" DAN LEATHERWOOD "

996 COULTER PINE ROAD
CRESTLINE, CA 92325

REVISION	DATE
STR.	10/24/23
SGN.	00/00/00
CNTY.	00/00/00
CORT.	00/00/00
CORT.	00/00/00

Bryant Bergeson
CONSULTING ENGINEER
(RCE 48805)
P.O. BOX 6885
CRESTLINE , CA. 92325

KADTEC
DESIGN ENGINEERING
26748 HWY 189, BLUE JAY (909) 336-6970

PROJECT PLAN NOTES

1. NO CHANGES ARE TO BE MADE ON THESE PLANS WITHOUT THE KNOWLEDGE OR CONSENT OF THE ARCHITECT / ENGINEER WHOSE SIGNATURE APPEARS HEREON.
2. DIMENSIONS AS INDICATED ARE THE DIMENSIONS TO BE USED FOR CONSTRUCTION. DO NOT SCALE DRAWINGS.
3. NO FRAMING OF ANY TYPE TO BE CONCEALED PRIOR TO INSPECTION BY GOVERNING AGENCIES.
4. REFERENCES TO ANY DETAIL OR DRAWINGS IS FOR CONVENIENCE ONLY AND DOES NOT LIMIT THE APPLICATION OF SUCH DETAIL OR DRAWINGS.
5. DIMENSIONS AND CONDITIONS AT THE JOB SITE SHALL BE VERIFIED BY ALL CONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE ALL THE CONDITIONS PRIOR TO SUBMITTING BIDS TO THE OWNER SINCE PROPOSALS MUST TAKE INTO CONSIDERATION ALL SUCH DISCREPANCIES IN THE DRAWINGS OR BETWEEN THE DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER AND TO THE OWNER. CORRECTED DRAWINGS OF INSTRUCTIONS SHALL BE ISSUED BY THE ENGINEER PRIOR TO THE INSTALLATION OF ANY WORK. ALL DIMENSIONS ARE TO BE ROUGH UNLESS OTHERWISE NOTED.
6. ALL WORK, CONSTRUCTION AND MATERIALS SHALL COMPLY WITH ALL PROVISIONS OF THE BUILDING CODE AND WITH OTHER RULES, REGULATIONS AND ORDINANCES GOVERNING THE PLACE OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF ANYONE SUPPLYING LABOR OR MATERIAL OR BOTH TO BRING TO THE ATTENTION OF KADTEC CONSULTANTS AND THE OWNER ANY DISCREPANCIES OR CONFLICT BETWEEN THE REQUIREMENTS OF THE CODE AND THE DRAWINGS. THE APPLICABLE CODES SHALL INCLUDE, (SEE CODES AND REQUIREMENTS NOTED BELOW)
7. THESE DRAWINGS DO NOT CONTAIN THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
8. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND SHALL NOTIFY KADTEC OF ANY DISCREPANCIES IMMEDIATELY BEFORE COMMENCING ANY WORK.
9. NOTES: IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL SHEETS OF THE CONSTRUCTION DOCUMENTS AND CONDITIONS ON SITE.
10. THE GENERAL BUILDING PERMIT AND PLAN CHECK SHALL BE SECURED AND PAID FOR BY THE OWNER AND OR CONTRACTOR. ALL OTHER PERMITS SHALL BE SECURED AND PAID FOR BY THE SUBCONTRACTOR DIRECTLY RESPONSIBLE.
11. THE OWNER MAY ORDER EXTRA WORK OR MAKE CHANGES BY ALTERING, ADDING TO OR DEDUCTING FROM THE WORK, THE CONTRACT SUM BEING ADJUSTED ACCORDINGLY.
12. ALL TRADES SHALL, AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR WORK. AT THE COMPLETION OF THE WORK, REMOVE ALL RUBBISH, TOOLS, SCAFFOLDING, SURPLUS MATERIALS AND LEAVE THE JOB IN A BROOM CLEAN CONDITION.
13. ALL EXIT DOORS MUST BE OPERABLE FROM INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.
14. CONTRACTOR SHALL PROVIDE ALL NECESSARY CEILING OR WALL ACCESS PANELS (OR ACCESS DOORS) AS REQUIRED BY GOVERNING AGENCIES FOR AIR CONDITIONING, AND ELECTRICAL SYSTEMS. PROVIDE APPROVED ASSEMBLIES WITH SELF-CLOSING DEVICES IN 1-HOUR RATED CONSTRUCTION.

DESIGNER NOTES:

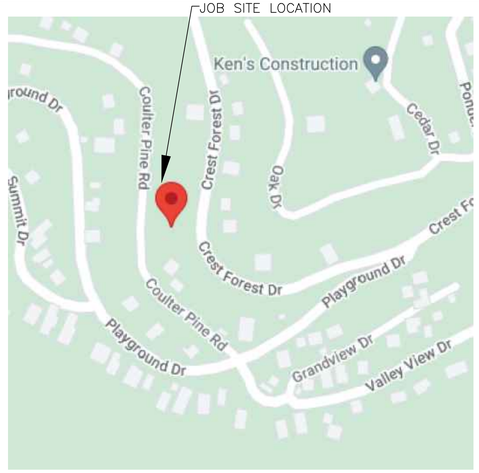
1. THIS SET OF PLANS, PER CONTRACT WITH KADTEC, IS A BUILDERS SET OF PLANS. THIS MEANS THAT NOT ALL DETAILS AND SPECIFICATIONS ARE PROVIDED AND THE GENERAL CONTRACTOR AND SUBCONTRACTOR WILL BE REQUIRED TO HAVE GENERAL CONSTRUCTION KNOWLEDGE TO COMPLETE THE STRUCTURE.
2. ANY CHANGES OR DEVIATIONS FROM THESE PLANS WITHOUT WRITTEN CONSENT OF AN AUTHORIZED KADTEC EMPLOYEE RELEASES THE PROJECT DESIGNER AND KADTEC FROM ANY LIABILITY FOR THE ENTIRE PROJECT.
3. THE ENTIRE STRUCTURE SHALL BE RETROFITTED TO COMPLY WHEN ANY ADDITION, ALTERATION, ENLARGEMENT OR RECONSTRUCTION EQUALS OR EXCEED 50% OF THE EXISTING STRUCTURE. THE ENTIRE ROOF SHALL BE RETROFITTED TO COMPLY WHEN 25% OR MORE OF THE EXISTING ROOFING IS REPLACED OR REPAIRED.
4. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT WILL BE REQUIRED FOR ALL DEVELOPMENT PROJECTS, PRIOR TO BUILDING PERMIT FINAL APPROVAL THE PROPERTY SHALL BE IN COMPLIANCE WITH THE VEGETATION CLEARANCE REQUIREMENTS PRESCRIBED IN CALIFORNIA PUBLIC RESOURCES CODE 4291 AND CALIFORNIA GOVERNMENT CODE SECTION 51182.
5. THE OWNER AND OR GENERAL/FRAMING CONTRACTOR ARE RESPONSIBLE TO REVIEW AND VERIFY ALL SHEAR SCHEDULED FOR THIS PROJECT. ALL SHEAR NAILING, SIMPSON STRONG-WALLS, HARDY FRAMES AND ANY OTHER ALTERNATIVE SHEAR STRUCTURE ARE TO BE INSTALLED AND LOCATED PER PLANS, ANY INCONSISTENCIES OR NECESSARY STRUCTURAL CHANGES ARE TO BE ADDRESSED BY THE ENGINEER OF RECORD BEFORE MOVING FORWARD WITH THE PROJECT IN QUESTION. STRUCTURAL CHANGES MADE DURING CONSTRUCTION THAT ARE NOT REVIEWED BY THE ENGINEER OF RECORD ARE LEGALLY THE RESPONSIBILITY OF THE OWNERS AND OR CONTRACTORS INVOLVED.

CSG CONSULTANTS, INC.
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE.
By _____
Date 11/9/2023
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS

COUNTY APPROVED PLANS AND CALCS (8 PAGES)
ALTR-2023-01092

County of San Bernardino
BUILDING AND SAFETY
THESE PLANS AND DETAILS ARE
APPROVED
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF ANY CODE OR ORDINANCE OF THIS COUNTY.
By _____
Date : 11/09/2023
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS

PROJECT VICINITY MAP (NOT TO SCALE)



STRUCTURAL OBSERVATIONS:

PER CBC 1704.6 THE OWNER OR AUTHORIZED AGENT SHALL EMPLOY A PROFESSIONAL ENGINEER TO PERFORM STRUCTURAL OBSERVATIONS OF THE FOLLOWING:

	DATE	SIGNATURE
FOOTINGS		
FOUNDATION STEEL		
FOUNDATION BOLTS		

SPECIAL INSPECTIONS

REQUIRED SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE, 1705.12.2

FOR THE SEISMIC FORCE-RESISTING SYSTEMS OF STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F:

* CONTINUOUS SPECIAL INSPECTION SHALL BE REQUIRED DURING FIELD GLUING OPERATIONS OF ELEMENTS OF THE SEISMIC FORCE-RESISTING SYSTEM.
* PERIODIC SPECIAL INSPECTION SHALL BE REQUIRED FOR NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF ELEMENTS OF THE SEISMIC FORCE- RESISTING SYSTEM, INCLUDING WOOD SHEAR WALLS, WOOD DIAPHRAGMS, DRAG STRUTS, BRACES, SHEAR PANELS AND HOLD-DOWNS.

NOTE: SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WOOD SHEAR WALLS, SHEAR PANELS AND DIAPHRAGMS...WHERE THE FASTENER SPACING OF THE SHEATHING IS MORE THAN 4 INCHES ON CENTER.

RESIDENTIAL CONCRETE FOUNDATION DESIGN WITHOUT A SOILS REPORT

SAN BERNARDINO COUNTY "RESIDENTIAL CONCRETE FOUNDATION DESIGN WITHOUT A SOILS REPORT" REQUIREMENTS PER IB2019-0005 CODE EFFECTIVE DATE: JANUARY 15, 2020

1.0...CONCRETE FOUNDATION DESIGN REQUIREMENTS FOR RESIDENTIAL DWELLINGS LOCATED IN NON-GEOLOGICAL HAZARD LOCATIONS (SUCH AS LIQUEFACTION, LANDSLIDE, ALQUIST PRIOLO ZONE, ETC.) WHEN NO SOILS REPORT IS PROVIDED. RESIDENTIAL DWELLINGS INCLUDE CONSTRUCTION OF SINGLE-FAMILY RESIDENCES, DUPLEXES, TOWNHOUSES, ACCESSORY DWELLING UNITS, GUEST HOUSES, AND ROOM ADDITIONS. THIS...REPLACES STANDARD OPERATING PROCEDURE BSN-00.04 – ALTERNATE GEOTECHNICAL/LIMITED SOIL INVESTIGATION REPORTS FOR SINGLE FAMILY RESIDENTIAL PROJECTS. 2.0 ...UPDATED JANUARY 15, 2020

3.0 POLICY/PROCEDURE:

FOR RESIDENTIAL DWELLINGS OF NO MORE THAN 2 STORIES: EITHER; A SOILS REPORT IS REQUIRED FOR THE CONSTRUCTION OF RESIDENTIAL DWELLINGS,

OR; IN LIEU OF THE REQUIRED SOILS REPORT, WHERE THE GROUND SLOPE IS LESS THAN 5:1, STRUCTURAL CONCRETE FOUNDATIONS MAY BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH AS FOLLOWS:

GENERAL REQUIREMENTS

A.ALL EXTERIOR WALLS AND INTERIOR BEARING WALLS SHALL BE SUPPORTED ON CONTINUOUS FOOTINGS.

B.THE MINIMUM DEPTH OF FOOTINGS BELOW THE NATURAL AND FINISH GRADE SHALL BE 24 INCHES FOR THE EXTERIOR AND 18 INCHES FOR THE INTERIOR FOOTINGS.

C.THE MINIMUM WIDTH OF FOOTINGS SHALL BE 12 INCHES FOR SUPPORTING 1-STORY BUILDING OR 15 INCHES FOR SUPPORTING 2-STORY BUILDING.

D.FOOTINGS SHALL BE REINFORCED WITH FOUR CONTINUOUS #4 REINFORCING STEEL BARS. TWO BARS SHALL BE PLACED WITHIN 4 INCHES FROM THE BOTTOM OF THE FOOTINGS AND TWO BARS PLACED WITHIN 4 INCHES FROM THE TOP OF THE FOOTINGS WITH A MINIMUM CONCRETE COVER PER ACI 318 SECTION 7.7.1.

E.DRAINAGE ADJACENT TO FOOTINGS SHALL BE DIRECTED AWAY FROM THE STRUCTURE BY SLOPED FINISH GRADE AT LEAST 2 PERCENT FOR A DISTANCE OF 4 FEET.

EXCEPTION: WHERE LOT LINES, WALLS, SLOPES OR OTHER PHYSICAL BARRIERS PROHIBIT SLOPE WITHIN 10 FEET, DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED NOT LESS THAN 2 PERCENT AWAY FROM THE BUILDING.

