

## GENERAL NOTES

THE CONSTRUCTION DOCUMENTS PRESENTED BY R.E. HURTADO & ASSOCIATES HAVE BEEN DEVELOPED FOR THE EXPERIENCED BUILDER AND CONFORM TO THE CURRENT I.B.C. STANDARDS. SAID STANDARDS INCORPORATE BUILDING AND ENGINEERING PRACTICES THAT MAY NOT BE SPECIFICALLY NOTED ON THE DOCUMENTS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CONFORMING TO THE CODES AND REGULATIONS OF THE ENFORCING BODY.

R.E. HURTADO & ASSOCIATES SHALL BE PROMPTLY NOTIFIED OF ANY ERRORS, OMISSIONS AND DESIGN FLAWS APPEARING IN THE DRAWINGS OR SPECIFICATIONS, AND SHALL ISSUE INSTRUCTIONS TO THE CONTRACTOR. SHOULD THE CONTRACTOR PROCEED WITH THE WORK SO AFFECTED WITHOUT SAID INSTRUCTIONS, HE SHALL MAKE GOOD ANY RESULTING DAMAGE OR DEFECT.

DETAILS AND NOTES ON THESE DRAWINGS ARE TYPICAL AND SHALL APPLY UNLESS OTHERWISE NOTED. DETAILS NOT FULLY SHOWN SHALL BE OF THE SAME NATURE AS SHOWN FOR SIMILAR CONDITIONS.

THE ENERGY COMPLIANCE FORMS FOR THIS PROJECT, DATED 8-19-2024, ISSUED UNDER SEPARATE COVER ARE AN INTEGRAL PART OF THE CONSTRUCTION DOCUMENTS AND SHALL GOVERN IN CASE OF DISCREPANCIES. CHANGES IN SPECIFIED MATERIALS SHALL NOT BE PERMITTED UNLESS THE PROPOSED CHANGES WILL RESULT IN LOWER OVERALL HEAT TRANSFER COEFFICIENT (U) FOR THE ASSEMBLY.

THE SITE PLAN PROVIDED IS NOT A PROPERTY SURVEY. ALL INFORMATION REGARDING THE PROPERTY BOUNDARIES WAS TAKEN FROM RECORDED MAPS FILED WITH THE COUNTY OR CITY. R.E. HURTADO & ASSOCIATES DOES NOT TAKE RESPONSIBILITY FOR THE ACCURACY OF THE DATA PRESENTED AND DRAWN. IF A DISCREPANCY ARISES, THE PROPERTY SHOULD BE RESURVEYED. R.E. HURTADO & ASSOCIATES IS NOT RESPONSIBLE NOR LIABLE FOR THE EXISTING SOILS CONDITIONS OR TOPOGRAPHY OF THE PROPERTY SHOWN.

ALL UTILITY INFORMATION SHALL BE VERIFIED BY THE CONTRACTOR. R.E. HURTADO & ASSOCIATES ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE UTILITY LOCATIONS SHOWN.

THE CONTRACTOR SHALL RESTORE ALL EXISTING BUILDING SITE IMPROVEMENTS, INCLUDING SIDEWALK, CURB & GUTTER, WALKWAYS, PATIOS, FENCES, LANDSCAPING & IRRIGATION, PLUMBING ETC. WHICH HAVE BEEN DAMAGED OR ALTERED BY REASON OF THE CONTRACTOR'S OPERATIONS, TO A NEW CONDITION AND TO THE COMPLETE SATISFACTION OF THE OWNER.

## ENERGY NOTES

THE PROJECT HEREIN COMPLIES WITH ALL CURRENT GENERAL ENERGY CONSERVATION REGULATIONS AS KNOWN TO PRESENTLY EXIST IN THE COUNTY OF CONTRA COSTA. INSULATION SHALL BE MINIMUM AS SHOWN ON PLANS. ALL DOORS AND WINDOWS SHALL BE TIGHT FITTING AND FULLY WEATHERSTRIPPED. SOLE PLATE, EXTERIOR CORNERS, WINDOW AND DOOR FRAMES SHALL BE PROPERLY CAULKED TO AVOID THE TRANSFER OF CONDITIONED AIR. INSULATION, CAULKING, WATER FLOW RATES, GAS PILOTS, AND LIGHTING SHALL BE AS PER CURRENT TITLE 24 REGULATIONS. ALL FIRE PLACES SHALL HAVE TIGHT FITTING CLOSEABLE METAL OR GLASS DOORS, OUTSIDE AIR INTAKE WITH DAMPER, FLUE DAMPER, NO CONTINUOUS PILOT AND SHALL COMPLY TO ALL LOCAL CODES. TOTAL GLAZING INSTALLED SHALL COMPLY TO SPECIFIC TITLE 24 PACKAGE, MEET GLAZING REQUIREMENTS FOR NEW RESIDENTIAL BUILDINGS AND ALL PERFORMANCE REGULATIONS IN EFFECT AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT.

## APPLICABLE CODES & STANDARDS

2022 California Building Code  
2022 California Electrical Code  
2022 California Fire Code  
2022 California Green Building Standards Code  
2022 California Mechanical Code  
2022 California Plumbing Code  
2022 California Residential Code  
2022 California Energy Code  
Energy Efficiency Standards for Residential and Nonresidential Buildings, July 2022  
CONTRA COSTA COUNTY Municipal Code

THE DESIGNS HEREIN PRESENTED ARE THOSE OF DAREN & TINA DERITA, AND HAVE BEEN PREPARED BY R.E. HURTADO & ASSOC. UNDER THE DIRECTION OF THE ABOVE.

## CALGREEN NOTES

TO MANAGE STORM WATER DRAINAGE DURING CONSTRUCTION AND WHERE STORM WATER IS CONVEYED TO A PUBLIC DRAINAGE SYSTEM, COLLECTION POINT OR SIMILAR DISPOSAL METHOD, WATER SHALL BE FILTERED BY USE OF A BARRIER SYSTEM, WATTLE OR OTHER METHOD APPROVED BY THE ENFORCEMENT AGENCY. CONTRACTOR TO SUBMIT WASTE REDUCTION, DISPOSAL, AND RECYCLING PLAN DOCUMENT THROUGH GREEN HALO. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHALL NOT BE INSTALLED. WALL AND FLOOR FRAMING SHALL NOT BE ENCLOSED WHEN THE FRAMING MEMBERS EXCEED 19% MOISTURE CONTENT. FINISH MATERIALS SHALL COMPLY WITH SECTION 4.502.2 OF THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE FOR ADHESIVES, SEALANTS AND CAULKS, PAINTS AND COATINGS, RESILIENT FLOORING SYSTEMS, AND COMPOSITE WOOD PRODUCTS.

## Residential CALGreen Code Checklist

Project designer may use this checklist to indicate the sheet number of the project plans that shows compliance with the specific CALGREEN code sections for residential projects. Residential projects consist of any project with a residential occupancy group (R-3, R-2, etc.). CALGreen applies to all new residential structures, and also applies to additions and alterations that increase the building's condition area, volume, or size. For sections that do not apply to the specific project, please write "N/A" as the sheet number.

This guideline also identifies:

- Which city division has responsibility for plan check and inspection for the listed sections of the CALGreen provisions: B Building Division; E Current Engineering Division;

When using this checklist: reviewer or inspector place a check mark next to the division letter; reviewer circle the appropriate letter B or E to indicate which division will do the inspection.

