5" X 0.131") | TOENAIL EA. END |
| 3. 1"x6" SUBFLOOR OR LESS TO EA. JOIST | 2-2d COMMON (2.5" X 0.131") | FACE NAIL |
| 4. WIDER THAN 1"x6" SUBFLOOR TO EA. JOIST | 3-2d COMMON (2.5" X 0.131") | FACE NAIL |
| 5. 2" SUBFLOOR TO JOIST OR GIRDER | 2-16d COMMON (2.5" X 0.162") | BLIND AND FACENAIL |
| 6. SOLE PLATE TO JOIST OR BLOCKING | 16d (3.5" X 0.135") @ 16" O.C. | TYPICAL FACE NAIL |
| SOLE PLATE TO JOIST OR BLOCKING @ BRACED WALL PANEL | 3" - 16d (3.5" X 0.135") @ 16" O.C. | BRACED WALL PANELS |
| 7. TOP PLATE TO STUD | 2-16d COMMON (2.5" X 0.162") | END NAIL |
| 8. STUD TO SOLE PLATE | 4-2d COMMON (2.5" X 0.131") 2-16d COMMON (2.5" X 0.162") | TOENAIL END NAIL |
| 9. DOUBLE STUDS | 16d (3.5" X 0.135") @ 24" O.C. | FACE NAIL |
| 10. DOUBLE TOP PLATES | 16d (3.5" X 0.135") @ 16" O.C. | TYP. FACE NAIL |
| DOUBLE TOP PLATES | 2-16d COMMON (2.5" X 0.162") | LAP SPLICE |
| 11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE | 3-2d COMMON (2.5" X 0.131") | TOENAIL |
| 12. RIM JOIST TO TOP PLATE | 2d (2.5" X 0.131") @ 6" O.C. | TOENAIL |
| 13. TOP PLATES, LAPS AND INTERSECTIONS | 2-16d COMMON (2.5" X 0.162") | FACE NAIL |
| 14. CONTINUOUS HEADER, TWO PIECES | 16d COMMON (3.5" X 0.162") | 16" O.C. ALONG EDGE |
| 15. CEILING JOISTS TO PLATE | 3-2d COMMON (2.5" X 0.131") | TOENAIL |
| 16. CONTINUOUS HEADER TO STUD | 4-2d COMMON (2.5" X 0.131") | TOENAIL |
| 17. CEILING JOISTS, LAPS OVER PARTITIONS SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1) | 3-16d COMMON (3.5" X 0.162") MINIMUM, TABLE 2308.10.4.1 | FACE NAIL |
| 18. CEILING JOISTS TO PARALLEL RAFTERS SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1) | 3-16d COMMON (3.5" X 0.162") MINIMUM, TABLE 2308.10.4.1 | FACE NAIL |
| 19. RAFTER TO PLATE SEE SECTION 2308.10.1, TABLE 2308.10.1) | 3-2d COMMON (2.5" X 0.131") | TOENAIL |
| 20. 1" DIAGONAL BRACE TO EA. STUD AND PLATE | 2-2d COMMON (2.5" X 0.131") | |
| 21. 1"x8" SHEATHING TO EA. BEARING | 3-2d COMMON (2.5" X 0.131") | |
| 22. WIDER THAN 1"x8" SHEATHING TO EA. BEARING | 3-2d COMMON (2.5" X 0.131") | |
| 23. BUILT-UP CORNER STUDS | 16d COMMON (3.5" X 0.162") | |
| 24. BUILT-UP GIRDER AND BEAMS | 20d COMMON (4" X 0.142") 32" O.C. 2 - 20d COMMON (4" X 0.142") | |
| 25. 2" PLANKS | 16d COMMON (3.5" X 0.162") | |
| 26. COLLAR TIE TO RAFTER | 3-10d COMMON (3" X 0.148") | |
| 27. JACK RAFTER TO HIP | 3-10d COMMON (3" X 0.148") 2-16d COMMON (3.5" X 0.162") | |
| 28. ROOF RAFTER TO 2 BY RIDGE BEAM | 2-16d COMMON (3.5" X 0.162") 2-16d COMMON (3.5" X 0.162") | |
| 29. JOIST TO BAND JOIST | 3-16d COMMON (3.5" X 0.162") | |
| 30. LEDGER STRIP | 3-16d COMMON (3.5" X 0.162") | |
| 31. WOOD STRUCTURAL PANELS AND PARTICLEBOARD SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING) | 1/2" AND LESS 6d ^c 1 1/8" TO 3/4" 2d ^d OR 6d ^e 7/8" TO 1" 2d 1 1/8" TO 1 1/4" 10d ^d OR 2d | |
| SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING) | 3/4" AND LESS 6d ^e 7/8" TO 1" 2d ^e 1 1/8" TO 1 1/4" 10d ^d OR 2d ^e | |
| 32. PANEL SIDING (TO FRAMING) | 1/2" AND LESS 6d ^f 5/8" AND LESS 2d ^f | |
| 33. FIBERBOARD SHEATHING | 1/2" AND LESS No. 11 GA ROOFING NAIL ^h 6d COMMON NAIL (2" X 0.113") No. 16 GA STAPLE ⁱ 25/32" No. 11 GA ROOFING NAIL ^h 2d COMMON NAIL (2 1/2" X 0.131") No. 16 GA STAPLE ⁱ | |
| 34. INTERIOR PANELING | 1/4" 4d ^j 3/8" 6d ^k | |

- a. Common or box nails are permitted to be used except where otherwise noted.
b. Nails spaced at 6 inches on center at edges, 12 inches at intermediate supports except 6 inches at supports where spans are 48 inches or more. For nailing of wood structural panel and particle board diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.
c. Common or deformed shank (6d - 2" x 0.113"; 2d - 2 1/2" x 0.131"; 10d - 3" x 0.148").
d. Common (6d - 2" x 0.113"; 2d - 2 1/2" x 0.131"; 10d - 3" x 0.148").
e. Deformed shank (6d - 2" x 0.113"; 2d - 2 1/2" x 0.131"; 10d - 3" x 0.148").
f. Corrosion resistant siding (6d - 1 7/8" x 0.106"; 2d - 2 3/8" x 0.128") or casing (6d - 2" x 0.094"; 2d - 2 1/2" x 1/16") nail.
g. Fasteners spaced 3 inches on center at exterior edges and 6 inches on center at intermediate supports, when used as structural sheathing. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.
h. Corrosion resistant roofing nails with 7/16 inch dia. head and 1 1/2 inch length for 1/2" length for 1/2" inch sheathing and 1 3/4 inch length for 25/32 inch sheathing.
i. Corrosion resistant staples with nominal 7/16" crown and 1 1/8" length for 1/2" inch sheathing and 1 3/4" inch length for 25/32 inch sheathing.
j. Casing (1 1/2" x 0.080" or finish (1 1/2" x 0.072") nails spaced 6" on panel edges, 12" at intermediate supports.
k. Panel supports at 24". Casing or finish nails spaced 6" on panel edges, 12" at intermediate supports.
l. For roof sheathing applications, 2d nails (2 1/2" x 0.113") and the minimum required for wood structural panels.
m. Staples shall have a minimum crown width of 7/16 inch.
n. For roof sheathing applications, fasteners spaced 4 inches on center at edges, 6 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
o. Fasteners spaced 4 inches on center at edges, 6 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
p. Fasteners spaced 4 inches on center at edges, 6 inches at intermediate supports.

EXCAVATION, GRADING AND FILL:

- EXCAVATION NEAR FOUNDATION FOR ANY PURPOSE SHALL NOT REDUCE LATERAL SUPPORT FROM ANY FOUNDATION OR ADJACENT FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOUNDATION AGAINST DETRIMENTAL LATERAL OR VERTICAL MOVEMENT OR BOTH:
 - WHERE UNDERPINNING IS CHOSEN TO PROVIDE THE PROTECTION OR SUPPORT OF ADJACENT STRUCTURES, THE UNDERPINNING STEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH PROVISIONS OF CURRENT CALIFORNIA BUILDING CODE.
 - UNDERPINNING SHALL BE INSTALLED IN A SEQUENTIAL MANNER THAT PROTECTS THE NEIGHBORING STRUCTURE AND THE WORKING CONSTRUCTION SITE. THE ENGINEER OF RECORD SHALL BE NOTIFIED IF THIS CONDITION EXISTS TO ALLOW FOR PREPARATION OF CONSTRUCTION DOCUMENTS.
- PLACEMENT OF BACKFILL: THE EXCAVATION OUTSIDE THE FOUNDATION SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS, COBBLES AND BOULDERS OR WITH CONTROLLED LOW-STRENGTH MATERIAL (CLSM). THE BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE THE FOUNDATION OR THE WATERPROOFING OR DAMPPROOFING MATERIAL.
- SITE GRADING: THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN 5% FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET AN APPROVED METHOD OF DRAINAGE AWAY FROM STRUCTURE SHALL BE USED. SNALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2% WHERE LOCATED WITHIN 10 FEET OF BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MIN. OF 2% AWAY FROM THE BUILDING. 2% SLOPES MAY BE USED WHEN APPROVED BY THE ENGINEER OF RECORD.
- WHERE SHALLOW FOUNDATIONS WILL BEAR ON COMPACTED FILL MATERIAL, THE COMPACTED FILL SHALL COMPLY WITH THE APPROVED GEOTECHNICAL REPORT.
 - WHERE COMPACTED FILL MATERIAL 12 INCHES IN DEPTH OR LESS NEED NOT COMPLY WITH AN APPROVED REPORT, PROVIDED THE IN-PLACE DRY DENSITY IS NOT LESS THAN 90% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D1557. THE COMPACTATION SHALL BE VERIFIED BY SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1705.6

FOUNDATIONS:

- NO FILL OR OTHER SURCHARGE LOADS SHALL BE PLACED ADJACENT TO ANY BUILDING OR STRUCTURE UNLESS SUCH STRUCTURE IS CAPABLE OF WITHSTANDING THE ADDITIONAL LOADS CAUSED BY THE FILL OR SURCHARGE.
- IF VIBRATORY LOADS ARE TO BE PRESENT DURING THE USE OF THE STRUCTURE, THE ENGINEER OF RECORD SHALL BE NOTIFIED TO DETERMINE IF ADDITIONAL CONSIDERATION IS REQUIRED TO PREVENT DETRIMENTAL DISTURBANCES OF THE SOIL.
- IF EXPANSIVE SOILS ARE DISCOVERED THE ENGINEER OF RECORD SHALL BE NOTIFIED TO PROVIDE ADDITIONAL FOUNDATION DESIGN AND CONSTRUCTION REQUIREMENTS.
- BUILDING CLEARANCE FROM ASCENDING SLOPES SHALL IN GENERAL BE SET A SUFFICIENT DISTANCE FROM THE SLOPE TO PROVIDE PROTECTION FROM SLOPE DRAINAGE, EROSION AND SHALLOW FAILURES.
- FOUNDATION SETBACK FROM DESCENDING SLOPE SURFACE SHALL BE FOUNDED IN FIRM MATERIAL WITH AN EMBEDMENT AND SET BACK FROM THE SLOPE SURFACE SUFFICIENT TO PROVIDE VERTICAL AND LATERAL SUPPORT FOR THE FOUNDATION WITHOUT DETRIMENTAL SETTLEMENT.
- FOR FOUNDATIONS SUPPORTING GROUP R OR U OCCUPANCIES OF LIGHT-FRAME CONSTRUCTION, TWO STORIES OR LESS IN HEIGHT, ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 psi
- CONCRETE FOUNDATIONS ARE PERMITTED TO BE CAST AGAINST THE EARTH WHERE SOIL CONDITIONS DO NOT REQUIRE FORMWORK.
- SHALLOW FOUNDATIONS SHALL BE BUILT ON UNDISTURBED SOIL, COMPACTED FILL MATERIAL OR CLSM. COMPACTED FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH CBC SECTION 1804.5
- THE TOP SURFACE OF FOOTINGS SHALL BE LEVEL. THE BOTTOM SURFACE OF FOOTINGS SHALL BE PERMITTED TO HAVE A SLOPE NOT EXCEEDING 10%. FOOTINGS SHALL BE STEPPED WHERE IT IS NECESSARY TO CHANGE THE ELEVATION OF THE TOP SURFACE OF THE FOOTING OR WHERE THE SURFACE OF THE GROUND SLOPES MORE THAN 10%.
- FOR SINGLE STORIES, THE MIN. DEPTH OF FOOTINGS SHALL BE 12" BELOW UNDISTURBED GROUND SURFACE. THE MIN. WIDTH OF FOOTING SHALL BE 12". FOR TWO STORIES, THE MIN. DEPTH OF FOOTINGS SHALL BE 18" BELOW UNDISTURBED GROUND SURFACE AND THE MIN. WIDTH OF THE FOOTING SHALL BE 15".
- ALL LOAD BEARING WALLS SHALL BE PLACED ON CONTINUOUS CONCRETE FOOTINGS BONDED INTEGRALLY WITH THE EXTERIOR WALL FOOTINGS.
- MIN. SLAB THICKNESS SHALL BE 4". A 6-MIL POLYETHYLENE VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" SHALL BE PLACED BETWEEN THE BASE COURSE AND THE CONCRETE FLOOR SLAB. A VAPOR RETARDER IS NOT REQUIRED FOR DETACHED STRUCTURES ACCESSORY TO OCCUPANCIES IN GROUP R-3, SUCH AS GARAGES, UTILITY BUILDINGS OR OTHER UNHEATED FACILITIES.
- PLANS ARE VALID FOR SITES WITH A 3:1 IV SLOPE OR FLATTER WITH SOILS SUITABLE TO BEAR LOADS FROM STRUCTURE. IF UNSUITABLE SOILS ARE ENCOUNTERED, NOTIFY E.O.R. IMMEDIATELY

GENERAL NOTES:

- ALL CONSTRUCTION SHALL COMPLY WITH THE CURRENTLY ACCEPTED EDITION OF THE CALIFORNIA BUILDING CODE (CBC) AND CBC STANDARDS.
- IF CONDITIONS ARISE OUTSIDE THE SCOPE OF THESE PLANS, THE ENGINEER OF RECORD SHALL BE NOTIFIED.
- ALL CONCRETE SHALL HAVE A MIN. STRENGTH OF 2500 PSI (28 DAY)
- REINFORCEMENT BAR SHALL BE GRADE 40 FOR BARS #4 AND SMALLER AND GRADE 60 FOR BARS #5 AND LARGER
- BOTTOM HORIZONTAL REINFORCING BAR PLACED IN THE FOOTING SHALL BE 3" CLEAR OF BOTTOM OF FOOTING. TOP HORIZONTAL REINFORCING BAR PLACED IN THE FOOTING SHALL BE 2" CLEAR OF THE TOP OF THE FOOTING

| DESIGN CRITERIA: | |
|--|------------------|
| SEISMIC: ASCET-16, CHP 12.8 | |
| EQUIVALENT LATERAL FORCE PROCEDURE | |
| I= | II |
| SS= | 1.67I |
| S1= | 0.57I |
| SMS= | 2.00S |
| SMI= | NULL |
| SDS= | 0.67I |
| SDI= | NULL |
| TI= | 12 |
| SO= | 13 |
| R= | 6.5 |
| ROOF LOADS: | |
| LIVE LOAD | 20 PSF |
| SNOW LOAD(P _s) | 30.5 TO PSF |
| SNOW LOAD(P _f) | 23.1 TO 53.9 PSF |
| WIND: | |
| MAIN WIND FORCE RESISTING SYSTEM, ALL HEIGHTS METHOD, ASCET-16 | |
| CHP 26 & 27 | |
| WIND SPEED= | 45MPH |
| EXPOSURE= | C |
| ENCLOSURE= | ENCLOSED |
| SOIL: | |
| ALLOWABLE = SOIL BEARING | 1500 PSF |

SHEAR WALL NOTES: (PER SDPPWS-2015)

- FRAMING REQUIREMENTS: ALL FRAMING MEMBERS AND BLOCKING USED FOR SHEAR WALL CONSTRUCTION SHALL BE 2" NOMINAL OR GREATER, WHERE SHEAR WALLS ARE DESIGNED AS BLOCKED, ALL JOINTS IN SHEATHING SHALL OCCUR OVER AND BE FASTENED TO COMMON FRAMING MEMBERS OR COMMON BLOCKING. SHEAR WALL BOUNDARY ELEMENTS SUCH AS END POSTS, SHALL BE PROVIDED TO TRANSMIT THE DESIGN TENSION AND COMPRESSION FORCES. SHEAR WALL SHEATHING SHALL NOT BE USED TO SPlice BOUNDARY ELEMENTS. END POSTS (STUDS OR COLUMNS) SHALL BE FRAMED TO PROVIDE FULL END BEARING.
- COMMON FRAMING MEMBER: WHERE A COMMON FRAMING MEMBER IS REQUIRED AT ADJOINING PANEL EDGES, TWO FRAMING MEMBERS THAT ARE AT LEAST 2" NOMINAL THICKNESS SHALL BE PERMITTED PROVIDED THEY ARE FASTENED TOGETHER WITH FASTENERS DESIGNED IN ACCORDANCE WITH THE NDS TO TRANSFER THE INDUCED SHEAR BETWEEN MEMBERS. WHEN FASTENERS CONNECTING THE TWO FRAMING MEMBERS ARE SPACED LESS THAN 4" ON CENTER, THEY SHALL BE STAGGERED.
- TENSION AND COMPRESSION CHORDS SHALL BE INSTALLED AT EACH END OF SHEAR WALL.
- FASTENERS: SHEATHING SHALL BE ATTACHED TO FRAMING MEMBERS USING NAILS OR OTHER APPROVED FASTENERS. NAILS SHALL BE DRIVEN WITH THE HEAD OF THE NAIL FLUSH WITH THE SURFACE OF THE SHEATHING. OTHER APPROVED FASTENERS SHALL BE DRIVEN AS REQUIRED FOR PROPER INSTALLATION OF THAT FASTENER. SEE TABLE FOR NAIL DIMENSIONS.
- ANCHOR BOLTS: FOUNDATION ANCHOR BOLTS SHALL HAVE A STEEL PLATE WASHER UNDER EACH NUT NOT LESS THAN 0.224"x3"x3" IN SIZE. THE HOLE IN THE PLATE WASHER SHALL BE PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/8" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1-3/4". PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. THE PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE BOTTOM FLUSH WITH THE SIDES) WITH SHEATHING OR OTHER MATERIAL WITH NOMINAL UNIT SHEAR CAPACITY GREATER THAN 400 PLF FOR WIND OR SEISMIC (TYPE C, D AND E SHEAR WALLS) EXCEPTIONS MAY APPLY PER SECTION 4.3.6.4.3.
- WOOD STRUCTURAL PANEL SHEAR WALL CONSTRUCTION: PANELS SHALL NOT BE LESS THAN 4"x8", EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING.
 - ALL EDGES OF PANELS SHALL BE SUPPORTED BY AND FASTENED TO FRAMING MEMBERS OR BLOCKING.
 - NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE PANEL EDGES, MAXIMUM NAIL SPACING BE 6" ON CENTER.
 - NAILS ALONG INTERMEDIATE FRAMING MEMBERS SHALL BE THE SAME SIZE AS NAILS SPECIFIED FOR PANEL EDGE NAILING. AT INTERMEDIATE FRAMING MEMBERS, THE MAXIMUM NAILING SPACING SHALL BE 6" ON CENTER, WHERE PANELS ARE THICKER THAN 3/8" NOMINAL OR STUDS ARE SPACED LESS THAN 24" ON CENTER, THE MAXIMUM NAIL SPACING SHALL BE 12" ON CENTER.
 - THE WIDTH OF THE NAILED FACE OF FRAMING MEMBERS AND BLOCKING SHALL BE 2" NOMINAL OR GREATER.
 - WHERE ANY OF THE FOLLOWING CONDITIONS OCCUR, THE WIDTH OF THE NAILED FACE OF A COMMON FRAMING MEMBER OR BLOCKING AT ADJOINING PANEL EDGES SHALL BE 3" NOMINAL OR GREATER AND NAILING SHALL BE STAGGERED AT ALL PANEL EDGES (IN LIEU OF A SINGLE COMMON FRAMING MEMBER, TWO FRAMING MEMBERS THAT ARE AT LEAST 2" IN NOMINAL THICKNESS SHALL BE PERMITTED):
 - NAIL SPACING OF 2" ON CENTER AT ADJOINING PANEL EDGES IS SPECIFIED (TYPE E SHEAR WALL), OR
 - 100 COMMON NAILS HAVING PENETRATION INTO FRAMING MEMBERS AND BLOCKING OF MORE THAN 1-1/2" ARE SPECIFIED AT 3" ON CENTER, OR LESS AT ADJOINING PANEL EDGES, OR
 - THE NOMINAL UNIT SHEAR CAPACITY ON EITHER SIDE OF THE SHEAR WALL, TYPE E, EXCEEDS 700 PLF IN SEISMIC DESIGN CATEGORY D, E, OR F.
 - MAXIMUM STUD SPACING SHALL BE 24" ON CENTER
 - WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR ITS TYPE
- SHEAR WALL CONSTRUCTION WITH GYPSUM WALLBOARD OR GYPSUM SHEATHING BOARD SHALL MEET THE FOLLOWING REQUIREMENTS:
 - END JOINTS OF ADJACENT COURSES OF GYPSUM WALLBOARD OR SHEATHING SHALL NOT OCCUR OVER THE SAME STUD. THE SIZE AND SPACING OF FASTENERS AT SHEAR WALL BOUNDARIES, PANEL EDGES, AND INTERMEDIATE SUPPORTS SHALL BE PER SHEAR WALL SCHEDULE. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE EDGES AND ENDS OF PANELS. THE WIDTH OF THE NAILED FACE OF FRAMING MEMBERS AND BLOCKING SHALL BE 2" NOMINAL OR GREATER.
 - GYPSUM WALLBOARD SHALL BE APPLIED PARALLEL OR PERPENDICULAR TO STUDS. GYPSUM WALLBOARD SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C 840.
 - GYPSUM SHEATHING BOARD: 4" WIDE PIECES OF GYPSUM SHEATHING BOARD SHALL BE APPLIED PARALLEL OR PERPENDICULAR TO STUDS. 2" WIDE PIECES OF GYPSUM SHEATHING BOARD SHALL BE APPLIED PERPENDICULAR TO THE STUDS. GYPSUM SHEATHING BOARD SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C 1280.

| SHEAR WALL SCHEDULE 30/50/70# SNOW | |
|---------------------------------------|--|
| A | WALL SYSTEM STRENGTH: 175 PLF SEISMIC 175 PLF WIND 3/8" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 2d (COMMON OR HOT DIPPED GALVANIZED) 6" O.C. @ EDGES 12" O.C. @ FIELD 1/2" ANCHOR BOLT SPACING 12" W/ 2X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 36" O.C. SILL SHEAR TRANSFER NAILING 16d @ 6" O.C. (COMMON, BOX OR SINKER) |
| B | WALL SYSTEM STRENGTH: 260 PLF SEISMIC 260 PLF WIND 3/8" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 2d (COMMON OR HOT DIPPED GALVANIZED) 6" O.C. @ EDGES 12" O.C. @ FIELD 1/2" ANCHOR BOLT SPACING 48" W/ 2X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 27" O.C. SILL SHEAR TRANSFER NAILING 16d @ 6" O.C. (COMMON, BOX OR SINKER) |
| C | WALL SYSTEM STRENGTH: 260 PLF SEISMIC 346 PLF WIND 3/8" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 2d (COMMON OR HOT DIPPED GALVANIZED) 6" O.C. @ EDGES 12" O.C. @ FIELD 1/2" ANCHOR BOLT SPACING 36" W/ 2X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 18" O.C. SILL SHEAR TRANSFER NAILING 16d @ 4" O.C. (COMMON, BOX OR SINKER) |
| D | WALL SYSTEM STRENGTH: 390 PLF SEISMIC SEE NOTE 1 3/8" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 2d (COMMON OR HOT DIPPED GALVANIZED) 4" O.C. @ EDGES 12" O.C. @ FIELD 1/2" ANCHOR BOLT SPACING 24" W/ 2X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 12" O.C. SILL SHEAR TRANSFER NAILING (2) ROWS 16d @ 4" O.C. (COMMON, BOX OR SINKER) |
| E | WALL SYSTEM STRENGTH: 640 PLF SEISMIC SEE NOTE 1 3/8" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 10d (COMMON OR HOT DIPPED GALVANIZED) 2" O.C. @ EDGES 12" O.C. @ FIELD 5/8" ANCHOR BOLT SPACING 24" W/ 3X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 8" O.C. SILL SHEAR TRANSFER NAILING (2) ROWS 16d @ 4" O.C. (COMMON, BOX OR SINKER) |

| TYPE OR LOCATION OF CONCRETE CONSTRUCTION (TABLE R402.2) | MINIMUM COMPRESSIVE STRENGTH (f' _c) | |
|---|---|--------|
| | WEATHERING POTENTIAL | |
| | MODERATE | SEVERE |
| BASEMENT WALLS, FOUNDATIONS, AND OTHERS NOT EXPOSED TO WEATHER | 2500 | 2500 |
| BASEMENT SLABS AND INTERIOR SLAB ON GRADE, EXCEPT GARAGE FLOORS | 2500 | 2500 |
| BASEMENT WALLS, FOUNDATIONS WALLS, AND OTHERS EXPOSED TO WEATHER | 3000 | 3000 |
| PORCHES, CARPORT SLABS AND STEPS EXPOSED TO THE WEATHER, & GARAGE FLOOR | 3000 | 3500 |

| APA RATED ROOF SHEATHING | | | |
|--------------------------|---------------|-------------------|--------------------------|
| SNOW LOAD | TRUSS SPACING | PANEL SPAN RATING | TYP. PANEL THICKNESS (") |
| 30 # | 24" O.C. | 32/16 | 1/2 |
| 50 # | 24" O.C. | 32/16 | 1/2 |
| 70 # | 24" O.C. | 32/16 | 1/2 |
| 490 # | 12" O.C. | 48/24 | 3/4 |

**BID SET
NOT FOR CONSTRUCTION**

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

STRUCTURAL NOTES

TABLE 2304.10.1
FASTENING SCHEDULE

| CONNECTION | FASTENING ^{a,m} | LOCATION |
|---|--|--|
| 1. JOIST TO SILL OR GIRDER | 3-8d COMMON (2.5" X 0.131") | TOENAIL |
| 2. BRIDGING TO JOIST | 2-8d COMMON (2.5" X 0.131") | TOENAIL EA. END |
| 3. 1"x6" SUBFLOOR OR LESS TO EA. JOIST | 2-8d COMMON (2.5" X 0.131") | FACE NAIL |
| 4. WIDER THAN 1"x6" SUBFLOOR TO EA. JOIST | 3-8d COMMON (2.5" X 0.131") | FACE NAIL |
| 5. 2" SUBFLOOR TO JOIST OR GIRDER | 2-16d COMMON (2.5" X 0.162") | BLIND AND FACENAIL |
| 6. SOLE PLATE TO JOIST OR BLOCKING | 16d (3.5" X 0.135") @ 16" O.C. | TYPICAL FACE NAIL |
| SOLE PLATE TO JOIST OR BLOCKING @ BRACED WALL PANEL | 3" - 16d (3.5" X 0.135") @ 16" O.C. | BRACED WALL PANELS |
| 7. TOP PLATE TO STUD | 2-16d COMMON (2.5" X 0.162") | END NAIL |
| 8. STUD TO SOLE PLATE | 4-8d COMMON (2.5" X 0.131") 2-16d COMMON (2.5" X 0.162") | TOENAIL END NAIL |
| 9. DOUBLE STUDS | 16d (3.5" X 0.135") @ 24" O.C. | FACE NAIL |
| 10. DOUBLE TOP PLATES | 16d (3.5" X 0.135") @ 16" O.C. | TYP. FACE NAIL |
| DOUBLE TOP PLATES | 8-16d COMMON (2.5" X 0.162") | LAP SPLICE |
| 11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE | 3-8d COMMON (2.5" X 0.131") | TOENAIL |
| 12. RIM JOIST TO TOP PLATE | 8d (2.5" X 0.131") @ 6" O.C. | TOENAIL |
| 13. TOP PLATES, LAPS AND INTERSECTIONS | 2-16d COMMON (2.5" X 0.162") | FACE NAIL |
| 14. CONTINUOUS HEADER, TWO PIECES | 16d COMMON (3.5" X 0.162") | 16" O.C. ALONG EDGE |
| 15. CEILING JOISTS TO PLATE | 3-8d COMMON (2.5" X 0.131") | TOENAIL |
| 16. CONTINUOUS HEADER TO STUD | 4-8d COMMON (2.5" X 0.131") | TOENAIL |
| 17. CEILING JOISTS, LAPS OVER PARTITIONS SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1) | 3-16d COMMON (3.5" X 0.162") MINIMUM, TABLE 2308.10.4.1) | FACE NAIL |
| 18. CEILING JOISTS TO PARALLEL RAFTERS SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1) | 3-16d COMMON (3.5" X 0.162") MINIMUM, TABLE 2308.10.4.1) | FACE NAIL |
| 19. RAFTER TO PLATE SEE SECTION 2308.10.1, TABLE 2308.10.1) | 3-8d COMMON (2.5" X 0.131") | TOENAIL |
| 20. 1" DIAGONAL BRACE TO EA. STUD AND PLATE | 2-8d COMMON (2.5" X 0.131") | |
| 21. 1"x8" SHEATHING TO EA. BEARING | 3-8d COMMON (2.5" X 0.131") | |
| 22. WIDER THAN 1"x8" SHEATHING TO EA. BEARING | 3-8d COMMON (2.5" X 0.131") | |
| 23. BUILT-UP CORNER STUDS | 16d COMMON (3.5" X 0.162") | |
| 24. BUILT-UP GIRDER AND BEAMS | 20d COMMON (4" X 0.142") 32" O.C. | |
| 25. 2" PLANKS | 16d COMMON (3.5" X 0.162") | |
| 26. COLLAR TIE TO RAFTER | 3-10d COMMON (3" X 0.148") | |
| 27. JACK RAFTER TO HIP | 3-10d COMMON (3" X 0.148") 2-16d COMMON (3.5" X 0.162") | |
| 28. ROOF RAFTER TO 2 BY RIDGE BEAM | 2-16d COMMON (3.5" X 0.162") 2-16d COMMON (3.5" X 0.162") | |
| 29. JOIST TO BAND JOIST | 3-16d COMMON (3.5" X 0.162") | |
| 30. LEDGER STRIP | 3-16d COMMON (3.5" X 0.162") | |
| 31. WOOD STRUCTURAL PANELS AND PARTICLEBOARD SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING) | 1/2" AND LESS 1 1/8" TO 1 1/4" | 6d ^c 8d ^d OR 6d ^e 8d 10d ^f OR 8d |
| SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING) | 3/4" AND LESS 7/8" TO 1" 1 1/8" TO 1 1/4" | 6d ^e 8d ^e 10d ^f OR 8d ^e |
| 32. PANEL SIDING (TO FRAMING) | 1/2" AND LESS | 6d ^f 8d ^f |
| 33. FIBERBOARD SHEATHING | 1/2" AND LESS | No. 11 GA ROOFING NAIL ^h 6d COMMON NAIL (2" X 0.113") No. 16 GA STAPLE ⁱ 25/32" No. 11 GA ROOFING NAIL ^h 8d COMMON NAIL (2 1/2" X 0.131") No. 16 GA STAPLE ⁱ |
| 34. INTERIOR PANELING | 1/4" 3/8" | 4d ^j 6d ^k |

a. Common or box nails are permitted to be used except where otherwise noted.
b. Nails spaced at 6 inches on center at edges, 12 inches at intermediate supports except 6 inches at supports where spans are 48 inches or more. For nailing of wood structural panel and particle board diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.
c. Common or deformed shank (6d - 2" x 0.113"; 8d - 2 1/2" x 0.131"; 10d - 3" x 0.148").
d. Common (6d - 2" x 0.113"; 8d - 2 1/2" x 0.131"; 10d - 3" x 0.148").
e. Deformed shank (6d - 2" x 0.113"; 8d - 2 1/2" x 0.131"; 10d - 3" x 0.148").
f. Corrosion resistant siding (6d - 1 7/8" x 0.106"; 8d - 2 3/8" x 0.128") or casing (6d - 2" x 0.094"; 8d - 2 1/2" x 113") nail.
g. Fasteners spaced 3 inches on center at exterior edges and 6 inches on center at intermediate supports, when used as structural sheathing. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.
h. Corrosion resistant roofing nails with 7/16 inch dia. head and 1 1/2 inch length for 1/2 inch length for 1/2 inch sheathing and 1 3/4 inch length for 25/32 inch sheathing.
i. Corrosion resistant staples with nominal 7/16" crown and 1 1/8" length for 1/2 inch sheathing and 1 3/4 inch length for 25/32 inch sheathing.
j. Casing (1 1/2" x 0.080" or finish (1 1/2" x 0.072") nails spaced 6" on panel edges, 12" at intermediate supports.
k. Panel supports at 24". Casing or finish nails spaced 6" on panel edges, 12" at intermediate supports.
l. For roof sheathing applications, 8d nails (2 1/2" x 0.113") and the minimum required for wood structural panels.
m. Staples shall have a minimum crown width of 7/16 inch.
n. For roof sheathing applications, fasteners spaced 4 inches on center at edges, 6 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
o. Fasteners spaced 4 inches on center at edges, 6 inches at intermediate supports for subfloor and wall sheathing and 3 inches on center at edges, 6 inches at intermediate supports for roof sheathing.
p. Fasteners spaced 4 inches on center at edges, 6 inches at intermediate supports.

EXCAVATION, GRADING AND FILL:

- EXCAVATION NEAR FOUNDATION FOR ANY PURPOSE SHALL NOT REDUCE LATERAL SUPPORT FROM ANY FOUNDATION OR ADJACENT FOUNDATION WITHOUT FIRST UNDERPINNING OR PROTECTING THE FOUNDATION AGAINST DETRIMENTAL LATERAL OR VERTICAL MOVEMENT OR BOTH:
 - WHERE UNDERPINNING IS CHOSEN TO PROVIDE THE PROTECTION OR SUPPORT OF ADJACENT STRUCTURES, THE UNDERPINNING STEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH PROVISIONS OF CURRENT CALIFORNIA BUILDING CODE.
 - UNDERPINNING SHALL BE INSTALLED IN A SEQUENTIAL MANNER THAT PROTECTS THE NEIGHBORING STRUCTURE AND THE WORKING CONSTRUCTION SITE. THE ENGINEER OF RECORD SHALL BE NOTIFIED IF THIS CONDITION EXISTS TO ALLOW FOR PREPARATION OF CONSTRUCTION DOCUMENTS.
- PLACEMENT OF BACKFILL: THE EXCAVATION OUTSIDE THE FOUNDATION SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS, COBBLES AND BOULDERS OR WITH CONTROLLED LOW-STRENGTH MATERIAL (CLSM). THE BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE THE FOUNDATION OR THE WATERPROOFING OR DAMPROOFING MATERIAL.
- SITE GRADING: THE GROUND IMMEDIATELY ADJACENT TO THE FOUNDATION SHALL BE SLOPED AWAY FROM THE BUILDING AT A SLOPE OF NOT LESS THAN 5% FOR A MINIMUM DISTANCE OF 10 FEET MEASURED PERPENDICULAR TO THE WALL. IF PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET AN APPROVED METHOD OF DRAINAGE AWAY FROM STRUCTURE SHALL BE USED. SNALES USED FOR THIS PURPOSE SHALL BE SLOPED A MINIMUM OF 2% WHERE LOCATED WITHIN 10 FEET OF BUILDING FOUNDATION. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MIN. OF 2% AWAY FROM THE BUILDING. 2% SLOPES MAY BE USED WHEN APPROVED BY THE ENGINEER OF RECORD.
- WHERE SHALLOW FOUNDATIONS WILL BEAR ON COMPACTED FILL MATERIAL, THE COMPACTED FILL SHALL COMPLY WITH THE APPROVED GEOTECHNICAL REPORT.
 - WHERE COMPACTED FILL MATERIAL 12 INCHES IN DEPTH OR LESS NEED NOT COMPLY WITH AN APPROVED REPORT, PROVIDED THE IN-PLACE DRY DENSITY IS NOT LESS THAN 90% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D1557. THE COMPACTATION SHALL BE VERIFIED BY SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1705.6

FOUNDATIONS:

- NO FILL OR OTHER SURCHARGE LOADS SHALL BE PLACED ADJACENT TO ANY BUILDING OR STRUCTURE UNLESS SUCH STRUCTURE IS CAPABLE OF WITHSTANDING THE ADDITIONAL LOADS CAUSED BY THE FILL OR SURCHARGE.
- IF VIBRATORY LOADS ARE TO BE PRESENT DURING THE USE OF THE STRUCTURE, THE ENGINEER OF RECORD SHALL BE NOTIFIED TO DETERMINE IF ADDITIONAL CONSIDERATION IS REQUIRED TO PREVENT DETRIMENTAL DISTURBANCES OF THE SOIL.
- IF EXPANSIVE SOILS ARE DISCOVERED THE ENGINEER OF RECORD SHALL BE NOTIFIED TO PROVIDE ADDITIONAL FOUNDATION DESIGN AND CONSTRUCTION REQUIREMENTS.
- BUILDING CLEARANCE FROM ASCENDING SLOPES SHALL IN GENERAL BE SET A SUFFICIENT DISTANCE FROM THE SLOPE TO PROVIDE PROTECTION FROM SLOPE DRAINAGE, EROSION AND SHALLOW FAILURES.
- FOUNDATION SETBACK FROM DESCENDING SLOPE SURFACE SHALL BE FOUNDED IN FIRM MATERIAL WITH AN EMBEDMENT AND SET BACK FROM SLOPE SURFACE SUFFICIENT TO PROVIDE VERTICAL AND LATERAL SUPPORT FOR THE FOUNDATION WITHOUT DETRIMENTAL SETTLEMENT.
- FOR FOUNDATIONS SUPPORTING GROUP R OR U OCCUPANCIES OF LIGHT-FRAME CONSTRUCTION, TWO STORIES OR LESS IN HEIGHT, ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 psi
- CONCRETE FOUNDATIONS ARE PERMITTED TO BE CAST AGAINST THE EARTH WHERE SOIL CONDITIONS DO NOT REQUIRE FORMWORK.
- SHALLOW FOUNDATIONS SHALL BE BUILT ON UNDISTURBED SOIL, COMPACTED FILL MATERIAL OR CLSM. COMPACTED FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH CBC SECTION 1804.5
- THE TOP SURFACE OF FOOTINGS SHALL BE LEVEL. THE BOTTOM SURFACE OF FOOTINGS SHALL BE PERMITTED TO HAVE A SLOPE NOT EXCEEDING 10%. FOOTINGS SHALL BE STEPPED WHERE IT IS NECESSARY TO CHANGE THE ELEVATION OF THE TOP SURFACE OF THE FOOTING OR WHERE THE SURFACE OF THE GROUND SLOPES MORE THAN 10%.
- FOR SINGLE STORIES, THE MIN. DEPTH OF FOOTINGS SHALL BE 12" BELOW UNDISTURBED GROUND SURFACE. THE MIN. WIDTH OF FOOTING SHALL BE 12". FOR TWO STORIES, THE MIN. DEPTH OF FOOTINGS SHALL BE 18" BELOW UNDISTURBED GROUND SURFACE AND THE MIN. WIDTH OF THE FOOTING SHALL BE 15"
- ALL LOAD BEARING WALLS SHALL BE PLACED ON CONTINUOUS CONCRETE FOOTINGS JOINED INTEGRALLY WITH THE EXTERIOR WALL FOOTINGS.
- MIN. SLAB THICKNESS SHALL BE 4". A 6-MIL POLYETHYLENE VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" SHALL BE PLACED BETWEEN THE BASE COURSE AND THE CONCRETE FLOOR SLAB. A VAPOR RETARDER IS NOT REQUIRED FOR DETACHED STRUCTURES ACCESSORY TO OCCUPANCIES IN GROUP R-3, SUCH AS GARAGES, UTILITY BUILDINGS OR OTHER UNHEATED FACILITIES.
- PLANS ARE VALID FOR SITES WITH A 3H:1V SLOPE OR FLATTER WITH SOILS SUITABLE TO BEAR LOADS FROM STRUCTURE. IF UNSUITABLE SOILS ARE ENCOUNTERED, NOTIFY E.O.R. IMMEDIATELY
- CONCRETE SUBJECT TO FREEZING SHALL BE AIR-ENTRAINED. TOTAL AIR CONTENT (PERCENT BY VOLUME OF CONCRETE) SHALL BE NOT LESS THAN 5% OR MORE THAN 7%, R402.2
- FOR GARAGE FLOORS WITH A STEEL TROWELED FINISH, REDUCTION OF THE TOTAL AIR CONTENT (PERCENT BY VOLUME OF CONCRETE) TO NOT LESS THAN 3 PERCENT IS PERMITTED IF THE SPECIFIED COMPRESSIVE STRENGTH OF THE CONCRETE IS INCREASED TO NOT LESS THAN 4,000 PSI.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL COMPLY WITH THE CURRENTLY ACCEPTED EDITION OF THE CALIFORNIA BUILDING CODE (CBC) AND CBC STANDARDS.
- IF CONDITIONS ARISE OUTSIDE THE SCOPE OF THESE PLANS, THE ENGINEER OF RECORD SHALL BE NOTIFIED.
- ALL CONCRETE SHALL HAVE A MIN. STRENGTH OF 2500 PSI (28 DAY)
- REINFORCEMENT BAR SHALL BE GRADE 40 FOR BARS #4 AND SMALLER AND GRADE 60 FOR BARS #5 AND LARGER
- BOTTOM HORIZONTAL REINFORCING BAR PLACED IN THE FOOTING SHALL BE 3" CLEAR OF BOTTOM OF FOOTING. TOP HORIZONTAL REINFORCING BAR PLACED IN THE FOOTING SHALL BE 2" CLEAR OF THE TOP OF THE FOOTING

| DESIGN CRITERIA: | |
|--|-----------|
| SEISMIC: ASCE7-16, CHP 12.8 | |
| EQUIVALENT LATERAL FORCE PROCEDURE: | |
| I= | II |
| S _s = | 0.57 |
| S ₁ = | 0.205 |
| S _M = | 0.57 |
| S _{M1} = | 0.57 |
| S _{DS} = | 1.337 |
| S _{D1} = | 0.57 |
| T _s = | 6 |
| S _{0.2} = | 1.3 |
| S ₁ = | 0.57 |
| ROOF LOADS: | |
| LIVE LOAD | 20 PSF |
| SNOW LOAD (P _s) | 49.0 PSF |
| SNOW LOAD (P _s) | 311.3 PSF |
| SURFACE (C _e) | I |
| THERMAL (C _t) | II |
| WIND: | |
| MAIN WIND FORCE RESISTING SYSTEM, ALL HEIGHTS METHOD, ASCE7-16 | |
| CHP 26 & 27 | |
| WIND SPEED= | 150MPH |
| EXPOSURE= | C |
| ENCLOSURE= | ENCLOSED |
| SOIL: | |
| ALLOWABLE = SOIL BEARING | 2000 PSF |

| TYPE OR LOCATION OF CONCRETE CONSTRUCTION (TABLE R402.2) | MINIMUM COMPRESSIVE STRENGTH (f _c) | |
|---|--|--------|
| | WEATHERING POTENTIAL | |
| | MODERATE | SEVERE |
| BASEMENT WALLS, FOUNDATIONS, AND OTHERS NOT EXPOSED TO WEATHER | 2500 | 2500 |
| BASEMENT SLABS AND INTERIOR SLAB ON GRADE, EXCEPT GARAGE FLOORS | 2500 | 2500 |
| BASEMENT WALLS, FOUNDATIONS WALLS, AND OTHERS EXPOSED TO WEATHER | 3,000 | 3,000 |
| PORCHES, CARPORT SLABS AND STEPS EXPOSED TO THE WEATHER, & GARAGE FLOOR | 3,000 | 3500 |

| APA RATED ROOF SHEATHING | | | |
|--------------------------|---------------|-------------------|--------------------------|
| SNOW LOAD | TRUSS SPACING | PANEL SPAN RATING | TYP. PANEL THICKNESS (") |
| 30 # | 24" O.C. | 32/16 | 1/2 |
| 50# | 24" O.C. | 32/16 | 1/2 |
| 70# | 24" O.C. | 32/16 | 1/2 |
| 490# | 12" O.C. | 48/24 | 3/4 |

SHEAR WALL NOTES: (PER SDPPWS-2015)