SLAB-ON-GRADE FOUNDATION

F.CONCRETE SLABS ON GRADE SHALL HAVE A THICKNESS OF AT LEAST 4 INCHES WITH #4 REINFORCING STEEL BARS PLACED AT MID-SLAB AND SPACED AT INTERVALS NOT EXCEEDING 16 INCHES EACH WAY. SLABS SHALL BE PLACED ON A 4-INCH COARSE AGGREGATE OR A 2-INCH CLEAN SAND OVER A VAPOR BARRIER MEMBRANE OF MINIMUM 6-MIL THICKNESS.

G.THE SOIL BELOW INTERIOR CONCRETE SLABS SHALL BE PRE-SATURATED TO A DEPTH OF 18 INCHES PRIOR TO POURING THE CONCRETE.

H.#4 DOWELS SPACED AT 16 INCHES, BENT AT 90 DEGREES, AND EXTENDED 2 FEET INTO THE SLAB AND 2 FOOT INTO THE FOOTING SHALL BE PROVIDED.

EXCEPTION: DOWELS MAY BE OMITTED IF SLABS AND FOOTINGS ARE POURED MONOLITHICALLY.

RAISED FLOOR FOUNDATION

I. THE STEM WALL SHALL BE OF CONCRETE OR MASONRY WITH A MINIMUM THICKNESS OF 8 INCHES.

ADDITIONAL REQUIREMENTS

J.THE ALLOWABLE LOAD-BEARING PRESSURE IN REFERENCE TO THE DESIGN OF STRUCTURAL FOUNDATIONS SHALL NOT EXCEED 1,500 PSF.

K.CONCRETE SHALL BE NORMAL WEIGHT WITH MINIMUM COMPRESSIVE STRENGTH OF f'c = 2,500 PSI AT 28 DAYS.

L. THE BUILDING INSPECTOR MAY REQUIRE COMPACTION TESTING OR A SOILS REPORT IF QUESTIONABLE SITE CONDITIONS EXIST.

EXISTING 2- STORY HOME AREA SUMMARY

EXISTING DECK & DEMO AREA
573 SQ.FT.

SCOPE OF PROJECT

DEMOLISH EXISTING SNOW FAILING DECK AND BOARD UP EGRESS DOOR FOR FALL PROTECTION UNTIL DECK IS BUILT. ALSO TEMPORARY SHORING UNDER FAILING EXTERIOR BEARING WALL.

RETAINING WALL & GRADING SUMMARY

"NO" SEPARATE RETAINING WALLS PROPOSED.

"NO" SITE GRADING PROPOSED

CODES AND REQUIREMENTS

OCCUPANCY: R-3 / U
TYPE OF CONSTRUCTION: V-B
FIRE SPRINKLERS: (NO) SEE FIRE LETTER FOR THIS PROJECT. SPRINKLER PLAN UNDER SEPARATE PERMIT

BUILDING CODE STANDARDS:
2022 CBC
2022 CRC
2022 CPC
2022 CMC
2022 CEC
2022 CGBC (CAL GREEN)
2022 CALIFORNIA T-24 ENERGY CODE
AND LOCAL SAN BERNARDINO COUNTY / CITY BLDG. CODES

NOTE: THIS PROJECT MUST COMPLY WITH ALL 2022 GREEN BUILDING STANDARD REQUIREMENTS

(R301.1.3) WHERE STRUCTURAL ELEMENTS EXCEED THE LIMITS OF SECTION R301 THESE ELEMENTS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE. ENGINEERED DESIGN IN ACCORDANCE WITH THE CBC IS PERMITTED FOR STRUCTURES, AND PARTS THEREOF, INCLUDED IN THE SCOPE OF THIS CODE.

W.U.I. NOTE: THIS PROJECT SHALL BE CONSTRUCTED WITH "THE WILDLAND URBAN INTERFACE" (WUI) APPROVED PRODUCTS IN ACCORDANCE WITH CBC CHAPTER 7A. THE (WUI) APPROVED PRODUCTS ARE FOUND WITHIN THE CURRENT "BUILDING MATERIALS LISTING" (BML) AT: https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/

DEFERRED SUBMITTAL NOTE

DEFERRED SUBMITTALS ITEMS LISTED BELOW SHALL BE REVIEWED BY THE ARCHITECT OR ENGINEER OF RECORD PRIOR TO SUBMITTAL TO THE BUILDING OFFICIAL FOR APPROVAL. THE ARCHITECT OR ENGINEER OF RECORD SHALL INDICATE THAT THE DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. CBC107.3.4.1

"NO" DEFERRED SUBMITTAL FOR THIS PROJECT

CATEGORY	CITY / COUNTY STANDARDS	PROVIDED

CONSULTANTS

OWNER
DAN LEATHERWOOD
6788 RAINER COURT
RIVERSIDE, CA 92506
PHONE:(909) 000-0000

ENGINEERING AND TITLE 24
BRYANT R. BERGESON (RCE 48805)
P.O. BOX 6885
CRESTLINE, CA. 92325
PHONE:(909) 336-6970
FAX : (909) 337-2211

DRAFTING & PLANNING
KADTEC
26748 HWY 189, SUITE 'B'
BLUE JAY, CA. 92317
PHONE:(909) 336-6970
FAX : (909) 337-2211

LOCAL SERVICES

BUILDING AND SAFETY
LAND USE SERVICES DEPT., BUILDING AND SAFETY DIVISION
26010 STATE HIGHWAY 189, (P.O. BOX 709)
TWIN PEAKS, CA. 92391
PHONE:(909) 336-0640 SB COUNTY:(909) 387-8311
FAX : (909) 336-0616 SB CITY :(909) 387-4244

ASSESSOR OFFICE
SAN BERNARDINO COUNTY ASSESSOR, TWIN PEAKS DIVISION
26010 STATE HIGHWAY 189, (P.O. BOX 393)
TWIN PEAKS, CA. 92391
PHONE:(909) 336-0650
FAX : (909) 336-0656

SITE INSPECTION APPOINTMENTS
PHONE: (909) 336-0641

SOUTHERN CALIFORNIA GAS
PHONE: 1-800-427-2200

SOUTHERN CALIFORNIA EDISON
PHONE: 1-800-655-4555

VERIZON CALIFORNIA
PHONE: 1-800-483-4000

WATER / SEWER COMPANIES
SEE YOUR LOCAL WHITE PAGES FOR CONTACT INFORMATION

FIRE DEPARTMENTS
SEE YOUR LOCAL WHITE PAGES FOR CONTACT INFORMATION

SHEET INDEX

OWNER:
Name: DAN LEATHERWOOD
Address: 6788 RAINER COURT
City: RIVERSIDE, CA. 92506
PHONE: (909) 000-0000
E-MAIL: –

PROJECT:
Name: SHORING PLAN
Address: 996 COULTER PINE ROAD
City: CRESTLINE, CA 92325
CONTRACTOR: SEAN HORAN
CONTR. PHONE: (951) 452-6474

LOT: 74-76
TRACT: 1713
BLOCK: 0
A.P.N.: 0344-092-57

REGISTERED PROFESSIONAL ENGINEER
BRYANT R. BERGESON
No. C048805
Exp. 09/30/24
CIVIL
STATE OF CALIFORNIA

SCALE: AS NOTED
DRAWN BY: ADAN RODARTE
JOB NO.: 0344-092-57
TITLE: TITLE PAGE
SHEET NO.: T-1

PLUMBING & H.V.A.C. NOTES

EFFECTIVE JAN 1, 2014, SB 407 REQUIRES REPLACEMENT OF ALL NONCOMPLIANT PLUMBING FIXTURES IN PROPERTIES BUILT ON OR BEFORE JAN 1, 1994 WITH WATER-CONSERVING PLUMBING FIXTURES

H.V.A.C. GENERAL
1- ALL DUCT WORK, MECHANICAL INSTALLATIONS, INSULATION, AND MATERIALS SHALL COMPLY WITH THE UNIFORM MECHANICAL CODE AND ALL BUILDING DEPT. CODES AND ADOPTED ORDINANCES. MECHANICAL UNIT FILTER MUST BE MERV-6 OR BETTER.
2- ALL DUCTS PENETRATING 1-HOUR WALLS MUST BE FIRE-RATED AND INCLUDE DAMPERS.
3- IN CONDITIONED AND UNCONDITIONED AREAS ALL HEAT DUCTS ARE TO BE R-6 INSULATED FLEX TYPE DUCTING THROUGH OUT THE HOUSE.
FURNACE LOCATED IN ATTIC
1- A PLATFORM FROM ATTIC ACCESS TO APPLIANCE MUST BE A MIN. 24 INCH WIDE PATH TO UNIT UNOBSTRUCTED AND 30 INCH BY 30 INCH WORKING AREA IN FRONT OF CONTROLS. OPENING TO APPLIANCE NOT TO EXCEED 20' IN LENGTH
2- LIGHT PROVIDED WITH SWITCH AT ATTIC ACCESS AND ROMEX WIRING PROTECTED, DEDICATED 120 V OUTLET WITHIN 15 FEET OF ATTIC ACCESS.
3- ATTIC ACCESS A MINIMUM 22 INCH BY 30 INCH OR AS LARGE AS THE LARGEST PIECE OF EQUIPMENT IN THE ATTIC AREA. (509.4 CPC)
GENERAL PLUMBING
1- ALL WATER HEATING EQUIPMENT SHALL BE CERTIFIED BY THE CALIF. ENERGY COMMISSION TO BE IN COMPLIANCE WITH THE STATE APPLIANCE EFFICIENCY STANDARDS.
2- EXPOSED PIPING, EXCEPT FOR PLUMBING VENTS ABOVE THE ROOF, SHALL BE NONCOMBUSTIBLE AS DEFINED IN THE CALIFORNIA BUILDING CODE.
GAS PIPING
1- ALL PIPE USED FOR THE INSTALLATION OF ANY GAS PIPING SHALL BE OF STANDARD WEIGHT SCHEDULE 40 BLACK STEEL WITH THREADED FITTINGS.
2- FUEL TANKS (E.G., LIQUEFIED PETROLEUM TANKS) SHALL BE LOCATED AT LEAST TEN (10) FEET AWAY FROM ANY STRUCTURE AND IN ACCORDANCE WITH THE UNIFORM FIRE CODE, SUCH TANKS SHALL BE SECURED TO THE GROUND.
WATER PIPING
1.COPPER TUBE FOR WATER PIPING SHALL HAVE A WEIGHT OF NOT LESS THAN THAT OF COPPER WATER TUBE TYPE "L".
2. INSULATE HOT WATER PIPING PER TITLE 24 (ALL HOT WATER SUPPLY PIPING 3/4" AND GREATER SHALL BE INSULATED PER CEC SECTION 150.0(j)2iii). ALL HOT WATER SUPPLY PIPING FROM THE HEATING SOURCE TO THE KITCHEN FIXTURES SHALL BE INSULATED PER CEC SECTION 150.0 (j)2.vi. INSULATE WATER PIPING AND COOLING SYSTEM LINES THROUGH OUT THE STRUCTURE EXCEPT ON PIPING THAT PENETRATES FRAMING MEMBERS, PIPING INSTALLED IN WALLS THAT ARE INSULATED IN CONFORMANCE TO THE INSULATION INSTALLATION QUALITY COMPLIANCE OPTION, AND IN ATTICS WITH A MINIMUM OF FOUR INCHES OF ATTIC INSULATION ON TOP OF THE PIPING.
3. INSTALL BACK FLOW PREVENTION DEVICE AT ALL HOSE BIBS.
4. WATER SUPPLY PIPES SHALL NOT BE LOCATED IN EXTERIOR WALLS
5. PROVIDE A HOT WATER SYSTEM SERVING THE RESIDENCE WITH EITHER A SINGLE GAS STORAGE TYPE WATER HEATER (50 GALLONS) RECIRCULATION PUMP IS NOT REQUIRED OR A INSTANTANEOUS GAS WATER HEATING SYSTEM. THE SYSTEM NEEDS TO MEET MANDATORY INSULATION REQUIREMENTS (SEE "WATER PIPING" #2 ABOVE)
6. BURIED WATER PIPE MUST BE AT LEAST 30" BELOW GRADE.
WASTE PIPING
1.ALL WASTE PIPING WHICH PENETRATES WALLS WITH 1 HOUR FIRE RESISTIVE MATERIALS APPLIED SHALL BE CAST IRON OR OTHER NONCOMBUSTIBLE PIPING MATERIAL APPROVED BY THE I.B.C. APPLICABLE EDITION, STATE AND LOCAL CODES.
2.PROVIDE 2" TRAP FOR WASHER IN WALL.
3.PROVIDE SOLID, 1 PIECE, WASTE TRAP VENT FOR ALL TUBS (NO SLIP JOINT) ACCESS PANEL MAY BE OMITTED.
PLUMBING REQUIREMENTS:
WATER CLOSETS
1. HEIGHT TO TOP OF TOILET MIN.17"-MAX.19", WIDTH MIN. 30" WITH 24" CLEAR SPACE IN FRONT OF TOILET.
2. FLUSH CONTROL LOCATED TO ELIMINATE EXCESSIVE BODY MOVEMENT; MANUAL CONTROLS; OSCILLATING HANDLE WITH MAX. OPERATING FORCE OF 3 LBS. OR REMOTE BUTTON FOR LOW VOLTAGE ELECTRICAL OPERATION.
3. FLOW RATES FOR WATER CLOSET ARE TO BE 1.28 GPM PER FLUSH MAXIMUM
LAVATORIES AND SHOWERS
1. MIN. CLEARANCE FROM BOTTOM OF LAV. APRON TO FLOOR IS 29".
2. HOT WATER SUPPLY AND DRAIN PIPING INSULATED OR COVERED.
3. NO SHARP OR ABRASIVE SURFACES UNDER LAVS..
4. CONTROLS OPERABLE WITH ONE HAND WITH MAX. ACTIVATING FORCE OF 5 LBS./FT., SELF CLOSING VALVES TO REMAIN OPEN MIN. OF 10 SECONDS.
5. LAVATORY FAUCETS TO BE 1.2 GPM MAX. & SINK FAUCETS TO BE 1.2 GPM MAX." TITLE 24, VCBC, UPC
6. SHOWER HEADS TO BE 1.8 GPM MAXIMUM
7. NET AREA OF SHOWER RECEPTOR SHALL BE NOT LESS THAN 1,024 SQ. IN. OF FLOOR AREA, AND ENCOMPASS 30 INCH DIAMETER CIRCLE. CPC 411.7
8. CEMENT, FIBER-CEMENT, FIBER-MAT REINFORCED CEMENT, GLASS MAT GYPSUM OR FIBER-REINFORCED GYPSUM BACKERS SHALL BE USED AS A BASE FOR WALL TILE IN TUB AND SHOWER AREAS AND WALL AND CEILING PANELS IN SHOWER AREAS PER (TABLE CRC R702.4.2) ASTM C1178, C1278, C1288, & C1325.
9. SHOWER COMPARTMENTS AND WALLS ABOVE BATHTUB WITH SHOWER HEADS SHALL BE FINISHED WITH A SMOOTH, NONABSORBENT SURFACE TO A HEIGHT NOT LESS THAN 6 FT ABOVE FLOOR. (R307.2)
10. SHOWER DOOR SHALL OPEN SO AS TO MAINTAIN NOT LESS THAN A 22-INCH UNOBSTRUCTED OPENING FOR EGRESS. CPC 408.5
ACCESSORIES
1. BOTTOM EDGE OF MIRRORS AT 40" MAX. ABOVE FLOOR.
2. SOAP DISHES IN SHOWER AT 40" MAX. ABOVE FLOOR. ALL HOSE BIBS MUST HAVE AN APPROVED ANTI-SIPHON DEVICE. WATER HEATER SHALL BE ADEQUATELY STRAPPED FOR EARTHQUAKE.
WATER FAUCETS
1- A MINIMUM OF TWO (2) THREE QUARTER INCH (3/4") FAUCETS WITH HOSE CONNECTIONS EACH SERVED BY A THREE QUARTER INCH (3/4") WATERLINE AND INSTALLED PRIOR TO ANY PRESSURE REDUCING DEVICE SHALL BE AVAILABLE PER HABITABLE STRUCTURE SEPARATED BY AT LEAST ONE_THIRD (1/3) OF THE PERIMETER OF THE STRUCTURE. SUCH FAUCETS SHOULD BE ON THE SIDE(S) OF A STRUCTURE FACING FIRE HAZARDOUS AREAS WHENEVER POSSIBLE.