Permit No.	Reviewed by:	Section Title	Sheet Number	Primary responsibility (office use)	Yes	No
4.106		Site Development	ONE	E	E/B	
		2 Storm water drainage and retention during construction	N/A	E	E/B	
		3 Grading and paving (Surface Drainage) (on Site or Grading Plan)	N/A	E	E/B	
		4 Electrical vehicle charging	N/A	B	B	
4.201		Energy Efficiency	ELEVEN (24.3)	B	B	
		1 Mandatory Energy Standards of Title 24		B	B	
4.303		Indoor Water Use	EIGHT	B	B	
		1 Water conserving plumbing fixtures and fittings		B	B	
		2 Plumbing fixtures and fittings to meet CFC		B	B	
4.304		Outdoor Water Use	N/A	B	B	
		1 Irrigation controllers		B	B	
4.406		Enhanced Durability and Reduced Maintenance	EIGHT	B	B	
		1 Rotect proofing		B	B	
4.408		Construction Waste Reduction, Disposal and Recycling	ONE	B	B	
		1 Submit local ordinance waste management plan and final report for Covered Projects, as defined in City of Concord Municipal Code ("CCMC") Section 8.20.350, and meet the Division Requirements of CCMC Section 8.20.360.		B	B	
4.410		Building Maintenance and Operation	EIGHT	B	B	
		1 Operation and maintenance manual		B	B	
4.503		Fireplaces	N/A	B	B	
		1 Direct-vent sealed-combustion gas fireplace or woodstove with U.S. EPA New Source Performance Standards		B	B	
4.504		Pollutant Control	EIGHT	B	B	
		1 Covering of dust openings and protection of equipment during construction		B	B	
		2 Finish material pollution control		B	B	
		3 Carpet systems		B	B	
		4 Resilient flooring systems		B	B	
		5 Composite wood products		B	B	
4.505		Indoor Moisture Control	N/A	B	B	
		2 Concrete slab foundations		B	B	
		3 Moisture content of building materials		B	B	
4.506		Indoor Air Quality and Exhaust	EIGHT	B	B	
		1 Bathroom exhaust fans		B	B	
4.507		Environmental Comfort	EIGHT	B	B	
		2 Heating and air-conditioning system design		B	B	

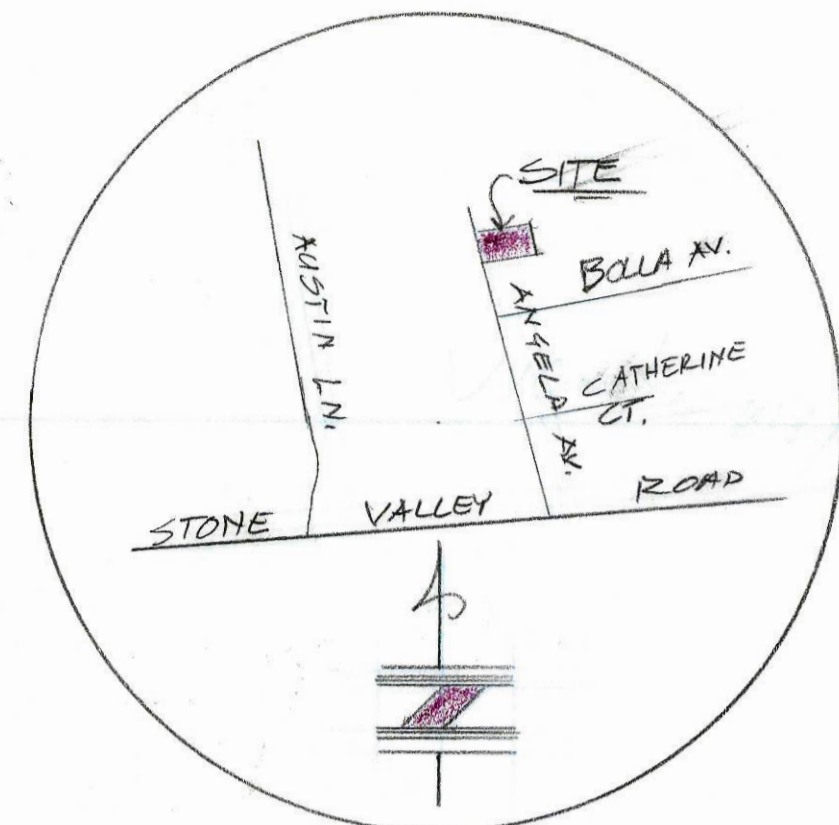
\*\* For inspection items with E/B, Engineering Division will inspect when a grading permit is issued, otherwise Building Division will inspect.

PROJECT DATA	PROJECT INDEX
EDITION	R-20
OCCUPANCY TYPE	R-3
BUILDING TYPE	V-B
NUMBER OF STORIES	ONE
AUTOMATIC FIRE SPRINKLER SYSTEM	NONE
DESCRIPTION	SQ. FT.
TOTAL LOT AREA	25,440
EXISTING LIVING AREA	1,657
NEW LIVING AREA	1,455
TOTAL LIVING AREA	3,112
EXISTING GARAGE AREA	400
NEW GARAGE AREA (ADDED)	306
NEW GARAGE AREA (ADJUSTED)	506
BUILDING FOOTPRINT	3,618
LOT COVERAGE	14.28

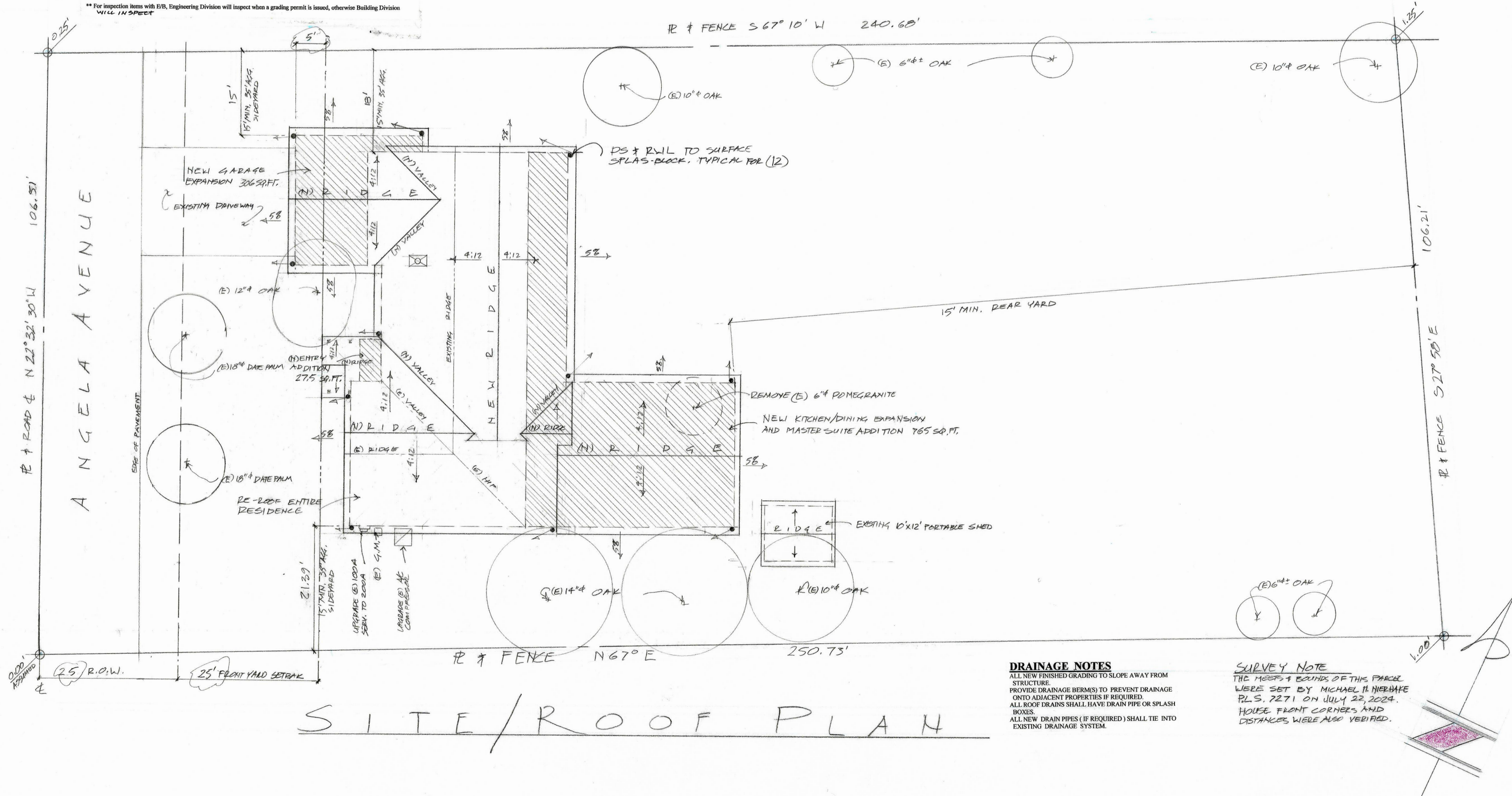
## SCOPE OF WORK

ADD 1,455 SQ. FT. OF LIVING AREA.  
ADD 306 SQ. FT. OF GARAGE AREA.  
RECONFIGURE ROOF FRAMING.  
RE-ROOF ENTIRE STRUCTURE.  
UPGRADE ELECTRICAL MAIN SERVICE TO 200A.  
UPGRADE HVAC UNITS, PER HVAC CONTRACTOR AND TITLE 24 ENERGY DOCUMENTS.  
REPLACE EXISTING WATER HEATER WITH TANKLESS UNIT.  
ADD ELECTRICAL OUTLETS, SWITCHES AND LIGHTING.  
ADD PLUMBING AND FIXTURES PER PLAN.  
REPLACE EXISTING MASONRY CHIMNEY WITH WOOD AND MPED TRIPLE WALL FLUE PER PLAN.