- FRAMING REQUIREMENTS: ALL FRAMING MEMBERS AND BLOCKING USED FOR SHEAR WALL CONSTRUCTION SHALL BE 2" NOMINAL OR GREATER, WHERE SHEAR WALLS ARE DESIGNED AS BLOCKED, ALL JOINTS IN SHEATHING SHALL OCCUR OVER AND BE FASTENED TO COMMON FRAMING MEMBERS OR COMMON BLOCKING. SHEAR WALL BOUNDARY ELEMENTS SUCH AS END POSTS, SHALL BE PROVIDED TO TRANSMIT THE DESIGN TENSION AND COMPRESSION FORCES. SHEAR WALL SHEATHING SHALL NOT BE USED TO SPlice BOUNDARY ELEMENTS. END POSTS (STUDS OR COLUMNS) SHALL BE FRAMED TO PROVIDE FULL END BEARING.
- COMMON FRAMING MEMBER: WHERE A COMMON FRAMING MEMBER IS REQUIRED AT ADJOINING PANEL EDGES, TWO FRAMING MEMBERS THAT ARE AT LEAST 2" NOMINAL THICKNESS SHALL BE PERMITTED PROVIDED THEY ARE FASTENED TOGETHER WITH FASTENERS DESIGNED IN ACCORDANCE WITH THE NDS TO TRANSFER THE INDUCED SHEAR BETWEEN MEMBERS. WHEN FASTENERS CONNECTING THE TWO FRAMING MEMBERS ARE SPACED LESS THAN 4" ON CENTER, THEY SHALL BE STAGGERED.
- TENSION AND COMPRESSION CHORDS SHALL BE INSTALLED AT EACH END OF SHEAR WALL.
- FASTENERS: SHEATHING SHALL BE ATTACHED TO FRAMING MEMBERS USING NAILS OR OTHER APPROVED FASTENERS. NAILS SHALL BE DRIVEN WITH THE HEAD OF THE NAIL FLUSH WITH THE SURFACE OF THE SHEATHING. OTHER APPROVED FASTENERS SHALL BE DRIVEN AS REQUIRED FOR PROPER INSTALLATION OF THAT FASTENER. SEE TABLE FOR NAIL DIMENSIONS.
- ANCHOR BOLTS: FOUNDATION ANCHOR BOLTS SHALL HAVE A STEEL PLATE WASHER UNDER EACH NUT NOT LESS THAN 0.224"x3"x3" IN SIZE. THE HOLE IN THE PLATE WASHER SHALL BE PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/8" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. THE PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE BOTTOM EDGE OF THE SIDING(S) WITH SHEATHING OR OTHER MATERIAL WITH NOMINAL UNIT SHEAR CAPACITY GREATER THAN 400 PLF FOR WIND OR SEISMIC (TYPE C, D AND E SHEAR WALLS) EXCEPTIONS MAY APPLY PER SECTION 4.3.6.4.3.
- WOOD STRUCTURAL PANEL SHEAR WALL CONSTRUCTION: PANELS SHALL NOT BE LESS THAN 4"x8", EXCEPT AT BOUNDARIES AND CHANGES IN FRAMING.
 - ALL EDGES OF PANELS SHALL BE SUPPORTED BY AND FASTENED TO FRAMING MEMBERS OR BLOCKING.
 - NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE PANEL EDGES, MAXIMUM NAIL SPACING AT PANEL EDGES SHALL BE 6" ON CENTER.
 - NAILS ALONG INTERMEDIATE FRAMING MEMBERS SHALL BE THE SAME SIZE AS NAILS SPECIFIED FOR PANEL EDGE NAILING. AT INTERMEDIATE FRAMING MEMBERS, THE MAXIMUM NAILING SPACING SHALL BE 6" ON CENTER, WHERE PANELS ARE THICKER THAN 3/8" NOMINAL OR STUDS ARE SPACED LESS THAN 24" ON CENTER, THE MAXIMUM NAIL SPACING SHALL BE 12" ON CENTER.
 - THE WIDTH OF THE NAILED FACE OF FRAMING MEMBERS AND BLOCKING SHALL BE 2" NOMINAL OR GREATER.
 - WHERE ANY OF THE FOLLOWING CONDITIONS OCCUR, THE WIDTH OF THE NAILED FACE OF A COMMON FRAMING MEMBER OR BLOCKING AT ADJOINING PANEL EDGES SHALL BE 3" NOMINAL OR GREATER AND NAILING SHALL BE STAGGERED AT ALL PANEL EDGES (IN LIEU OF A SINGLE COMMON FRAMING MEMBER, TWO FRAMING MEMBERS THAT ARE AT LEAST 2" IN NOMINAL THICKNESS SHALL BE PERMITTED):
 - NAIL SPACING OF 2" ON CENTER AT ADJOINING PANEL EDGES IS SPECIFIED (TYPE E SHEAR WALL), OR
 - 100 COMMON NAILS HAVING PENETRATION INTO FRAMING MEMBERS AND BLOCKING OF MORE THAN 1-1/2" ARE SPECIFIED AT 3" ON CENTER, OR LESS AT ADJOINING PANEL EDGES, OR
 - THE NOMINAL UNIT SHEAR CAPACITY ON EITHER SIDE OF THE SHEAR WALL, TYPE E, EXCEEDS 700 PLF IN SEISMIC DESIGN CATEGORY D, E, OR F.
 - MAXIMUM STUD SPACING SHALL BE 24" ON CENTER
 - WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS FOR ITS TYPE
- SHEAR WALL CONSTRUCTION WITH GYPSUM WALLBOARD OR GYPSUM SHEATHING BOARD SHALL MEET THE FOLLOWING REQUIREMENTS:
 - END JOINTS OF ADJACENT COURSES OF GYPSUM WALLBOARD OR SHEATHING SHALL NOT OCCUR OVER THE SAME STUD. THE SIZE AND SPACING OF FASTENERS AT SHEAR WALL BOUNDARIES, PANEL EDGES, AND INTERMEDIATE SUPPORTS SHALL BE PER SHEAR WALL SCHEDULE. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM THE EDGES AND ENDS OF PANELS. THE WIDTH OF THE NAILED FACE OF FRAMING MEMBERS AND BLOCKING SHALL BE 2" NOMINAL OR GREATER.
 - GYPSUM WALLBOARD SHALL BE APPLIED PARALLEL OR PERPENDICULAR TO STUDS. GYPSUM WALLBOARD SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C 840.
 - GYPSUM SHEATHING BOARD: 4" WIDE PIECES OF GYPSUM SHEATHING BOARD SHALL BE APPLIED PARALLEL OR PERPENDICULAR TO STUDS. 2" WIDE PIECES OF GYPSUM SHEATHING BOARD SHALL BE APPLIED PERPENDICULAR TO THE STUDS. GYPSUM SHEATHING BOARD SHALL CONFORM TO ASTM C 1396 AND SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C 1280.

| SHEAR WALL SCHEDULE 490 # SNOW | |
|-----------------------------------|---|
| A | WALL SYSTEM STRENGTH: 175 PLF SEISMIC 175 PLF WIND 3/8" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 8d (COMMON OR HOT DIPPED GALVANIZED) 6" O.C. @ EDGES 12" O.C. @ FIELD 5/8" ANCHOR BOLT SPACING 72" W/ 3X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 36" O.C. SILL SHEAR TRANSFER NAILING 16d @ 6" O.C. (COMMON, BOX OR SINKER) |
| B | WALL SYSTEM STRENGTH: 340 PLF SEISMIC 415 PLF WIND 1 1/2" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 10d (COMMON OR HOT DIPPED GALVANIZED) 6" O.C. @ EDGES 12" O.C. @ FIELD 5/8" ANCHOR BOLT SPACING 48" W/ 3X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 27" O.C. SILL SHEAR TRANSFER NAILING 16d @ 6" O.C. (COMMON, BOX OR SINKER) |
| C | WALL SYSTEM STRENGTH: 510 PLF SEISMIC 715 PLF WIND 1 1/2" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 10d (COMMON OR HOT DIPPED GALVANIZED) 6" O.C. @ EDGES 12" O.C. @ FIELD 5/8" ANCHOR BOLT SPACING 36" W/ 3X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 27" O.C. SILL SHEAR TRANSFER NAILING 16d @ 4" O.C. (COMMON, BOX OR SINKER) |
| D | WALL SYSTEM STRENGTH: 665 PLF SEISMIC SEE NOTE 1 930 PLF WIND 1 1/2" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 10d (COMMON OR HOT DIPPED GALVANIZED) 4" O.C. @ EDGES 12" O.C. @ FIELD 5/8" ANCHOR BOLT SPACING 24" W/ 3X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 12" O.C. SILL SHEAR TRANSFER NAILING (2) ROWS 16d @ 4" O.C. (COMMON, BOX OR SINKER) |
| E | WALL SYSTEM STRENGTH: 870 PLF SEISMIC SEE NOTE 1 1215 PLF WIND 1 1/2" STRUCTURAL WOOD PANELS (BLOCKED) NAILING: 10d (COMMON OR HOT DIPPED GALVANIZED) 2" O.C. @ EDGES 12" O.C. @ FIELD 5/8" ANCHOR BOLT SPACING 24" W/ 3X P.T. SILL SIMPSON A35 SHEAR TRANSFER @ 8" O.C. SILL SHEAR TRANSFER NAILING (2) ROWS 16d @ 4" O.C. (COMMON, BOX OR SINKER) |



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PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

**STRUCTURAL NOTES
(490LB)**

S3.1



RUSSELL DAVIDSON
ARCHITECTURE + DESIGN

JACKSON
&
SANDS
ENGINEERING, Inc.



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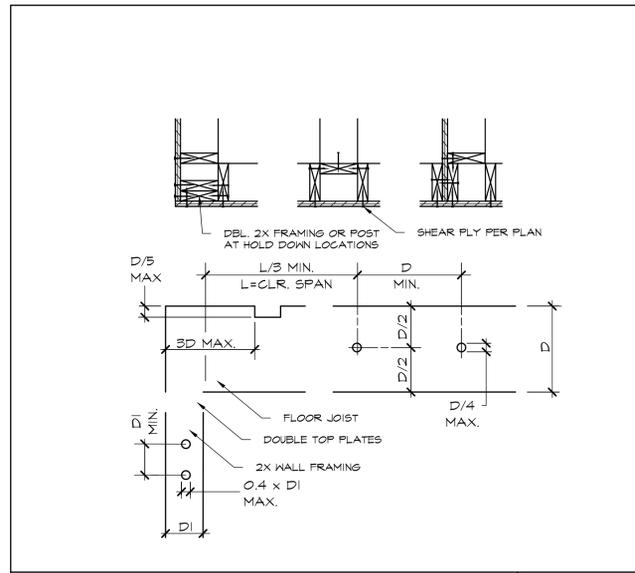
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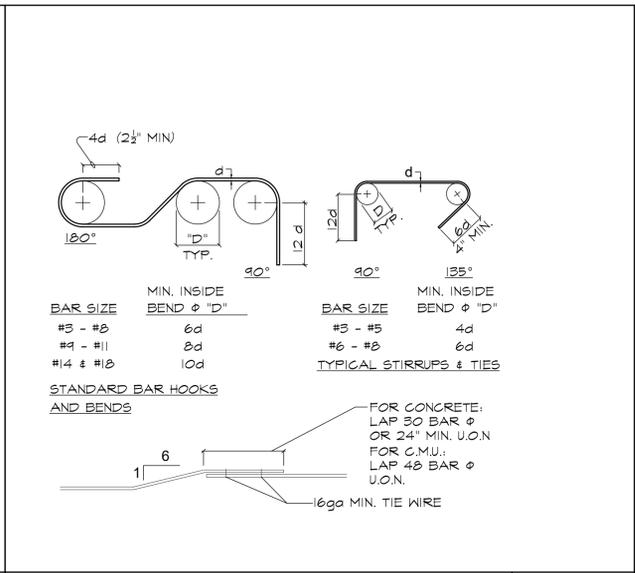
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STRUCTURAL DETAILS

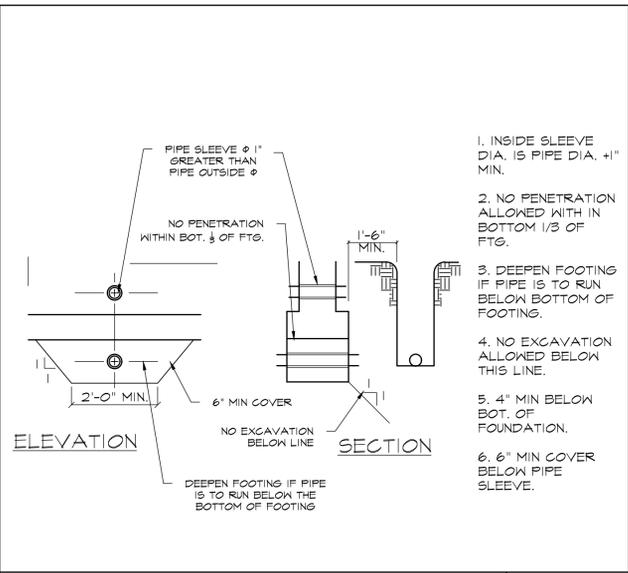
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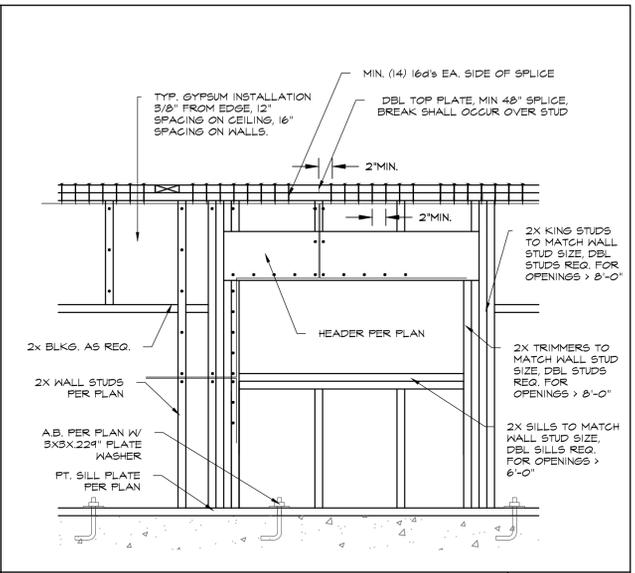
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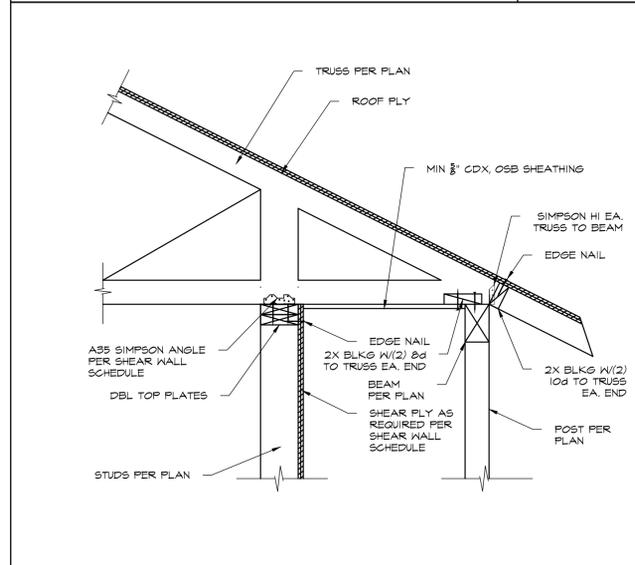
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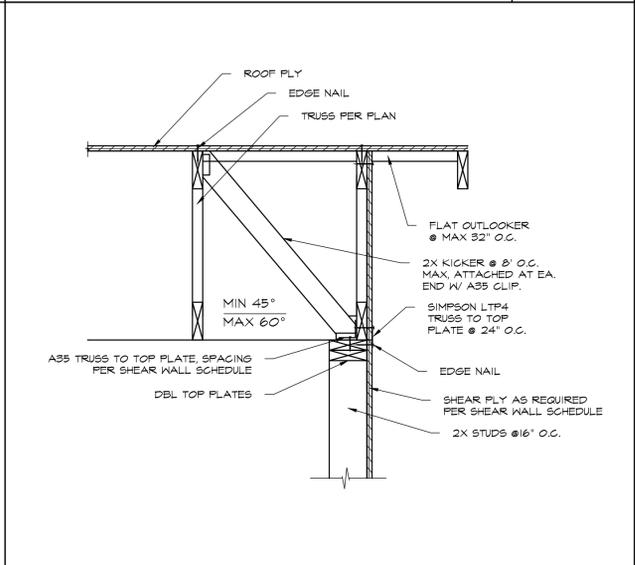
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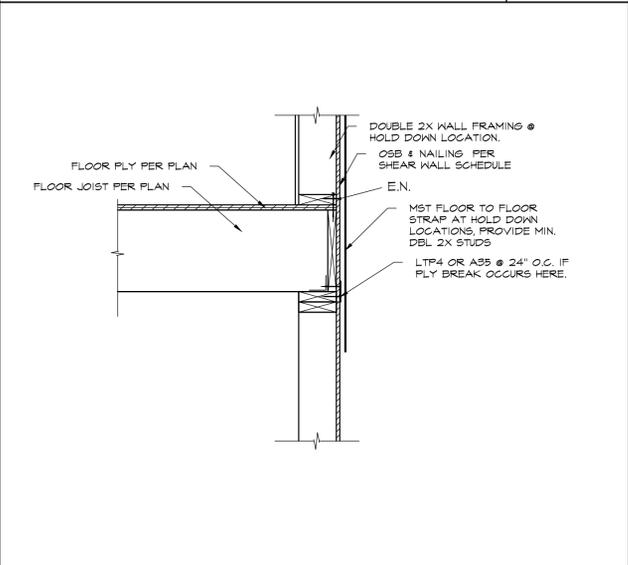
TYP. WALL CONN. DETAIL



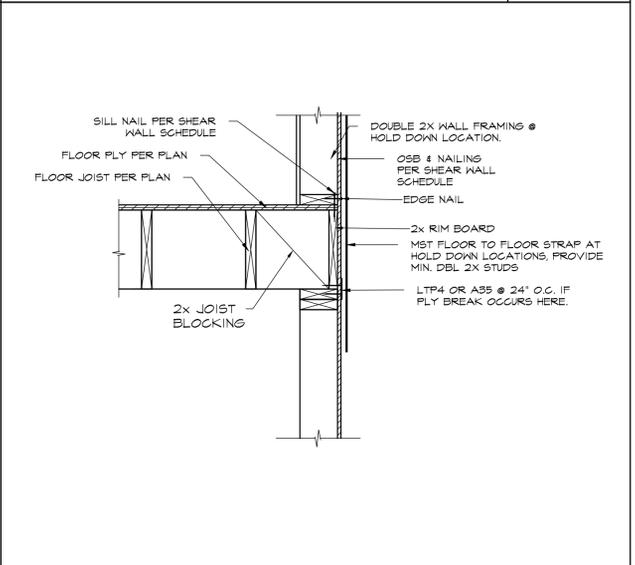
ROOF EAVE DETAIL



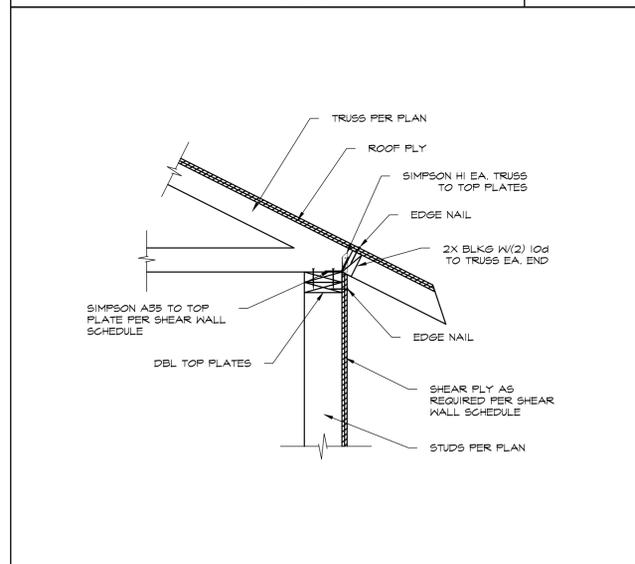
GABLE END DETAIL



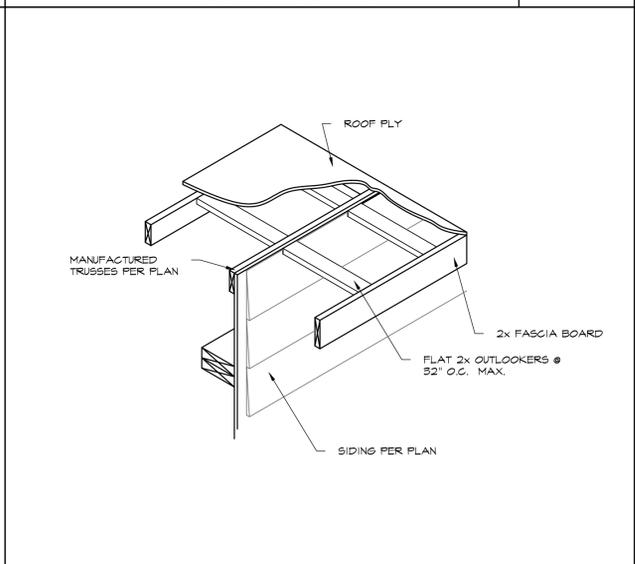
SECOND STORY WALL CONNECTION



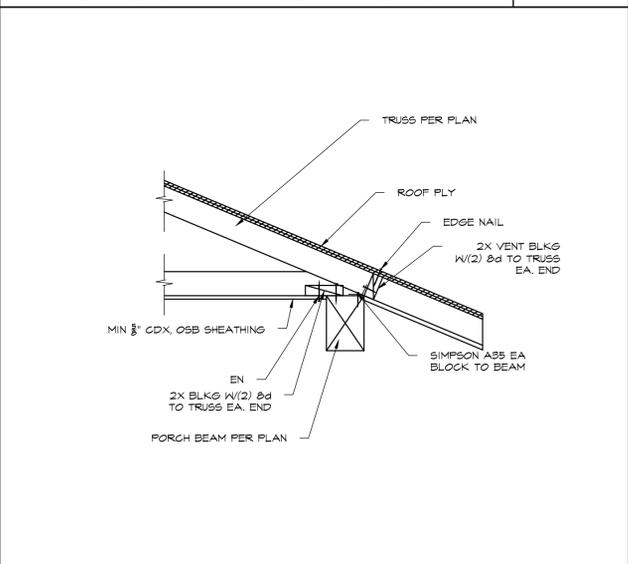
SECOND STORY WALL CONN.



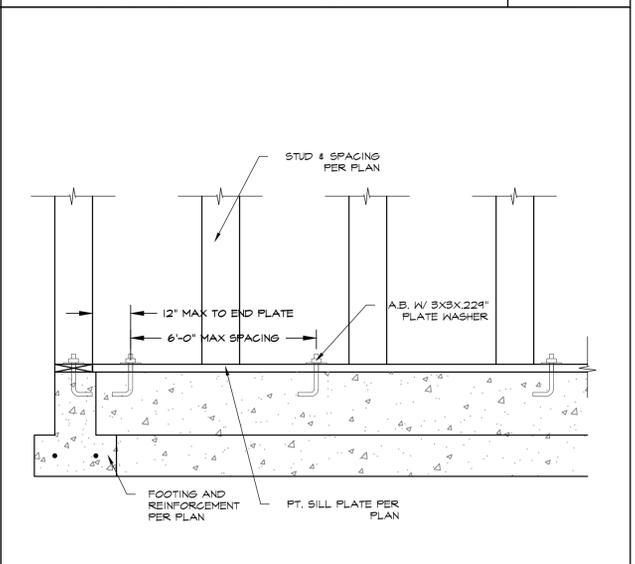
ROOF EAVE DETAIL



OUTLOOKER DETAIL



ROOF PORCH EAVE DETAIL



ANCHOR CONNECTION DETAIL



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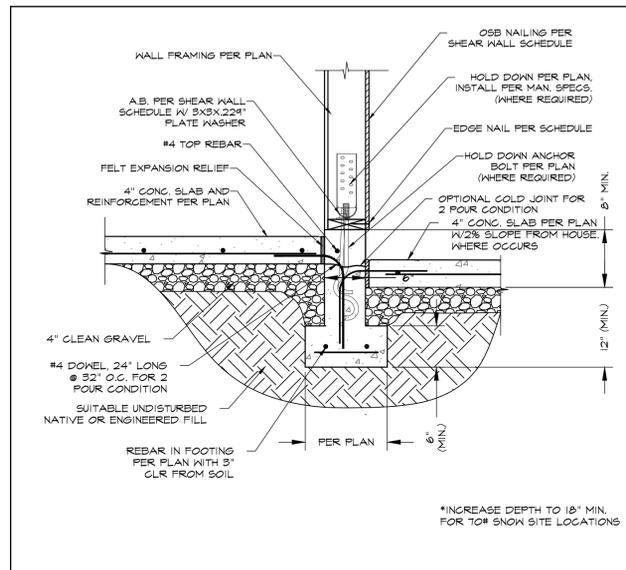
1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:

Table with 3 columns: ID, NAME, DATE. Row 1: SUBMITTAL, 3/30/23

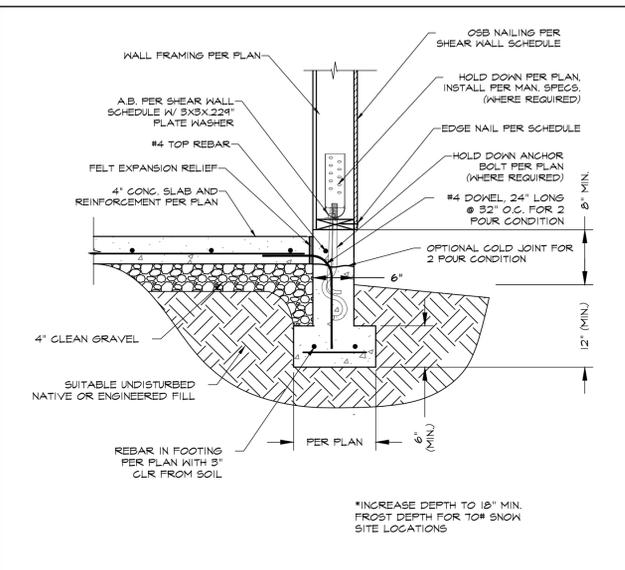
STRUCTURAL DETAILS

S4.1



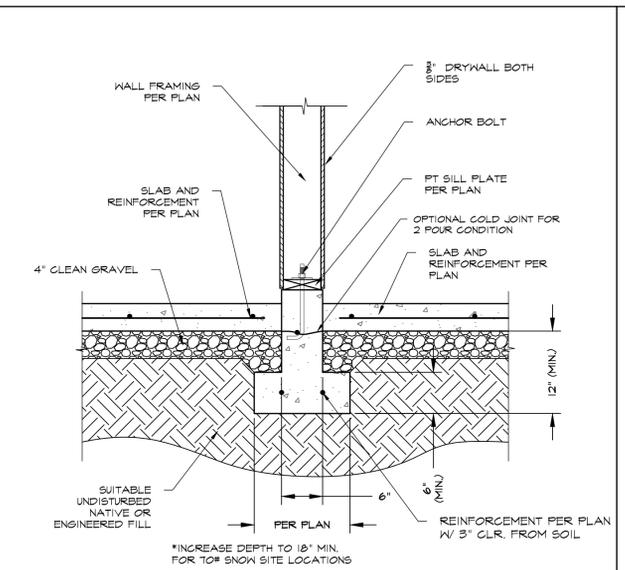
SHEAR/HOLDOWN CONN. @ FOUNDATION

1



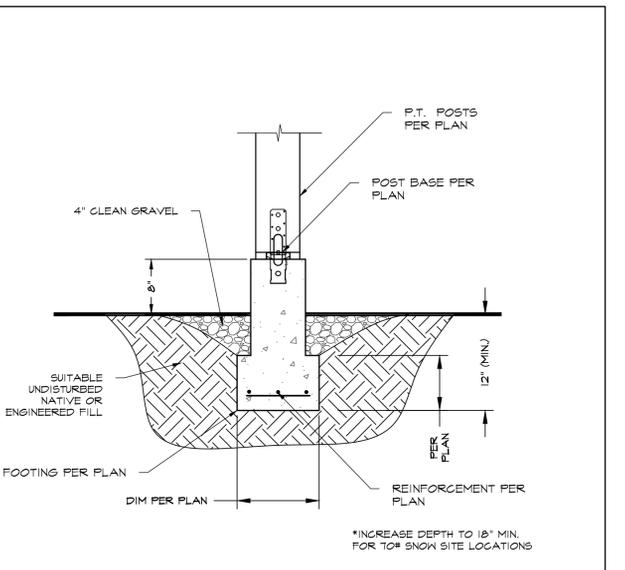
SHEAR/HOLDOWN CONN. @ FOUNDATION

2



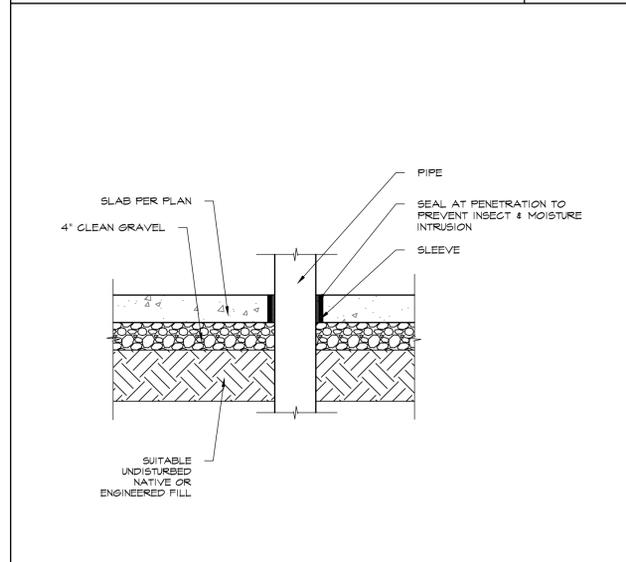
FOUNDATION @ CENTER WALL

3



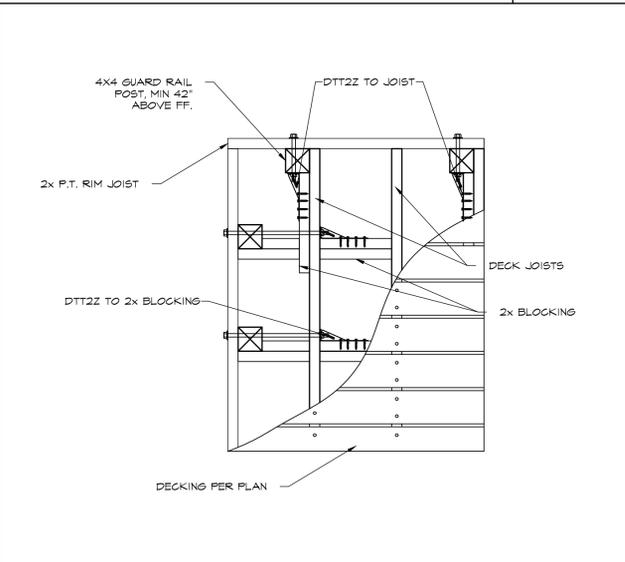
FOOTING AND POST AT PORCH

4



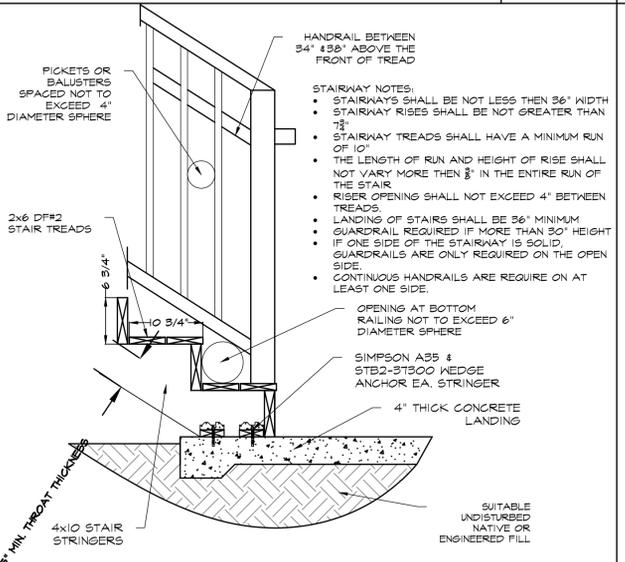
PLUMBING THROUGH SLAB

5



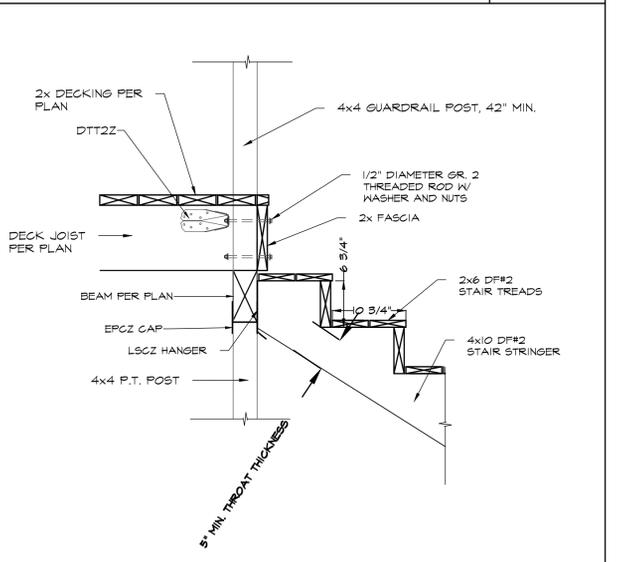
GUARD RAIL POST INSIDE RIM PLAN VIEW

6



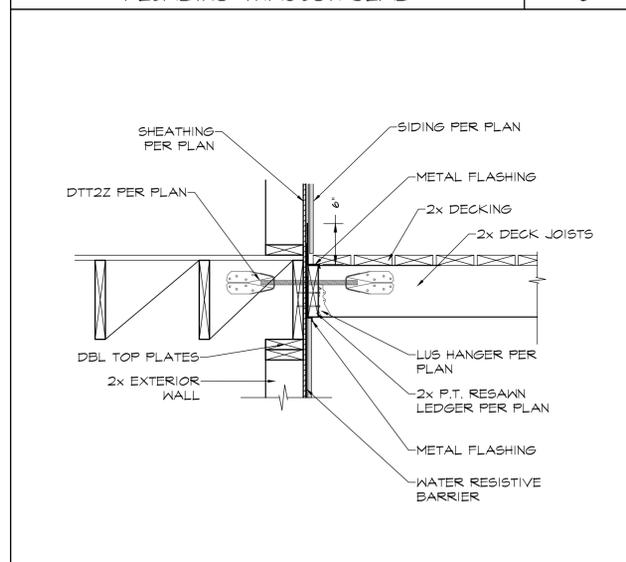
CONNECTION @ BOTTOM STAIRS

7



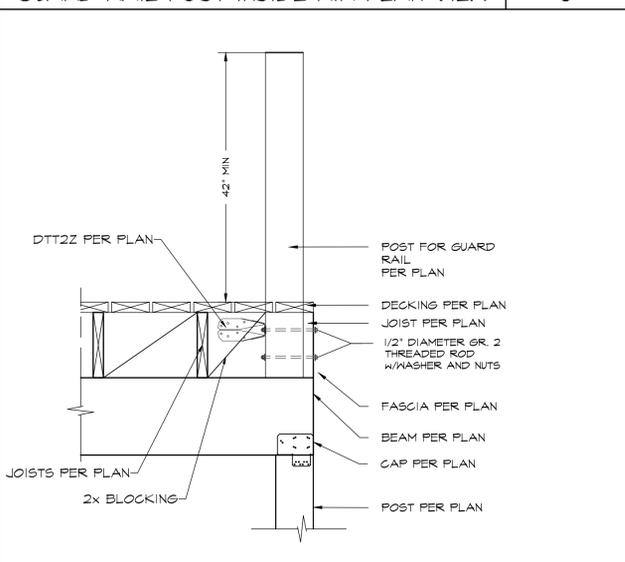
TOP OF STAIRS

8



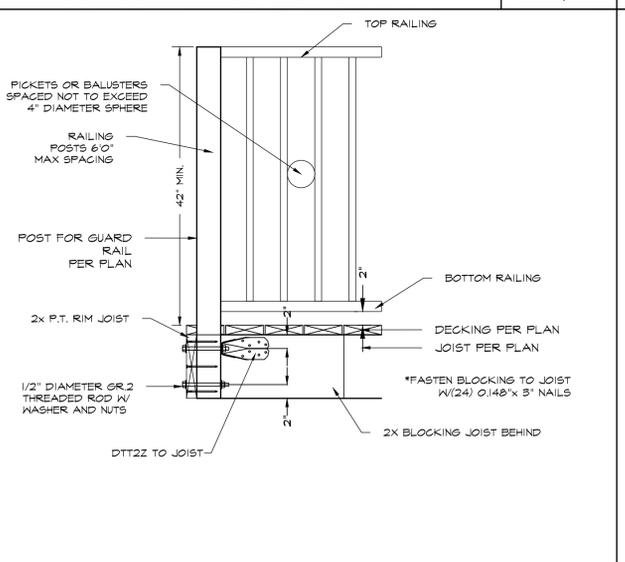
DECK LEDGER, TYP.

9



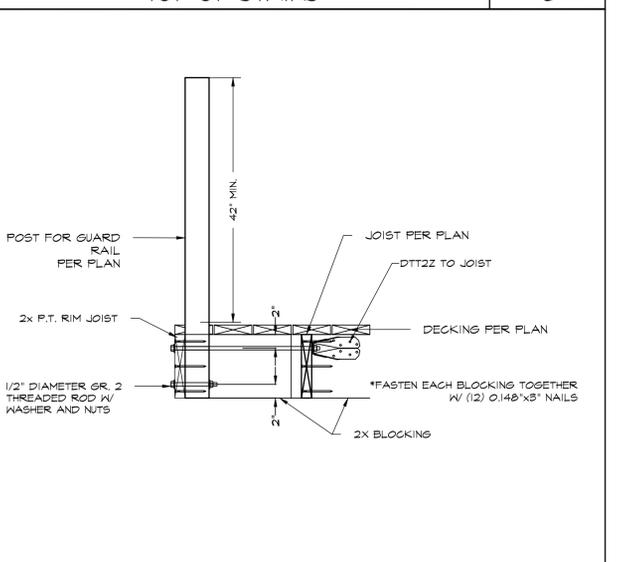
DECK GUARD RAIL DETAIL

10



DECK GUARD RAIL DETAIL ELEV VIEW

11



DECK GUARD RAIL DETAIL ELEV VIEW

12



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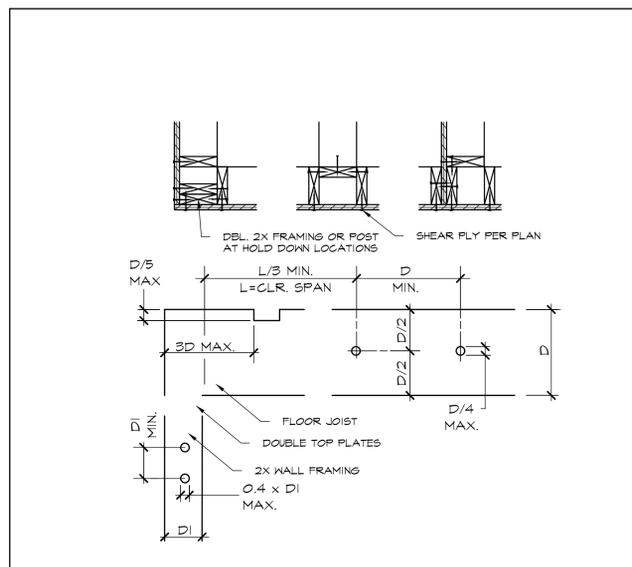
1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:

Table with 3 columns: ID, NAME, DATE. Row 1: SUBMITTAL, 3/30/23

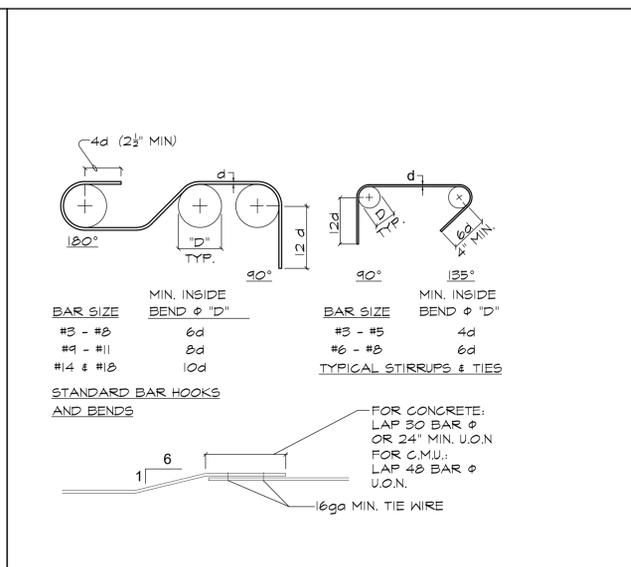
STRUCTURAL DETAILS (490LB)

S4.2



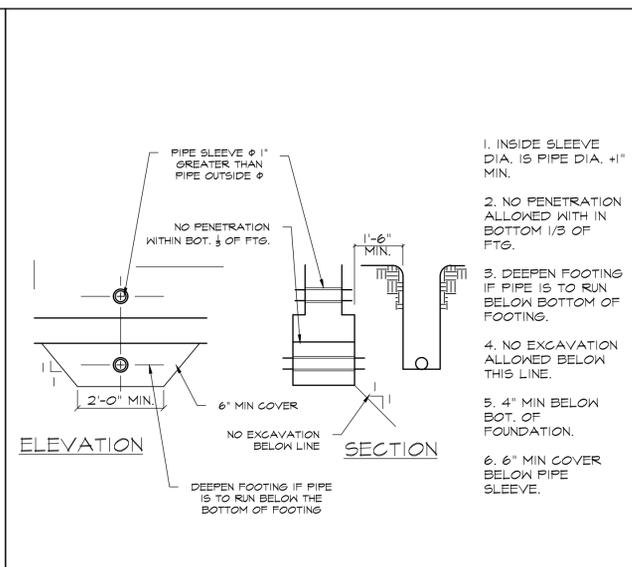
TYPICAL WALL CORNERS

1



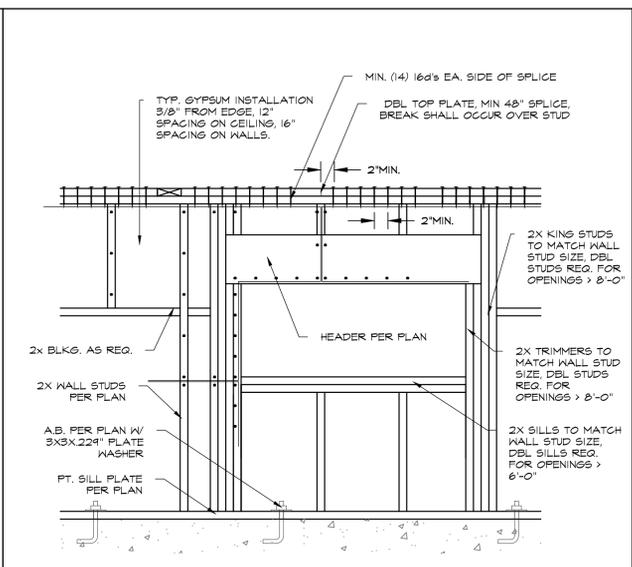
TYPICAL HOOKS & BENDS

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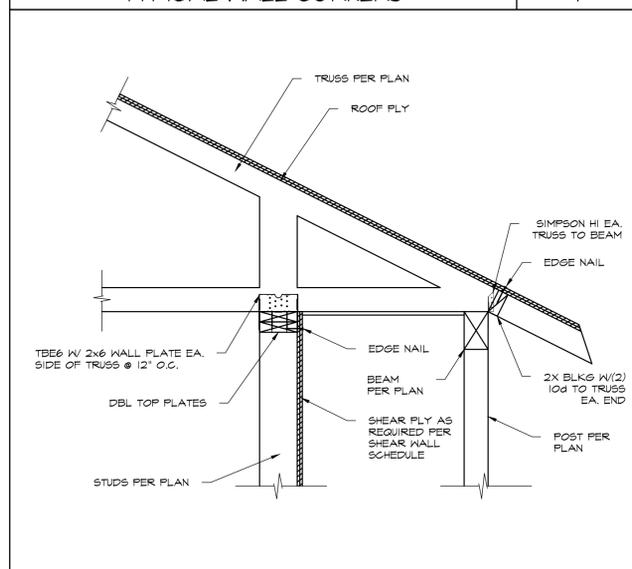
FOUNDATION PENETRATIONS

3



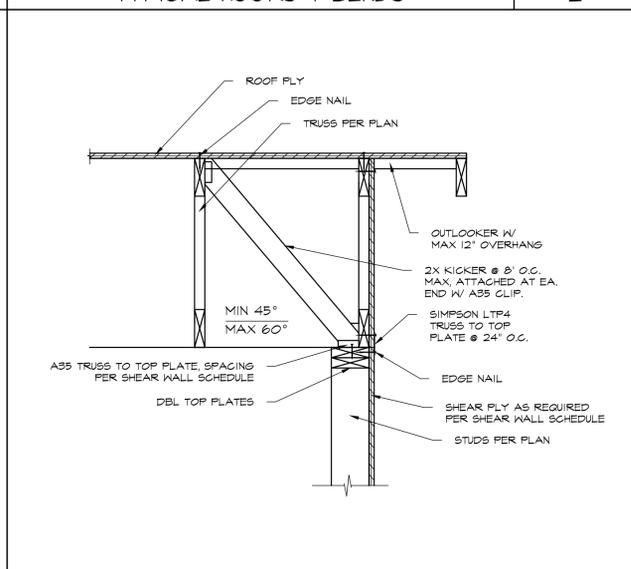
TYP. WALL CONN. DETAIL

4



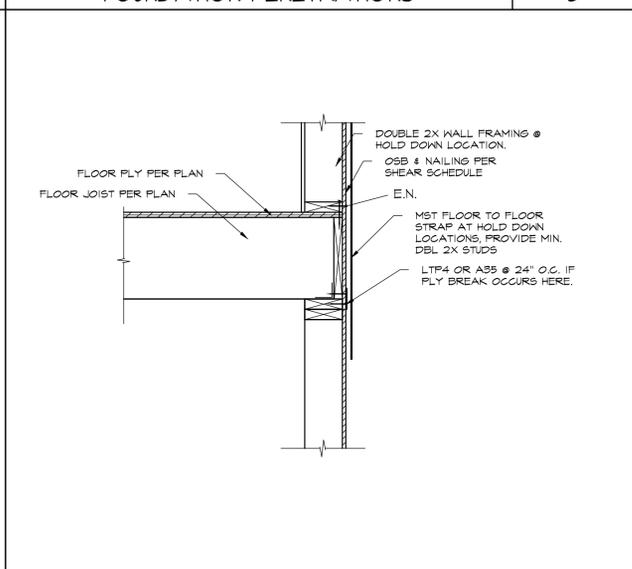
ROOF EAVE DETAIL

5



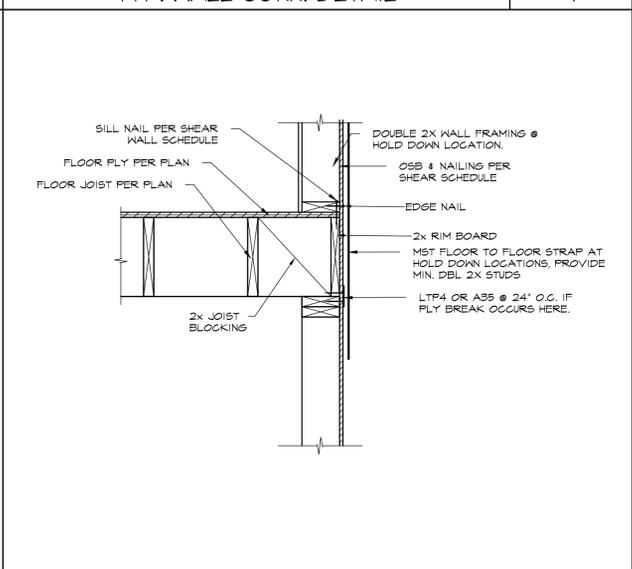
GABLE END DETAIL

6



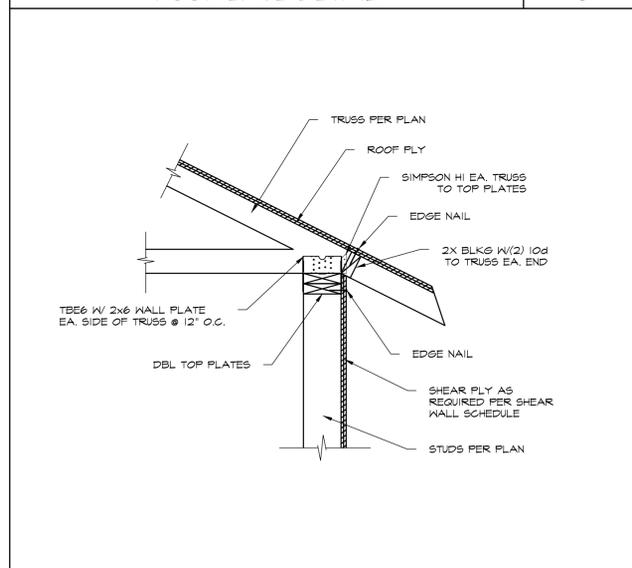
SECOND STORY WALL CONNECTION

7



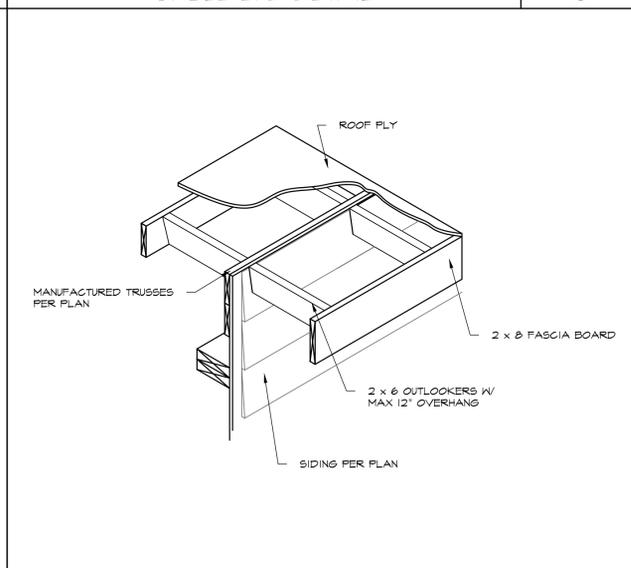
SECOND STORY WALL CONN.