THE MINIMUM CAPACITY FOR WATER HEATERS SHALL BE IN ACCORDANCE WITH THE FIRST HOUR RATING LISTED IN TABLE 5-1. SECTION 501.0. TABLE 5-1

NUMBER OF BATHROOMS	1 TO 1.5			2 TO 2.5				3 TO 3.5			
NUMBER OF BEDROOMS	1	2	3	2	3	4	5	3	4	5	6
FIRST HOUR RATING GALLONS	42	54	54	54	67	67	80	67	80	80	80

NOTES: THE FIRST HOUR RATING IS FOUND ON THE "ENERGY GUIDE" LABEL.
NON-STORAGE AND SOLAR WATER HEATERS SHALL BE SIZED TO MEET THE APPROPRIATE FIRST HOUR RATING AS SHOWN IN THE TABLE.

INDOOR VENTILATION NOTES

A KITCHEN IS DEFINED AS ANY ROOM CONTAINING COOKING APPLIANCES. EACH KITCHEN IS REQUIRED TO HAVE AN EXHAUST FAN DUCTED TO THE OUTSIDE WITH A MINIMUM VENTILATION RATE OF 100 CFM AND THE KITCHEN HOOD EXHAUST MUST HAVE A SMOOTH INTERIOR SURFACE. THE RANGE HOOD OVER THE STOVE MAY BE USED TO MEET THIS REQUIREMENT, BUT THE RANGE HOOD MUST VENT TO THE OUTSIDE; RE-CIRCULATING RANGE HOODS CANNOT BE USED. THE DUCTING FOR THE EXHAUST FAN SHALL BE SIZED ACCORDING TO ASHRAE STANDARD 62.2 TABLE 7.1. THIS LOCAL EXHAUST FAN MAY OPERATE CONTINUOUSLY OR INTERMITTENTLY. INSTALLING THIS LOCAL EXHAUST FAN IN THE KITCHEN WILL ALLOW THE HOME OCCUPANT TO REGULATE THE INDOOR AIR QUALITY WHEN NEEDED.

IN ADDITION TO THE LOCAL EXHAUST FANS IN THE BATHROOMS AND KITCHENS, AN EXHAUST FAN SHALL BE SIZED TO PROVIDE VENTILATION FOR THE WHOLE HOUSE. THE MINIMUM VENTILATION RATE FOR THE WHOLE-BUILDING EXHAUST FAN SHALL BE CALCULATED ACCORDING TO ASHRAE STANDARD 62.2 EQUATION 4.1 (A). THE CONDITIONED FLOOR AREA AND THE NUMBER OF BEDROOMS IN THE HOME (THE EXISTING HOUSE AND THE ADDITION) WILL DETERMINE THE MINIMUM VENTILATION RATE. ONE OF THE LOCAL EXHAUST FANS IN THE BATHROOMS OR KITCHENS MAY BE USED TO MEET THE WHOLE-BUILDING VENTILATION, PROVIDED THE EXHAUST FAN MEETS THE MINIMUM VENTILATION RATED FOR BOTH THE LOCAL EXHAUST AND WHOLE-BUILDING VENTILATION REQUIREMENTS. THE DUCTING FOR THE WHOLE BUILDING EXHAUST FAN SHALL BE SIZED ACCORDING TO ASHRAE STANDARD 62.2 TABLE 7.1 AND THIS EXHAUST FAN SHALL OPERATE CONTINUOUSLY. IDENTIFY FAN MANUFACTURER, MODEL AND SOUNDS RATING (1 SONE FOR CONTINUOUS MAY BE SONE FOR INTERMITTENT) ON PLANS.

THE WHOLE-BUILDING VENTILATION EXHAUST FAN WILL OPERATE CONTINUOUSLY AND IS REQUIRED TO BE RATED FOR SOUND AT A MAXIMUM OF 1 SONE. THIS EXHAUST FAN CAN BE CONTROLLED BY A STANDARD ON/OFF SWITCH, BUT THE SWITCH MUST BE LABELED TO INFORM THE OCCUPANT THAT THE EXHAUST FAN IS THE WHOLE-BUILDING VENTILATION EXHAUST FAN AND IS INTENDED TO OPERATE CONTINUOUSLY. NO SPECIFIC WORDING IS MANDATED, BUT THE WORDING NEEDS TO MAKE CLEAR WHAT THE CONTROL IS FOR AND THE IMPORTANCE OF OPERATING THE SYSTEM. THIS MAY BE AS SIMPLE AS "VENTILATION CONTROL" OR MIGHT INCLUDE WORDING SUCH AS: "OPERATE WHEN THE HOUSE IS IN USE" OR "KEEP ON EXCEPT WHEN GONE OVER 7 DAYS" OR "FAN IS TO BE LEFT ON THE ENSURE INDOOR AIR QUALITY."

MISC. NOTES

MISC. GENERAL
1- TRASH CONTAINERS AND SANITARY FACILITIES ARE REQUIRED ON ALL CONSTRUCTION SITES.
2- ATTIC ACCESS SHALL BE PROVIDED WHERE THE MAXIMUM VERTICAL HEIGHT EXCEEDS 30" WITH AT LEAST A 22"X30" OPENING AT A READILY ACCESSIBLE LOCATION.
3- ALL AREAS USED FOR THE STORAGE OF FIREWOOD, OR OTHER FLAMMABLE MATERIALS SHALL EITHER BE AT LEAST THIRTY FEET (30') AWAY FROM ALL STRUCTURES, OR WHOLLY ENCLOSED WITHIN A STRUCTURE.
INTERIOR WALLS
1- DRYWALL NAILED WITH 5D COOLERS @ 7" O.C.. ON EDGES AND IN FIELD.
2- DRYWALL 'GREEN BOARD' ARE PERMITTED ON CEILINGS IN TUB AND SHOWER LOCATIONS PER (CRC 702.3.7)
3- 'INSPECTION OF NAILING REQUIRED FOR DRYWALL AND ALL LATH WHEN IN PLACE. CORNER BEADS ARE TO BE NAILED. DRYWALL BOARD SPACING SHALL BE 3/8" MAXIMUM.
EXTERIOR ELEMENTS
1- PROVIDE SPARK ARRESTORS ON CHIMNEYS. DURATECH UL 103 HT, UL 103, AND ULC S604.
2- CHIMNEY CAPS SHALL EXTEND 24" ABOVE ANY SECTION OF ROOF WITHIN 10' OF CHIMNEY, BUT SHALL NOT BE LESS THAN 3 FT. ABOVE THE HIGHEST POINT WHERE THE CHIMNEY PASSES THOUGHT THE ROOF.
3- EVERY CHIMNEY USED IN CONJUNCTION WITH ANY FIREPLACE OR ANY HEATING APPLIANCE IN WHICH SOLID OR LIQUID FUEL IS USED, SHALL BE MAINTAINED WITH A SPARK ARRESTER. AN APPROVED SPARK ARRESTER SHALL MEAN A DEVICE CONSTRUCTED OF STAINLESS STEEL, COPPER OR BRASS, WOVEN GALVANIZED WIRE MESH, TWELVE (12) GAUGE MINIMUM OF THREE-EIGHTHS INCH (3/8") MINIMUM TO ONE-HALF INCH (1/2") MAXIMUM OPENINGS, MOUNTED IN OR OVER ALL OUTSIDE FLUE OPENINGS IN A VERTICAL AND NEAR VERTICAL POSITION, ADEQUATELY SUPPORTED TO PREVENT MOVEMENT AND VISIBLE FROM THE GROUND.
RESIDENTIAL ADDRESSING
1- ALL NEW & EXISTING BUILDINGS SHALL HAVE INTERNALLY ILLUMINATED, NONCOMBUSTIBLE BUILDING ADDRESS NUMBERS. THE STREET ADDRESS SHALL BE INSTALLED ON THE BUILDING WITH NUMBERS THAT ARE A MINIMUM OF FOUR (4) INCHES IN HEIGHT AND WITH A ONE HALF (½) INCH STROKE. THE ADDRESS SHALL BE VISIBLE FROM THE STREET. DURING THE HOURS OF DARKNESS, THE NUMBERS SHALL BE INTERNALLY AND ELECTRICALLY ILLUMINATED WITH A LOW VOLTAGE POWER SOURCE. NUMBERS SHALL CONTRAST WITH THEIR BACKGROUND & BE LEGIBLE FROM THE STREET. WHERE THE BUILDING IS FIFTY (50) FEET OR MORE FROM THE ROADWAY, ADDITIONAL CONTRASTING FOUR (4) INCH NUMBERS SHALL BE DISPLAYED AT THE PROPERTY ACCESS ENTRANCES.(R319.1CRC)
VEGETATION NOTE
COMBUSTIBLE VEGETATION SHALL BE REMOVED AS FOLLOWS:
1- WHERE THE AVERAGE SLOPE OF THE SITE IS LESS THAN 15%-COMBUSTIBLE VEGETATION SHALL BE REMOVED A MIN. DISTANCE OF THIRTY (30) FEET FROM ALL STRUCTURES OR TO THE PROPERTY LINE, WHICHEVER IS LESS.
2- WHERE THE AVERAGE SLOPE OF THE SITE IS 15% OR GREATER - COMBUSTIBLE VEGETATION SHALL BE REMOVED A MINIMUM ONE HUNDRED (100) FEET FROM ALL STRUCTURES OR TO THE PROPERTY LINE, WHICHEVER IS LESS. PER COUNTY ORDINANCE # 3586