RECEIVED on 07/14/2025 CDVR25-01036  
By Contra Costa County  
Department of Conservation and Development



VICINITY MAP  
N.T.S.



## DRAINAGE NOTES

ALL NEW FINISHED GRADING TO SLOPE AWAY FROM STRUCTURE.  
PROVIDE DRAINAGE BERM(S) TO PREVENT DRAINAGE ONTO ADJACENT PROPERTIES IF REQUIRED.  
ALL ROOF DRAINS SHALL HAVE DRAIN PIPE OR SPLASH BOXES.  
ALL NEW DRAIN PIPES (IF REQUIRED) SHALL TIE INTO EXISTING DRAINAGE SYSTEM.

## SURVEY NOTE

THE MEASUREMENTS OF THIS PARCEL WERE SET BY MICHAEL H. HERBATE PLS. 7271 ON JULY 23, 2024. HOUSE FRONT CORNERS AND DISTANCES WERE ALSO VERIFIED.

REVISIONS  
PER PLAN A-1-25

R.E. HURTADO & ASSOC.  
RESIDENTIAL / LIGHT COMMERCIAL  
P.O. BOX 6152  
CONCORD, CA 94524-6152  
925-685-5834  
Hurtado.Assoc@gmail.com

ADDITION/REMODEL PLAN  
DAREN & TINA DERITA  
236 ANGELA AVENUE, ALAMO, CONTRA COSTA COUNTY, CA  
APR. 192-090-007

## SCALE

1"=10'

## DATE

4-9-25

## JOB No

R2309

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# RECORD OF SURVEY

## RS \_\_\_\_\_

PORTION OF RANCHO SAN RAMON  
UNINCORPORATED TOWN OF ALAMO  
CONTRA COSTA COUNTY, CALIFORNIA

JULY, 2024

SCALE: 1" = 30'

**Nierhake Surveying**  
Martinez, CA.

### SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYOR'S ACT AT THE REQUEST OF DARRIN DERITA, JULY, 2024.

DATED: 7/22/24

*Michael H. Nierhake*  
MICHAEL H. NIERHAKE, P.L.S. 7271



### COUNTY SURVEYOR'S STATEMENT

THIS MAP HAS BEEN EXAMINED IN ACCORDANCE WITH SECTION 8766 OF THE PROFESSIONAL LAND SURVEYOR'S ACT  
THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

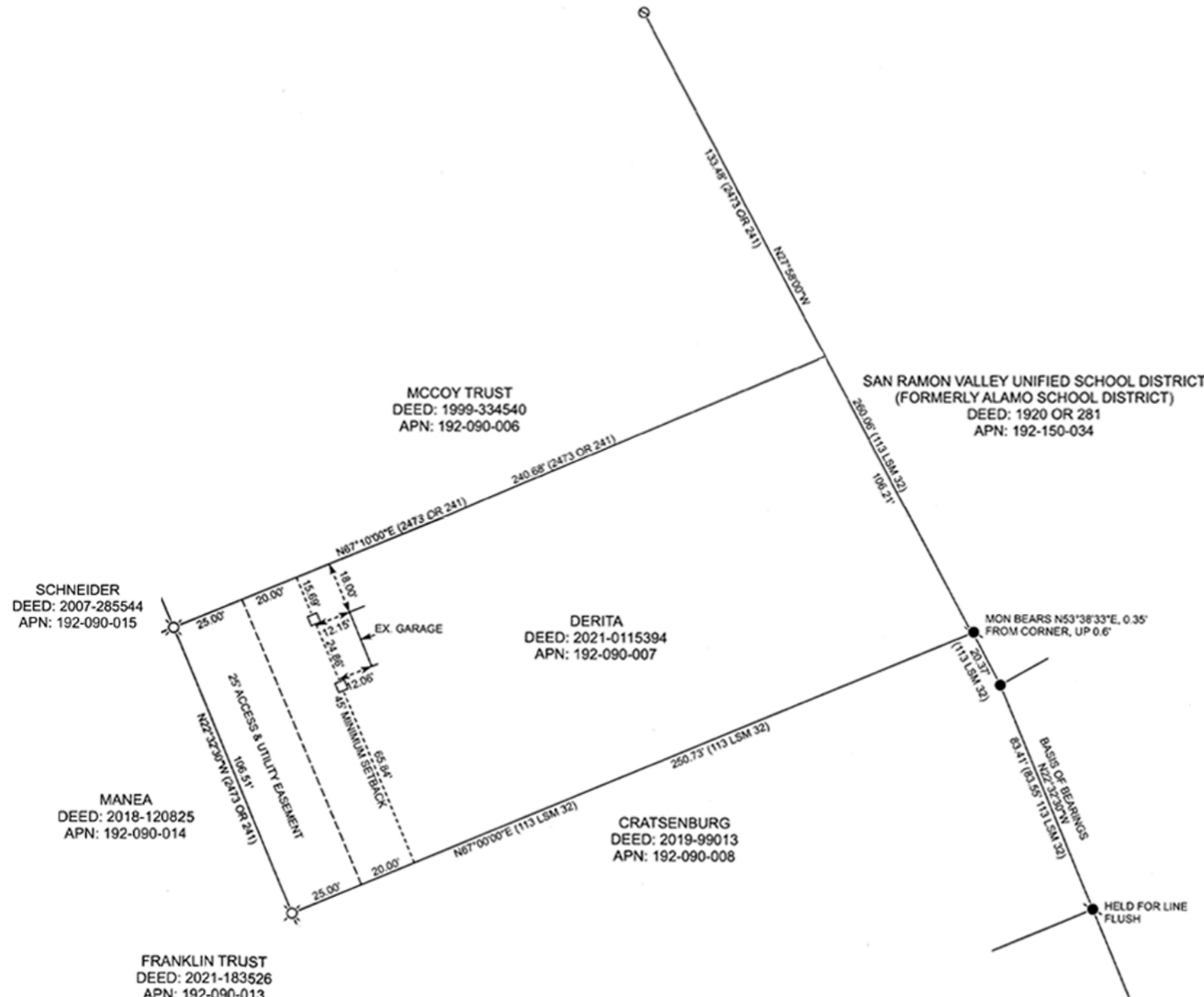
BY: \_\_\_\_\_  
DANA M. TREZISE, PLS 7438  
COUNTY SURVEYOR

### RECORDER'S STATEMENT

FILED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ AT \_\_\_\_\_ .M.  
IN BOOK \_\_\_\_\_ OF LICENSED SURVEYOR'S MAPS AT PAGE \_\_\_\_\_,  
AT THE REQUEST OF DARRIN DERITA.

