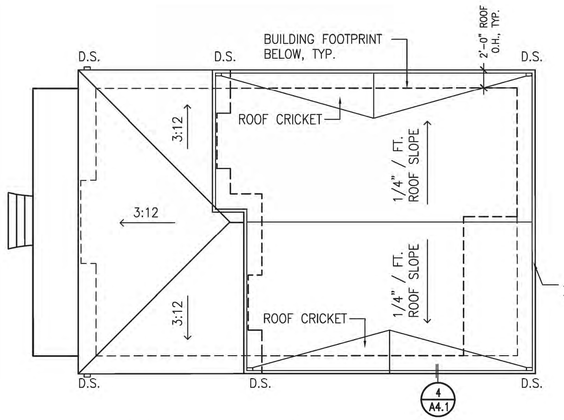
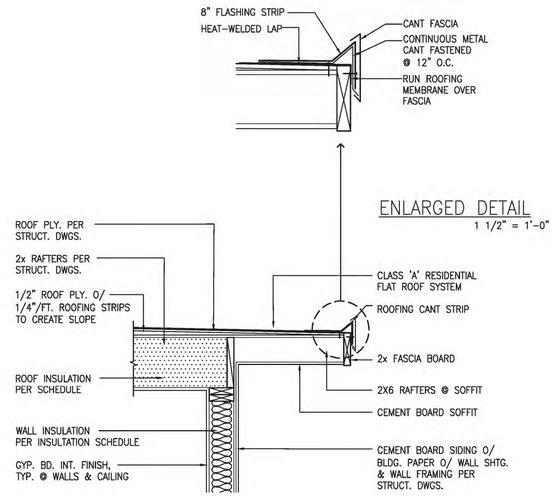


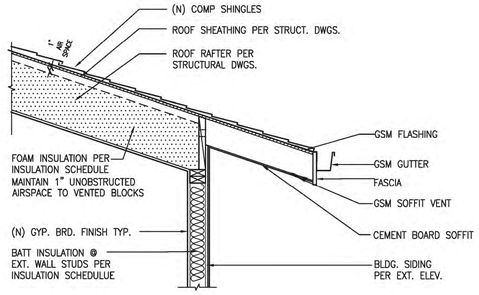
6 A4.2 ROOF PLAN

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



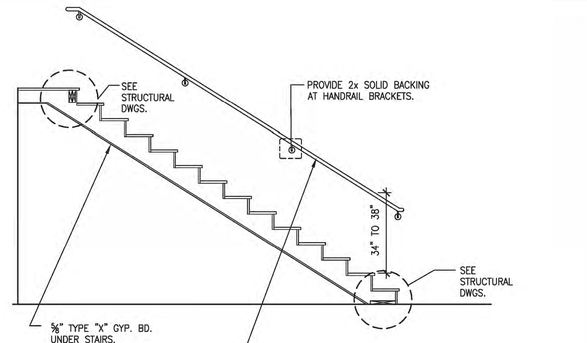
5 A4.2 ROOF DETAIL

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



4 A4.2 EAVE DETAIL

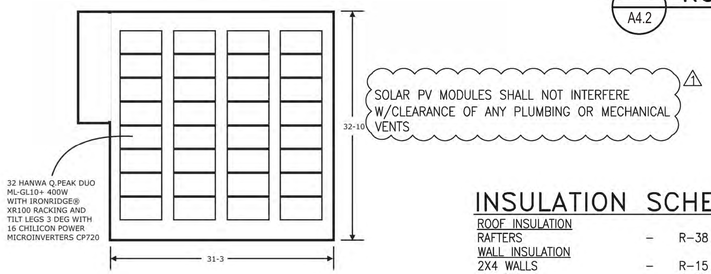
SCALE: 1/8" = 1'-0"



3 A4.2 STAIR DETAIL

SCALE: 3/8" = 1'-0"

UPPER FLAT ROOFTOP PV ARRAY



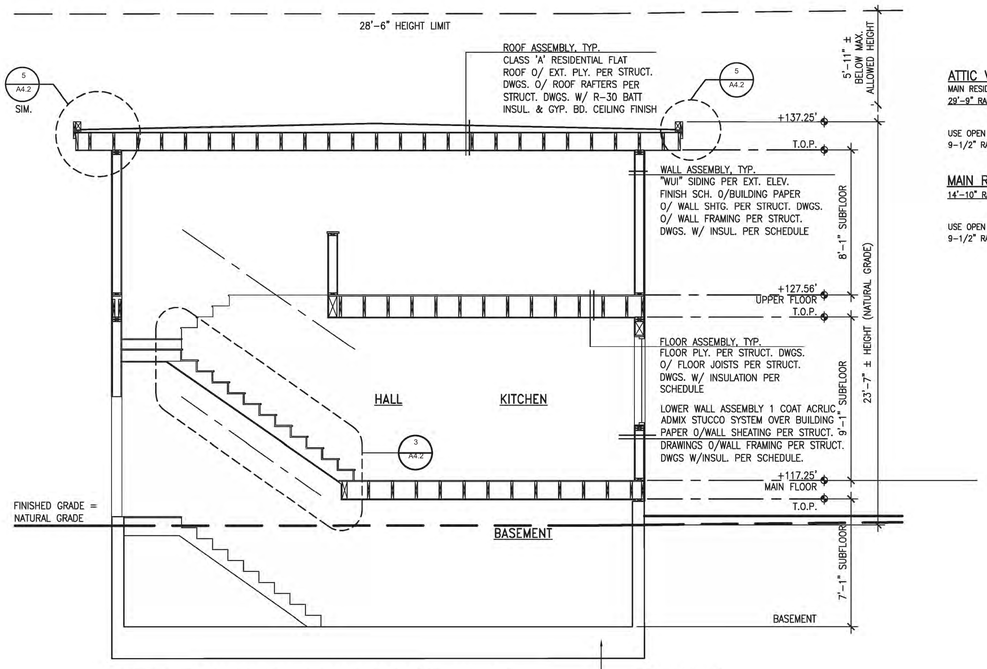
LRE033122 79 WOOD LANE - FAIRFAX, CA 94930

7 A4.2 ROOF TOP SOLAR PANELS

SCALE: N.T.S.

INSULATION SCHEDULE

ROOF INSULATION		
RAFTERS	–	R-38 SPRAY FOAM
WALL INSULATION		
2X4 WALLS	–	R-15 BATT
2X6 WALLS	–	R-21 BATT
FLOOR INSULATION		
FLOOR O/ CRAWL SPACE	–	R-19 BATT



2 A4.2 BUILDING SECTION C-C

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

ATTIC VENTING

MAIN RESIDENCE UPPER ROOF
29'-9" RAFTER LENGTH x 22"
150 = 0.36 S.F. (52.36 S.I.)

USE OPEN CELL SPRAY FOAM INSULATION
9-1/2" RAFTER DEPTH x 3.7 (R PER INCH) = R 35 PROVIDED

MAIN RESIDENCE LOWER HIP ROOF

14'-10" RAFTER LENGTH x 22"
150 = 0.18 S.F. (26.10 S.I.)

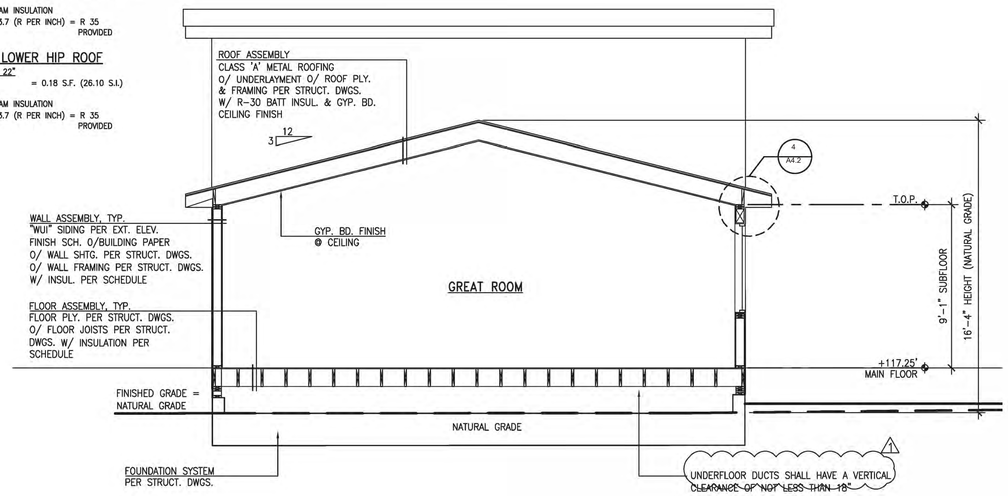
USE OPEN CELL SPRAY FOAM INSULATION
9-1/2" RAFTER DEPTH x 3.7 (R PER INCH) = R 35 PROVIDED

9 A4.2 STONE VENEER DETAIL

SCALE: 1" = 1'-0"

8 A4.2 WEEP SCREED

SCALE: 1" = 1'-0"



1 A4.2 BUILDING SECTION B-B

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

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

ARCHITECTS
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LICENSED ARCHITECT LAURA S. KERRIGAN NO. C 25466 REN. 01-31-23 STATE OF CALIFORNIA

NEW RESIDENCE AND ADU
79 WOOD LANE
FAIRFAX, CA 94930
APN: 002-062-03
FOR: COBY FRIEDMAN

BUILDING SECTIONS

Revisions:
1 PERMIT SUBMITTAL 03-17-2022
2 REVISED PERMIT SUBMITTAL 04-06-2022
3 PLAN CHECK COMMENTS 06-23-2022

Date: 06-20-2022
Scale: As Noted
Drawn: LSK
Job # 19049.00
Prototype DIVINE

A4.2

STRUCTURAL NOTES

GENERAL

1. THESE NOTES APPLY TO ALL DRAWINGS AND GOVERN UNLESS OTHERWISE NOTED OR SPECIFIED. ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE CODES AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.

   APPLICABLE CODES INCLUDE:
   THE 2019 EDITION OF:
   CALIFORNIA BUILDING CODE (CBC)
   CALIFORNIA RESIDENTIAL CODE (CRC)
   CALIFORNIA PLUMBING CODE (CPC)
   CALIFORNIA ELECTRICAL CODE
   CALIFORNIA MECHANICAL CODE (CMC)
   CALIFORNIA GREEN BUILDING STANDARDS CODE
   CALIFORNIA ENERGY CODE
   CALIFORNIA FIRE CODE (CFC)

2. VERIFY ALL EXISTING CONDITIONS AND PROPOSED DIMENSIONS AT THE SUBJECT SITE. COMPARE STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK. DO NOT PROCEED WITH CONSTRUCTION IF DISCREPANCIES ARE DETECTED UNTIL THEY ARE RESOLVED. DO NOT SCALE DRAWINGS.

3. UNLESS OTHERWISE SHOWN OR NOTED ALL TYPICAL DETAILS SHALL BE USED WHERE APPLICABLE. ALL DETAILS SHALL BE CONSIDERED TYPICAL AT SIMILAR CONDITIONS.

4. THE CONTRACTOR AND SPECIAL INSPECTOR ARE ENCOURAGED TO CONTACT THE ENGINEER REGARDING ANY QUESTIONS OF INTERPRETATION OF THESE SPECIFICATIONS AND DRAWINGS.

5. SAFETY MEASURES: AT ALL TIMES, THE CONTRACTOR SHALL WORK IN COMPLIANCE WITH CAL/OSHA—TITLE 8 SAFETY REGULATIONS AND SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF PEOPLE AND PROPERTY, AND FOR ALL NECESSARY INDEPENDENT ENGINEERING REVIEWS OF THESE CONDITIONS. 1

6. SHORING AND BRACING OF THE SOIL, AND THE EXISTING AND NEW STRUCTURES SHALL BE INSTALLED WHERE NECESSARY TO ADEQUATELY SUPPORT THE IMPOSED VERTICAL AND LATERAL LOADS, AND SHALL BE MAINTAINED UNTIL THE NEW STRUCTURE CAN SUPPORT THE ANTICIPATED LOADS. THE ENGINEER'S JOB SITE VISITS ARE NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE TEMPORARY SHORING AND/OR CONTRACTOR'S SAFETY MEASURES.

7. ANY OPENING, HOLES, CUTS OR DISCONTINUITIES NOT SHOWN ON THE STRUCTURAL DRAWINGS AND EXTENDING INTO OR THROUGH STRUCTURAL ELEMENTS REQUIRE THE PRIOR APPROVAL OF THE ENGINEER.

8. SURFACE GRADES ADJACENT TO THE FOUNDATION SHALL SLOPE AWAY FROM BUILDING AT A MIN OF 5% FOR PERVIOUS SURFACES OR 2% FOR IMPERVIOUS SURFACES FOR MIN 10 FEET.

SPECIAL INSPECTIONS AND CONSTRUCTION OBSERVATIONS 1

1. TESTS AND SPECIAL INSPECTIONS SHALL BE PROVIDED PER REQUIREMENTS OF THE 2019 CALIFORNIA BUILDING CODE CHAPTER 17.

2. THE FOLLOWING ITEMS SHALL BE INSPECTED AND/OR TESTED BY DAC ASSOCIATES INC. OR A TESTING LAB IN ACCORDANCE WITH CHAPTER 17 OF THE 2019 CALIFORNIA BUILDING CODE. THE CONTRACTOR SHALL NOTIFY THE INSPECTOR AT LEAST 72 HOURS PRIOR TO TIME OF INSPECTION.
   a. FOR CONCRETE WITH STRENGTH EQUAL OR MORE THAN 3,000PSI, PLACEMENT, SAMPLING & TESTING FOR STRENGTH (EXCEPT FOR CONTINUOUS FOOTING & SLAB-ON-GRADE)

3. THE FOLLOWING ITEMS SHALL BE INSPECTED BY THE ENGINEER OF RECORD (DAC ASSOCIATES, INC.). THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 72 HOURS PRIOR TO TIME OF INSPECTION.
   a. FOUNDATION, PAVEMENT, AND SLAB-ON-GRADE SUBGRADES
   b. PLACEMENT OF REINFORCING STEEL AND CAST-IN-PLACE ANCHORAGES
   c. HOLDOWNS AND ANCHOR BOLTS
   d. STEEL WELDING
   e. SHEARWALLS, DIAPHRAGMS, ROUGH FRAMING AND FRAMING HARDWARE
   f. SOIL ENGINEER TO OBSERVE AND APPROVE IN WRITING PLACEMENT OF GEOTECHNICAL DRAINAGE
   g. SOIL ENGINEER TO OBSERVE AND APPROVE IN WRITING BACKFILL OPERATIONS

4. FOUNDATION EXCAVATIONS AND SLAB-ON-GRADE SUBGRADES SHALL BE OBSERVED AND APPROVED IN WRITING BY THE SOIL ENGINEER (HERZOG GEOTECHNICAL CONSULTING ENGINEERS) PRIOR TO PLACEMENT OF FORMS OR REINFORCING STEEL. THE CONTRACTOR SHALL NOTIFY THE SOIL ENGINEER AT LEAST 72 HOURS BEFORE EXCAVATION/DRILLING IS SCHEDULED TO BEGIN.

5.

6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INSPECTIONS AND ENSURING THAT ALL REQUIRED TESTING & INSPECTION IS PERFORMED TO THE SATISFACTION OF THE INSPECTOR.

DESIGN BASIS AND CRITERIA

1. DESIGN CONFORMS TO THE 2019 CBC AND ALL APPLICABLE LOCAL ORDINANCES.

2. DESIGN VERTICAL LOAD

	DL (PSF)	LL (PSF)
a. ROOF	23	20
b. RES. FLOORS	20	40
c. DECK/BALCONY	15	60
d. GARAGE/PARKING	63	40 (OR 3000 LB CONCENTRATED)

3. DESIGN LATERAL LOAD

   e. WIND: 110 MPH BASIC WIND SPEED. EXPOSURE C
   f. SEISMIC: RISK CATEGORY II, SEISMIC DESIGN CATEGORY D,
   S_s = 1.6g S_1 = 0.63g, S_{DS}=1.07g, S_{D1}=0.63g
   R=6.5, I=1.0, Cs = $S_{DS}/(R/I)$, BASE SHEAR, V = Cs*W

4. ALL STRUCTURES SHOWN ON THESE DRAWINGS ARE BASED UPON ARCHITECTURAL PLANS FOR "NEW RESIDENCE & ADU, 79 WOOD LANE, FAIRFAX, CA" PREPARED BY FREDRIC C. DIVINE ASSOCIATES, DATED 04-06-2022.

CONCRETE

1. CONCRETE CEMENT SHALL CONFORM TO THE LATEST ASTM C-150 & C-595, AND SHALL BE TYPE II. TYPE I CEMENT MAY BE USED IN AREAS NOT IN CONTACT WITH EARTH. MINIMUM 6 SAKCS/CU.YD. OF CEMENT. FLY ASH SHALL NOT COMPOSE MORE THAN 25% OF THE CEMENTITIOUS MATERIAL. AGGREGATE SHALL BE FREE OF ALKALI REACTIVITY.

2. WATER/CEMENT RATIO SHALL NOT EXCEED 0.45. ACID SOLUBLE CHOLRIDE-FREE ADMIXTURES AND PLASTICIZERS FOR WORKABILITY MAY BE USED IF APPROVED BY THE TESTING LABORATORY AND ENGINEER. BECAUSE EXCESS WATER REDUCES CONCRETE STRENGTH, ADDING WATER AT THE SITE IS DISCOURAGED AND SHALL NOT EXCEED ONE GALLON PER CUBIC YARD.

3. REINFORCE ALL STRUCTURAL CONCRETE. CONCRETE CONSTRUCTION TOLERANCES SHALL COMPLY WITH ACI 117. INSTALL ALL INSERTS, BOLTS, ANCHORS, AND REINFORCING BARS AND SECURELY TIE PRIOR TO PLACING CONCRETE.

4. CONCRETE SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):

LOCATION	28 DAYS STRENGTH	SLUMP	AGGREGATE (ASTM C33)
SLAB ON GRADE	3000 PSI	4"	HR-LS, 1" MAX
FOOTINGS/ GRADE BEAMS/ CONCRETE WALLS	3000 PSI	4"	HR, 1" MAX
DRILLED PIERS	3000 PSI	6"	HR, ¾" MAX

NOTE: STRUCTURAL DESIGN OF CONTINUOUS FOOTING AND SLAB-ON-GRADE CONCRETE BASED ON 2,500 PSI COMPRESSIVE STRENGTH. THE SPECIFIED STRENGTH ABOVE ARE USED FOR BETTER QUALITY PER CRITERIA ONLY. CONCRETE SPECIAL INSPECTION FOR CONTINUOUS FOOTING AND SLAB-ON-GRADE IS NOT REQUIRED.

5. CONCRETE SHALL BE PLACED IN A CONTINUOUS OPERATION BETWEEN PREDETERMINED AND PREAPPROVED CONSTRUCTION JOINTS.

6. CONCRETE SHALL BE CONTINUOUSLY CURED FOR 7 DAYS AFTER PLACEMENT IN ANY APPROVED MANNER. FOOTINGS ARE EXCEPTED FROM THIS REQUIREMENT.

7. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL, DRAWINGS LOCATING AND DETAILING ALL PROPOSED CONSTRUCTION/CONTROL JOINTS IN CONCRETE PRIOR TO COMMENCING WORK. CONSTRUCTION JOINT SHALL BE ROUGHENED, EXPOSING CLEAN AGGREGATE TO ¼" DEPTH SOLIDLY EMBEDDED IN MORTAR MATRIX, AND SHALL INCLUDE SHEAR KEYS AND DOWELS AS REQUIRED BY THE ENGINEER.

8. THE LOCATION AND PROTECTION OF EXISTING UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF UTILITY PIPES RUN THROUGH, OR WITHIN 24" BELOW, ANY NEW CONCRETE CONSTRUCTION. THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH DESIGN DETAILS UNDER SUCH CIRCUMSTANCES.

9. PATCHING OF CONCRETE: ALL INSERTS HOLES, AND OTHER IMPERFECTIONS ON THE SURFACE OF THE CONCRETE SHALL BE FILLED WITH GROUT, BRUSHED, AND SACKED TO A UNIFORM FINISH. ALL HOLES THROUGH TO THE OUTSIDE OF THE BUILDING MUST BE MADE WATERTIGHT.

10. CHAMFER ALL CORNERS ¾", EXCEPT TOP EDGES OF SLABS AND BEAMS, UNLESS OTHERWISE NOTED.

11. ALL CONCRETE SHALL BE PLACED ON COMPETENT SUBGRADE, AS DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

12. CONCRETE FLOOR SLAB-ON-GRADE SHALL HAVE A MINIMUM THICKNESS OF 4" UNLESS OTHERWISE NOTED.

13. ALL SLAB-ON-GRADE SHALL HAVE CONTROL JOINTS (WEAKENED PLANE JOINT) PER TYPICAL DETAIL TO CREATE APPROXIMATELY 20-FOOT SQUARES, UNLESS OTHERWISE NOTED ON PLANS.

REINFORCING STEEL

1. ALL REINFORCING STEEL BARS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR DEFORMED BILLET-STEEL CONCRETE REINFORCEMENT, ASTM A615 GRADE 60 KSI EXCEPT FOR GRADE 40 KSI FOR #3 STIRRUP/TIE, UNLESS OTHERWISE NOTED.

2. LAP SLICE ALL BARS A MINIMUM OF 36 BAR DIA OR 18" MIN, (UNLESS OTHERWISE NOTED) LAP HORIZ REBAR AT CORNERS AND INTERSECTIONS IN FOOTINGS AND WALLS WITH CORNER BARS OR OTHER METHODS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.

3. WIRE MESH SHALL CONFIRM WITH ASTM A185-64.

4. UNLESS OTHERWISE NOTED, MAINTAIN COVERAGE TO FACE OF REINFORCING BARS AS FOLLOWS:

LOCATION	MINIMUM CLEAR COVER
CAST AGAINST EARTH:	3"
EXPOSED TO EARTH OR WEATHER:	2" (1½" FOR #5 & SMALLER)
EXTERIOR SURFACES FOR BEAMS & COLUMN	1½"

FOUNDATIONS AND RETAINING WALLS

1. THE FOUNDATION AND RETAINING WALLS DESIGN IS BASED ON RECOMMENDATIONS OF THE GEOTECHNICAL INVESTIGATION REPORT TITLED "GEOTECHNICAL REPORT UPDATE," PREPARED BY HERZOG GEOTECHNICAL CONSULTING ENGINEERS, DATED 11-15-2021. A COPY OF THE REPORT SHALL BE OBTAINED FROM THE SOIL ENGINEER'S OFFICE. THE REPORT IS PART OF THE CONSTRUCTION DOCUMENTS, AND ITS RECOMMENDATIONS ARE TO BE FOLLOWED DURING CONSTRUCTION.

2. DESIGN CRITERIA
   a. ASSUMED DEPTH TO COMPETENT SUBGRADE = 44.5 FEET
   b. ALLOWABLE BEARING PRESSURE (DL+LL) = 1000 PSF FOR MAT SLAB
   c. COEFFICIENT OF FRICTION = 0.3
   d. ALLOWABLE PASSIVE PRESSURE FOR MAT SLAB = 150 PCF (EQUIVALENT FLUID PRESSURE)
   e. ALLOWABLE PASSIVE PRESSURE FOR RETAINING WALLS = 60 PCF FOR LEVEL BACKFILL WITH BACK-DRAINAGE (ADD 2 FT BACKFILL FOR VEHICULAR SURCHARGE) (12H SEISMIC)

3. ALL FOUNDATION AND RETAINING WALL WORK SHALL COMPLY WITH 2019 CBC CHAPTER 18.

4. WATERPROOF MEMBRANE SHALL BE 10MIL MIN THICK; 2" MIN OVERLAP & SECURED W/ TAPE AT ALL EDGES PER MANUFACTURE'S RECOMMENDATION.

5. CONTRACTOR SHALL USE APPROVED DEVICES AND/OR SERVICES TO SCAN FOR UNDERGROUND UTILITIES PRIOR TO START OF EXCAVATION OR GRADING.

6. CONTRACTOR SHALL AVOID EXCAVATION BELOW BOTTOM OF FOOTING AND REMOVING ANY SOIL WHICH MAY SERVE FOR LATERAL RESISTANCE FOR ADJACENT FOOTINGS. UNLESS OTHERWISE NOTED.

7. EXTERIOR FOOTINGS TO BE A MINIMUM OF 18" BELOW FINISHED GRADE (UNLESS OTHERWISE NOTED) BEARING ON NATIVE UNDISTURBED COMPETENT SOIL OR ENGINEERED COMPACTED FILLS WITH 95% RELATIVE COMPACTION (ASTM D1557), APPROVED BY SOIL ENGINEER IN WRITING.

8. DO NOT ALLOW WATER TO STAND IN EXCAVATED HOLES. IF BOTTOMS OF HOLE BECOME SOFTENED DUE TO RAIN OR OTHER WATER BEFORE CONCRETE IS CAST, EXCAVATE SOFTENED MATERIAL AND REPLACE WITH PROPERLY COMPACTED BACKFILL OR CONCRETE AT NO COST TO THE OWNER.

EQUIPMENT, PIPE, AND DUCT SUPPORT

1. THE CONTRACTOR IS RESPONSIBLE FOR THE VERTICAL AND LATERAL SUPPORT OF ALL HVAC AND OTHER EQUIPMENT. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE SUPPORT OF ALL HVAC EQUIPMENT OVER 400 POUNDS, STAMPED AND SIGNED BY A CALIFORNIA-LICENSED CIVIL OR STRUCTURAL ENGINEER. EQUIPMENT AND ANCHORAGE SHALL BE DESIGNED TO RESIST LATERAL SEISMIC FORCES PER 2019 CBC SECTION 1632.2. LATERAL SEISMIC DESIGN FORCES ON ALL LIFE SAFETY EQUIPMENT SHALL BE INCREASED BY A FACTOR OF 1.50.

2. CONDUITS, PIPES AND DUCTS SHALL BE BRACED TO RESIST SEISMIC HAZARD B PER THE CURRENT EDITION OF "SMACNA SEISMIC RESTRAINT MANUAL: GUIDELINES FOR MECHANICAL SYSTEMS", EXCEPT THAT THE COMPONENTS OF LIFE SAFETY SYSTEMS SHALL BE BRACED TO RESIST SEISMIC HAZARD LEVEL A.

ROUGH CARPENTRY

1. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, NAILING SHALL CONFORM TO THE 2019 CBC, TABLE 2304.9.1 UNLESS OTHERWISE NOTED ON THESE DRAWINGS, ALL NAILS SHALL BE COMMON NAILS (AS OPPOSED TO BOX, SINKER OR COOLER NAILS).

2. SILLS ON CONCRETE SHALL BE PRESSURE TREATED DOUGLAS FIR. SILLS SHALL BE FASTENED TO THE CONCRETE WITH A MINIMUM OF TWO FASTENERS PER PIECE, SPACED NOT MORE THAN 4 FEET APART AND A FASTENER LOCATED NOT MORE THAN 12 INCHES OR SEVEN BOLT DIAMETERS AND NOT LESS THAN 5 INCHES FROM EACH END OF PIECE. USE HOT-DIPPED GALVANIZED FASTENERS WITH PRESSURE TREATED WOOD.