FRAMING NOTES

GENERAL
1-DOUGLAS FIR-LARCH LUMBER SHALL COMPLY WITH 2022 CALIFORNIA BUILDING CODE STANDARDS, DOC PS20. THE FOLLOWING MINIMUM STANDARDS APPLY; A) 2X RAFTERS, 2X JOISTS, 4X HEADERS, 4X RAFTERS, 4X JOISTS, 4X BEAMS, 4X POSTS.....DF#2 B) 6X BEAMS, HEADERS, POSTS....DF#1
2- ALL PLYWOOD SHALL CONFORM TO 2022 C.B.C. STANDARD AND SHALL BE OF GRADE,INDEX #, AND THICKNESS CALLED ON PLANS. ALL PLYWOOD SHALL BE BONDED WITH EXTERIOR GLUE. ALL PLYWOOD DIRECTLY EXPOSED TO THE WEATHER SHALL BE EXTERIOR TYPE UNLESS NOTED OTHERWISE ON PLANS. WOOD STRUCTURAL PANELS MUST COMPLY WITH DOC PS1 OR DOC PS2 ACCORDING TO SECTION 2303.1.4.
3- ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED. NAILING OF HORIZONTAL AND VERTICAL DIAPHRAGMS SHALL BE INSPECTED AND APPROVED BY BUILDING DEPT. PRIOR TO COVERING.
4- ALL BOLT NUTS AND HEADS WHICH BEAR AGAINST THE FACE OF WOOD MEMBERS SHALL BE PROVIDED WITH METAL WASHERS.
5- GLUE LAMINATED BEAMS SHALL BE FABRICATED BY A LICENSED FABRICATOR PER W C L A , A I T C , AND I C C REQUIREMENTS AND FABRICATOR TO PROVIDE A CERTIFICATE OF INSPECTION TO THE GENERAL CONTRACTOR. CERTIFICATE OF INSPECTION TO BE PRESENT AT JOB FOR BLDG. INSPECTOR TO VERIFY AND RECORD AT ROUGH/COMBO INSPECTION.
6- MAXIMUM DEPTH OF NOTCHING NOT TO EXCEED 1/6 OF DEPTH OF MEMBER AND SHALL NOT BE LOCATED IN THE MIDDLE 1/3 OF SPAN.
7- MAXIMUM DEPTH OF NOTCH AT ENDS OF SPANS NOT TO EXCEED 1/4 DEPTH OF MEMBER.
8- SOLID BLOCK RAFTERS AND FLOOR JOISTS AT INTERVALS NOT TO EXCEED 8'-0".
9-ALL JOINTS AND PENETRATIONS TO BE CAULKED AND SEALED.
10- SHEAR NAILS WILL BE 'COMMON' NAILS FROM COMPANIES RECOGNIZED AND APPROVED BY THE INTERNATIONAL STAPLE, NAIL AND TOOL ASSOCIATION AND ARE LISTED BY THE NATIONAL EVALUATION SERVICE, INC. THAT THEY ARE NER-272 REPORT AUTHORIZED.
11- FOR GLUE-LAM BEAMS PROVIDE FIELD INSPECTOR WITH APPROVED "CERTIFICATION OF INSPECTION"
12-FASTENERS FOR PRESERVATIVE TREATED AND FIRE TREATED WOOD SHALL BE OF HOT DIPPED ZINC COATED GALVANIZED STEEL, SILICON BRONZE OR COOPER. THE COATING WEIGHTS FOR ZINC COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTM A153. CBC 2304.10.5
13- NAIL ALL WOOD FASTENER IN ACCORDANCE WITH TABLE 2304.10.1 UNLESS STRICTER REQUIREMENTS ARE SPECIFIED ON THE STRUCTURAL PLANS OR IN THE ENGINEERING CALCULATIONS.
14- WOOD SHALL BE PROTECTED FROM DECAY & TERMITES IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF (CBC 2304.12.1 THRU 2304.12.7.) THIS INCLUDES BEAMS, GIRDERS, JOISTS, DECKING, AND COLUMNS. USE "NATURALLY DURABLE" OR PRESERVATIVE-TREATED WOOD WHERE SUCH MEMBERS ARE EXPOSED TO THE WEATHER WITHOUT ADEQUATE PROTECTION FROM A ROOF. (CRC R317 / CBC 2304.12.2)
ROOF
1- ROOF DIAPHRAGMS TO BE 1/2" EXTERIOR CDX PLYWOOD 32/16 RATE ROOF SHEATHING WITH 10d NAILS @ 6" O.C. ON EDGES & 12" O.C. IN FIELD.
2- PLYWOOD ROOF CRICKETS TO BE 1/2" PLYWOOD.WHERE SPAN EXCEEDS 24" USE 2X TAPERED WOOD STRIPS @ 16" O.C..
3- PROVIDE EDGE NAILING TO MEMBERS DESIGNED AS STRUTS.
4- A CERTIFICATE OF INSPECTION TO BE PROVIDED FOR ROOF TRUSSES AT COMBO. INSPECTION.
5- ROOF COVERINGS SHALL BE EITHER NONCOMBUSTIBLE OR SHALL BE FIRE RETARDANT MATERIAL NOT COMPOSED OF ORGANIC FIBER WITH A MINIMUM CLASS A RATING, AS DEFINED IN THE CALIFORNIA BUILDING CODE.
6- PROVIDE ROOF VALLEY FLASHING OF A MINIMUM 26 GAUGE GALVANIZED CORROSION RESISTANT SHEET METAL INSTALLED OVER A MINIMUM 36" WIDE UNDERLAYMENT CONSISTING OF 72 POUND MATERIAL SURFACE NON-PERFORATED CAP SHEET RUNNING THE FULL LENGTH OF THE VALLEY.
7- ROOF GUTTERS SHALL BE PROVIDED WITH A MEANS TO PREVENT THE ACCUMULATION OF LEAVES AND DEBRIS IN GUTTER.
8- EAVES SHALL BE BOXED IN PERPENDICULAR TO THE ADJOINING WALL AND SHALL BE CONSTRUCTED OF NONCOMBUSTIBLE MATERIALS OR PROVIDE THE ONE-HOUR FIRE RESISTANCE-RATED CONSTRUCTION. FASCIA SHALL BE TWO INCHES NOMINAL SOLID WOOD OR STUCCO OR EQUIVALENT PROTECTION.
9- ROOF AND ATTIC VENTS SHALL RESIST THE INTRUSION OF FLAME AND EMBERS INTO THE ATTIC AREA OF THE STRUCTURE, OR SHALL BE PROTECTED BY CORROSION RESISTANT, NON-COMBUSTIBLE WIRE MESH WITH MINIMUM 1/16 INCH, NOT TO EXCEED 1/8 INCH OPENINGS OR ITS EQUIVALENT. (CBC 704A.2.1)
10- WHERE THE ROOF ALLOWS SPACE BETWEEN THE ROOF COVERING AND THE ROOF DECKING, THE SPACE SHALL BE CONSTRUCTED TO PREVENT THE INTRUSION OF FLAMES AND EMBERS, BE FIRE STOPPED WITH APPROVED MATERIALS, OR HAVE ONE LAYER OF 72 POUND MINERAL SURFACED NON-PERFORATED CAP SHEET INSTALLED OVER THE COMBUSTIBLE DECKING.
WALLS
1- BALLOON FRAME ALL STUD WALLS @ SLOPING CEILING.
2- PROVIDE MULTIPLE STUDS FOR SOLID BEARING AT ENDS OF ALL BEAMS WHERE POSTS ARE NOT SHOWN AND CARRY ALL BEARING STUDS/POSTS DOWN TO FOUNDATIONS.
3- MINIMUM SPLICE NAILING OF DOUBLE PLATES SHALL BE 8-16D NAILS EACH SIDE OF SPLICE WITH NO ADJACENT SPLICE WITHIN 4'0".
4- ALL EXTERIOR WALL COVERINGS SHALL BE APPROVED NONCOMBUSTIBLE OR IGNITION-RESISTANT MATERIAL, HEAVY TIMBER, OR LOG WALL CONSTRUCTION OR SHALL PROVIDE PROTECTION FROM INTRUSION OF FLAMES AND EMBERS IN ACCORDANCE WITH SFM 12-7A-1 OR ONE HOUR FIRE RESISTANCE RATED CONSTRUCTION.
5- ALL RESIDENTIAL STRUCTURES SHALL HAVE INTERIOR SIDE YARD SETBACKS OF TWENTY PERCENT (20%) OF THE LOT WIDTH. INTERIOR SIDE YARDS SHALL NOT BE LESS THAN FIVE FEET (5') AND NEED NOT EXCEED FIFTEEN FEET (15'). EAVES SHALL BE PERMITTED TO PROJECT INTO THE REQUIRED SETBACK NO MORE THAN TWO FEET (2'). NO OTHER PROJECTIONS SHALL BE ALLOWED INTO THE INTERIOR SIDE YARD LESS THAN FIVE FEET FROM THE PROPERTY LINE. EXTERIOR WALL SEPARATIONS SHALL NOT BE LESS THAN TEN FEET (10') FOR ALL BUILDINGS, INCLUDING THOSE ON ADJOINING PARCELS.
6- WHEN EXTERIOR WALLS OF RESIDENTIAL BUILDINGS ARE WITHIN 15' OF INTERIOR SIDE OR REAR LOT LINES OR THE WALL SEPARATION IS LESS THAN 30', THE OUTSIDE OF ALL SUCH EXTERIOR WALLS OR PORTIONS THEREOF SHALL BE CONSTRUCTED WITH EXTERIOR WALL COVERINGS THAT ARE CONSTRUCTED OF NONCOMBUSTIBLE MATERIALS OR PROVIDE ONE HOUR FIRE- RESISTANCE-RATED CONSTRUCTION ON THE EXTERIOR SIDE.
7- EXTERIOR WALL COVERINGS SHALL EXTEND FROM THE TOP OF THE FOUNDATION TO THE ROOF, AND TERMINATE AT 2 INCH (50.8 MM) NOMINAL SOLID WOOD BLOCKING BETWEEN RAFTERS AT ALL ROOF OVERHANGS, OR IN THE CASE OF ENCLOSED EAVES, TERMINATE AT THE ENCLOSURE.
8- EXTERIOR WALL VENTS. UNLESS OTHERWISE PROHIBITED BY OTHER PROVISIONS OF THIS CODE, VENT OPENINGS IN EXTERIOR WALLS SHALL RESIST THE INTRUSION OF FLAME AND EMBERS INTO THE STRUCTURE OR VENTS SHALL BE SCREENED WITH A CORROSION-RESISTANT, NON-COMBUSTIBLE WIRE MESH WITH 1/8 INCH(6 MM) OPENINGS OR ITS EQUIVALENT. PROVIDE 2X BLOCK AROUND VENT OPENING IN SHEAR.
FLOOR
1- FLOOR DIAPHRAGMS TO BE 5/8" T&G WAFER BOARD FLOOR SHEATHING WITH 10d NAILS @ 6" O.C. ON EDGES & 12" O.C. IN THE FIELD AND GLUED.
2- PROVIDE DOUBLE FLOOR JOISTS UNDER PARALLEL PARTITIONS AND PARALLEL EXTERIOR WALLS.
3- PROVIDE SOLID 2X BLOCKING UNDER PARTITIONS PERPENDICULAR TO FLOOR.
4- ALL HEADERS ON EXTERIOR AND BEARING WALLS ARE TO BE 4X12 DF#2 UNLESS OTHERWISE IDENTIFIED.
5- PROVIDE CROSS VENTILATION OPENINGS UNDER FIRST FLOOR OF WOOD FRAMING ON AT LEAST (2) OPPOSITE SIDES & AT LEAST (1) WITHIN 3' OF BUILDING CORNERS. THE TOTAL AREA IN SQUARE FEET OF ALL OPENINGS NEEDS TO BE 1 SQ. FT. FOR EACH 150 SQ. FT. OF UNDER FLOOR AREA. PROTECTED BY CORROSION RESISTANT, NONCOMBUSTIBLE WIRE MESH WITH MINIMUM 1/16" & MAXIMUM. 1/8" OPENINGS. USE "AIR VENT INC." MODEL # EV16824 16"X8" ALUMINUM VENTS (56 SQUARE INCHES OF AREA). PROVIDE 2X BLOCKING AROUND OPENING IN SHEAR WALLS.
6- ALL WEATHER-EXPOSED SURFACES SHALL HAVE A WEATHER-RESISTIVE BARRIER TO PROTECT THE INTERIOR WALL COVERING. BUILDING PAPER AND FELT SHALL BE FREE FROM HOLES AND BREAKS OTHER THAN THOSE CREATED BY FASTENERS AND CONSTRUCTION SYSTEM DUE TO ATTACHING OF THE BUILDING PAPER, AND SHALL BE APPLIED OVER STUDS OR SHEATHING OF ALL EXTERIOR WALLS.
7- EXTERIOR OPENINGS EXPOSED TO THE WEATHER SHALL BE FLASHED IN SUCH A MANNER AS TO MAKE THEM WEATHERPROOF.
8- DECKING SURFACES, STAIR TREADS, RISERS, AND LANDINGS OF DECKS, PORCHES AND BALCONIES WHERE ANY PORTION OF SUCH SURFACE IS WITHIN TEN FEET (10') OF THE PRIMARY STRUCTURE SHALL BE CONSTRUCTED OF IGNITION RESISTANT MATERIALS, OR HEAVY TIMBER, OR EXTERIOR FIRE RETARDANT TREATED WOOD (FACTORY APPLIED) OR APPROVED NONCOMBUSTIBLE MATERIALS. THE USE OF PAINTS, COATINGS, STAINS, OR OTHER SURFACE TREATMENTS ARE NOT AN APPROVED METHOD OF PROTECTION AS REQUIRED IN THIS CHAPTER.
*(WUI)DECKING PRODUCTS (SFM STANDARD 12-7A-4) VARIOUS MANUFACTURERS: LISTING 8110-2041:0002 SOLID "WOOD" DECKING: "REDWOOD", "WESTERN RED CEDAR", "INCENSE CEDAR", "PORT ORFORD CEDAR", AND "ALASKA YELLOW CEDAR".
SIZES: MINIMUM NOMINAL 2X THICKNESS.
LUMBER GRADES: CONSTRUCTION COMMON AND BETTER GRADES FOR REDWOOD, 3 COMMON & BETTER GRADES FOR CEDARS, & COMMERCIAL DECKING OR BETTER GRADES FOR BOTH REDWOOD & CEDARS.
SPECIAL INSTRUCTIONS: SOLID WOOD DECKING SHALL BE INSTALLED OVER SOLID WOOD JOISTS SPACING 24" OR LESS ON CENTER.
9- THE UNDERSIDE OF CANTILEVERED AND OVER HANGING APPENDAGES AND ALL FLOORS SHALL BE ENCLOSED WITH NONCOMBUSTIBLE OR IGNITION RESISTANCE OR ONE HOUR FIRE RESISTIVE MATERIALS ON THE EXPOSED SURFACE. ALL EXPOSED STRUCTURAL COLUMNS, BEAMS AND SUPPORTING WALLS SHALL BE PROTECTED AS REQUIRED FOR EXTERIOR WALLS.
STRUCTURE OPENINGS
1- LOUVERS, VENTILATORS, OR OPENINGS IN WALLS, ROOFS, ATTICS, AND UNDER FLOOR AREAS HAVING HEADROOM LESS THAN FOUR FEET (4') IN HEIGHT WHICH ARE NOT FITTED WITH SASH OR DOORS, SHALL BE COVERED WITH WIRE SCREEN. THE SCREEN COVERING SUCH OPENINGS SHALL BE OF CORROSION-RESISTANT METAL OR OTHER APPROVED MATERIAL THAT OFFERS EQUIVALENT PROTECTION AND SHALL HAVE A MAXIMUM MESH OF ONE-EIGHTH INCH (1/8"). EAVE VENTS AND ROOF-MOUNTED TURBINE VENTS ARE PROHIBITED.
DOORS & WINDOWS
1- EXTERIOR WINDOWS, WINDOW WALLS & GLAZED DOORS SHALL BE MULTI-LAYERED GLASS PANELS, LABELED (DUAL OR TRIPLE-PANED W/ A MINIMUM OF (1) TEMPERED PANE, OR GLASS BLOCK) OR OTHER ASSEMBLIES W/ A MINIMUM OF 20 MIN. FIRE RESISTIVE RATING. FRAMES SHALL BE CONSISTENT W/ ENERGY CALCULATIONS
2- EXTERIOR VEHICLE ACCESS AND MAN DOOR ASSEMBLIES SHALL MEET STANDARD SFM 12-7A-2 (708A.2.1; R337.8.2.1) OR SHALL BE OF APPROVED NON-COMBUSTIBLE, FIRE RETARDANT TREATED WOOD OR SOLID CORE WOOD STYLE AND RAILS NOT LESS THAN 1-3/8" THICK WITH INTERIOR FIELD PANEL THICKNESS NO LESS THAN 1-1/4" THICK, OR SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 20 MINUTES.
3- NONCOMBUSTIBLE OR EXTERIOR FIRE RETARDANT TREATED WOOD VEHICLE ACCESS DOORS ARE NOT REQUIRED TO COMPLY WITH THIS CHAPTER.
4- TEMPERED SAFETY GLASS IS REQUIRED PER SEC. 2406.3:
*GLAZING IN DOORS AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS AND SHOWERS. GLAZING IN ANY PORTION OF A BUILDING WALL ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE A STANDING SURFACE.
*GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMPS WITHIN 36" HORIZONTALLY OF A WALKING SURFACE; WHEN THE EXPOSED SURFACE OF THE GLASS IS LESS THAN 60" ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE. (SEE EXCEPTION)
5- THRESHOLD: LANDINGS OR FLOORS AT THE REQUIRED EGRESS DOOR SHALL NOT BE MORE THAN 1-1/2" LOWER THAN THE TOP OF THE THRESHOLD. EXCEPTION: THE EXTERIOR LANDING OR FLOOR SHALL NOT BE MORE THAN 7-3/4" BELOW THE TOP OF THE THRESHOLD PROVIDED THE DOOR DOES NOT SWING OVER THE LANDING OR FLOOR. (CBC R311.3.1)
DOORS OTHER THAN THE REQUIRED EGRESS DOOR SHALL BE PROVIDED WITH LANDINGS OR FLOORS NOT MORE THAN 7-3/4" BELOW THE TOP OF THE THRESHOLD. (CBC R311.3.2)