8



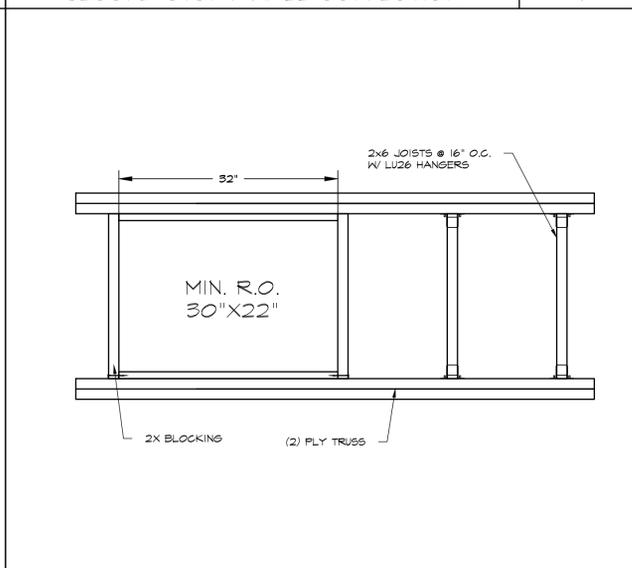
ROOF EAVE DETAIL

9



OUTLOOKER DETAIL

10



LADDER BLOCKING DETAIL

11



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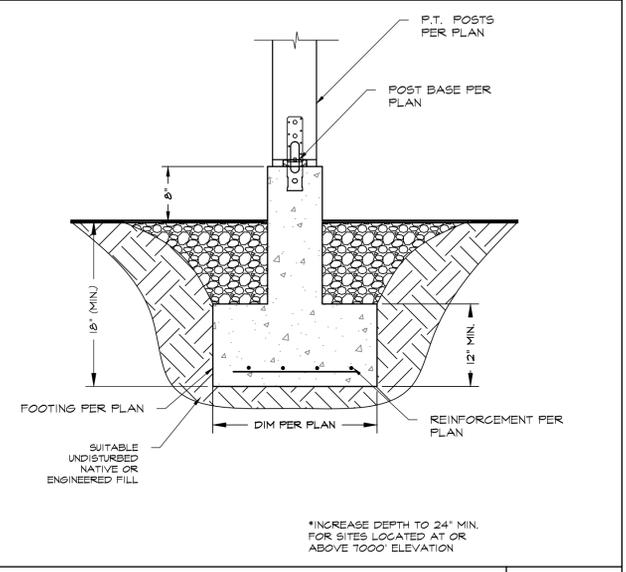
1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:

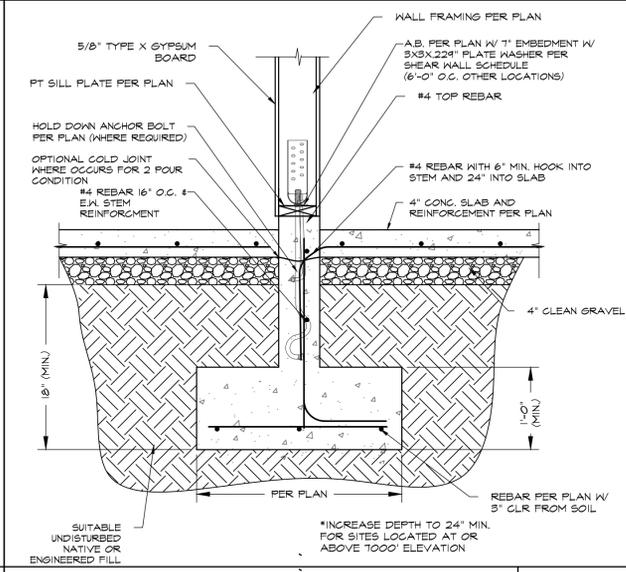
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STRUCTURAL DETAILS (490LB)

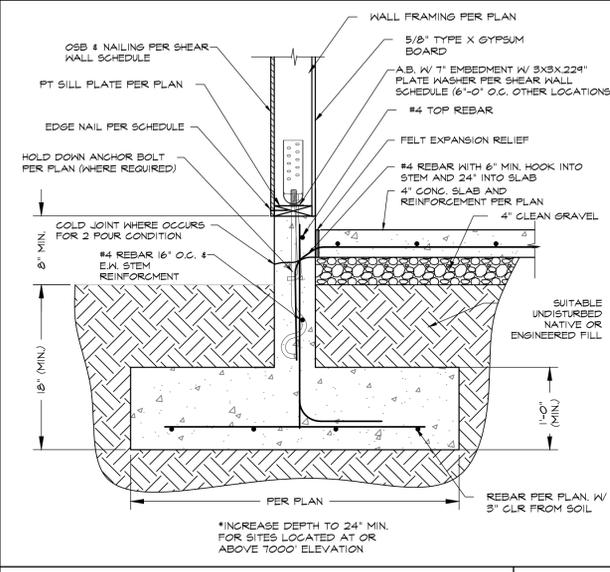
S4.3



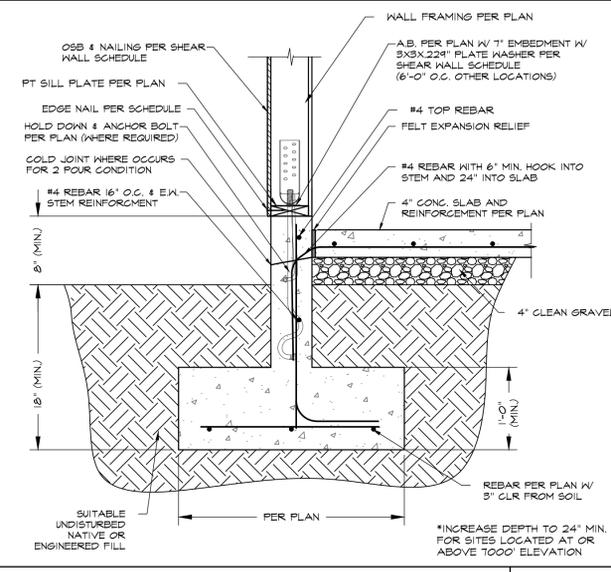
FOOTING AND POST AT PORCH 4



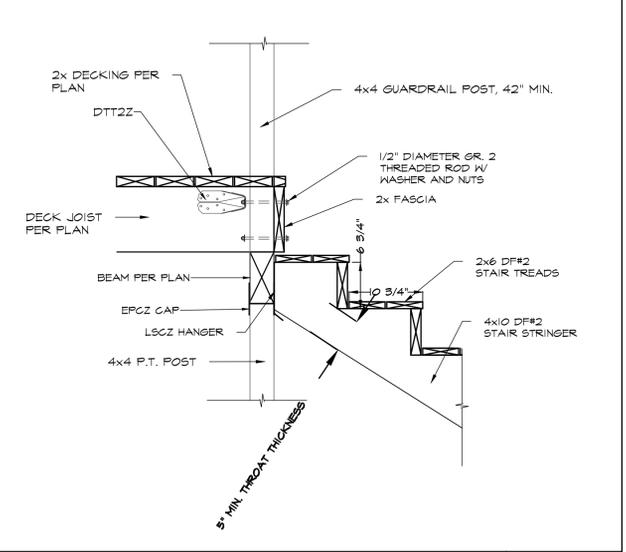
SHEAR/HOLDOWN CONN. @ FOUNDATION 3



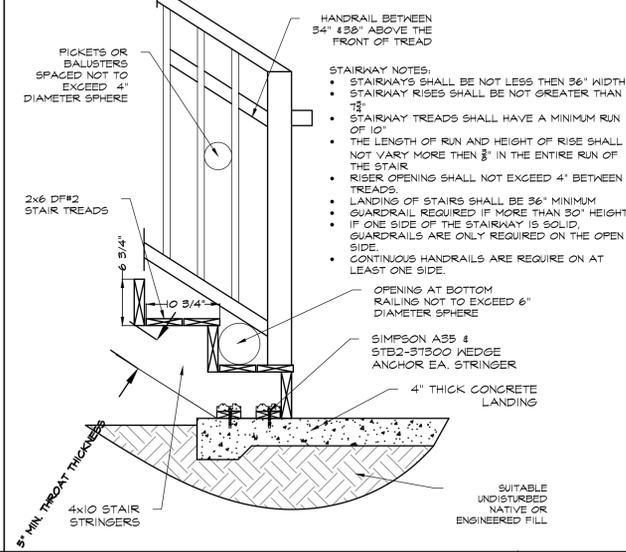
SHEAR/HOLDOWN CONN. @ FOUNDATION 2



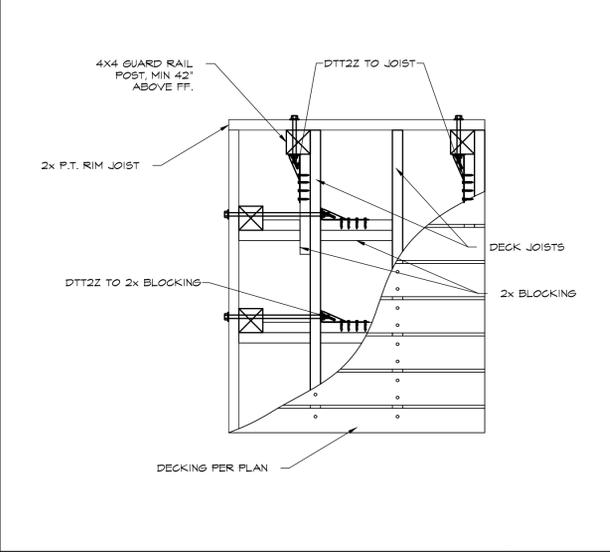
SHEAR/HOLDOWN CONN. @ FOUNDATION 1



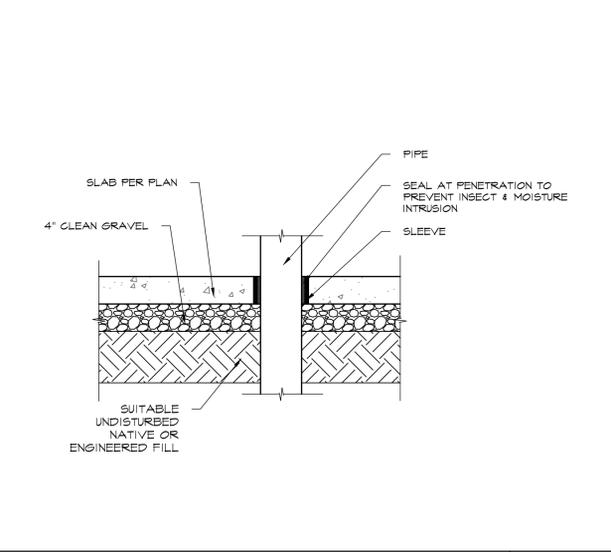
TOP OF STAIRS 8



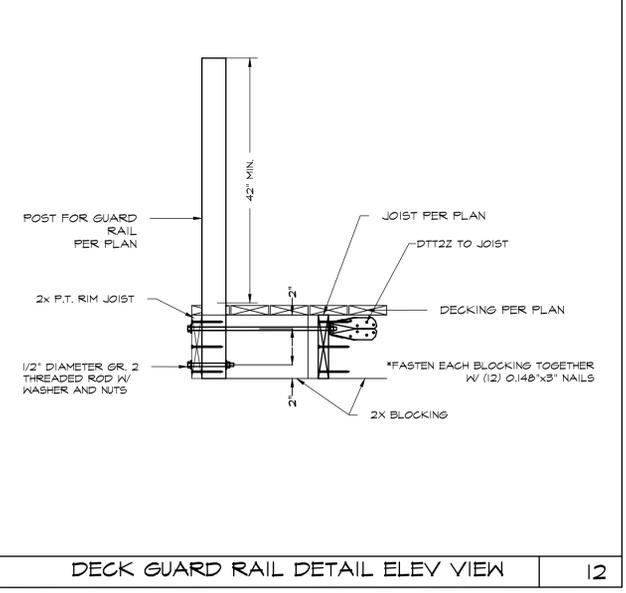
CONNECTION @ BOTTOM STAIRS 7



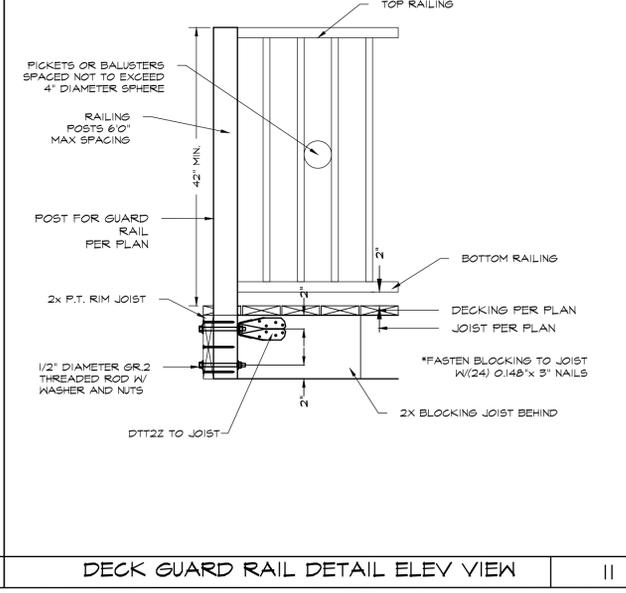
GUARD RAIL POST INSIDE RIM PLAN VIEW 6



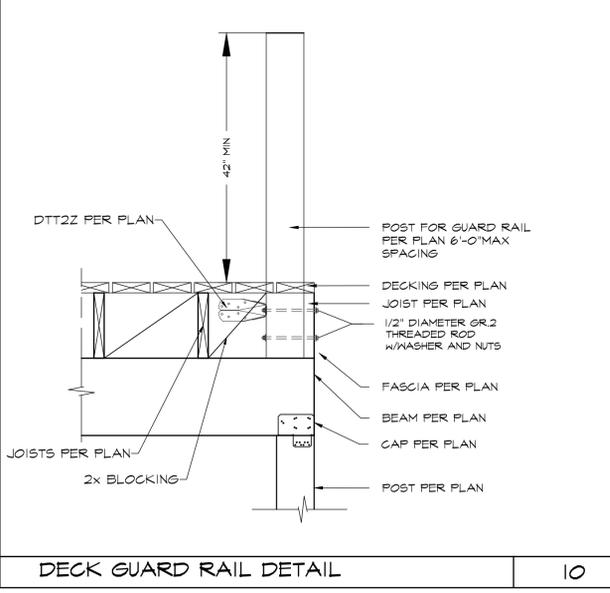
PLUMBING THROUGH SLAB 5



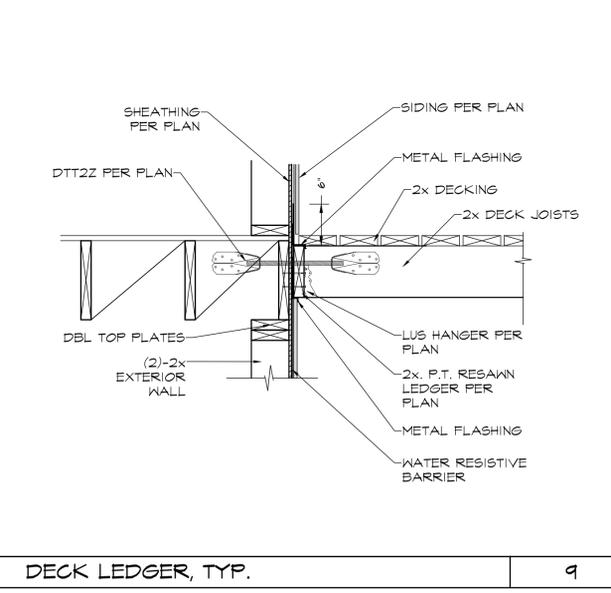
DECK GUARD RAIL DETAIL ELEV VIEW 12



DECK GUARD RAIL DETAIL ELEV VIEW 11



DECK GUARD RAIL DETAIL 10



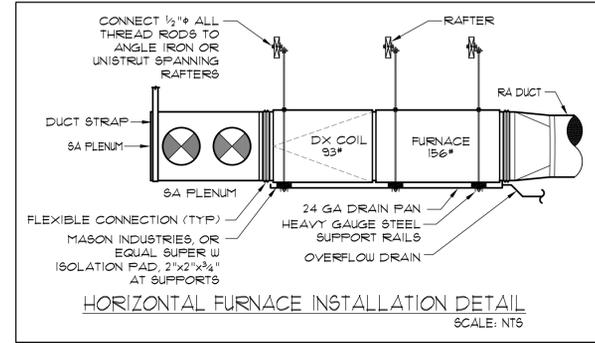
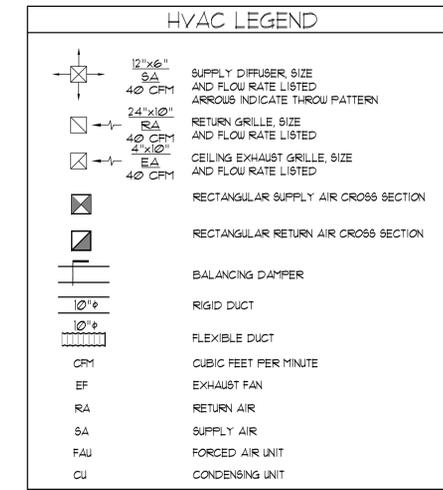
DECK LEDGER, TYP. 9



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HVAC SYSTEM SUMMARY

- DESIGN SUPPLY DUCTING SUCH THAT AIR FLOW RATES DO NOT EXCEED A FRICTION OF 0.08 INCHES WATER PER 100'. SEE TABLE BELOW.

| DUCT DIA. (INCHES) | AIR FLOW RANGE (CFM) | SHEET METAL DUCT AIR FLOW RANGE (CFM) |
|--------------------|----------------------|---------------------------------------|
| 6 | 0-80 | 0-100 |
| 8 | 80-160 | 100-200 |
| 10 | 160-240 | 200-360 |
| 12 | 240-420 | 360-600 |
| 14 | 420-700 | 600-900 |
| 16 | 700-1000 | 900-1250 |
| 18 | 1000-1450 | 1250-1750 |
| 20 | 1450-2000 | 1750-2300 |
- DESIGN RETURN AIR DUCTING SUCH THAT AIR FLOW RATES DO NOT EXCEED A FRICTION OF 0.06 INCHES WATER PER 100'. SEE TABLE BELOW.

| DUCT DIA. (INCHES) | AIR FLOW RANGE (CFM) | SHEET METAL DUCT AIR FLOW RANGE (CFM) |
|--------------------|----------------------|---------------------------------------|
| 6 | 0-60 | 0-80 |
| 8 | 60-150 | 80-170 |
| 10 | 150-230 | 170-300 |
| 12 | 230-360 | 300-500 |
| 14 | 360-540 | 500-800 |
| 16 | 540-750 | 800-1100 |
| 18 | 750-1200 | 1100-1500 |
| 20 | 1200-1600 | 1500-2000 |
- SUPPLY AIR DIFFUSERS SHALL BE SIZED FOR A FACE VELOCITY NOT TO EXCEED 600 FPM.
- RETURN AIR GRILLES SHALL BE SIZED FOR A FACE VELOCITY NOT TO EXCEED 400 FPM.
- INSTALL DIFFUSERS AND GRILLES WHERE INDICATED ON MECHANICAL DRAWINGS. SUPPLY DIFFUSERS AND RETURN GRILLES SHALL SHOE/MAKER, OR EQUAL, AS FOLLOWS:

| TYPE | MODEL | REMARKS |
|---------------------|-------|----------------------------------|
| CEILING - SA | SCB | STEEL CURVED BLADE DIFFUSER |
| CEILING/SIDEWALL RA | FG2 | THROW PATTERN INDICATED ON PLANS |
| | | LOUVERED 2" FILTER GRILLE |
- FURNACE AFUE ≥ 95%
- AIR CONDITIONING: SEER ≥ 14.0, EER ≥ 12.5
- PROVIDE ANCHORAGE FOR ALL HVAC UNITS PER CMC 303.4
- DUCTING:
 - WHEN USING FLEX DUCT, MINIMIZE BENDS AND FULLY EXTEND THE DUCT IN ORDER TO MINIMIZE FRICTION LOSSES. FLEX DUCT INSULATION SHALL BE R-8.0 (MIN).
 - WHERE TURNS AND/OR TRANSITIONS EXCEED 45 DEGREES USE SHEET METAL FITTINGS AND ELBOWS. PROVIDE SHEET METAL SLEEVES FOR ALL SPLICES.
 - FLEX DUCTING SHALL BE SUPPORTED AT 4 FEET INTERVALS (MAX.). EACH SUPPORT SHALL ONLY SUPPORT ONE DUCT.
 - ALL TAPES AND MASTIC SEALANTS SHALL COMPLY WITH UL181, UL 181A, OR UL181B.
- DUCT LAYOUT MEETS THE CRITERIA LISTED ABOVE.
 - KITCHEN COOKTOP EXHAUST HOOD/FAN SHALL HAVE A MINIMUM RATE OF 100 CFM.
 - ALL DRYER, KITCHEN, AND BATHROOM EXHAUST DUCTS ARE REQUIRED TO TERMINATE 3' MIN FROM DOOR/WINDOWS.
 - PROVIDE MOISTURE EXHAUST DUCT FOR THE CLOTHES DRYER TO THE OUTSIDE. THE DUCT SHALL BE OF METAL OR APPROVED MATERIAL WITH SMOOTH SURFACE WITH MINIMUM 4 INCHES IN DIAMETER, CMC 504.3.
 - EXHAUST DUCTING FROM DRYER SHALL BE EQUIPPED WITH A LISTED BACK DRAFT DAMPER AT OUTSIDE TERMINATION, R504.4.
 - HEATING AND COOLING LOADS AND ROOM AIRFLOWS HAVE BEEN CALCULATED ACCORDING TO ASHRAE METHOD. SUPPLY AIR QUANTITIES ARE TO BE DIVIDED INTO THE VARIOUS ROOMS ACCORDING TO THE FRACTIONS BELOW, BASED ON 400 CFM PER TON.

| ROOM NAME | AIR BALANCE AIRFLOW (CFM) |
|-----------|---------------------------|
| FOYER | 80 |
| LIVING | 230 |
| KITCHEN | 150 |
| DINING | 60 |
| BEDROOM | 230 |
| BATHROOM | 70 |
| TOTAL | 800 |

*THE ABOVE AIRFLOW CALCULATIONS AND CORRESPONDING DUCT DESIGN ARE BASED ON A 2 TON COOLING CAPACITY. THE DUCT SYSTEM IS UNDERSIZED FOR A LARGER UNIT. PLEASE CONTACT US FOR REVISED CALCULATION AND DUCT LAYOUT IF A LARGER SYSTEM IS DESIRED.

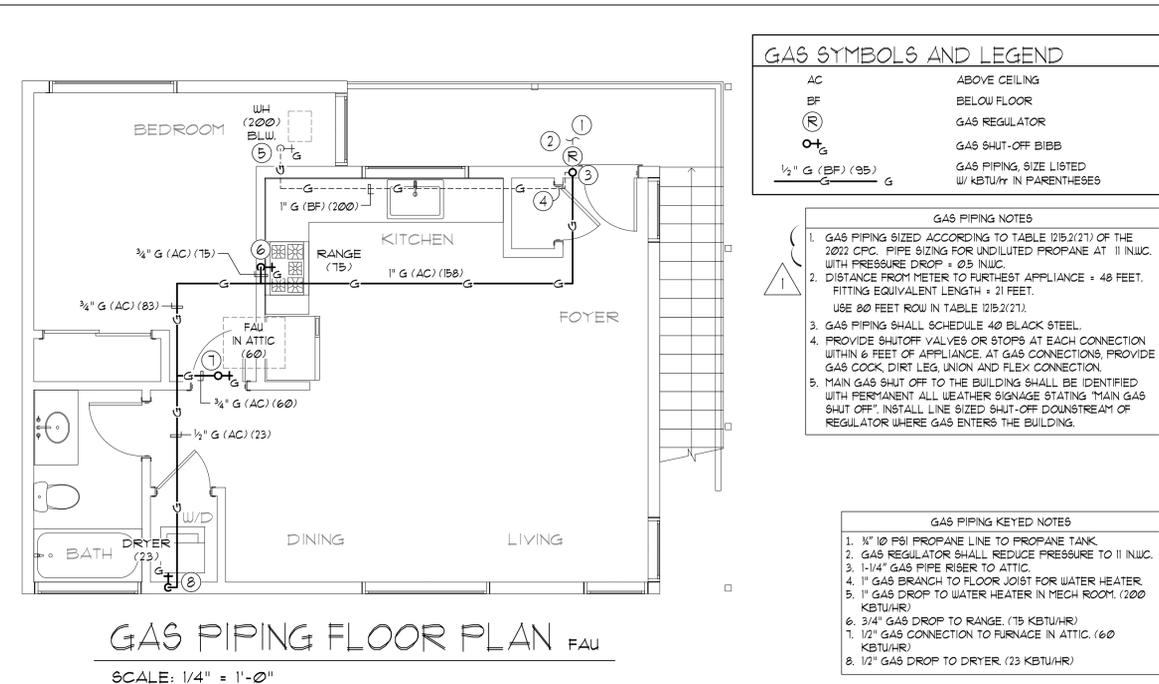
HVAC EQUIPMENT SCHEDULE

| SYMBOL | AREA SERVED | COOLING | | | HEATING | | FAN | | | ELECT. | | | | | MFGR & MODEL NO. | WEIGHT (LBS) | EFFICIENCY | REMARKS |
|--------|-------------|--|-------------------|-------------------|----------------------------|---------|-------|-----------|------------------|--------------------|------|---------------------|-----------|------------------------|--|-------------------------|---|---------|
| | | TOTAL (BTU/HR) | SENSIBLE (BTU/HR) | COIL EDB/EWB (°F) | HIGH INPUT/OUTPUT (BTU/HR) | DB (°F) | CFM | S.P. (WC) | O.A. (CFM) (MIN) | VOLTAGE | MCA | COMP. LRA | FUSE/MOCP | | | | | |
| F-1 | MAIN LEVEL | --- | --- | --- | 60,000 / 58,000 | 25 | 1,200 | 0-1.00 | --- | 115 V, 1 PHASE | 12.4 | --- | 15 | CARRIER # 59TP6A060-14 | 156 | AFUE = 96.3 | TWO-STAGE CONDENSING FURNACE MOUNTED IN HORIZONTAL POSITION ECM FAN MOTOR L=35", W=29-1/2", H=17-1/2" | |
| CU-1 | MAIN LEVEL | 34,430 | 27,570 | 80/63 | --- | --- | --- | --- | --- | 208/230 V, 1 PHASE | 22.6 | 82 | 35 | CARRIER # 24ANB136 | 324 | SEER = 17.2 EER=12.5 | GROUND MOUNT CONDENSING UNIT INSTALL PREFAB.MFG ROOF CURB W=35", D=35", H=47-7/16" | |
| DX-1 | MAIN LEVEL | PERFORMANCE FOR CU-1 ABOVE IS BASED ON THIS COIL | | | | | | | | | | CARRIER # CAPMP3617 | 93 | --- | MULTIPOISE DIRECT EXPANSION COIL PRESS.DROP = 0.23 IN.WC AT 1200 CFM L=29-3/4", H=17-1.2", W=20-5/8" | | | |

EXHAUST FAN SCHEDULE

| SYMBOL | QTY. | AREA SERVED | COOLING | | FAN | | | ELECT. | | | MFGR & MODEL NO. | WEIGHT (LBS) | SONES | REMARKS |
|--------|------|-------------|---------------------------|-----|-----------|-----|----------------|--------|-------|---------------------------------------|------------------|--------------|---|---------|
| | | | DESCRIPTION | CFM | S.P. (WC) | RPM | VOLTAGE | BHP | WATTS | | | | | |
| EF-1 | 1 | BATH | CEILING CABINET FAN/LIGHT | 80 | 0.25 | --- | 115 V, 1 PHASE | --- | 5.1 | PANASONIC WHISPERGREEN™ FV-05-11VKS12 | 10 | 0.4 | FAN SHALL BE SET FOR 40 CFM CONTINUOUS VENTILATION. REFER TO NOTE (2). AIRFLOW INDICATED IS SETTING FOR "BOOST" AIRFLOW. PROVIDE CONDENSATION SENSOR ACCESSORY #FVCSVK1 FAN SHALL HAVE 4" DIA. DUCT CONNECTION INCLUDES 10 W DIMMABLE LED LIGHT | |
| EF-2 | 1 | LAUNDRY | CEILING CABINET FAN | 50 | 0.25 | --- | 115 V, 1 PHASE | --- | 3.1 | PANASONIC WHISPERGREEN™ FV-05-11VK2 | 11 | <0.3 | UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 4" DUCT CONNECTION INSTALL CONDENSATION SENSOR MODULE FOR HUMIDITY CONTROL PROVIDE OVERRIDE CONTROL WITH SEPARATE SWITCH SELECT DESIRED AIRFLOW (50-80-110 CFM) | |

NOTES:
 (1) INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 (2) THE CONTINUOUS FLOW RATE OF EXHAUST FANS EF-1 IS 40 CFM. THIS MEETS THE REQUIRED VENTILATION ACCORDING TO ASHRAE STANDARD 62.2 FLR AREA x .03 + (7.5 x (# OF BEDROOMS + 1)); 661 x .03 + (7.5 x 2) = 35 CFM
 (3) ALL BATHROOM AND LAUNDRY ROOM EXHAUST FANS SHALL HAVE A MINIMUM RATE OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.

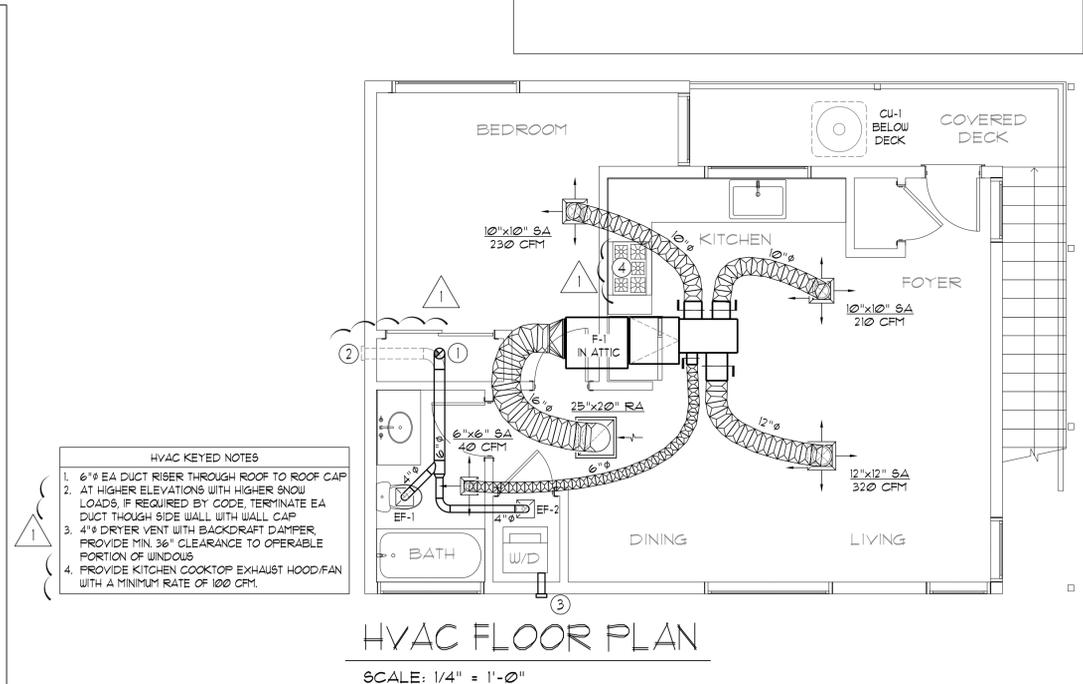


GAS SYMBOLS AND LEGEND

- AC: ABOVE CEILING
- BF: BELOW FLOOR
- (R): GAS REGULATOR
- ⊕: GAS SHUT-OFF BIBB
- 1/2" G (BF) (95): GAS PIPING, SIZE LISTED W/ KBTU/HR IN PARENTHESES

- ### GAS PIPING NOTES
- GAS PIPING SIZED ACCORDING TO TABLE 12B.2(2) OF THE 2022 CPC. PIPE SIZING FOR UNDILUTED PROPANE AT 11 IN.WC. WITH PRESSURE DROP = 0.5 IN.WC.
 - DISTANCE FROM METER TO FURTHEST APPLIANCE = 48 FEET. FITTING EQUIVALENT LENGTH = 2) FEET. USE 80 FEET ROW IN TABLE 12B.2(2).
 - GAS PIPING SHALL SCHEDULE 40 BLACK STEEL.
 - PROVIDE SHUT-OFF VALVES OR STOPS AT EACH CONNECTION WITHIN 6 FEET OF APPLIANCE. AT GAS CONNECTIONS, PROVIDE GAS COOK, DIRT LEG, UNION AND FLEX CONNECTION.
 - MAIN GAS SHUT OFF TO THE BUILDING SHALL BE IDENTIFIED WITH PERMANENT ALL WEATHER SIGNAGE STATING "MAIN GAS SHUT OFF". INSTALL LINE SIZED SHUT-OFF DOWNSTREAM OF REGULATOR WHERE GAS ENTERS THE BUILDING.

- ### GAS PIPING KEYED NOTES
- 1" x 10 LBSI PROPANE LINE TO PROPANE TANK.
 - GAS REGULATOR SHALL REDUCE PRESSURE TO 11 IN.WC.
 - 1-1/4" GAS PIPE RISER TO ATTIC.
 - 1" GAS BRANCH TO FLOOR JOIST FOR WATER HEATER.
 - 1" GAS DROP TO WATER HEATER IN MECH ROOM. (200 KBTU/HR)
 - 3/4" GAS DROP TO RANGE. (15 KBTU/HR)
 - 1/2" GAS CONNECTION TO FURNACE IN ATTIC. (60 KBTU/HR)
 - 1/2" GAS DROP TO DRYER. (23 KBTU/HR)



- ### HVAC KEYED NOTES
- 6"x6" EA DUCT RISER THROUGH ROOF TO ROOF CAP
 - AT HIGHER ELEVATIONS WITH HIGHER SNOW LOADS, IF REQUIRED BY CODE, TERMINATE EA DUCT THROUGH SIDE WALL WITH WALL CAP
 - 4" DRYER VENT WITH BACKDRAFT DAMPER PROVIDE MIN 36" CLEARANCE TO OPERABLE PORTION OF WINDOWS
 - PROVIDE KITCHEN COOKTOP EXHAUST HOOD/FAN WITH A MINIMUM RATE OF 100 CFM.

1 BEDROOM (661 SF)

OWNER: _____
 ADDRESS: _____
 APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

MECHANICAL PLAN (490 LBS / ZONE 16 / GAS FURNACE W/ AC)

MP1.1



RUSSELL DAVIDSON
ARCHITECTURE + DESIGN



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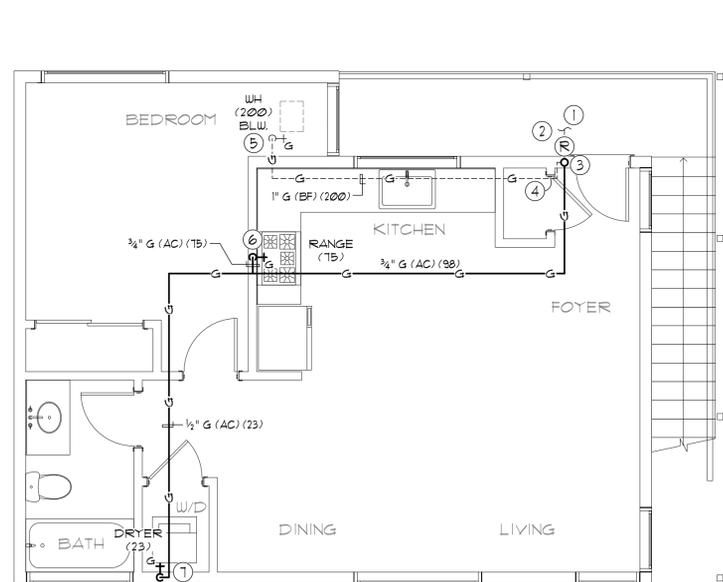
| HVAC LEGEND | |
|-------------|---------------------|
| | CEILING EXHAUST FAN |
| HP | HEAT PUMP UNIT |
| FC | FANCOIL UNIT |

| HVAC EQUIPMENT SCHEDULE | | | | | | | | | | | | | | | | | |
|-------------------------|-------------|----------------|-------------------|-------------------|----------------------------|---------|-----|-----------|------------------|--------------------|------|-----------|-----------|----------------------|--------------|--|--|
| SYMBOL | AREA SERVED | COOLING | | | HEATING | | FAN | | | ELECT. | | | | MFGR & MODEL NO. | WEIGHT (LBS) | EFFICIENCY | REMARKS |
| | | TOTAL (BTU/HR) | SENSIBLE (BTU/HR) | COIL EDB/EWB (°F) | HIGH INPUT/OUTPUT (BTU/HR) | DB (°F) | CFM | S.P. (WC) | O.A. (CFM) (MIN) | VOLTAGE | MCA | COMP. LRA | FUSE/MOCP | | | | |
| FC-1A | LIVING AREA | 12,000 | 8,500 | 80/65 | 13,500 | 47 | 388 | --- | --- | (1) | 0.19 | --- | (1) | FUJITSU # ASU12RLF1 | 19 | --- | INDOOR HEAT PUMP WALL UNIT DIMENSIONS: H=10-9/16", W=33-1/16", D=8" FAN SET AT HIGH SPEED 36 dBA PROVIDE CONDENSATE PUMP (3) |
| FC-1B | BEDROOM | 7,000 | 5,000 | 80/65 | 8,500 | 47 | 330 | --- | --- | (1) | 0.13 | --- | (1) | FUJITSU # ASU7RLF1 | 19 | --- | INDOOR HEAT PUMP WALL UNIT DIMENSIONS: H=10-9/16", W=33-1/16", D=8" FAN SET AT HIGH SPEED 36 dBA PROVIDE CONDENSATE PUMP (3) |
| HP-1 | HOUSE | 18,000 | 12,500 | 80/65 | 21,600 | 47 | --- | --- | --- | 208/230 V. 1 PHASE | 17.4 | --- | 20 | FUJITSU # AOU18RLXFZ | 95 | HSPF = 9.30 SEER = 18.0 EER = 12.5 | MULTI ZONE GROUND MOUNTED OUTDOOR HEAT PUMP DIMENSIONS: H=27-9/16", W=35-7/16", D=13" |

- NOTES:
 (1) ELECTRICAL FOR INDOOR UNITS, FC-#, WILL BE PROVIDED BY OUTDOOR UNIT HP-#.
 (2) FLOAT SWITCH FOR AIR HANDLER WILL INTERRUPT POWER TO THE FANCOIL UNIT WHEN MOISTURE IS DETECTED IN THE DRAIN PAN. THIS SATISFIES THE REQUIREMENT FOR SECONDARY CONDENSATE.
 (3) CONDENSATE PUMP SHALL BE G081 II, MANUFACTURED BY REFCO. SPECIFICATIONS: 11 GPH, HEAD=65 FT, 1.3 LBS, 20 DBA

| EXHAUST FAN SCHEDULE | | | | | | | | | | | | | |
|----------------------|------|-------------|---------------------------|-----|-----------|-----|----------------|-----|-------|---------------------------------------|--------------|-------|---|
| SYMBOL | QTY. | AREA SERVED | DESCRIPTION | CFM | FAN | | ELECT. | | | MFGR & MODEL NO. | WEIGHT (LBS) | SONES | REMARKS |
| | | | | | S.P. (WC) | RPM | VOLTAGE | BHP | WATTS | | | | |
| EF-1 | 1 | BATH | CEILING CABINET FAN/LIGHT | 80 | 0.25 | --- | 115 V. 1 PHASE | --- | 5.1 | PANASONIC WHISPERGREEN™ FV-05-11VKS12 | 10 | 0.4 | FAN SHALL BE SET FOR 40 CFM CONTINUOUS VENTILATION. REFER TO NOTE (2). AIRFLOW INDICATED IS SETTING FOR "BOOST" AIRFLOW. PROVIDE CONDENSATION SENSOR ACCESSORY #FVCSVK1 FAN SHALL HAVE 4" DIA. DUCT CONNECTION INCLUDES 10 W DIMMABLE LED LIGHT |
| EF-2 | 1 | LAUNDRY | CEILING CABINET FAN | 50 | 0.25 | --- | 115 V. 1 PHASE | --- | 3.1 | PANASONIC WHISPERGREEN™ FV-0511VK2 | 11 | <0.3 | UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 4" DUCT CONNECTION INSTALL CONDENSATION SENSOR MODULE FOR HUMIDITY CONTROL PROVIDE OVERRIDE CONTROL WITH SEPARATE SWITCH SELECT DESIRED AIRFLOW (50-80-110 CFM) |

- NOTES:
 (1) INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 (2) THE CONTINUOUS FLOW RATE OF EXHAUST FANS EF-1 IS 40 CFM. THIS MEETS THE REQUIRED VENTILATION ACCORDING TO ASHRAE STANDARD 62.2 FLR AREA x .03 + (7.5 x (# OF BEDROOMS +1)); 561 x .03 + (7.5 x 2) = 35 CFM
 (3) ALL BATHROOM AND LAUNDRY ROOM EXHAUST FANS SHALL HAVE A MINIMUM RATE OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.