3. FASTEN ALL SILL PLATES AT NON-STRUCTURAL WALLS TO NON-PRESTRESSED CONCRETE SLABS WITH 0.177" DIAMETER POWER DRIVEN FASTENERS AT 16" ON CENTER, WITH 1 ¼" MINIMUM CONCRETE EMBEDMENT, UNLESS OTHERWISE NOTED ON THE DRAWINGS. FASTEN ALL SILL PLATES AT NON-STRUCTURAL WALLS TO PRESTRESSED CONCRETE SLABS WITH 0.145" DIAMETER POWER EMBEDMENT DRIVEN FASTENERS AT 16" ON CENTERS, WITH ¾" MINIMUM AND 1" MAXIMUM CONCRETE EMBEDMENT, UNLESS OTHERWISE NOTED ON THE DRAWINGS.

4. ALL ANCHOR BOLTS (AB) SHALL BE ASTM A307. ALL ANCHOR BOLTS SHALL HAVE PLATE WASHERS, MINIMUM 3"X3" SQUARE BY 0.229" THICK. ANCHOR BOLTS MUST BE SECURELY WIRED IN PLACE AND ALIGNED IN A TRUE STRAIGHT LINE PRIOR TO THE CONCRETE PLACEMENT. ANCHOR BOLTS AND OTHER EMBEDDED STRUCTURAL CONNECTORS MAY NOT BE "WET SET".

5. LAG SCREWS: PRE-DRILL LEAD HOLES WITH ½ TO ⅝ OF SHANK DIAMETER FOR THREADED PORTION OF LAG SCREW, AND FULL DIAMETER FOR THE UNTHREADED SHANK PORTION. LAD SCREWS SHALL BE TORQUED, AND NEVER HAMMERED, INTO POSITION. LUBRICATE THREADS WITH SOAP OR OTHER WOOD-COMPATIBLE LUBRICANT.

6. ALL MACHINE BOLTS (M.B.) SHALL BE ASTM A307 GRADE A, INSTALLED THROUGH HOLES ⅛" LARGER THAN DIAMETER OF BOLT. RE-TIGHTEN ALL BOLTS PRIOR TO CLOSING IN WALLS.

7. USE HOT-DIPPED GALVANIZED NAILS, BOLTS, AND HARDWARE WHERE EXPOSED TO WEATHER AND FOR WHEN IN CONTACT WITH PRESSURE TREATED WOOD.

8. PLACE JOISTS WITH CROWN UP. ADD ONE ADDITIONAL JOIST UNDER ALL PARALLEL PARTITIONS.

9. BLOCK ALL JOISTS AT SUPPORTS AND UNDER ALL PARTITIONS WITH MINIMUM 2X SOLID BLOCKING. BLOCK AND BRIDGE ROOF JOISTS AT 10 FOOT AND FLOOR JOISTS AT 8 FOOT ON CENTER WHERE CEILING ASSEMBLY IS NOT ATTACHED DIRECTLY TO BOTTOM OF JOISTS.

10. ALL TIMBER FASTENERS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE SIMPSON COMPANY'S STANDARD FASTENERS OR APPROVED EQUAL.

11. ALL WOOD AND WOOD PRODUCTS IN CONTACT WITH CONCRETE OR MASONRY OR EXPOSED TO WEATHER SHALL BE PRESSURE-TREATED. SPECIES AND GRADE FOR PRESSURE TREATED PRODUCTS SHALL MATCH THAT SPECIFIED FOR UNTREATED SIMILAR LUMBER OR WOOD PRODUCTS (i.e. PRESSURE-TREATED HEM-FIR MAY NOT BE SUBSTITUTED FOR PRESSURE-TREATED DOUGLAS-FIR), UNLESS OTHERWISE NOTED ON THE DRAWINGS.

12. RE-TIGHTEN ALL BOLTS BEFORE CLOSING IN FRAMING.

13. AT THE TIME OF INSTALLATION, ALL FRAMING LUMBER SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19%.

14. ALL TJI, MICRO-LAM (LVL), PARALAM (PSL) ARE MADE BY WEYERHAUSER. THE MANUFACTURER'S GUIDELINES AND RECOMMENDATIONS SHALL BE FOLLOWED IN HANDLING AND INSTALLATION OF ALL PRODUCTS.

15. TIMBER RIVETS: SHALL BE INSTALLED WITH LONG EDGE PARALLEL TO GRAIN. TIMBER RIVETS AT THE PERIMETER OF THE GROUP SHALL BE DRIVEN FIRST. SUCCESSIVE TIMBER RIVETS SHALL BE DRIVEN IN A SPIRAL PATTERN FROM THE OUTSIDE TO THE CENTER OF THE GROUP.

16. SIMPSON STRONG WALL SHEAR WALL MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER INSTRUCTIONS. MANUFACTURER GUIDELINES AND RECOMMENDATIONS SHALL BE FOLLOWED AT ALL TIMES DURING HANDLING AND INSTALLATION OF ALL PRODUCTS.

FRAMING LUMBER

1. ALL FRAMING LUMBER SHALL BE DOUGLAS FIR GRADED PER WCLIB GRADING RULES NO. 16 LUMBER MAY BE SURFACE GREEN EXCEPT AS NOTED BELOW.

2. ALL POSTS, BEAMS, HEADERS SHALL BE #1 OR BETTER.

3. ALL ROOF JOISTS SHALL BE #1 OR BETTER.

4. ALL FLOOR JOISTS SHALL BE #1 OR BETTER, SURFACE DRY.

5. ALL STUDS SHALL BE STUD GRADE OR BETTER.

6. ALL PLATES AND MISCELLANEOUS LUMBER SHALL BE STANDARD GRADE OR BETTER.

7. ALL WOOD AND WOOD PRODUCTS IN CONTACT WITH CONCRETE OR MASONRY OR EXPOSED TO WEATHER SHALL BE PRESSURE-TREATED. SPECIES AND GRADE FOR PRESSURE TREATED PRODUCTS SHALL MATCH THAT SPECIFIED FOR UNTREATED SIMILAR LUMBER OR WOOD PRODUCTS (i.e. PRESSURE-TREATED HEM-FIR MAY NOT BE SUBSTITUTED FOR PRESSURE-TREATED DOUGLAS-FIR), UNLESS OTHERWISE NOTED ON THE DRAWINGS.

PLYWOOD

1. EACH PLYWOOD SHEET OR WOOD STRUCTURAL PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE GRADE AND TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE U.S. PRODUCT STANDARD PS 1 OR PS 2. WOOD STRUCTURAL PANELS (SUCH AS ORIENTED STRAND BOARD) OF EQUAL THICKNESS AND RATING, AND MEETING THE REQUIREMENTS OF APA PS 2, MAY BE SUBSTITUTED FOR PLYWOOD.

2. PLYWOOD SHEETS AT FLOORS AND ROOFS SHALL BE LAID WITH FACE GRAIN PERPENDICULAR TO JOISTS AND RAFTERS. BLOCK EDGES WHERE NOTED ON THE DRAWINGS. ALL CUT PANELS SHALL BE EQUAL OR GREATER THAN 24"X48". APPLY A CONTINUOUS BEAD OF GLUE TO ALL FLOOR JOISTS BEFORE SETTING FLOOR PLYWOOD.

3. PLYWOOD SHEETS ON WALLS SHALL BE LAID WITH LONG DIMENSION VERTICAL. ALL CUT PANELS IN SHEAR WALLS SHALL BE EQUAL OR GREATER THAN 16" IN BOTH DIRECTIONS. BLOCK AND NAIL ALL EDGES. GLUE ADHESIVE SHALL NOT BE APPLIED BETWEEN STUDS AND WALL PLYWOOD.

4. ROOF PLYWOOD SHALL BE MINIMUM ½", $^{24}/_{16}$, EXPOSURE 1, PROVIDE PLYCLIPS BETWEEN RAFTERS WHERE EDGES ARE NOT BLOCKED. U.O.N.

5. FLOOR PLYWOOD SHALL BE MINIMUM ¾", $^{40}/_{20}$, EXPOSURE 1. U.O.N.

6. WALL PLYWOOD SHALL BE MINIMUM ½", $^{24}/_{16}$, EXPOSURE 1. U.O.N.

STRUCTURAL STEEL AND MISCELLANEOUS IRON

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AS REVISED BY THE PROJECT SPECIFICATIONS).

2. STEEL SHAPES AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING:
   A. WIDE FLANGES (W) - ASTM 992, GR 50
   B. HOLLOW STRUCTURAL SECTIONS (HSS)
      *SQUARE OR RECTANGULAR - ASTM A500 GR B (Fy = 46 ksi)
      *ROUND - ASTM A500 GR B (Fy = 42 ksi)
   C. PLATES AND BARS - A36
      *EXCEPT FOR MOMENT FRAME CONNECTIONS (I.E. CONTINUITY, DOUBLER, SPLICE, ETC) WHICH SHALL BE ASTM A572 GR 50
   D. PIPE - ASTM A53 GR B
   E. MISCELLANEOUS SHAPES (I.E. CHANNELS, ANGLES, ETC) - ASTM A36

3. ALL BOLTS FOR STEEL TO STEEL CONNECTIONS SHALL CONFORM TO ASTM A325N-SC; UNLESS OTHERWISE NOTED. BOLTS SHALL BE FULLY PRE-TENSIONED TO SATISFY SLIP-CRITICAL REQUIREMENTS WITH A CLASS-A FAYING SURFACE. FULL PRE-TENSIONING SHALL BE ATTAINED BY "TURN-OF-THE-NUT" OR OTHER METHOD APPROVED BY THE STRUCTURAL ENGINEER.

4. ANCHOR RODS:
   TYPICAL: ASTM F1554 GR 36 W/ ASTM A563 HEAVY HEX NUTS
   WELDABLE: ASTM F1554 GR 55 S1 W/ ASTM A563 HEAVY HEX NUTS
   HIGH STRENGTH: ASTM F1554 GR 105 W/ ASTM A563 GR DH HEAVY HEX NUTS

5. NON-SHRINK GROUT:
   7500 PSI COMPRESSIVE STRENGTH, NON METALLIC CONFORMING TO ASTM 1107. MASTERFLOW 928 OR EQUAL.

6. STEEL NOT RECEIVING FIRE PROOFING SHALL BE SHOP PRIMED OR EQUAL, EXCEPT SURFACES TO RECEIVE WELDS, SHEAR STUDS, FULLY PRE-TENSIONED BOLTS, CONCRETE ENCASEMENT OR SPRAY FIREPROOFING. ALL STEEL OR STEEL FASTENERS EXPOSED TO WEATHER SHALL BE HOT-DIP ZINC GALVANIZED, OR PAINTED WITH TWO COATS OF BITUMINOUS/COAL TAR EPOXY OR WEATHERPROOFED BY AN APPROVED EQUAL U.O.N.

7. WELDING TO CONFORM TO THE LATEST EDITION OF THE AWS SPECIFICATIONS SHALL BE PREFORMED BY CERTIFIED WELDERS. BUTT WELDS ARE TO BE COMPLETE PENETRATION JOINT (CPJ), U.O.N. ALL FILLET WELDS SHOWN ARE MINIMUM REQUIRED BY STRESS, INCREASE WELDS TO AISC MINIMUM SIZES BASED ON THICKNESS OF MATERIAL JOINED U.O.N.

8. ALL ELECTRODES SHALL BE E70XX (70 KSI), U.O.N. ELECTRODES AND FLUXES SHALL BE KEPT CLEAN AND DRY PER AWS D1.1 AND THE FOLLOWING ADDITIONAL REQUIREMENTS. FCAW (WIRE) ELECTRODES SHALL BE CONSUMED WITHIN TWO WEEKS OF OPENING THEIR ORIGINAL PACKAGING. RUSTED ELECTRODES SHALL BE DISCARDED. SMAW (STICK) ELECTRODES SHALL BE LOW HYDROGEN TYPE, SHALL HAVE MOISTURE-RESISTANT COATINGS, AND SHALL BE USED WITHIN 8 HOURS OF OPENING THEIR HERMETICALLY-SEALED CONTAINERS, OR SHALL BE REDRIED PER AWS D1.1, SECTION 4.5.2. SAW FLUX SHALL BE KEPT CLEAN AND DRY PER AWSD1.1, SECTION 4.8.3. SAW FLUX OPEN TO AIR FOR MORE THAN TWO DAYS SHALL BE RE-DRIED FOR AT LEAST TWO HOURS AT BETWEEN 500 AND 900 DEGREES FAHRENHEIT. WET FLUX SHALL BE DISCARDED.

9. SHOP AND ERECTION DRAWINGS CONFORMING WITH AISC SPEC, AWS D1.1 AND RCSC SPEC SHALL BE PROVIDED BY THE STEEL FABRICATOR, AND REVIEWED AND APPROVED BY THE ENGINEER.

10. STEEL MEMBER CONNECTING TO WOOD FRAMING SHALL HAVE WOOD NAILER WITH MIN $^{5}/_{8}$"ø NELSON STUD OR THREADED STUDS AT 24"O.C. WITH MIN ⅜" FILLET WELDED ALL AROUND TO THE STEEL MEMBER, UNLESS OTHERWISE NOTED.

ADHESIVE ANCHOR

1. INSTALLATION OF ADHESIVE, ANCHORS AND DOWELS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THESE NOTES. WHERE REQUIREMENTS OF THE MANUFACTURER OR THESE NOTES CONFLICT THE MORE RESTRICTIVE PROVISIONS GOVERN.

2. ADHESIVE SYSTEMS
   A. THE FOLLOWING ADHESIVE ANCHOR SYSTEMS ARE ACCEPTABLE FOR USE IN CONCRETE:
      SIMPSON STRONG-TIE CO. INC.: SET-XP (ESR-2508)
      HILTI, INC.: HILTI HIT HY-200

3. ADHESIVE CONNECTIONS SHALL HAVE SPECIAL INSPECTION PER CBC SECTION 1704 UNLESS OTHERWISE NOTED.

PROJECT DESCRIPTION

NEW RESIDENCE, NEW GARAGE, AND NEW ADU.

PROJECT DIRECTORY

OWNER:	COBY FRIEDMAN 79 WOOD LANE FAIRFAX, CA 94930 COBY@CFCONTRACTING.COM 415-310-5442
ARCHITECT:	FREDRIC DIVINE ARCHITECTS 1924 4TH STREET SAN RAFAEL, CA 94901 LAURA@ FDIVINEARCHITECTS.COM 415-457-0220
STRUCTURAL/CIVIL ENGINEER:	DAC ASSOCIATES, INC. 7 MOUNT LASSEN DRIVE SUITE A-129 SAN RAFAEL, CA 94903 DARIUS@DACASSOCIATES.NET 415-499-1919

SHEET INDEX

1 S-1.0 PARCEL MAP NTS

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS		BY
1	2022-06-21	DL

Darius Abolhassani Consultant & Associates, Inc.
Consulting Engineering & Construction Support
7 Mt. Lassen Drive, Suite A-129, San Rafael, CA 94903
Phone: (415)499-1919 Email: darius@dacassociates.net

REGISTERED PROFESSIONAL ENGINEER
DARYOUSH DARIUS ABOLHASSANI
No. 58778
CIVIL
STATE OF CALIFORNIA

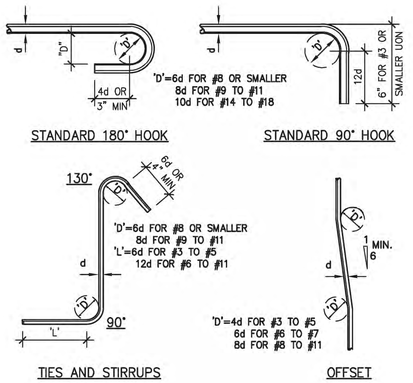
NEW RESIDENCE & ADU

79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

STRUCTURAL GENERAL NOTES

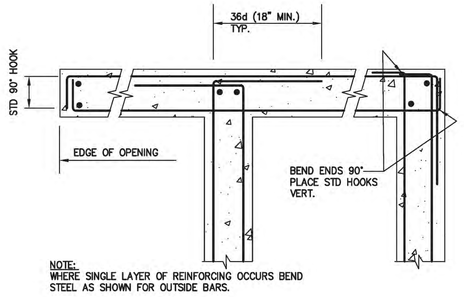
DATE: 2022-04-08
SCALE: AS SHOWN
DRAWN BY: DL
JOB NUMBER: 1477-0822 S

SHEET 1
S-1.0
OF 12 SHEET

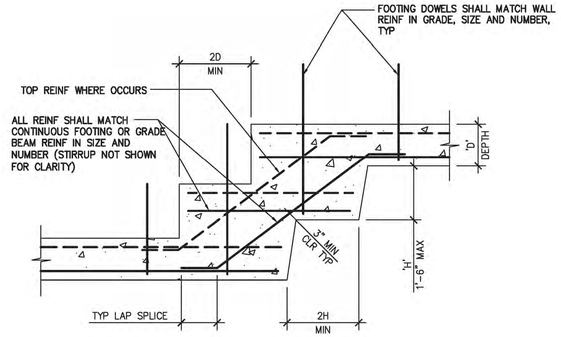


NOTE:
1. ALL BENDS SHALL BE MADE COLD.
2. #14 AND #18 BARS SHALL BEND TESTED LAB APPROVED PRIOR TO BENDING.
3. DO NOT BEND BARS ALREADY CAST IN CONCRETE UNLESS OTHERWISE NOTED.

1 / S-1.1 STANDARD REINFORCEMENT HOOKS & BENDS NTS

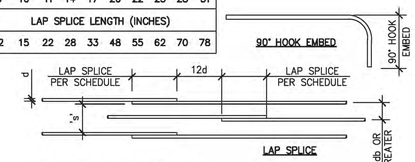


2 / S-1.1 (TYP) REINF. HORIZONTAL BEND NTS



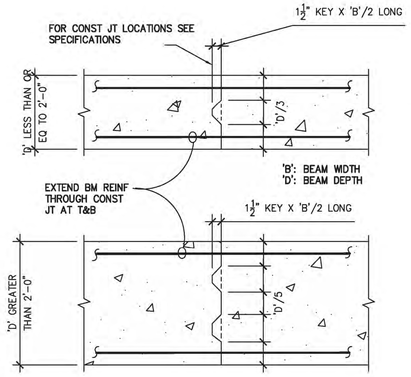
3 / S-1.1 (TYP) STEPPED FOOTING / GRADE BEAM NTS

WALL AND FOOTING LAP SPLICE SCHEDULE										
f'c CONCRETE STRENGTH	REBAR SIZE									
	GRADE 40	GRADE 60								
	#3	#4	#4	#5	#6	#7	#8	#9	#10	#11
	90° HOOK EMBED (INCHES)									
3000	8	10	11	14	17	20	22	25	28	31
	LAP SPLICE LENGTH (INCHES)									
3000	12	15	22	28	33	48	55	62	70	78

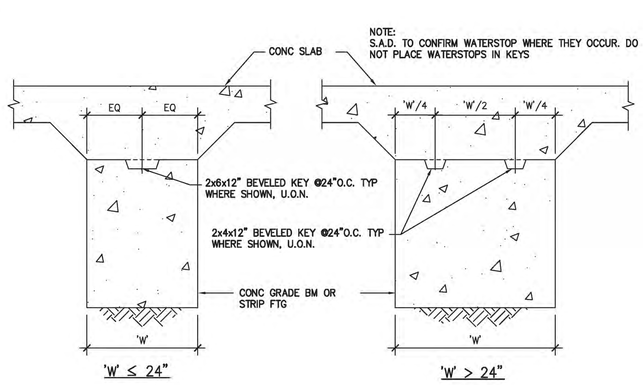


REINFORCEMENT LAP SPLICE NOTE:
1. STAGGERED LAPS BETWEEN ADJACENT BAR SPLICE.
2. MULTIPLY ALL LENGTH BY 1.5 IF EITHER OF THE FOLLOWING ARE TRUE.
   B. CLEAR COVER IS LESS THAN 1 BAR DIAMETER (d)
   A. CLEAR SPACING 's' OF BARS IS LESS THAN 2d
3. NONCONTACT SPLICE WITH MIN 3d SPACING SHALL BE USED FOR SHOTCRETE.

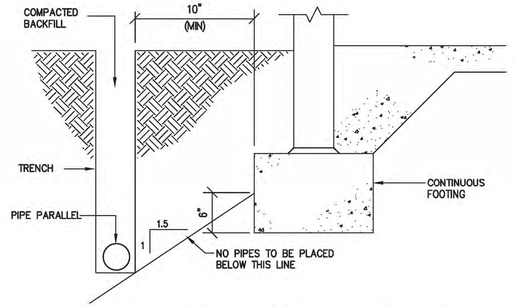
4 / S-1.1 (TYP) REINFORCEMENT LAP SPLICE & HOOK EMBED NTS



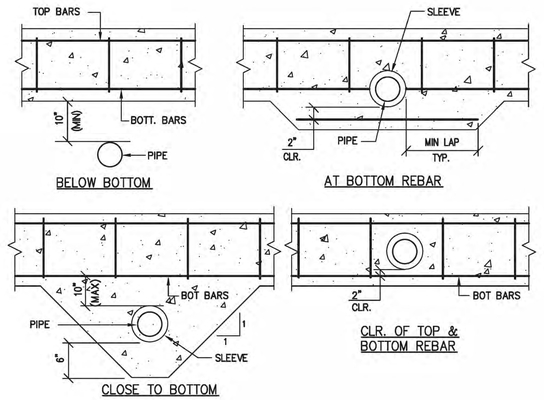
5 / S-1.1 (TYP) CONC BEAM CONST JOINTS NTS



6 / S-1.1 (TYP) FOOTING KEY NTS



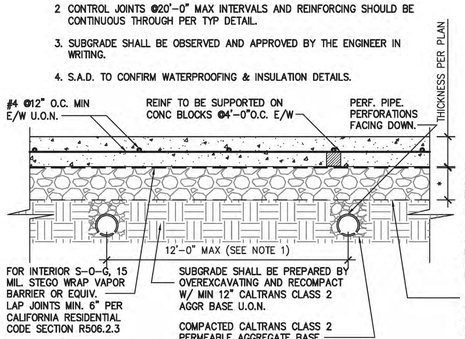
TYPICAL PIPE AND TRENCH PARALLEL TO FOOTING



PIPE PERPENDICULAR TO FOOTING

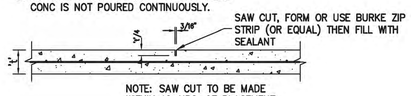
7 / S-1.1 (TYP) PIPES ADJACENT TO FOUNDATIONS NTS

NOTES:
1. SUBDRAIN PIPE 4" SDR35 (PERFORATION DOWN) SHALL BE INSTALLED @ 12'-0" O.C. MAX W/ 1% SLOPE TO DAYLIGHT IN APPROVED DISPERSION LOCATION IN THE FIELD.
2. CONTROL JOINTS @20'-0" MAX INTERVALS AND REINFORCING SHOULD BE CONTINUOUS THROUGH PER TYP DETAIL.
3. SUBGRADE SHALL BE OBSERVED AND APPROVED BY THE ENGINEER IN WRITING.
4. S.A.D. TO CONFIRM WATERPROOFING & INSULATION DETAILS.

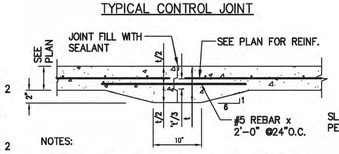


8 / S-1.1 (TYP) SLAB-ON-GRADE NTS

NOTES:
1. S.A.D FOR CONTROL JOINT OR @ 20'x20' MAX
2. CONTROL & CONSTRUCTION JOINTS WHERE CONC IS NOT POURED CONTINUOUSLY.



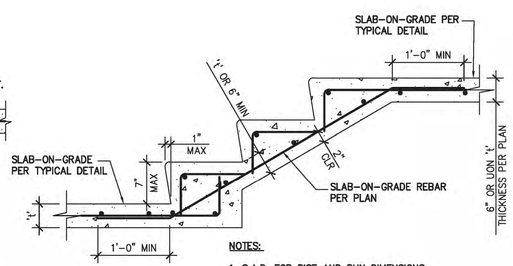
TYPICAL CONTROL JOINT



NOTES:
1. BURKE KEYED JOINT WITH REMOVABLE CAP MAY BE SUBSTITUTED FOR FORMED KEY
2. POUR ADJACENT SLABS AT LEAST 8 HRS. APART

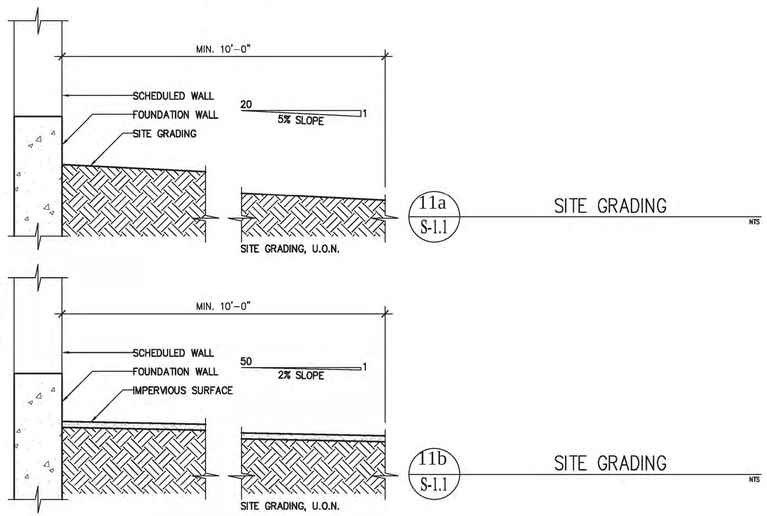
TYP CONTROL & CONSTRUCTION JOINT

9 / S-1.1 (TYP) S-O-G JOINTS NTS



NOTES:
1. S.A.D. FOR RISE AND RUN DIMENSIONS

10 / S-1.1 (TYP) CONCRETE STAIR ON GRADE NTS



11a / S-1.1 SITE GRADING NTS

11b / S-1.1 SITE GRADING NTS

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS		BY
1	2022-06-21	DL

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REGISTERED PROFESSIONAL ENGINEER DARYOUSH DARIUS ABOLHASSANI No. 58778 CIVIL STATE OF CALIFORNIA

NEW RESIDENCE & ADU
79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

STRUCTURAL TYPICAL DETAILS

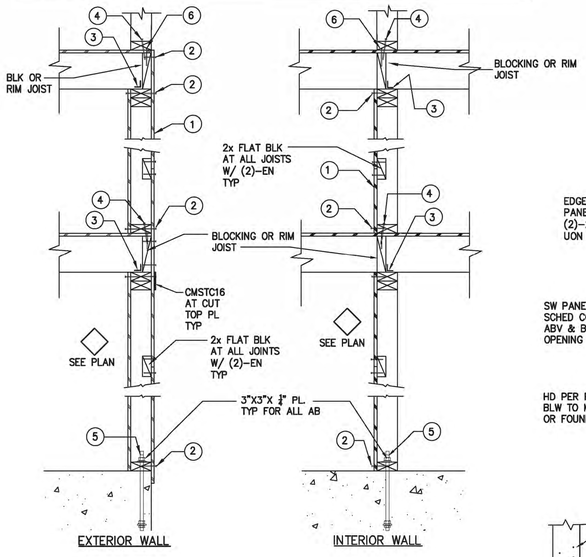
DATE:	2022-04-08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477-0822 S

SHEET 2
S-1.1
OF 12 SHEET

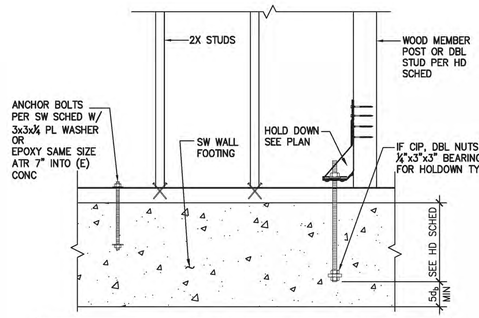
SHEAR WALL SCHEDULE

MARK	SHEATHING (1)	EDGE NAIL (EN) (2) / FIELD NAIL (FN)	FRAMING CLIPS (3)	SOLE PL NAILS (4)	ANCHOR BOLTS (5)	FL/ROOF EDGE NAIL (6)	Code Value (A S D)
A.6	1/2" STRUCTURAL 1	10d @ 4"O.C. 10d @ 12"O.C.	A35 @12"O.C.	20d @4"O.C. OR SDS 1/4 x5 @6"	5/8"ø @32"O.C. W/8" EMBED.	SEE DIAPHRAGM SCHED	510 PLF
A.3	1/2" STRUCTURAL 1	10d @ 3"O.C. 10d @ 12"O.C.	A35 @6"O.C.	20d @3"O.C. OR SDS 1/4 x5 @6"O.C.	5/8"ø @32"O.C. W/8" EMBED.	SEE DIAPHRAGM SCHED	665 PLF
A.2	1/2" STRUCTURAL 1	10d @ 2"O.C. 10d @ 12"O.C.	A35 @6"O.C.	SDS 1/4 x5 @6"	5/8"ø @16"O.C. W/8" EMBED.	SEE DIAPHRAGM SCHED	870 PLF
A.22	2-SIDED 1/2" STRUCTURAL 1	10d @ 2"O.C. 10d @ 12"O.C.	A35 @4"O.C.	SDS 1/4 x5 @3"O.C.	5/8"ø @6"O.C. W/8" EMBED.	SEE DIAPHRAGM SCHED	1740 PLF
C	SIMPSON STRONG WALL	SEE MANUFACTURER'S SPECIFICATIONS					XXXX LB

NOTES:
- SEE STRUCTURAL PLANS FOR SHEAR WALL TYPE, HOLDOWN, AND LOCATION
- ALL INFORMATION IN THE ABOVE SCHEDULE RELATES TO THE ITEMS SHOWN IN THE ACCOMPANYING WALL SECTIONS. ALL PARTS REQUIRED FOR EACH SHEAR WALL TYPE OCCUR IN THE WALLS BETWEEN THE LEVEL REPRESENTED BY THE FRAMING PLAN AND THE LEVEL ABOVE. EXAMPLE: (A SHEARWALL SHOWN ON THE SECOND FLOOR FRAMING PLAN WITH A MARK A.6 NEXT TO IT, SHALL HAVE ALL THE PARTS REQUIRED FOR A TYPE A.6 WALL INSTALLED IN THE WALL BETWEEN THE SECOND AND THIRD FLOORS OR SECOND FLOOR AND ROOF).
- WHERE THE SHEAR WALL SPECIFIED ON ONE SIDE OF THE WALL ONLY, PLACE SHEATHING ON SIDE OF WALL WHERE SYMBOL ◇ IS SHOWN ON PLAN
- WHERE THE SHEAR WALL SPECIFIED ON BOTH SIDES OF THE WALL, JOINTS AND SILL PL NAILING SHALL BE STAGGERED IN ALL CASES. PANELS JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.
- AT SHEAR WALLS WITH CODE VALUES EXCEEDING 350 PLF, PROVIDE 3x SILL PL. AND 3x STUD (OR DBL 2x STUDS JOINED TOGETHER WITH SDS SCREWS @6"O.C. MAX.) AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED.
- AT SHEAR WALLS WITH 2"O.C. EDGE NAILING, PROVIDE 3x SILL PL. AND 3x STUD AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED.