DEBORAH COOPER  
COUNTY RECORDER

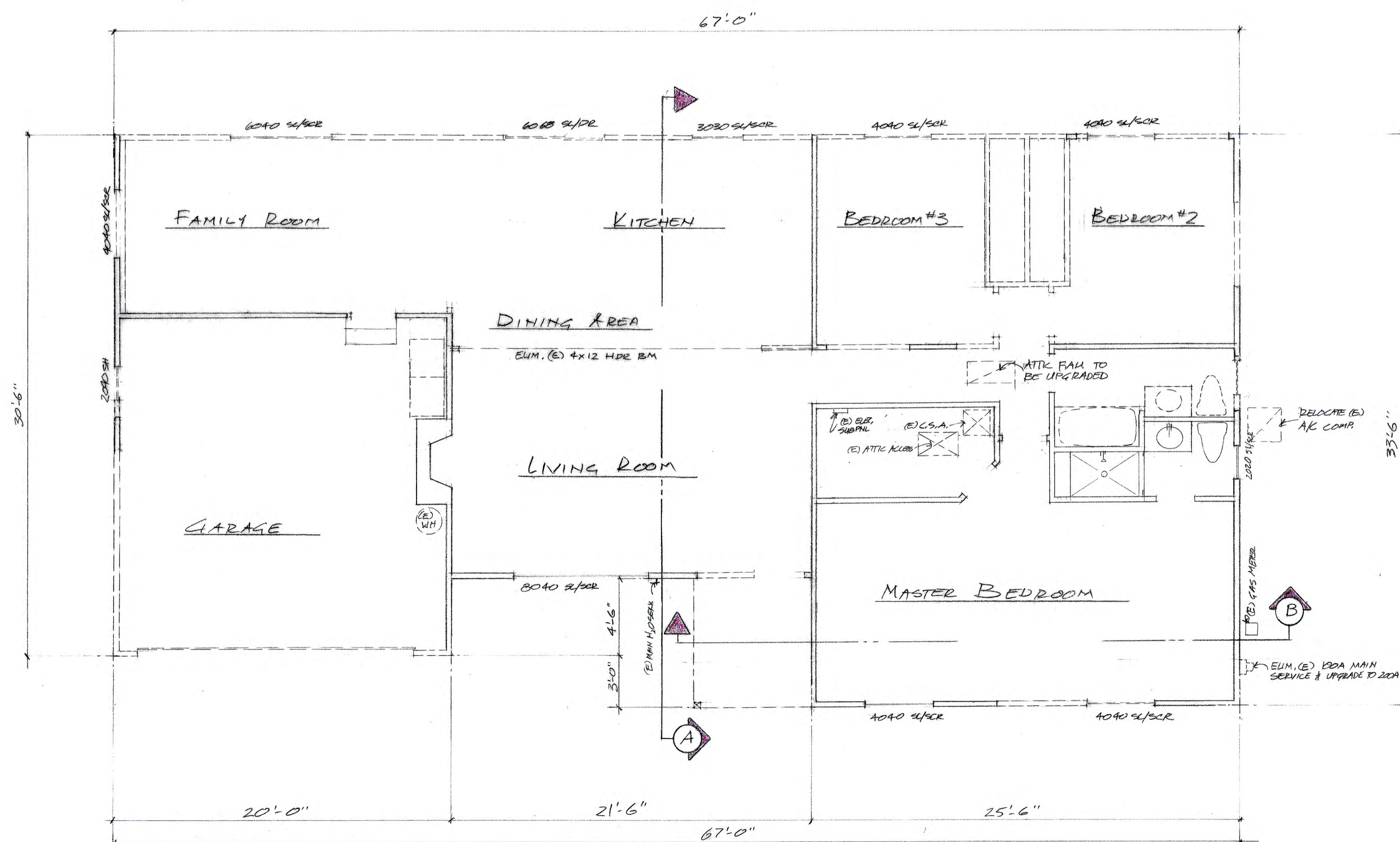
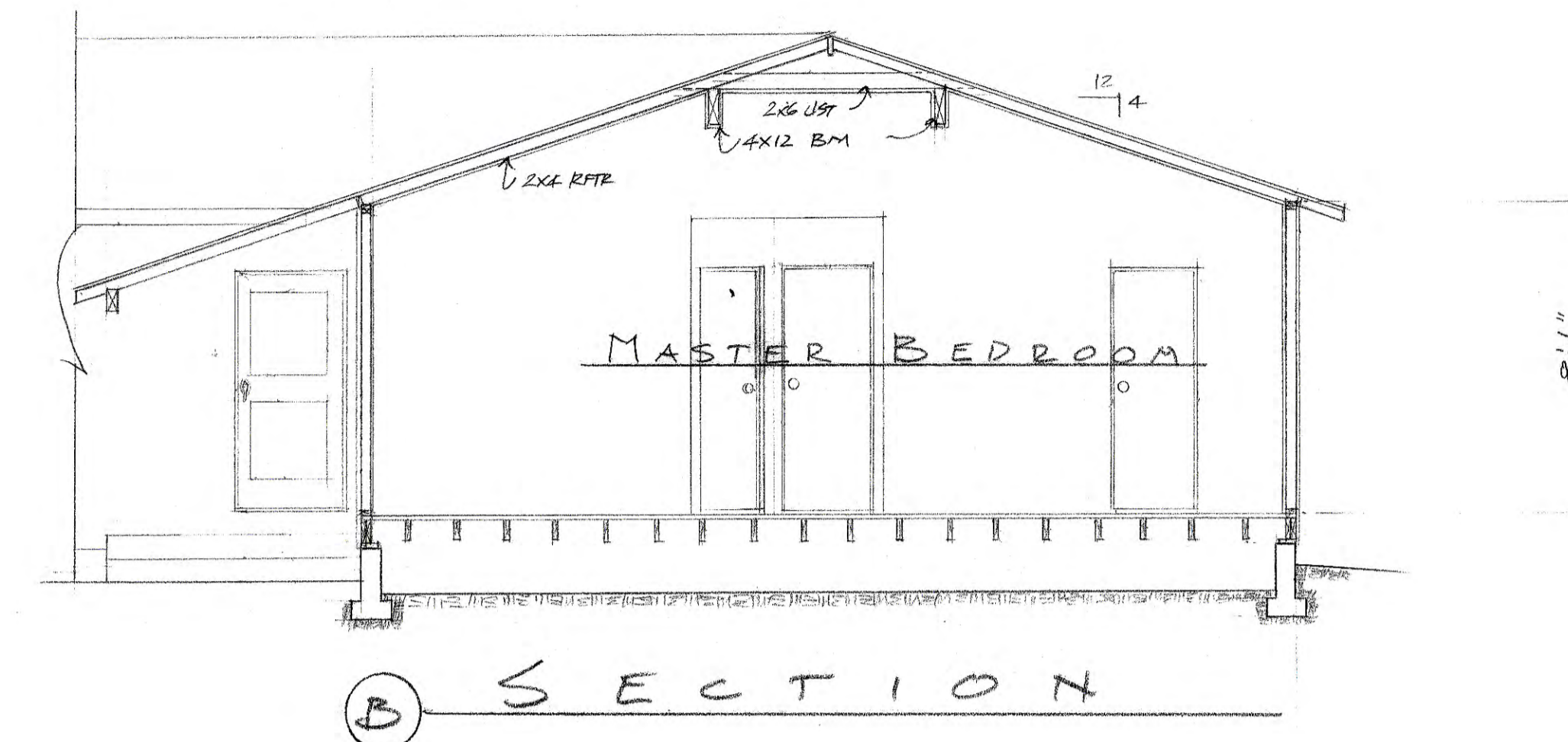