ATTIC INSULATIONS
1- PAPER-FACED INSULATION SHALL BE ALLOWED IN ATTICS OR VENTILATED SPACES ONLY IF THE PAPER IS NOT EXPOSED TO THE ATTIC OPEN SPACE. CELLULOSE INSULATION IS REQUIRED TO BE FIRE RETARDANT.
2- PROVIDE A RADIANT BARRIER (HIGHLY REFLECTIVE, LOW EMITTING MATERIAL) INSTALLED AT THE UNDERSIDE OF THE ROOF SHEATING, ON THE INSIDE SURFACE OF GABLE ENDS AND OTHER EXTERIOR VERTICAL SURFACES IN ATTICS TO REDUCE SOLAR HEAT GAIN INTO THE ATTIC, AS SPECIFIED BY SECTION 151(F)2.

CONCRETE NOTES

1- CONCRETE IN CONTACT WITH THE SOIL FOR SLABS AND FOUNDATIONS SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 2500 P.S.I. FOR (FOR FREEZE-THAW & SDC="E") @ 28 DAYS. CONCRETE ACI 318-14, WATER-CEMENT RATIO OF 0.45 & TYPE 'V' CEMENT UNLESS A SOIL REPORT RECOMMENDS OTHERWISE.
2- CONCRETE COVER OVER REINFORCING STEEL SHALL BE: A) POURED AGAINST EARTH UNFORMED.........3" B) POURED AGAINST EARTH FORMED............2" C) SLABS ON GRADE...................................@ CENTER
3- ALL REINFORCING STEEL SHOWN TO BE CONTINUOUS. CORNERS AND INTERSECTIONS SHALL BE LAPPED A MINIMUM OF 30 BAR DIAMETERS OR 24", WHICH EVER IS GREATER.
4- ALL REINFORCING STEEL SHALL BE SECURED IN PLACE PRIOR TO POURING CONCRETE.
5- ALL RETAINING WALLS WITH TIES AT TOP SHALL REMAIN SHORED UNTIL UPPER SLAB IS POURED AND CURED FOR 14 DAYS. TYPICAL CONCRETE SLAB ON GRADE: 4" THICK W/ 6"X6"/#10 WELDED WIRE MESH
6- SLAB ON GRADE OVER 2" SAND, OVER 10 MIL. VAPOR BARRIER (INTERIOR SLAB ONLY), OVER 4" THICK BASE COURSE CONSISTING OF CLEAN SAND, GRAVEL, CRUSHED STONE OR CONCRETE.
7- ALL REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A-615 GRADE 40. ALL BARS TO BE FREE FROM LOOSE FLAKY RUST, SCALE, GREASE OR OTHER MATERIALS WHICH COULD AFFECT OR IMPAIR BOND. ALL BENDS SHALL BE MADE COLD.
8-HOLLOW CORE MASONRY UNITS SHALL BE LIGHTWEIGHT CONCRETE BLOCK ,GRADE A, CONFORMING TO ASTM C90 WITH AN ULTIMATE COMPRESSIVE STRENGTH OF 1500 PSI. GROUT SHALL BE OF FLUID CONSISTENCY WITH A MIXTURE OF 1 PART CEMENT 3 PARTS SAND, 1/8 PART LIME PUTTY AND HAVE A COMPRESSIVE STRENGTH OF 2000 PSI @ 28 DAYS. MORTAR SHALL CONFORM TO ASTM C-270-521 AND SHALL BE 1 PART CEMENT 3 PARTS SAND, 1/4 PART LIME PUTTY OR HYDRATED LIME AND HAVE A COMPRESSIVE STRENGTH OF 2000 PSI @ 28 DAYS ALL BLOCKS TO BE RUNNING BOND.
9- BACKFILL SOIL TYPE: COARSE GRAINED SOILS MORE THAN 50% RETAINED ON OR ABOVE NO. 200 SIEVE. SILTY GRAVELS, POORLY GRADED GRAVEL-SAND MIXES (NATIVE SOIL)

ELECTRICAL NOTES

(SEE FLOOR PLAN PAGES FOR ELECTRICAL SYMBOLS AND ELECTRICAL SCHEDULE)