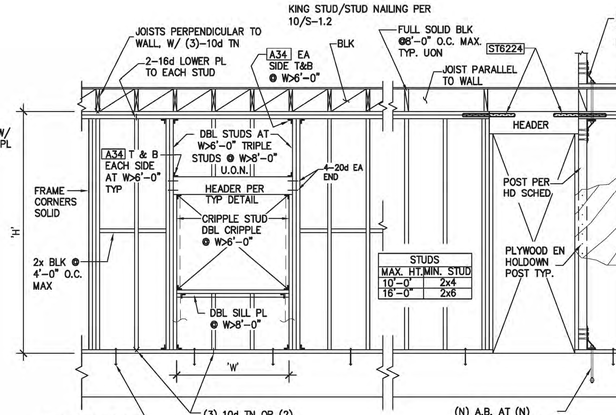
1 S-1.2 (TYP) WALL SECTIONS NTS



HOLDOWN/TIEDOWN SCHEDULE

HOLDOWN	ANCHOR DIA 'd$_b$'	UPLIFT (LB)	MIN EMBEDMENT IN CONCRETE		FLR TO FLR OPTION	MIN WOOD MEMBER
			NEW	EXISTING		
HDU2	⅝"ø	3,075	SB⅝x24/SSTB24 OR ATR EMBED 14"	8"	MSTC40 (FLR<16")	2-2x OR 4x #1
HDU4	⅝"ø	4,565	SB⅝x24/SSTB28 OR ATR EMBED 18"	10"	MSTC52 (FLR<16")	2-2x OR 4x #1
HDU5	⅝"ø	5,645	SB⅞"x24 OR ATR EMBED 20"	12"	MSTC66 (FLR<18")	2-2x OR 4x #1
HDU8	⅞"ø	7,870	SB⅞"x24 OR ATR EMBED 20"	14"	N/A	3-2x OR 6x #1
HDU11-A	1"ø	9,335	SB1x30 OR ATR EMBED 24"	16"	N/A	4x6 SS
HDU11-B		11,175		18"	N/A	4x8 SS

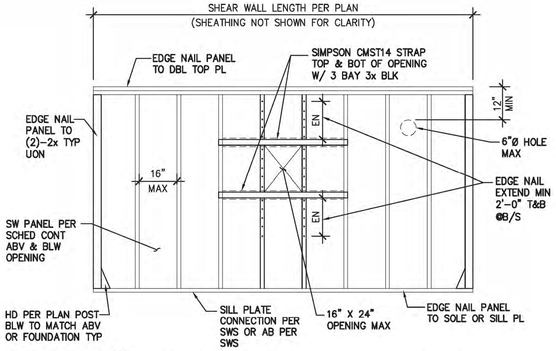
2 S-1.2 (TYP) HOLDOWN/TIEDOWN SCHEDULE NTS



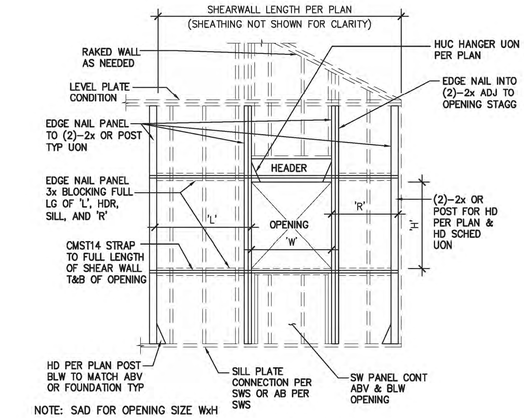
3 S-1.2 (TYP) WALL FRAMING DETAIL NTS

WALL FRAMING NOTE:
1. WALLS SHALL BE FRAMED WITH STUDS NOT LESS THAN STUDDING ABOVE WITH MINIMUM HEIGHT OF 14". CRIPPLE WALL LESS THAN 14" HEIGHT SHALL BE FRAMED OF SOLID BLOCKING.
2. DOUBLE UP JOIST IF WALL ABOVE IS PARALLEL TO THE JOIST U.O.N.
3. SOLID BLOCK BETWEEN JOISTS IF WALL ABOVE IS PERPENDICULAR TO THE JOISTS U.O.N.
4. FULL SOLID BLK BETWEEN JOIST @6'-0" O.C. MAX. TYP. U.O.N.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

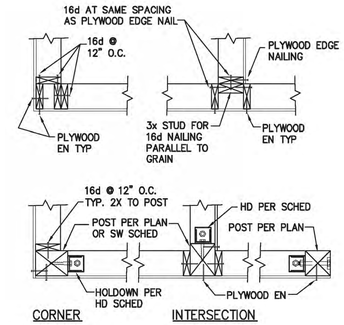


4 S-1.2 (TYP) SW WITH OPENING < 16"x24" NTS

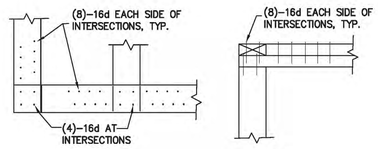


NOTE: SAD FOR OPENING SIZE WxH

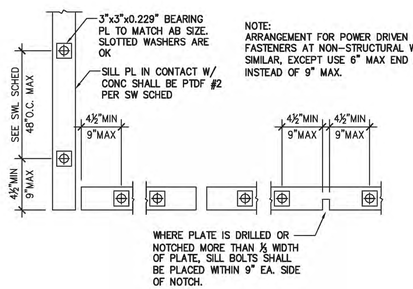
5 S-1.2 (TYP) SW WITH LARGE OPENING NTS



6 S-1.2 (TYP) WALL INTERSECTIONS NTS

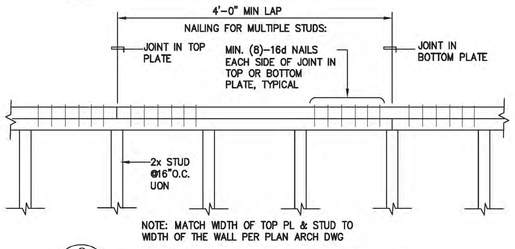


8 S-1.2 (TYP) TOP PLATE INTERSECTION NTS



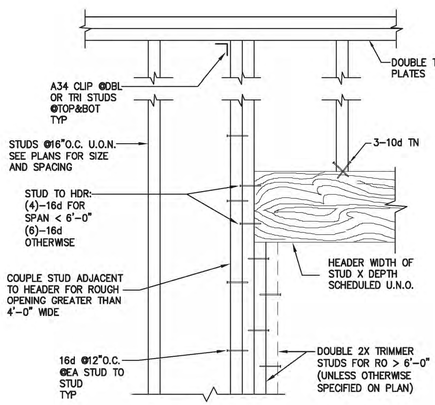
NOTE: ARRANGEMENT FOR POWER DRIVEN FASTENERS AT NON-STRUCTURAL WALLS SIMILAR, EXCEPT USE 6" MAX END DISTANCE INSTEAD OF 9" MAX.

7 S-1.2 (TYP) SILL ANCHOR BOLT LAYOUT NTS



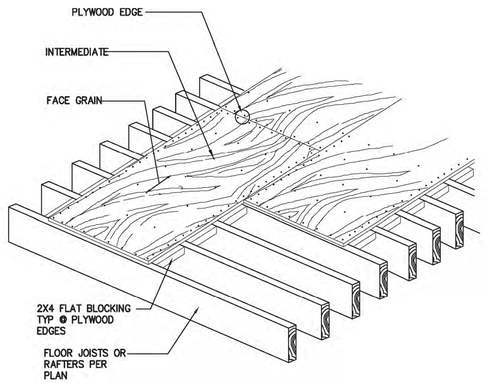
NOTE: MATCH WIDTH OF TOP PL & STUD TO WIDTH OF THE WALL PER PLAN ARCH DWG

9 S-1.2 (TYP) NAILED TOP PLATE SPLICE NTS



HEADER SCHEDULE	
MAX SPAN	HEADER DEPTH
3'-6"	6"
6'-0"	8"
8'-0"	10"
OVER 8'-0"	SEE PLAN

10 S-1.2 (TYP) SINGLE OPENING FRAMING W/ HEADER NTS



DIAPHRAGMS NAILING SCHEDULE

	SHEATHING	EDGE NAIL	FIELD NAIL	CODE VALUE
ROOF	1/2" PLYWD STRUCTURAL 1	10d @ 6"O.C. STAGGERED	10d @ 12"O.C.	640 PLF
FLOOR	3/4" PLYWD STRUCTURAL 1	10d @ 6"O.C. STAGGERED	10d @ 12"O.C.	640 PLF

11 S-1.2 (TYP) DIAPHRAGM NAILING DETAIL NTS

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REGISTERED PROFESSIONAL ENGINEER DARYOUSH DARIUS ABOLHASSANI No. 58778 CIVIL STATE OF CALIFORNIA

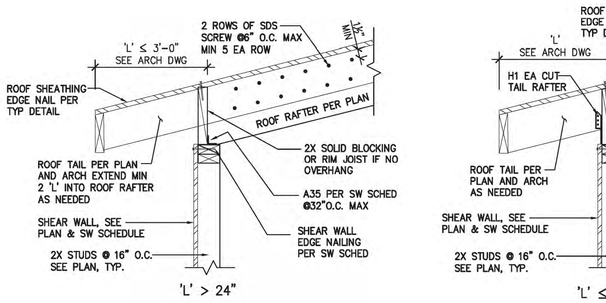
REVISIONS	BY
1 2022-06-21	DL

NEW RESIDENCE & ADU
79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

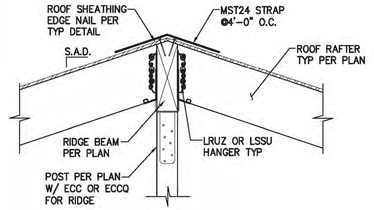
STRUCTURAL TYPICAL DETAILS CONTINUED

DATE:	2022-04-08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477-0822 S

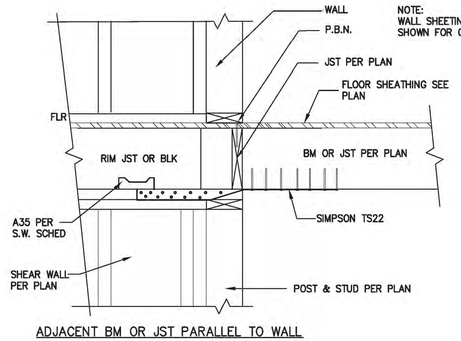
SHEET 3
S-1.2
OF 12 SHEET



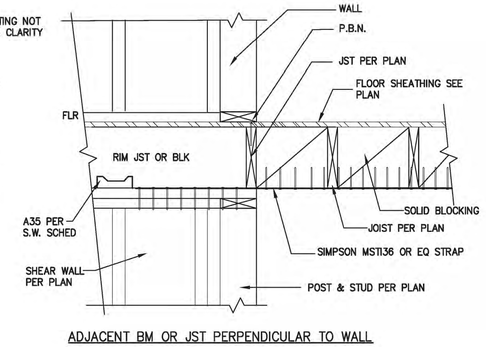
1 S-1.3 (TYP) ROOF TO WALL CONNECTION NTS



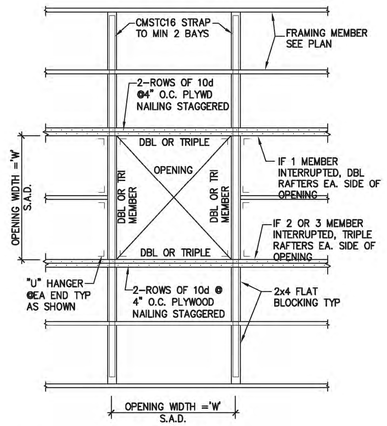
2 S-1.3 (TYP) RAFTER AND RIDGE NTS



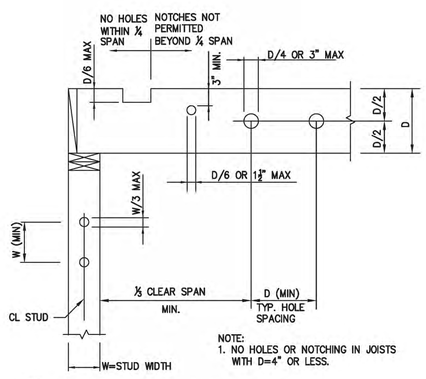
NOTE: WALL SHEETING NOT SHOWN FOR CLARITY



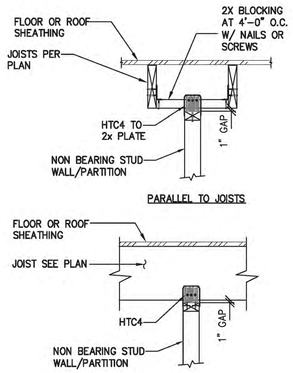
3 S-1.3 (TYP) LATERAL FORCE COLLECTOR – DRAG STRUT NTS



4 S-1.3 (TYP) FLOOR/ROOF OPENING FRAMING NTS



5 S-1.3 (TYP) ALLOWABLE HOLES AND NOTCHES IN JOISTS AND STUDS NTS



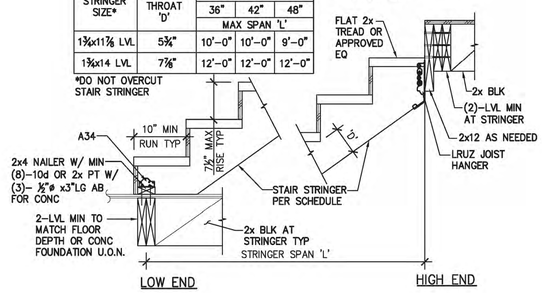
6 S-1.3 (TYP) NON BEARING PARTITION WALL NTS

ALTERNATIVE:

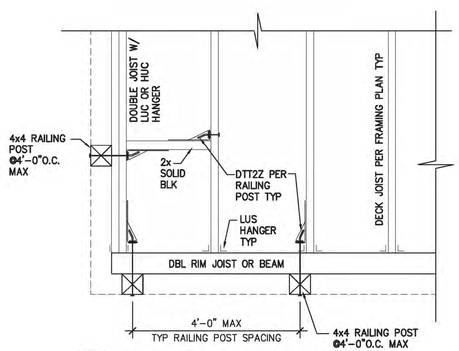
INSTEAD OF LOW END AND HIGH END CONNECTIONS, STINGER COULD BE CONNECTED TO WALLS W/ (2) ¼"x4½" SDS PER STUDS @16"O.C. MIN

STRINGER SIZE*	MINIMUM THROAT 'D'	MAX TREAD WIDTH		
		36"	42"	48"
		MAX SPAN 'L'		
1¾x11⅞ LVL	5¾"	10'-0"	10'-0"	9'-0"
1¾x14 LVL	7⅞"	12'-0"	12'-0"	12'-0"

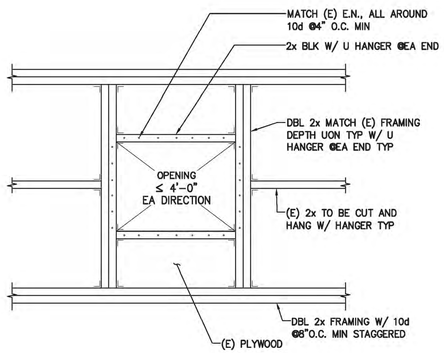
*DO NOT OVERCUT STAIR STRINGER



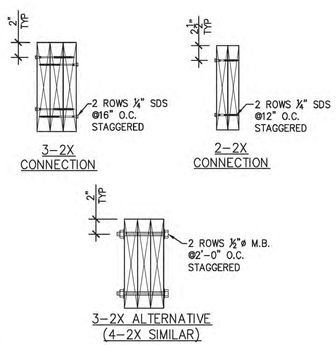
11 S-1.3 (TYP) INTERIOR STAIR FRAMING NTS



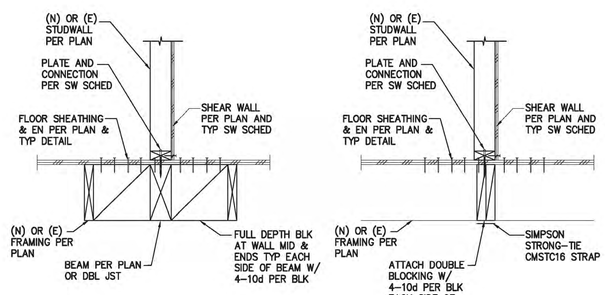
8 S-1.3 (TYP) DECK JOIST AND RAILING POST PLAN NTS



9 S-1.3 (TYP) OPENING IN EXISTING FRAMED ROOF NTS



12 S-1.3 (TYP) BUILT-UP BEAM/JOIST NTS



13 S-1.3 (TYP) SHEAR WALL ABOVE BEAM NTS

REVIEWED FOR CODE COMPLIANCE BY COASTLAND CIVIL ENGINEERING, INC. IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS	BY
1 2022-06-21	DL

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NEW RESIDENCE & ADU
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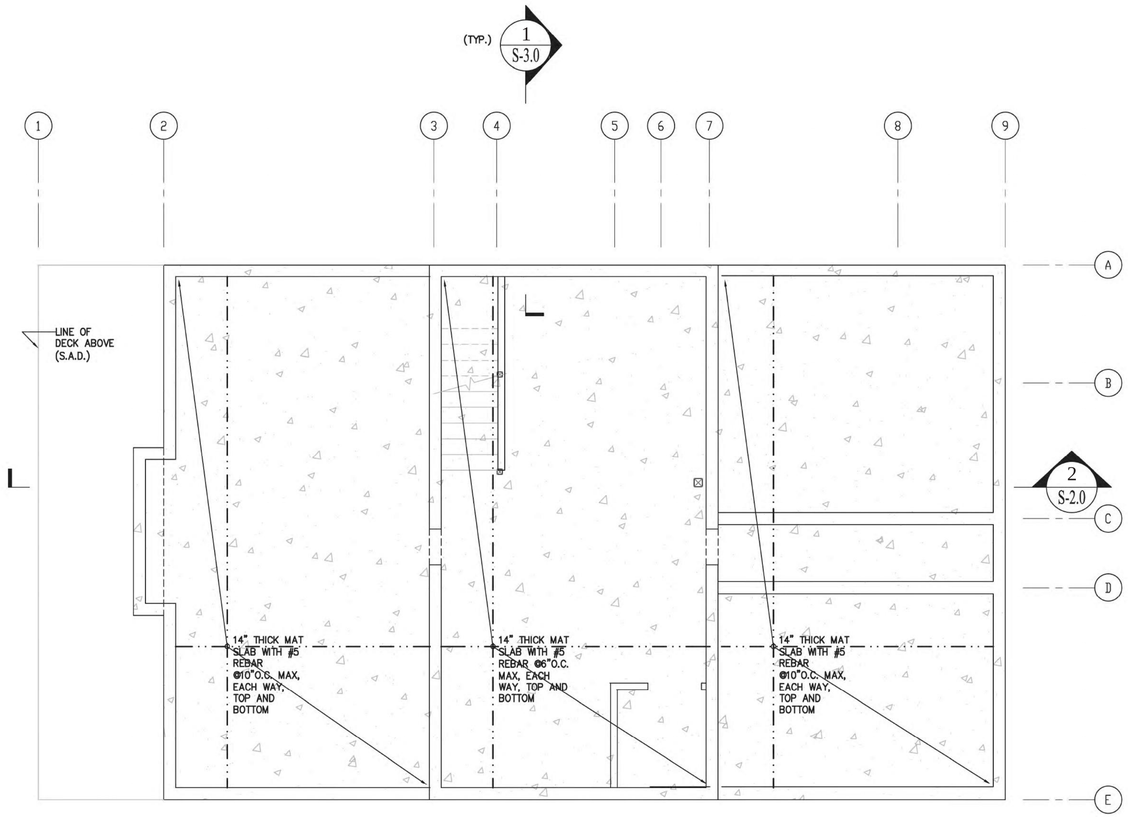
PROJECT APN 002-062-03

STRUCTURAL TYPICAL DETAILS CONTINUED

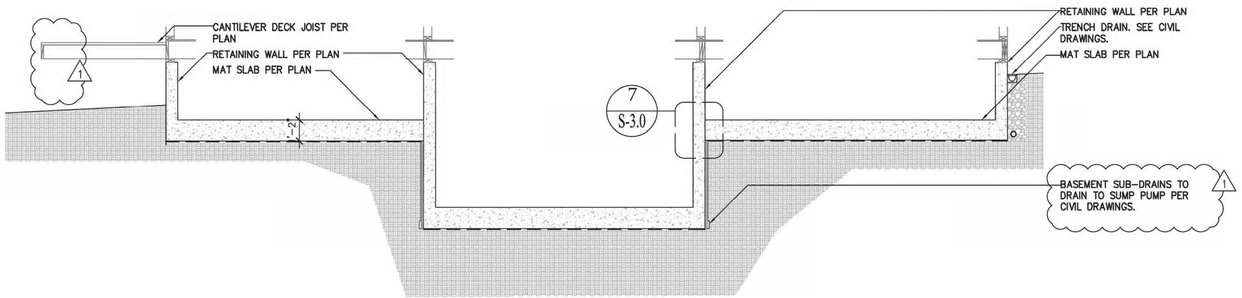
DATE:	2022-04-08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477-0822 S

SHEET 4
S-1.3
OF 12 SHEET



1 S-2.0 FOUNDATION PLAN: RESIDENCE

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



2 S-2.0 SECTION THROUGH FOUNDATION: RESIDENCE

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

ABBREVIATIONS

&	AND	HR	HARDROCK
L	ANGLE	HT	HEIGHT
@	AT		
		ID	INSIDE DIAMETER
ACI	AMERICAN CONCRETE INSTITUTE	INT	INTERIOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	JT	JOINT
		JST	JOIST
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	LG	LONG
AWS	AMERICAN WELDING SOCIETY	LS	LOW SHRINKAGE
AB	ANCHOR BOLT		
ABV	ABOVE	MATL	MATERIAL
ADD'L	ADDITIONAL	MAX	MAXIMUM
AGGR	AGGREGATE	MB	MACHINE BOLT
ALT	ALTERNATE	MECH	MECHANICAL
APPROX	APPROXIMATE	MFR	MANUFACTURER
ARCH	ARCHITECT, ARCHITECTURAL	MIN	MINIMUM
ATR	ALL-THREAD ROD	MISC	MISCELLANEOUS
B.E.	BOTH ENDS	(N)	NEW
B.S.	BOTH SIDES	N/A	NOT APPLICABLE
B.W.	BOTH WAYS	NSG	NON-SHRINK GROUT
BETW	BETWEEN	NTS	NOT TO SCALE
BLD'G	BUILDING	NO,#	NUMBER
BLW	BELOW		
BM	BEAM	O/	OVER
BLK	BLOCKING	O.C.	ON CENTERS
BOT	BOTTOM	OD	OUTSIDE DIAMETER
		OPNG	OPENING
C.C.	CENTER TO CENTER	OPP	OPPOSITE
CBC	CALIFORNIA BUILDING CODE	PL	PLATE
CL	CENTERLINE	PLYWD	PLYWOOD
CLR	CLEAR	PT	PRESSURE TREATED
C-I-P	CAST-IN-PLACE		
CO	DRAINAGE CLEAN OUT	REF	REFERENCE/REFER
COL	COLUMN	REINF	REINFORCEMENT
CONC	CONCRETE	REQ	REQUIREMENTS
CONN	CONNECTION	REQ'D	REQUIRED
CONST	CONSTRUCTION	RM	ROOM
CONT	CONTINUOUS	RW	RETAINING WALL
		RO	ROUGH OPENING
DBL	DOUBLE		
DBLR	DOUBLER	S.A.D.	SEE ARCHITECTURAL DRAWINGS
DET	DETAIL		
DF	DOUGLAS FIR	S-O-G	SLAB-ON-GRADE
DN	DOWN	SCHED	SCHEDULE
DIA,ø	DIAMETER	SHT	SHEET
DIAG	DIAGONAL	SIM	SIMILAR
DIM	DIMENSION	STAGG	STAGGER, STAGGERED
DL	DEVELOPMENT	STD	STANDARD
DWG	DRAWING	STIFF	STIFFENER
		STIRR	STIRRUP
(E)	EXISTING	STL	STEEL
EA	EACH	SW	SHEAR WALL
EF	EACH FACE	SWS	SHEAR WALL SCHEDULE
EL	END LENGTH		
EMBED	EMBEDMENT	T&B	TOP AND BOTTOM
EN	EDGE NAILING	THK	THICK, THICKNESS
ENGR	ENGINEER, ENGINEERED	THRD	THREAD, THREADED
EQ	EQUAL/EQUIVLENT	TYP	TYPICAL
EW	EACH WAY		
EXT	EXTERIOR	U.O.N.	UNLESS OTHERWISE NOTED
FDN	FOUNDATION		
FLR	FLOOR	VB	VAPOR BARRIER
FN	FIELD NAILING	VERT	VERTICAL
FTG	FOOTING	V.I.F.	VERIFY IN FIELD
GA	GAGE, GAUGE	W/	WITH
GALV	GALVANIZED	W/O	WITHOUT
GB	GRADE BEAM	WA	WEDGE ANCHOR
		WD	WOOD
HD	HOLDOWN	WF	WIDE FLANGE
HGR	HANGER	WLD	WELDED
HORI	HORIZONTAL		

PLAN LEGEND

- FOUNDATION WALL/ WALL ABOVE
- CONCRETE SLAB
- JOIST
- BEAM
- POST BELOW
- POST ABOVE
- POST ABOVE & BELOW
- SHEARWALL ABOVE SEE SCHEDULE — X—X SW # — 1 S-1.2
- HDU 5 HOLDOWN ABOVE (U.O.N.) SEE SCHEDULE — 2 S-1.2
- HEADER, SEE TYP. DETAIL U.O.N. — 10 S-1.2

PLAN NOTES

1. AT SHEAR WALLS WITH CODE VALUES EXCEEDING 350 PLF, PROVIDE 3x SILL PL. AND 3x STUD (OR DBL 2x STUDS JOINED TOGETHER WITH SDS SCREWS @6"O.C. MAX.) AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE.