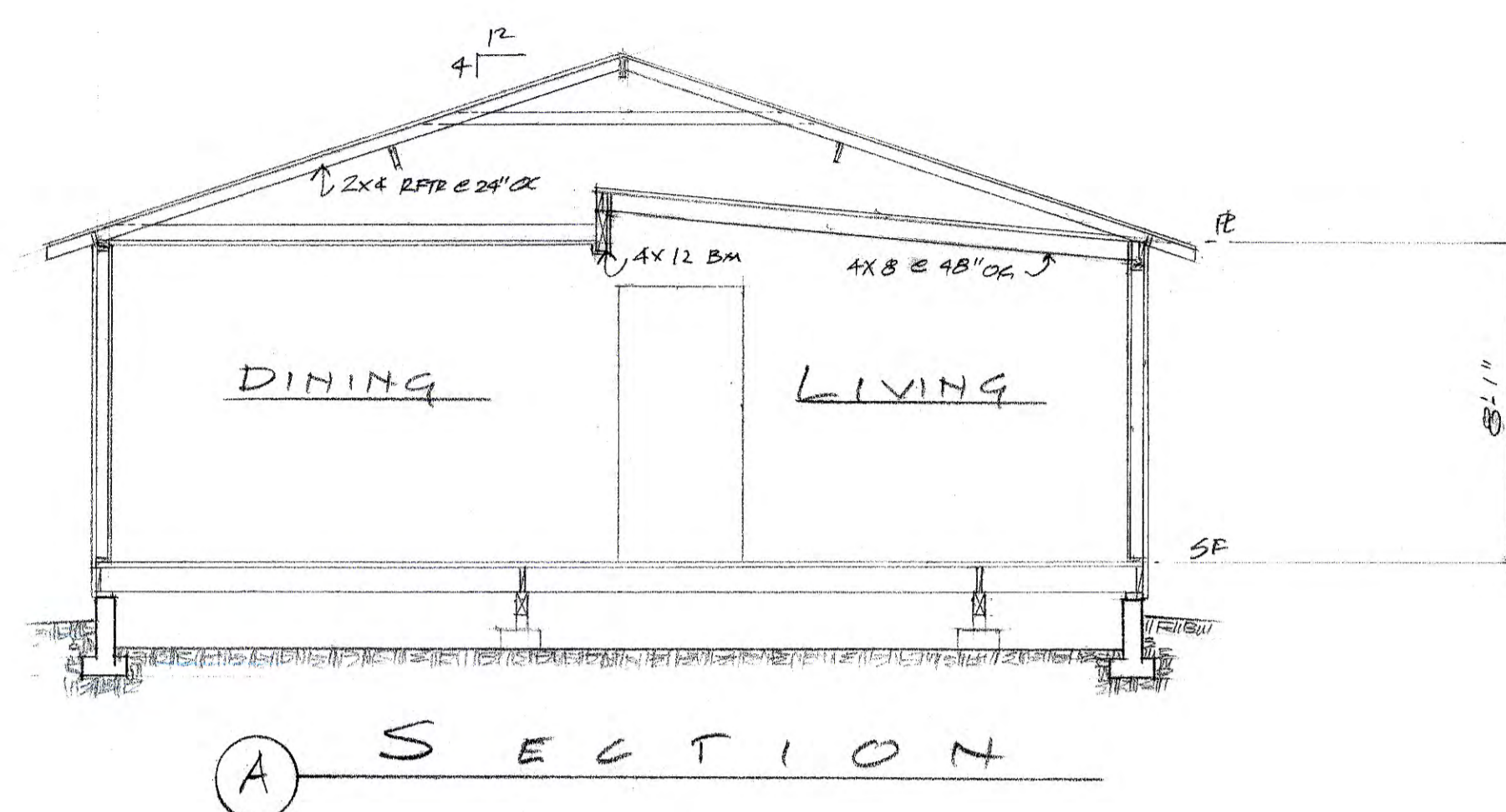
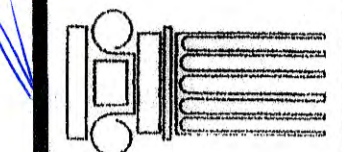
BY: \_\_\_\_\_  
DEPUTY COUNTY RECORDER