ELECTRICAL NOTES:
1- 125 AMP MAIN PANEL UNLESS NOTED OTHERWISE.
2- ALL WORK AND MATERIALS TO BE PER C.B.E.E.S. ALL BLDG. DEPT. CODES, AND ADOPTED ORDINANCES.
3- REVIEW LANDSCAPE PLANS FOR ELECTRICAL & TIME REQUIREMENTS.
4- REVIEW SYMBOL SCHEDULE; ALL FIXTURES AND EQUIPMENT TO BE SUPPLIED COMPLETE.
5- ALL OUTLETS IN GARAGE,LAUNDRY,KITCHEN,BATHS, & EXTERIOR TO BE ON GROUND FAULT CIRCUIT (G.F.C.I.)
6- ALL OUTSIDE OUTLETS TO BE WATERPROOF.
7- ALL SWITCHES TO BE GROUPED WITH SINGLE COVER PLATES WHERE SHOWN ADJACENT ON PLANS.
8- SEE FLOOR PLAN FOR LOCATIONS OF LIGHTS, SWITCHES, ETC..
9- ALL RECESSED FIXTURES SHALL BE THERMALLY PROTECTED AND UL APPROVED.
10- INSTALL ALL CEC LISTED FEATURES, DEVICES, AND EQUIPMENT AND COMPLY TO APPLICABLE REGULATIONS.
11- ALL GENERAL LIGHTING IN BATHS AND KITCHEN TO BE HIGH EFFICACY LUMINARIES CAPABLE OF OBTAINING 40 LUMENS IN ACCORDANCE WITH TABLE 150.0-A.
12- PROVIDE 2- 20 AMP SMALL APPLIANCE CIRCUITS IN KITCHEN, A DEDICATED 20 AMP CIRCUIT IN BATHROOMS FOR OUTLETS 210-23(A). SECTION 210-11(C),3., A DEDICATED 20 AMP CIRCUIT LAUNDRY, AND A DEDICATED CIRCUIT FOR GARBAGE DISPOSAL AND DISHWASHER IN KITCHEN.
13- PROVIDE A DEDICATED GFI MOTOR CIRCUIT AND ACCESS PANEL FOR 'JETTED' TUB
14- PROVIDE PERMANENTLY INSTALLED LUMINARIES IN KITCHENS THAT ARE HIGH-EFFICACY IN ACCORDANCE WITH TABLE 150.0-A.
15- PROVIDE PERMANENTLY INSTALLED LUMINARIES IN BATHROOMS, GARAGES, LAUNDRY ROOMS, AND UTILITY ROOMS THAT ARE HIGH EFFICACY AND AT LEAST ONE LUMINAIRE IN EACH OF THESE SPACES SHALL BE CONTROLLED BY A VACANCY SENSOR.
16- ALL LUMINAIRES REQUIRED TO HAVE LIGHT SOURCES COMPLIANT WITH REFERENCE JOINT APPENDIX JA8, EXCEPT HALLWAYS AND CLOSETS OVER 70 SF, SHALL BE CONTROLLED BY DIMMERS SWITCH. (THIS APPLIES TO ALL GU-24 LEDS AND RECESSED LUMINAIRES.) CBEES 150.0(K)2K
17- LUMINARIES THAT ARE RECESSED INTO INSULATED CEILINGS SHALL BE APPROVED FOR ZERO CLEARANCE INSULATION COVER (IC) AND SHALL BE LABELED AS AIR TIGHT (AT) TO LESS THAN 2.0 CFM AT 75 PASCALS WHEN TESTED IN ACCORDANCE WITH ASTM E283.
18- LUMINARIES PROVIDING OUTDOOR LIGHTING PERMANENTLY MOUNTED TO A RESIDENTIAL BUILDING OR TO OTHER BUILDINGS ON THE SAME LOT MUST BE HIGH EFFICACY LUMINARIES. ALL EXTERIOR OUTDOOR LIGHTING SHALL PROVIDE A MINIMUM HEIGHT OF 6'-8" ABOVE FINISH SURFACE AND BE SUITABLE FOR WET LOCATIONS (W.P.) ALL OUTDOOR LIGHTING SHALL BE CONTROLLED BY A MANUAL ON AND OFF SWITCH THAT DOES NOT OVERRIDE TO ON AND ONE OF THE FOLLOWING:
*MOTION SENSORS WITH INTEGRAL PHOTO CONTROL
*AUTOMATIC TIME SWITCH CONTROL W/ INTEGRAL PHOTO CONTROL
*ASTRONOMICAL TIME SWITCH CONTROL
*ENERGY MANAGEMENT CONTROL SYSTEM
19- ALL BRANCH CIRCUITS WILL BE ARC FAULT CIRCUIT PROTECTED, NEC Art. 210-12(b).
20- GENERALLY ALL INSTALLED LUMINAIRES SHALL BE HIGH-EFFICACY IN ACCORDANCE WITH TABLE 150.0-A.
21- SINGLE & MULTIPLE-STATION CARBON MONOXIDE ALARMS SHALL BE LISTED AS COMPLYING WITH THE REQUIREMENTS OF UL 2034 & 2075. SMOKE ALARMS SYSTEMS & COMPONENTS SHALL BE CAL. STATE FIRE MARSHAL & UL 217 LISTED.
22- ALL HIGH EFFICACY LUMINAIRES REFEREED TO ABOVE MUST BE PIN BASED IN DESIGN.
23- PROVIDE A DRIVEN GROUND AT EACH SUB-PANEL. A 20 FT MIN UFER GROUND MUST BE INSTALLED IN AN EXTERIOR FOOTING IN ADDITION TO THE DRIVEN GROUND. SERVICE GROUNDING CONDUCTOR MUST BE #8 COPPER (MIN. FOR 125 AMP SERVICE) CONNECTED TO THE UFER GROUND ELECTRODE SYSTEM WITH A READILY AND APPROVED CLAMPING DEVICE.
24- INTERIOR WATER AND GAS SYSTEM MUST BE BONDED TO THE BUILDING SERVICE EQUIPMENT ENCLOSURE. MIN. 2" DIAMETER SERVICE RISER MUST BE PROVIDED.
25- ALL EQUIPMENT SHALL BE LISTED & LABELED BY AN APPROVED TESTING AGENCY, i.e. U.L.
26- FOR A ONE-FAMILY DWELLING AND EACH UNIT OF A TWO-FAMILY DWELLING THAT IS AT GRADE LEVEL PROVIDE AT LEAST ONE GFCI PROTECTED OUTLET OUTDOORS AT FRONT AND BACK.
27- ELECTRICAL GROUNDING CONDUCTOR SHALL EXTEND TO THE NEUTRAL BUS OF EACH SERVICE ENCLOSURE.
28- PROVIDE 20' MINIMUM 1/2" REBAR OR #4 BARE COPPER CONDUCTOR IN CONCRETE FOOTING TO SERVE AS A GROUNDING ELECTRODE.
29- A METAL UNDERGROUND WATER PIPE USED AS A GROUNDING ELECTRODE SHALL BE SUPPLEMENTED BY ANOTHER ELECTRODE OF A TYPE SPECIFIED IN NEC SECTION 250-81 OR 83.
30- RECESSED FIXTURES SHALL HAVE A THERMAL PROTECTION AND BE SO IDENTIFIED.
31- PROVIDE TWO INCH DIAMETER MINIMUM RIGID SERVICE RISER, EXTEND RISER TO 36" MINIMUM ABOVE ROOF; 10' MINIMUM ABOVE WALKWAYS, AND KEEP RISER A MINIMUM OF 3' AWAY FROM WINDOWS. RISER SHALL BE BRACED IN AN APPROVED MANNER.
32- ROOMS CONTAINING BATHTUBS, SHOWERS, SPAS & SIMILAR BATHING FIXTURES SHALL BE MECHANICALLY VENTILATED WITH A MINIMUM 50 CFM EXHAUST FOR HUMIDITY CONTROL (R303.3.1). FAN MUST BE NON-RECIRCULATING, 3 ZONES MAXIMUM & COMPLY W/ ASHRAE STANDARD 62.2 MANDATORY MEASURES.
33- FOR BUILDINGS WITH FUEL-BURNING APPLIANCES OR FIREPLACES AND/OR ATTACHED GARAGES, PROVIDE AN APPROVED CARBON MONOXIDE ALARM AT: (R315)
a. OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
b. ON EVERY LEVEL OF A DWELLING UNIT INCLUDING BASEMENTS.
c. WHERE FUEL-BURNING APPLIANCES ARE IN A BEDROOM OR AN ATTACHED BATHROOM, INSTALL A CARBON MONOXIDE ALARM WITHIN THE BEDROOM.
d. ALL CARBON MONOXIDE ALARM SHALL BE INTERCONNECTED HARD-WIRED WITH BATTERY BACKUP.
34- TAMPER-RESISTANT RECEPTACLES ARE TO BE USED IN ALL AREAS SPECIFIED IN 210.52. ALL 125 VOLT, 15 AND 20 AMPERE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES.
35- ARCH-FAULT CIRCUIT INTERRUPTER (AFCI) PROTECTION IS REQUIRED THROUGHOUT IN ACCORDANCE WITH THE NEW CALIFORNIA ELECTRICAL CODE. SECTION 210.12(B).
36- PROVIDE MINIMUM 125 AMP ELECTRICAL SERVICE PANEL W/ METER EQUIP., NO MORE THAN 1 SQ FT SHEAR PENETRATION.
37- PROVIDE DISCONNECT SWITCH FOR AIR HANDLER IN SPACE REQUIRED.
38- PROVIDE OPTIONAL ELECTRICAL TO MASTER BATH TUB (OR AS REQUIRED) FOR WHIRLPOOL HOOK UP PER OWNER.
39- INTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE, CAPABLE OF ILLUMINATING TREADS AND LANDINGS TO LEVELS OF NOT LESS THAN 1-FOOT CANDLE (11 LUX) AS MEASURED AT THE CENTER OF TREADS & LANDINGS. THERE SHALL BE A WALL SWITCH AT EACH FLOOR LEVEL TO CONTROL THE LIGHT SOURCE WHERE THE STAIRWAY HAS SIX OR MORE RISERS. (R303.7)
40- EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED AT THE TOP LANDING OF THE STAIRWAY. (R303.8)
41- SERVICES SUPPLYING DWELLING UNITS SHALL HAVE TYPE 1 OR 2 SURGE PROTECTION DEVICE, PER 2022 CEC SECTION 230.67

BASIS FOR DESIGN

BASIS FOR DESIGN
GOVERNING BUILDING CODE 2022 CALIFORNIA BUILDING CODE
* FLOOR LIVE LOAD = 40 PSF
* DECK LOAD = 60 PSF
* GROUND SNOW LOAD = 107.15 PSF
* WIND DESIGN DATA:
BASIC WIND SPEED V ult = 120 MPH V asd = 93MPH
WIND EXPOSURE = (C)
WIND IMPORTANCE FACTOR, I, AND RISK CATEGORY =1.0
INTERNAL PRESSURE COEFFICIENT 0.2
* SEISMIC DESIGN DATA:
SEISMIC IMPORTANT FACTOR. Ie/RISK =1.0/II
MAPPED Ss = 2.2451
MAPPED S1 = 0.938
SITE CLASS = (D)
SEISMIC DESIGN CATEGORY = E
SDS AND SD1 = 1.495 & 0.938
BASIC SEISMIC-FORCE-RESISTING SYSTEM = LIGHT FRAME W/ SHEAR PANELS
Cs / R / Fa = 0.23 / 6.5 / 1.2
ANALYSIS PROCEDURE USED = BASE SHEAR
DESIGN BASE SHEAR V = 0.23W
REDUNDANCY FACTOR USED p = 1.3

* SNOW LOAD DATA:
FLAT-ROOF SNOW LOAD, Pf = 75 PSF
SNOW EXPOSURE FACTOR, Ce = 1
SNOW LOAD IMPORTANCE FACTOR, Is = 1.0
THERMAL FACTOR, Ct = 1.0
DRIFT SURCHARGE LOAD, Pd, WHERE Hd = 2L
THE SUM PF Pd & Pf EXCEEDS 20 PSF= 200.9#
WIDTH OF SNOW DRIFT, w = 8'

ROOF LIVE SNOW LOAD

(4:12)	=	75 PSF
(5:12)	=	75 PSF
(6:12)	=	75 PSF
(7:12)	=	75 PSF
(8:12)	=	64 PSF
(9:12)	=	58 PSF
(10:12)	=	53 PSF
(12:12)	=	44 PSF
(14:12)	=	36 PSF
(16:12)	=	30 PSF
(18:12)	=	24 PSF

SOIL CLASSIFICATION:	VERTICAL FOUNDATION PRESSURE (psf)	LATERAL BEARING PRESSURE (psf/ft below grade)	COEFFICIENT OF FRICTION	DESIGN LATERAL SOIL LOAD (pound/s.ft. per ft. of depth)		
SANDY GRAVEL, SAND, DG				Active pressure	At-rest pressure	Passive Pressure
NO SILT OR CLAY (SW, SP, GW, GP)	2000	150	0.30	30 FLAT	60	200

THE ENGINEER HAS IDENTIFIED THE SOIL TYPE SW & SP BASED ON OBSERVATION AND HAS CONFIRMED THE SOIL TYPE WITH A SITE VISIT.

REVISION	DATE
STR.	10/24/23
SGN.	00/00/00
CNTY.	00/00/00
CORT.	00/00/00
CORT.	00/00/00

Bryant Bergeson
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(RCE 48805)
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26748 HWY 189, BLUE JAY (909) 336-6970

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Address: 6788 RAINIER COURT
City: RIVERSIDE, CA. 92506
PHONE: (909) 000-0000
E-MAIL: -

PROJECT:
Name: SHORING PLAN
Address: 996 COULTER PINE ROAD
City: CRESTLINE, CA 92325
CONTRACTOR: SEAN HORAN
CONTR. PHONE: (951) 452-6474

LOT: 74-76
TRACT: 1713
BLOCK: 0
A.P.N.: 0344-092-57

REGISTERED PROFESSIONAL ENGINEER
BRYANT R. BERGESON
No. C048805
Exp. 09/30/24
CIVIL
STATE OF CALIFORNIA

SCALE: 1/4"=1'0"
DRAWN BY: ADAN RODARTE
JOB NO.: 0344-092-57
TITLE: NOTES PAGE
SHEET NO.: T-2

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By _____
Date 11/9/2023
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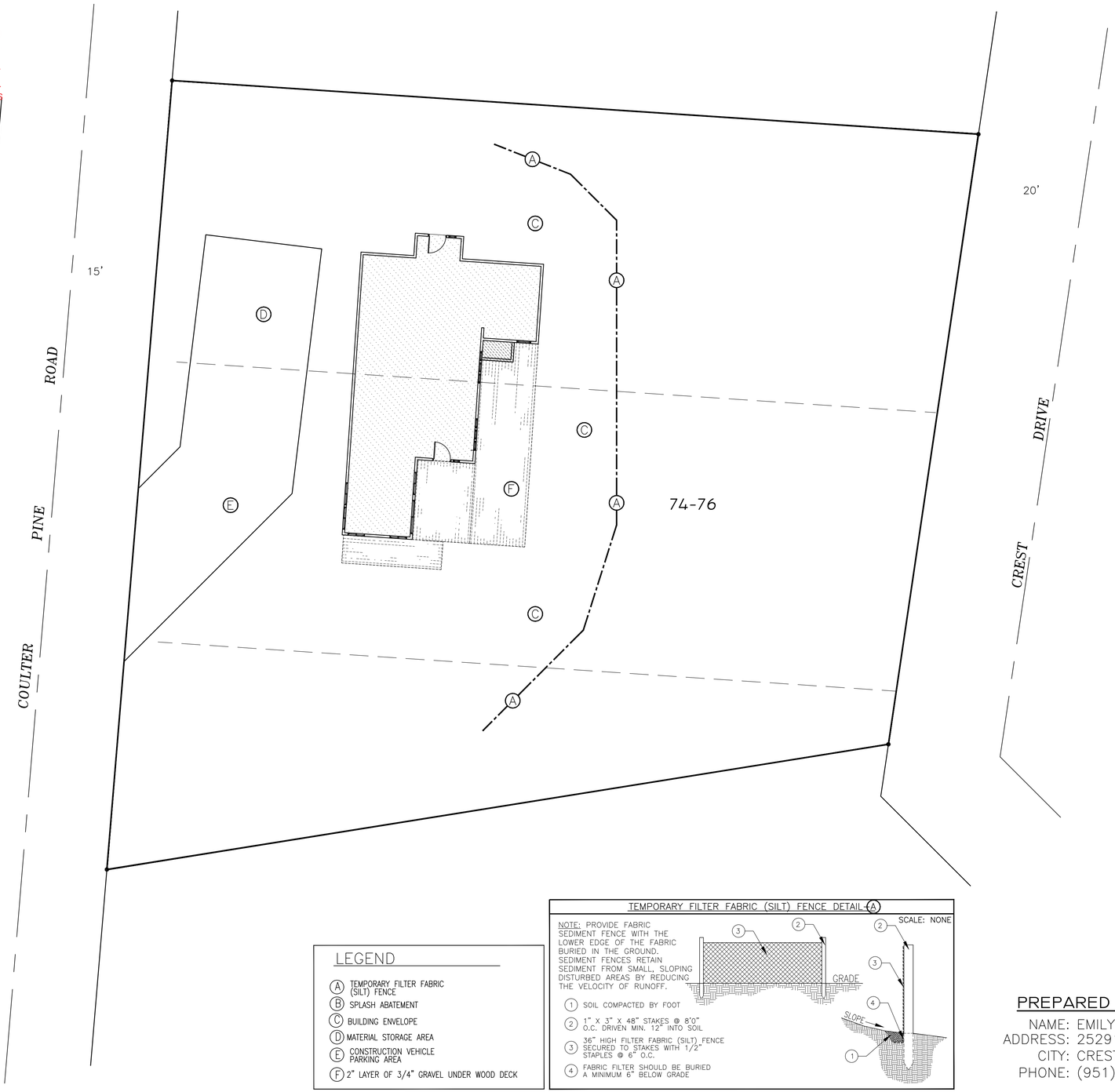
NORTH

SCALE: 1"= 10'
DATE: OCTOBER 27, 2023

10' 0 10' 20' 30'
SCALE IN FEET



BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES

STORM WATER POLLUTION CONTROL AND MINIMUM WATER QUALITY PROTECTION REQUIREMENTS FOR ALL DEVELOPMENT CONSTRUCTION PROJECTS AND ACTIVITIES

THE FOLLOWING IS INTENDED AS MINIMUM NOTES OR AS AN ATTACHMENT FOR BUILDING AND GRADING PLANS AND REPRESENT THE MINIMUM STANDARDS OF GOOD HOUSEKEEPING THAT MUST BE IMPLEMENTED ON ALL CONSTRUCTION SITES REGARDLESS OF SIZE. (APPLIES TO ALL PERMITS)

- ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEETFLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES OR WIND.
- STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
- FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
- NON-STORMWATER RUNOFF FROM EQUIPMENT AND VEHICLE WASHING AND ANY OTHER ACTIVITY SHALL BE CONTAINED AT THE PROJECT SITE.
- EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
- TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
- SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
- ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.