2. AT SHEAR WALLS WITH 2"O.C. EDGE NAILING, PROVIDE 3x SILL PL. AND 3x STUD AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE

3. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS NEEDED. (1)

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS		BY
1	2022-06-21	DL

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NEW RESIDENCE & ADU

79 WOOD LANE
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PROJECT APN 002-062-03

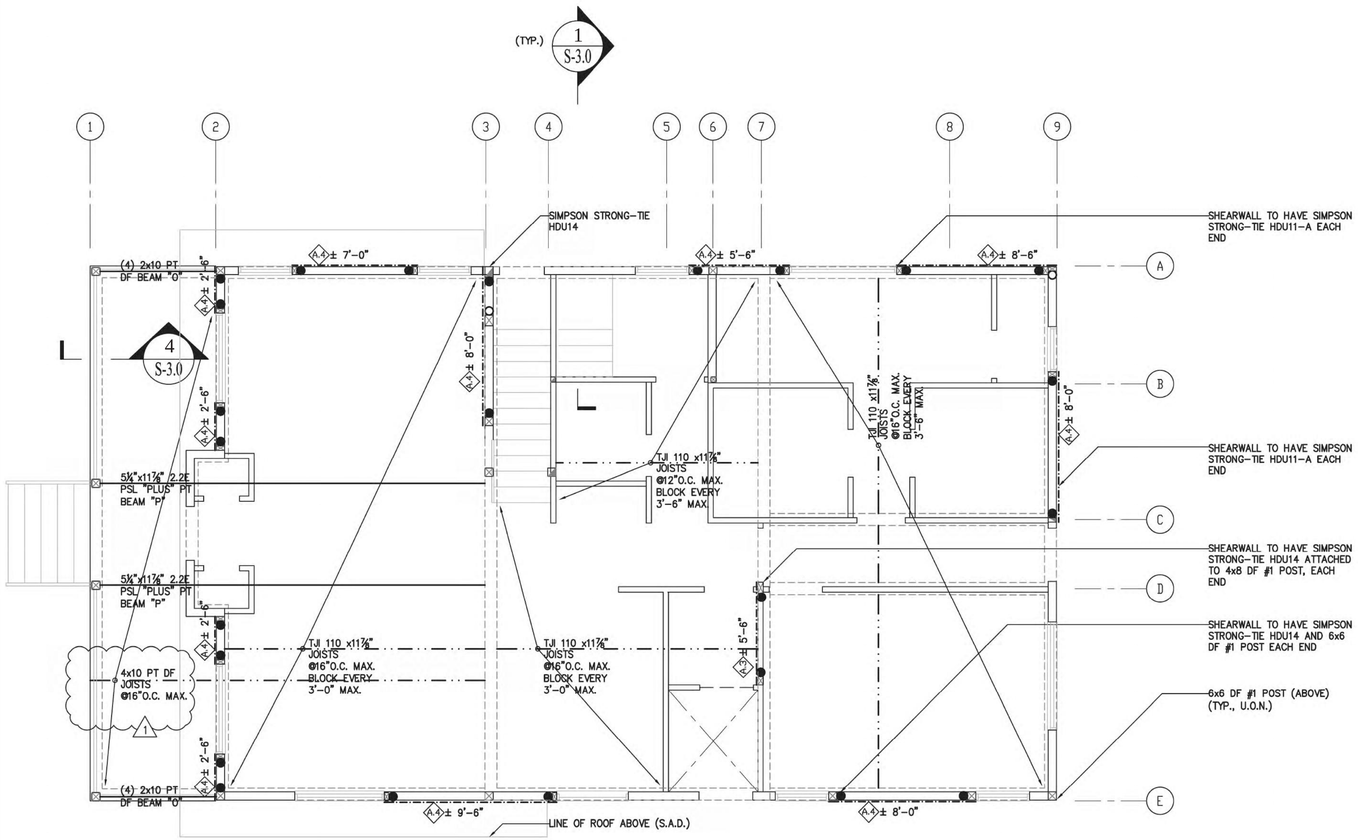
FOUNDATION PLAN

DATE: 2022-04-08
SCALE: AS SHOWN
DRAWN BY: DL
JOB NUMBER: 1477-0822 S

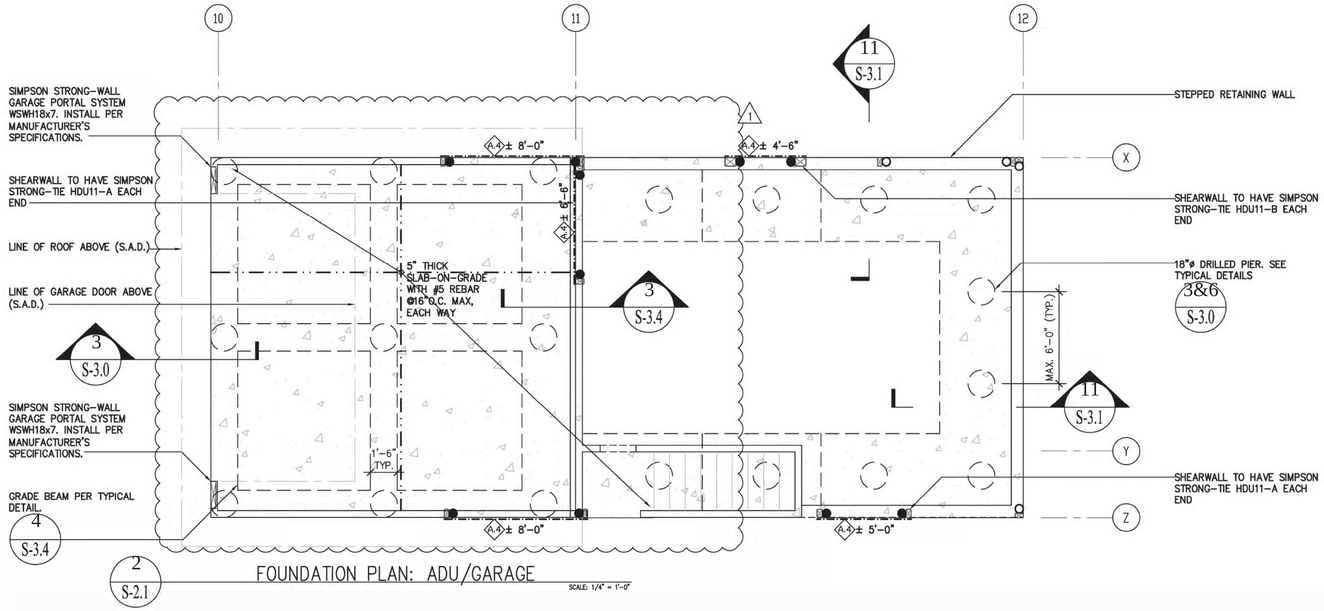
SHEET 5

S-2.0

OF 12 SHEET



1 S-2.1 MAIN FLOOR FRAMING PLAN: RESIDENCE
SCALE: 1/4" = 1'-0"



2 S-2.1 FOUNDATION PLAN: ADU/GARAGE
SCALE: 1/4" = 1'-0"

PLAN LEGEND

- FOUNDATION WALL/ WALL BELOW
- WALL ABOVE
- CONCRETE SLAB
- JOIST
- BEAM
- POST BELOW
- POST ABOVE
- POST ABOVE & BELOW
- X'-X" SW # — SHEARWALL ABOVE SEE SCHEDULE (1 / S-1.2)
- HDU 5 HOLDOWN ABOVE (U.O.N.) SEE SCHEDULE (2 / S-1.2)
- HEADER, SEE TYP. DETAIL U.O.N. (10 / S-1.2)

PLAN NOTES

1. AT SHEAR WALLS WITH CODE VALUES EXCEEDING 350 PLF, PROVIDE 3x SILL PL. AND 3x STUD (OR DBL 2x STUDS JOINED TOGETHER WITH SDS SCREWS @6"O.C. MAX.) AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE.

2. AT SHEAR WALLS WITH 2"O.C. EDGE NAILING, PROVIDE 3x SILL PL. AND 3x STUD AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE

3. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS NEEDED. (1)

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NEW RESIDENCE & ADU

79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

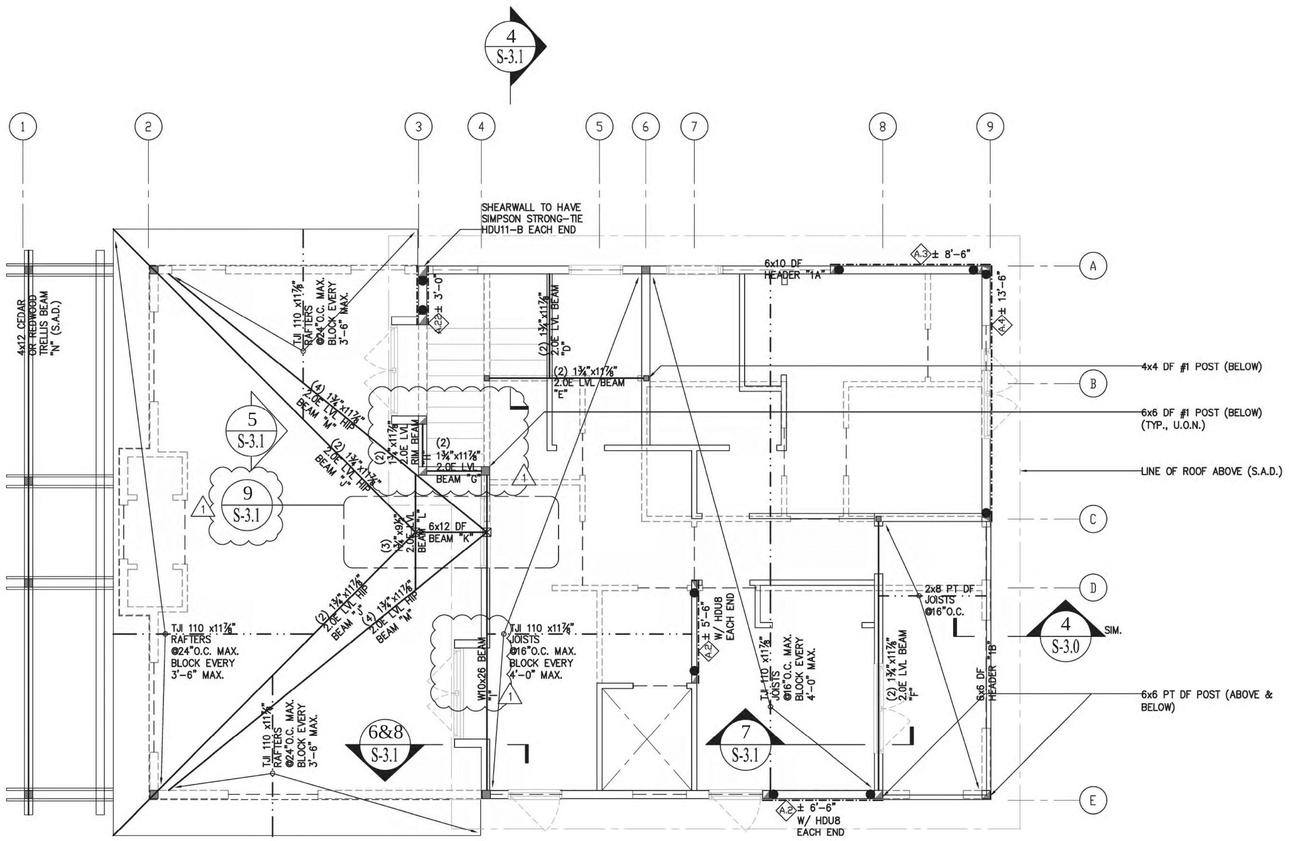
MAIN FLOOR FRAMING PLAN

DATE:	2022-04-08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477-0822 S

SHEET 6

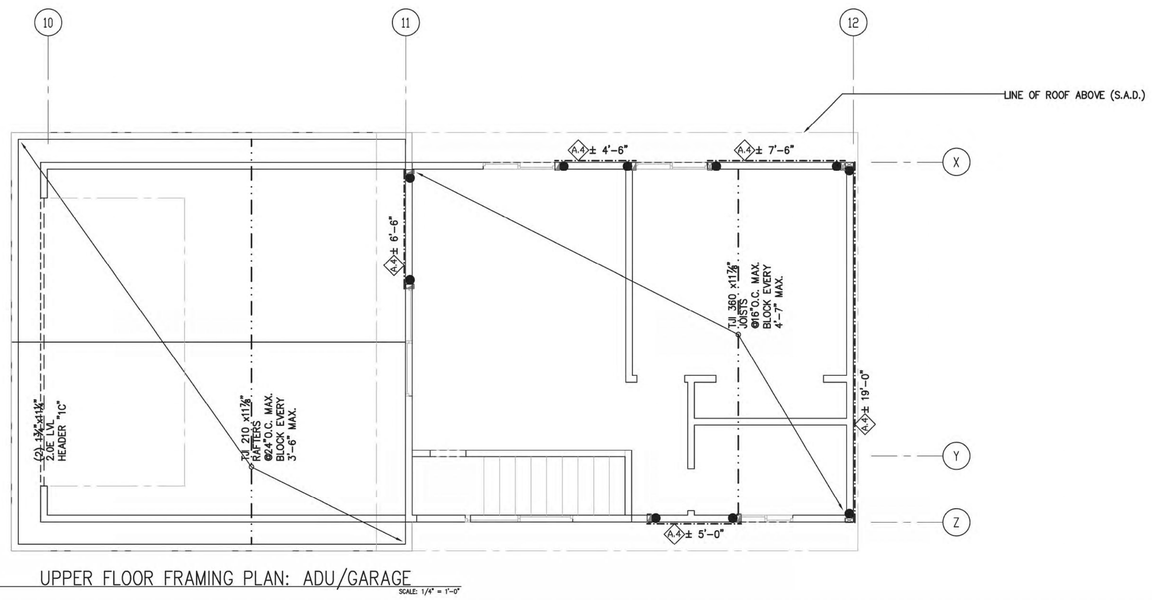
S-2.1

OF 12 SHEET



1 S-2.2 UPPER FLOOR FRAMING PLAN: RESIDENCE

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



2 S-2.2 UPPER FLOOR FRAMING PLAN: ADU/GARAGE

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

PLAN LEGEND

- FOUNDATION WALL/ WALL BELOW
- WALL ABOVE
- CONCRETE SLAB
- JOIST
- BEAM
- POST BELOW
- POST ABOVE
- POST ABOVE & BELOW
- SHEARWALL ABOVE SEE SCHEDULE — SW # — 1 / S-1.2
- HDU 5 HOLDOWN ABOVE (U.O.N.) SEE SCHEDULE — 2 / S-1.2
- HEADER, SEE TYP. DETAIL U.O.N. — 10 / S-1.2

PLAN NOTES

1. AT SHEAR WALLS WITH CODE VALUES EXCEEDING 350 PLF, PROVIDE 3x SILL PL. AND 3x STUD (OR DBL 2x STUDS JOINED TOGETHER WITH SDS SCREWS @6"O.C. MAX.) AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE.

2. AT SHEAR WALLS WITH 2"O.C. EDGE NAILING, PROVIDE 3x SILL PL. AND 3x STUD AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE

3. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS NEEDED. 1

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NEW RESIDENCE & ADU

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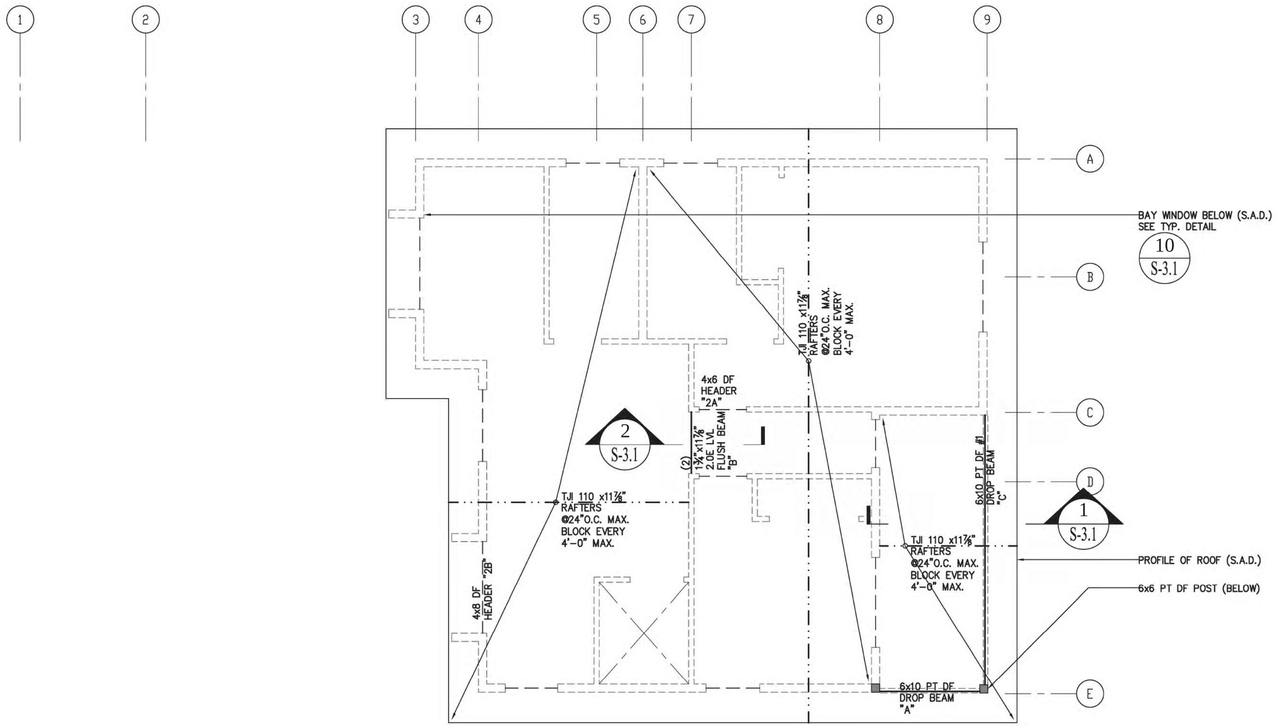
PROJECT APN 002-062-03

UPPER FLOOR FRAMING PLAN

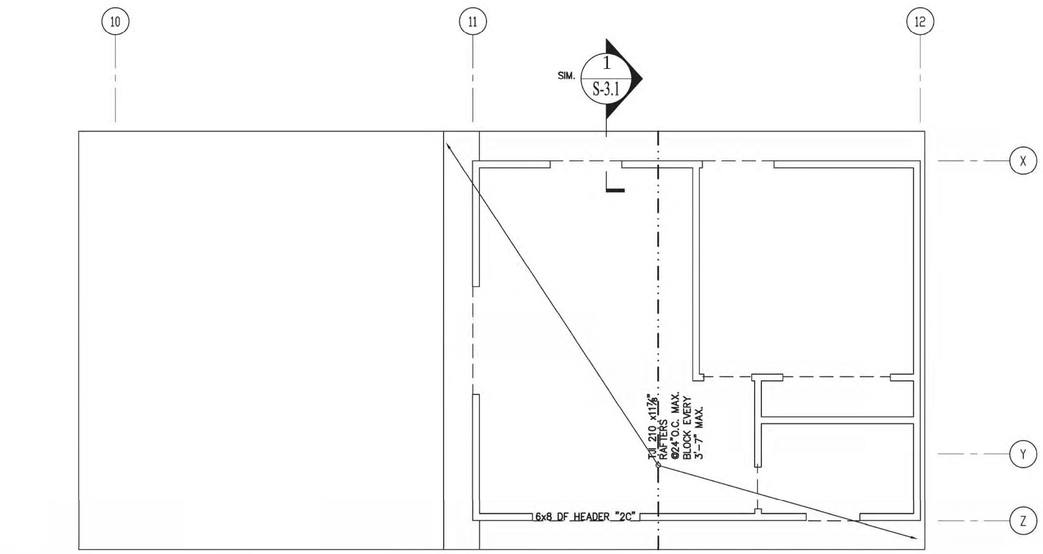
DATE: 2022-04-08
SCALE: AS SHOWN
DRAWN BY: DL
JOB NUMBER: 1477-0822 S

SHEET 7
S-2.2
OF 12 SHEET



1 S-2.3 ROOF FRAMING PLAN: RESIDENCE

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



2 S-2.3 ROOF FRAMING PLAN: ADU/GARAGE

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

PLAN LEGEND

- FOUNDATION WALL/ WALL BELOW
- WALL ABOVE
- CONCRETE SLAB
- JOIST
- BEAM
- POST BELOW
- POST ABOVE
- POST ABOVE & BELOW
- SHEARWALL ABOVE SEE SCHEDULE — X'-X" SW # — 1 / S-1.2
- HDU 5 HOLDOWN ABOVE (U.O.N.) SEE SCHEDULE — 2 / S-1.2
- HEADER, SEE TYP. DETAIL U.O.N. — 10 / S-1.2

PLAN NOTES

1. AT SHEAR WALLS WITH CODE VALUES EXCEEDING 350 PLF, PROVIDE 3x SILL PL. AND 3x STUD (OR DBL 2x STUDS JOINED TOGETHER WITH SDS SCREWS @6"O.C. MAX.) AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE.

2. AT SHEAR WALLS WITH 2"O.C. EDGE NAILING, PROVIDE 3x SILL PL. AND 3x STUD AT FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS. EDGE NAILING ON ABUTTING PANELS SHALL BE STAGGERED. SEE SHEARWALL SCHEDULE

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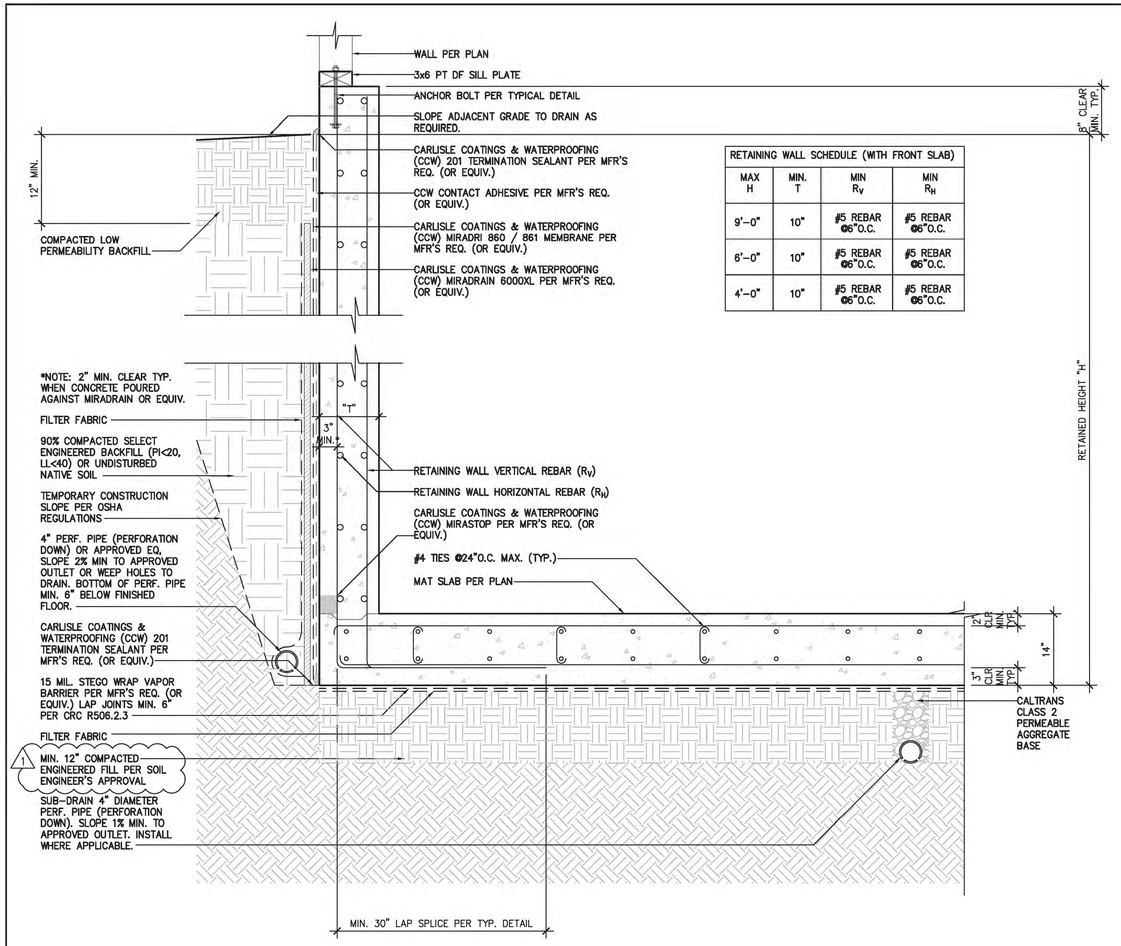
ROOF FRAMING PLAN

DATE:	2022–04–08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477–0822 S

SHEET 8
S-2.3
OF 12 SHEET



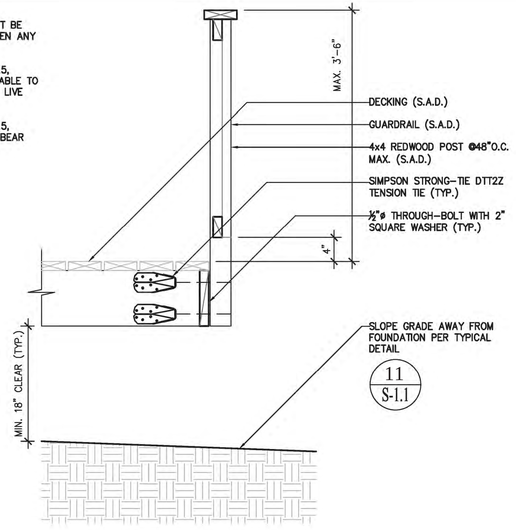
RETAINING WALL SCHEDULE (WITH FRONT SLAB)			
MAX H	MIN. T	MIN R_V	MIN R_H
9'-0"	10"	#5 REBAR @6"O.C.	#5 REBAR @6"O.C.
6'-0"	10"	#5 REBAR @6"O.C.	#5 REBAR @6"O.C.
4'-0"	10"	#5 REBAR @6"O.C.	#5 REBAR @6"O.C.