### LEGEND



- FOUND 1.5" IP & TAG LS 2471 PER 113 LSM 32 DOWN 0.25'
- FOUND 5/8" REBAR & CAP LS 6534 PER 113 LSM 32 AS NOTED
- ⊗ SET SPIKE & WASHER, PLS 7271
- SET HUB & TAG, PLS 7271
- ⊙ SEARCHED FOR MON, NOTHING FOUND
- ( ) RECORD INFORMATION AS NOTED

BASIS OF BEARINGS:  
MONUMENTS AS SHOWN ON 133 LSM 32  
TAKEN AS N22°32'30"W AS SHOWN.



EXISTING/DEMOLITION FLOOR PLAN

WALL LEGEND

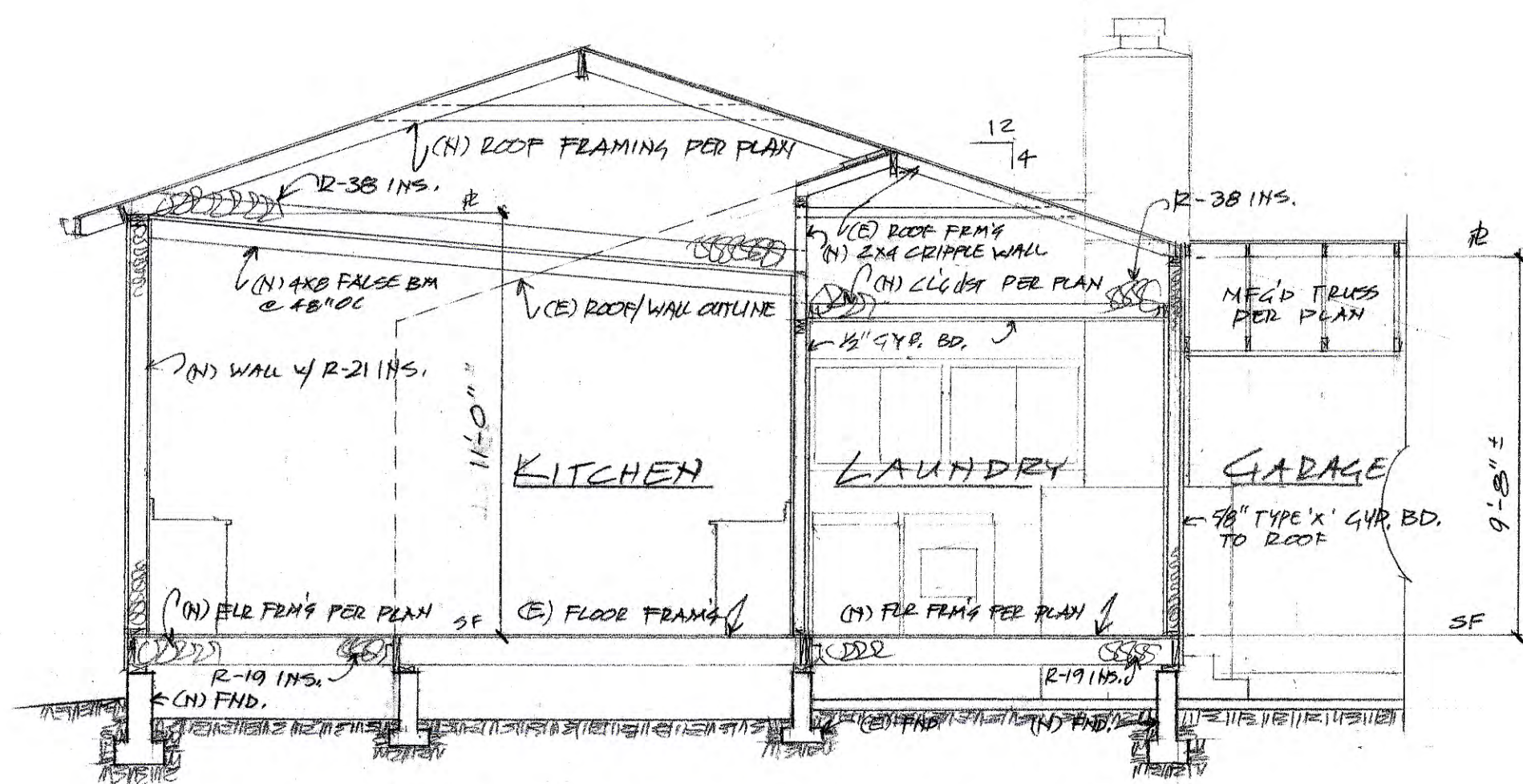
	INDICATES EXISTING CONSTRUCTION
	INDICATES EXISTING REMOVED

ADDITIONAL REMODEL PLAN  
DARREN & TINA DERITA  
236 ANGELA AVENUE, ALAMO, CONTRA COSTA, CA  
APH. 192-090-007

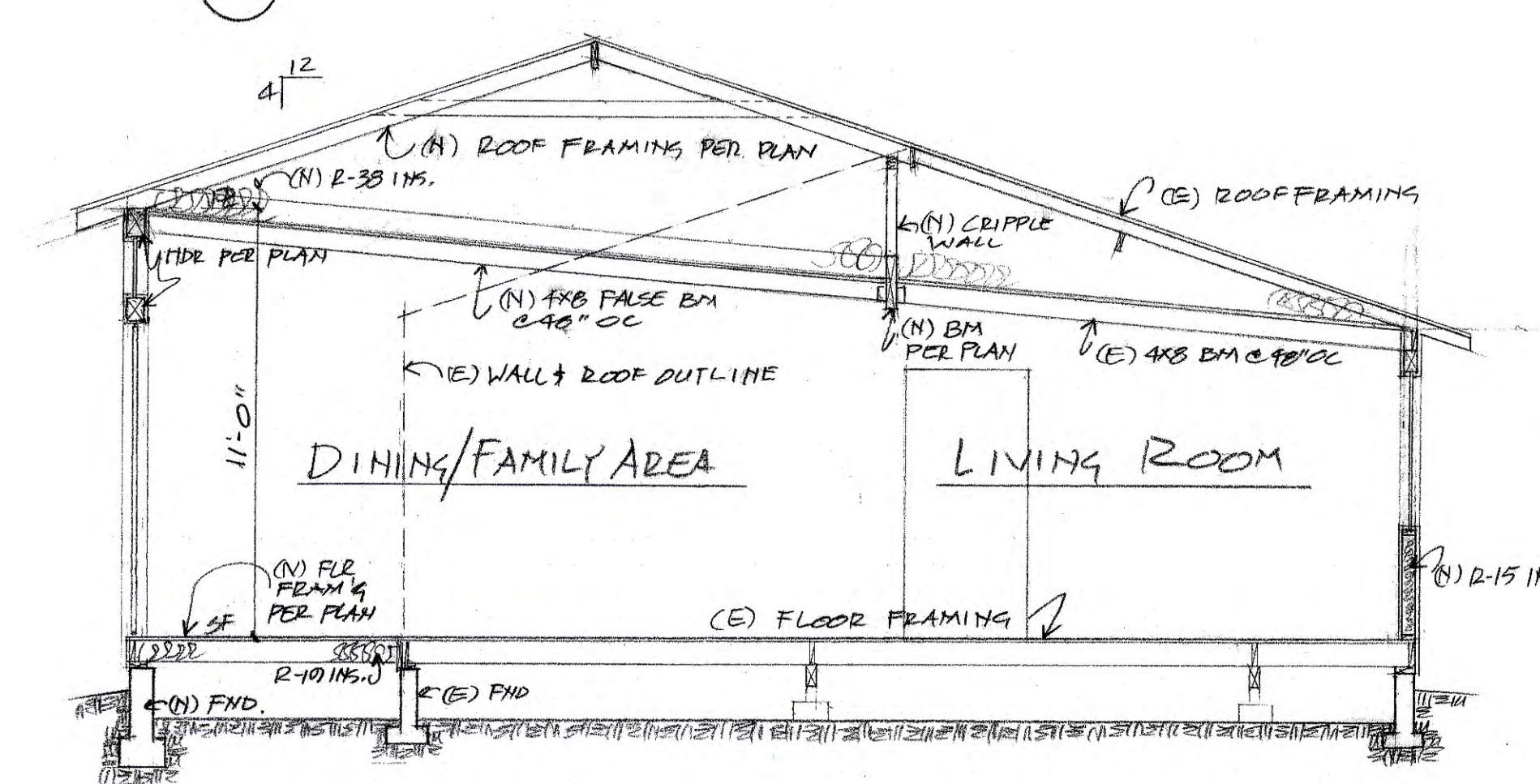
SCALE  
1/4" = 1'-0"