LEGEND

- (A) TEMPORARY FILTER FABRIC (SILT) FENCE
- (B) SPLASH ABATEMENT
- (C) BUILDING ENVELOPE
- (D) MATERIAL STORAGE AREA
- (E) CONSTRUCTION VEHICLE PARKING AREA
- (F) 2" LAYER OF 3/4" GRAVEL UNDER WOOD DECK

TEMPORARY FILTER FABRIC (SILT) FENCE DETAIL-(A)

NOTE: PROVIDE FABRIC SEDIMENT FENCE WITH THE LOWER EDGE OF THE FABRIC BURIED IN THE GROUND. SEDIMENT FENCES RETAIN SEDIMENT FROM SMALL, SLOPING DISTURBED AREAS BY REDUCING THE VELOCITY OF RUNOFF.

1. SOIL COMPACTED BY FOOT
2. 1" X 3" X 48" STAKES @ 8'0" O.C. DRIVEN MIN. 12" INTO SOIL
3. 36" HIGH FILTER FABRIC (SILT) FENCE SECURED TO STAKES WITH 1/2" STAPLES @ 6" O.C.
4. FABRIC FILTER SHOULD BE BURIED A MINIMUM 6" BELOW GRADE

PREPARED FOR

NAME: EMILY FOSTER
ADDRESS: 25291 MAXY DRIVE
CITY: CRESTLINE, CA 92325
PHONE: (951) 662-9370

REVISION	DATE
STR.	10/24/23
SGN.	00/00/00
CNTY.	00/00/00
CORT.	00/00/00
CORT.	00/00/00

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City: CRESTLINE, CA 92325
CONTRACTOR: SEAN HORAN
CONTR. PHONE: (951) 452-6474

LOT:	74-76
TRACT:	1713
BLOCK:	0
A.P.N.:	0344-092-57

REGISTERED PROFESSIONAL ENGINEER
BRYANT R. BERGESON
No. C48805
Exp. 06/30/24
CIVIL
STATE OF CALIFORNIA

SCALE:	1"=10'
DRAWN BY:	ADAN RODARTE
JOB NO.:	0344-092-57
TITLE:	PLOT PLAN
SHEET NO.:	C-1

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By _____

Date 11/9/2023

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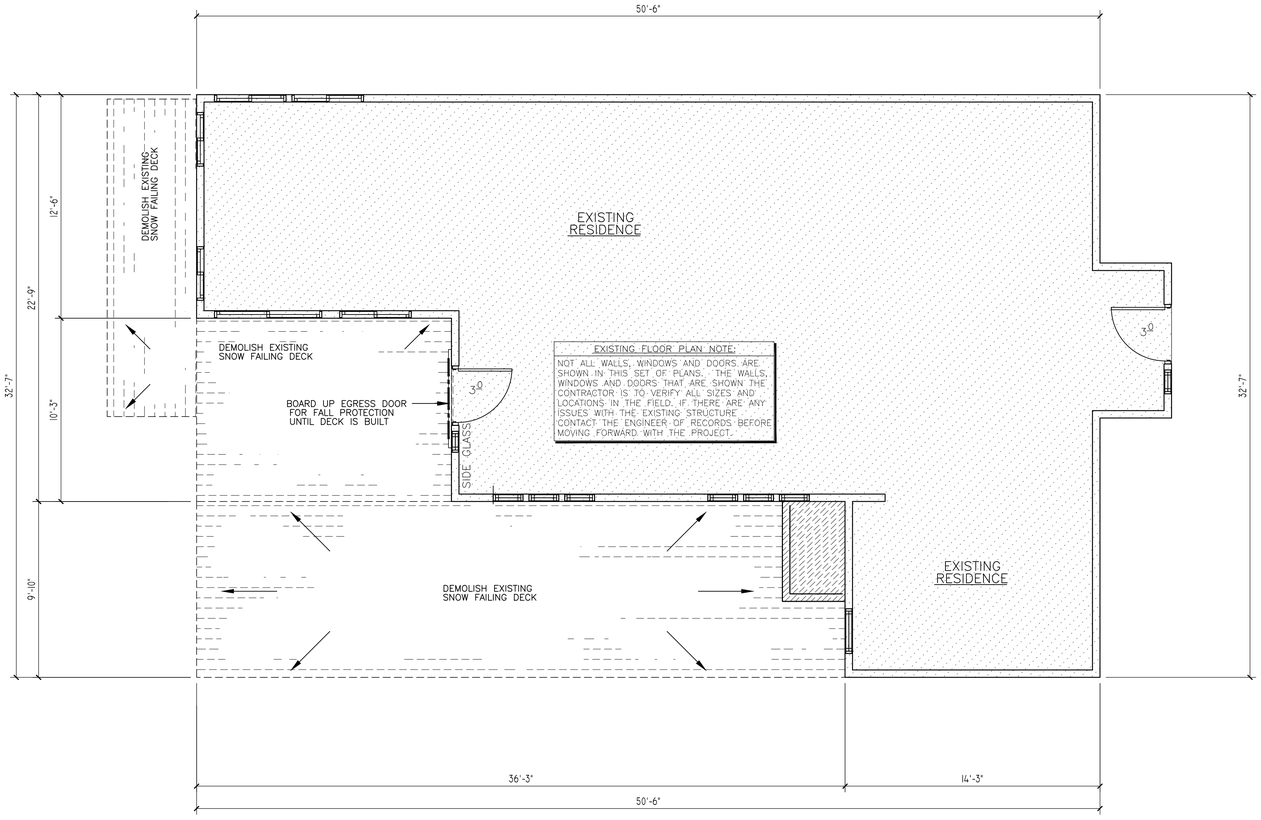

EXISTING DECK FLOOR PLAN

1178 SQ. FT. EXISTING RESIDENCE
573 SQ. FT. EXISTING DECK AREA

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

REVISION	DATE
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CORT.	00/00/00
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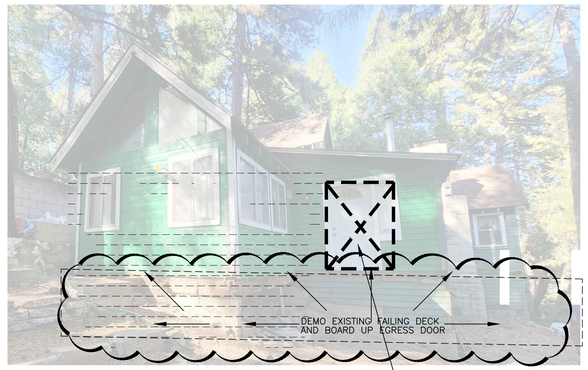
REGISTERED PROFESSIONAL ENGINEER
BRYANT R. BERGESON
No. C048805
Exp. 08/31/24
CIVIL
STATE OF CALIFORNIA

SCALE: 1/4" = 1'-0"
DRAWN BY: ADAN RODARTE
JOB NO.: 0344–092–57
TITLE: FLOOR PLANS
SHEET NO.: A-1

WALL SCHEDULE

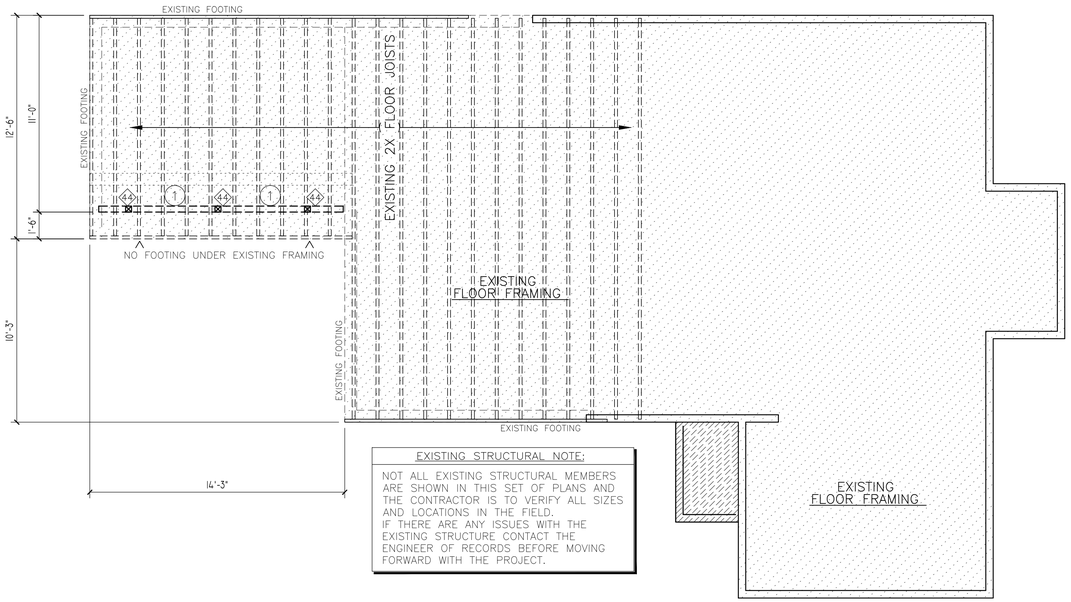
= DENOTES EXISTING WALL TO REMAIN.
= DENOTES NEW 2X4 @ 16" O.C. STUD WALLS.
= DENOTES NEW 2X6 @ 16" O.C. STUD WALLS.
= DENOTES RETAINING WALL.
= DENOTES CONCRETE SLAB OR WATERPROOFING.



EXISTING DEMO & SHORING PLAN

EXISTING EXPOSE FOOTING & STRUCTURAL VIEW

TEMPORARY SHORING PLAN



EXISTING STRUCTURAL NOTE:

NOT ALL EXISTING STRUCTURAL MEMBERS ARE SHOWN IN THIS SET OF PLANS AND THE CONTRACTOR IS TO VERIFY ALL SIZES AND LOCATIONS IN THE FIELD.
IF THERE ARE ANY ISSUES WITH THE EXISTING STRUCTURE CONTACT THE ENGINEER OF RECORDS BEFORE MOVING FORWARD WITH THE PROJECT.

SHORING FRAMING PLAN

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

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STRUCTURAL POST SCHEDULE	
⊠ 4X2 = 4X4 POST	⊠ 6X6 = 6X6 POST
⊠ 4X6 = 4X6 POST	⊠ 6X8 = 6X8 POST
⊠ 4X8 = 4X8 POST	⊠ 8X8 = 8X8 POST
⊠ PL = POINT LOAD/KING POST	⊠ EXT = EXISTING POST

STRUCTURAL FLOOR SCHEDULE	
1	TEMPORARY SHORING WITH TWO 4X12 JOIST GIRDER AND 4X4 POSTS
2	
3	
4	

FLOOR JOISTS SCHEDULE	
A	
B	
C	

STRUCTURAL FLOOR NOTES:

1- 2X & 4X MEMBERS TO BE DOC PS20 GRADE DF #2 OR BETTER
2- 6X & 8X MEMBERS TO BE DOC PS20 GRADE DF#1 OR BETTER
3- ◄—— BLOCK ——► = SOLID BLOCK OVER BEARING WALL AND OR FLOOR GIRDERS AND JOIST ENDS
4- ALL BEARING WINDOW AND DOOR HEADERS ARE TO BE 4X12 DF#2 UNLESS NOTED OTHERWISE
5- ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE LATEST OF ALL CITY, COUNTY, AND STATE BUILDING CODES.
6- PROVIDE DOUBLE FLOOR JOISTS UNDER PARALLEL PARTITIONS AND PARALLEL EXTERIOR WALLS.