1 S-3.0 MAT SLAB DETAIL
SCALE: 1" = 1'-0"

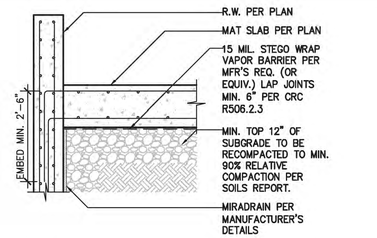
GUARDRAIL NOTES:
4"ø SPHERE MUST NOT BE ABLE TO PASS BETWEEN ANY GUARD OPENING

PER CRC TABLE R301.5, GUARDRAIL MUST BE ABLE TO BEAR 200 LBS/SQ FT LIVE LOAD.

PER CRC TABLE R301.5, GUARDRAIL INFILL TO BEAR MIN. 50 LBS/SQ. FT.



4 S-3.0 GUARDRAIL DETAIL
SCALE: 1" = 1'-0"



7 S-3.0 R.W.-TO-MAT SLAB DETAIL
SCALE: 1/2" = 1'-0"

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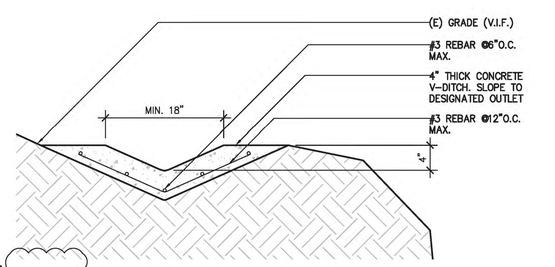
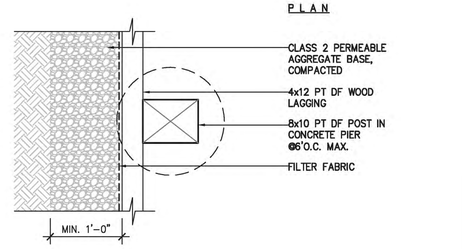
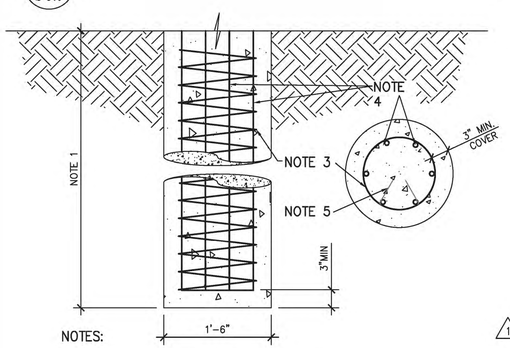
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.



1 5 S-3.0 V-DITCH DETAIL
SCALE: 1" = 1'-0"

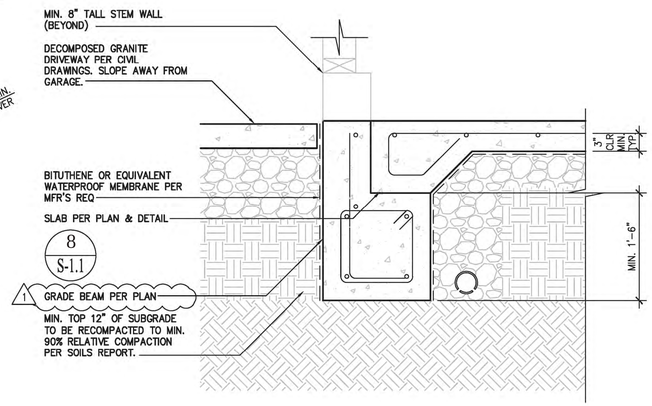




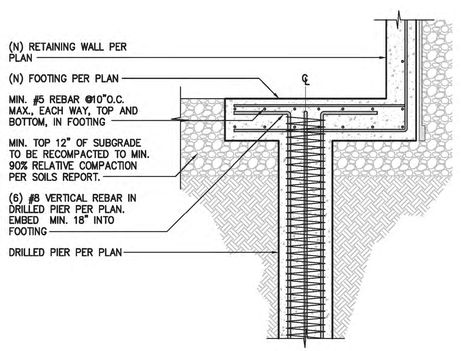
NOTES:

1. DEPTH OF PIER VARIES DEPENDING ON THE DEPTH OF BEDROCK. 8'-0" MINIMUM INTO COMPETENT BEDROCK. CONTRACTOR SHALL CONTACT THE SOIL ENGINEER TO OBSERVE EXCAVATION AND VERIFY ADEQUATE DEPTH IN WRITING BEFORE POURING CONCRETE.
2. CONCRETE MINIMUM COMPRESSIVE STRENGTH FC=3000 PSI AT 28 DAYS.
3. USE #4 AT 3" PITCH.
4. USE (6) #8 VERTICAL REBAR BENT EXTEND ½ RETAINED HEIGHT (24" MIN) WHERE APPLY.
1 5. SPIRAL REINFORCING TO END WITH SEISMIC HOOK PER CBC 1810.3.2.1.1 AND ACI 318. SEE TYP. DETAIL 1/S-1.1.

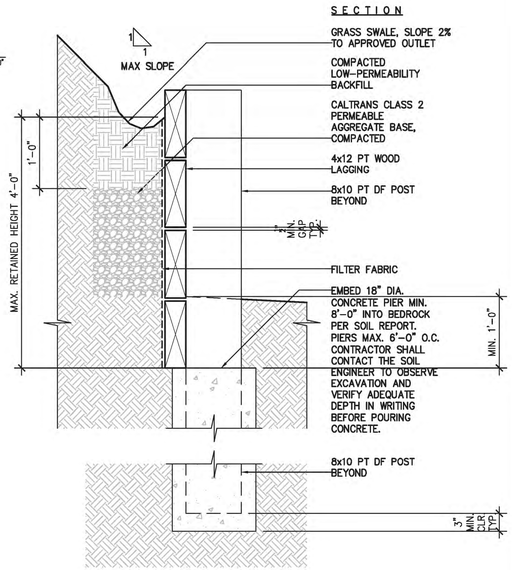
2 S-3.0 DRILLED PIER DETAIL
SCALE: 1" = 1'-0"



3 S-3.0 MAT SLAB EDGE DETAIL
SCALE: 1" = 1'-0"



6 S-3.0 DRILLED PIER-TO-FOOTING DETAIL
SCALE: 1/2" = 1'-0"



1 8 S-3.0 WOOD SOLIDER PILE & LAGGING RW
SCALE: 1" = 1'-0"

REVISIONS		BY
1	2022-06-21	DL

Darius Abolhassani Consultant & Associates, Inc.
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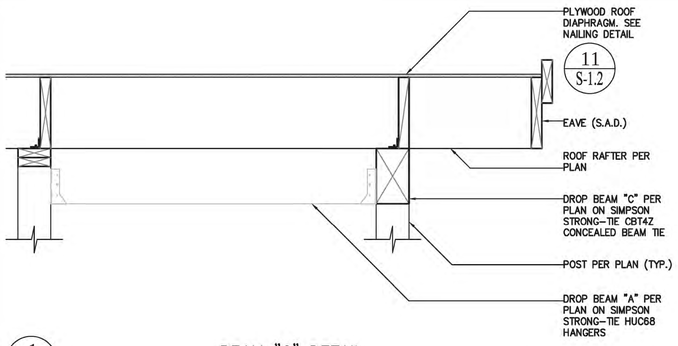
REGISTERED PROFESSIONAL ENGINEER
DARYOUSH DARIUS ABOLHASSANI
No. 58778
CIVIL
STATE OF CALIFORNIA

NEW RESIDENCE & ADU
79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

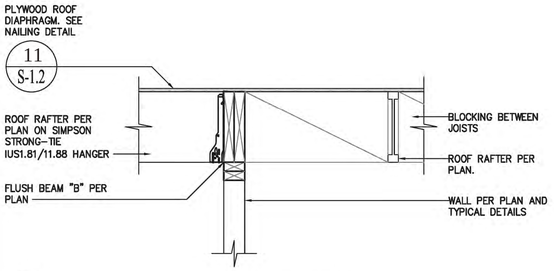
STRUCTURAL DETAILS

DATE:	2022-04-08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477-0822 S

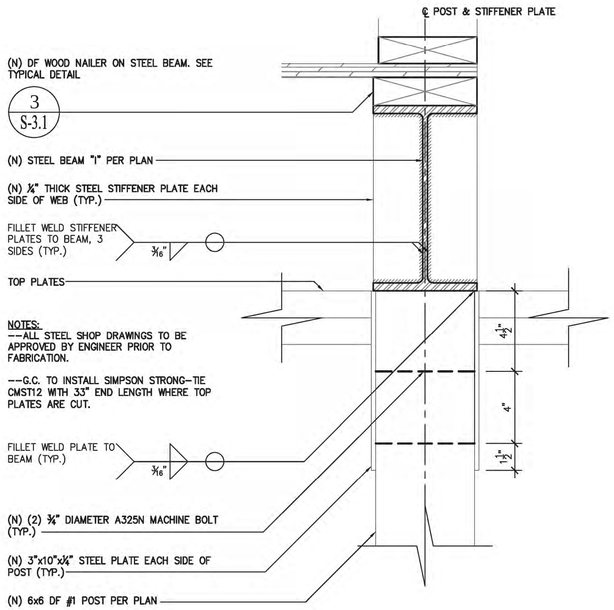
SHEET 9
S-3.0
OF 12 SHEET



1 S-3.1 BEAM "C" DETAIL SCALE: 1" = 1'-0"



2 S-3.1 BEAM "B" DETAIL SCALE: 1" = 1'-0"



8 S-3.1 BEAM "I" DETAIL SCALE: 3" = 1'-0"

TABLE 1 – L FOOTING RETAINING WALL SCHEDULE					
MAX H	MIN B_W	MIN B_T	MIN B_H	MIN R_V	MIN R_H
10'–0"	10"	4'–6"	14"	#6 REBAR @10" O.C.	#5 REBAR @16" O.C.
8'–0"	10"	4'–6"	14"	#6 REBAR @16" O.C.	#5 REBAR @16" O.C.
6'–0"	10"	4'–6"	14"	#5 REBAR @16" O.C.	#5 REBAR @16" O.C.
4'–0"	10"	4'–6"	14"	#5 REBAR @16" O.C.	#5 REBAR @16" O.C.

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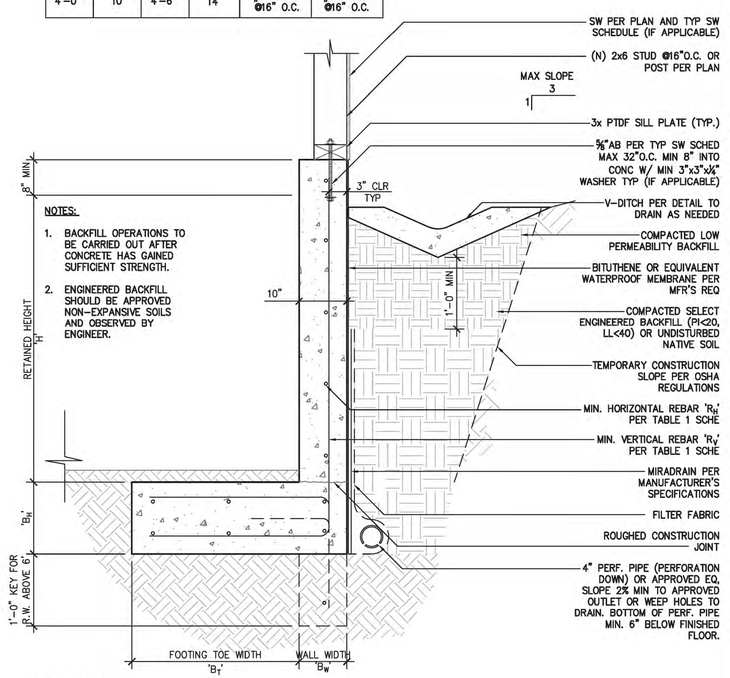
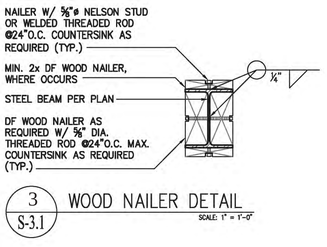
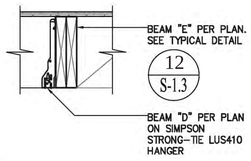
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.



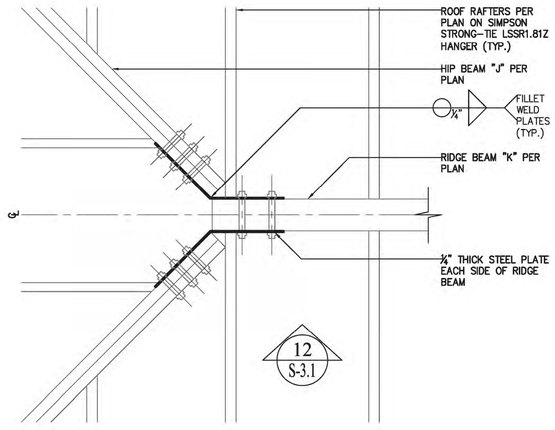
1 11 S-3.1 RETAINING WALL DETAIL SCALE: 1" = 1'-0"

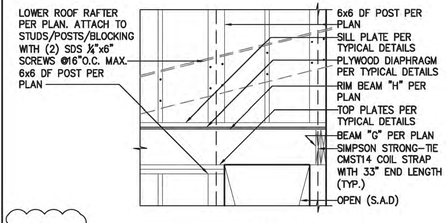


3 S-3.1 WOOD NAILER DETAIL SCALE: 1" = 1'-0"

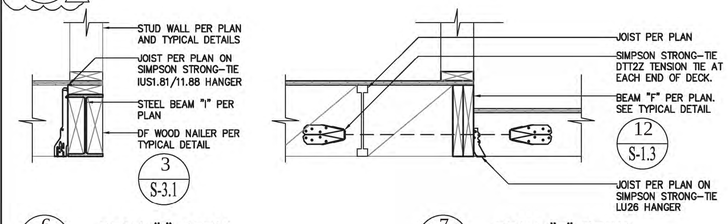


4 S-3.1 BEAM "D" DETAIL SCALE: 1" = 1'-0"



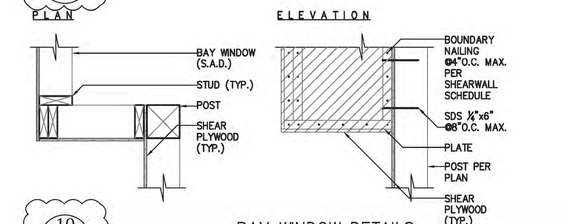


5 S-3.1 1 BEAM "H" DETAIL SCALE: 1" = 1'-0"



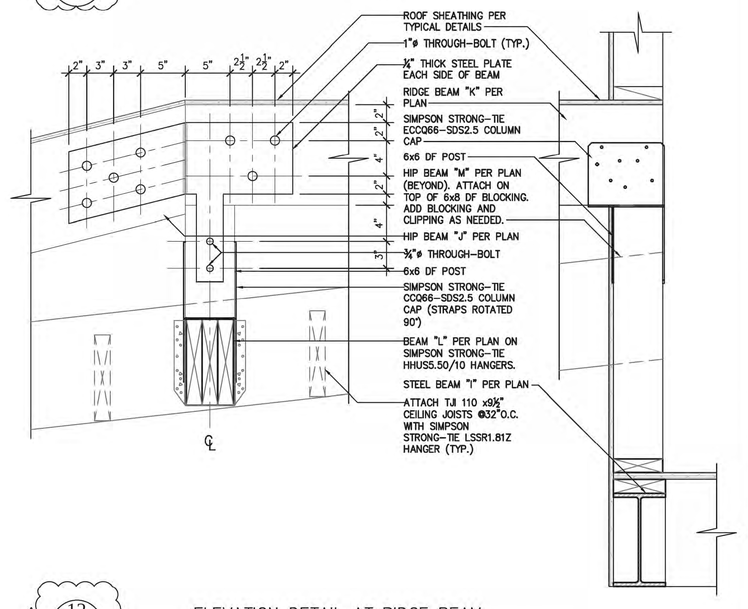
6 S-3.1 BEAM "I" DETAIL SCALE: 1" = 1'-0"

7 S-3.1 BEAM "F" DETAIL SCALE: 1" = 1'-0"



1 9 S-3.1 ENLARGED PLAN AT LOWER ROOF HIP BEAMS SCALE: 1" = 1'-0"

1 10 S-3.1 BAY WINDOW DETAILS SCALE: 1" = 1'-0"



1 12 S-3.1 ELEVATION DETAIL AT RIDGE BEAM SCALE: 1-1/2" = 1'-0"

REVISIONS		BY
1	2022-06-21	DL

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REGISTERED PROFESSIONAL ENGINEER DARYOUSH DARIUS ABOLHASSANI No. 58778 CIVIL STATE OF CALIFORNIA

NEW RESIDENCE & ADU

79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

STRUCTURAL DETAILS

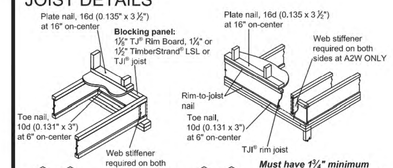
DATE:	2022–04–08
SCALE:	AS SHOWN
DRAWN BY:	DL
JOB NUMBER:	1477–0822 S

SHEET 10

S-3.1

OF 12 SHEET

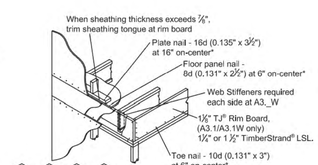
JOIST DETAILS



A1 A1W*

A2 A2W*

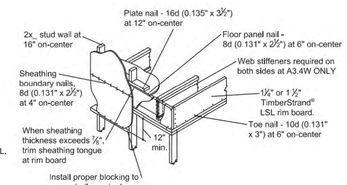
Must have 1¾" minimum joist bearing at ends. Attach rim joist per A3 detail.



A3 A3.1 A3.2 A3.3*

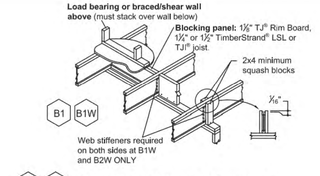
A3W A3.1W A3.2W A3.3W

* For additional installation specifications see Rim Board Details and Installation in *Weyerhaeuser Installation Guide for Floor and Roof Framing*, TJ-9001.



A3.4 A3.4W*

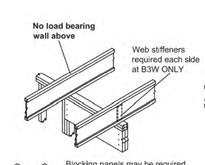
* For additional installation specifications see Rim Board Details and Installation in *Weyerhaeuser Installation Guide for Floor and Roof Framing*, TJ-9001.



B1 B1W

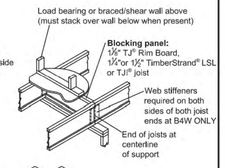
B2 B2W

Blocking panels may be required with braced/shear walls above or below — see detail B1

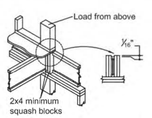


B3 B3W

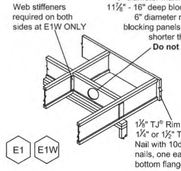
Blocking panels may be required with braced/shear walls above or below — see detail B1



B4 B4W

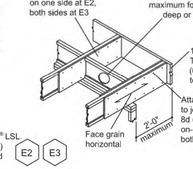


CS ***Use 2x4 minimum squash blocks to transfer load around TJI® joist***

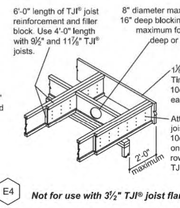


E1 E1W

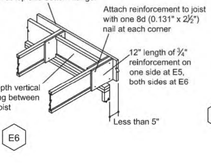
E2 E3



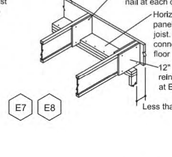
E4 ***Not for use with 3½" TJI® joist flange widths***

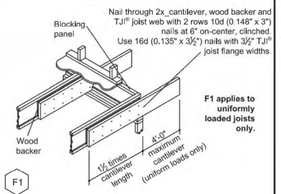


E5 E6

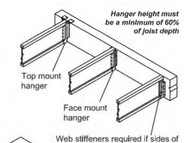


E7 E8

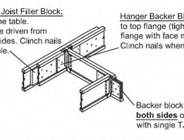




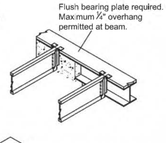
F1



H1

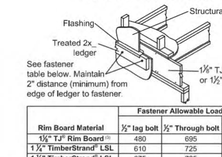


H2 **With top mount hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions. For nailing requirements see page 5, TJ - 9001, *Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.***



H3

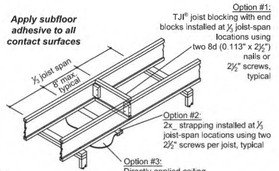
EXTERIOR DECK ATTACHMENT



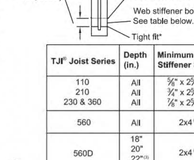
Rim Board Material	Fastener Allowable Load[2] (lbs/bolt)		
	½" lag bolt	½" Through bolt	½" Through bolt with Air Space
1⅛" TJI® Rim Board [3]	480	695	615[4]
1 ¾" TimberStrand® LSL	610	725	
1 ¾" TimberStrand® LSL	675	725	

(1) Corrosion-resistant fasteners required for wet-service applications.
(2) Allowable load determined in accordance with ASTM D7672.
(3) 1⅛" TJI® Rim Board is allowed with joist depths ≤ 16" only.
(4) Maximum ½" shimmed air space.

LA



PB1 ***When specified on the layout, one of the bracing options above is required***



WEB STIFFENER ATTACHMENT

* With point load from above, and no support below, install web stiffener tight to top flange (gap at bottom flange)

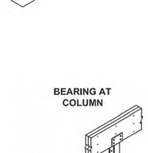
TJI® Joist Series	Depth (in.)	Minimum Web Stiffener Size	Nailing Requirements		
			Type	Number Nails	
				End	Intermediate
110 210 230 & 360	All All All	⅜" x 2½"[1][3] ⅞" x 2½"[1][3] ⅞" x 2½"[1][3]	8d (0.113" x 2½")	3	3
560	All	2x4[2]	16d (0.135" x 3½")		
560D	18" 20" 22"[3] 24"[3]	2x4[2]	16d (0.135" x 3½")	4 5 6 6	4 5 11 13

(1) PS1 or PS2 sheathing, face grain vertical
(2) Construction grade or better
(3) Web stiffeners are always required for 22" and 24" TJI® 560D Joists

W

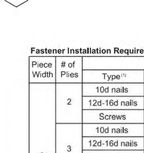
BEAM DETAILS

BEARING AT WALL



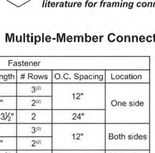
L1

BEARING FOR DOOR OR WINDOW HEADER



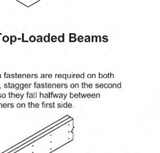
L2

BEAM TO BEAM CONNECTION



L3 ***See current Weyerhaeuser literature for framing connectors***

BEARING AT CONCRETE WALL



L4

BEARING AT COLUMN

L5 **Verify column capacity and beam bearing length. See current Weyerhaeuser literature.**

Multiple-Member Connections for Top-Loaded Beams

Fastener Installation Requirements

Piece Width	# of Pies	Fastener Type[1]	Min. Length	# Rows	O.C. Spacing	Location
1¾"	2	10d nails	3"	3[2]	12"	One side
		12d-16d nails	3 ¼"	2[2]		
		Screws	3½" or 3½"	2	24"	
	3	10d nails	3"	3[2]	12"	Both sides
		12d-16d nails	3 ¼"	2[2]		
		Screws	3½" or 3½"	2	24"	Both sides
			5"			One side
	4	10d nails[3]	3"	3[2]	12"	One side (per ply)
		12d-16d nails[3]	3 ¼"	2[2]		
		Screws	5" or 6"	2	24"	Both sides
			6 ¾"			One side
3½"	2	Screws	5" or 6"	2	24"	Both sides
			6 ¾"			One side
		½" bolts	8"	2	24"	-

(1) 10d nails are 0.128" diameter; 12d-16d nails are 0.148" - 0.162" diameter; screws are SDS, SDW, USP WS, or TrussLOK®
(2) An additional row of nails is required with depths of 14" or greater.
(3) When connecting 4-ply members, nail each ply to the other and offset nail rows by 2" from the rows in the ply below.