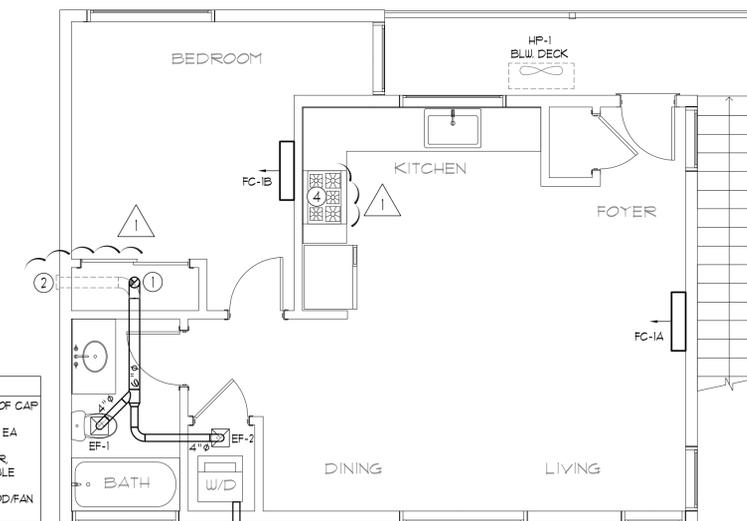
GAS PIPING FLOOR PLAN HP/FC

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

| GAS SYMBOLS AND LEGEND | |
|------------------------|---------------------------|
| AC | ABOVE CEILING |
| BF | BELOW FLOOR |
| | GAS REGULATOR |
| | GAS SHUT-OFF BIBB |
| | GAS PIPING, SIZE LISTED |
| | W/ KBTU/HR IN PARENTHESES |

- GAS PIPING NOTES**
- GAS PIPING SIZED ACCORDING TO TABLE 1215.2(21) OF THE 2022 CFC. PIPE SIZING FOR UNDILUTED PROPANE AT 11 IN.WC. WITH PRESSURE DROP = 0.5 IN.WC.
 - DISTANCE FROM METER TO FURTHEST APPLIANCE + 40 FEET. FITTING EQUIVALENT LENGTH + 21 FEET. USE 80 FEET ROW IN TABLE 1215.2(21).
 - GAS PIPING SHALL SCHEDULE 40 BLACK STEEL.
 - PROVIDE SHUTOFF VALVES OR STOPS AT EACH CONNECTION WITHIN 6 FEET OF APPLIANCE. AT GAS CONNECTIONS, PROVIDE GAS COCK, DIRT LEG, UNION AND FLEX CONNECTION.
 - MAIN GAS SHUT OFF TO THE BUILDING SHALL BE IDENTIFIED WITH PERMANENT ALL WEATHER SIGNAGE STATING "MAIN GAS SHUT OFF". INSTALL LINE SIZED SHUT-OFF DOWNSTREAM OF REGULATOR WHERE GAS ENTERS THE BUILDING.

- GAS PIPING KEYED NOTES**
- 3/4" 10 PSI PROPANE LINE TO PROPANE TANK.
 - GAS REGULATOR SHALL REDUCE PRESSURE TO 11 IN.WC.
 - 1/4" GAS PIPE RISER TO ATTIC.
 - 1" GAS BRANCH TO FLOOR JOIST FOR WATER HEATER.
 - 1" GAS DROP TO WATER HEATER IN MECH ROOM. (200 KBTU/HR)
 - 3/4" GAS DROP TO RANGE. (15 KBTU/HR)
 - 1/2" GAS DROP TO DRYER. (23 KBTU/HR)



HVAC FLOOR PLAN

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

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

MECHANICAL PLAN (490 LBS / ZONE 16 / DUCTLESS HEAT PUMP)

MP1.2

BID SET
NOT FOR CONSTRUCTION

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1 BEDROOM (661 SF)

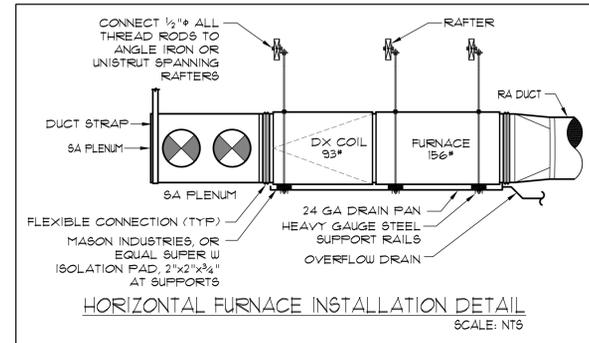
OWNER:
ADDRESS:
APN:

MECHANICAL PLAN (ZONE 11 / GAS FURNACE W/ AC)

MP1.3

HVAC LEGEND

| | | |
|--|----------------------|--|
| | 12"x6" SA 40 CFM | SUPPLY DIFFUSER, SIZE AND FLOW RATE LISTED. ARROWS INDICATE THROW PATTERN. |
| | 24"x10" RA 40 CFM | RETURN GRILLE, SIZE AND FLOW RATE LISTED. |
| | EA 40 CFM | CEILING EXHAUST GRILLE, SIZE AND FLOW RATE LISTED. |
| | | RECTANGULAR SUPPLY AIR CROSS SECTION |
| | | RECTANGULAR RETURN AIR CROSS SECTION |
| | | BALANCING DAMPER |
| | 10" R | RIGID DUCT |
| | 10" F | FLEXIBLE DUCT |
| | CFM | CUBIC FEET PER MINUTE |
| | EF | EXHAUST FAN |
| | RA | RETURN AIR |
| | SA | SUPPLY AIR |
| | FAU | FORCED AIR UNIT |
| | CU | CONDENSING UNIT |



HVAC SYSTEM SUMMARY

1) DESIGN SUPPLY DUCTING SUCH THAT AIR FLOW RATES DO NOT EXCEED A FRICTION OF 0.08 INCHES WATER PER 100'. SEE TABLE BELOW.

| DUCT DIA. (INCHES) | AIR FLOW RANGE (CFM) | SHEET METAL DUCT AIR FLOW RANGE (CFM) |
|--------------------|----------------------|---------------------------------------|
| 6 | 0-80 | 0-100 |
| 8 | 80-160 | 100-200 |
| 10 | 160-240 | 200-360 |
| 12 | 240-420 | 360-600 |
| 14 | 420-700 | 600-900 |
| 16 | 700-1000 | 900-1250 |
| 18 | 1000-1450 | 1250-1750 |
| 20 | 1450-2000 | 1750-2300 |

2) DESIGN RETURN AIR DUCTING SUCH THAT AIR FLOW RATES DO NOT EXCEED A FRICTION OF 0.06 INCHES WATER PER 100'. SEE TABLE BELOW.

| DUCT DIA. (INCHES) | AIR FLOW RANGE (CFM) | SHEET METAL DUCT AIR FLOW RANGE (CFM) |
|--------------------|----------------------|---------------------------------------|
| 6 | 0-60 | 0-80 |
| 8 | 60-150 | 80-170 |
| 10 | 150-230 | 170-300 |
| 12 | 230-360 | 300-500 |
| 14 | 360-540 | 500-800 |
| 16 | 540-750 | 800-1100 |
| 18 | 750-1200 | 1100-1500 |
| 20 | 1200-1600 | 1500-2000 |

3) SUPPLY AIR DIFFUSERS SHALL BE SIZED FOR A FACE VELOCITY NOT TO EXCEED 600 FPM.
4) RETURN AIR GRILLES SHALL BE SIZED FOR A FACE VELOCITY NOT TO EXCEED 400 FPM.
5) INSTALL DIFFUSERS AND GRILLES WHERE INDICATED ON MECHANICAL DRAWINGS. SUPPLY DIFFUSERS AND RETURN GRILLES SHALL SHOEMAKER OR EQUAL, AS FOLLOWS:
TYPE MODEL REMARKS
CEILING - SA 8CB STEEL CURVED BLADE DIFFUSER THROWN PATTERN INDICATED ON PLANS
CEILING/SIDEWALL RA FG2 LOUVERED 2" FILTER GRILLE

6) FURNACE AFUE ≥ 95%
7) AIR CONDITIONING: SEER ≥ 14.0, EER ≥ 12.5
8) PROVIDE ANCHORAGE FOR ALL HVAC UNITS PER CMC 303.4
9) DUCTING:
• WHEN USING FLEX DUCT, MINIMIZE BENDS AND FULLY EXTEND THE DUCT IN ORDER TO MINIMIZE FRICTION LOSSES. FLEX DUCT INSULATION SHALL BE R-8.0 (MIN).
• WHERE TURNS AND/OR TRANSITIONS EXCEED 45 DEGREES USE SHEET METAL FITTINGS AND ELBOWS. PROVIDE SHEET METAL SLEEVES FOR ALL SPLICES.
• FLEX DUCTING SHALL BE SUPPORTED AT 4 FEET INTERVALS (MAX.). EACH SUPPORT SHALL ONLY SUPPORT ONE DUCT.
• ALL TAPES AND MASTIC SEALANTS SHALL COMPLY WITH UL181, UL 181A, OR UL181B.
10) DUCT LAYOUT MEETS THE CRITERIA LISTED ABOVE.
11) KITCHEN COOKTOP EXHAUST HOOD/FAN SHALL HAVE A MINIMUM RATE OF 100 CFM.
12) ALL DRYER, KITCHEN, AND BATHROOM EXHAUST DUCTS ARE REQUIRED TO TERMINATE 3' MIN FROM DOOR/WINDOWS.
13) PROVIDE MOISTURE EXHAUST DUCT FOR THE CLOTHES DRYER TO THE OUTSIDE. THE DUCT SHALL BE OF METAL OR APPROVED MATERIAL WITH SMOOTH SURFACE WITH MINIMUM 4 INCHES IN DIAMETER, CMC 504.3.
14) EXHAUST DUCTING FROM DRYER SHALL BE EQUIPPED WITH A LISTED BACK DRAFT DAMPER AT OUTSIDE TERMINATION, R504.4.
15) HEATING AND COOLING LOADS AND ROOM AIRFLOWS HAVE BEEN CALCULATED ACCORDING TO ASHRAE METHOD. SUPPLY AIR QUANTITIES ARE TO BE DIVIDED INTO THE VARIOUS ROOMS ACCORDING TO THE FRACTIONS BELOW, BASED ON 400 CFM PER TON.

| ROOM NAME | AIR BALANCE AIRFLOW (CFM) |
|--------------|---------------------------|
| FOYER | 100 |
| LIVING | 200 |
| KITCHEN | 110 |
| DINING | 90 |
| BEDROOM | 240 |
| BATHROOM | 60 |
| TOTAL | 800 |

*THE ABOVE AIRFLOW CALCULATIONS AND CORRESPONDING DUCT DESIGN ARE BASED ON A 2 TON COOLING CAPACITY. THE DUCT SYSTEM IS UNDERSIZED FOR A LARGER UNIT. PLEASE CONTACT US FOR REVISED CALCULATION AND DUCT LAYOUT IF A LARGER SYSTEM IS DESIRED.

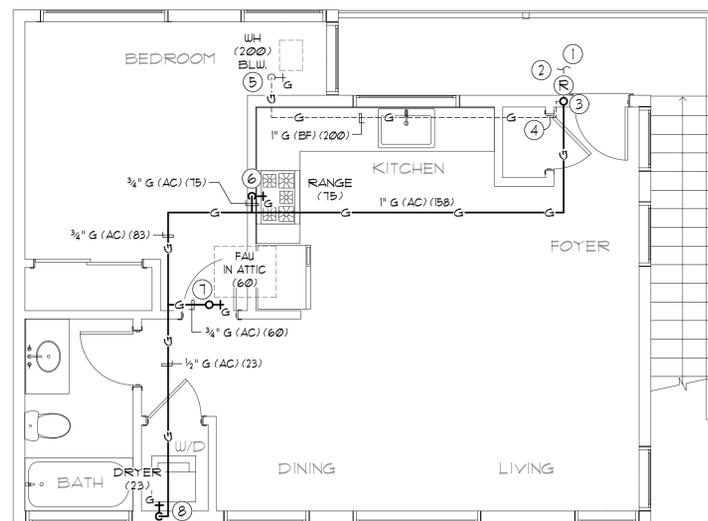
HVAC EQUIPMENT SCHEDULE

| SYMBOL | AREA SERVED | COOLING | | | HEATING | | FAN | | | ELECT. | | | | MFGR & MODEL NO. | WEIGHT (LBS) | EFFICIENCY | REMARKS |
|--------|-------------|--|-------------------|-------------------|----------------------------|---------|-------|-----------|------------------|--------------------|------|---------------------|-----------|------------------------|---|-------------------------|--|
| | | TOTAL (BTU/HR) | SENSIBLE (BTU/HR) | COIL EDB/EWB (°F) | HIGH INPUT/OUTPUT (BTU/HR) | DB (°F) | CFM | S.P. (WC) | O.A. (CFM) (MIN) | VOLTAGE | MCA | COMP. LRA | FUSE/MOCP | | | | |
| F-1 | MAIN LEVEL | --- | --- | --- | 60,000 / 58,000 | 25 | 1,200 | 0-1.00 | --- | 115 V, 1 PHASE | 12.4 | --- | 15 | CARRIER # 59TP6A060-14 | 156 | AFUE = 96.3 | TWO-STAGE CONDENSING FURNACE MOUNTED IN HORIZONTAL POSITION ECM FAN MOTOR: L=35", W=29-1/2", H=17-1/2" |
| CU-1 | MAIN LEVEL | 34,430 | 27,570 | 80/63 | --- | --- | --- | --- | --- | 208/230 V, 1 PHASE | 22.6 | 82 | 35 | CARRIER # 24ANB136 | 324 | SEER = 17.2 EER=12.5 | GROUND MOUNT CONDENSING UNIT INSTALL PREFAB MFG ROOF CURB W=35", D=35", H=47-7/16" |
| DX-1 | MAIN LEVEL | PERFORMANCE FOR CU-1 ABOVE IS BASED ON THIS COIL | | | | | | | | | | CARRIER # CAPMP3617 | 93 | --- | MULTIPOLE DIRECT EXPANSION COIL PRESS.DROP = 0.23 IN.WC AT 1200 CFM L=29-3/4", H=17-1.2", W=20-5/8" | | |

EXHAUST FAN SCHEDULE

| SYMBOL | QTY. | AREA SERVED | COOLING DESCRIPTION | FAN | | | ELECT. | | | MFGR & MODEL NO. | WEIGHT (LBS) | SONES | REMARKS |
|--------|------|-------------|---------------------------|-----|-----------|-----|----------------|-----|-------|---------------------------------------|--------------|-------|---|
| | | | | CFM | S.P. (WC) | RPM | VOLTAGE | BHP | WATTS | | | | |
| EF-1 | 1 | BATH | CEILING CABINET FAN/LIGHT | 80 | 0.25 | --- | 115 V, 1 PHASE | --- | 5.1 | PANASONIC WHISPERGREEN™ FV-05-11VKS12 | 10 | 0.4 | FAN SHALL BE SET FOR 40 CFM CONTINUOUS VENTILATION. REFER TO NOTE (2). AIRFLOW INDICATED IS SETTING FOR "BOOST" AIRFLOW. PROVIDE CONDENSATION SENSOR ACCESSORY #FVCSVK1 FAN SHALL HAVE 4" DIA. DUCT CONNECTION INCLUDES 10 W DIMMABLE LED LIGHT |
| EF-2 | 1 | LAUNDRY | CEILING CABINET FAN | 50 | 0.25 | --- | 115 V, 1 PHASE | --- | 3.1 | PANASONIC WHISPERGREEN™ FV-0511VK2 | 11 | <0.3 | UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 4" DUCT CONNECTION INSTALL CONDENSATION SENSOR MODULE FOR HUMIDITY CONTROL PROVIDE OVERRIDE CONTROL WITH SEPARATE SWITCH SELECT DESIRED AIRFLOW (50-80-110 CFM) |

NOTES:
 (1) INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 (2) THE CONTINUOUS FLOW RATE OF EXHAUST FANS EF-1 IS 40 CFM. THIS MEETS THE REQUIRED VENTILATION ACCORDING TO ASHRAE STANDARD 62.2 FLR. AREA x .03 + (7.5 x # OF BEDROOMS +1); 661 x .03 + (7.5 x 2) = 35 CFM
 (3) ALL BATHROOM AND LAUNDRY ROOM EXHAUST FANS SHALL HAVE A MINIMUM RATE OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.



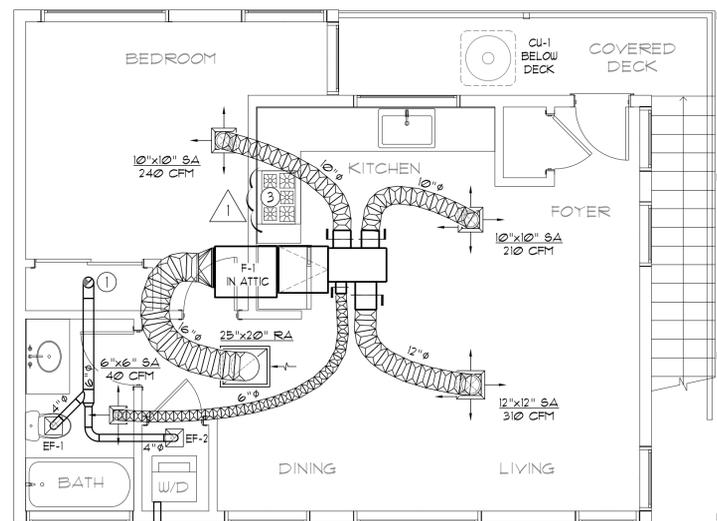
GAS SYMBOLS AND LEGEND

| | |
|------------------|---|
| AC | ABOVE CEILING |
| BF | BELOW FLOOR |
| (R) | GAS REGULATOR |
| + | GAS SHUT-OFF BIBB |
| 1/2" G (BF) (95) | GAS PIPING, SIZE LISTED W/ KBTU/HR IN PARENTHESES |

- ### GAS PIPING NOTES
- GAS PIPING SIZED ACCORDING TO TABLE 12B.2(2) OF THE 2022 CPC. PIPE SIZING FOR UNDILUTED PROPANE AT 11 IN.WC. WITH PRESSURE DROP = 0.5 IN.WC.
 - DISTANCE FROM METER TO FURTHEST APPLIANCE = 48 FEET. FITTING EQUIVALENT LENGTH = 21 FEET. USE 80 FEET ROW IN TABLE 12B.2(2).
 - GAS PIPING SHALL SCHEDULE 40 BLACK STEEL.
 - PROVIDE SHUT-OFF VALVES OR STOPS AT EACH CONNECTION WITHIN 6 FEET OF APPLIANCE. AT GAS CONNECTIONS, PROVIDE GAS COOK, DIRT LEG, UNION AND FLEX CONNECTION.
 - MAIN GAS SHUT OFF TO THE BUILDING SHALL BE IDENTIFIED WITH PERMANENT ALL WEATHER SIGNAGE STATING "MAIN GAS SHUT OFF". INSTALL LINE SIZED SHUT-OFF DOWNSTREAM OF REGULATOR WHERE GAS ENTERS THE BUILDING.

- ### GAS PIPING KEYED NOTES
- 1" 10 PSI PROPANE LINE TO PROPANE TANK.
 - GAS REGULATOR SHALL REDUCE PRESSURE TO 11 IN.WC.
 - 1-1/4" GAS PIPE RISER TO ATTIC.
 - 1" GAS BRANCH TO FLOOR JOIST FOR WATER HEATER.
 - 1" GAS DROP TO WATER HEATER IN MECH ROOM. (200 KBTU/HR)
 - 3/4" GAS DROP TO RANGE. (15 KBTU/HR)
 - 1/2" GAS CONNECTION TO FURNACE IN ATTIC. (60 KBTU/HR)
 - 1/2" GAS DROP TO DRYER. (23 KBTU/HR)

- ### HVAC KEYED NOTES
- 6" EA DUCT RISER THROUGH ROOF TO ROOF CAP
 - 4" DRYER VENT WITH BACKDRAFT DAMPER PROVIDE MIN. 36" CLEARANCE TO OPERABLE PORTION OF WINDOWS
 - PROVIDE KITCHEN COOKTOP EXHAUST HOOD/FAN WITH A MINIMUM RATE OF 100 CFM.





RUSSELL DAVIDSON
ARCHITECTURE + DESIGN

MELAS
ENERGY
ENGINEERING



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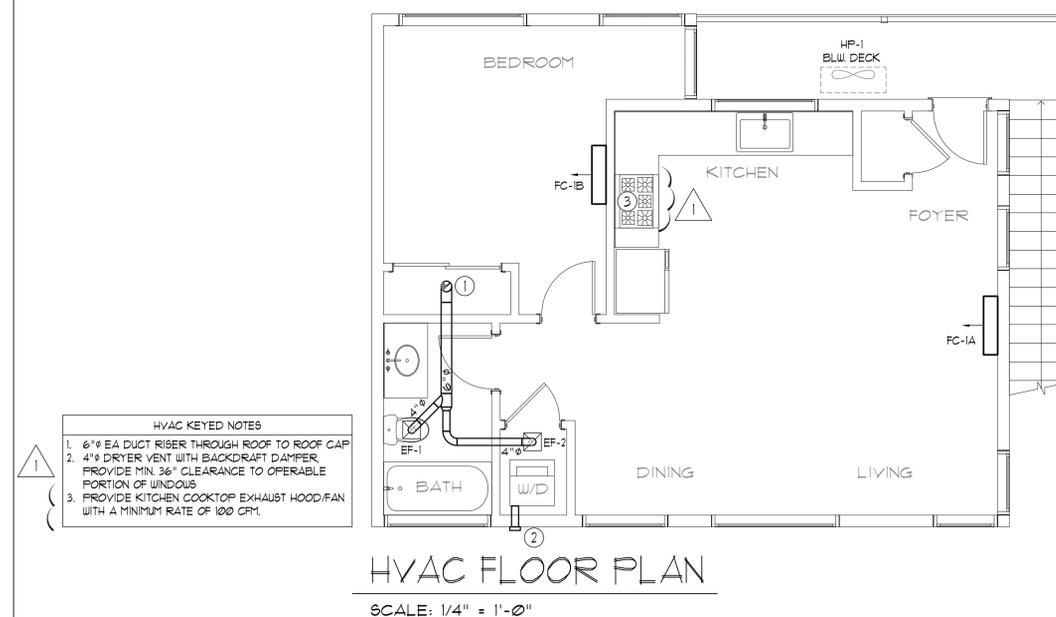
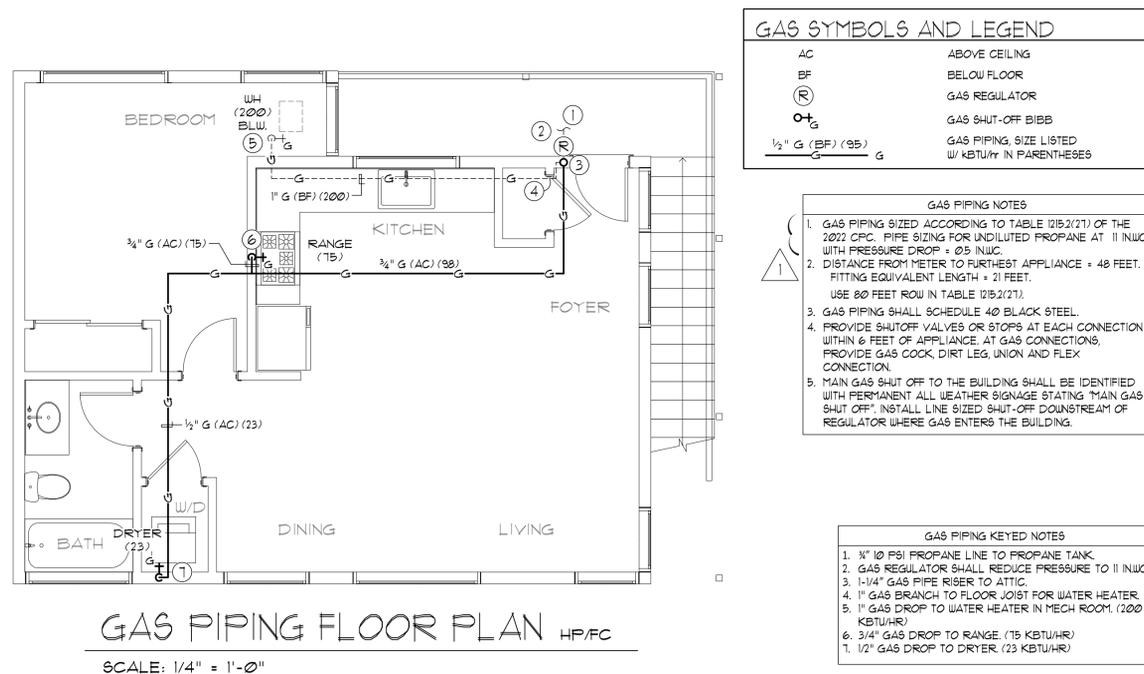
| HVAC LEGEND | |
|-------------|---------------------|
| | CEILING EXHAUST FAN |
| HP | HEAT PUMP UNIT |
| FC | FANCOIL UNIT |

| HVAC EQUIPMENT SCHEDULE | | | | | | | | | | | | | | | | | |
|-------------------------|-------------|----------------|-------------------|-------------------|----------------------------|---------|-----|-----------|------------------|--------------------|------|-----------|-----------|----------------------|--------------|--|--|
| SYMBOL | AREA SERVED | COOLING | | | HEATING | | FAN | | | ELECT. | | | | MFR & MODEL NO. | WEIGHT (LBS) | EFFICIENCY | REMARKS |
| | | TOTAL (BTU/HR) | SENSIBLE (BTU/HR) | COIL EDB/EWB (°F) | HIGH INPUT/OUTPUT (BTU/HR) | DB (°F) | CFM | S.P. (WC) | O.A. (CFM) (MIN) | VOLTAGE | MCA | COMP. LRA | FUSE/MOCP | | | | |
| FC-1A | LIVING AREA | 12,000 | 8,500 | 80/65 | 13,500 | 47 | 388 | --- | --- | (1) | 0.19 | --- | (1) | FUJITSU # ASU12RLF1 | 19 | --- | INDOOR HEAT PUMP WALL UNIT DIMENSIONS: H=10-9/16", W=33-1/16", D=8" FAN SET AT HIGH SPEED 36 dBA PROVIDE CONDENSATE PUMP (3) |
| FC-1B | BEDROOM | 7,000 | 5,000 | 80/65 | 8,500 | 47 | 330 | --- | --- | (1) | 0.13 | --- | (1) | FUJITSU # ASU7RLF1 | 19 | --- | INDOOR HEAT PUMP WALL UNIT DIMENSIONS: H=10-9/16", W=33-1/16", D=8" FAN SET AT HIGH SPEED 36 dBA PROVIDE CONDENSATE PUMP (3) |
| HP-1 | HOUSE | 18,000 | 12,500 | 80/65 | 21,600 | 47 | --- | --- | --- | 208/230 V, 1 PHASE | 17.4 | --- | 20 | FUJITSU # AOU18RLXFZ | 95 | HSPF = 9.30 SEER = 18.0 EER = 12.5 | MULTI ZONE GROUND MOUNTED OUTDOOR HEAT PUMP DIMENSIONS: H=27-9/16", W=35-7/16", D=13" |

- NOTES:
- ELECTRICAL FOR INDOOR UNITS, FC-#, WILL BE PROVIDED BY OUTDOOR UNIT HP-#.
 - FLOAT SWITCH FOR AIR HANDLER WILL INTERRUPT POWER TO THE FANCOIL UNIT WHEN MOISTURE IS DETECTED IN THE DRAIN PAN. THIS SATISFIES THE REQUIREMENT FOR SECONDARY CONDENSATE.
 - CONDENSATE PUMP SHALL BE G081 II, MANUFACTURED BY REFCO. SPECIFICATIONS: 11 GPH, HEAD=65 FT, 1.3 LBS, 20 DBA

| EXHAUST FAN SCHEDULE | | | | | | | | | | | | | |
|----------------------|------|-------------|---------------------------|-----|-----------|-----|----------------|-----|-------|---------------------------------------|--------------|-------|---|
| SYMBOL | QTY. | AREA SERVED | COOLING DESCRIPTION | FAN | | | ELECT. | | | MFR & MODEL NO. | WEIGHT (LBS) | SONES | REMARKS |
| | | | | CFM | S.P. (WC) | RPM | VOLTAGE | BHP | WATTS | | | | |
| EF-1 | 1 | BATH | CEILING CABINET FAN/LIGHT | 80 | 0.25 | --- | 115 V, 1 PHASE | --- | 5.1 | PANASONIC WHISPERGREEN™ FV-05-11VKS12 | 10 | 0.4 | FAN SHALL BE SET FOR 40 CFM CONTINUOUS VENTILATION. REFER TO NOTE (2). AIRFLOW INDICATED IS SETTING FOR "BOOST" AIRFLOW. PROVIDE CONDENSATION SENSOR ACCESSORY #FVCSVK1 FAN SHALL HAVE 4" DIA. DUCT CONNECTION INCLUDES 10 W DIMMABLE LED LIGHT |
| EF-2 | 1 | LAUNDRY | CEILING CABINET FAN | 50 | 0.25 | --- | 115 V, 1 PHASE | --- | 3.1 | PANASONIC WHISPERGREEN™ FV-05-11VK2 | 11 | <0.3 | UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 4" DUCT CONNECTION INSTALL CONDENSATION SENSOR MODULE FOR HUMIDITY CONTROL PROVIDE OVERRIDE CONTROL WITH SEPARATE SWITCH SELECT DESIRED AIRFLOW (50-80-110 CFM) |

- NOTES:
- INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - THE CONTINUOUS FLOW RATE OF EXHAUST FANS EF-1 IS 40 CFM. THIS MEETS THE REQUIRED VENTILATION ACCORDING TO ASHRAE STANDARD 62.2 FLR AREA x .03 + (.# OF BEDROOMS x 1); 561 x .03 + (7.5 x 2) = 35 CFM
 - ALL BATHROOM AND LAUNDRY ROOM EXHAUST FANS SHALL HAVE A MINIMUM RATE OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.



1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

MECHANICAL PLAN (ZONE 11 / DUCTLESS HEAT PUMP)

MP1.4

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

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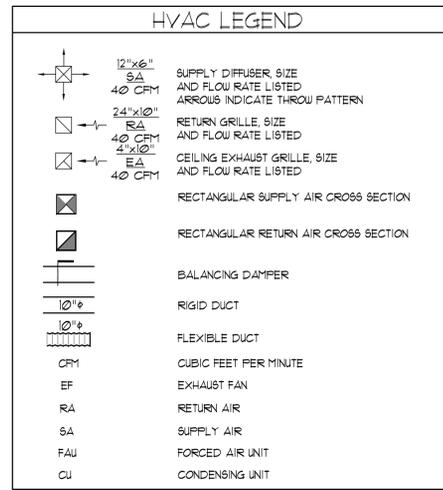
PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED.

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

MECHANICAL PLAN (ZONE 16 / GAS FURNACE W/ AC)

MP1.5



HVAC SYSTEM SUMMARY

1) DESIGN SUPPLY DUCTING SUCH THAT AIR FLOW RATES DO NOT EXCEED A FRICTION OF 0.08 INCHES WATER PER 100'. SEE TABLE BELOW.

| DUCT DIA. (INCHES) | AIR FLOW RANGE (CFM) | SHEET METAL DUCT AIR FLOW RANGE (CFM) |
|--------------------|----------------------|---------------------------------------|
| 6 | 0-80 | 0-100 |
| 8 | 80-160 | 100-200 |
| 10 | 160-240 | 200-360 |
| 12 | 240-420 | 360-600 |
| 14 | 420-700 | 600-900 |
| 16 | 700-1000 | 900-1250 |
| 18 | 1000-1450 | 1250-1750 |
| 20 | 1450-2000 | 1750-2300 |

NOTES:
a) WHEN USING FLEX DUCT AS LEADERS (10 FT. MAX.) TO AND FROM AIR TERMINALS USE SAME SIZE AS SHEET METAL DUCT.
2) DESIGN RETURN AIR DUCTING SUCH THAT AIR FLOW RATES DO NOT EXCEED A FRICTION OF 0.06 INCHES WATER PER 100'. SEE TABLE BELOW.

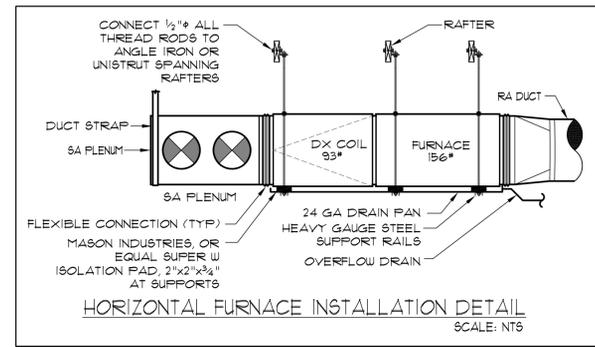
| DUCT DIA. (INCHES) | AIR FLOW RANGE (CFM) | SHEET METAL DUCT AIR FLOW RANGE (CFM) |
|--------------------|----------------------|---------------------------------------|
| 6 | 0-60 | 0-80 |
| 8 | 60-150 | 80-170 |
| 10 | 150-230 | 170-300 |
| 12 | 230-360 | 300-500 |
| 14 | 360-540 | 500-800 |
| 16 | 540-750 | 800-1100 |
| 18 | 750-1200 | 1100-1500 |
| 20 | 1200-1600 | 1500-2000 |

3) SUPPLY AIR DIFFUSERS SHALL BE SIZED FOR A FACE VELOCITY NOT TO EXCEED 600 FPM.
4) RETURN AIR GRILLES SHALL BE SIZED FOR A FACE VELOCITY NOT TO EXCEED 400 FPM.
5) INSTALL DIFFUSERS AND GRILLES WHERE INDICATED ON MECHANICAL DRAWINGS. SUPPLY DIFFUSERS AND RETURN GRILLES SHALL SHOEMAKER OR EQUAL, AS FOLLOWS:
TYPE MODEL REMARKS
CEILING - SA SCB STEEL CURVED BLADE DIFFUSER THROU PATTERN INDICATED ON PLANS LOUVERED 2" FILTER GRILLE
CEILING/SIDEWALL RA FG2

6) FURNACE AFUE ≥ 95%
7) AIR CONDITIONING: SEER ≥ 14.0, EER ≥ 12.5
8) PROVIDE ANCHORAGE FOR ALL HVAC UNITS PER CMC 303.4
9) DUCTING:
• WHEN USING FLEX DUCT, MINIMIZE BENDS AND FULLY EXTEND THE DUCT IN ORDER TO MINIMIZE FRICTION LOSSES. FLEX DUCT INSULATION SHALL BE R-8.0 (MIN).
• WHERE TURNS AND/OR TRANSITIONS EXCEED 45 DEGREES USE SHEET METAL FITTINGS AND ELBOWS. PROVIDE SHEET METAL SLEEVES FOR ALL SPLICES.
• FLEX DUCTING SHALL BE SUPPORTED AT 4 FEET INTERVALS (MAX.). EACH SUPPORT SHALL ONLY SUPPORT ONE DUCT.
• ALL TAPES AND MASTIC SEALANTS SHALL COMPLY WITH UL181, UL 181A, OR UL181B.
10) DUCT LAYOUT MEETS THE CRITERIA LISTED ABOVE.
11) KITCHEN COOKTOP EXHAUST HOOD/FAN SHALL HAVE A MINIMUM RATE OF 100 CFM.
12) ALL DRYER, KITCHEN, AND BATHROOM EXHAUST DUCTS ARE REQUIRED TO TERMINATE 3' MIN FROM DOOR/WINDOWS.
13) PROVIDE MOISTURE EXHAUST DUCT FOR THE CLOTHES DRYER TO THE OUTSIDE. THE DUCT SHALL BE OF METAL OR APPROVED MATERIAL WITH SMOOTH SURFACE WITH MINIMUM 4 INCHES IN DIAMETER, CMC 504.3.
14) EXHAUST DUCTING FROM DRYER SHALL BE EQUIPPED WITH A LISTED BACK DRAFT DAMPER AT OUTSIDE TERMINATION, R504.4.
15) HEATING AND COOLING LOADS AND ROOM AIRFLOWS HAVE BEEN CALCULATED ACCORDING TO ASHRAE METHOD. SUPPLY AIR QUANTITIES ARE TO BE DIVIDED INTO THE VARIOUS ROOMS ACCORDING TO THE FRACTIONS BELOW, BASED ON 400 CFM PER TON.

| ROOM NAME | AIR BALANCE AIRFLOW (CFM) |
|-----------|---------------------------|
| FOYER | 100 |
| LIVING | 200 |
| KITCHEN | 110 |
| DINING | 90 |
| BEDROOM | 240 |
| BATHROOM | 60 |
| TOTAL | 800 |

*THE ABOVE AIRFLOW CALCULATIONS AND CORRESPONDING DUCT DESIGN ARE BASED ON A 2 TON COOLING CAPACITY. THE DUCT SYSTEM IS UNDERSIZED FOR A LARGER UNIT. PLEASE CONTACT US FOR REVISED CALCULATION AND DUCT LAYOUT IF A LARGER SYSTEM IS DESIRED.



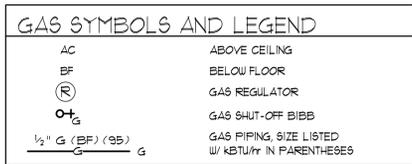
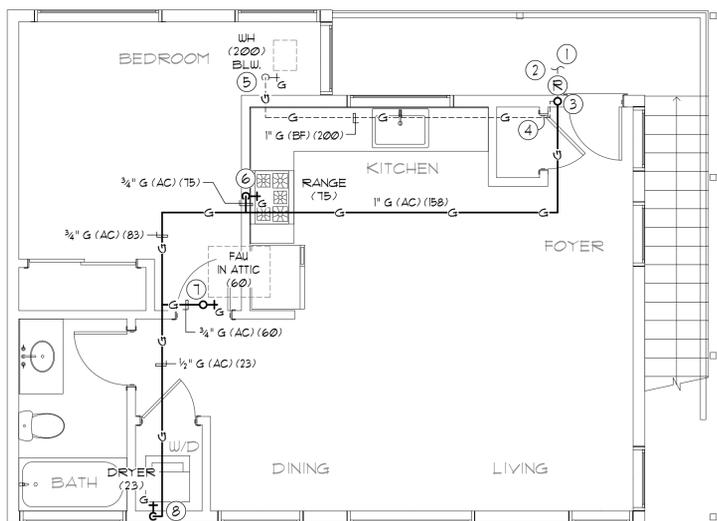
HVAC EQUIPMENT SCHEDULE

| SYMBOL | AREA SERVED | COOLING | | | HEATING | | FAN | | | ELECT. | | | MFGR & MODEL NO. | WEIGHT (LBS) | EFFICIENCY | REMARKS |
|--------|-------------|--|-------------------|-------------------|----------------------------|---------|-------|-----------|------------------|--------------------|------|-----------|------------------|--------------|-------------------------|--|
| | | TOTAL (BTU/HR) | SENSIBLE (BTU/HR) | COIL EDB/EWB (°F) | HIGH INPUT/OUTPUT (BTU/HR) | DB (°F) | CFM | S.P. (WC) | O.A. (CFM) (MIN) | VOLTAGE | MCA | COMP. LRA | | | | |
| F-1 | MAIN LEVEL | --- | --- | --- | 60,000 / 58,000 | 25 | 1,200 | 0-1.00 | --- | 115 V, 1 PHASE | 12.4 | --- | 15 | 156 | AFUE = 96.3 | TWO-STAGE CONDENSING FURNACE MOUNTED IN HORIZONTAL POSITION ECM FAN MOTOR: L=35", W=29-1/2", H=17-1/2" |
| CU-1 | MAIN LEVEL | 34,430 | 27,570 | 80/63 | --- | --- | --- | --- | --- | 208/230 V, 1 PHASE | 22.6 | 82 | 35 | 324 | SEER = 17.2 EER=12.5 | GROUND MOUNT CONDENSING UNIT INSTALL PREFAB.MFG ROOF CURB W=35", D=35", H=47-7/16" |
| DX-1 | MAIN LEVEL | PERFORMANCE FOR CU-1 ABOVE IS BASED ON THIS COIL | | | | | | | | | | | | | | |

EXHAUST FAN SCHEDULE

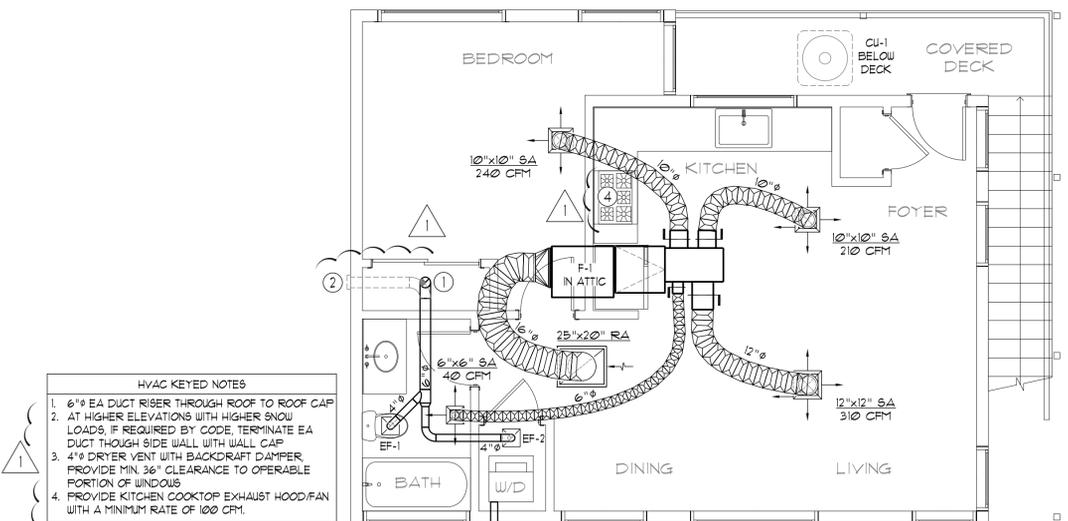
| SYMBOL | QTY. | AREA SERVED | COOLING DESCRIPTION | FAN | | | ELECT. | | | MFGR & MODEL NO. | WEIGHT (LBS) | SONES | REMARKS |
|--------|------|-------------|---------------------------|-----|-----------|-----|----------------|-----|-------|---------------------------------------|--------------|-------|---|
| | | | | CFM | S.P. (WC) | RPM | VOLTAGE | BHP | WATTS | | | | |
| EF-1 | 1 | BATH | CEILING CABINET FAN/LIGHT | 80 | 0.25 | --- | 115 V, 1 PHASE | --- | 5.1 | PANASONIC WHISPERGREEN™ FV-05-11VKS12 | 10 | 0.4 | FAN SHALL BE SET FOR 40 CFM CONTINUOUS VENTILATION. REFER TO NOTE (2). AIRFLOW INDICATED IS SETTING FOR "BOOST" AIRFLOW. PROVIDE CONDENSATION SENSOR ACCESSORY #FVCSVK1 FAN SHALL HAVE 4" DIA. DUCT CONNECTION INCLUDES 10 W DIMMABLE LED LIGHT |
| EF-2 | 1 | LAUNDRY | CEILING CABINET FAN | 50 | 0.25 | --- | 115 V, 1 PHASE | --- | 3.1 | PANASONIC WHISPERGREEN™ FV-0511VK2 | 11 | <0.3 | UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 4" DUCT CONNECTION INSTALL CONDENSATION SENSOR MODULE FOR HUMIDITY CONTROL PROVIDE OVERRIDE CONTROL WITH SEPARATE SWITCH SELECT DESIRED AIRFLOW (50-80-110 CFM) |

NOTES:
(1) INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
(2) THE CONTINUOUS FLOW RATE OF EXHAUST FANS EF-1 IS 40 CFM. THIS MEETS THE REQUIRED VENTILATION ACCORDING TO ASHRAE STANDARD 62.2 FLR. AREA x .03 + (7.5 x # OF BEDROOMS +1); 661 x .03 + (7.5 x 2) = 35 CFM
(3) ALL BATHROOM AND LAUNDRY ROOM EXHAUST FANS SHALL HAVE A MINIMUM RATE OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.