DATE  
8-20-24

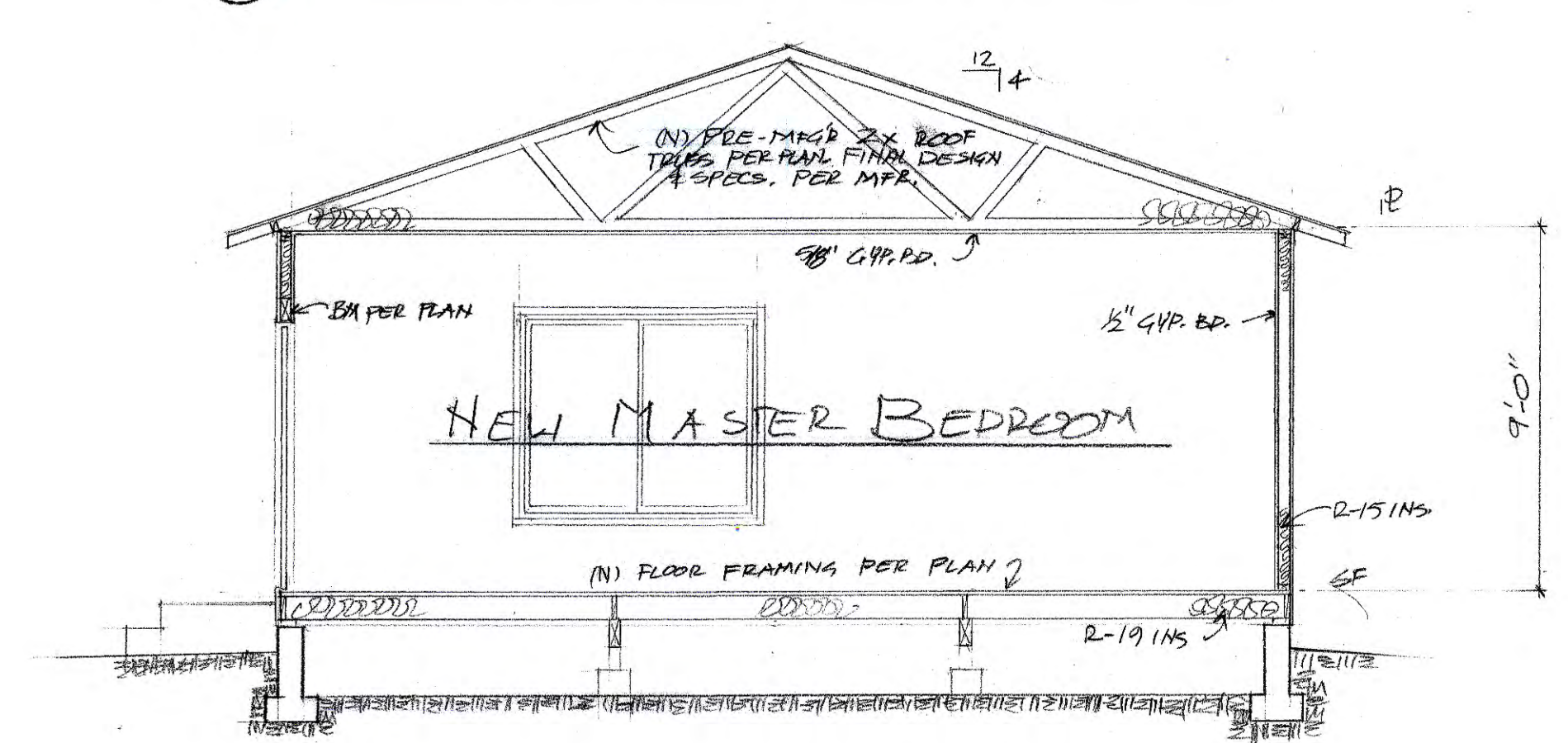
JOB No.  
R2309



A SECTION



B SECTION



C SECTION

### WALL LEGEND

- INDICATES EXISTING CONSTRUCTION
- INDICATES NEW CONSTRUCTION

### DOOR & WINDOW NOTES

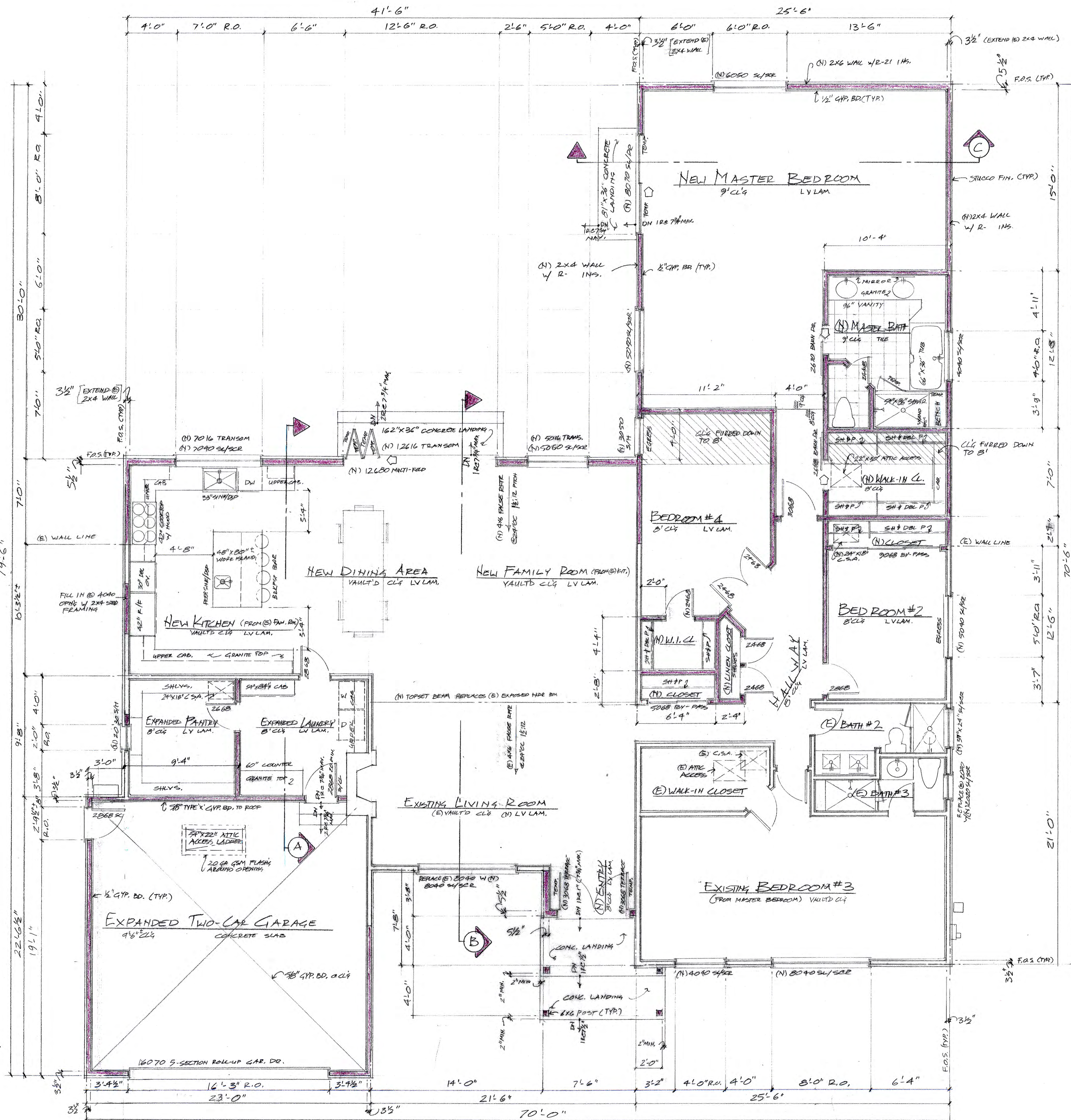
ALL NEW DOORS SHALL BE SOLID CORE, MIN. 1 3/4" THICK. GLAZING TO BE DOUBLE PANE, LOW-E U-0.30 OR BETTER, SHGC=0.21 MAX. ALL NEW WINDOWS SHALL BE DOUBLE-GLAZED, LOW-E VINYL FRAMED UNITS. U-0.32 OR BETTER, SHGC=0.21 OR BETTER.

### INTERIOR FINISH NOTES

WALLS SHALL BE FINISHED WITH 1/2" GYP. BOARD, TAPE & TEXTURE PER OWNER. WINDOW & DOOR CASINGS, BASEBOARDS & MOULDINGS PER OWNER. COUNTERTOPS & FLOORING SHALL BE AS PER OWNER.

### FLOOR PLAN NOTES

MINIMUM WINDOW AREA SHALL BE 8% OF THE FLOOR AREA OF ANY HABITABLE SPACE WITH 1/2 OPENABLE. SECTION 1204 & 1205 '22 CBC. BEDROOM WINDOWS SHALL COMPLY TO ALL EGRESS CODES: SEC. 1026 '22 CBC, '22 CMC, '22 CPC, '22 CRC. GLASS DOORS AND WINDOWS WITHIN 18" OF FINISH FLOOR AND WITHIN 24" OF A DOOR JAMB SHALL COMPLY WITH SEC. 2406 '22 CBC. TUB AND SHOWER ENCLOSURES SHALL COMPLY WITH SEC. 2406 '22 CBC. HEATING, VENTILATING, AND AIR CONDITIONING SHALL COMPLY TO '22 CMC AND LOCAL ORDINANCES AND REGULATIONS CURRENTLY IN EFFECT. STAIRS SHALL COMPLY WITH SEC. 1009 '22 CBC. ALL NEW DOOR AND WINDOW RETURNS SHALL BE 4" UNLESS OTHERWISE NOTED. SEE STRUCTURAL PLANS FOR SHEARWALL LOCATIONS WHERE APPLICABLE. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO CONSTRUCTION.



NEW FLOOR PLAN

EXIST'G LIVING = 1,657 SF NEW LIVING (TOTAL) = 3,112 SF

### REVISIONS

R.E. HURTADO & ASSOC.  
RESIDENTIAL/LIGHT COMMERCIAL  
P.O. BOX 6152  
CONCORD, CA 94524-6152  
925-685-5634  
hurtado.assoc@gmail.com

ADDITION/REMODEL PLAN  
DARREN & TINA DERITA  
236 ANGELA AVENUE, A LAMO, COUNTRA COSTA Co., CA  
APH. 102-090-007

### SCALE

1/4"=1'-0"