L6 Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"

FASTENING of FLOOR PANELS

Guidelines for Closest On-Center Spacing per Row

Nail Size	TJI®[1][2] Rim Board							
	110, 210, and 230	360 and 560	1⅛" TJI® Rim Board	1¼" TimberStrand® LSL	1½" TimberStrand® LSL	1¼" TimberStrand® LSL or wider	Microllam® LVL	Parallam® PSL
8d (0.113" x 2½"), 8d (0.131" x 2½")	4"	3"	6"	4"	3"	3"	4"	4"
10d (0.148"x 3"), 12d (0.148"x 3¼")	4"[3]	4"[3]	6"	4"	3"	3"	5"	4"
16d (0.162" x 3½")	6"	6"	16"[4]	6"[5]	6"[5]	6"[6]	8"[4]	6"

(1) Stagger nails when using 4" on-center spacing and maintain ½" joist and panel edge distance. One row of fasteners is permitted (two at abutting panel edges) for diaphragms. Fastener spacing for TJI® joists in diaphragm applications cannot be less than shown in table. When fastener spacing for blocking is less than spacing shown above, rectangular blocking must be used in lieu of TJI® joists.
(2) For non-diaphragm applications, multiple rows of fasteners are permitted if the rows are offset at least ½" and staggered.
(3) With 10d (0.148" x 1½") nails, spacing can be reduced to 3" on-center for light gauge steel straps.
(4) Can be reduced to 5" on-center if nail penetration into the narrow edge is no more than 1½" (to minimize splitting).
(5) Can be reduced to 4" on-center if nail penetration into the narrow edge is no more than 1½" (to minimize splitting).
(6) Can be reduced to 3½" on-center if nail penetration into the narrow edge is no more than 1½" (to minimize splitting).
■ Recommended nailing is 12" on-center in field and 6" on-center along panel edge. Fastening requirements on engineered drawings supersede recommendations listed above.
■ Maximum nail spacing for TJI® joists is 18" on-center.
■ 14 ga. staples may be substituted for 8d (0.113" x 2½") nails if minimum penetration of 1" into the TJI® joist or rim board is achieved.
■ To minimize splitting, maintain edge distance and row spacing of 2½ x nail diameter or ½", whichever is greater.
■ Nailing rows must be offset at least ½" and staggered.
■ For recommended nailing and adhesives, see INSTALLATION RECOMMENDATIONS on page 2 of the *Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.*

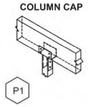
FILLER and BACKER BLOCK SIZES

TJI® Joists		110	210	230 or 360	360	560		560D
Depth		9½"-11⅞"	14"-16"	9½"-11⅞"	14"-16"	9½"-11⅞"	14"-16"	18"-20"	11⅞"	14"-16"	18"-20"	22"-24"
Filler Block (1) (Detail H2)		2x6	2x8	2x6 + ½" sheathing	2x8 + ½" sheathing	2x6 + ½" sheathing	2x8 + ½" sheathing	2x12 + ½" sheathing	Two 2x6	Two 2x8	Two 2x12	Four ½" x 15" sheathing
Cantilever Filler (Detail E4)		2x6 4'-0" long	2x10 6'-0" long	2x6 + ½" sheathing 4'-0" long	2x10 + ½" sheathing 6'-0" long	2x6 + ½" sheathing 4'-0" long	2x10 + ½" sheathing 6'-0" long	Not applicable	Not applicable			
Backer Block (1) (Detail F1 or H2)		½" or ¾"		½" or ¾"		½" or 1" Net			2x6	2x8	2x12	Two ½" x 15" sheathing
Nail Size	Filler	(0.131" x 3")							(0.131" x 3 ½")			
	Backer								(0.131" x 3")			
Nail Quantity[2]	Filler	15							32		50	
	Backer								15		15	

(1) If necessary, increase filler and backer block height for face mount hangers and maintain ½" gap at top of joist; see detail W. Filler and backer block dimensions should accomodate required nailing without splitting (12" minimum for backer blocks and 24" minimum for filler blocks).
(2) Clinch nails when possible.

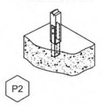
COLUMN DETAILS

BEAM ON COLUMN CAP



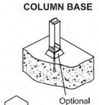
P1

COLUMN BASE



P2

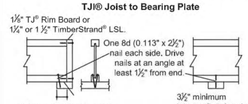
ELEVATED COLUMN BASE



P3

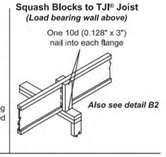
NAILING AT BEARING (FLOOR)

TJI® Joist to Bearing Plate



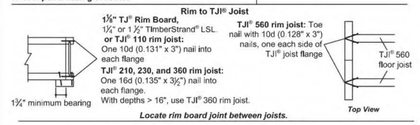
Shear transfer: Connections equivalent to floor panel nailing schedule

Squash Blocks to TJI® Joist *(Load bearing wall above)*



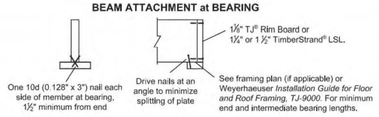
Also see detail B2

Rim to TJI® Joist

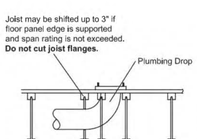


Locate rim board joint between joists.

BEAM ATTACHMENT at BEARING



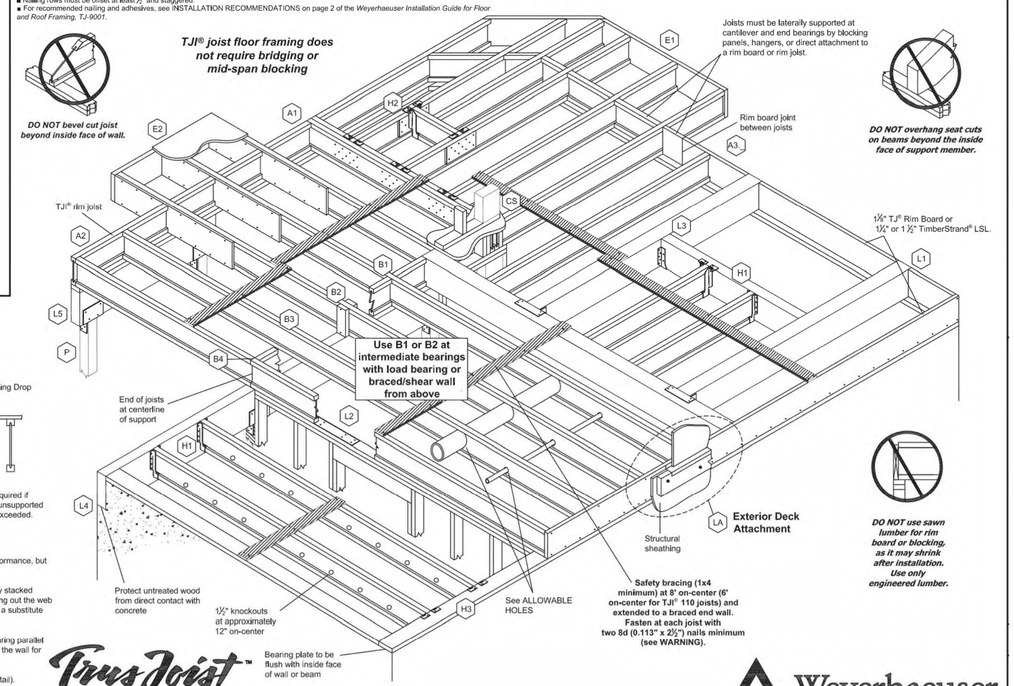
Joist may be shifted up to 3" if floor panel edge is supported and span rating is not exceeded. **Do not cut joist flanges.**



INSTALLATION TIPS

- Subfloor adhesive will improve floor performance, but may not be required.
- Squash blocks and blocking panels carry stacked vertical loads (details B1 and B2). Packing out the web of a TJI® joist (with web stiffeners) is not a substitute for squash blocks or blocking panels.
- When joists are doubled at non-load bearing parallel partitions, space joists apart the width of the wall for plumbing or HVAC.
- Additional joist at plumbing drop (see detail).

TJI® joist floor framing does not require bridging or mid-span blocking



TrusJoist™ Weyerhaeuser

Weyerhaeuser

SEE MANUFACTURER'S DETAILS FOR INSTALLATION.

REVISIONS		BY
1	2022-06-21	DL

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STATE OF CALIFORNIA

NEW RESIDENCE & ADU
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FAIRFAX, CA 94930
PROJECT APN 002-062-03

WEYERHAEUSER
TYPICAL DETAILS

DATE: 2022-04-08
SCALE: AS SHOWN
DRAWN BY: DL
JOB NUMBER: 1477-0822 S

SHEET 11
S-3.2
OF 12 SHEET

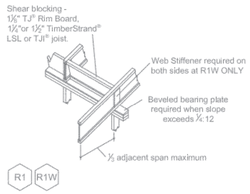
REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ROOF DETAILS

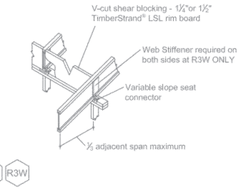
General Notes
Unless otherwise noted, all details are valid to a maximum slope of 12:12.
Joists >16" have a maximum slope of 3:12.

Web stiffeners are required with all 22" and 24" joists and when the sides of the hanger do not latterally support at least ⅜" of the TJI® joist top flange. Also see framing plan.

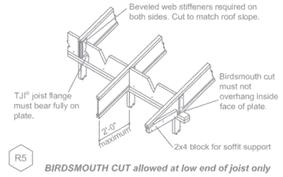
SEE MANUFACTURER'S DETAILS FOR INSTALLATION.



R1 R1W

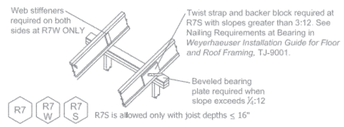


R3 R3W

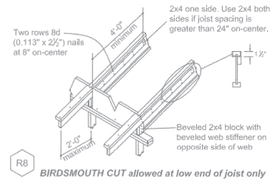


R5
BIRDSMOUTH CUT allowed at low end of joist only

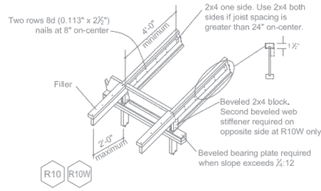
INTERMEDIATE BEARING
Blocking panels or shear blocking may be specified for joist stability at intermediate supports



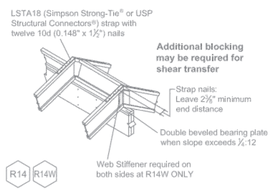
R7 R7W R7S
R7S is allowed only with joist depths ≤ 16"



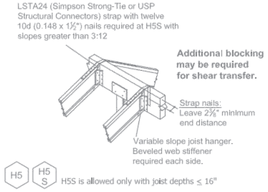
R8
BIRDSMOUTH CUT allowed at low end of joist only



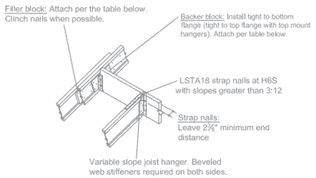
R10 R10W



R14 R14W



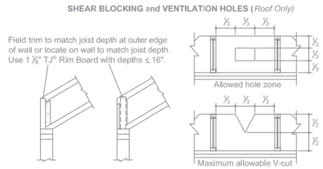
H5 H5S
H5S is allowed only with joist depths ≤ 16"



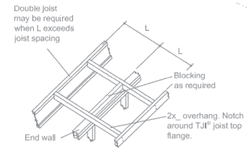
TJI® Depth, D	TJI® Flange Width	Block Type	Nail Size	Nail Quantity
9½" <D≤16"	less than 3½"	Filler	10d(0.128" x 3")	10
		Backer	10d(0.128" x 3")	10
	3½"	Filler	16d(0.135" x 3½")	10 - each side
		Backer	10d(0.128" x 3")	10
16" <D≤ 20"	less than 3½"	Filler	10d(0.128" x 3")	15
		Backer	10d(0.128" x 3")	15
	3½"	Filler	16d(0.135" x 3½")	15 - each side
		Backer	10d(0.128" x 3")	15
20" <D≤ 24"	3½"	Filler	16d(0.135" x 3½")	25 - each side
		Backer	10d(0.128" x 3")	15

H6 H6S
H6S is allowed only with joist depths ≤ 16".
For filler and backer block sizes see *Weyerhaeuser TJI® Joist Specifier's Guide*, TJ-4000

SHEAR BLOCKING and VENTILATION HOLES *(Roof Only)*



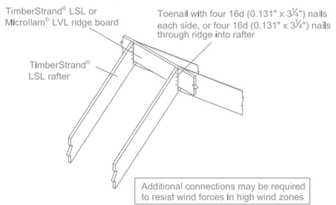
SB
For TJI® joists with slopes of 10:12 to 12:12, the vertical depth of shear blocking at bearing will require 1⅛" TJI® Rim Board or 1⅛" or 1½" TimberStrand® LSL that is one size deeper than the TJI® joist. DO NOT use 1½" TJI® Rim Board with 18"-24" TJI® joists or in vertilation - hole applications.



O

ROOF FRAMING DETAILS

Ridge Connection

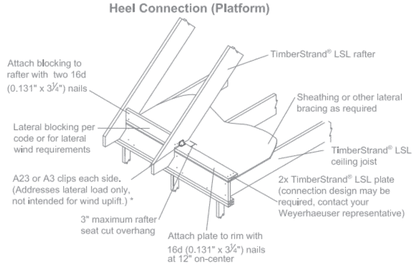


Minimum Ridge Board Depth

Rafter Size	Rafter Pitch			
	4:12 to 9:12	10:12 to 11:12	12:12	
	Ridge Board Sizes			
2x6	2x8	2x10	2x10	
2x8	2x10	2x12	2x12	
2x10	14"	14"	14"	
2x12	14"	16"	16"	

R20

Heel Connection (Platform)



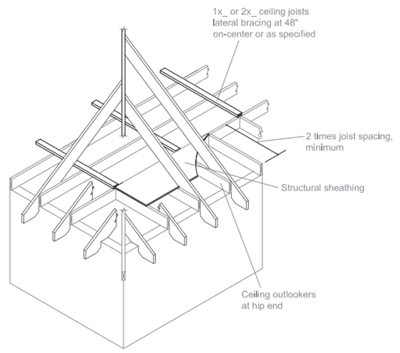
*** Angle Clips**

Hanger Type	Clip	Nailing	
		Top Plate	Rafter/Ceiling Joist
Simpson Strong Tie®	A23	10d x 1½"	10d x 1½"
USP Structural Connectors®	A3	10d x 1½"	10d x 1½"

Rafter Connection for Thrust:
* For lap connection nail quantity requirements, see Rafter Span and Heel Connection Tables in *Weyerhaeuser Roof System Design Guide*, TJ-9005.
- If fewer than 8 nails are required, use only one A23 or A3 clip, each side.
- If 8-15 nails required, use two A23 or A3 clips, each side.

R22

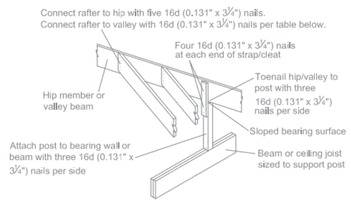
Outlooker Detail



R24

Hip/Valley Intermediate Support

Connect rafter to hip with five 16d (0.131" x 3¼") nails.
Connect rafter to valley with 16d (0.131" x 3¼") nails per table below.

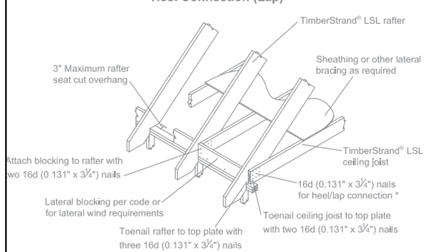


Rafter - to - Valley Connection

Rafter On-Center Spacing	Rafter Span	Roof Snow Load		
		30 LL + 15 DL	50 LL + 15 DL	80 LL + 15 DL
		Number of 16d (0.131" x 3 ¼") nails required		
16"	6'	5	5	5
	12'	5	6	8
	18'	6	9	12
	24'	8	12	*
24"	6'	5	5	7
	12'	6	8	11
	18'	9	13	*
	24'	12	*	*

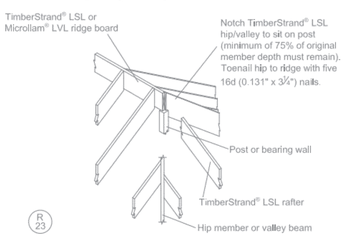
R26
* Contact your Weyerhaeuser representative for additional connection information.

Heel Connection (Lap)



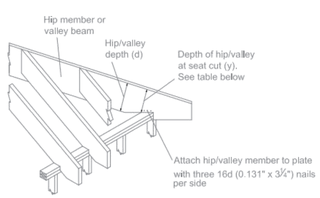
R21
* For heel/lap connection nailing see Rafter Span and Heel Connection Tables in *Weyerhaeuser Roof System Design Guide*, TJ-9005.

Hip/Ridge/Valley/ Post Detail



R23

Hip/Valley Low End



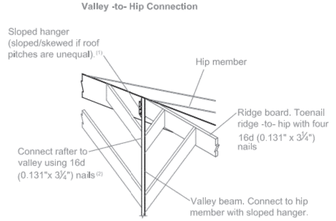
Hip/Valley Depth
Minimum Percentage of Original Hip/Valley Depth Required

Member Type	TimberStrand® LSL	Microllam® LVL
Hip Member	30%	50%
Valley Beam	60%	90%

Calculate percentage as y/d x 100

R25

Valley -to- Hip Connection



Contact your Weyerhaeuser representative for sizing of a hip or valley with a point load.
[1] See Framing Connectors in *Weyerhaeuser Roof System Guide*, TJ-9005 for hanger capacities.
[2] See Rafter -to- Valley Connection table in Detail R26 above.

R28

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS		BY
1	2022-06-21	DL

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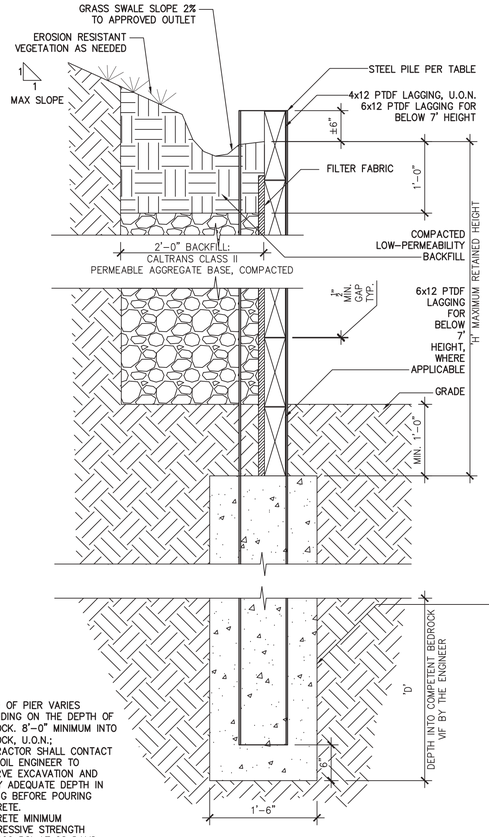
FAIRFAX, CA 94930
PROJECT APN 002-062-03

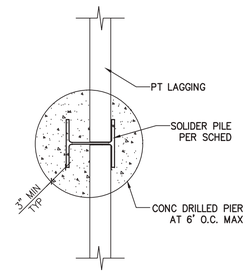
WEYERHAEUSER
TYPICAL DETAILS

DATE: 2022-04-08
SCALE: AS SHOWN
DRAWN BY: DL
JOB NUMBER: 1477-0822 S

SHEET 12
S-3.3
OF 12 SHEET



SOLIDER PILE & LAGGING RETAINING WALL SCHEDULE				
DEPTH INTO BEDROCK 'D'	DRILLED PIER DIA	SOLIDER PILE	MAX RETAINED HEIGHT 'H'	MIN. OVERALL PIER DEPTH
10'-0"	18"ø	W8X21	6'-0"	16'-0"
8'-0"	18"ø	W8X10	4'-0"	14'-0"



NOTES:

1. ALL EXPOSED STEEL SHALL BE HOT-DIPPED GALVANIZED OR PAINTED WITH TWO COATS OF BITUMINOUS EPOXY PAINT.
2. NAILS/METAL FASTENERS SHALL BE HOP DIPPED GALVANIZED OR STAINLESS STEEL, OR OTHER APPROVED ACCEPTABLE CORROSION RESISTANT MATERIAL.

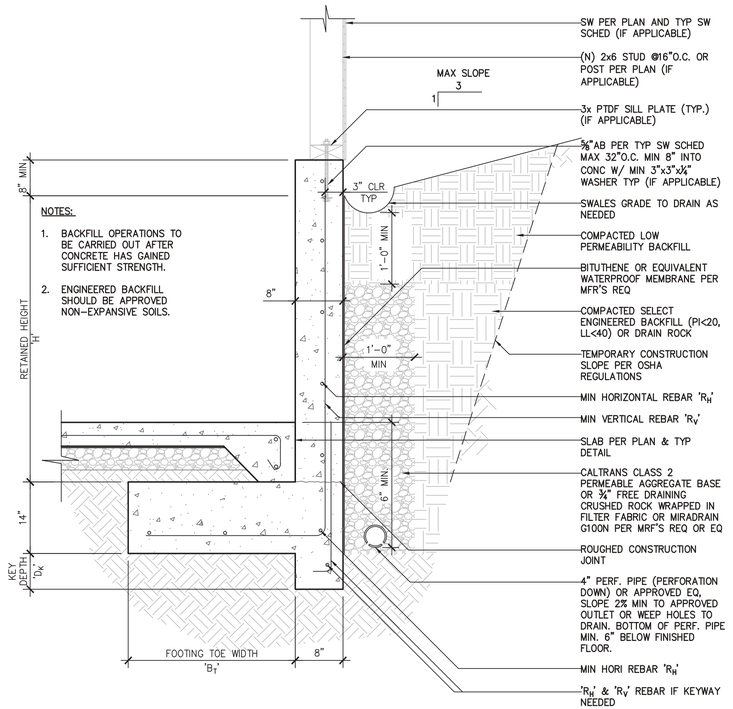
NOTES:

1. DEPTH OF PIER VARIES DEPENDING ON THE DEPTH OF BEDROCK. 8'-0" MINIMUM INTO BEDROCK, U.O.N.; CONTRACTOR SHALL CONTACT THE SOIL ENGINEER TO OBSERVE EXCAVATION AND VERIFY ADEQUATE DEPTH IN WRITING BEFORE POURING CONCRETE.
2. CONCRETE MINIMUM COMPRESSIVE STRENGTH FC=3000 PSI AT 28 DAYS.
3. MAX. 6'-0" BETWEEN PIERS.

1 S-3.4 STEEL SOLDIER PILE & LAGGING RW DETAIL
SCALE: 1" = 1'-0"

RETAINING WALL SCHEDULE (WITH FRONT SLAB)					
MAX H	MIN T	MIN B	MIN D_K	MIN R_V	MIN R_H
6'-0"	8"	4'-6"	N.A.	#5 REBAR @16" O.C.	#5 REBAR @16" O.C.
UP TO 3'-0"	8"	4'-6"	N.A.	#5 REBAR @16" O.C.	#5 REBAR @16" O.C.

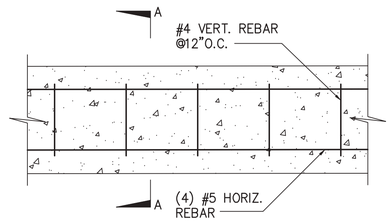
3 S-3.4 RW DETAIL
SCALE: 1" = 1'-0"

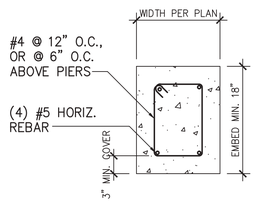


NOTES:

1. BACKFILL OPERATIONS TO BE CARRIED OUT AFTER CONCRETE HAS GAINED SUFFICIENT STRENGTH.
2. ENGINEERED BACKFILL SHOULD BE APPROVED NON-EXPANSIVE SOILS.

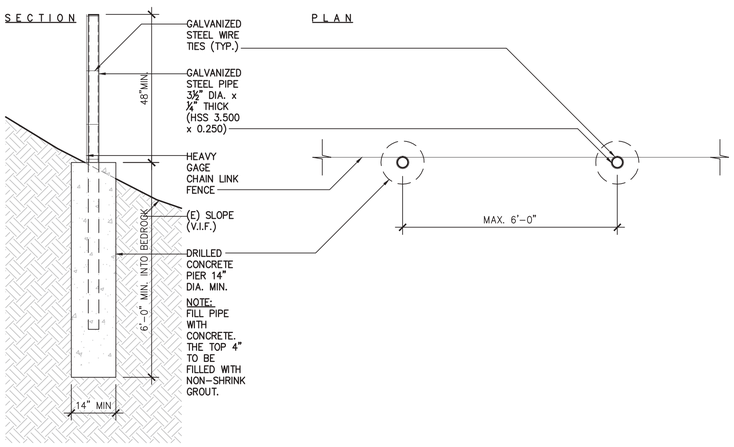
A-A WITH FRAMING CONTACT





A-A WITHOUT FRAMING CONTACT

4 S-3.4 GRADE BEAM DETAILS
SCALE: 1" = 1'-0"



2 S-3.4 DEBRIS FENCE DETAIL
SCALE: 1/2" = 1'-0"

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS AMENDED BY THE LOCAL AGENCY.