- ### GAS PIPING NOTES
- GAS PIPING SIZED ACCORDING TO TABLE 12B.2(2) OF THE 2022 CPC. PIPE SIZING FOR UNDILUTED PROPANE AT 11 IN.W.C. WITH PRESSURE DROP = 0.5 IN.W.C.
 - DISTANCE FROM METER TO FURTHEST APPLIANCE = 48 FEET. FITTING EQUIVALENT LENGTH = 21 FEET. USE 80 FEET ROW IN TABLE 12B.2(2).
 - GAS PIPING SHALL SCHEDULE 40 BLACK STEEL.
 - PROVIDE SHUT-OFF VALVES OR STOPS AT EACH CONNECTION WITHIN 6 FEET OF APPLIANCE. AT GAS CONNECTIONS, PROVIDE GAS COOK, DIRT LEG, UNION AND FLEX CONNECTION.
 - MAIN GAS SHUT OFF TO THE BUILDING SHALL BE IDENTIFIED WITH PERMANENT ALL WEATHER SIGNAGE STATING "MAIN GAS SHUT OFF". INSTALL LINE SIZED SHUT-OFF DOWNSTREAM OF REGULATOR WHERE GAS ENTERS THE BUILDING.

- ### GAS PIPING KEYED NOTES
- 1" 10 PSI PROPANE LINE TO PROPANE TANK.
 - GAS REGULATOR SHALL REDUCE PRESSURE TO 11 IN.W.C.
 - 1-1/4" GAS PIPE RISER TO ATTIC.
 - 1" GAS BRANCH TO FLOOR JOIST FOR WATER HEATER.
 - 1" GAS DROP TO WATER HEATER IN MECH ROOM. (200 KBTU/HR)
 - 3/4" GAS DROP TO RANGE. (15 KBTU/HR)
 - 1/2" GAS CONNECTION TO FURNACE IN ATTIC. (60 KBTU/HR)
 - 1/2" GAS DROP TO DRYER. (23 KBTU/HR)



- ### HVAC KEYED NOTES
- 6" x 9" EA DUCT RISER THROUGH ROOF TO ROOF CAP
 - AT HIGHER ELEVATIONS WITH HIGHER SNOW LOADS, IF REQUIRED BY CODE, TERMINATE EA DUCT THROUGH SIDE WALL WITH WALL CAP
 - 4" x 9" DRYER VENT WITH BACKDRAFT DAMPER PROVIDE MIN. 36" CLEARANCE TO OPERABLE PORTION OF WINDOW
 - PROVIDE KITCHEN COOKTOP EXHAUST HOOD/FAN WITH A MINIMUM RATE OF 100 CFM.



RUSSELL DAVIDSON
ARCHITECTURE + DESIGN



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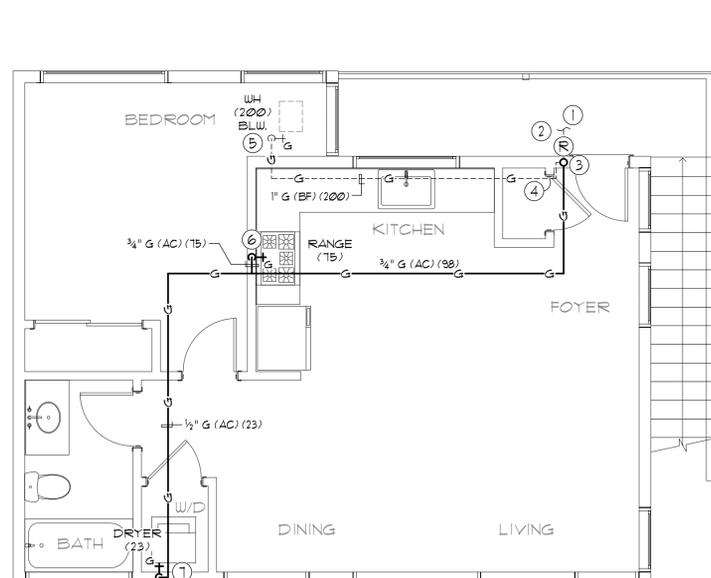
| HVAC LEGEND | |
|-------------|---------------------|
| | CEILING EXHAUST FAN |
| HP | HEAT PUMP UNIT |
| FC | FANCOIL UNIT |

| HVAC EQUIPMENT SCHEDULE | | | | | | | | | | | | | | | | | |
|-------------------------|-------------|----------------|-------------------|-------------------|----------------------------|---------|-----|-----------|------------------|--------------------|------|-----------|-----------|----------------------|--------------|--|--|
| SYMBOL | AREA SERVED | COOLING | | | HEATING | | FAN | | | ELECT. | | | | MFR & MODEL NO. | WEIGHT (LBS) | EFFICIENCY | REMARKS |
| | | TOTAL (BTU/HR) | SENSIBLE (BTU/HR) | COIL EDB/EWB (°F) | HIGH INPUT/OUTPUT (BTU/HR) | DB (°F) | CFM | S.P. (WC) | O.A. (CFM) (MIN) | VOLTAGE | MCA | COMP. LRA | FUSE/MOCP | | | | |
| FC-1A | LIVING AREA | 12,000 | 8,500 | 80/65 | 13,500 | 47 | 388 | --- | --- | (1) | 0.19 | --- | (1) | FUJITSU # ASU12RLF1 | 19 | --- | INDOOR HEAT PUMP WALL UNIT DIMENSIONS: H=10-9/16", W=33-1/16", D=8" FAN SET AT HIGH SPEED 36 dBA PROVIDE CONDENSATE PUMP (3) |
| FC-1B | BEDROOM | 7,000 | 5,000 | 80/65 | 8,500 | 47 | 330 | --- | --- | (1) | 0.13 | --- | (1) | FUJITSU # ASU7RLF1 | 19 | --- | INDOOR HEAT PUMP WALL UNIT DIMENSIONS: H=10-9/16", W=33-1/16", D=8" FAN SET AT HIGH SPEED 36 dBA PROVIDE CONDENSATE PUMP (3) |
| HP-1 | HOUSE | 18,000 | 12,500 | 80/65 | 21,600 | 47 | --- | --- | --- | 208/230 V, 1 PHASE | 17.4 | --- | 20 | FUJITSU # AOU18RLXFZ | 95 | HSPF = 9.30 SEER = 18.0 EER = 12.5 | MULTI ZONE GROUND MOUNTED OUTDOOR HEAT PUMP DIMENSIONS: H=27-9/16", W=35-7/16", D=13" |

- NOTES:
- ELECTRICAL FOR INDOOR UNITS, FC-#, WILL BE PROVIDED BY OUTDOOR UNIT HP-#.
 - FLOAT SWITCH FOR AIR HANDLER WILL INTERRUPT POWER TO THE FANCOIL UNIT WHEN MOISTURE IS DETECTED IN THE DRAIN PAN. THIS SATISFIES THE REQUIREMENT FOR SECONDARY CONDENSATE.
 - CONDENSATE PUMP SHALL BE G081 II, MANUFACTURED BY REFCO. SPECIFICATIONS: 11 GPH, HEAD=65 FT, 1.3 LBS, 20 DBA

| EXHAUST FAN SCHEDULE | | | | | | | | | | | | | |
|----------------------|------|-------------|---------------------------|-----|-----------|-----|----------------|-----|-------|---------------------------------------|--------------|-------|---|
| SYMBOL | QTY. | AREA SERVED | COOLING DESCRIPTION | FAN | | | ELECT. | | | MFR & MODEL NO. | WEIGHT (LBS) | SONES | REMARKS |
| | | | | CFM | S.P. (WC) | RPM | VOLTAGE | BHP | WATTS | | | | |
| EF-1 | 1 | BATH | CEILING CABINET FAN/LIGHT | 80 | 0.25 | --- | 115 V, 1 PHASE | --- | 5.1 | PANASONIC WHISPERGREEN™ FV-05-11VKS12 | 10 | 0.4 | FAN SHALL BE SET FOR 40 CFM CONTINUOUS VENTILATION. REFER TO NOTE (2). AIRFLOW INDICATED IS SETTING FOR "BOOST" AIRFLOW. PROVIDE CONDENSATION SENSOR ACCESSORY #FVCSVK1 FAN SHALL HAVE 4" DIA. DUCT CONNECTION INCLUDES 10 W DIMMABLE LED LIGHT |
| EF-2 | 1 | LAUNDRY | CEILING CABINET FAN | 50 | 0.25 | --- | 115 V, 1 PHASE | --- | 3.1 | PANASONIC WHISPERGREEN™ FV-0511VK2 | 11 | <0.3 | UNIT HAS BUILT-IN BACKDRAFT DAMPER EXHAUST FAN SHALL HAVE 4" DUCT CONNECTION INSTALL CONDENSATION SENSOR MODULE FOR HUMIDITY CONTROL PROVIDE OVERRIDE CONTROL WITH SEPARATE SWITCH SELECT DESIRED AIRFLOW (50-80-110 CFM) |

- NOTES:
- INSTALL/MOUNT EXHAUST FANS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - THE CONTINUOUS FLOW RATE OF EXHAUST FANS EF-1 IS 40 CFM. THIS MEETS THE REQUIRED VENTILATION ACCORDING TO ASHRAE STANDARD 62.2 FLR AREA x .03 + (7.5 x (# OF BEDROOMS + 1)); 561 x .03 + (7.5 x 2) = 35 CFM
 - ALL BATHROOM AND LAUNDRY ROOM EXHAUST FANS SHALL HAVE A MINIMUM RATE OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS.



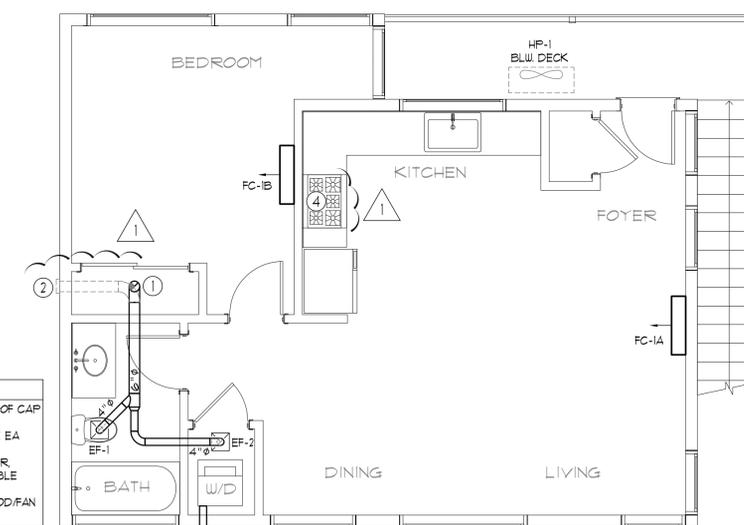
GAS PIPING FLOOR PLAN_{HP/FC}

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

| GAS SYMBOLS AND LEGEND | |
|-----------------------------|---|
| AC | ABOVE CEILING |
| BF | BELOW FLOOR |
| | GAS REGULATOR |
| | GAS SHUT-OFF BIBB |
| $\frac{1}{2}$ " G (BF) (95) | GAS PIPING, SIZE LISTED W/ KBTU/HR IN PARENTHESES |

- GAS PIPING NOTES
- GAS PIPING SIZED ACCORDING TO TABLE 1215.2(21) OF THE 2022 CFC. PIPE SIZING FOR UNDILUTED PROPANE AT 11 IN.WC. WITH PRESSURE DROP = 0.5 IN.WC.
 - DISTANCE FROM METER TO FURTHEST APPLIANCE + 40 FEET. FITTING EQUIVALENT LENGTH + 2 FEET. USE 80 FEET ROW IN TABLE 1215.2(21).
 - GAS PIPING SHALL SCHEDULE 40 BLACK STEEL.
 - PROVIDE SHUTOFF VALVES OR STOPS AT EACH CONNECTION WITHIN 6 FEET OF APPLIANCE. AT GAS CONNECTIONS, PROVIDE GAS COCK, DIRT LEG, UNION AND FLEX CONNECTION.
 - MAIN GAS SHUT OFF TO THE BUILDING SHALL BE IDENTIFIED WITH PERMANENT ALL WEATHER SIGNAGE STATING "MAIN GAS SHUT OFF". INSTALL LINE SIZED SHUT-OFF DOWNSTREAM OF REGULATOR WHERE GAS ENTERS THE BUILDING.

- GAS PIPING KEYED NOTES
- 1/2" 10 PSI PROPANE LINE TO PROPANE TANK.
 - GAS REGULATOR SHALL REDUCE PRESSURE TO 11 IN.WC.
 - 1/4" GAS PIPE RISER TO ATTIC.
 - 1" GAS BRANCH TO FLOOR JOIST FOR WATER HEATER.
 - 1" GAS DROP TO WATER HEATER IN MECH ROOM. (200 KBTU/HR)
 - 3/4" GAS DROP TO RANGE. (75 KBTU/HR)
 - 1/2" GAS DROP TO DRYER. (23 KBTU/HR)



HVAC FLOOR PLAN

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

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

MECHANICAL PLAN (ZONE 16 / DUCTLESS HEAT PUMP)

MP1.6

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |



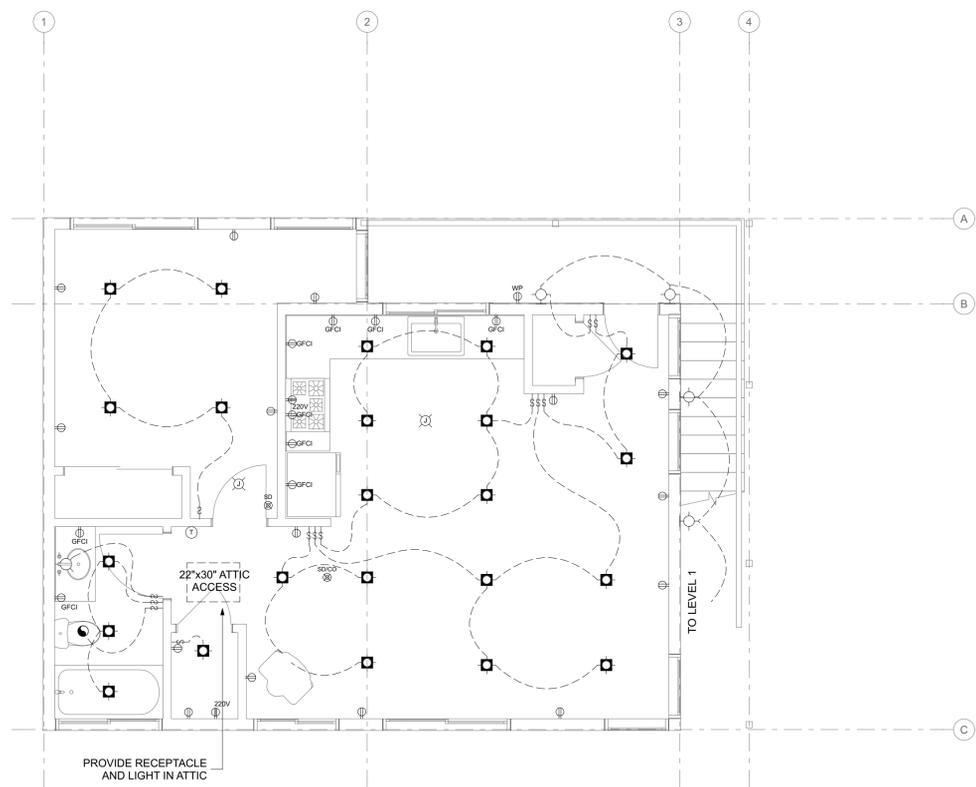
RUSSELL DAVIDSON
ARCHITECTURE + DESIGN



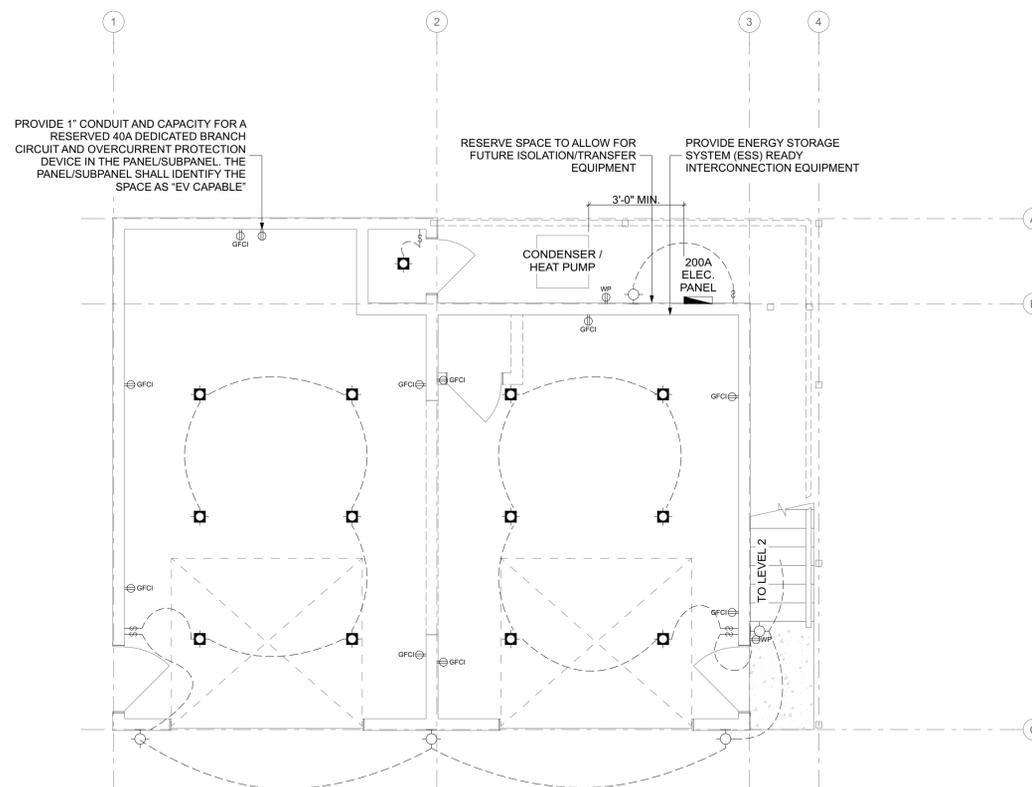
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PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED



2 2ND FLOOR ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



1 1ST FLOOR ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

NOTES

- REFER TO GENERAL NOTES ON G1.0
- EXTERIOR LIGHTS AND BATHTUB/SHOWER LIGHT TO BE RATED FOR DAMP/WET LOCATION.
- ELECTRICAL CLOTHES DRYER READY SYSTEMS USING A GAS OR PROPANE DRYER SHALL INCLUDE A DEDICATED 240 VOLT BRANCH CIRCUIT WITH 3 FEET OF THE CLOTHES DRYER. THE BRANCH CIRCUIT SHALL BE RATED AT 30 AMPS MINIMUM. THE MAIN ELECTRICAL SERVICE SHALL HAVE A RESERVED SPACE TO ALLOW FOR THE INSTALLATION OF A DOUBLE POLE CIRCUIT BREAKER. THE RESERVED SPACE SHALL BE PERMANENTLY MARKED AS "FOR FUTURE 240V USE".
- READILY ACCESSIBLE, WALL MOUNTED DIMMER CONTROLS THAT ALLOW LIGHTING TO BE ADJUSTED UP AND DOWN ARE REQUIRED IN ALL HABITABLE SPACES. HABITABLE SPACES INCLUDE LIVING ROOMS, DINING ROOMS, KITCHENS, AND BEDROOMS. DIMMER NOT REQUIRED WHEN:

- AUTO-OFF SENSORS ARE UTILIZED FOR VACANCY/OCCUPANCY CONTROLS IN THE SPACE
 - LUMINAIRES ARE CONNECTED TO A CIRCUIT WITH CONTROLLED LIGHTING POWER ~20 WATTS.
- IN BATHROOMS, GARAGES, WALK-IN CLOSET, LAUNDRY ROOMS, AND UTILITY ROOMS, AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES SHALL BE CONTROLLED BY A VACANCY SENSOR.
 - ENERGY STORAGE SYSTEM (ESS) READY. AT LEAST ONE OF THE FOLLOWING SHALL BE PROVIDED:
ESS READY INTERCONNECTION EQUIPMENT WITH A MINIMUM BACKED-UP CAPACITY OF 60 AMPS AND A MINIMUM OF FOUR ESS-SUPPLIED BRANCH CIRCUITS, OR

- A DEDICATED RACEWAY FROM THE MAIN SERVICE PANEL TO A PANELBOARD (SUBPANEL) THAT SUPPLIES THE FOLLOWING BRANCH CIRCUITS: REFRIGERATOR, LIGHTING CIRCUIT NEAR PRIMARY EGRESS DOOR, SLEEPING ROOM RECEPTACLE AND ONE ADDITIONAL.
- THE MAIN PANELBOARD SHALL HAVE A MINIMUM BUSBAR RATING OF 225 AMPS. SPACE SHALL BE RESERVED TO ALLOW FUTURE INSTALLATION OF A SYSTEM ISOLATION EQUIPMENT/TRANSFER SWITCH WITHIN 3 FEET OF THE MAIN PANELBOARD. RACEWAYS SHALL BE INSTALLED BETWEEN THE PANELBOARD AND THE SYSTEM ISOLATION EQUIPMENT TO ALLOW THE CONNECTION OF BACKUP POWER SOURCE.
 - ENERGY STORAGE SYSTEMS SHALL ONLY BE INSTALLED IN DETACHED GARAGES AND ACCESSORY STRUCTURES, ATTACHED GARAGES, OUTDOOR NOT LESS THAN 3' FROM DOOR AND WINDOWS AND ENCLOSED UTILITY CLOSETS, BASEMENTS, STORAGE OR UTILITY CLOSETS WITHIN DWELLING UNITS WITH FINISHED OR NONCOMBUSTIBLE WALLS AND CEILING. (CRC R328.4)

- INDIVIDUAL ESS UNITS SHALL HAVE A MAXIMUM RATINGS OF 20 KWH. THE AGGREGATE RATING OF THE ESS SHALL NOT EXCEED 40 KWH WITHIN UTILITY CLOSETS, BASEMENTS AND STORAGE OR UTILITY SPACES, 80 KWH IN ATTACHED OR DETACHED GARAGES OR DETACHED ACCESSORY STRUCTURES, 80 KWH ON EXTERIOR WALLS AND 80 KWH OUTDOORS ON THE GROUND. (CRC R328.5)
- ROOMS AND AREAS WITHIN STRUCTURES IN WHICH ESS ARE INSTALLED SHALL BE PROTECTED BY SMOKE ALARMS. A HEAT DETECTOR SHALL BE INSTALLED IN LOCATIONS WITHIN STRUCTURES WHERE SMOKE ALARMS CANNOT BE INSTALLED BASED ON THEIR LISTING. (CRC R328.7) ESS INSTALLED IN LOCATIONS SUBJECT TO VEHICLE DAMAGE SHALL BE PROVIDED WITH IMPACT PROTECTION. (CRC R328.8)
- WHERE PV DISCONNECTING MEANS (ABOVE 30 VOLTS) ARE READILY ACCESSIBLE TO UNQUALIFIED PERSONS, ANY ENCLOSURE DOOR OR HINGED COVER THAT EXPOSES LIVE PARTS WHEN OPENED, ARE REQUIRED TO BE LOCKED OR REQUIRE A TOOL TO OPEN. (CEC 690.13(A))

ELECTRICAL LEGEND

| | | | |
|--|-----------------------------|--|---------------------------|
| | DUPLEX OUTLET | | HOSE BIB |
| | GFCI DUPLEX OUTLET | | GAS |
| | OVERHEAD GFCI DUPLEX OUTLET | | ELECTRICAL PANEL |
| | FLOOR OUTLET | | FAN / LIGHT COMBO |
| | WATERPROOF DUPLEX OUTLET | | J-BOX |
| | 220V DUPLEX OUTLET | | RECESSED LIGHT |
| | SWITCHED DUPLEX OUTLET | | WALL MOUNTED LIGHT |
| | SWITCH | | WALL MOUNTED MOTION LIGHT |
| | 3-WAY SWITCH | | UNDERCOUNTER LIGHT |
| | DIMMER SWITCH | | FLUORESCENT LIGHT |
| | VACANCY SWITCH | | CEILING FAN |
| | TV JACK | | |
| | THERMOSTAT | | |
| | CO & SMOKE DETECTOR | | |

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

ELECTRICAL PLAN

E1.0

BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

TITLE 24 ENERGY REPORT - CZ16 DUCTED HP 490LB

T24.1.1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 1
Calculation Date/Time: 2023-02-08T13:34:07-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 1 CZ16 Ducted HP - 23043.rbd22x

CF1R-PRF-01-E
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| GENERAL INFORMATION | |
|---------------------|---|
| 01 | Project Name: 1 Bedroom Unit Version 1 |
| 02 | Run Title: Title 24 Analysis |
| 03 | Project Location: TBD |
| 04 | City: Truckee |
| 05 | Standards Version: 2022 |
| 06 | Zip code: 95959 |
| 07 | Software Version: EnergyPro 9.0 |
| 08 | Climate Zone: 16 |
| 09 | Front Orientation (deg/ Cardinal): All orientations |
| 10 | Building Type: Single family |
| 11 | Number of Dwelling Units: 1 |
| 12 | Project Scope: Newly Constructed |
| 13 | Number of Bedrooms: 1 |
| 14 | Addition Cond. Floor Area (ft²): 0 |
| 15 | Number of Stories: 1 |
| 16 | Existing Cond. Floor Area (ft²): N/A |
| 17 | Fenestration Average U-Factor: 0.3 |
| 18 | Total Cond. Floor Area (ft²): 661 |
| 19 | Glazing Percentage (%): 19.30% |
| 20 | ADU Bedroom Count: N/A |

COMPLIANCE RESULTS

| | |
|----|---|
| 01 | This building complies with Computer Performance |
| 02 | This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEI-approved HERS provider. |
| 03 | This building incorporates one or more Special Features shown below |

Registration Number: 223-P1010161488-000-000-0000000-0000
Registration Date/Time: 2023-02-10 12:49:29
HERS Provider: CalCERTS Inc.
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901
Report Generated: 2023-02-08 13:35:59

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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Input File Name: NC Affordable Housing 1 Bed Vn 1 CZ16 Ducted HP - 23043.rbd22x

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| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) |
|---|--|--|--|--|--------------------------|--------------------------|
| Space Heating | 13.63 | 91.8 | 5.12 | 54.22 | 8.51 | 37.58 |
| Space Cooling | 0.83 | 10.43 | 0.72 | 8.45 | 0.11 | 1.98 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.45 | 79.8 | -8.18 | -31.41 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| South Facing Efficiency Compliance Total | 19.13 | 154.99 | 18.69 | 146.84 | 0.44 | 8.15 |
| Space Heating | 13.63 | 91.8 | 5.09 | 56.39 | 8.24 | 35.41 |
| Space Cooling | 0.83 | 10.43 | 0.91 | 11.32 | -0.08 | -0.89 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.45 | 79.8 | -8.18 | -31.41 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| West Facing Efficiency Compliance Total | 19.13 | 154.99 | 19.15 | 151.88 | -0.02 | 3.11 |

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| Zone Name | Zone Type | HVAC System Name | Zone Floor Area (ft²) | Avg. Ceiling Height | Water Heating System 1 | Status |
|-----------------|-------------|------------------|-----------------------|---------------------|------------------------|--------|
| 1 Bed Unit Zone | Conditioned | HVAC1 | 661 | 9 | DHW Sys 1 | New |

| Zone | Construction | Admuth | Orientation | Gross Area (ft²) | Window and Door Area (ft²) | Tilt (deg) |
|-------------------|------------------------------------|--------|-------------|------------------|----------------------------|------------|
| Front Wall | 1 Bed Unit Zone R-23 Wall | 0 | Front | 270 | 61.5 | 90 |
| Right Wall | 1 Bed Unit Zone R-23 Wall | 270 | Right | 216 | 0 | 90 |
| Back Wall | 1 Bed Unit Zone R-23 Wall | 180 | Back | 270 | 48 | 90 |
| Left Wall | 1 Bed Unit Zone R-23 Wall | 90 | Left | 216 | 37.22 | 90 |
| Ceiling | 1 Bed Unit Zone R-38-R-25 HP Attic | N/A | N/A | 661 | N/A | N/A |
| Floor to Garage | 1 Bed Unit Zone R-30 NS Crnl | N/A | N/A | 661 | N/A | N/A |
| Garage Front Wall | Garage Ext Garage Wall | 0 | Front | 300 | 0 | 90 |
| Garage Right Wall | Garage Ext Garage Wall | 270 | Right | 240 | 0 | 90 |
| Garage Back Wall | Garage Ext Garage Wall | 180 | Back | 300 | 144 | 90 |
| Garage Left Wall | Garage Ext Garage Wall | 90 | Left | 240 | 0 | 90 |

| Zone | Construction | Type | Roof Rise (x in 12) | Roof Reflectance | Roof Emissance | Radiant Barrier | Cool Roof |
|-----------------------|----------------------------|------------|---------------------|------------------|----------------|-----------------|-----------|
| Attic 1 Bed Unit Zone | Attic Roof 1 Bed Unit Zone | Ventilated | 6 | 0.1 | 0.85 | No | No |

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| | Energy Design Ratings | | | Compliance Margins | | |
|------------------------|-----------------------|----------------------------------|-----------------------|----------------------|----------------------------------|-----------------------|
| | Source Energy (EDR1) | Efficiency EDR (EDR2/Efficiency) | Total EDR (EDR2total) | Source Energy (EDR1) | Efficiency EDR (EDR2/Efficiency) | Total EDR (EDR2total) |
| Standard Design | 51.8 | 51.3 | 58.9 | | | |
| Proposed Design | | | | | | |
| North Facing | 50.7 | 48.1 | 57.1 | 1.1 | 3.2 | 1.8 |
| East Facing | 51.1 | 48.9 | 57.5 | 0.7 | 2.4 | 1.4 |
| South Facing | 51.1 | 48.6 | 57.3 | 0.7 | 2.7 | 1.6 |
| West Facing | 51.8 | 50.3 | 58.3 | 0 | 1 | 0.6 |

RESULT: PASS

Efficiency EDR includes Improvements like a better building envelope and more efficient equipment
Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

- Standard Design PV Capacity: 0.0 kWdc
- Proposed PV Capacity Scaling: North (0.00 kWdc) South (0.00 kWdc) West (0.00 kWdc)

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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| Energy Use Intensity | Standard Design (kBtu/ft²-yr) | Proposed Design (kBtu/ft²-yr) | Compliance Margin (kBtu/ft²-yr) | Margin Percentage |
|----------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------|
| North Facing | | | | |
| Gross EUI ¹ | 38.55 | 36.8 | 1.75 | 4.54 |
| Net EUI² | 38.55 | 36.8 | 1.75 | 4.54 |
| East Facing | | | | |
| Gross EUI ¹ | 38.55 | 37.14 | 1.41 | 3.66 |
| Net EUI² | 38.55 | 37.14 | 1.41 | 3.66 |
| South Facing | | | | |
| Gross EUI ¹ | 38.55 | 36.98 | 1.57 | 4.07 |
| Net EUI² | 38.55 | 36.98 | 1.57 | 4.07 |
| West Facing | | | | |
| Gross EUI ¹ | 38.55 | 37.57 | 0.98 | 2.54 |
| Net EUI² | 38.55 | 37.57 | 0.98 | 2.54 |

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

Registration Number: 223-P1010161488-000-000-0000000-0000
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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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| Name | Type | Surface | Orientation | Admuth | Width (ft) | Height (ft) | Mult. | Area (ft²) | U-factor | U-factor Source | SHGC | SHGC Source | Exterior Shading |
|---------------------|--------|------------|-------------|--------|------------|-------------|-------|------------|----------|-----------------|------|-------------|------------------|
| Front Window (OP) | Window | Front Wall | Front | 0 | 1 | 24 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |
| Front Window (OP) 2 | Window | Front Wall | Front | 0 | 5 | 4 | 1 | 20 | 0.3 | NFRC | 0.4 | NFRC | Bug Screen |
| Back Window (OP) | Window | Back Wall | Back | 180 | 1 | 10 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |
| Back Window (OP) 2 | Window | Back Wall | Back | 180 | 1 | 24 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |
| Back Window (OP) 3 | Window | Back Wall | Back | 180 | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |
| Left Window (OP) | Window | Left Wall | Left | 90 | 3 | 4.44 | 1 | 13.32 | 0.3 | NFRC | 0.4 | NFRC | Bug Screen |
| Left Window (OP) 2 | Window | Left Wall | Left | 90 | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |
| Left Window (OP) 3 | Window | Left Wall | Left | 90 | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |

| Name | Side of Building | Area (ft²) | U-factor |
|----------------------|------------------|------------|----------|
| Front Door | Front Wall | 17.5 | 0.2 |
| Garage Back Car Door | Garage Back Wall | 144 | 1 |

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| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) |
|---|--|--|--|--|--------------------------|--------------------------|
| Space Heating | 13.63 | 91.8 | 4.95 | 52.45 | 8.68 | 39.35 |
| Space Cooling | 0.83 | 10.43 | 0.65 | 8.85 | 0.18 | 1.58 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.45 | 79.8 | -8.18 | -31.41 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| North Facing Efficiency Compliance Total | 19.13 | 154.99 | 18.45 | 145.47 | 0.68 | 9.52 |
| Space Heating | 13.63 | 91.8 | 4.88 | 51.19 | 8.75 | 40.61 |
| Space Cooling | 0.83 | 10.43 | 0.66 | 12.26 | -0.13 | -1.83 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.45 | 79.8 | -8.18 | -31.41 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| East Facing Efficiency Compliance Total | 19.13 | 154.99 | 18.69 | 147.62 | 0.44 | 7.37 |

Registration Number: 223-P1010161488-000-000-0000000-0000
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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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| DC System Size (kWdc) | Exception | Module Type | Array Type | Power Electronics | CFI | Admuth (deg) | Tilt Input | Array Angle (deg) | Tilt (x in 12) | Inverter Eff. (%) | Annual Solar Access (%) |
|-----------------------|-----------|-------------------|------------|-------------------|------|--------------|------------|-------------------|----------------|-------------------|-------------------------|
| 0 | | Standard (14-17%) | Fixed | none | true | n/a | n/a | n/a | n/a | n/a | n/a |

REQUIRED SPECIAL FEATURES

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

- PV exception 2: No PV required when minimum PV size (Section 150.10(14) < 1.8 kWdc (D kW))
- Insulation below roof deck
- Window overhangs and/or fins

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 CF2Rb are required to be completed in the HERS Registry.

- Quality insulation installation (QI)
- Indoor air quality ventilation
- Kitchen range hood
- Minimum Airflow
- Verified SEER/SEER2
- Verified Refrigerant Charge
- Fan Efficacy Watts/CFM
- Verified HSPF2
- Verified heat pump rated heating capacity
- Duct leakage testing

BUILDING - FEATURES INFORMATION

| Project Name | Conditioned Floor Area (ft²) | Number of Dwelling Units | Number of Bedrooms | Number of Zones | Number of Ventilation Cooling Systems | Number of Water Heating Systems |
|--------------------------|------------------------------|--------------------------|--------------------|-----------------|---------------------------------------|---------------------------------|
| 1 Bedroom Unit Version 1 | 661 | 1 | 1 | 1 | 0 | 1 |

Registration Number: 223-P1010161488-000-000-0000000-0000
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Report Version: 2022.0.000
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ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: NA - EXCEPTION 2: <1.8 kWDC
SPECIAL FEATURES: NONE
SPACE HEATING: DUCTED HEAT PUMP (HSPF2=9.5)
SPACE COOLING: DUCTED HEAT PUMP (SEER2=16.0, EER2=11.7)
HEAT & COOL LOADS: HEAT: 12,942 BTU/HR COOL: 6,708 BTU/HR
DUCT INSULATION: R-8 ATTIC
WATER HEATING: GAS ON DEMAND WATER HEATER (UEF=0.96)
PIPE INSULATION: ALL DHW PIPING SHALL BE INSULATED WITH 1" THICK OR MINIMUM R-VALUE 7.7
RADIANT BARRIER: NA
HERS TESTS: INDOOR AIR QUALITY VENTILATION, DUCT LEAKAGE TESTING, MINIMUM AIRFLOW, FAN EFFICACY WATTS/CFM, VERIFIED REFRIGERANT CHARGE, VERIFIED SEER/SEER2, VERIFIED HSPF2, VERIFIED HEAT PUMP RATED HEATING CAPACITY, VERIFIED RANGE HOOD, QUALITY INSULATION INSPECTION (QI)
IAQ VENTILATION: 0.03*BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03* 661+ 2*7.5 = 34 CFM
KITCHEN VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM. REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, LTG-01 - LIGHTING, MCH-01 - SPACE CONDITIONING SYSTEMS, PLB-22 - WATER HEATERS, PVB-01 - PV SYSTEMS
EXTERIOR WALLS: R-23
ROOF ATTIC: R-38 WITH R-15 ON PITCH TOUCHING ROOF SHEATHING
FLOOR: R-30
WINDOWS: NON-METAL FRAMED, DOUBLE PANE WITH LOW-E GLASS (U-VALUE=0.30, SHGC=0.40)
GLASS DOORS: NA
EXTERIOR SC DOOR: SOLID CORE AT R-5 (U-FACTOR=0.20)
SKYLIGHTS: NA

| DWELLING UNIT FLOOR AREA (FT2) | HOOD OVER ELECTRIC RANGE | HOOD OVER GAS RANGE |
|--------------------------------|--------------------------|---------------------|
| > 1500 | 110 CFM | 180 CFM |
| < 1000 - 1500 | 110 CFM | 250 CFM |
| 750-1000 | 130 CFM | 280 CFM |
| < 750 | 160 CFM | 280 CFM |

SPECIAL HERS VERIFICATION QII REQUIRED

CONTACT ENERGY CONSULTANT OR HERS RATER DURING FRAMING STAGE OF PROJECT

KITCHEN RANGE HOOD MUST BE HVI OR AHAM CERTIFIED

BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

TITLE 24 ENERGY REPORT - CZ16 DUCTED HP 490LB

T24.1.2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E
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Project Name: 1 Bedroom Unit Version 1
Calculation Date/Time: 2023-02-08T13:34:07-08:00
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| OVERHANGS AND FINIS | | | | | | | | | | | | | |
|---------------------|----------|---------|-------------|--------------|----------|-------|--------|-----------|--------|-------|--------|--------|--------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| Window | Overhang | | | Left Fin | | | | Right Fin | | | | Bot Up | |
| | Depth | Dist Up | Left Extent | Right Extent | Flap Ht. | Depth | Top Up | Dist L | Bot Up | Depth | Top Up | | Dist R |
| Front Window (OP) 2 | 4 | 0.3 | 12 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Left Window (OP) | 18 | 0.3 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| SLAB FLOORS | | | | | | | |
|---------------|--------|-------------------------|----------------|-------------------------------|-------------------------------|-------------------|--------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| Name | Zone | Area (ft ²) | Perimeter (ft) | Edge Insul. R-value and Depth | Edge Insul. R-value and Depth | Carpeted Fraction | Heated |
| Slab-on-Grade | Garage | 661 | 108 | none | 0 | 0% | No |

| OPAQUE SURFACE CONSTRUCTIONS | | | | | | | |
|------------------------------|----------------|-------------------|-------------------|----------------------|--|----------|--|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-Factor | Assembly Layers |
| Ext Garage Wall | Exterior Walls | Wood Framed Wall | 2x6 @ 16 in. O.C. | R-0 | None / None | 0.29 | Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x6 Exterior Finish: Wood Siding/sheathing/decking |
| R-23 Wall | Exterior Walls | Wood Framed Wall | 2x6 @ 16 in. O.C. | R-23 | None / None | 0.063 | Inside Finish: Gypsum Board Cavity / Frame: R-23 / 2x6 Exterior Finish: Wood Siding/sheathing/decking |

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| HVAC - HEAT PUMPS | | | | | | | | | | | | |
|--------------------|------------------|-----------------|-------------|--------|---------|--------------|--------------|------------------|--------------------|-----------------|-------------------|-------------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
| Name | System Type | Number of Units | Heating | | Cooling | | SEER / SEER2 | EER / EER / CEER | Zonally Controlled | Compressor Type | HERS Verification | HERS Verification |
| | | | HSPF2 / COP | Cap 47 | Cap 17 | SEER / SEER2 | | | | | | |
| Heat Pump System 1 | Central Split HP | 1 | HSPF2 | 9.5 | 27000 | 23000 | EER2SEER2 | 16 | 11.7 | Not Zonal | Single Speed | Heat Pump System 1-HERS-HPump |

| HVAC HEAT PUMPS - HERS VERIFICATION | | | | | | | | |
|-------------------------------------|------------------|----------------|--------------------|-----------------------------|---------------------|-------------------------|-------------------------|-------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Name | Verified Airflow | Airflow Target | Verified EER/SEER2 | Verified Refrigerant Charge | Verified HSPF/HSPF2 | Verified Heating Cap 47 | Verified Heating Cap 17 | Verified Heating Cap 17 |
| Heat Pump System 1-HERS-HPump | Required | 350 | Not Required | Not Required | Yes | No | Yes | Yes |

| HVAC - DISTRIBUTION SYSTEMS | | | | | | | | | | | |
|-----------------------------|---------------------|--------------|-------------------|--------|---------------|--------|--------------|--------|----------------|-------------------|-------------------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
| Name | Type | Design Type | Duct Ins. R-value | | Duct Location | | Surface Area | | Bypass Duct | Duct Leakage | HERS Verification |
| | | | Supply | Return | Supply | Return | Supply | Return | | | |
| Air Distribution System 1 | Unconditioned attic | Non-Verified | R-8 | R-8 | Attic | Attic | n/a | n/a | No Bypass Duct | Sealed and Tested | Air Distribution System 1-HERS-dist |

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| OPAQUE SURFACE CONSTRUCTIONS | | | | | | | |
|------------------------------|------------------------|---------------------|--------------------|----------------------|--|----------|--|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-Factor | Assembly Layers |
| Attic Roof/1 Bed Unit Zone | Attic Roofs | Wood Framed Ceiling | 2x4 @ 24 in. O.C. | R-15 | None / 0 | 0.07 | Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Attic/Roof Joist: R-3.0 Insul. |
| R-38-R-15 HP Attic | Ceilings (below attic) | Wood Framed Ceiling | 2x4 @ 24 in. O.C. | R-38 | None / None | 0.025 | Over Ceiling Joist: R-38 Insul. Cavity / Frame: R-1.1 / 2x4 Inside Finish: Gypsum Board |
| R-30 No Crawl | Interior Floors | Wood Framed Floor | 2x10 @ 16 in. O.C. | R-30 | None / None | 0.033 | Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 Ceiling Below Finish: Gypsum Board |

| BUILDING ENVELOPE - HERS VERIFICATION | | | | |
|---------------------------------------|------------------------------------|-------------------------------|-------|-------|
| 01 | 02 | 03 | 04 | 05 |
| Quality Insulation Installation (QII) | High R-value Spray Foam Insulation | Building Envelope Air Leakage | CFM50 | CFM50 |
| Required | Not Required | N/A | n/a | n/a |

| WATER HEATING SYSTEMS | | | | | | | | |
|-----------------------|--------------------------|-------------------|-------------------|-----------------|----------------------|----------------------|-------------------|-----------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Name | System Type | Distribution Type | Water Heater Name | Number of Units | Solar Heating System | Compact Distribution | HERS Verification | Water Heater Name (H) |
| DHW Sys 1 | Domestic Hot Water (DHW) | Standard | DHW Heater 1 | 1 | n/a | None | n/a | DHW Heater 1 (H) |

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| HVAC DISTRIBUTION - HERS VERIFICATION | | | | | | | | |
|---------------------------------------|---------------------------|-------------------------|------------------------|----------------------|--------------|---------------------|-------------------------|---|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Name | Duct Leakage Verification | Duct Leakage Target (%) | Verified Duct Location | Verified Duct Design | Buried Ducts | Deeply Buried Ducts | Low-leakage Air Handler | Low Leakage Ducts Entirely in Conditioned Space |
| Air Distribution System 1-HERS-dist | Yes | 5.0 | Not Required | Not Required | Not Required | Credit not taken | Not Required | Not Required |

| HVAC - FAN SYSTEMS | | | |
|--------------------|----------|-----------------------|---------------------|
| 01 | 02 | 03 | 04 |
| Name | Type | Fan Power (Watts/CFM) | Name |
| HVAC Fan 1 | HVAC Fan | 0.58 | HVAC Fan 1-HERS-fan |

| HVAC FAN SYSTEMS - HERS VERIFICATION | | |
|--------------------------------------|------------------------|-----------------------------------|
| 01 | 02 | 03 |
| Name | Verified Fan Watt Draw | Required Fan Efficacy (Watts/CFM) |
| HVAC Fan 1-HERS-fan | Required | 0.58 |

| INDOOR AIR QUALITY (IAQ) FANS | | | | | | | | |
|-------------------------------|---------------|----------------------|--------------|--------------------------------|----------------------------------|-----------------------------------|-------------------|--------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Dwelling Unit | Airflow (CFM) | Fan Efficacy (W/CFM) | IAQ Fan Type | Includes Heat/Energy Recovery? | IAQ Recovery Effectiveness - SRE | Includes Fault Indicator Display? | HERS Verification | Status |
| S-fan IAQVentRpt | 34 | 0.35 | Exhaust | No | n/a | No | Yes | |