REVISION	DATE
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CORT.	00/00/00
CORT.	00/00/00

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No. C48805
Exp. 06/30/24
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STATE OF CALIFORNIA

SCALE:	1/4"=1'0"
DRAWN BY:	ADAN RODARTE
JOB NO.:	0344-092-57
TITLE:	FLR. FRAMING
SHEET NO.:	S-1

----------COVER SHEET----------

2022 CBC & 2022 CRC

Job Name:	Leatherwood Shoring
Lot Number:	74-76
Tract Number:	1713
APN:	0344-092-57
Job Address:	996 Coulter Pine Rd, Crestline, Ca. 92325
Engineer:	Bryant R. Bergeson, RPE No. 48805 26748 Hwy 189, Blue Jay, Ca 92327 (909) 336-6970
Pages in Calculation Packet:	3
Typical Load Calculation Page:	2
Vertical Load Calculation Pages:	3-
Lateral Load Calculation Pages:	x-xx

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Stamp and Signature

Typical Load Calculations

Roof

DEAD LOAD | LIVE LOAD | Roof Snow Load

$P_{g75} := 107.143\ psf$
$P_{g100} := 142.857\ psf$

Shingles	$sh := 6.0\ psf$	$C_e := 1.0$	$C_t := 1.0$	$I := 1.0$	ASCE 7-16, 7.3-1
Sheathing	$sht := 2.0\ psf$	$P_g := P_{g75} = 107.143\ psf$	$P_f := 0.7 \cdot C_e \cdot C_t \cdot I \cdot P_g$	$P_f = 75\ psf$	
Framing	$fr := 4.0\ psf$	$C_s := 1.0$			
Insulation	$ins := 1.5\ psf$	$RLL := 20\ psf$	$Pitch(x) := \frac{x}{12}$	$L(Pitch) := \sqrt{(12 \cdot Pitch)^2 + 12^2}$	
Ceiling	$cl := 1.5\ psf$				
PV	$PV := 3\ psf$				

$A_m(b,d) := b \cdot d$
$S_m(b,d) := \frac{b \cdot d^2}{6}$
$I_m(b,d) := \frac{b \cdot d^3}{12}$

$C_{so}(x) := 1 - (\text{atan}(Pitch(x))\ deg^{-1} - 30) \div 40$
$P_{so}(x) := \text{if}(x > 7, C_{so}(x) \cdot P_f, P_f)$

*ASCE 7-16 commentary C7.4

$DL := (sh + sht + fr + ins + cl + PV)$ $DL = 18\ psf$ $RDL(x) := DL \cdot (L(Pitch(x)) \div 12)$ $TRL(x) := P_{so}(x) + RDL(x)$

Slope/12	Sloped Dead Load	Sloped Snow Load	Total Roof Load
$y := 12$	$RDL(y) = 25.456\ psf$	$P_{so}(y) = 46.875\ psf$	$TRL_1 := TRL(y) = 72.331\ psf$
$y := 8$	$RDL(y) = 21.633\ psf$	$P_{so}(y) = 68.081\ psf$	$TRL_2 := TRL(y) = 89.715\ psf$
$y := 6$	$RDL(y) = 20.125\ psf$	$P_{so}(y) = 75\ psf$	$TRL_3 := TRL(y) = 95.125\ psf$
$y := 4$	$RDL(y) = 18.974\ psf$	$P_{so}(y) = 75\ psf$	$TRL_4 := TRL(y) = 93.974\ psf$

Note: if roof pitch is less than 7:12 use total snow load on roof which is TRL4

$P_{sr} := P_{so}(6) = 75\ psf$

Floor

DEAD LOAD: $cvr := 1.0\ psf$ $shtg := 2.0\ psf$ $frg := 2.0\ psf$ $ins := 1.5\ psf$ $cl := 1.5\ psf$

$FDL := (cvr + shtg + frg + ins + cl + 2\ psf)$ $FDL = 10\ psf$ (Floor Dead Load)

LIVE LOAD: $FLL := 40\ psf$ (Floor Live Load)

TOTAL FLOOR LOAD: $TFL := (FLL + FDL)$ $TFL = 50\ psf$

Wall

(studs) (drywall) (stucco) (5/8" plywood) (3/8" plywood)

$stds := 1.0$ $dry := 3.0$ $stucco := 11.0$ $five := 2.0$ $three := 1.0$

$Wall_e := (stds + dry + 2 \cdot five)\ psf$ $Wall_i := (stds + 2 \cdot dry)\ psf$ $Wall_s := (stds + dry + stucco + three)\ psf$ $Wall := 40\ plf$

Deck

$dshtg := 3.0\ psf$ (decking) $DLL := 60\ psf$ (Deck Live Load) $SpaLoad := 95\ psf$

$dfrg := 3.0\ psf$ (framing) $DSL := P_f$ $DSL = 75\ psf$ (Deck Snow Load)

$DDL := dshtg + dfrg = 6\ psf$

$DTL := DDL + DLL \cdot .75 + DSL \cdot 0.75$ $DTL = 107.25\ psf$ (Deck Total Load) CBC 1605.3 equation 16-11

Photovoltaic System Provisions

$CFA := 1500$ $NDwell := 1$ $A_{16} := 0.59$ $B_{16} := 1.22$ 250 W Panel Size $PS := 5\ ft \cdot 3\ ft$ $PS = 15\ ft^2$

$KW_{PV} := (CFA \cdot A_{16}) \cdot 0.001 + (NDwell \cdot B_{16})$ $KW_{PV} = 2.105$

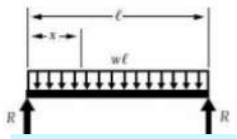
$N_p := KW_{PV} \cdot \frac{1000}{250}$ $N_p = 8.42$ $SQ := N_p \cdot PS$ $SQ = 126.3\ ft^2$ Equation 150.1-C PV output

GLB Volume Factor

$$C_{Vo}(l,d,b) := \text{if}\left(\left(\frac{21\ ft}{l}\right)^{0.1} \cdot \left(\frac{12\ in}{d}\right)^{0.1} \cdot \left(\frac{5.125\ in}{b}\right)^{0.1} < 1, \left(\frac{21\ ft}{l}\right)^{0.1} \cdot \left(\frac{12\ in}{d}\right)^{0.1} \cdot \left(\frac{5.125 \cdot in}{b}\right)^{0.1}, 1\right)$$

Beam - 1 (S-1)

$l := 5 \cdot ft$ **try 4x12 DF#2** $b := 3.5 \cdot in$ $d := 11.25 \cdot in$



$E := 1600000 \cdot psi$ $F_v := 180 \cdot psi$ $F_b := 900 \cdot psi$ $C_f := 1.0$ $C_D := 1.0$

$Beam := b \cdot d \cdot 33 \cdot pcf = 9.023\ plf$ $w := (6 \cdot ft) \cdot (TRL_1 + TFL) + Beam$ $w = 743.009\ plf$

$Le := l - (d \cdot 2)$ $R := \frac{Le \cdot w}{2}$ $R = 1160.951\ lbf$ $A := \frac{R \cdot 1.5}{F_v \cdot C_D}$ $A = 9.675\ in^2$ < $A_m(b,d) = 39.375\ in^2$

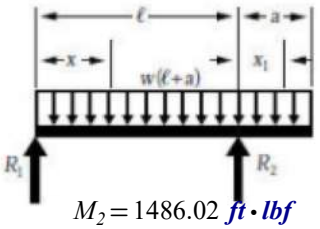
$M := \frac{w \cdot l^2}{8}$ $M = 2321.903\ ft \cdot lbf$ $S := \frac{M}{F_b \cdot C_f \cdot C_D}$ $S = 30.959\ in^3$ < $S_m(b,d) = 73.83\ in^3$

$\Delta TL := \frac{l}{240}$ $\Delta TL = 0.25\ in$ $I := \frac{5 \cdot (w) \cdot l^4}{384 \cdot (E) \cdot (\Delta TL)}$ $I = 26.121\ in^4$ < $I_m(b,d) = 415.283\ in^4$

USE 4 X 12 DF#2

Cantilevered Beam -1 (S-1)

$l := 5 \cdot ft$ $a := 2 \cdot ft$ **try 4x12 DF#2** $b := 3.5 \cdot in$ $d := 11.25 \cdot in$



$E := 1600000 \cdot psi$ $F_v := 180 \cdot psi$ $F_b := 900 \cdot psi$ $C_f := 1.0$ $C_D := 1.0$

$Beam := b \cdot d \cdot 33 \cdot pcf = 9.023\ plf$ $w := (6 \cdot ft) \cdot (TRL_1 + TFL) + Beam$ $w = 743.009\ plf$

$R_1 := \left(\frac{w}{2 \cdot l}\right) \cdot (l^2 - a^2)$ $R_1 = 1560.319\ lbf$ $R_2 := \frac{w}{2 \cdot l} \cdot (l + a)^2$ $R_2 = 3640.743\ lbf$

$V_1 := R_1 = 1560.319\ lbf$ $V_2 := w \cdot a = 1486.018\ lbf$ $V_3 := \frac{w}{2 \cdot l} \cdot (l^2 + a^2) = 2154.726\ lbf$

$M_1 := \left(\frac{w}{8 \cdot l^2}\right) \cdot (l + a)^2 \cdot (l - a)^2$ $M_2 := \frac{w \cdot a^2}{2}$ $M_1 = 1638.33\ ft \cdot lbf$ $M_2 = 1486.02\ ft \cdot lbf$

$V := \max(V_1, V_2, V_3)$ $V = 2154.726\ lbf$ $A := \frac{V \cdot 1.5}{F_v \cdot C_D}$ $A = 17.956\ in^2$ < $A_m(b,d) = 39.375\ in^2$

$M := \max(M_1, M_2) = 1638.33\ ft \cdot lbf$ $S := \frac{M}{F_b \cdot C_f \cdot C_D}$ $S = 21.84\ in^3$ < $S_m(b,d) = 73.83\ in^3$

$\Delta TL := \frac{l}{240}$ $\Delta TL = 0.25\ in$ $I := \frac{5 \cdot (w) \cdot l^4}{384 \cdot (E) \cdot (\Delta TL)}$ $I = 26.121\ in^4$ < $I_m(b,d) = 415.283\ in^4$

USE 4 X 12 DF#2

Deck Post 4x4

$span := 4 \cdot ft$ **try 4x4 DF#2 post.** $b := 3.5 \cdot in$ $d := 3.5 \cdot in$

$E := 1600000 \cdot psi$ $E_{min} := 580000 \cdot psi$ $F_v := 170 \cdot psi$ $F_b := 1200 \cdot psi$ $F_c := 1000 \cdot psi$ $C_D := 1.15$

$Beam := 15 \cdot plf$ $Load := (6 \cdot ft) \cdot 6 \cdot ft \cdot (TFL + TRL_1)$ $Load = 4403.913\ lbf$

$WLoad := 16 \cdot plf$

$F_{bb} := F_b \cdot C_D = 1380\ psi$ $Fcc := F_c \cdot C_D$ $Fcc = 1150\ psi$ $S_b := \frac{b \cdot d^2}{6}$ $A_b := b \cdot d$

NDS Notation Key
$fcc=f_c$
$fbb=f_b$
$Fcc=F_c$*
$F_{cc}=F_c'$
$F_{bb}=F_b'$

$K_e := 1.0$ $l_e := K_e \cdot span$ $l_e = 4\ ft$ $\frac{l_e}{d} = 13.714$ < **50 OK**

$F_{cE} := 0.822 \cdot E_{min} \cdot \left(\frac{d}{l_e}\right)^2$ $F_{cE} = 2534.857\ psi$

$f_c := \frac{Load}{A_b}$ $f_c = 359.503\ psi$ < $F_{cE} = 2534.857\ psi$ **OK**

$M := \frac{WLoad \cdot span^2}{8}$ $f_b := \frac{M}{S_b}$ $f_b = 53.738\ psi$

$c := 0.8$ $C_P := \left(1 + \left(\frac{F_{cE}}{Fcc}\right)\right) \cdot \left(\frac{1}{2 \cdot c}\right) - \sqrt{\left(\left(1 + \left(\frac{F_{cE}}{Fcc}\right)\right) \cdot \left(\frac{1}{2 \cdot c}\right)\right)^2 - \left(\frac{F_{cE}}{Fcc \cdot c}\right)} = 0.882$

$F_{cc} := Fcc \cdot C_P$ $F_{cc} = 1014.581\ psi$ $\left(\frac{f_c}{F_{cc}}\right)^2 + \left(\frac{f_b}{F_{bb} \cdot \left(1 - \left(\frac{f_c}{F_{cE}}\right)\right)}\right) = 0.171$ ≤ **1.0 OK**

$R_b := \sqrt{l_e \cdot \frac{d}{b^2}} = 3.703$ $F_{bE} := 1.20 \cdot \frac{E_{min}}{R_b^2} = 50750\ psi$ $\left(\frac{f_c}{F_{cE}}\right) + \left(\frac{f_b}{F_{bE}}\right)^2 = 0.142$ < **1.0 OK**

USE 4 X 4 DF#2 Post