REVISIONS		BY
1	2022-06-21	DL

Darius Abolhassani Consultant & Associates, Inc.
Consulting Engineering & Construction Support
7 Mt. Lassen Drive, Suite A-129, San Rafael, CA 94903
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REGISTERED PROFESSIONAL ENGINEER DARIUS ABOLHASSANI No. 58778 CIVIL STATE OF CALIFORNIA

NEW RESIDENCE & ADU

79 WOOD LANE
FAIRFAX, CA 94930
PROJECT APN 002-062-03

STRUCTURAL DETAILS

DATE: 2022-04-08
SCALE: AS SHOWN
DRAWN BY: DL
JOB NUMBER: 1477-0822 S

SHEET 13
S-3.4
1 OF 12 SHEET

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 1 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

GENERAL INFORMATION

01	Project Name	79 Wood Ln			
02	Run Title	Title 24 Analysis			
03	Project Location	79 Wood Ln			
04	City	Fairfax	05	Standards Version	2019
06	Zip code	94930	07	Software Version	EnergyPro 8.3
08	Climate Zone	2	09	Front Orientation (deg/ Cardinal)	320
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	NewConstruction	13	Number of Bedrooms	4
14	Addition Cond. Floor Area (ft²)	0	15	Number of Stories	3
16	Existing Cond. Floor Area (ft²)	n/a	17	Fenestration Average U-factor	0.32
18	Total Cond. Floor Area (ft²)	3177	19	Glazing Percentage (%)	14.53%
20	ADU Bedroom Count	1	21	ADU Conditioned Floor Area	500
22	Is Natural Gas Available?	Yes			

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

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 2 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

ENERGY DESIGN RATING

	Energy Design Ratings		Compliance Margins	
	Efficiency[1] (EDR)	Total[2] (EDR)	Efficiency[1] (EDR)	Total[2] (EDR)
Standard Design	49.7	31.8		
Proposed Design	49.6	31.8	0.1	0
RESULT: [3] COMPLIES				

1: Efficiency EDR includes improvements to the building envelope and more efficient equipment
2: Total EDR includes efficiency and demand response measures such as photovoltaic (PV) systems and batteries
3: Building complies when efficiency and total compliance margins are greater than or equal to zero

- Standard Design PV Capacity: 3.37 kWdc
- PV System resized to 3.37 kWdc (a factor of 3.365) to achieve 'Standard Design PV' PV scaling

ENERGY USE SUMMARY

Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	26.83	27.35	-0.52	-1.9
Space Cooling	7.19	9.99	-2.8	-38.9
IAQ Ventilation	3.6	3.6	0	0
Water Heating	23.16	19.76	3.4	14.7
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	**60.78**	**60.7**	**0.08**	**0.1**

REQUIRED PV SYSTEMS - SIMPLIFIED

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

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 3 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

REQUIRED SPECIAL FEATURES

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

- 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

Building-level Verifications:
- Quality insulation installation (QII)
- Indoor air quality ventilation

Cooling System Verifications:
- Minimum Airflow
- Verified EER
- Verified SEER
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Fan Efficacy Watts/CFM

Heating System Verifications:
- Verified HSPF
- 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)

HVAC Distribution System Verifications:
- Duct leakage testing

Domestic Hot Water System Verifications:
- -- None --

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
79 Wood Ln	3177	1	4	4	0	2

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 4 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

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	Water Heating System 2
Basement Zone	Conditioned	Res HVAC1	469	7	DHW Sys 1	N/A
Main Floor Zone	Conditioned	Res HVAC1	1415	9	DHW Sys 1	N/A
Upper Floor Zone	Conditioned	Res HVAC1	793	8	DHW Sys 1	N/A
ADU Zone	Conditioned	Res HVAC2	500	8	DHW Sys 3	N/A

OPAQUE SURFACES

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	Main Floor Zone	R-21 Wall	320	Front	267.8	70	90
Left Wall	Main Floor Zone	R-21 Wall	50	Left	438.2	70.7	90
Back Wall	Main Floor Zone	R-21 Wall	140	Back	267.8	60	90
Right Wall	Main Floor Zone	R-21 Wall	230	Right	438.2	71	90
Front Wall 2	Upper Floor Zone	R-21 Wall	320	Front	238	52.5	90
Left Wall 2	Upper Floor Zone	R-21 Wall	50	Left	280	18	90
BackWall	Upper Floor Zone	R-21 Wall	140	Back	238	60	90
Right Wall 2	Upper Floor Zone	R-21 Wall	230	Right	280	24	90
Front Wall 3	ADU Zone	R-15 Wall	320	Front	97.4	18	90
Left Wall 3	ADU Zone	R-15 Wall	50	Left	200	24	90
Back Wall 2	ADU Zone	R-15 Wall	140	Back	20	0	90
Right Wall 3	ADU Zone	R-15 Wall	230	Right	200	13.5	90
Front Interior Wall	ADU Zone>>__Garage__	R-13 Wall	n/a	n/a	62.6	0	n/a
Attic Roof	Main Floor Zone	R-38 Roof Attic	n/a	n/a	622	n/a	n/a
Raised Floor	Main Floor Zone	R-19 Floor Crawlspace	n/a	n/a	946	n/a	n/a

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 5 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
Raised Floor 2	ADU Zone	R-19 Floor Crawlspace	n/a	n/a	500	n/a	n/a
Front Underground Wall	Basement Zone	8 Concrete Wall	n/a	n/a	208.3	n/a	n/a
Left Underground Wall	Basement Zone	8 Concrete Wall	n/a	n/a	114	n/a	n/a
Back Underground Wall	Basement Zone	8 Concrete Wall	n/a	n/a	208.3	n/a	n/a
Right Underground Wall	Basement Zone	8 Concrete Wall	n/a	n/a	114	n/a	n/a
Back Underground Wall 2	ADU Zone	8 Concrete Wall	n/a	n/a	120	n/a	n/a
Interior Floor	Main Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	469	n/a	n/a
Interior Floor 2	Upper Floor Zone	R-0 Floor No Crawlspace	n/a	n/a	793	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	320	Front	175	120	90
Left Wall 4	__Garage__	R-0 Wall	50	Left	181.6	0	90
Back Wall 3	__Garage__	R-0 Wall	140	Back	175	0	90
Right Wall 4	__Garage__	R-0 Wall	230	Right	181.6	0	90

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Area (ft²)	Skylight Area (ft²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
Flat Roof	Upper Floor Zone	R-35 Roof Cathedral	320	Front	793	0	0	0.1	0.85	No
Flat Roof 2	ADU Zone	R-35 Roof Cathedral	320	Front	500	0	0	0.1	0.85	No
Flat Roof 3	__Garage__	R-0 Roof Cathedral	320	Front	400	0	0	0.1	0.85	No

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 6 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

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 Main Floor Zone	Attic RoofMain Floor Zone	Ventilated	3	0.1	0.85	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Windows	Window	Front Wall	Front	320			1	50	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 2	Window	Left Wall	Left	50			1	70.7	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 3	Window	Back Wall	Back	140			1	60	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 4	Window	Right Wall	Right	230			1	71	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 5	Window	Front Wall 2	Front	320			1	52.5	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 6	Window	Left Wall 2	Left	50			1	18	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 7	Window	BackWall	Back	140			1	60	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 8	Window	Right Wall 2	Right	230			1	24	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 9	Window	Front Wall 3	Front	320			1	18	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 10	Window	Left Wall 3	Left	50			1	24	0.32	NFRC	0.3	NFRC	Bug Screen
Windows 11	Window	Right Wall 3	Right	230			1	13.5	0.32	NFRC	0.3	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft²)	U-factor
Entry Door	Front Wall	20	0.5
Door	Front Wall 4	120	0.5

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

ARCHITECTS
FREDRIC C. DIVINE ASSOCIATES
1924 FOURTH ST., SAN RAFAEL, CA 94901
Phone: (415) 457 - 0220 Fax: (415) 454 - 9581

LICENSED ARCHITECT
LINDA S. KELLERIN
NO. C 25466
REN. 01-31-23
STATE OF CALIFORNIA

NEW RESIDENCE AND ADU
79 WOOD LANE
FAIRFAX, CA 94930
APN: 002-062-03
FOR: COBY FRIEDMAN

TITLE 24 COMPLIANCE

Revisions
△ PERMIT SUBMITTAL 03-17-2022

Date: 03-17-2022
Scale: As Noted
Drawn: LSK/ MP/ JK
Job # 19049.00
Prototype DIVINE

T24-1

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CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 7 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

SLAB FLOORS

01	02	03	04	05	06	07	08
Name	Zone	Area (ft²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Covered Slab	Basement Zone	469	92	none	0	80%	No
Slab-on-Grade	__Garage__	400	0.1	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
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.361	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: 3 Coat Stucco
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.069	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Exterior Finish: 3 Coat Stucco
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.095	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Exterior Finish: 3 Coat Stucco
R-0 Roof Cathedral	Cathedral Ceilings	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-0	None / None	0.484	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4 Inside Finish: Gypsum Board
R-35 Roof Cathedral	Cathedral Ceilings	Wood Framed Ceiling	2x12 @ 16 in. O. C.	R-35	None / None	0.032	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-35 / 2x12 Inside Finish: Gypsum Board

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 8 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

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-13 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-13	None / None	0.092	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Other Side Finish: Gypsum Board
Attic RoofMain Floor Zone	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / None	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
R-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x6 @ 16 in. O. C.	R-19	None / None	0.05	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6
R-38 Roof Attic	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 Insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
R-0 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board
8 Concrete Wall	Underground Walls	Concrete / ICF / Brick	None	n/a	R-6 / None	0.161	Inside Finish: Gypsum Board Insulation/Furring: R-6 / 1.5in. wd Mass Layer: 8 in. Concrete

BUILDING ENVELOPE - HERS VERIFICATION

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

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 9 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

WATER HEATING SYSTEMS

01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	n/a	None	n/a
DHW Sys 3	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 3 (1)	n/a	None	n/a

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition
DHW Heater 1	Heat Pump	n/a	1	50	NEEA Rated	<= 12 kW	n/a	n/a	n/a	A. O. Smith\HP10-50H45DV (50 gal)	Garage
DHW Heater 3	Heat Pump	n/a	1	50	NEEA Rated	<= 12 kW	n/a	n/a	n/a	A. O. Smith\HP10-50H45DV (50 gal)	Garage

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
DHW Sys 3 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 10 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
Res HVAC1	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1	HVAC Fan 1	Air Distribution System 1	Setback	New	NA	1	1
Res HVAC2	Heat pump heating cooling	Heat Pump System 2	Heat Pump System 2	n/a	n/a	Setback	New	NA	1	1

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Number of Units	Heating			Cooling		Zonally Controlled	Compressor Type	HERS Verification
			HSPF/COP	Cap 47	Cap 17	SEER	EER/CEER			
Heat Pump System 1	Central split HP	1	10	45000	42000	16	12.2	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump
Heat Pump System 2	VCHP-ductless	1	8.2	24000	18000	14	11.7	Not Zonal	Single Speed	Heat Pump System 2-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge	Verified HSPF	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Required	350	Required	Required	No	Yes	Yes	Yes
Heat Pump System 2-hers-htpump	Not Required	0	Not Required	Not Required	Yes	No	Yes	Yes

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 11 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

VARIABLE CAPACITY HEAT PUMP COMPLIANCE OPTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09	10
Name	Certified Low-Static VCHP System	Airflow to Habitable Rooms	Ductless Units in Conditioned Space	Wall Mount Thermostat	Air Filter Sizing & Pressure Drop Rating	Low Leakage Ducts in Conditioned Space	Minimum Airflow per RA3.3 and SC3.3.3.4.1	Certified non-continuous Fan	Indoor Fan not Running Continuously
Heat Pump System 2	Not required	Required	Required	Required	Not required	Not required	Not required	Not required	Not required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
Air Distribution System 1	Unconditioned attic	Non-Verified	R-6	R-6	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Air Distribution System 1-hers-dist

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	No

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

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 12 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

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

IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06	07
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASRE	HERS Verification
SFam IAQVentRpt	104	0.35	Exhaust	n/a	n/a	Yes
SFam ADU IAQVentRpt	30	0.35	Exhaust	n/a	n/a	Yes

CERTIFICATE OF COMPLIANCE **CF1R-PRF-01E**

Project Name: 79 Wood Ln **Calculation Date/Time:** 2022-03-09T11:33:58-08:00 **(Page 13 of 13)**

Calculation Description: Title 24 Analysis **Input File Name:** Friedman New Residence + ADU - 79 Wood Ln - plans.ribd19x

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: S. Romer	Documentation Author Signature: S. Romer
Company: Energy Calc Co.	Signature Date: 03/10/2022
Address: 45 Mitchell Blvd #16	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: San Rafael, CA 94903	Phone: 415-457-0990

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Laura Kehrlein	Responsible Designer Signature: Laura Kehrlein
Company: Fredric Divine Architects	Date Signed: 03/11/2022
Address: 1924 Fourth Street	License: C 25466
City/State/Zip: San Rafael, CA 94901	Phone: (415) 457-0220

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

ARCHITECTS
FREDRIC C. DIVINE ASSOCIATES
1924 FOURTH ST., SAN RAFAEL, CA 94901 - 9581
Phone: (415) 457 - 0220 Fax: (415) 454 - 9581

LICENSED ARCHITECT
LAURA S. KEHRLEIN
NO. C 25466
REN. 01-31-23
STATE OF CALIFORNIA

NEW RESIDENCE AND ADU
79 WOOD LANE
FAIRFAX, CA 94930
APN: 002-062-03
FOR: COBY FRIEDMAN

TITLE 24 COMPLIANCE

Revisions
PERMIT SUBMITTAL 03-17-2022

Date: 03-17-2022
Scale: As Noted
Drawn: LSK/ MP/ JK
Job #: 19049.00
Prototype: DIVINE

T24-2

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RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Friedman New Residence + ADU	☑ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration		*3/9/2022*
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area** / **Addition** / **# of Units**	
79 Wood Ln Fairfax	*CA Climate Zone 02*	*3,177* / *n/a* / *1*	

INSULATION

Construction Type	Cavity	Area (ft^2)	Special Features	Status
Slab Unheated Slab-on-Grade	*- no insulation*	*469*	*Perim = 92'*	*New*
WallBG Solid Unit Masonry	*- no insulation*	*765*	*Add=R-6.0 Depth = 84.000"*	*New*
Roof Wood Framed Attic	*R 38*	*622*		*New*
Wall Wood Framed	*R 21*	*2,022*		*New*
Door Opaque Door	*- no insulation*	*20*		*New*
Floor Wood Framed w/Crawl Space	*R 19*	*1,446*		*New*
Demising Wood Framed w/o Crawl Space	*- no insulation*	*1,262*		*New*
Roof Wood Framed Rafter	*R 38*	*1,293*		*New*

FENESTRATION — Total Area: *462* Glazing Percentage: *14.5%* New/Altered Average U-Factor: *0.32*

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status
Front (NW)	*120.5*	*0.320*	*0.30*	*none*	*none*	*N/A*	*New*
Left (NE)	*112.7*	*0.320*	*0.30*	*none*	*none*	*N/A*	*New*
Rear (SE)	*120.0*	*0.320*	*0.30*	*none*	*none*	*N/A*	*New*
Right (SW)	*108.5*	*0.320*	*0.30*	*none*	*none*	*N/A*	*New*

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status
1	*Split Heat Pump*	*10.00 HSPF*	*Split Heat Pump*	*16.0 SEER*	*Setback*	*New*
1	*Split Heat Pump*	*8.20 HSPF*	*Split Heat Pump*	*14.0 SEER*	*Setback*	*New*

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status
Res HVAC	*Ducted*	*Ducted*	*Attic*	*6.0*	*New*
Res HVAC	*Ductless / with Fan*	*Ductless*	*n/a*	*n/a*	*New*

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status
1	*Heat Pump*	*50*	*2.90*	*Standard*	*New*
1	*Heat Pump*	*50*	*2.90*	*Standard*	*New*

RESIDENTIAL MEASURES SUMMARY — RMS-1

Project Name	Building Type		Date
Friedman New Residence + ADU	☑ Single Family ☐ Multi Family ☐ Addition Alone ☐ Existing+ Addition/Alteration		*3/9/2022*
Project Address	**California Energy Climate Zone**	**Total Cond. Floor Area** / **Addition** / **# of Units**	
79 Wood Ln Fairfax	*CA Climate Zone 02*	*3,177* / *n/a* / *1*	

INSULATION

Construction Type	Cavity	Area (ft^2)	Special Features	Status
Wall Wood Framed	*R 15*	*462*		*New*
Demising Wood Framed	*R 13*	*63*		*New*

FENESTRATION — Total Area: *462* Glazing Percentage: *14.5%* New/Altered Average U-Factor: *0.32*

Orientation	Area(ft^2)	U-Fac	SHGC	Overhang	Sidefins	Exterior Shades	Status

HVAC SYSTEMS

Qty.	Heating	Min. Eff	Cooling	Min. Eff	Thermostat	Status

HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Status

WATER HEATING

Qty.	Type	Gallons	Min. Eff	Distribution	Status

2019 Low-Rise Residential Mandatory Measures Summary

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

Building Envelope Measures:	
§ 110.6(a)1:	**Air Leakage.** Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*
§ 110.6(a)5:	**Labeling.** Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	**Field fabricated exterior doors and fenestration** products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	**Air Leakage.** All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	**Insulation Certification by Manufacturers.** Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	**Insulation Requirements for Heated Slab Floors.** Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	**Roofing Products Solar Reflectance and Thermal Emittance.** The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	**Radiant Barrier.** When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	**Ceiling and Rafter Roof Insulation.** Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	**Loose-fill Insulation.** Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	**Wall Insulation.** Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	**Raised-floor Insulation.** Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	**Slab Edge Insulation.** Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	**Vapor Retarder.** In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	**Vapor Retarder.** In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	**Fenestration Products.** Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decorative Gas Appliances, and Gas Log Measures:	
§ 110.5(e)	**Pilot Light.** Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	**Closable Doors.** Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	**Combustion Intake.** Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device.*
§ 150.0(e)3:	**Flue Damper.** Masonry or factory-built fireplaces must have a flue damper with a readily accessible control.*
Space Conditioning, Water Heating, and Plumbing System Measures:	
§ 110.0-§ 110.3:	**Certification.** Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	**HVAC Efficiency.** Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
§ 110.2(b):	**Controls for Heat Pumps with Supplementary Electric Resistance Heaters.** Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*
§ 110.2(c):	**Thermostats.** All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*
§ 110.3(c)4:	**Water Heating Recirculation Loops Serving Multiple Dwelling Units.** Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	**Isolation Valves.** Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
§ 110.5:	**Pilot Lights.** Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.*
§ 150.0(h)1:	**Building Cooling and Heating Loads.** Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(h)3A:	**Clearances.** Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
§ 150.0(h)3B:	**Liquid Line Drier.** Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	**Storage Tank Insulation.** Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A:	**Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.** All domestic hot water piping must be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a minimum insulation wall thickness of one inch or a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all hot water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter less than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	**Insulation Protection.** Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tapes). Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected by, a Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve.
§ 150.0(n)1:	**Gas or Propane Water Heating Systems.** Systems using gas or propane water heaters to serve individual dwelling units must include all of the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit breaker for the branch circuit and labeled with the words "Future 240V Use"; a Category III or IV vent, or a Type B vent with straight pipe between the outside termination and the space where the water heater is installed; a condensate drain that is no more than two inches higher than the base of the water heater, and allows natural draining without pump assistance; and a gas supply line with a capacity of at least 200,000 Btu per hour.
§ 150.0(n)2:	**Recirculating Loops.** Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	**Solar Water-heating Systems.** Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listing agency that is approved by the Executive Director.
Ducts and Fans Measures:	
§ 110.8(d)3:	**Ducts.** Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	**CMC Compliance.** All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air ducts and plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely encased and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than ¼ inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be usec to convey conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	**Factory-Fabricated Duct Systems.** Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures, joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	**Field-Fabricated Duct Systems.** Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	**Backdraft Damper.** Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	**Gravity Ventilation Dampers.** Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	**Protection of Insulation.** Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	**Porous Inner Core Flex Duct.** Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	**Duct System Sealing and Leakage Test.** When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	**Air Filtration.** Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*
§ 150.0(m)13:	**Space Conditioning System Airflow Rate and Fan Efficacy.** Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.*

2019 Low-Rise Residential Mandatory Measures Summary

Requirements for Ventilation and Indoor Air Quality:	
§ 150.0(o)1:	**Requirements for Ventilation and Indoor Air Quality**. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	**Single Family Detached Dwelling Units.** Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	**Multifamily Attached Dwelling Units.** Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	**Multifamily Building Central Ventilation Systems.** Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	**Kitchen Range Hoods.** Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	**Field Verification and Diagnostic Testing.** Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa Systems and Equipment Measures:	
§ 110.4(a):	**Certification by Manufacturers.** Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.*
§ 110.4(b)1:	**Piping.** Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	**Covers.** Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	**Directional Inlets and Time Switches for Pools.** Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	**Pilot Light.** Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	**Pool Systems and Equipment Installation.** Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.*
Lighting Measures:	
§ 110.9:	**Lighting Controls and Components.** All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*
§ 150.0(k)1A:	**Luminaire Efficacy.** All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	**Blank Electrical Boxes.** The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	**Recessed Downlight Luminaires in Ceilings.** Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	**Electronic Ballasts for Fluorescent Lamps.** Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output frequency no less than 20 kHz.
§ 150.0(k)1E:	**Night Lights, Step Lights, and Path Lights.** Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	**Lighting Integral to Exhaust Fans.** Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).*
§ 150.0(k)1G:	**Screw based luminaires.** Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	**Light Sources in Enclosed or Recessed Luminaires.** Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	**Light Sources in Drawers, Cabinets, and Linen Closets.** Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)2A:	**Interior Switches and Controls.** All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	**Interior Switches and Controls.** Exhaust fans must be controlled separately from lighting systems.*
§ 150.0(k)2C:	**Interior Switches and Controls.** Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*
§ 150.0(k)2D:	**Interior Switches and Controls.** Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	**Interior Switches and Controls.** Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).
§ 150.0(k)2F:	**Interior Switches and Controls.** Lighting controls must comply with the applicable requirements of § 110.9.

2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2G:	**Interior Switches and Controls.** An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to § 110.9; meets the Installation Certificate requirements of § 130.4; meets the EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	**Interior Switches and Controls.** A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(k) if it provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2.
§ 150.0(k)2I:	**Interior Switches and Controls.** In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces must be controlled by an occupant sensor or a vacancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
§ 150.0(k)2J:	**Interior Switches and Controls.** Luminaires that are or contain light sources that meet Reference Joint Appendix JA8 requirements for dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.*
§ 150.0(k)2K:	**Interior Switches and Controls.** Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
§ 150.0(k)3A:	**Residential Outdoor Lighting.** For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must meet the requirement in item § 150.0(k)3Ai (ON and OFF switch) and the requirements in either § 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aiii (astronomical time clock), or an EMCS.
§ 150.0(k)3B:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrances, balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(k)3A or with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)3C:	**Residential Outdoor Lighting.** For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking lots or carports with a total of eight or more vehicles per site and any outdoor lighting not regulated by § 150.0(k)3B or § 150.0(k)3D must comply with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
§ 150.0(k)4:	**Internally illuminated address signs.** Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 watts of power as determined according to § 130.0(c).
§ 150.0(k)5:	**Residential Garages for Eight or More Vehicles.** Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0(k)6A:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in that building must be comply with Table 150.0-A and be controlled by an occupant sensor.
§ 150.0(k)6B:	**Interior Common Areas of Low-rise Multifamily Residential Buildings.** In a low-rise multifamily residential building where the total interior common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas in that building must: i. Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and ii. Lighting installed in corridors and stairwells must be controlled by occupant sensors that reduce the lighting power in each space by at least 50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Buildings:	
§ 110.10(a)1:	**Single Family Residences.** Single family residences located in subdivisions with 10 or more single family residences and where the application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
§ 110.10(a)2:	**Low-rise Multifamily Buildings.** Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) through § 110.10(d).
§ 110.10(b)1:	**Minimum Solar Zone Area.** The solar zone must have a minimum total area as described below. The solar zone must comply with access, pathway, smoke ventilation, and spacing requirements as specified in Title 24, Part 9 or other parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area must be comprised of areas that have no dimension less than 5 feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet. For single family residences, the solar zone must be located on the roof or overhang of the building and have a total area no less than 250 square feet. For low-rise multi-family buildings the solar zone must be located on the roof or overhang of the building, or on the roof or overhang of another structure located within 250 feet of the building, or on covered parking installed with the building project, and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area. The solar zone requirement is applicable to the entire building, including mixed occupancy.*
§ 110.10(b)2:	**Azimuth.** All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true north.
§ 110.10(b)3A:	**Shading.** The solar zone must not contain any obstructions, including but not limited to: vents, chimneys, architectural features, and roof mounted equipment.*
§ 110.10(b)3B:	**Shading.** Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.*
§ 110.10(b)4:	**Structural Design Loads on Construction Documents.** For areas of the roof designated as a solar zone, the structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	**Interconnection Pathways.** The construction documents must indicate: a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service; and for single family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system.
§ 110.10(d):	**Documentation.** A copy of the construction documents or a comparable document indicating the information from § 110.10(b) through § 110.10(c) must be provided to the occupant.
§ 110.10(e)1:	**Main Electrical Service Panel.** The main electrical service panel must have a minimum busbar rating of 200 amps.
§ 110.10(e)2:	**Main Electrical Service Panel.** The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation. The reserved space must be permanently marked as "For Future Solar Electric".

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

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STATE OF CALIFORNIA

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79 WOOD LANE
FAIRFAX, CA 94930
APN: 002-062-03
FOR: COBY FRIEDMAN

NEW MANDATORY MEASURES

Revisions
△ PERMIT SUBMITTAL 03-17-2022

Date: 03-17-2022
Scale: As Noted
Drawn: LSK/ MP/ JK
Job #: 19049.00
Prototype: DIVINE

T24-3

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RESIDENTIAL GREEN BUILDING STANDARDS

1. STORM WATER DRAINAGE/RETENTION DURING CONSTRUCTION: PROJECTS WHICH DISTURB LESS THAN ONE ACRE OF SOIL SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION BY ONE OF THE FOLLOWING: (A) RETENTION BASINS; (B) WHERE STORM WATER IS CONVEYED TO A PUBLIC DRAINAGE SYSTEM, WATER SHALL BE FILTERED BY USE OF A BARRIER SYSTEM, WATTLE, OR OTHER APPROVED SYSTEM. CGC §4.106.2.

2. SITE GRADING OR DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS (SWALES, WATER COLLECTION, FRENCH DRAINS, ETC.). CGC §4.106.3.

3. BUILDING MEETS OR EXCEEDS THE REQUIREMENTS OF THE CA BUILDING ENERGY EFFICIENCY STANDARDS. SEE SHEETS T24-1 AND T24-2 FOR DOCUMENTS.

4. INDOOR WATER USE – VERIFY WATER CONSERVING FIXTURES ARE USED (WATER CLOSETS SHALL USE NO MORE THAN 1.28 gpf; KITCHEN FAUCETS MAY NOT EXCEED 1.8 gpm @ 60 psi; LAVATORIES MAY NOT EXCEED 1.5 gpm @ 60 psi, AND NO LESS THAN 0.8 gpm @ 20 psi; SHOWERHEADS MAY NOT EXCEED 1.8 gpm @ 80 psi. CPC §403, §408. CGC §4.303.1.

5. PLUMBING FIXTURES AND FITTINGS REQUIRED IN CGC §4.303.1 SHALL BE INSTALLED IN ACCORDANCE WITH THE CA PLUMBING CODE, AND SHALL MEET THE APPLICABLE REFERENCED STANDARDS.

6. ANNULAR SPACES AROUND PIPES, ELECTRICAL CABLES, CONDUITS, OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.

7. RECYCLING: RECYCLE AND/ OR SALVAGE FOR A REUSE A MINIMUM OF 65% OF NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH THE REPORTING STANDARDS OUTLINED BY ZERO WASTE MARIN. ANY MIXED RECYCLABLES THAT ARE SENT TO A MIXED-WASTE RECYCLING FACILITY SHALL INCLUDE A QUALIFIED THIRD PARTY VERIFIED FACILITY AVERAGE DIVERSION RATE. CAL Green §A4.408.1.

8. OPERATION AND MAINTENANCE MANUAL: THE BUILDER IS TO PROVIDE AN OPERATION MANUAL (CONTAINING INFORMATION FOR MAINTAINING APPLIANCES, ETC.) FOR THE OWNER AT THE TIME OF FINAL INSPECTION. CPC §4.410.1.

9. DUCT OPENINGS AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED DURING CONSTRUCTION.

10. ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS.

11. PAINTS, STAINS AND COATINGS, SHALL BE COMPLIANT WITH VOC LIMITS.

12. AEROSOL PAINTS AND OTHER COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR ROC AND OTHER TOXIC COMPOUNDS.

13. DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED.

14. CARPET AND CARPET SYSTEMS SHALL BE COMPLIANT WITH VOC LIMITS.

15. 80% OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH THE VOC EMISSION LIMITS ESTABLISHED IN CGC §4.504.4.
    TIER 1: 90% OF RESILIENT FLOORING FLOOR AREA SHALL COMPLY WITH VOC EMISSION LIMITS
    TIER 2: 100% OF RESILIENT FLOORING FLOOR AREA SHALL COMPLY WITH VOC EMISSION LIMITS

16. PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF) AND HARDWOOD PLYWOOD USED IN INTERIOR FINISH SYSTEMS SHALL COMPLY WITH LOW FORMALDEHYDE EMISSION STANDARDS.

17. CONCRETE SLAB ON GRADE FOUNDATIONS SHALL BE PROVIDED WITH A VAPOR RETARDANT AND CAPILLARY BREAK PER CGC §4.505.2.1. MOISTURE CONTENT OF WOOD SHALL NOT EXCEED 19% BEFORE IT IS ENCLOSED IN CONSTRUCTION. THE MOISTURE CONTENT NEEDS TO BE CERTIFIED BY 1 OF 3 METHODS SPECIFIED IN CGC §4.505.3. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHOULD NOT BE USED IN CONSTRUCTION. THE MOISTURE CONTENT MUST BE DETERMINED BY THE CONTRACTOR BY ONE OF THE METHODS LISTED IN CGC §4.505.3.

18. MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING IS CHECKED BEFORE ENCLOSURE.

19. EACH ENERGY STAR BATHROOM FANS (WITH TUB OR SHOWER) MUST BE MECHANICALLY VENTILATED WITH A HUMIDITY CONTROLLED ENERGY STAR COMPLIANT EXHAUST FAN VENTED DIRECTLY TO THE OUTSIDE, UNLESS OTHERWISE A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM. HUMIDITY CONTROLS SHALL HAVE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT, CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY OF $\leq$ 50% TO A MAXIMUM OF 80%.

20. DUCT SYSTEMS ARE SIZED AND DESIGNED AND EQUIPMENT IS SELECTED USING THE FOLLOWING METHODS:
    a. ESTABLISH HEAT LOSS AND HEAT GAIN VALUES ACCORDING TO ANSI/ACCA 2 MANUAL J-2011 OR EQUIVALENT.
    b. SIZE DUCT SYSTEMS ACCORDING TO ANSI/ACCA 1 MANUAL D-2014 OR EQUIVALENT.
    c. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S-2014 OR EQUIVALENT.