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| WATER HEATING | | | | | | | | | | | | |
|---------------|----------------------|------------------------|------------|-----------------|-------------------------|------------|-------------|-----------------------|----------------------------------|------------------------------|-----------------------------|---------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
| Name | Heating Element Type | Tank Type | # of Units | Tank Vol. (gal) | Heating Efficiency Type | Efficiency | Rated Input | Input Rating or Pilot | Tank Insulation R-value (in/Fin) | Standby Loss or Recovery Eff | 1st Hr. Rating or Flow Rate | Tank Location |
| DHW Heater 1 | Propane | Consumer Instantaneous | 1 | 0 | UEF | 0.96 | 800/Hr | 200000 | 0 | n/a | | |

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

| SPACE CONDITIONING SYSTEMS | | | | | | | | |
|----------------------------|---------------------------|--------------------|-------------------------|--------------------|-------------------------|------------|---------------------------|--------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
| Name | System Type | Heating Unit Name | Heating Equipment Count | Cooling Unit Name | Cooling Equipment Count | Fan Name | Distribution Name | Required Thermostat Type |
| HVAC1 | Heat pump heating/cooling | Heat Pump System 1 | 1 | Heat Pump System 1 | 1 | HVAC Fan 1 | Air Distribution System 1 | Setback |

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Nicole E Porata
Company: Melas Energy Engineering
Address: 547 Uren St, Nevada City, CA 95959
Phone: 530-265-2492

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I, certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features and system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Russell Davidson
Company: Russell Davidson Architecture + Design
Address: 149 Crown Point Ct, Suite A, Grass Valley, CA 95949
Phone: 530-913-2370

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

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ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: NA - EXCEPTION 2: <1.8 KWDC
SPECIAL FEATURES: NONE
SPACE HEATING: DUCTED HEAT PUMP (HSPF2=9.5)
SPACE COOLING: DUCTED HEAT PUMP (SEER2=16.0, EER2=11.7)
HEAT & COOL LOADS: HEAT: 12,942 BTU/HR COOL: 6,708 BTU/HR
DUCT INSULATION: R-8 ATTIC
WATER HEATING: GAS ON DEMAND WATER HEATER (UEF=0.96)
PIPE INSULATION: ALL DHW PIPING SHALL BE INSULATED WITH 1" THICK OR MINIMUM R-VALUE 7.7
RADIANT BARRIER: NA
HERS TESTS: INDOOR AIR QUALITY VENTILATION, DUCT LEAKAGE TESTING, MINIMUM AIRFLOW, FAN EFFICACY WATTS/CFM, VERIFIED REFRIGERANT CHARGE, VERIFIED SEER/SEER2, VERIFIED HSPF2, VERIFIED HEAT PUMP RATED HEATING CAPACITY, KITCHEN RANGE HOOD, QUALITY INSULATION INSPECTION (QII)
IAQ VENTILATION: 0.03*BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03* 661+ 2*7.5 = 34 CFM
KITCHEN VENTILATION: KITCHEN RANGE HOOD CFM REQUIREMENTS VARY BASED ON DWELLING UNIT SQUARE FOOTAGE. SEE TABLE BELOW OF REQUIRED CFM. A SOUND RATING OF 3 SONES OR LESS FOR NOISE UNLESS THE EXHAUST FAN IS 400 CFM OR GREATER. 0.25 EXTERNAL STATIC PRESSURE HOOD, DUCT VENT FANS REQUIRE 7" DUCT MIN. OTHER COMPLIANCE OPTIONS ARE LISTED UNDER TITLE 24, PART 6 SECTION 150.0.
BATHROOM VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM.
REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, LTG-01 - LIGHTING, MCH-01 - SPACE CONDITIONING SYSTEMS, PLB-22 - WATER HEATERS, PVB-01 - PV SYSTEMS
EXTERIOR WALLS: R-23
ROOF ATTIC: R-38 WITH R-15 ON PITCH TOUCHING ROOF SHEATHING
FLOOR: R-30
WINDOWS: NON-METAL FRAMED, DOUBLE PANE WITH LOW-E GLASS (U-VALUE=0.30, SHGC=0.40)
GLASS DOORS: NA
EXTERIOR SC DOOR: SOLID CORE AT R-5 (U-FACTOR=0.20)
SKYLIGHTS: NA

| REQUIRED KITCHEN RANGE HOOD AIRFLOW RATES (CFM) | | |
|---|--------------------------|---------------------|
| DWELLING UNIT FLOOR AREA (FT2) | HOOD OVER ELECTRIC RANGE | HOOD OVER GAS RANGE |
| > 1500 | 110 CFM | 180 CFM |
| < 1000 - 1500 | 110 CFM | 250 CFM |
| 750-1000 | 130 CFM | 280 CFM |
| < 750 | 160 CFM | 280 CFM |

SPECIAL HERS VERIFICATION QII REQUIRED
CONTACT ENERGY CONSULTANT OR HERS RATER DURING FRAMING STAGE OF PROJECT
KITCHEN RANGE HOOD MUST BE HVI OR AHAM CERTIFIED

BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

TITLE 24 ENERGY REPORT - CZ16 DUCTLESS HP 490LB

T24.2.1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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| GENERAL INFORMATION | | | |
|---------------------|---------------------------------|--------------------------|-----------------------------------|
| 01 | Project Name | 1 Bedroom Unit Version 2 | |
| 02 | Run Title | Title 24 Analysis | |
| 03 | Project Location | TBD | |
| 04 | City | 05 | Standards Version |
| 06 | Zip code | 07 | Software Version |
| 08 | Climate Zone | 09 | Front Orientation (deg/ Cardinal) |
| 10 | Building Type | 11 | Number of Dwelling Units |
| 12 | Project Status | 13 | Number of Bedrooms |
| 14 | Addition Cond. Floor Area (ft²) | 15 | Number of Stories |
| 16 | Existing Cond. Floor Area (ft²) | 17 | Fenestration Average U-Factor |
| 18 | Total Cond. Floor Area (ft²) | 19 | Glazing Percentage (%) |
| 20 | ADU Bedroom Count | N/A | |

| COMPLIANCE RESULTS | |
|--------------------|---|
| 01 | Building Complies with Computer Performance |
| 02 | This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider. |
| 03 | This building incorporates one or more Special Features shown below |

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| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) |
|---|--|--|--|--|--------------------------|--------------------------|
| Space Heating | 13.65 | 91.92 | 4.62 | 49.12 | 9.03 | 42.8 |
| Space Cooling | 0.83 | 10.55 | 0.72 | 8.53 | 0.11 | 2.02 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.79 | 81.93 | -8.52 | -33.54 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| South Facing Efficiency Compliance Total | 19.15 | 155.23 | 18.53 | 143.95 | 0.62 | 11.28 |
| Space Heating | 13.65 | 91.92 | 4.87 | 51.05 | 8.78 | 40.87 |
| Space Cooling | 0.83 | 10.55 | 0.83 | 11.23 | -0.04 | -0.68 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.79 | 81.93 | -8.52 | -33.54 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| West Facing Efficiency Compliance Total | 19.15 | 155.23 | 18.93 | 146.58 | 0.22 | 6.65 |

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| ZONE INFORMATION | | | | | | |
|------------------|-------------|------------------|-----------------------|---------------------|------------------------|--------|
| Zone Name | Zone Type | HVAC System Name | Zone Floor Area (ft²) | Avg. Ceiling Height | Water Heating System 1 | Status |
| 1 Bed Unit Zone | Conditioned | HVAC1 | 661 | 9 | DHW Sys 1 | New |

| OPAQUE SURFACES | | | | | | | |
|-------------------|-----------------|-----------------------|-------------|------------------|----------------------------|------------|-----|
| Zone | Construction | Admth | Orientation | Gross Area (ft²) | Window and Door Area (ft²) | Tilt (deg) | |
| Front Wall | 1 Bed Unit Zone | R-23 Wall | 0 | Front | 270 | 61.5 | 90 |
| Right Wall | 1 Bed Unit Zone | R-23 Wall | 270 | Right | 216 | 0 | 90 |
| Back Wall | 1 Bed Unit Zone | R-23 Wall | 180 | Back | 270 | 62 | 90 |
| Left Wall | 1 Bed Unit Zone | R-23 Wall | 90 | Left | 216 | 49.32 | 90 |
| Ceiling | 1 Bed Unit Zone | R-38 Attic w/ Rad Bar | N/A | N/A | 661 | N/A | N/A |
| Floor to Garage | 1 Bed Unit Zone | R-30 NIS Crnl | N/A | N/A | 661 | N/A | N/A |
| Garage Front Wall | Garage | Ext Garage Wall | 0 | Front | 300 | 0 | 90 |
| Garage Right Wall | Garage | Ext Garage Wall | 270 | Right | 240 | 0 | 90 |
| Garage Back Wall | Garage | Ext Garage Wall | 180 | Back | 300 | 144 | 90 |
| Garage Left Wall | Garage | Ext Garage Wall | 90 | Left | 240 | 0 | 90 |

| ATTIC | | | | | | | |
|-----------------------|----------------------------|------------|---------------------|------------------|----------------|-----------------|-----------|
| Zone | Construction | Type | Roof Rise (x in 12) | Roof Reflectance | Roof Emittance | Radiant Barrier | Cool Roof |
| Attic 1 Bed Unit Zone | Attic Roof 1 Bed Unit Zone | Ventilated | 6 | 0.1 | 0.85 | Yes | No |

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| | Energy Design Ratings | | | Compliance Margins | | |
|-----------------|-----------------------|-----------------------------------|------------------------|----------------------|-----------------------------------|------------------------|
| | Source Energy (EDR1) | Efficiency* EDR (EDR2/Efficiency) | Total* EDR (EDR2total) | Source Energy (EDR1) | Efficiency* EDR (EDR2/Efficiency) | Total* EDR (EDR2total) |
| Standard Design | 51.8 | 51.4 | 59 | | | |
| Proposed Design | | | | | | |
| North Facing | 50.2 | 46.6 | 56.1 | 1.6 | 4.8 | 2.9 |
| East Facing | 50.7 | 47.4 | 56.6 | 3.1 | 4 | 2.4 |
| South Facing | 50.9 | 47.6 | 56.7 | 0.9 | 3.8 | 2.3 |
| West Facing | 51.5 | 49.2 | 57.7 | 0.3 | 2.2 | 1.3 |

RESULT: PASS

*Efficiency EDR includes improvements like a better building envelope and more efficient equipment
*Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
*Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

Standard Design PV Capacity: 0.0 kWdc
Proposed PV Capacity Scaling: North (0.00 kWdc) South (0.00 kWdc) East (0.00 kWdc) West (0.00 kWdc)

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| | ENERGY USE INTENSITY | | | Margin Percentage |
|------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------|
| | Standard Design (kBtu/ft²-yr) | Proposed Design (kBtu/ft²-yr) | Compliance Margin (kBtu/ft²-yr) | |
| North Facing | | | | |
| Gross EUt ¹ | 38.58 | 36.46 | 2.12 | 5.5 |
| Net EUt ² | 38.58 | 36.46 | 2.12 | 5.5 |
| East Facing | | | | |
| Gross EUt ¹ | 38.58 | 36.87 | 1.71 | 4.43 |
| Net EUt ² | 38.58 | 36.87 | 1.71 | 4.43 |
| South Facing | | | | |
| Gross EUt ¹ | 38.58 | 36.78 | 1.8 | 4.67 |
| Net EUt ² | 38.58 | 36.78 | 1.8 | 4.67 |
| West Facing | | | | |
| Gross EUt ¹ | 38.58 | 37.31 | 1.27 | 3.29 |
| Net EUt ² | 38.58 | 37.31 | 1.27 | 3.29 |

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

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
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| FENESTRATION / GLAZING | | | | | | | | | | | | | |
|------------------------|--------|------------|-------------|-------|------------|-------------|-------|------------|----------|-----------------|------|-------------|------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| Name | Type | Surface | Orientation | Admth | Width (ft) | Height (ft) | Mult. | Area (ft²) | U-factor | U-factor Source | SHGC | SHGC Source | Exterior Shading |
| Front Window (OP) | Window | Front Wall | Front | 0 | 1 | 24 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC | Bug Screen |
| Front Window (OP) 2 | Window | Front Wall | Front | 0 | 5 | 4 | 1 | 20 | 0.3 | NFRC | 0.4 | NFRC | Bug Screen |
| Back Window (OP) | Window | Back Wall | Back | 180 | | 1 | 10 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |
| Back Window (OP) 2 | Window | Back Wall | Back | 180 | | 1 | 16 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |
| Back Window (OP) 3 | Window | Back Wall | Back | 180 | | 1 | 26 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |
| Back Window (OP) 4 | Window | Back Wall | Back | 180 | | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |
| Left Window (OP) | Window | Left Wall | Left | 90 | 3 | 4.44 | 1 | 13.32 | 0.3 | NFRC | 0.4 | NFRC | Bug Screen |
| Left Window (OP) 2 | Window | Left Wall | Left | 90 | | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |
| Left Window (OP) 3 | Window | Left Wall | Left | 90 | | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |
| Left Window (OP) 4 | Window | Left Wall | Left | 90 | | 1 | 12 | 0.3 | NFRC | 0.4 | NFRC | 0.4 | NFRC |

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| ENERGY USE SUMMARY | | | | | | |
|---|--|--|--|--|--------------------------|--------------------------|
| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) |
| Space Heating | 13.65 | 91.92 | 4.24 | 45.35 | 9.41 | 46.67 |
| Space Cooling | 0.83 | 10.55 | 0.64 | 9.12 | 0.19 | 1.43 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.79 | 81.93 | -8.52 | -33.54 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| North Facing Efficiency Compliance Total | 19.15 | 155.23 | 18.07 | 140.67 | 1.08 | 14.56 |
| Space Heating | 13.65 | 91.92 | 4.23 | 44.83 | 9.42 | 47.49 |
| Space Cooling | 0.83 | 10.55 | 0.67 | 12.58 | -0.14 | -2.03 |
| IAQ Ventilation | 0.4 | 4.37 | 0.4 | 4.37 | 0 | 0 |
| Water Heating | 4.27 | 48.39 | 12.79 | 81.93 | -8.52 | -33.54 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| East Facing Efficiency Compliance Total | 19.15 | 155.23 | 18.39 | 143.31 | 0.76 | 11.92 |

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| REQUIRED PV SYSTEMS | | | | | | | | | | | |
|-----------------------|-----------|-------------------|------------|-------------------|------|----------------|------------|-------------------|----------------|-------------------|-------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
| DC System Size (kWdc) | Exception | Module Type | Array Type | Power Electronics | CFI | Altitude (deg) | Tilt Input | Array Angle (deg) | Tilt (x in 12) | Inverter Eff. (%) | Annual Solar Access (%) |
| 0 | | Standard (14-17%) | Fixed | none | true | n/a | n/a | n/a | n/a | n/a | n/a |

REQUIRED SPECIAL FEATURES
The following are features that must be installed as a condition for meeting the modeled energy performance for this computer analysis.
• PV exception 2: No PV required when minimum PV size (Section 1501014) < 1.8 kWdc (0 kW)
• Window overhangs and/or fins
• Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)

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.
• Quality insulation installation (QI)
• Indoor air quality ventilation
• Kitchen range hood
• Verified Refrigerant Charge
• Airflow in habitable rooms (SC3.1.4.1.7)
• Verified heat pump rated heating capacity
• Wall mounted thermostat in zones greater than 150 ft² (SC3.4.5)
• Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

| BUILDING - FEATURES INFORMATION | | | | | | |
|---------------------------------|------------------------------|--------------------------|--------------------|-----------------|---------------------------------------|---------------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| Project Name | Conditioned Floor Area (ft²) | Number of Dwelling Units | Number of Bedrooms | Number of Zones | Number of Ventilation Cooling Systems | Number of Water Heating Systems |
| 1 Bedroom Unit Version 2 | 661 | 1 | 1 | 1 | 0 | 1 |

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| ZONE INFORMATION | | | | | | |
|------------------|-------------|------------------|-----------------------|---------------------|------------------------|--------|
| Zone Name | Zone Type | HVAC System Name | Zone Floor Area (ft²) | Avg. Ceiling Height | Water Heating System 1 | Status |
| 1 Bed Unit Zone | Conditioned | HVAC1 | 661 | 9 | DHW Sys 1 | New |

ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: NA - EXCEPTION 2: <1.8 kWDC
SPECIAL FEATURES: NONE
SPACE HEATING: DUCTLESS HEAT PUMP (HSPF2=7.5)
SPACE COOLING: DUCTLESS HEAT PUMP (SEER2=14.3, EER2=9.0)
HEAT & COOL LOADS: HEAT: 11,108 BTU/HR COOL: 6,455 BTU/HR
DUCT INSULATION: NA
WATER HEATING: GAS ON DEMAND WATER HEATER (UEF=0.95)
PIPE INSULATION: FIRST 5' OF HOT & COLD DHW PIPING INSULATED WITH 1" THICK, IF RECIRC LOOP ALL PIPE INSULATED
RADIANT BARRIER: RADIANT BARRIER IN ATTIC AND GABLE ENDS INSTALLED PER MANUFACTURERS SPECIFICATIONS REQUIRED
HERS TESTS: INDOOR AIR QUALITY VENTILATION, VERIFIED REFRIGERANT CHARGE, VERIFIED HEAT PUMP RATED HEATING CAPACITY, AIRFLOW IN HABITABLE ROOMS, WALL-MOUNTED THERMOSTAT IN ZONES GREATER THAN 150 SQ FT, DUCTLESS INDOOR UNITS LOCATED ENTIRELY IN CONDITIONED SPACE, KITCHEN RANGE HOOD, QUALITY INSULATION INSPECTION (QI)
IAQ VENTILATION: 0.03 BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03 * 661 + 2 * 7.5 = 34 CFM
KITCHEN VENTILATION: KITCHEN RANGE HOOD CFM REQUIREMENTS VARY BASED ON DWELLING UNIT SQUARE FOOTAGE. SEE TABLE BELOW OF REQUIRED CFM. A SOUND RATING OF 3 SONES OR LESS FOR NOISE UNLESS THE EXHAUST FAN IS 400 CFM OR GREATER, 0.25" EXTERNAL STATIC PRESSURE HOOD, DUCT VENT FANS REQUIRE 7" DUCT MIN. OTHER COMPLIANCE OPTIONS ARE LISTED UNDER TITLE 24, PART 6 SECTION 150.0.
BATHROOM VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM.
REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, LTG-01 - LIGHTING, MCH-01 - SPACE CONDITIONING SYSTEMS, PLB-22 - WATER HEATERS, PVB-01 - PV SYSTEMS
EXTERIOR WALLS: R-21
ROOF ATTIC: R-38
FLOOR: R-1

BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

TITLE 24 ENERGY REPORT - CZ16 DUCTLESS HP 490LB

T24.2.2

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| 01 | 02 | 03 | 04 |
|----------------------|------------------|-------------------------|----------|
| Name | Side of Building | Area (ft ²) | U-factor |
| Front Door | Front Wall | 17.5 | 0.2 |
| Garage Back Car Door | Garage Back Wall | 144 | 1 |

OVERHANGS AND FINS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
|---------------------|----------|---------|-------------|--------------|----------|-------|--------|-----------|--------|-------|--------|--------|--------|
| Window | Overhang | | | Left Fin | | | | Right Fin | | | | | |
| | Depth | Dist Up | Left Extent | Right Extent | Flap Ht. | Depth | Top Up | Dist L | Bot Up | Depth | Top Up | Dist R | Bot Up |
| Front Window (OP) 2 | 4 | 0.3 | 12 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Left Window (OP) | 18 | 0.3 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SLAB FLOORS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|--------------|--------|-------------------------|----------------|-------------------------------|-------------------------------|-------------------|--------|
| Name | Zone | Area (ft ²) | Perimeter (ft) | Edge Insul. R-value and Depth | Edge Insul. R-value and Depth | Carpeted Fraction | Heated |
| Sub-on-Grade | Garage | 661 | 108 | none | 0 | 0% | No |

OPAQUE SURFACE CONSTRUCTIONS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|-------------------|----------------|-------------------|--------------------|----------------------|--|----------|--|
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-factor | Assembly Layers |
| Ext Garage Wall | Exterior Walls | Wood Framed Wall | 2x6 @ 16 in. O. C. | R-0 | None / None | 0.29 | Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x6 Exterior Finish: Wood Siding/shaathing/decok |

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HERS Provider: CaCERTS Inc.
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HEAT PUMPS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
|--------------------|---------------|-----------------|-----------------|------------|---------|--------|--------------------|-----------------|-------------------|-----------------|--------------|------------------------------|
| Name | System Type | Number of Units | Heating | | Cooling | | Zonally Controlled | Compressor Type | HERS Verification | | | |
| | | | Efficiency Type | HSPF / COP | Cap 47 | Cap 17 | | | | Efficiency Type | SEER / SEER2 | EER / CEER |
| Heat Pump System 1 | VCHP-ductless | 1 | HSPF2 | 7.5 | 24000 | 23000 | EER2SEER2 | 14.3 | 9 | Not Zonal | Single Speed | Heat Pump System 1-Heat-Pump |

HEAT PUMPS - HERS VERIFICATION

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|------------------------------|------------------|----------------|--------------------|---------------------|-----------------------------|---------------------|-------------------------|-------------------------|
| Name | Verified Airflow | Airflow Target | Verified EER/SEER2 | Verified SEER/SEER2 | Verified Refrigerant Charge | Verified HSPF/HSPF2 | Verified Heating Cap 47 | Verified Heating Cap 17 |
| Heat Pump System 1-Heat-Pump | Not Required | 0 | Not Required | Not Required | Yes | No | Yes | Yes |

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|--------------------|----------------------------------|----------------------------|-------------------------------------|-----------------------|-------------------------------|--|---|------------------------------|-------------------------------------|
| Name | Certified Low-Static VCHP System | Airflow to Habitable Rooms | Ductless Units in Conditioned Space | Wall Mount Thermostat | Air Filter Sizing Drop Rating | Low Leakage Ducts in Conditioned Space | Minimum Airflow per S3.3.3.4.1 and S3.3.3.4.1 | Certified non-continuous Fan | Indoor Fan not Running Continuously |
| Heat Pump System 1 | Not required | Required | Required | Required | Not required | Not required | Not required | Not required | Not required |

INDOOR AIR QUALITY (IAQ) FANS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-----------------|---------------|------------------------|--------------|--------------------------------|----------------------------------|-----------------------------------|-------------------|--------|
| Dwelling Unit | Airflow (CFM) | Fan Efficiency (W/CFM) | IAQ Fan Type | Includes Heat/Energy Recovery? | IAQ Recovery Effectiveness - SBE | Includes Fault Indicator Display? | HERS Verification | Status |
| SFan IAQVentPpt | 34 | 0.35 | Exhaust | No | n/a | No | Yes | |

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OPAQUE SURFACE CONSTRUCTIONS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|----------------------------|------------------------|---------------------|---------------------|----------------------|--|----------|--|
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-factor | Assembly Layers |
| R-23 Wall | Exterior Walls | Wood Framed Wall | 2x6 @ 16 in. O. C. | R-23 | None / None | 0.066 | Inside Finish: Gypsum Board Cavity / Frame: R-23 / 2x6 Exterior Finish: 3 Coat Stucco |
| Attic Roof/1 Bed Unit Zone | Attic Roofs | Wood Framed Ceiling | 2x4 @ 24 in. O. C. | R-0 | None / 0 | 0.644 | Roofing: Light Roof (Asphalt Shingles) Roof Deck: Wood Siding/shaathing/decok Cavity / Frame: no insul. / 2x4 |
| R-38 Attic w/ Rad Bar | Ceilings (Below Attic) | Wood Framed Ceiling | 2x4 @ 16 in. O. C. | R-38 | None / None | 0.025 | Over Ceiling Joists: R-38.9 Insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board |
| R-30 No Crawl | Interior Floors | Wood Framed Floor | 2x10 @ 16 in. O. C. | R-30 | None / None | 0.033 | Floor Surface: Carpeted Floor Deck: Wood Siding/shaathing/decok Cavity / Frame: R-30 / 2x10 Ceiling Below Finish: Gypsum Board |

BUILDING ENVELOPE - HERS VERIFICATION

| 01 | 02 | 03 | 04 | 05 |
|---------------------------------------|------------------------------------|-------------------------------|-------|-------|
| Quality Insulation Installation (QII) | High R-value Spray Foam Insulation | Building Envelope Air Leakage | CFM50 | CFM50 |
| Required | Not Required | N/A | n/a | n/a |

WATER HEATING SYSTEMS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-----------|--------------------------|-------------------|-------------------|-----------------|----------------------|-----------------------------|-------------------|------------------------|
| Name | System Type | Distribution Type | Water Heater Name | Number of Units | Solar Heating System | Compact Distribution System | HERS Verification | Water Heater Name (ft) |
| DHW Sys 1 | Domestic Hot Water (DHW) | Standard | DHW Heater 1 | 1 | n/a | None | n/a | DHW Heater 1 (1) |

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Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ16 Ductless HP - 23043.rbd22x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Nicole E Porata
Signature Date: 2023-02-08 14:32:30
Company: Melas Energy Engineering
Address: 547 Uren St, Nevada City, CA 95959
Phone: 530-265-2492

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I, certify that the energy model and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.

Responsible Designer Name: Russell Davidson
Signature Date: 2023-02-10 10:05:58
Company: Russell Davidson Architecture + Design
Address: 149 Crown Point Ct, Suite A, Grass Valley, CA 95949
Phone: 530-913-2370

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

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WATER HEATING

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
|--------------|----------------------|-------------------------|------------|-----------------|-------------------------|------------|------------------|-----------------------|------------------------------------|------------------------------|-----------------------------|---------------|
| Name | Heating Element Type | Tank Type | # of Units | Tank Vol. (gal) | Heating Efficiency Type | Efficiency | Rated Input Type | Input Rating or Pilot | Tank Insulation R-value (per/Foot) | Standby Loss on Recovery Eff | 1st Hr. Rating or Flow Rate | Tank Location |
| DHW Heater 1 | Propane | Consumer Instantaneo us | 1 | 0 | UEF | 0.95 | 800/Hr | 200000 | 0 | n/a | | |

WATER HEATING - HERS VERIFICATION

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

SPACE CONDITIONING SYSTEMS

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-------|---------------------------|--------------------|-------------------------|--------------------|-------------------------|----------|-------------------|--------------------------|
| Name | System Type | Heating Unit Name | Heating Equipment Count | Cooling Unit Name | Cooling Equipment Count | Fan Name | Distribution Name | Required Thermostat Type |
| HVAC1 | Heat pump heating/cooling | Heat Pump System 1 | 1 | Heat Pump System 1 | 1 | n/a | n/a | Setback |

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ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: NA - EXCEPTION 2: <1.8 KWDC
SPECIAL FEATURES: NONE
SPACE HEATING: DUCTLESS HEAT PUMP (HSPF2=7.5)
SPACE COOLING: DUCTLESS HEAT PUMP (SEER2=14.3, EER2=9.0)
HEAT & COOL LOADS: HEAT: 11,108 BTU/HR COOL: 6,455 BTU/HR
DUCT INSULATION: NA
WATER HEATING: GAS ON DEMAND WATER HEATER (UEF=0.95)
PIPE INSULATION: FIRST 5' OF HOT & COLD DHW PIPING INSULATED WITH 1" THICK, IF RECIRC LOOP ALL PIPE INSULATED
RADIANT BARRIER: RADIANT BARRIER IN ATTIC AND GABLE ENDS INSTALLED PER MANUFACTURES SPECIFICATIONS REQUIRED
HERS TESTS: INDOOR AIR QUALITY VENTILATION, VERIFIED REFRIGERANT CHARGE, VERIFIED HEAT PUMP RATED HEATING CAPACITY, AIRFLOW IN HABITABLE ROOMS, WALL-MOUNTED THERMOSTAT IN ZONES GREATER THAN 150 SQ FT, DUCTLESS INDOOR UNITS LOCATED ENTIRELY IN CONDITIONED SPACE, KITCHEN RANGE HOOD, QUALITY INSULATION INSPECTION (QII)
IAQ VENTILATION: 0.03*BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03* 661+ 2*7.5 = 34 CFM
KITCHEN VENTILATION: KITCHEN RANGE HOOD CFM REQUIREMENTS VARY BASED ON DWELLING UNIT SQUARE FOOTAGE. SEE TABLE BELOW OF REQUIRED CFM. A SOUND RATING OF 3 SONES OR LESS FOR NOISE UNLESS THE EXHAUST FAN IS 400 CFM OR GREATER, 0.25" EXTERNAL STATIC PRESSURE HOOD, DUCT VENT FANS REQUIRE 7" DUCT MIN. OTHER COMPLIANCE OPTIONS ARE LISTED UNDER TITLE 24, PART 6 SECTION 155.0.
BATHROOM VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION FLOW SHALL BE 50 CFM.
REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, LTG-01 - LIGHTING, MCH-01 - SPACE CONDITIONING SYSTEMS, PLB-22 - WATER HEATERS, PVB-01 - PV SYSTEMS
EXTERIOR WALLS: R-21
ROOF ATTIC: R-38
FLOOR: R-19
WINDOWS: NON-METAL FRAMED, DOUBLE PANE WITH LOW-E GLASS (U-VALUE=0.30, SHGC=0.40)
GLASS DOORS: NA
EXTERIOR SC DOOR: SOLID CORE R-5 (U-FACTOR=0.20)
SKYLIGHTS: NA

| REQUIRED KITCHEN RANGE HOOD AIRFLOW RATES (CFM) | | |
|---|--------------------------|---------------------|
| DWELLING UNIT FLOOR AREA (FT2) | HOOD OVER ELECTRIC RANGE | HOOD OVER GAS RANGE |
| > 1500 | 110 CFM | 180 CFM |
| < 1000 - 1500 | 110 CFM | 250 CFM |
| 750-1000 | 130 CFM | 280 CFM |
| < 750 | 160 CFM | 280 CFM |

SPECIAL HERS VERIFICATION QII REQUIRED
CONTACT ENERGY CONSULTANT OR HERS RATER DURING FRAMING STAGE OF PROJECT
KITCHEN RANGE HOOD MUST BE HVI OR AHAM CERTIFIED

BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |

TITLE 24 ENERGY REPORT - CZ11 DUCTED HP

T24.3.1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

CF1R-PRF-01-E
(Page 1 of 14)

| GENERAL INFORMATION | | | |
|---------------------|---------------------------------|--------------------------|-----------------------------------|
| 01 | Project Name | 1 Bedroom Unit Version 2 | |
| 02 | Run Title | Title 24 Analysis | |
| 03 | Project Location | TBD | |
| 04 | City | 05 | Standards Version |
| 06 | Zip code | 07 | Software Version |
| 08 | Climate Zone | 09 | Front Orientation (deg/ Cardinal) |
| 10 | Building Type | 11 | Number of Dwelling Units |
| 12 | Project Scope | 13 | Number of Bedrooms |
| 14 | Addition Cond. Floor Area (ft²) | 15 | Number of Stories |
| 16 | Existing Cond. Floor Area (ft²) | 17 | Fenestration Average U-Factor |
| 18 | Total Cond. Floor Area (ft²) | 19 | Glazing Percentage (%) |
| 20 | ADU Bedroom Count | N/A | |

| COMPLIANCE RESULTS | |
|--------------------|---|
| 01 | Building Complies with Computer Performance |
| 02 | This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider. |
| 03 | This building incorporates one or more Special Features shown below |

Registration Number: 233-P010016176A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:26
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 14:05:39

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

CF1R-PRF-01-E
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| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) |
|---|--|--|--|--|--------------------------|--------------------------|
| Space Heating | 6.06 | 40.89 | 3.85 | 28.54 | 2.21 | 12.35 |
| Space Cooling | 2.62 | 58.27 | 3.03 | 71.79 | -0.41 | -13.52 |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 |
| Water Heating | 2.97 | 30.86 | 1.92 | 22.43 | 1.05 | 8.43 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| South Facing Efficiency Compliance Total | 12.05 | 134.3 | 9.2 | 127.04 | 2.85 | 7.26 |
| Space Heating | 6.06 | 40.89 | 3.99 | 29.68 | 2.07 | 11.21 |
| Space Cooling | 2.62 | 58.27 | 3.16 | 74.45 | -0.54 | -16.18 |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 |
| Water Heating | 2.97 | 30.86 | 1.91 | 22.22 | 1.06 | 8.64 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| West Facing Efficiency Compliance Total | 12.05 | 134.3 | 9.46 | 130.63 | 2.59 | 3.67 |

Registration Number: 233-P010016176A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:26
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 14:05:39

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

CF1R-PRF-01-E
(Page 7 of 14)

| Zone Name | Zone Type | HVAC System Name | Zone Floor Area (ft²) | Avg. Ceiling Height | Water Heating System 1 | Status |
|-----------------|-------------|------------------|-----------------------|---------------------|------------------------|--------|
| 1 Bed Unit Zone | Conditioned | HVAC1 | 661 | 9 | DHW Sys 1 | New |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|-------------------|-----------------|--------------------|---------|-------------|------------------|----------------------------|------------|
| Name | Zone | Construction | Azimuth | Orientation | Gross Area (ft²) | Window and Door Area (ft²) | Tilt (deg) |
| Front Wall | 1 Bed Unit Zone | R-21 Wall | 0 | Front | 270 | 61.5 | 90 |
| Right Wall | 1 Bed Unit Zone | R-21 Wall | 270 | Right | 216 | 0 | 90 |
| Back Wall | 1 Bed Unit Zone | R-21 Wall | 180 | Back | 270 | 62 | 90 |
| Left Wall | 1 Bed Unit Zone | R-21 Wall | 90 | Left | 216 | 49.32 | 90 |
| Ceiling | 1 Bed Unit Zone | R-38+R-23 HP Attic | N/A | N/A | 661 | N/A | N/A |
| Floor to Garage | 1 Bed Unit Zone | R-19 NS Cryst | N/A | N/A | 661 | N/A | N/A |
| Garage Front Wall | Garage | Ext Garage Wall | 0 | Front | 300 | 0 | 90 |
| Garage Right Wall | Garage | Ext Garage Wall | 270 | Right | 240 | 0 | 90 |
| Garage Back Wall | Garage | Ext Garage Wall | 180 | Back | 300 | 144 | 90 |
| Garage Left Wall | Garage | Ext Garage Wall | 90 | Left | 240 | 0 | 90 |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|-----------------------|---------------------------|------------|---------------------|------------------|----------------|-----------------|-----------|
| Name | Construction | Type | Roof Rise (x in 12) | Roof Reflectance | Roof Emittance | Radiant Barrier | Cool Roof |
| Attic 1 Bed Unit Zone | Attic Roof, Bed Unit Zone | Ventilated | 6 | 0.1 | 0.85 | No | No |

Registration Number: 233-P010016176A-000-000-000000-0000
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Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 14:05:39

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

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| | Energy Design Ratings | | | Compliance Margins | | |
|-----------------|-----------------------|----------------------------------|-----------------------|----------------------|----------------------------------|-----------------------|
| | Source Energy (EDR1) | Efficiency* EDR (EDR/Efficiency) | Total* EDR (EDRTotal) | Source Energy (EDR1) | Efficiency* EDR (EDR/Efficiency) | Total* EDR (EDRTotal) |
| Standard Design | 37.7 | 34.8 | 30.9 | | | |
| Proposed Design | | | | | | |
| North Facing | 32.5 | 31.4 | 27.9 | 5.2 | 3.4 | 3 |
| East Facing | 33.2 | 34.2 | 29.7 | 4.5 | 0.6 | 1.2 |
| South Facing | 33 | 32.9 | 28.9 | 4.7 | 1.9 | 2 |
| West Facing | 33.4 | 33.9 | 29.5 | 4.3 | 0.9 | 1.4 |

Efficiency EDR includes Improvements like a better building envelope and more efficient equipment
Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

* Standard Design PV Capacity: 2.24 kWdc

Registration Number: 233-P010016176A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:26
CA Building Energy Efficiency Standards - 2022 Residential Compliance
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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

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(Page 5 of 14)

| Energy Use Intensity | Standard Design (kBtu/ft²-yr) | Proposed Design (kBtu/ft²-yr) | Compliance Margin (kBtu/ft²-yr) | Margin Percentage |
|------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------|
| North Facing | | | | |
| Gross EUI ¹ | 32.6 | 29.34 | 3.26 | 10 |
| Net EUI ² | 15.02 | 11.02 | 4 | 26.63 |
| East Facing | | | | |
| Gross EUI ¹ | 32.6 | 30.08 | 2.52 | 7.73 |
| Net EUI ² | 15.02 | 11.77 | 3.25 | 21.64 |
| South Facing | | | | |
| Gross EUI ¹ | 32.6 | 29.55 | 3.05 | 9.36 |
| Net EUI ² | 15.02 | 11.33 | 3.79 | 25.23 |
| West Facing | | | | |
| Gross EUI ¹ | 32.6 | 30.04 | 2.56 | 7.85 |
| Net EUI ² | 15.02 | 11.73 | 3.29 | 21.9 |

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

Registration Number: 233-P010016176A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:26
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 14:05:39

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

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(Page 8 of 14)

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
|---------------------|--------|------------|-------------|---------|------------|-------------|-------|------------|----------|-----------------|------|-------------|------------------|
| Name | Type | Surface | Orientation | Azimuth | Width (ft) | Height (ft) | Mult. | Area (ft²) | U-factor | U-factor Source | SHGC | SHGC Source | Exterior Shading |
| Front Window (OP) | Window | Front Wall | Front | 0 | 1 | 24 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Front Window (OP) 2 | Window | Front Wall | Front | 0 | 5 | 4 | 1 | 20 | 0.3 | NFRC | 0.23 | NFRC | Bug Screen |
| Back Window (OP) | Window | Back Wall | Back | 180 | 1 | 10 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Back Window (OP) 2 | Window | Back Wall | Back | 180 | 1 | 16 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Back Window (OP) 3 | Window | Back Wall | Back | 180 | 1 | 26 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Back Window (OP) 4 | Window | Back Wall | Back | 180 | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Left Window (OP) | Window | Left Wall | Left | 90 | 3 | 4.44 | 1 | 13.32 | 0.3 | NFRC | 0.23 | NFRC | Bug Screen |
| Left Window (OP) 2 | Window | Left Wall | Left | 90 | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Left Window (OP) 3 | Window | Left Wall | Left | 90 | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Left Window (OP) 4 | Window | Left Wall | Left | 90 | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |

Registration Number: 233-P010016176A-000-000-000000-0000
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CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

CF1R-PRF-01-E
(Page 3 of 14)

| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) |
|---|--|--|--|--|--------------------------|--------------------------|
| Space Heating | 6.06 | 40.89 | 3.68 | 26.99 | 2.38 | 13.9 |
| Space Cooling | 2.62 | 58.27 | 2.9 | 67.99 | -0.28 | -9.32 |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 |
| Water Heating | 2.97 | 30.86 | 1.9 | 22.09 | 1.07 | 8.77 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| North Facing Efficiency Compliance Total | 12.05 | 134.3 | 8.88 | 120.95 | 3.17 | 13.35 |
| Space Heating | 6.06 | 40.89 | 3.7 | 27.26 | 2.36 | 13.63 |
| Space Cooling | 2.62 | 58.27 | 2.28 | 78.11 | -0.66 | -19.84 |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 |
| Water Heating | 2.97 | 30.86 | 1.9 | 22.2 | 1.07 | 8.66 |
| Self Utilization/Flexibility Credit | | | | | 0 | 0 |
| East Facing Efficiency Compliance Total | 12.05 | 134.3 | 9.28 | 131.85 | 2.77 | 2.45 |

Registration Number: 233-P010016176A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:26
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 14:05:39

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

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(Page 6 of 14)

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|-----------|-------------|-------------------|-------------------|------|---------------|------------|-------------------|----------------|-------------------|-------------------------|-----|
| Exception | Module Type | Array Type | Power Electronics | CFI | Azimuth (deg) | Tilt Input | Array Angle (deg) | Tilt (x in 12) | Inverter Eff. (%) | Annual Solar Access (%) | |
| 2.24 | NA | Standard (14-17%) | Fixed | none | true | 150-270 | n/a | n/a | <=7.12 | 96 | 100 |

REQUIRED SPECIAL FEATURES
The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.
• Insulation below roof deck
• Window overhangs and/or fins
• 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 CF1Rs and CF2Rs are required to be completed in the HERS Registry.
• Indoor air quality ventilation
• Kitchen range hood
• Minimum airflow
• Verified SEER/SEER2
• Verified Refrigerant Charge
• Fan Efficiency Motors/CFM
• Verified HSPF2
• Verified heat pump rated heating capacity
• Duct leakage testing

| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
|--------------------------|------------------------------|--------------------------|--------------------|-----------------|---------------------------------------|---------------------------------|
| Project Name | Conditioned Floor Area (ft²) | Number of Dwelling Units | Number of Bedrooms | Number of Zones | Number of Ventilation Cooling Systems | Number of Water Heating Systems |
| 1 Bedroom Unit Version 2 | 661 | 1 | 1 | 1 | 0 | 1 |

Registration Number: 233-P010016176A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:26
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 14:05:39

ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: 2.24 KW MINIMUM - 150-270 DEG AT <=7/12 PITCH

SPECIAL FEATURES: NONE

SPACE HEATING: DUCTED HEAT PUMP (HSPF2=9.5)

SPACE COOLING: DUCTED HEAT PUMP (SEER2=16.0, EER2=11.7)

HEAT & COOL LOADS: HEAT: 8,019 BTU/hr COOL: 6,415 BTU/hr

R-8 ATTIC

DUCT INSULATION: R-8 ATTIC

WATER HEATING: NEEA RATED HEAT PUMP WATER HEATER (UEF=3.1)

MANUF/MODEL: RHEM/XES0110H4500

PIPE INSULATION: FIRST 5' OF HOT & COLD DHW PIPING INSULATED WITH 1" THICK, IF RECIRC LOOP ALL PIPE INSULATED

RADIANT BARRIER: NA

HERS TESTS: INDOOR AIR QUALITY VENTILATION, DUCT LEAKAGE TESTING, MINIMUM AIRFLOW, FAN EFFICACY WATTS/CFM, VERIFIED REFRIGERANT CHARGE, VERIFIED HSPF2, VERIFIED SEER/SEER2, VERIFIED HEAT PUMP RATED HEATING CAPACITY, KITCHEN RANGE HOOD

IAQ VENTILATION: 0.03*BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03* 661+ 2*7.5 = 34 CFM

KITCHEN VENTILATION: KITCHEN RANGE HOODS REQUIRE 100 CFM LOCAL EXHAUST MINIMUM WITH A SOUND RATING OF 3 SONES OR LESS FOR NOISE UNLESS THE EXHAUST FAN IS 400 CFM OR GREATER, 0.25" EXTERNAL STATIC PRESSURE HOOD, DUCT VENT FANS REQUIRE 7" DUCT MIN. HOOD FANS THAT EXHAUST >400 CFM AT MINIMUM SPEED ARE EXEMPT FROM HERS RATING. OTHER TYPES OF INTERMITTENT LOCAL EXHAUST FOR KITCHENS NEED 300 CFM OR A CAPACITY AT 5 ACH.

BATHROOM VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM.

REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, ENV-05 - ROOFING, LTG-01 - LIGHTING, MECH-01 - MECHANICAL, PLB-01 - WATER HEATERS, PLB-02 - PLUMBING

EXTERIOR WALLS: R-21

ROOF ATTIC: R-38 WITH R-13 ON PITCH TOUCHING ROOF SHEATHING

FLOOR: R-19

WINDOWS: NON-METAL FRAMED, DOUBLE PANE WITH LOW-E GLASS (U-VALUE=

BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

TITLE 24 ENERGY REPORT - CZ11 DUCTED HP

T24.3.2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E
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Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Calculation Description: Title 24 Analysis
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

| 01 | 02 | 03 | 04 |
|----------------------|------------------|-------------------------|----------|
| Name | Side of Building | Area (ft ²) | U-Factor |
| Front Door | Front Wall | 17.5 | 0.2 |
| Garage Back Car Door | Garage Back Wall | 144 | 1 |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
|---------------------|-------|---------|-------------|--------------|----------|-------|--------|--------|-----------|-------|--------|--------|--------|
| Window | Depth | Dist Up | Overhang | | Left Fin | | | | Right Fin | | | | |
| | | | Left Extent | Right Extent | Flap Ht. | Depth | Top Up | Dist L | Bot Up | Depth | Top Up | Dist R | Bot Up |
| Front Window (OP) 2 | 4 | 0.3 | 12 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Left Window (OP) | 18 | 0.3 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|--------------|--------|-------------------------|----------------|-------------------------------|-------------------------------|-------------------|--------|
| Name | Zone | Area (ft ²) | Perimeter (ft) | Edge Insul. R-value and Depth | Edge Insul. R-value and Depth | Carpeted Fraction | Heated |
| Sub-on-Grade | Garage | 661 | 108 | none | 0 | 0% | No |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|-------------------|----------------|-------------------|--------------------|----------------------|--|----------|---|
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-Factor | Assembly Layers |
| Ext Garage Wall | Exterior Walls | Wood Framed Wall | 2x6 @ 16 in. O. C. | R.0 | None / None | 0.29 | Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x6 Exterior Finish: Wood Siding/shathing/decking |

Registration Number: 223-P01016179A-000-000-000000-0000
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

Registration Date/Time: 2023-02-10 10:06:26
HERS Provider: CaCERTS Inc.
Report Generated: 2023-02-08 14:05:39

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD CF1R-PRF-01-E
Page 12 of 14

Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Calculation Description: Title 24 Analysis
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 |
|--------------------|------------------|-----------------|-----------------|------------|---------|--------|--------------------|-----------------|-------------------|--------------|------------------|-----------------------------|
| Name | System Type | Number of Units | Heating | | Cooling | | Zonally Controlled | Compressor Type | HERS Verification | | | |
| | | | Efficiency Type | HSPF / COP | Cap 47 | Cap 17 | | | | SEER / SEER2 | EER / EER / CEER | |
| Heat Pump System 1 | Central Split HP | 1 | HSPF2 | 9.5 | 27000 | 23000 | EER2SEER2 | 16 | 11.7 | Not Zonal | Single Speed | Heat Pump System 1-Heatpump |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-----------------------------|------------------|----------------|-------------------|---------------------|-----------------------------|---------------------|-------------------------|-------------------------|
| Name | Verified Airflow | Airflow Target | Verified EER/EER2 | Verified SEER/SEER2 | Verified Refrigerant Charge | Verified HSPF/HSPF2 | Verified Heating Cap 47 | Verified Heating Cap 17 |
| Heat Pump System 1-Heatpump | Required | 350 | Not Required | Not Required | Yes | No | Yes | Yes |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
|---------------------------|---------------------|--------------|-------------------|--------|---------------|--------|--------------|--------|----------------|-------------------|------------------------------------|
| Name | Type | Design Type | Duct Ins. R-value | | Duct Location | | Surface Area | | Bypass Duct | Duct Leakage | HERS Verification |
| | | | Supply | Return | Supply | Return | Supply | Return | | | |
| Air Distribution System 1 | Unconditioned attic | Non-Verified | R-8 | R-8 | Attic | Attic | n/a | n/a | No Bypass Duct | Sealed and Tested | Air Distribution System 1-her-dist |

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Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T14:03:02-08:00
Calculation Description: Title 24 Analysis
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|----------------------------|------------------------|---------------------|--------------------|----------------------|--|----------|--|
| Construction Name | Surface Type | Construction Type | Framing | Total Cavity R-value | Interior / Exterior Continuous R-value | U-Factor | Assembly Layers |
| R-21 Wall | Exterior Walls | Wood Framed Wall | 2x6 @ 16 in. O. C. | R-21 | None / None | 0.066 | Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: Wood Siding/shathing/decking |
| Attic Roof/1 Bed Unit Zone | Attic Roofs | Wood Framed Ceiling | 2x4 @ 24 in. O. C. | R-13 | None / 0 | 0.078 | Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/shathing/decking Cavity / Frame: R-13.0 / 2x4 Attic/Roof Joist: R-0.0/Insul. |
| R-38-R-13 HP Attic | Ceilings (below attic) | Wood Framed Ceiling | 2x4 @ 16 in. O. C. | R-38 | None / None | 0.025 | Over Ceiling Joist: R-38 Insul. Cavity / Frame: R-13 / 2x4 Inside Finish: Gypsum Board |
| R-19 No Crawl | Interior Floors | Wood Framed Floor | 2x6 @ 16 in. O. C. | R-19 | None / None | 0.049 | Floor Surface: Carpeted Floor Deck: Wood Siding/shathing/decking Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Ceiling Below Finish: Gypsum Board |

| 01 | 02 | 03 | 04 | 05 |
|---------------------------------------|------------------------------------|-------------------------------|-------|-------|
| Quality Insulation Installation (QII) | High R-value Spray Foam Insulation | Building Envelope Air Leakage | CFM50 | CFM50 |
| Not Required | Not Required | N/A | n/a | n/a |

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Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|------------------------------------|---------------------------|-------------------------|------------------------|----------------------|--------------|---------------------|-------------------------|---|
| Name | Duct Leakage Verification | Duct Leakage Target (%) | Verified Duct Location | Verified Duct Design | Buried Ducts | Deeply Buried Ducts | Low-leakage Air Handler | Low Leakage Ducts Entirely in Conditioned Space |
| Air Distribution System 1-her-dist | Yes | 5.0 | Not Required | Not Required | Not Required | Credits not taken | Not Required | No |

| 01 | 02 | 03 | 04 |
|------------|----------|------------------|-----------------------|
| Name | Type | Verified Heating | Fan Power (Watts/CFM) |
| HVAC Fan 1 | HVAC Fan | 0.58 | HVAC Fan 1-her-fan |

| 01 | 02 | 03 |
|--------------------|------------------------|-------------------------------------|
| Name | Verified Fan Watt Draw | Required Fan Efficiency (Watts/CFM) |
| HVAC Fan 1-her-fan | Required | 0.58 |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-----------------|---------------|----------------------|--------------|--------------------------------|----------------------------------|-----------------------------------|-------------------|--------|
| Dwelling Unit | Airflow (CFM) | Fan Efficacy (W/CFM) | IAQ Fan Type | Includes Heat/Energy Recovery? | IAQ Recovery Effectiveness - SRE | Includes Fault Indicator Display? | HERS Verification | Status |
| SFan IAQVentRpt | 34 | 0.35 | Exhaust | No | n/a | No | Yes | |

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| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-----------|--------------------------|-------------------|-------------------|-----------------|----------------------|----------------------|-------------------|------------------------|
| Name | System Type | Distribution Type | Water Heater Name | Number of Units | Solar Heating System | Compact Distribution | HERS Verification | Water Heater Name (if) |
| DHW Sys 1 | Domestic Hot Water (DHW) | Standard | DHW Heater 1 | 1 | n/a | None | n/a | DHW Heater 1 (1) |

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
|--------------|------------|-----------------|----------------------|----------------------|---------------|-----------------------|------------------------|
| Name | # of Units | Tank Vol. (gal) | NEEA Heat Pump Brand | NEEA Heat Pump Model | Tank Location | Duct Inlet Air Source | Duct Outlet Air Source |
| DHW Heater 1 | 1 | 50 | Rheem | RHEEM/SESOT10H45U0 | Garage | Garage | Garage |

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

| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|-------|---------------------------|--------------------|-------------------------|--------------------|-------------------------|------------|---------------------------|--------------------------|
| Name | System Type | Heating Unit Name | Heating Equipment Count | Cooling Unit Name | Cooling Equipment Count | Fan Name | Distribution Name | Required Thermostat Type |
| HVAC1 | Heat pump heating/cooling | Heat Pump System 1 | 1 | Heat Pump System 1 | 1 | HVAC Fan 1 | Air Distribution System 1 | Setback |

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Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ducted HP - 23043.rbd22x

DECLARATION STATEMENT
I, the undersigned, certify that the information provided on this Certificate of Compliance is accurate and complete.

Documentation Author Name: Nicole E Porata
Company: Melas Energy Engineering
Address: 547 Uren St, Nevada City, CA 95959
Phone: 530-265-2492

Responsible Designer Name: Russell Davidson
Company: Russell Davidson Architecture + Design
Address: 149 Crown Point Ct, Suite A, Grass Valley, CA 95949
Phone: 530-913-2370

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

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ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: 2.24 KW MINIMUM - 150-270 DEG AT <=7/12 PITCH
SPECIAL FEATURES: NONE
SPACE HEATING: DUCTED HEAT PUMP (HSPF2=9.5)
SPACE COOLING: DUCTED HEAT PUMP (SEER2=16.0, EER2=11.7)
HEAT & COOL LOADS: HEAT: 8,019 BTU/hr COOL: 6,415 BTU/hr
DUCT INSULATION: R-8 ATTIC
WATER HEATING: NEEA RATED HEAT PUMP WATER HEATER (UEF=3.1)
MANUF/MODEL: RHEEM/SESOT10H45U0
PIPE INSULATION: FIRST 5' OF HOT & COLD DHW PIPING INSULATED WITH 1" THICK, IF RECIRC LOOP ALL PIPE INSULATED
RADIANT BARRIER: NA
HERS TESTS: INDOOR AIR QUALITY VENTILATION, DUCT LEAKAGE TESTING, MINIMUM AIRFLOW, FAN EFFICACY WATTS/CFM, VERIFIED REFRIGERANT CHARGE, VERIFIED HSPF2, VERIFIED SEER/SEER2, VERIFIED HEAT PUMP RATED HEATING CAPACITY, KITCHEN RANGE HOOD
IAQ VENTILATION: 0.03*BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03* 661 + 2*7.5 = 34 CFM
KITCHEN RANGE HOODS REQUIRE 100 CFM LOCAL EXHAUST MINIMUM WITH A SOUND RATING OF 3 SONES OR LESS FOR NOISE UNLESS THE EXHAUST FAN IS 400 CFM OR GREATER, 0.25" EXTERNAL STATIC PRESSURE. HOOD, DUCT VENT FANS REQUIRE 7" DUCT MIN. HOOD FANS THAT EXHAUST >400 CFM AT MINIMUM SPEED ARE EXEMPT FROM HERS RATING. OTHER TYPES OF INTERMITTENT LOCAL EXHAUST FOR KITCHENS NEED 300 CFM OR A CAPACITY AT 5 ACH.
BATHROOM VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM.
REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, ENV-05 - ROOFING, LTG-01 - LIGHTING, MECH-01 - MECHANICAL, PLB-01 - WATER HEATERS, PLB-02 - PLUMBING
EXTERIOR WALLS: R-21
ROOF ATTIC: R-38 WITH R-13 ON PITCH TOUCHING ROOF SHEATHING
FLOOR: R-19
WINDOWS: NON-METAL FRAMED, DOUBLE PANE WITH LOW-E GLASS (U-VALUE=0.30, SHGC=0.23)
GLASS DOORS: NA
EXTERIOR SC DOOR: SOLID CORE AT R-5 (U-FACTOR=0.20)
SKYLIGHTS: NA

| DWELLING UNIT FLOOR AREA (FT2) | HOOD OVER ELECTRIC RANGE | HOOD OVER GAS RANGE |
|--------------------------------|--------------------------|---------------------|
| > 1500 | 110 CFM | 180 CFM |
| < 1000 - 1500 | 110 CFM | 250 CFM |
| 750-1000 | 130 CFM | 280 CFM |
| < 750 | 160 CFM | 280 CFM |

KITCHEN RANGE HOOD MUST BE HVI OR AHAM CERTIFIED



BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED.

1 BEDROOM (661 SF)

OWNER:
ADDRESS:
APN:

| ID | NAME | DATE |
|----|------|------|
| | | |
| | | |
| | | |

TITLE 24 ENERGY REPORT - CZ11 DUCTLESS HP

T24.4.1

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T13:50:52-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ductless HP - 23043.rbd22x

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| GENERAL INFORMATION | | | |
|---------------------|---------------------------------|--------------------------|-----------------------------------|
| 01 | Project Name | 1 Bedroom Unit Version 2 | |
| 02 | Run Title | Title 24 Analysis | |
| 03 | Project Location | TBD | |
| 04 | City | 05 | Standards Version |
| 06 | Zip code | 07 | Software Version |
| 08 | Climate Zone | 09 | Front Orientation (deg/ Cardinal) |
| 10 | Building Type | 11 | Number of Dwelling Units |
| 12 | Project Scope | 13 | Number of Bedrooms |
| 14 | Addition Cond. Floor Area (ft²) | 15 | Number of Stories |
| 16 | Existing Cond. Floor Area (ft²) | 17 | Fenestration Average U-Factor |
| 18 | Total Cond. Floor Area (ft²) | 19 | Glazing Percentage (%) |
| 20 | ADU Bedroom Count | N/A | |

| COMPLIANCE RESULTS | |
|--------------------|---|
| 01 | Building Complies with Computer Performance |
| 02 | This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider. |
| 03 | This building incorporates one or more Special Features shown below |

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Registration Date/Time: 2023-02-10 10:06:34
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 13:53:42

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
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| ENERGY DESIGN RATINGS | Energy Design Ratings | | | Compliance Margins | | |
|-----------------------|-----------------------|----------------------------------|------------------------|----------------------|----------------------------------|------------------------|
| | Source Energy (EDES) | Efficiency* EDR (EDR/efficiency) | Total* EDR (EDR/total) | Source Energy (EDES) | Efficiency* EDR (EDR/efficiency) | Total* EDR (EDR/total) |
| Standard Design | 37.7 | 34.8 | 30.9 | | | |
| Proposed Design | | | | | | |
| North Facing | 31.4 | 27.8 | 25.5 | 6.3 | 7 | 5.4 |
| East Facing | 31.9 | 30.1 | 27.1 | 5.8 | 4.7 | 3.8 |
| South Facing | 31.8 | 29.1 | 26.4 | 5.9 | 5.7 | 4.5 |
| West Facing | 32.1 | 29.9 | 26.9 | 5.6 | 4.9 | 4 |

RESULT: PASS

*Efficiency EDR includes Improvements like a better building envelope and more efficient equipment
*Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries
*Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

Standard Design PV Capacity: 2.24 kWdc

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| ENERGY USE SUMMARY | | | | | | | |
|---|--|--|--|--|--------------------------|--------------------------|--|
| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) | |
| Space Heating | 6.06 | 40.89 | 3.16 | 23.33 | 2.9 | 17.66 | |
| Space Cooling | 2.62 | 58.27 | 2.48 | 56.31 | 0.14 | 1.96 | |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 | |
| Water Heating | 2.97 | 30.86 | 2.1 | 23.43 | 0.87 | 7.43 | |
| Self Utilization/Flexibility Credit | | | | 0 | | 0 | |
| North Facing Efficiency Compliance Total | 12.05 | 134.3 | 8.14 | 107.25 | 3.91 | 27.05 | |
| Space Heating | 6.06 | 40.89 | 3.18 | 23.44 | 2.88 | 17.45 | |
| Space Cooling | 2.62 | 58.27 | 2.48 | 56.97 | -0.19 | -6.7 | |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 | |
| Water Heating | 2.97 | 30.86 | 2.1 | 23.5 | 0.87 | 7.36 | |
| Self Utilization/Flexibility Credit | | | | 0 | | 0 | |
| East Facing Efficiency Compliance Total | 12.05 | 134.3 | 8.49 | 116.19 | 3.56 | 18.11 | |

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| ENERGY USE SUMMARY | | | | | | | |
|---|--|--|--|--|--------------------------|--------------------------|--|
| Energy Use | Standard Design Source Energy (EDR1) (kBtu/ft²-yr) | Standard Design TDV Energy (EDR2) (kWh/ft²-yr) | Proposed Design Source Energy (EDR1) (kBtu/ft²-yr) | Proposed Design TDV Energy (EDR2) (kWh/ft²-yr) | Compliance Margin (EDR1) | Compliance Margin (EDR2) | |
| Space Heating | 6.06 | 40.89 | 3.29 | 24.53 | 2.77 | 16.36 | |
| Space Cooling | 2.62 | 58.27 | 2.59 | 55.59 | 0.03 | -3.32 | |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 | |
| Water Heating | 2.97 | 30.86 | 2.12 | 23.77 | 0.85 | 7.09 | |
| Self Utilization/Flexibility Credit | | | | 0 | | 0 | |
| South Facing Efficiency Compliance Total | 12.05 | 134.3 | 8.4 | 112.17 | 3.65 | 22.13 | |
| Space Heating | 6.06 | 40.89 | 3.42 | 25.57 | 2.64 | 15.32 | |
| Space Cooling | 2.62 | 58.27 | 2.69 | 61.8 | -0.07 | -3.53 | |
| IAQ Ventilation | 0.4 | 4.28 | 0.4 | 4.28 | 0 | 0 | |
| Water Heating | 2.97 | 30.86 | 2.11 | 23.58 | 0.86 | 7.28 | |
| Self Utilization/Flexibility Credit | | | | 0 | | 0 | |
| West Facing Efficiency Compliance Total | 12.05 | 134.3 | 8.62 | 115.23 | 3.43 | 19.07 | |

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| ENERGY USE INTENSITY | | | | |
|------------------------|-------------------------------|-------------------------------|---------------------------------|-------------------|
| | Standard Design (kBtu/ft²-yr) | Proposed Design (kBtu/ft²-yr) | Compliance Margin (kBtu/ft²-yr) | Margin Percentage |
| North Facing | | | | |
| Gross EUI ¹ | 32.6 | 28.31 | 4.29 | 13.16 |
| Net EUI ² | 15.02 | 10 | 5.02 | 33.42 |
| East Facing | | | | |
| Gross EUI ¹ | 32.6 | 28.95 | 3.65 | 11.2 |
| Net EUI ² | 15.02 | 10.64 | 4.38 | 29.15 |
| South Facing | | | | |
| Gross EUI ¹ | 32.6 | 26.5 | 6.1 | 12.58 |
| Net EUI ² | 15.02 | 10.19 | 4.83 | 32.16 |
| West Facing | | | | |
| Gross EUI ¹ | 32.6 | 28.93 | 3.67 | 11.25 |
| Net EUI ² | 15.02 | 10.61 | 4.41 | 29.36 |

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

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| REQUIRED PV SYSTEMS | | | | | | | | | | | |
|-----------------------|-----------|-------------------|------------|-------------------|------|----------------|------------|-------------------|----------------|-------------------|-------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 |
| DC System Size (kWdc) | Exception | Module Type | Array Type | Power Electronics | CFI | Altitude (deg) | Tilt Input | Array Angle (deg) | Tilt (x in 12) | Inverter Eff. (%) | Annual Solar Access (%) |
| 2.24 | NA | Standard (14-17%) | Fixed | none | true | 150-270 | n/a | n/a | <=7:12 | 96 | 100 |

REQUIRED SPECIAL FEATURES
The following are features that must be installed as a condition for meeting the modeled energy performance for this computer analysis.
• Window overhangs and/or fins
• Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
• Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater, specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY
The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry.
• Indoor air quality ventilation
• Kitchen range hood
• Verified Refrigerant Charge
• Airflow in habitable rooms (SC3.1.4.1.1)
• Verified heat pump rated heating capacity
• Well-mounted thermostat in zones greater than 150 R2 (SC3.4.5)
• Ductless indoor units located entirely in conditioned space (SC3.1.4.1.8)

| BUILDING - FEATURES INFORMATION | | | | | | |
|---------------------------------|------------------------------|--------------------------|--------------------|-----------------|---------------------------------------|---------------------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| Project Name | Conditioned Floor Area (ft²) | Number of Dwelling Units | Number of Bedrooms | Number of Zones | Number of Ventilation Cooling Systems | Number of Water Heating Systems |
| 1 Bedroom Unit Version 2 | 661 | 1 | 1 | 1 | 0 | 1 |

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| ZONE INFORMATION | | | | | | |
|------------------|-------------|------------------|-----------------------|---------------------|------------------------|--------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| Zone Name | Zone Type | HVAC System Name | Zone Floor Area (ft²) | Avg. Ceiling Height | Water Heating System 1 | Status |
| 1 Bed Unit Zone | Conditioned | HVAC1 | 661 | 9 | DHW Sys 1 | New |

| OPAQUE SURFACES | | | | | | | |
|-------------------|-----------------|-----------------------|----------|-------------|------------------|----------------------------|------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| Name | Zone | Construction | Altitude | Orientation | Gross Area (ft²) | Window and Door Area (ft²) | Tilt (deg) |
| Front Wall | 1 Bed Unit Zone | R-21 Wall | 0 | Front | 270 | 61.5 | 90 |
| Right Wall | 1 Bed Unit Zone | R-21 Wall | 270 | Right | 216 | 0 | 90 |
| Back Wall | 1 Bed Unit Zone | R-21 Wall | 180 | Back | 270 | 62 | 90 |
| Left Wall | 1 Bed Unit Zone | R-21 Wall | 90 | Left | 216 | 49.32 | 90 |
| Ceiling | 1 Bed Unit Zone | R-38 Attic w/ Rad Bar | n/a | n/a | 661 | n/a | n/a |
| Floor to Garage | 1 Bed Unit Zone | R-19 Ins Crnl | n/a | n/a | 661 | n/a | n/a |
| Garage Front Wall | Garage | Ext Garage Wall | 0 | Front | 300 | 0 | 90 |
| Garage Right Wall | Garage | Ext Garage Wall | 270 | Right | 240 | 0 | 90 |
| Garage Back Wall | Garage | Ext Garage Wall | 180 | Back | 300 | 144 | 90 |
| Garage Left Wall | Garage | Ext Garage Wall | 90 | Left | 240 | 0 | 90 |

| ATTIC | | | | | | | |
|-----------------------|----------------------------|------------|---------------------|------------------|----------------|-----------------|-----------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 |
| Name | Construction | Type | Roof Rise (x in 12) | Roof Reflectance | Roof Emittance | Radiant Barrier | Cool Roof |
| Attic 1 Bed Unit Zone | Attic Roof 1 Bed Unit Zone | Ventilated | 6 | 0.1 | 0.85 | Yes | No |

Registration Number: 233-P101016167A-000-000-000000-0000
Registration Date/Time: 2023-02-10 10:06:34
CA Building Energy Efficiency Standards - 2022 Residential Compliance
Report Version: 2022.0.000
Schema Version: rev 20220901

HERS Provider: CalCERTS Inc.
Report Generated: 2023-02-08 13:53:42

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD
Project Name: 1 Bedroom Unit Version 2
Calculation Date/Time: 2023-02-08T13:50:52-08:00
Input File Name: NC Affordable Housing 1 Bed Vn 2 CZ11 Ductless HP - 23043.rbd22x

CF1R-PRF-01-E (Page 8 of 13)

| FENESTRATION / GLAZING | | | | | | | | | | | | | |
|------------------------|--------|------------|-------------|----------|------------|-------------|-------|------------|----------|-------------|------|-------------|------------------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| Name | Type | Surface | Orientation | Altitude | Width (ft) | Height (ft) | Mult. | Area (ft²) | U-Factor | SHGC Source | SHGC | SHGC Source | Exterior Shading |
| Front Window (OP) | Window | Front Wall | Front | 0 | 1 | 24 | 0.3 | NFRC | 0.23 | NFRC | 0.23 | NFRC | Bug Screen |
| Front Window (OP 2) | Window | Front Wall | Front | 0 | 5 | 4 | 1 | 20 | 0.3 | NFRC | 0.23 | NFRC | Bug Screen |
| Back Window (OP) | Window | Back Wall | Back | 180 | | 1 | 10 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |
| Back Window (OP 2) | Window | Back Wall | Back | 180 | | 1 | 16 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |
| Back Window (OP 3) | Window | Back Wall | Back | 180 | | 1 | 26 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |
| Back Window (OP 4) | Window | Back Wall | Back | 180 | | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |
| Left Window (OP) | Window | Left Wall | Left | 90 | 3 | 4.44 | 1 | 13.32 | 0.3 | NFRC | 0.23 | NFRC | Bug Screen |
| Left Window (OP 2) | Window | Left Wall | Left | 90 | | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |
| Left Window (OP 3) | Window | Left Wall | Left | 90 | | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |
| Left Window (OP 4) | Window | Left Wall | Left | 90 | | 1 | 12 | 0.3 | NFRC | 0.23 | NFRC | | Bug Screen |

ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY

PV SYSTEM: 2.24 KW MINIMUM - 150-270 DEG AT <=7/12 PITCH
SPECIAL FEATURES: NONE
SPACE HEATING: DUCTLESS HEAT PUMP (HSPF2=7.5)
SPACE COOLING: DUCTLESS HEAT PUMP (SEER2=14.3, EER2=9.0)
HEAT & COOL LOADS: HEAT: 8,027 BTU/HR COOL: 6,287 BTU/HR
DUCT INSULATION: NA
WATER HEATING: NEEA RATED HEAT PUMP WATER HEATER (UEF=3.1)
MAINF/MODEL: RHEEM/ XE40T10H45U0
PIPE INSULATION: FIRST 5' OF HOT & COLD DHW PIPING INSULATED WITH 1" THICK, IF RECIRC LOOP ALL PIPE INSULATED
RADIANT BARRIER: RADIANT BARRIER IN ATTIC AND GABLE ENDS INSTALLED PER MANUFACTURERS SPECIFICATIONS REQUIRED
HERS TESTS: INDOOR AIR QUALITY VENTILATION, VERIFIED REFRIGERANT CHARGE, VERIFIED HEAT PUMP RATED HEATING CAPACITY, AIRFLOW IN HABITABLE ROOMS, WALL-MOUNTED THERMOSTAT IN ZONES GREATER THAN 150 SQ FT, DUCTLESS INDOOR UNITS LOCATED ENTIRELY IN CONDITIONED SPACE, KITCHEN RANGE HOOD
IAQ VENTILATION: 0.03 BUILDING SQUARE FOOTAGE + OCCUPANTS * 7.5 = 0.03 * 661 + 2 * 7.5 = 34 CFM
KITCHEN RANGE HOODS REQUIRE 100 CFM LOCAL EXHAUST MINIMUM WITH A SOUND RATING OF 3 SONES OR LESS FOR NOISE UNLESS THE EXHAUST FAN IS 400 CFM OR GREATER, 0.25" EXTERNAL STATIC PRESSURE HOOD, DUCT VENT FANS REQUIRE 7" DUCT MIN. HOOD FANS THAT EXHAUST >400 CFM AT MINIMUM SPEED ARE EXEMPT FROM HERS RATINGS. OTHER TYPES OF INTERMITTENT LOCAL EXHAUST FOR KITCHENS NEED 300 CFM OR A CAPACITY AT 5 ACH.
BATHROOM VENTILATION: THE MINIMUM BATHROOM INTERMITTENT VENTILATION AIRFLOW SHALL BE 50 CFM.
REQUIRED CF2R'S: ENV-01 - FENESTRATION, ENV-03 - INSULATION, ENV-05 - ROOFING, LTC-01 - LIGHTING, MECH-01 - MECHANICAL, PLB-01 - WATER HEATERS, PLB-02 - PLUMBING
EXTERIOR WALLS: R-21
ROOF ATTIC: R-38
FLOOR: R-19
WINDOWS: NON-METAL FRAMED, DOUBLE PANE WITH LOW-E GLASS (U-VALUE=0.30, SHGC=0.23)
GLASS DOORS: NA
EXTERIOR SC DOOR: SOLID CORE AT



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YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS...

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE...

1 BEDROOM (661 SF)

OWNER: ADDRESS: APN:

Table with columns: ID, NAME, DATE

TITLE 24 ENERGY REPORT - CZ11 DUCTLESS HP

T24.4.2

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD. Table with columns: 01-09, Name, System Type, Distribution Type, Water Heater Name, Number of Units, Solar Heating System, Compact Distribution, HERS Verification, Water Heater Name (F).

Registration Number: 223-PF1016167A-000-000-000000-0000. Report Version: 2022.0.000. Schema Version: rev 20220901.

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD. Table with columns: 01-08, Construction Name, Surface Type, Construction Type, Framing, Total Cavity R-value, Interior / Exterior Continuous R-value, U-factor, Assembly Layers.

Registration Number: 223-PF1016167A-000-000-000000-0000. Report Version: 2022.0.000. Schema Version: rev 20220901.

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD. Table with columns: 01-04, Name, Side of Building, Area (ft²), U-factor.

Registration Number: 223-PF1016167A-000-000-000000-0000. Report Version: 2022.0.000. Schema Version: rev 20220901.

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD. Table with columns: 01-05, Quality Insulation Installation (QI), High R-value Spray Foam Insulation, Building Envelope Air Leakage, CFM50, CFM50.

Registration Number: 223-PF1016167A-000-000-000000-0000. Report Version: 2022.0.000. Schema Version: rev 20220901.

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD. Table with columns: 01-13, Name, System Type, Number of Units, Heating Efficiency Type, HSPF / COP, Cap 47, Efficiency SEER / SEER2, EER / EER2 / CEER, Zonally Controlled, Compressor Type, HERS Verification.

Registration Number: 223-PF1016167A-000-000-000000-0000. Report Version: 2022.0.000. Schema Version: rev 20220901.

ENERGY CALCULATIONS ENERGY CONSERVATION MEASURES SUMMARY. PV SYSTEM: 2.24 KW MINIMUM - 150-270 DEG AT <=7/12 PITCH. SPECIAL FEATURES: NONE. SPACE HEATING: DUCTLESS HEAT PUMP (HSPF2=7.5).

REQUIRED KITCHEN RANGE HOOD AIRFLOW RATES (CFM). Table with columns: DWELLING UNIT FLOOR AREA (FT2), HOOD OVER ELECTRIC RANGE, HOOD OVER GAS RANGE.

KITCHEN RANGE HOOD MUST BE HVI OR AHAM CERTIFIED

GENERAL NOTES

- THIS SYSTEM IS GRID-TIED VIA A UL LISTED INVERTER.
- ALL EQUIPMENT SHALL BE UL LISTED FOR ITS INTENDED PURPOSE.
- THE MODULES, RACKING SYSTEMS AND INVERTERS ARE UL2703, UL1703, AND UL1741 LISTED WITH FIRE CLASSIFICATION BASED ON THE SPECIFIC TYPE OF BUILDING CONSTRUCTION..
- THIS PROJECT SHALL COMPLY WITH LOCAL ORDINANCES.
- ALL ROOF PENETRATIONS TO BE SEALED WITH A HIGH PERFORMANCE ROOF SEALANT.
- THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOFING VENTS.
- WORKING SPACE AROUND ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- ELECTRICAL EQUIPMENT AND MATERIAL TO BE LISTED, LABELED, AND INSTALLED PER THE NEC, THE INSTALLATION STANDARDS/MANUFACTUREERS RECOMMENDATIONS.
- LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF AND SOLAR PHOTOVOLTAIC INSTALLATION.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND REVIEW ALL MANUFACTURER INSTALLATION DOCUMENTS PRIOR TO INITIATING CONSTRUCTION.
- ALL EQUIPMENT SHALL BE RATED FOR THE ENVIRONMENT IN WHICH IT IS INSTALLED AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ACCESS TO ELECTRICAL COMPONENTS OVER 150 VOLTS TO GROUND SHALL BE RESTRICTED TO QUALIFY PERSONNEL.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 VOLTS AND 90 DEG C WET ENVIRONMENT, UNLESS OTHERWISE NOTED.
- WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED CONTRACTOR SHALL SIZE THEM ACCORDING TO APPLICABLE CODES.
- ALL JUNCTION BOXES, COMBINER BOXES, AND DISCONNECTIONS SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION.
- PV MODULE FRAMES SHALL BE BONDED TO TACKING RAIL OR BARE COPPER G.E.C PER THE MODULES MANUFACTURE'S LISTED INSTRUCTION SHEET.
- PV MODULE RACKING RAIL SHALL BE BONDED TO BARE COPPER G.E.C VIA WEEB LUG, ILSKO GBL-4DBY LAY-IN-LUG, OR EQUIVALENT LISTED LUG.
- GROUNDING ELECTRODE CONDUCTOR (G.E.C) SHALL BE CONTINUOUS AND/PR IRREVERSIBLY SPLICED/WELDED.
- ALL JUNCTION BOXES, COMBINER BOXES, AND DISCONNECTIONS SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION.
- ROOF ACCESS POINTS SHALL BE AT A STRONG POINT ON THE BUILDING AND NOT REQUIRE THE PLACEMENT OF LADDERS OVER EXTERIOR WALL OPENINGS.

VICINITY MAP

TBD

SOLAR EXEMPTIONS:

HIGH SNOW LOAD AND HEAVILY SHADED AREAS MAY BE EXEMPT FROM THE CALIFORNIA PV REQUIREMENT. PLEASE INQUIRE WITH YOUR LOCAL JURISDICTION TO SEE IF YOUR PROJECT QUALIFIES.

PROJECTS IN CLIMATE ZONE 16 DO NOT REQUIRE SOLAR BASED ON EXEMPTION 2: SOLAR REQUIREMENT IS LESS THAN 1.8 kW

WIRING/CIRCUIT INSTALLATIONS REQUIREMENTS

- CONDUIT, RACEWAYS, AND WIRING SYSTEMS SHALL BE RUN AS CLOSE AS POSSIBLE TO RIDGES, HIPS, VALLEYS, ETC; THEY SHALL ALSO BE INSTALLED IN SUCH A MANNER TO LIMIT TRIP HAZARDS AND MAXIMIZE VENTILATION OPPORTUNITIES. DC WIRING IN ENCLOSED SPACES SHALL BE INSTALLED IN METALLIC CONDUIT; CONDUIT SHALL BE RUN ALONG THE BOTTOM OF LOAD BEARING MEMBERS.
- PV SOURCE AND OUTPUT CIRCUITS INSIDE A BUILDING SHALL BE ROUTED ALONG BUILDING STRUCTURAL MEMBERS WHERE THE MEMBERS CAN BE OBSERVED (ACCESSIBLE ATTIC, ETC). IF CIRCUITS ARE EMBEDDED IN AREAS (NOT ACCESSIBLE) THAT ARE NOT COVERED BY PV MODULES, THOSE AREAS SHALL BE CLEARLY MARKED INDICATING THEIR LOCATIONS.
- DC CIRCUITS RAN INSIDE A BUILDING 80 VOLTS OR GREATER SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER. TO BE CONSIDERED OUTSIDE IT SHALL BE DIRECT BURIED, IN METALLIC CONDUIT, AND/OR METALLIC CABLES TRAYS.
- WHERE MULTIPLE INVERTERS ARE INSTALLED AND NOT GROUPED A CLEAR LOCATION DIRECTORY SHALL BE PROVIDED AT EACH AC AND DC DISCONNECT LOCATION.
- FMC 3/4" OR SMALLER, MC CONDUIT 1" OR SMALLER OR EXPOSED WIRING INSTALLED ACROSS CEILING JOISTS OR FLOOR JOISTS SHALL BE PROTECTED BY GUARD STRIPS.
- RAPID SHUTDOWN DEVICE REQUIRED FOR DC SYSTEMS CIRCUITS IN OR ON BUILDINGS WITH SPECIFIC REQUIREMENTS IF LOCATED IN OR OUTSIDE THE ARRAY BOUNDARY.
 - 30 V WITHIN 30 SECONDS IF OUTSIDE OF ARRAY BOUNDARY
 - 80 V WITHIN 30 SECONDS IF WITHIN ARRAY BOUNDARY.
- ROOF MOUNTED DC SYSTEM MANUALLY OPERATED LOAD BREAK DISCONNECT REQUIRED AT COMBINER BOXES OR WITHIN 6FT OF COMBINER BOXES.
- DISCONNECTS REQUIRED FOR ENERGY STORAGE DEVICES WHERE MORE THAN 5FT FROM CONNECTED EQUIPMENT OR WHERE CIRCUITS PASS THROUGH A WALL/PARTITION.
- SIZE OF SUPPLY SIDE CONNECTIONS COMPLY WITH CEC 705.12(B)(2).
- SUPPLY SIDE CONNECTION REQUIRE OVERCURRENT PROTECTION WITHIN 10FT FROM THE SERVICE CONDUCTOR CONNECTION.
- PROJECT TO COMPLY WITH THE FOLLOWING CALIFORNIA CODE OF REGULATIONS, TITLE 24
 - 2022 CALIFORNIA BUILDING CODE (CBC)
 - 2022 CALIFORNIA MECHANICAL CODE (CMC)
 - 2022 CALIFORNIA PLUMBING CODE (CPC)
 - 2022 CALIFORNIA ELECTRICAL CODE (CEC)
 - 2022 CALIFORNIA ENERGY CODE
 - 2022 CALIFORNIA FIRE CODE

SITE PLAN

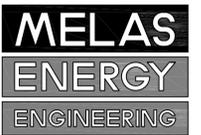
TBD

SCOPE OF WORK

| | |
|--------------------------|---------------------------|
| SYSTEM SIZE | 2.24 kWdc |
| MODULES | (7) LG LG325N1C-A5 |
| INVERTER(S) | (1) SOLAREEDGE SE3000H-US |
| RACKING | UNIRAC SOLARMOUNT |
| ATTACHMENT | ECOFASTEN |
| AZMUTH | 150° - 270° |
| ROOF PITCH | 6:12 |
| ROOF TYPE | SHINGLE |
| WIND EXPOSURE | C |
| WINDS SPEED (30/50/70LB) | 120 MPH |
| WINDS SPEED (490LB) | 150 MPH |
| CONSTRUCTION TYPE | RESIDENTIAL |



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PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

PV ARRAY SITE PLAN

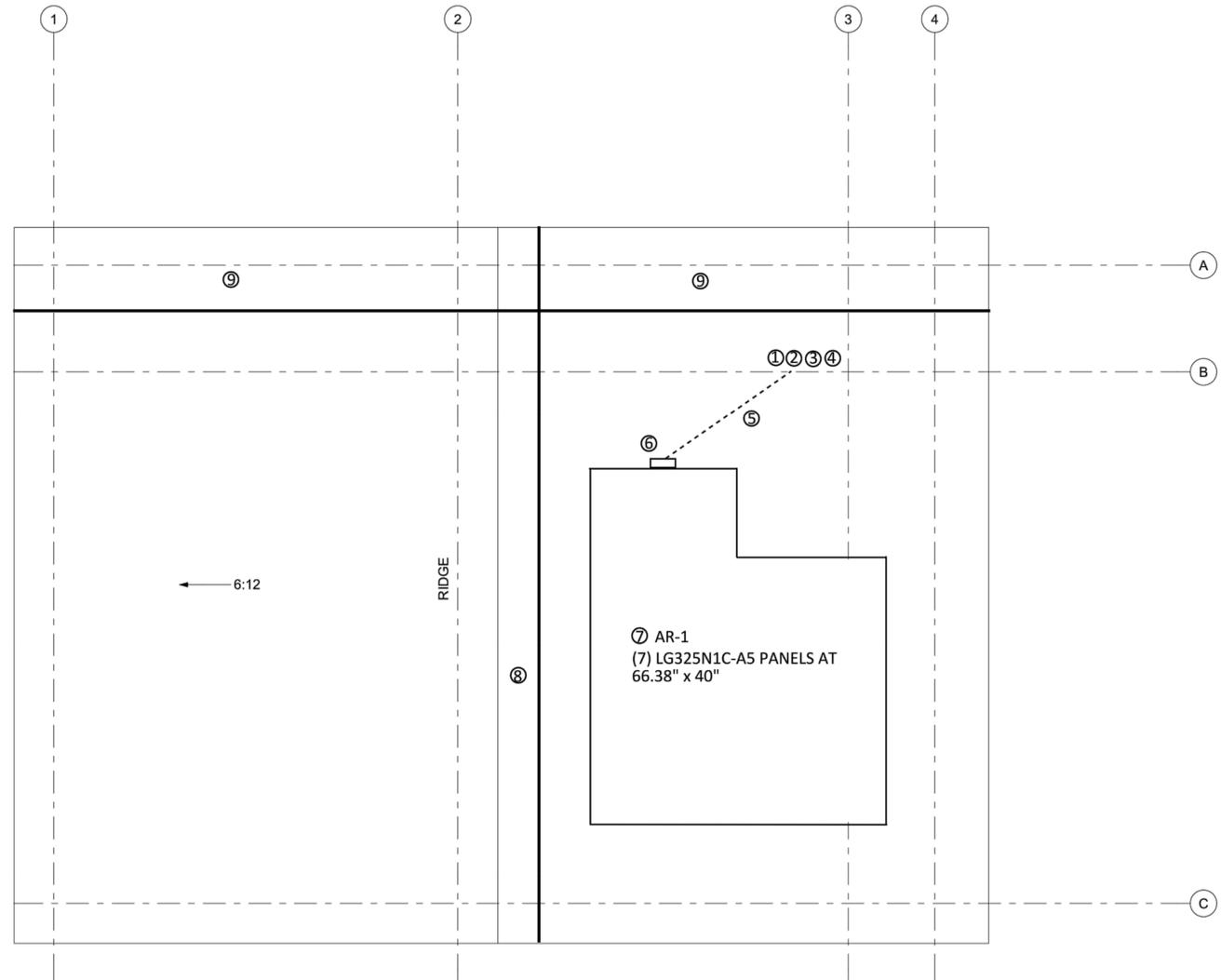
PV0.1

PV ARRAY NOTES

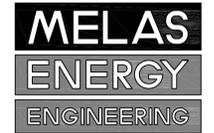
| | |
|----------------------|---------------------------|
| SYSTEM NAME | AR-1 |
| MODULES | (7) LG LG325N1C-A5 |
| INVERTER(S) | (1) SOLAREEDGE SE3000H-US |
| RACKING | UNIRAC SOLARMOUNT |
| MOUNT SPACING | 48" O.C MAX |
| ATTACHMENT | ECOFASTEN |
| AZMUTH | 150°-270° |
| ROOF PITCH | 6:12 |
| ROOF TYPE | SHINGLE |
| SOLAR AREA (SQFT) | 129.0 SQ. FT. |
| REQUIRED SYSTEM SIZE | 2240W |

KEYED NOTES

1. MAIN ELECTRIC METER, 200A
2. UTILITY AC DISCONNECT
3. PV GENERATOR METER
4. SOLAR INVERTER LOCATION (ON EXTERIOR WALL)
5. CONDUIT RUN (THROUGH ATTIC)
6. JUNCTION BOX
7. PV SYSTEM MODULES
8. RIDGE SETBACK (1.5FT)
9. ROOF ACCESS PATHWAYS (3FT TYPICAL)



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1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

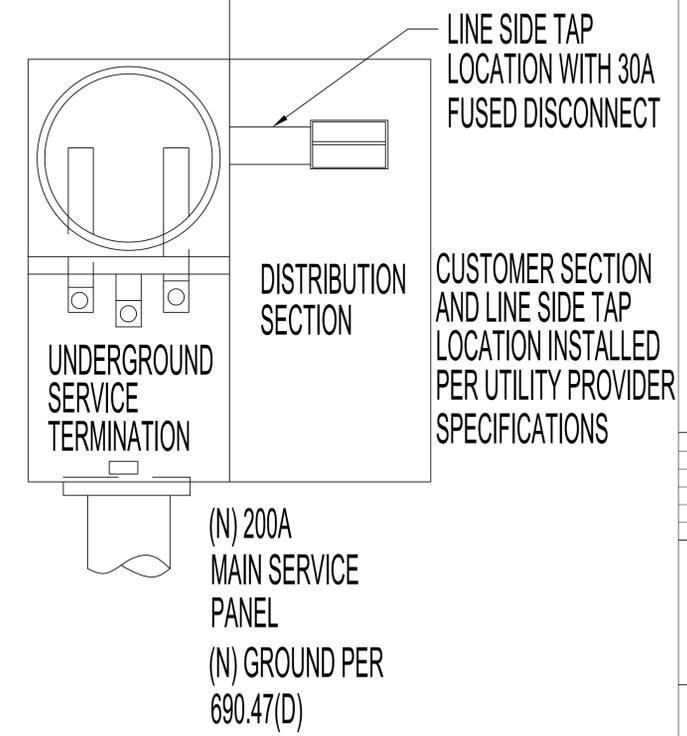
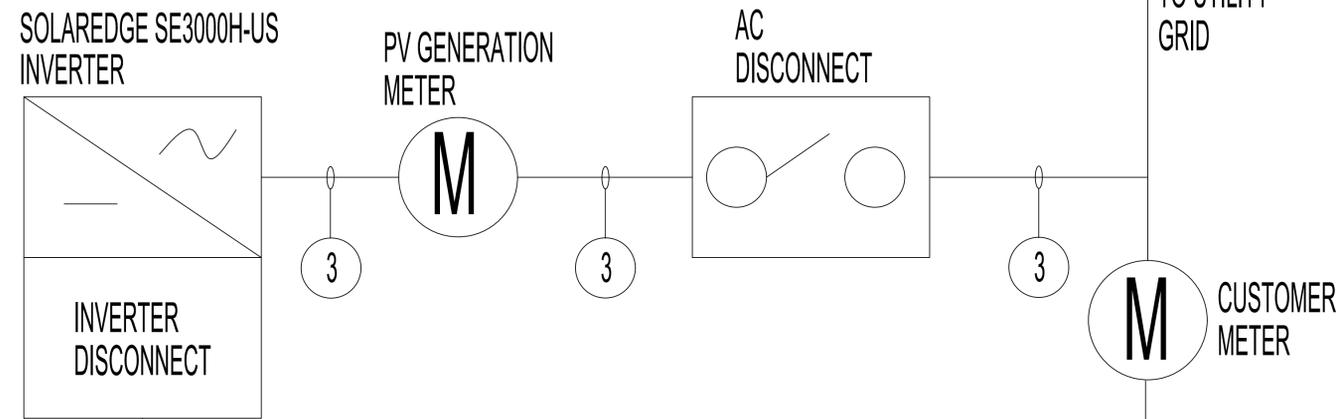
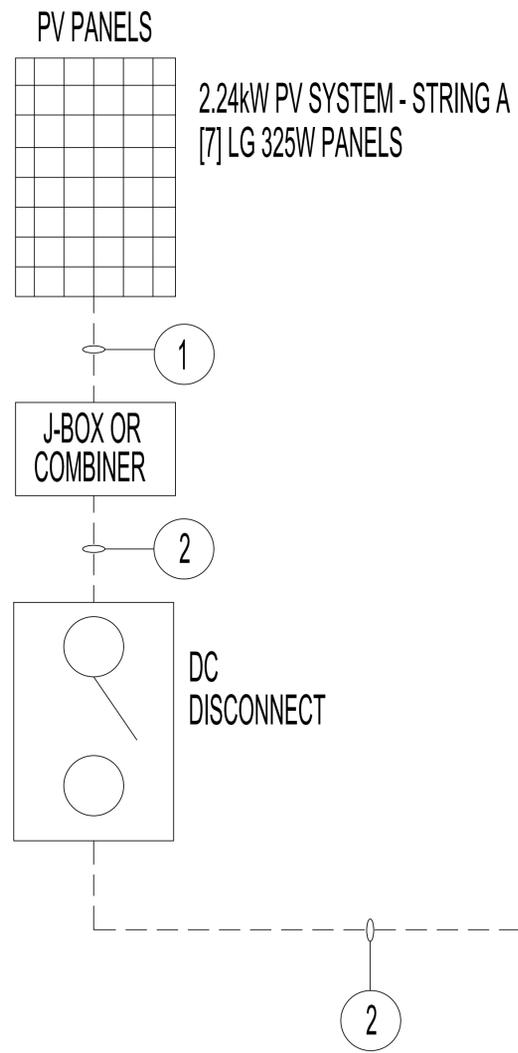
| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

PV ARRAY LAYOUT

PV0.2

| CONDUIT SCHEDULE | | | | |
|------------------|----------------|----------------|-------------|----------|
| ID | Conductor Type | Conductor Size | Ground | Conduit |
| 1 | PV Wire | (2) #12 AWG | (1) #12 GND | N/A |
| 2 | THHN/THWM-2 | (2) #10 AWG | (1) #10 GND | 3/4" EMT |
| 3 | THHN/THWM-2 | (2) #10 AWG | (1) #8 GND | 3/4" EMT |

PHOTOVOLTAIC SYSTEM MUST BE EQUIPPED WITH RAPID SHUTDOWN. TURN RAPID SHUTDOWN SWITCH TO OFF POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD.



| INVERTER RATINGS | |
|-------------------|------------|
| Manufacturer | SolarEdge |
| Model # | SE3000H-US |
| Max Input Current | 8.5A |
| Max Power (AC) | 480W |
| Nom. AC Voltage | 240V |
| Max AC Current | 12.5A |
| Efficiency (%) | 99% |

| MODULE AND ARRAY RATINGS: (7) MODULES | | | |
|---------------------------------------|-------------|-----------------------|------------|
| Make | LG | | |
| Model | LG325N1C-A5 | | |
| I _{mp} | 9.77A | Efficiency (%) | 19.0% |
| V _{mp} | 33.3V | Fire Rating | Type 1 |
| I _{sc} | 10.41A | P _{max} | 325W |
| V _{oc} | 40.9V | AR-1 P _{max} | 2275W |
| %v _{oc} /C | -0.27% | Total Array Weight | 277.76 LBS |



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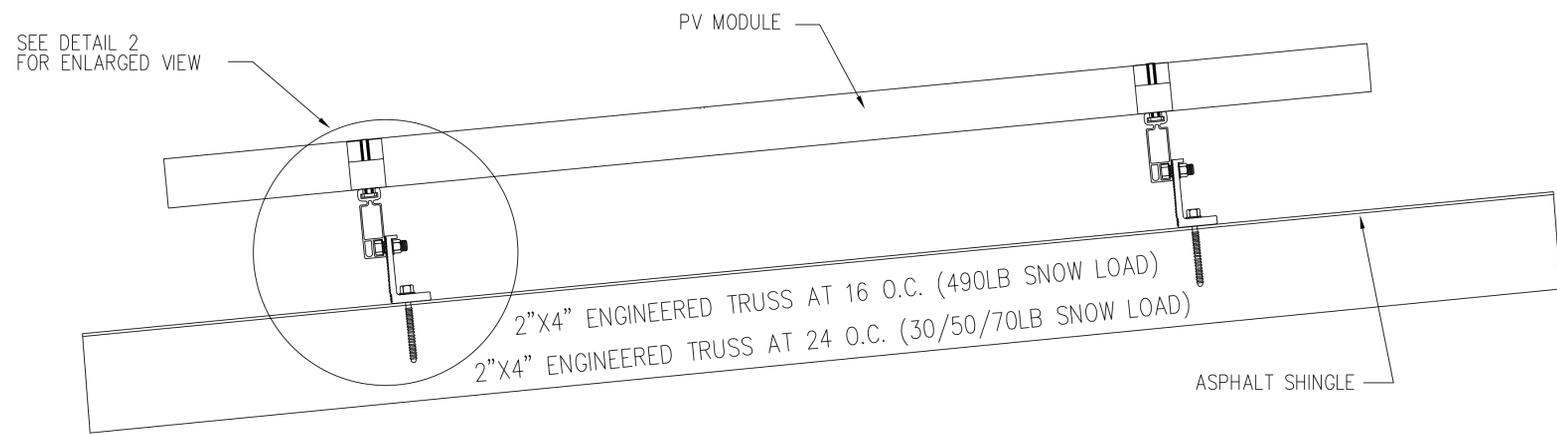
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1 BEDROOM (661 SF)

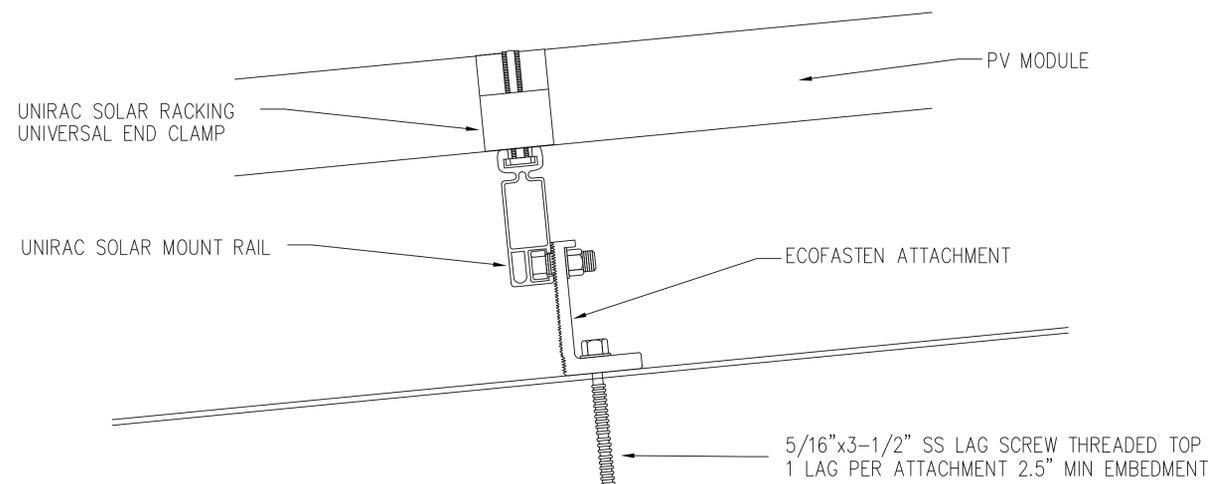
OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

PV SINGLE LINE DIAGRAM



1 | ATTACHMENT DETAIL



2 | ATTACHMENT DETAIL (SECTION VIEW)

May 13, 2020

PZSE
structural
ENGINEERS

EcoFasten Solar LLC
4141 W Van Buren St, Ste 2
Phoenix AZ, 85009
TEL: (877) 859-3947

Attn.: Engineering Department,
Re: Engineering Certification for the EcoFasten ClickFit System Installation Manual

This letter is to document that PZSE, Inc., Structural Engineers has reviewed the following EcoFasten ClickFit System Installation Manual and specifically the "Span Tables".

SCOPE OF THE SYSTEM:
The EcoFasten ClickFit System is a solar panel support system for installing solar photovoltaic arrays on sloped roofs of buildings. Typically, such buildings are residential with shingle or tile roofs. The number and spacing of attachments to the roof structure can vary depending on various site-specific criteria including, but not limited to, roof slope, spacing of supporting structural members and environmental loading.

SCOPE OF OUR REVIEW:
PZSE, Inc., Structural Engineers provided a review of the following:

- ClickFit System design methodology
- ClickFit System Installation Manual
- ClickFit System Loading Tables

and has determined that all information, data and analysis contained within the Installation Manual are based on, and are in compliance with, the structural requirements of the following Reference Documents:

- Minimum Design Loads for Buildings and other Structures, ASCE/SEI 7-16
- International Building Code, 2018 Edition, by International Code Council, Inc.
- International Residential Code, 2018 Edition, by International Code Council, Inc.
- AC428, Acceptance for Modular Framing System Used to Support Photovoltaic (PV) Panels, November 1, 2012 by ICC-ES
- ANSI/AIAA NDS-2018, National Design Specification for Wood Construction, by the American Wood Council
- Aluminum Design Manual, 2010 & 2015 Editions, by The Aluminum Association

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1 916.961.3940 F 916.961.3945 W www.pzse.com
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PZSE
structural
ENGINEERS

This letter certifies that the EcoFasten ClickFit System Installation Manual and Loading Tables are in compliance with the above Reference Documents.

DESIGN RESPONSIBILITY:
The ClickFit System Installation Manual is intended to be used under the responsible charge of a registered design professional where required by the authority having jurisdiction. In all cases, the user of the Installation Manual has sole responsibility for the accuracy of the design and integrity of the system.

The installation Manual does not check the capacity of the building structure to support the loads imposed on the building by the array, such as bending strength of roof rafters spanning between supports. This requires additional knowledge of the building and is outside the scope of the Installation Manual and our review.

If you have any questions on the above, do not hesitate to call.

Prepared By:
PZSE, Inc. - Structural Engineers
Roseville, CA

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1 916.961.3940 F 916.961.3945 W www.pzse.com
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YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED.

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

PV ARRAY DETAILS

PV0.4

GreenFasten® GF1 - Product Guide Cut Sheets: Bracket Options - SCL-101-3"

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EcoFasten Solar products are protected by the following U.S. Patents: 8,151,522; 8,153,750; 8,151,386; 8,180,713; 8,148,286; 8,205,914; 8,248,454; 8,272,174; 8,225,587; 8,010,026; 8,154,040; 8,175,478; 8,212,833 3/4

GreenFasten® GF1 - Product Guide Cut Sheets: Bracket Options - L-102-3"

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GreenFasten® GF1 - Product Guide Cutsheets: Bracket Options - Comp Slide

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WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE
Label to be installed at the photovoltaic O.C.P.D. per CEC 705.12(D)(2)

PHOTOVOLTAIC SYSTEM AC DISCONNECT
OPERATING VOLTAGE 240 VOLTS
OPERATING CURRENT 32 AMPS
Label to be installed at the POI and all AC disconnects per CEC 690.54 & CEC 705.10

PV SOLAR BREAKER
DO NOT RELOCATE THIS OVERCURRENT DEVICE
Label to be installed at the photovoltaic O.C.P.D. per CEC 705.12(D)(7)

PHOTOVOLTAIC SYSTEM DISCONNECT
Label to be installed next to Main Breaker

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN
2014 NEC 605.12(D)(2)

WARNING: PHOTOVOLTAIC POWER SOURCE

PHOTOVOLTAIC SYSTEM DC DISCONNECT
OPERATING VOLTAGE 51.2 VDC
OPERATING CURRENT 130 AMPS
MAX SYSTEM VOLTAGE 58.4 VDC
SHORT CIRCUIT CURRENT 130 AMPS
Label to be installed at the photovoltaic DC disconnect per CEC 690.14(C)(2) CEC 690.53

WARNING
ELECTRICAL SHOCK HAZARD
DO NOT TOUCH TERMINALS TERMINALS ON BOTH THE LINE AND LOAD SIDE MAY BE ENERGIZED IN THE OPEN POSITION
Label to be installed at the photovoltaic DC disconnect per CEC 690.17

WARNING
ELECTRICAL SHOCK HAZARD
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED
Label to be installed at the photovoltaic DC disconnect per CEC 690.35

INVERTER(S) LOCATED: GARAGE
Label to be installed at the point of interconnection per NEC 705.10

CAUTION SOLAR CIRCUIT
Label to be installed on raceways, junction boxes, and conduit bodies per CEC 690.31

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY

- NOTES:
- DIRECT CURRENT (DC) CONDUIT, ENCLOSURES, RACEWAYS, CABLE ASSEMBLIES, JUNCTION BOXES, COMBINER BOXES AND DISCONNECTS SHALL BE LABELED PER THE FOLLOWING:
 - LABELS SHALL BE REFLECTIVE, WATER RESISTANT AND CAN WITHSTAND THE ENVIRONMENT AS REQUIRED IN SECTIONS R331.2.2 – R331.2.4
 - LETTERING SHALL BE A MINIMUM 3/8 INCH IN HEIGHT WITH WHITE ON RED BACKGROUND.
 - LABELS SHALL STATE, WARNING: PHOTOVOLTAIC POWER SOURCE.
 - LABELS SHALL BE PLACED AT EVERY SERVICE DISCONNECT; ALSO EVERY DC CONDUIT, RACEWAYS, ENCLOSURES, ETC AT 10FT O.C. AND WITHIN 1FT OF TURNS, BENDS, AND PENETRATIONS.
 - RAPID SHUTDOWN INITIATION DEVICE SHALL BE LOCATED ON THE EXTERIOR LABELLED RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM WITH WHITE OR RED MINIMUM 3/8 INCH IN HEIGHT LETTERING

LG NeON²
LG340N1C-A5 | LG335N1C-A5 | LG330N1C-A5 | LG325N1C-A5
340W | 335W | 330W | 325W
The LG NeON² is LG's best-selling solar module. The NeON² received the acclaimed 2013 Inverter Award for featuring LG's Cell Technology, which increases power output and reliability and makes the NeON² one of the most powerful and versatile modules on the market.

Feature

- Enhanced Performance Warranty:** LG NeON² has an enhanced performance warranty. The annual degradation has fallen from 0.5% to 0.35% over 25 years, the cell guarantee 2.4% more than the previous LG NeON² modules.
- Roof Aesthetics:** LG NeON² has been designed with aesthetics in mind, using silver wires that appear all at a distance.
- Improved Performance on Sunny Days:** LG NeON² now performs better on sunny days, thanks to its improved temperature coefficient.

High Power Output: Compared with previous models, the LG NeON² has been designed to significantly enhance its output efficiency, thereby making it efficient even in limited space.

Outstanding Durability: With its newly reinforced frame design, LG has extended the warranty of the NeON² from 15 years to 25 years, including labor. In addition, LG NeON² can endure a front load up to 6000 Pa, and a rear load up to 5400 Pa.

Near Zero LID (Light Induced Degradation): The n-type cells used in LG NeON² have almost no light loss. This leads to less LID (Light Induced Degradation) right after installation.

About LG Electronics
LG Electronics is a global leader in consumer electronics, appliances, and mobile devices. The company has a rich history of innovation and a commitment to excellence. LG Electronics is a member of the LG Group, which is one of the world's largest conglomerates. LG Electronics is committed to providing high-quality products and services to its customers worldwide.

LG NeON²
LG340N1C-A5 | LG335N1C-A5 | LG330N1C-A5 | LG325N1C-A5

Electrical Properties (STC)

| Model | LG340N1C-A5 | LG335N1C-A5 | LG330N1C-A5 | LG325N1C-A5 |
|--|--|--|---|--|
| Maximum Power (P _{max}) | 340 | 335 | 330 | 325 |
| Maximum Power (P _{max}) | 291 | 287 | 283 | 279 |
| Maximum Power (P _{max}) | 242 | 241 | 237 | 233 |
| Maximum Power (P _{max}) | 193 | 192 | 189 | 187 |
| Open-Circuit Voltage (V _{oc}) | 41.1 | 40.9 | 40.7 | 40.5 |
| Short-Circuit Current (I _{sc}) | 10.0 | 9.9 | 9.8 | 9.7 |
| Maximum System Voltage (V _{max}) | 600 | 600 | 600 | 600 |
| Maximum System Current (I _{max}) | 13.0 | 13.0 | 13.0 | 13.0 |
| Maximum System Power (P _{max}) | 7800 | 7700 | 7600 | 7500 |
| Maximum System Power (P _{max}) | 6600 | 6500 | 6400 | 6300 |
| Maximum System Power (P _{max}) | 5400 | 5300 | 5200 | 5100 |
| Maximum System Power (P _{max}) | 4200 | 4100 | 4000 | 3900 |
| Maximum System Power (P _{max}) | 3000 | 2900 | 2800 | 2700 |
| Maximum System Power (P _{max}) | 1800 | 1700 | 1600 | 1500 |
| Maximum System Power (P _{max}) | 600 | 590 | 580 | 570 |
| Maximum System Power (P _{max}) | 300 | 290 | 280 | 270 |
| Maximum System Power (P _{max}) | 150 | 140 | 130 | 120 |
| Maximum System Power (P _{max}) | 75 | 70 | 65 | 60 |
| Maximum System Power (P _{max}) | 37.5 | 35 | 32.5 | 30 |
| Maximum System Power (P _{max}) | 18.75 | 17.5 | 16.5 | 15 |
| Maximum System Power (P _{max}) | 9.375 | 8.75 | 8.25 | 7.5 |
| Maximum System Power (P _{max}) | 4.6875 | 4.375 | 4.125 | 3.75 |
| Maximum System Power (P _{max}) | 2.34375 | 2.1875 | 2.0625 | 1.875 |
| Maximum System Power (P _{max}) | 1.171875 | 1.09375 | 1.03125 | 0.9375 |
| Maximum System Power (P _{max}) | 0.5859375 | 0.546875 | 0.515625 | 0.46875 |
| Maximum System Power (P _{max}) | 0.29296875 | 0.2734375 | 0.2578125 | 0.234375 |
| Maximum System Power (P _{max}) | 0.146484375 | 0.13671875 | 0.12890625 | 0.1171875 |
| Maximum System Power (P _{max}) | 0.0732421875 | 0.068359375 | 0.064453125 | 0.05859375 |
| Maximum System Power (P _{max}) | 0.03662109375 | 0.0341796875 | 0.0322265625 | 0.029296875 |
| Maximum System Power (P _{max}) | 0.018310546875 | 0.01708984375 | 0.01611328125 | 0.0146484375 |
| Maximum System Power (P _{max}) | 0.0091552734375 | 0.008544921875 | 0.008056640625 | 0.00732421875 |
| Maximum System Power (P _{max}) | 0.00457763671875 | 0.0042724609375 | 0.0040283203125 | 0.003662109375 |
| Maximum System Power (P _{max}) | 0.002288818359375 | 0.00213623046875 | 0.00201416015625 | 0.0018310546875 |
| Maximum System Power (P _{max}) | 0.0011444091796875 | 0.001068115234375 | 0.001007080078125 | 0.00091552734375 |
| Maximum System Power (P _{max}) | 0.00057220458984375 | 0.0005340576171875 | 0.0005035400390625 | 0.000457763671875 |
| Maximum System Power (P _{max}) | 0.000286102294921875 | 0.00026702880859375 | 0.00025177001953125 | 0.0002288818359375 |
| Maximum System Power (P _{max}) | 0.0001430511474609375 | 0.000133514404296875 | 0.000125885009765625 | 0.00011444091796875 |
| Maximum System Power (P _{max}) | 0.00007152557373046875 | 0.0000667572021484375 | 0.0000629425048828125 | 0.000057220458984375 |
| Maximum System Power (P _{max}) | 0.000035762786865234375 | 0.00003337860107421875 | 0.00003147125244140625 | 0.0000286102294921875 |
| Maximum System Power (P _{max}) | 0.0000178813934326171875 | 0.000016689300537109375 | 0.000015735626220703125 | 0.00001430511474609375 |
| Maximum System Power (P _{max}) | 0.00000894069671613046875 | 0.0000083446502685546875 | 0.0000078678131103515625 | 0.000007152557373046875 |
| Maximum System Power (P _{max}) | 0.000004470348358065234375 | 0.00000417232513427734375 | 0.00000393390655517578125 | 0.0000035762786865234375 |
| Maximum System Power (P _{max}) | 0.0000022351741790326171875 | 0.000002086162567136881875 | 0.000001966953277587890625 | 0.00000178813934326171875 |
| Maximum System Power (P _{max}) | 0.00000111758708951613046875 | 0.00000104308128356844375 | 0.0000009834766387939453125 | 0.000000894069671613046875 |
| Maximum System Power (P _{max}) | 0.0000005587935447578109375 | 0.000000521540641784221875 | 0.0000004917383193969765625 | 0.0000004470348358065234375 |
| Maximum System Power (P _{max}) | 0.00000027939677237890546875 | 0.00000026077032089214375 | 0.00000024586915969848828125 | 0.00000022351741790326171875 |
| Maximum System Power (P _{max}) | 0.00000013969838618945234375 | 0.00000013038516044609375 | 0.000000122934579849244140625 | 0.000000111758708951613046875 |
| Maximum System Power (P _{max}) | 0.000000069849193094726171875 | 0.000000065192580223046875 | 0.0000000614672899246220703125 | 0.00000005587935447578109375 |
| Maximum System Power (P _{max}) | 0.0000000349245965473630859375 | 0.0000000325962901115234375 | 0.00000003073364496231103515625 | 0.000000027939677237890546875 |
| Maximum System Power (P _{max}) | 0.000000017462298273681516171875 | 0.00000001629814505576171875 | 0.000000015366822481155578125 | 0.000000013969838618945234375 |
| Maximum System Power (P _{max}) | 0.0000000087311491368407890625 | 0.000000008149072527880859375 | 0.00000000768341124057890625 | 0.0000000069849193094726171875 |
| Maximum System Power (P _{max}) | 0.00000000436557456742444453125 | 0.0000000040745362639404296875 | 0.000000003841705620289453125 | 0.00000000349245965473681516171875 |
| Maximum System Power (P _{max}) | 0.000000002182787283712222265625 | 0.00000000203726813197021484375 | 0.0000000019208528101447265625 | 0.0000000017462298273681516171875 |
| Maximum System Power (P _{max}) | 0.0000000010913936418561111328125 | 0.0000000010186340659851071875 | 0.00000000096042640507236328125 | 0.00000000087311491368407890625 |
| Maximum System Power (P _{max}) | 0.0000000005456968209280556640625 | 0.0000000005093170329925390625 | 0.0000000004802132025361640625 | 0.0000000004365968209280556640625 |
| Maximum System Power (P _{max}) | 0.00000000027284841046402782703125 | 0.00000000025465851649626953125 | 0.00000000024010660126808203125 | 0.000000000218278728371222265625 |
| Maximum System Power (P _{max}) | 0.00000000013642420523201391365625 | 0.000000000127329258248134765625 | 0.000000000120053300634041015625 | 0.0000000001091393641856111328125 |
| Maximum System Power (P _{max}) | 0.000000000068212102616006956828125 | 0.0000000000636646291240673828125 | 0.0000000000600266503170205078125 | 0.00000000005456968209280556640625 |
| Maximum System Power (P _{max}) | 0.0000000000341060513080034764140625 | 0.00000000003183231456203369140625 | 0.00000000003001332515851025390625 | 0.00000000002728420523201391365625 |
| Maximum System Power (P _{max}) | 0.00000000001705302565400173220703125 | 0.0000000000159161572810168459375 | 0.000000000015006662579255119265625 | 0.000000000013642420523201391365625 |
| Maximum System Power (P _{max}) | 0.000000000008526512827000866111328125 | 0.00000000000795807864050842296875 | 0.00000000000750333128962755578125 | 0.000000000006821210265400173220703125 |
| Maximum System Power (P _{max}) | 0.000000000004263256413500433065625 | 0.000000000003979039320254211484375 | 0.00000000000375166564481377890625 | 0.00000000000341060513080034764140625 |
| Maximum System Power (P _{max}) | 0.000000000002131628206750021672828125 | 0.0000000000020395196601271072421875 | 0.000000000001875832822406889453125 | 0.000000000001705302565400173220703125 |
| Maximum System Power (P _{max}) | 0.0000000000010658141033750108364140625 | 0.000000000001019759830063535369140625 | 0.0000000000009379164112034447265625 | 0.0000000000008526512827000866111328125 |
| Maximum System Power (P _{max}) | 0.00000000000053290705168750054180703125 | 0.00000000000050987991503176768459375 | 0.00000000000046895820560172236328125 | 0.000000000000426325641350021672828125 |
| Maximum System Power (P _{max}) | 0.0000000000002664535258437502708640625 | 0.000000000000254939957515683842296875 | 0.000000000000234479102800861116819265625 | 0.0000000000002131628206750021672828125 |
| Maximum System Power (P _{max}) | 0.000000000000133226762921875013542140625 | 0.0000000000001274699787578419211484375 | 0.0000000000001172395514014030578125 | 0.0000000000001065814103375013542140625 |
| Maximum System Power (P _{max}) | 0.0000000000000666133814609375006771015625 | 0.00000000000006373498937892096072421875 | 0.0000000000000586197757007015390625 | 0.000000000000053226762921875006771015625 |
| Maximum System Power (P _{max}) | 0.00000000000003330669073046875003385578125 | 0.0000000000000318674946894604811484375 | 0.00000000000002930988785035076953125 | 0.0000000000000266133814609375003385578125 |
| Maximum System Power (P _{max}) | 0.00000000000001665334536523437500169279265625 | 0.000000000000015933747344702024211484375 | 0.000000000000014654943925150384765625 | 0.0000000000000133066907304687500169279265625 |
| Maximum System Power (P _{max}) | 0.0000000000000083266726826171875000846396328125 | 0.00000000000000796687367210101072421875 | 0.00000000000000732747196257519236328125 | 0.000000000000006653345365234375000846396328125 |
| Maximum System Power (P _{max}) | 0.000000000000004163336341308593750004231981640625 | 0.000000000000003983436836050505361072421875 | 0.00000000000000365373598128757619236328125 | 0.00000000000000332667268261718750004231981640625 |
| Maximum System Power (P _{max}) | 0.00000000000000208166817065429265625 | 0.00000000000000199171841802525265625 | 0.0000000000000018268679906438096328125 | 0.000000000000001663336341308593750004231981640625 |
| Maximum System Power (P _{max}) | 0.000000000000001040834085327146328125 | 0.00000000000000099585920901261328125 | 0.00000000000000091343399532190481640625 | 0.00000000000000083166817065429265625 |
| Maximum System Power (P _{max}) | 0.00000000000000052041704265357146328125 | 0.000000000000000497929604506306640625 | 0.00000000000000045671699766095240625 | 0.000000000000000416834085327146328125 |
| Maximum System Power (P _{max}) | 0.000000000000000260208521326783146328125 | 0.0000000000000002489648022531533203125 | 0.000000000000000228358498830476203125 | 0.00000000000000020841704265357146328125 |
| Maximum System Power (P _{max}) | 0.000000000000000130104260663146328125 | 0.0000000000000001244824011265 | | |

NOTES

- ALL SYSTEM PIPING AND FITTINGS SHALL BE NEW AND U.L. LISTED. ALL FLEX TUBING IS PEX UNLESS OTHERWISE NOTED. ALL CPVC IS BLAZEMASTER UNLESS NOTED OTHERWISE. ALL COPPER IS TYPE "L" UNLESS NOTED OTHERWISE.
- A SPARE HEAD BOX SHALL BE PROVIDED WITH 1 HEAD WRENCH AND 1 SPARE HEAD OF EACH TYPE OF SPRINKLER USED IN THE SYSTEM.
- SECURE PIPING TO TOP OF CEILING JOIST OR BOTTOM CHORD OF TRUSS. USE APPROVED PIPE STRAPS AND #18 X 1-1/2" WOOD SCREWS.
- SPRINKLERS ARE PERMITTED TO BE PAINTED AT THE FACTORY ONLY. ANY SPRINKLER THAT HAS BEEN PAINTED OUTSIDE THE FACTORY MUST BE REPLACED WITH A NEW LISTED SPRINKLER PER N.F.P.A. 13D.
- HANGER SPACING SHALL BE IN ACCORDANCE WITH N.F.P.A. 13 & 13R. MAXIMUM OF 6'-0" BETWEEN HANGERS FOR 1" PIPING. MAXIMUM OF 8'-6" FOR 1-1/4" PIPING. MAXIMUM OF 12' FROM SPRINKLER HEADS FOR 1" PIPE. MAXIMUM OF 6' FROM SPRINKLER HEADS FOR 3/4" PIPE.
- ALL PENETRATIONS THROUGH FIREWALLS AND CEILINGS BETWEEN ATTACHED GARAGES AND RESIDENCE WILL BE SEALED IN AN APPROVED MANNER TO MAINTAIN THE INTEGRITY OF THE FIREWALL.
- STORAGE IN ATTIC AND CRAWL SPACES IS NOT ALLOWED WHERE NOT PROTECTED WITH SPRINKLERS.
- SPRINKLERS MUST BE INSTALLED ACCORDING TO THE SPACING PARAMETERS THAT HAVE BEEN HYDRAULICALLY PROVEN, BUT MAY NOT BE IN THE EXACT LOCATIONS SHOWN ON PLAN.
- CONTRACTOR/OWNER IS RESPONSIBLE FOR THE INSTALLATION OF ALL UNDERGROUND PIPING.
- SYSTEM IS DESIGNED AND INSTALLED PER N.F.P.A. 13D AND THE AUTHORITY HAVING JURISDICTION.
- FINAL APPROVAL OF SYSTEM PENDING FINAL INSPECTION BY THE AUTHORITY HAVING JURISDICTION.
- INTERMEDIATE TEMPERATURE RATED SPRINKLERS ARE REQUIRED IN ALL SPACES (ATTIC, GARAGE, MECH RM, ETC) WITH FUEL FIRED EQUIPMENT (SPACE HEATERS, FURNACES, WATER HEATERS, ETC) ARE INSTALLED WHETHER SHOWN ON THE DRAWINGS OR NOT.
- NAIL PLATES ARE REQUIRED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE.

For multipurpose piping systems a warning sign, with minimum 1/4 in. (6 mm) letters, shall be affixed adjacent to the main shutoff valve and shall state the following, as required by NFPA 13D:

WARNING: The water system for this home supplies fire sprinklers that require certain flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water softeners, filtration systems, and automatic shutoff valves, shall not be added to this system without a review of the fire sprinkler system by a fire protection specialist. Do not remove this sign.

For residences with self-contained fire suppression systems and for manufactured home sprinklered buildings the minimum flow and pressure needed to satisfy the fire sprinkler system design criteria on the system side of the meter (POC) shall be specified on a data plate posted at the building supply point as required by NFPA 13D.

4" MINIMUM FROM WALLS
8' MINIMUM BETWEEN HEADS
COMPARTMENTS WITH ONE HEAD 10' MAXIMUM FROM WALLS
ALL OTHER COMPARTMENTS 8' MAXIMUM FROM WALLS AND 16' MAXIMUM BETWEEN HEADS

NOTE: ALL SPACES MUST BE KEPT AT 40F OR HIGHER UNLES ANTI-FREEZE OR DRY SPRINKLER SYSTEMS ARE USED.

FLOW THROUGH (STRAIGHT RUN), 4-WAY CROSS FITTINGS, HAVE BEEN CALCULATED AS 2 FITTINGS

ALL PIPE SIZES ARE 1" UNLESS NOTED OTHERWISE

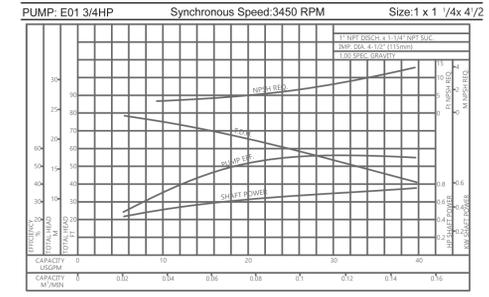
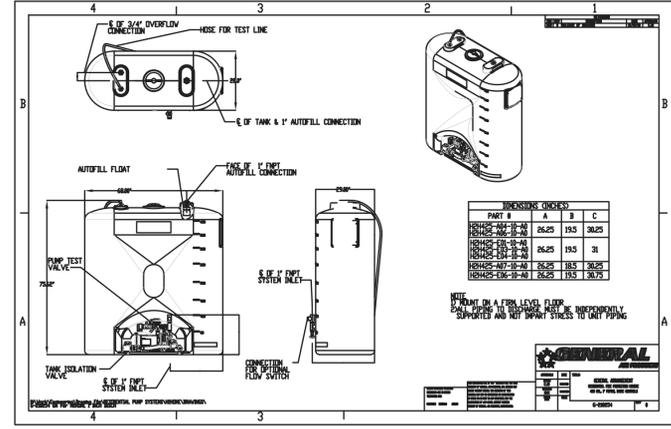
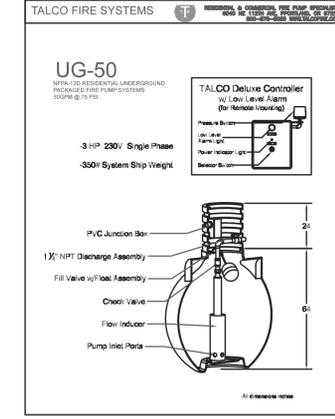
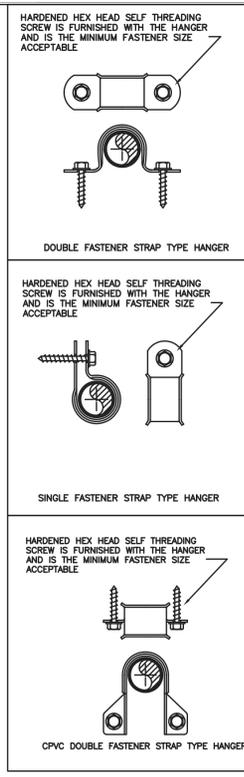
| | |
|------------------|-------|
| AREA 1 @ 20 X 20 | |
| PSI REQ | 36.59 |
| OPM REQ | 26.91 |

| | |
|----------------|-----------|
| FLOW TEST DATA | |
| DATE | 9-30-2022 |
| STATIC | ----- |
| RESIDUAL | ----- |
| GPM | ----- |

CONTRACTOR TO REF HYD CALC'S FOR MINIMUM WATER SUPPLY DESIGN REQUIREMENTS.

| | |
|----------------|-------------|
| FLOW TEST DATA | |
| DATE | ---/---/--- |
| STATIC | --- psi |
| RESIDUAL | --- psi |
| GPM | --- gpm |

CONTRACTOR TO DETERMINE AVAILABLE WATER SUPPLY AND ADJUST PIPING AS NEEDED.

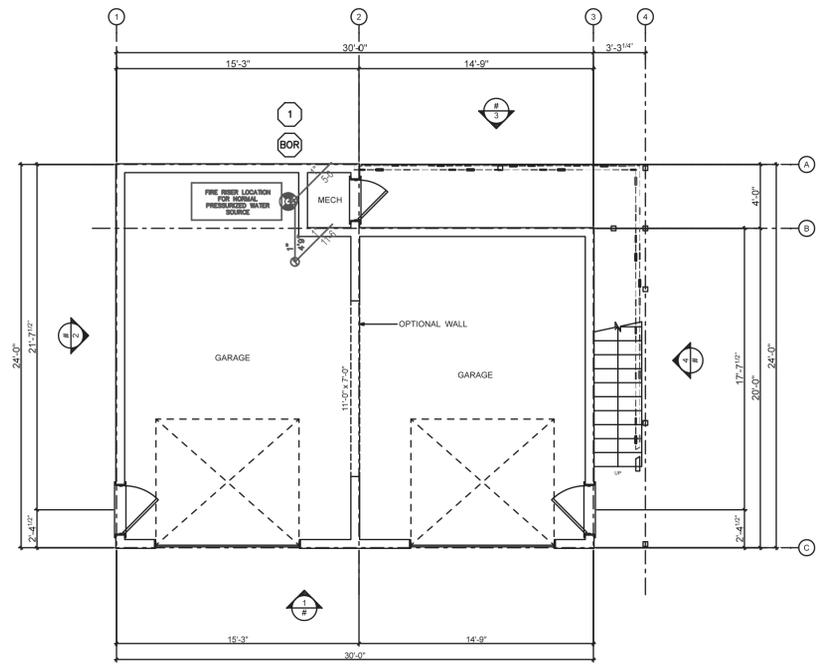
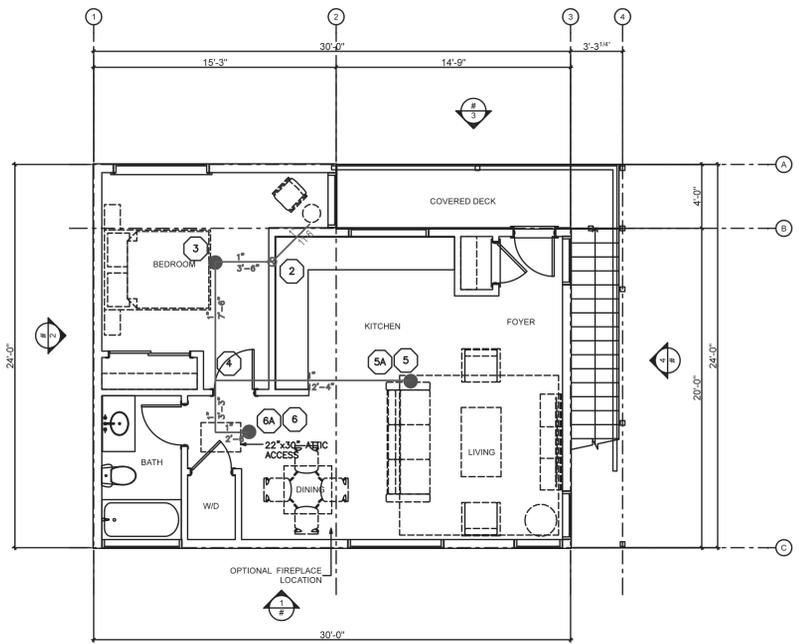
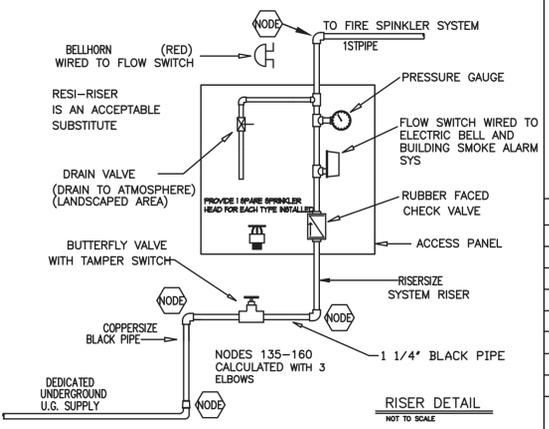
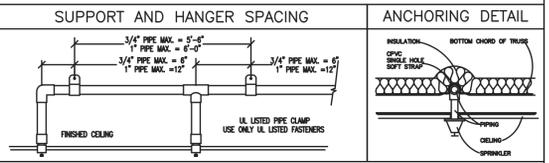


UNDERGROUND SELF-CONTAINED STORAGE TANK AND PUMP.

ABOVE GROUND SELF-CONTAINED STORAGE TANK AND PUMP.

1 SELF-CONTAINED PUMPED NFPA 13D FIRE SUPPRESSION SYSTEMS SCALE: NTS

| SPRINKLER HEAT ZONES | | |
|---|---|--------------------------|
| HEAT SOURCE | MINIMUM DISTANCE FROM EDGE OF SOURCE TO | |
| | ORDINARY TEMP. SPRK. | INTERMEDIATE TEMP. SPRK. |
| SIDE OF OPEN OR RECESSED FIREPLACE | 3'-0" | 1'-0" |
| FRONT OF RECESSED FIREPLACE | 5'-0" | 3'-0" |
| COAL- OR WOOD-BURNING STOVE | 3'-6" | 1'-0" |
| KITCHEN RANGE | 1'-6" | 0'-9" |
| WALL OVEN | 1'-6" | 0'-9" |
| HOT AIR FLUES | 1'-6" | 0'-9" |
| INSULATED HEAT DUCTS | 1'-6" | 0'-9" |
| UNINSULATED HOT WATER PIPES | 1'-0" | 0'-6" |
| SIDE OF CEILING- OR WALL-MOUNTED HOT AIR DIFFUSERS | 2'-0" | 1'-0" |
| FRONT OF WALL-MOUNTED HOT AIR DIFFUSERS | 3'-0" | 1'-6" |
| HOT WATER HEATER OR FURNACE | 0'-6" | 0'-3" |
| LIGHT FIXTURE 0W - 250W | 0'-6" | 0'-3" |
| LIGHT FIXTURE 250W - 499W | 1'-0" | 0'-6" |
| MINIMUM DISTANCE FROM THE CENTER OF CEILING FANS = 3' | | |
| MINIMUM DISTANCE FROM SURFACE MOUNTED LIGHTS = 3' | | |



2 2ND FLOOR PLAN SCALE: 3/16" = 1'-0"

3 1ST FLOOR PLAN SCALE: 3/16" = 1'-0"

Fire Sprinklers installed near potential high area are to be installed according to the following table.

| Heat Source | Minimum Distance from Edge of Source to Ordinary-Temperature Sprinkler | | | |
|--|--|------|-----|-----|
| | in. | mm | in. | mm |
| Side of open or recessed fireplace | 36 | 915 | 12 | 300 |
| Front of recessed fireplace | 60 | 1525 | 36 | 915 |
| Coal- or wood-burning stove | 42 | 1070 | 12 | 305 |
| Kitchen range | 18 | 460 | 9 | 230 |
| Wall oven | 18 | 460 | 9 | 230 |
| Hot air flues | 18 | 460 | 9 | 230 |
| Uninsulated heat ducts | 18 | 460 | 9 | 230 |
| Uninsulated hot water pipes | 12 | 305 | 6 | 155 |
| Side of ceiling- or wall-mounted hot air diffusers | 21 | 610 | 12 | 305 |
| Front of wall-mounted hot air diffusers | 36 | 915 | 18 | 460 |
| Hot water heater or furnace | 6 | 155 | 3 | 75 |
| Light fixture | 6 | 155 | 3 | 75 |
| 0 W- 250 W | 6 | 155 | 3 | 75 |
| 250 W- 499 W | 12 | 305 | 6 | 155 |

| SYSTEM DESIGN DATA | | BUILDING AREA | | SPRINKLER SYMBOL DESCRIPTION | | | | | | | | | | | | | | | |
|--------------------|-------------|-----------------------------------|----------|------------------------------|-------|---------|----------|---------|---------|------|----------|-------|---------|--|--|--|--|--|--|
| OCCUPANCY | RESIDENTIAL | AREA | SQ. FT. | SYMBOL | S/LN | MODEL | MAKE | FINISH | STYLE | TEMP | K-FACTOR | TOTAL | | | | | | | |
| HAZARD | NFPA 13D | LOWER | ----- | ● | R3516 | F1RFC49 | RELIABLE | PAINTED | PENDENT | 155' | 4.9 | 3 | | | | | | | |
| DENSITY | 0.05 OPM/SF | 1ST FLOOR | 1ST | SIN | MODEL | MAKE | FINISH | STYLE | TEMP | K | QTY | | | | | | | | |
| REMOTE AREA | | 2ND FLOOR | ----- | SIN | MODEL | MAKE | FINISH | STYLE | TEMP | K | QTY | | | | | | | | |
| PSI DATA | | OPTIONS | ----- | SIN | MODEL | MAKE | FINISH | STYLE | TEMP | K | QTY | | | | | | | | |
| DATE | ----- | DETACHED | DETACHED | | | | | | | | | | | | | | | | |
| STATIC | ----- | TOTAL | TOTAL | | | | | | | | | | 3 TOTAL | | | | | | |
| AVAILABLE | ----- | TOTAL SPRINKLERS FOR THIS PROJECT | | | | | | | | | | | | | | | | | |
| TAKEN BY | CONTRACTOR | | | | | | | | | | | | | | | | | | |



BID SET
NOT FOR CONSTRUCTION

YOU ASSUME ALL RESPONSIBILITY AND RISK FOR YOUR USE OF THE PLANS. THE PLANS ARE PROVIDED "AS IS" WITHOUT REPRESENTATIONS OR WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF TITLE, NON-INFRINGEMENT, OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITATION OF THE FOREGOING, YOU AGREE THAT IT IS YOUR RESPONSIBILITY TO ENSURE, PRIOR TO USE OF ANY PLANS, THAT SUCH PLANS ARE ACCURATE, SUITABLE FOR YOUR PURPOSES AND COMPLIANT WITH ALL APPLICABLE LAWS.

PLANS ONLY VALID WITHIN NEVADA COUNTY, PLACER COUNTY, SIERRA COUNTY, TOWN OF TRUCKEE, CITY OF GRASS VALLEY, AND CITY OF NEVADA CITY. USE OF THESE PLANS OUTSIDE THESE LISTED AREAS WITHOUT ARCHITECT/ENGINEER OF RECORD APPROVAL IS STRICTLY PROHIBITED.

1 BEDROOM (661 SF)

OWNER: _____
ADDRESS: _____
APN: _____

| ID | NAME | DATE |
|----|-----------|---------|
| | SUBMITTAL | 3/30/23 |
| | | |
| | | |

AUTOMATIC FIRE PROTECTION

FP1