21. HVAC SYSTEM INSTALLERS ARE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS.

22. PRIOR TO FINIAL INSPECTION, THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST PROVIDE BUILDING DEPARTMENT OFFICIAL WRITTEN VERIFICATION THAT ALL APPLICABLE PROVISIONS FROM THE GREEN BUILDING STANDARDS CODE HAVE BEEN IMPLEMENTED AS PART OF CONSTRUCTION PER CGC §102.3.

23. COMPLY WITH LOCAL WATER EFFICIENT LANDSCAPE ORDINANCE.

24. INSTALL ENERGY STAR APPLIANCES.

25. REDUCTION IN CEMENT USE– CEMENT USED IN FOUNDATION DESIGN SHALL BE REDUCED TO NOT LESS THAN 20% FOR TIER 1 COMPLIANCE AND 25% FOR TIER 2 COMPLIANCE. PRODUCTS COMMONLY USED TO REPLACE CEMENT IN CONCRETE MIX DESIGN INCLUDE, BUT ARE NOT LIMITED TO: FLY ASH, SLAG, SILICA FUME, RICE HULL ASH.

26. RECYCLED CONTENT– USE MATERIALS, EQUIVALENT IN PERFORMANCE TO VIRGIN MATERIALS WITH A TOTAL (COMBINED) RECYCLED CONTENT VALUE (RCV) OF:
    TIER 1: NOT LESS THAN 10% OF TOTAL MATERIAL COST.
    TIER 2: NOT LESS THAN 15% OF TOTAL MATERIAL COST.

27. MATERIAL PROTECTION– PROTECT BUILDING MATERIALS DELIVERED TO THE CONSTRUCTION SITE FROM RAIN AND OTHER SOURCES OF MOISTURE.

28. MATERIAL PROTECTION– PROTECT BUILDING MATERIALS DELIVERED TO THE CONSTRUCTION SITE FROM RAIN AND OTHER SOURCES OF MOISTURE.

29. THERMAL INSULATION– INSTALLED THERMAL INSULATION SHALL COMPLY WITH VOC LIMITS.

MARIN COUNTY 2019 CALGREEN CHECKLIST
Tier 1 Standards for Residential New Construction

This checklist is effective January 1, 2020, for newly constructed hotels, motels, lodging houses, dwellings, dormitories, condominiums, shelters, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without a common toilet or cooking facilities including accessory buildings, facilities and uses thereto. Existing site and landscaping improvements that are not otherwise disturbed are not subject to CALGreen.

Submit this checklist with your plans to demonstrate compliance with the green building ordinance. This checklist includes modifications *specific to* Marin County. For more information on the County's Green Building requirements, please visit www.maringreenbuilding.org

For more information on CALGreen and complete measure language, see Chapters 4 and Appendix 4 here: https://codes.iccsafe.org/content/CAGBSC2019/table-of-contents

PROJECT DETAILS

79 Wood Lane, Fairfax CA	002-062-03
Project Address	APN
Laura Kehrlein, Architect	
Applicant Name (Please Print)	

PROJECT VERIFICATION

The Green Building Rater, listed below, has reviewed the plans and certifies that the mandatory and elective measures listed above are hereby incorporated into the project plans and will be implemented into the project in accordance with the requirements set forth in the 2019 California Green Building Standards Code as amended by the County of Marin.

Signature	03-22-2022
	Date
Laura Kehrlein	
Name (Please Print)	
LEED AP 10754075	
Green Building Certification[1] and License Number	

[1] CALGreen Special Inspector, LEED AP, or Green Point Rater are acceptable certifications

MARIN COUNTY 2019 CALGREEN CHECKLIST
Tier 1 Standards for Residential New Construction

DIVISION 4.1 PLANNING AND DESIGN

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

A minimum of TWO elective measures must be completed/selected.

4.106.2 (MANDATORY) A plan is developed and implemented to manage stormwater runoff from the construction activities through compliance with the County of Marin's stormwater management ordinance.
Link: County of Marin's stormwater management ordinance
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Civil Site Plan Drawing 1

4.106.3 (MANDATORY) Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Civil Site Plan Drawing 1

A4.106.2.3 (MANDATORY) Displaced topsoil shall be stockpiled for reuse in a designated area and covered or protected from erosion.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Civil Notes and Details Drawing 2

A4.106.4 (MANDATORY) Permeable paving is utilized for not less than 20 percent of the total parking, walking, or patio surfaces.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Arch Site Plan 1/A1, Civil Site Plan Drawing 1

A4.106.5 (MANDATORY) Roofing materials shall have a minimum 3-year aged solar reflectance and thermal emittance or a minimum Solar Reflectance Index (SRI) equal to or greater than the values specified in Tables A4.106.5.1(3).
In Marin County, this measure applies only to high-rise residential buildings, hotels, and motels with a roof slope >2:12.
Completed ☐ N/A ■ *Plan sheet reference (if applicable):*

A4.106.8.1 (MANDATORY) For one- and two-family dwellings and townhouses with attached private garages, install a dedicated 208/240-volt branch circuit, including an overcurrent protective device rated at 40 amperes minimum per dwelling unit for future EV charging, as required in the Marin County Building Code, Chapter 19.04, Subchapter 2.
Link: Marin County Building Code, Chapter 19.04, Subchapter 2
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* See Floor Plan keynote #23 on sheet A2.2

A4.106.8.2 (MANDATORY) For multi-family dwellings and new hotels/motels, provide capability for future electrical vehicle charging as specified in the Marin County Building Code, Chapter 19.04, Subchapter 2.
Link: Marin County Building Code, Chapter 19.04, Subchapter 2
Completed ☐ N/A ■ *Plan sheet reference (if applicable):*

A4.103.1 Site Selection (ELECTIVE) - Selection ■
Plan sheet reference (if applicable): Infill site development

MARIN COUNTY 2019 CALGREEN CHECKLIST
Tier 1 Standards for Residential New Construction

A4.103.2 Site Selection (ELECTIVE)- Community connectivity ☐
Plan sheet reference (if applicable):

A4.104 Site Preservation (ELECTIVE)- Supervision and education ☐
Plan sheet reference (if applicable):

A4.105.1 Deconstruction and Reuse of Existing Materials (ELECTIVE)- General ☐
Plan sheet reference (if applicable):

A4.105.2 Deconstruction and Reuse of Existing Materials (ELECTIVE)- Reuse of materials ☐
Plan sheet reference (if applicable):

A4.106.6 Site Development (ELECTIVE)- Vegetated roof ☐
Plan sheet reference (if applicable):

A4.106.7 Site Development (ELECTIVE)- Reduction of heat island effect for nonroof areas ☐
Plan sheet reference (if applicable):

A4.106.9 Site Development (ELECTIVE)- Bicycle parking ☐
Plan sheet reference (if applicable):

A4.106.10 Site Development (ELECTIVE)- Light pollution reduction ■
Plan sheet reference (if applicable): Dark Sky compliant lighting, see note on exterior finish schedule sheet A3.1.

A4.306.1 Innovative Concepts and Local Environmental Conditions (ELECTIVE) ☐
Plan sheet reference (if applicable):

DIVISION 4.2 ENERGY EFFICIENCY

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

4.201.1 (MANDATORY) Building meets or exceeds the requirements of the California Building Energy Efficiency Standards, and complies with one of the energy efficiency and electrification compliance options outlined in the Marin County Building Code, Chapter 19.04, Subchapter 2.
Link: Marin County Building Code, Chapter 19.04, Subchapter 2
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* See Energy Report and sheets T24-1, T24-2, T24-3.

A4.203.1.1.1 (MANDATORY) Total Energy Design Rating (Total EDR) and Energy Efficiency Design Rating (Efficiency EDR) for the Proposed Design Building is included in the Certificate of Compliance Documentation
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* See Energy Report and sheets T24-1, T24-2, T24-3.

MARIN COUNTY 2019 CALGREEN CHECKLIST
Tier 1 Standards for Residential New Construction

A4.203.1.3.1 (MANDATORY) Buildings complying with the first level of advanced energy efficiency shall have additional integrated efficiency and onsite renewable energy generation to achieve a Total EDR margin as specified in Marin County Building Code, Chapter 19.04, Subchapter 2, or lower as calculated by Title 24, Part 6 Compliance Software approved by the Energy Commission. This Total EDR is in addition to meeting the Efficiency EDR.
Link: Marin County Building Code, Chapter 19.04, Subchapter 2
Completed ☐ N/A ☐ *Plan sheet reference (if applicable):* See Energy Report and sheets T24-1, T24-2, T24-3.

DIVISION 4.3 WATER EFFICIENCY AND CONSERVATION

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

A minimum of TWO elective measures must be completed/selected.

4.303.1 (MANDATORY) Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) installed in residential buildings shall comply with the prescriptive requirements of Sections 4.303.1.1 through 4.303.1.4.4.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* See Floor Plan keynotes #5, #6, #7 on shts A2.1, A2.2

4.303.1.4.3 (MANDATORY) Metering faucets in residential buildings shall not deliver more than 0.2 gallons per cycle.
Completed ☐ N/A ■ *Plan sheet reference (if applicable):*

4.303.2 (MANDATORY) Plumbing fixtures and fittings required in Section 4.303.1 shall be installed in accordance with the *California Plumbing Code* and shall meet the applicable referenced standards.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #5.

4.304.1 (MANDATORY) Residential developments shall comply with local water efficient landscape ordinance or the current California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #23.

4.305.1 (MANDATORY) Newly constructed residential developments, where disinfected tertiary recycled water is available from a municipal source to a construction site, may be required to have recycled water supply systems installed, allowing the use of recycled water for residential landscape irrigation systems.
Completed ☐ N/A ■ *Plan sheet reference (if applicable):*

A4.303.2 Indoor Water Use (ELECTIVE) - Alternate water sources for nonpotable applications ☐
Plan sheet reference (if applicable):

A4.303.3 Indoor Water Use (ELECTIVE) - Appliances ■
Plan sheet reference (if applicable): See Floor Plan keynote #1and Green Building Note #24.

A4.303.4 Indoor Water Use (ELECTIVE)- Nonwater urinals and waterless toilets ☐
Plan sheet reference (if applicable):

MARIN COUNTY 2019 CALGREEN CHECKLIST
Tier 1 Standards for Residential New Construction

A4.303.5 Indoor Water Use (ELECTIVE) - Hot water recirculation systems ☐
Plan sheet reference (if applicable):

A4.304.1 Outdoor Water Use (ELECTIVE) - Rainwater catchment systems ☐
Plan sheet reference (if applicable):

A4.304.2 Outdoor Water Use (ELECTIVE) - Potable water elimination ☐
Plan sheet reference (if applicable):

A4.304.3 Outdoor Water Use (ELECTIVE) - Landscape water meters ☐
Plan sheet reference (if applicable):

A4.305.1 Water Reuse Systems (ELECTIVE) - Graywater ■
Plan sheet reference (if applicable): Laundry graywater system detail 3/A2.1

A4.305.2 Water Reuse Systems (ELECTIVE) - Recycled water piping ☐
Plan sheet reference (if applicable):

A4.305.3 Water Reuse Systems (ELECTIVE) - Recycled water for landscape irrigation ☐
Plan sheet reference (if applicable):

A4.306.1 Innovative Concepts and Local Environmental Conditions (ELECTIVE) ☐
Plan sheet reference (if applicable):

DIVISION 4.4 MATERIAL CONSERVATION & RESOURCE EFFICIENCY

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

A minimum of TWO elective measures must be completed/selected.

A4.403.2 (MANDATORY) Cement use in foundation mix design is reduced as directed by Marin County Ordinance 3717.
Link: Marin County Ordinance 3717
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #25.

A4.405.3 (MANDATORY) Postconsumer or preconsumer recycled content value (RCV) materials are used on the project, not less than a 10 percent recycled content value.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #26.

4.406.1 (MANDATORY) Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #6.

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

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LICENSED ARCHITECT
LAURA S. KEHRLEIN
NO. C 25466
REN. 01-31-23
STATE OF CALIFORNIA

NEW RESIDENCE AND ADU
79 WOOD LANE
FAIRFAX, CA 94930
APN: 002-062-03
FOR: COBY FRIEDMAN

2019 CalGREEN CHECKLIST

Revisions
PERMIT SUBMITTAL 03-17-2022
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RESIDENTIAL GREEN BUILDING STANDARDS

1. STORM WATER DRAINAGE/RETENTION DURING CONSTRUCTION: PROJECTS WHICH DISTURB LESS THAN ONE ACRE OF SOIL SHALL MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION BY ONE OF THE FOLLOWING: (A) RETENTION BASINS; (B) WHERE STORM WATER IS CONVEYED TO A PUBLIC DRAINAGE SYSTEM, WATER SHALL BE FILTERED BY USE OF A BARRIER SYSTEM, WATTLE, OR OTHER APPROVED SYSTEM. CGC §4.106.2.
2. SITE GRADING OR DRAINAGE SYSTEM WILL MANAGE ALL SURFACE WATER FLOWS TO KEEP WATER FROM ENTERING BUILDINGS (SWALES, WATER COLLECTION, FRENCH DRAINS, ETC.). CGC §4.106.3.
3. BUILDING MEETS OR EXCEEDS THE REQUIREMENTS OF THE CA BUILDING ENERGY EFFICIENCY STANDARDS. SEE SHEETS T24-1 AND T24-2 FOR DOCUMENTS.
4. INDOOR WATER USE – VERIFY WATER CONSERVING FIXTURES ARE USED (WATER CLOSETS SHALL USE NO MORE THAN 1.28 gpf; KITCHEN FAUCETS MAY NOT EXCEED 1.8 gpm @ 60 psi; LAVATORIES MAY NOT EXCEED 1.5 gpm @ 60 psi, AND NO LESS THAN 0.8 gpm @ 20 psi; SHOWERHEADS MAY NOT EXCEED 1.8 gpm @ 80 psi. CPC §403, §408. CGC §4.303.1.
5. PLUMBING FIXTURES AND FITTINGS REQUIRED IN CGC §4.303.1 SHALL BE INSTALLED IN ACCORDANCE WITH THE CA PLUMBING CODE, AND SHALL MEET THE APPLICABLE REFERENCED STANDARDS.
6. ANNULAR SPACES AROUND PIPES, ELECTRICAL CABLES, CONDUITS, OR OTHER OPENINGS IN PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING SUCH OPENINGS WITH CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD ACCEPTABLE TO THE ENFORCING AGENCY.
7. RECYCLING: RECYCLE AND/ OR SALVAGE FOR A REUSE A MINIMUM OF 65% OF NONHAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH THE REPORTING STANDARDS OUTLINED BY ZERO WASTE MARIN. ANY MIXED RECYCLABLES THAT ARE SENT TO A MIXED-WASTE RECYCLING FACILITY SHALL INCLUDE A QUALIFIED THIRD PARTY VERIFIED FACILITY AVERAGE DIVERSION RATE. CAL Green §A4.408.1.
8. OPERATION AND MAINTENANCE MANUAL: THE BUILDER IS TO PROVIDE AN OPERATION MANUAL (CONTAINING INFORMATION FOR MAINTAINING APPLIANCES, ETC.) FOR THE OWNER AT THE TIME OF FINAL INSPECTION. CPC §4.410.1.
9. DUCT OPENINGS AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED DURING CONSTRUCTION.
10. ADHESIVES, SEALANTS AND CAULKS SHALL BE COMPLIANT WITH VOC AND OTHER TOXIC COMPOUND LIMITS.
11. PAINTS, STAINS AND COATINGS, SHALL BE COMPLIANT WITH VOC LIMITS.
12. AEROSOL PAINTS AND OTHER COATINGS SHALL BE COMPLIANT WITH PRODUCT WEIGHTED MIR LIMITS FOR ROC AND OTHER TOXIC COMPOUNDS.
13. DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED.
14. CARPET AND CARPET SYSTEMS SHALL BE COMPLIANT WITH VOC LIMITS.
15. 80% OF FLOOR AREA RECEIVING RESILIENT FLOORING SHALL COMPLY WITH THE VOC EMISSION LIMITS ESTABLISHED IN CGC §4.504.4.
    TIER 1: 90% OF RESILIENT FLOORING FLOOR AREA SHALL COMPLY WITH VOC EMISSION LIMITS
    TIER 2: 100% OF RESILIENT FLOORING FLOOR AREA SHALL COMPLY WITH VOC EMISSION LIMITS
16. PARTICLEBOARD, MEDIUM DENSITY FIBERBOARD (MDF) AND HARDWOOD PLYWOOD USED IN INTERIOR FINISH SYSTEMS SHALL COMPLY WITH LOW FORMALDEHYDE EMISSION STANDARDS.
17. CONCRETE SLAB ON GRADE FOUNDATIONS SHALL BE PROVIDED WITH A VAPOR RETARDANT AND CAPILLARY BREAK PER CGC §4.505.2.1. MOISTURE CONTENT OF WOOD SHALL NOT EXCEED 19% BEFORE IT IS ENCLOSED IN CONSTRUCTION. THE MOISTURE CONTENT NEEDS TO BE CERTIFIED BY 1 OF 3 METHODS SPECIFIED IN CGC §4.505.3. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHOULD NOT BE USED IN CONSTRUCTION. THE MOISTURE CONTENT MUST BE DETERMINED BY THE CONTRACTOR BY ONE OF THE METHODS LISTED IN CGC §4.505.3.
18. MOISTURE CONTENT OF BUILDING MATERIALS USED IN WALL AND FLOOR FRAMING IS CHECKED BEFORE ENCLOSURE.
19. EACH ENERGY STAR BATHROOM FANS (WITH TUB OR SHOWER) MUST BE MECHANICALLY VENTILATED WITH A HUMIDITY CONTROLLED ENERGY STAR COMPLIANT EXHAUST FAN VENTED DIRECTLY TO THE OUTSIDE, UNLESS OTHERWISE A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM. HUMIDITY CONTROLS SHALL HAVE MANUAL OR AUTOMATIC MEANS OF ADJUSTMENT, CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY OF <u>≤</u> 50% TO A MAXIMUM OF 80%.
20. DUCT SYSTEMS ARE SIZED AND DESIGNED AND EQUIPMENT IS SELECTED USING THE FOLLOWING METHODS.
    a. ESTABLISH HEAT LOSS AND HEAT GAIN VALUES ACCORDING TO ANSI/ACCA 2 MANUAL J-2011 OR EQUIVALENT.
    b. SIZE DUCT SYSTEMS ACCORDING TO ANSI/ACCA 1 MANUAL D-2014 OR EQUIVALENT.
    c. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ANSI/ACCA 3 MANUAL S-2014 OR EQUIVALENT.
21. HVAC SYSTEM INSTALLERS ARE TRAINED AND CERTIFIED IN THE PROPER INSTALLATION OF HVAC SYSTEMS.
22. PRIOR TO FINIAL INSPECTION, THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST PROVIDE BUILDING DEPARTMENT OFFICIAL WRITTEN VERIFICATION THAT ALL APPLICABLE PROVISIONS FROM THE GREEN BUILDING STANDARDS CODE HAVE BEEN IMPLEMENTED AS PART OF CONSTRUCTION PER CGC §102.3.
23. COMPLY WITH LOCAL WATER EFFICIENT LANDSCAPE ORDINANCE.
24. INSTALL ENERGY STAR APPLIANCES.
25. <u>REDUCTION IN CEMENT USE</u>– CEMENT USED IN FOUNDATION DESIGN SHALL BE REDUCED TO NOT LESS THAN 20% FOR TIER 1 COMPLIANCE AND 25% FOR TIER 2 COMPLIANCE. PRODUCTS COMMONLY USED TO REPLACE CEMENT IN CONCRETE MIX DESIGN INCLUDE, BUT ARE NOT LIMITED TO: FLY ASH, SLAG, SILICA FUME, RICE HULL ASH.
26. <u>RECYCLED CONTENT</u>– USE MATERIALS, EQUIVALENT IN PERFORMANCE TO VIRGIN MATERIALS WITH A TOTAL (COMBINED) RECYCLED CONTENT VALUE (RCV) OF:
    TIER 1: NOT LESS THAN 10% OF TOTAL MATERIAL COST.
    TIER 2: NOT LESS THAN 15% OF TOTAL MATERIAL COST.
27. <u>MATERIAL PROTECTION</u>– PROTECT BUILDING MATERIALS DELIVERED TO THE CONSTRUCTION SITE FROM RAIN AND OTHER SOURCES OF MOISTURE.
28. <u>MATERIAL PROTECTION</u>– PROTECT BUILDING MATERIALS DELIVERED TO THE CONSTRUCTION SITE FROM RAIN AND OTHER SOURCES OF MOISTURE.
29. <u>THERMAL INSULATION</u>– INSTALLED THERMAL INSULATION SHALL COMPLY WITH VOC LIMITS.

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Tier 1 Standards for <u>Residential New Construction</u>

4.408.1 (MANDATORY) Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with the reporting standards outlined by Zero Waste Marin.
Link: Zero Waste Marin
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #7.

A4.408.1 (MANDATORY) Construction waste generated at the site is diverted to recycle or salvage in compliance with at least a 65 percent reduction. Any mixed recyclables that are sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #7.

4.410.1 (MANDATORY) An operation and maintenance manual shall be provided to the building occupant or owner.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #8.

4.410.2 (MANDATORY) Where 5 or more multifamily dwelling units are constructed on a building site, provide readily accessible areas that serve all buildings on the site and is 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.
Completed ☐ N/A ■ *Plan sheet reference (if applicable):*

A4.403.1 Foundation Systems (ELECTIVE) - Frost protected foundation systems ☐
Plan sheet reference (if applicable):

A4.404.1 Efficient Framing Techniques (ELECTIVE) - Lumber size ☐
Plan sheet reference (if applicable):

A4.404.2 Efficient Framing Techniques (ELECTIVE) - Dimensions and layouts ☐
Plan sheet reference (if applicable):

A4.404.3 Efficient Framing Techniques (ELECTIVE) - Building systems ☐
Plan sheet reference (if applicable):

A4.404.4 Efficient Framing Techniques (ELECTIVE) - Pre-cut materials and details ☐
Plan sheet reference (if applicable):

A4.405.1 Material Sources (ELECTIVE) - Prefinished building materials ☐
Plan sheet reference (if applicable):

A4.405.2 Material Sources (ELECTIVE) - Concrete floors ☐
Plan sheet reference (if applicable):

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Tier 1 Standards for <u>Residential New Construction</u>

A4.405.4 Material Sources (ELECTIVE) - Use of building materials from rapidly renewable sources ☐
Plan sheet reference (if applicable):

A4.407.1 Water Resistance and Moisture Management (ELECTIVE) - Drainage around foundations ■
Plan sheet reference (if applicable): See detail 3/A4.1

A4.407.2 Water Resistance and Moisture Management (ELECTIVE) -Roof drainage ■
Plan sheet reference (if applicable): Civil Site Plan Drawing 1

A4.407.3 Water Resistance and Moisture Management (ELECTIVE) - Flashing details ☐
Plan sheet reference (if applicable):

A4.407.4 Water Resistance and Moisture Management (ELECTIVE) - Material protection ■
Plan sheet reference (if applicable): Green Building Note #27.

A4.407.6 Water Resistance and Moisture Management (ELECTIVE) - Door protection ☐
Plan sheet reference (if applicable):

A4.407.7 Water Resistance and Moisture Management (ELECTIVE) - Roof overhangs ☐
Plan sheet reference (if applicable):

A4.411.1 Innovative Concepts and Local Environmental Conditions (ELECTIVE) ☐
Plan sheet reference (if applicable):

DIVISION 4.5 ENVIRONMENTAL QUALITY

Note: All measures are mandatory unless not in project scope (Select Completed or Not Applicable [N/A])

A minimum of ONE elective measure must be completed/selected.

4.503.1 (MANDATORY) Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with the 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 including the County of Marin Municipal Code (Wood-Burning Devices).
Link: County of Marin Municipal Code (Wood-Burning Devices)
Completed ☐ N/A ■ *Plan sheet reference (if applicable):* No gas fireplace.

4.504.1 (MANDATORY) Duct openings and other related air distribution component openings shall be covered during construction.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #9.

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Tier 1 Standards for <u>Residential New Construction</u>

4.504.2.1 (MANDATORY) Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #10.

4.504.2.2 (MANDATORY) Paints, stains and other coatings shall be compliant with VOC limits.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #11.

4.504.2.3 (MANDATORY) Aerosol paints and coatings shall be compliant with product weighted MIR Limits for ROC and other toxic compounds.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #12.

4.504.2.4 (MANDATORY) Documentation shall be provided to verify that compliant VOC limit finish materials have been used.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #13.

4.504.3 (MANDATORY) Carpet and carpet systems shall be compliant with VOC limits.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #14.

4.504.4 (MANDATORY) 80 percent of floor area receiving resilient flooring shall comply with specified VOC criteria.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #15.

4.504.5 (MANDATORY) Particleboard, medium density fiberboard (MDF), and hardwood plywood used in interior finish systems shall comply with low formaldehyde emission standards.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #16.

A4.504.2 (MANDATORY) Install VOC compliant resilient flooring systems. Ninety (90) percent of floor area receiving resilient flooring shall comply with the VOC-emission limits established in section A4.504.2.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #15.

A4.504.3 (MANDATORY) Thermal insulation installed in the building shall install thermal insulation in compliance with VOC limits.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #29.

4.505.2 (MANDATORY) Vapor retarder and capillary break is installed at slab on grade foundations.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #17.

4.505.3 (MANDATORY) Moisture content of building materials used in wall and floor framing is checked before enclosure.
Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #18.

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Tier 1 Standards for <u>Residential New Construction</u>

4.506.1 (MANDATORY) Each bathroom shall be provided with the following:

1. ENERGY STAR fans ducted to terminate outside the building.
2. Fans must be controlled by a humidity control (Separate or built-in); OR functioning as a component of a whole-house ventilation system.
3. Humidity controls with manual or automatic means of adjustment, capable of adjustment between a relative humidity range of ≤ 50 percent to a maximum of 80 percent.

Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #19.

4.507.2 (MANDATORY) Duct systems are sized, designed, and equipment is selected using the following methods:

1. Establish heat loss and heat gain values according to ANSI/ACCA 2 Manual J-2016 or equivalent.
2. Size duct systems according to ANSI/ACCA 1 Manual D - 2016 or equivalent.
3. Select heating and cooling equipment according to ANSI/ACCA 3 Manual S-2014 or equivalent.

Completed ■ N/A ☐ *Plan sheet reference (if applicable):* Green Building Note #20.

A5.5041. Pollutant Control (ELECTIVE) - Compliance with formaldehyde limits ☐
Plan sheet reference (if applicable):

A5.506.2 Indoor Air Quality and Exhaust (ELECTIVE) - Construction filter ☐
Plan sheet reference (if applicable):

A5.506.3 Indoor Air Quality and Exhaust (ELECTIVE) - Direct-vent appliances ☐
Plan sheet reference (if applicable):

A5.509.1 Innovative Concepts and Local Environmental Conditions (ELECTIVE) ☐
Plan sheet reference (if applicable):

REVIEWED FOR CODE COMPLIANCE
BY COASTLAND CIVIL ENGINEERING, INC.
IN ACCORDANCE WITH CBC §107.3.1 AS
AMENDED BY THE LOCAL AGENCY.

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2019 CalGREEN CHECKLIST

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