### DATE

8-20-24

### JOB No.

R2309

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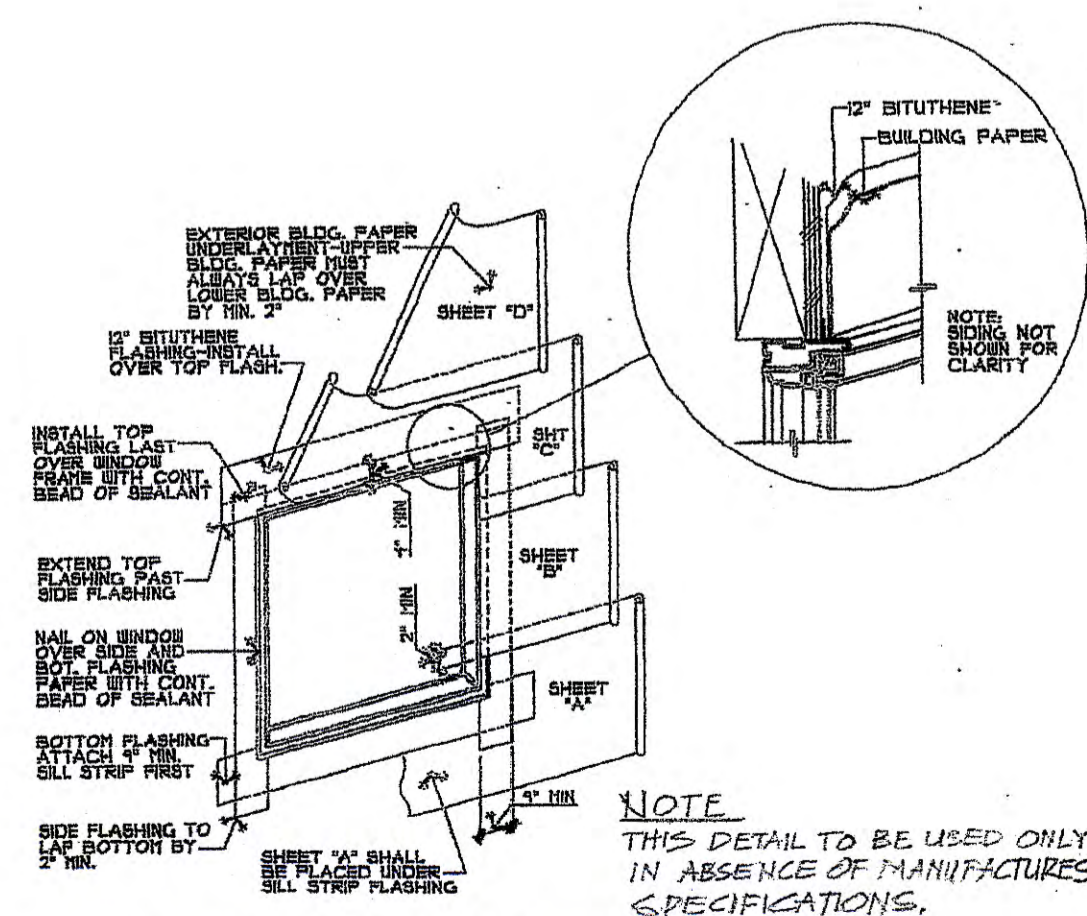
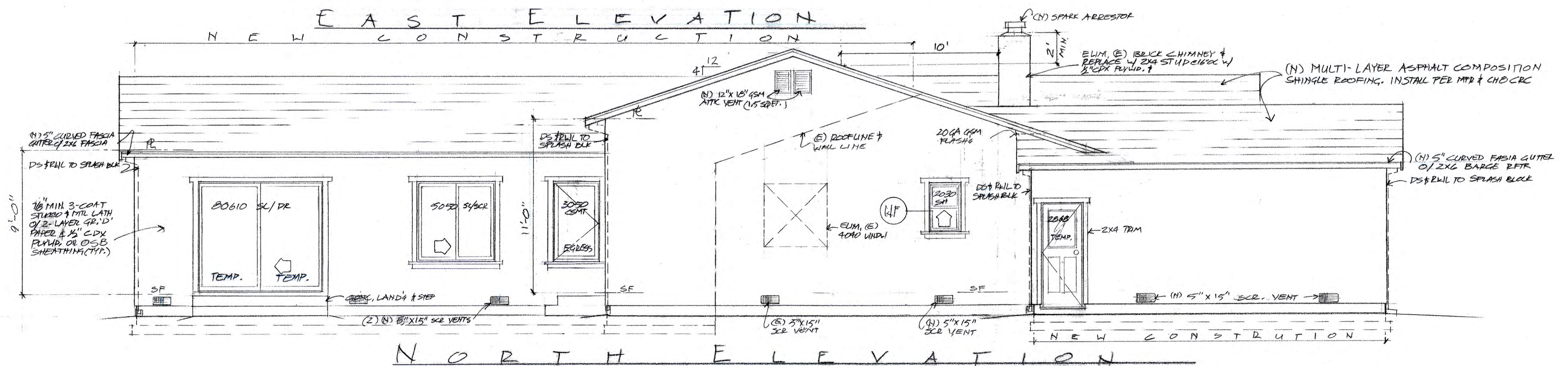
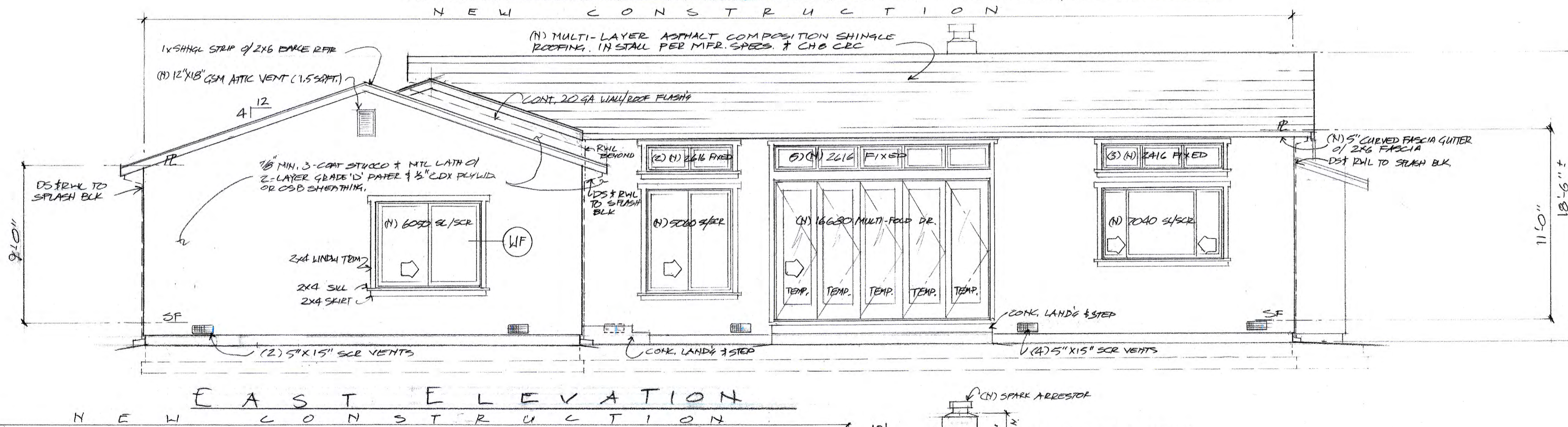
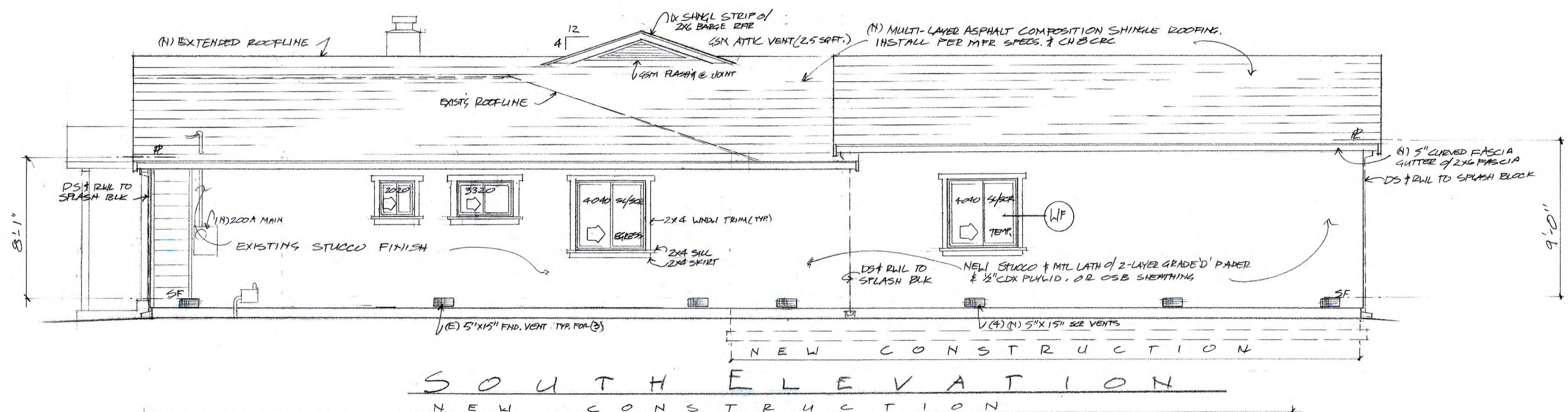
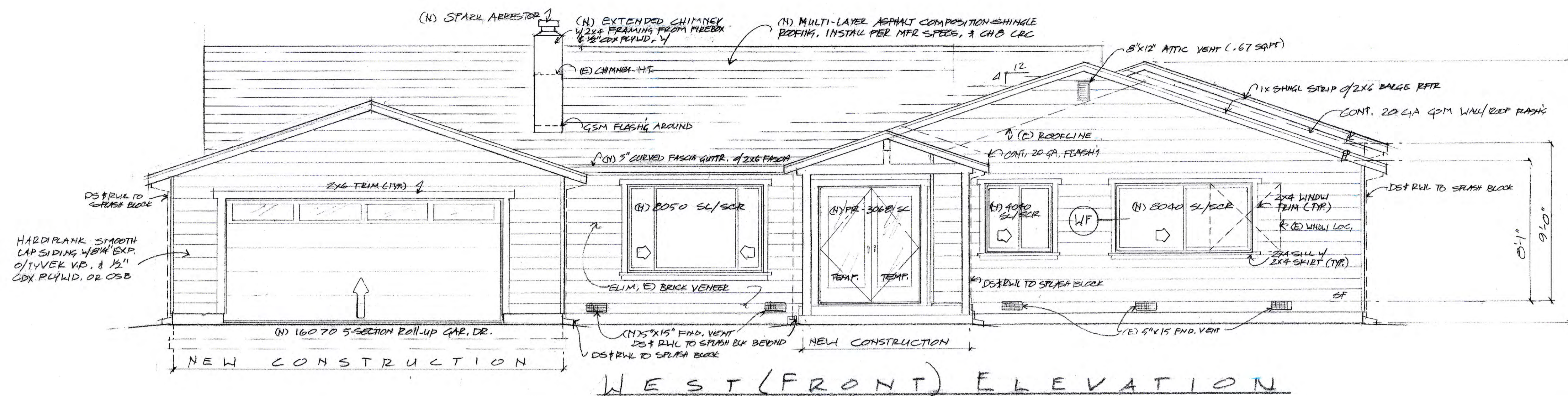
## REVISIONS

**R.R.E. HURTADO & ASSOC.**  
RESIDENTIAL / LIGHT COMMERCIAL  
P.O. BOX 6152  
CONCORD, CA 94524-6152  
925-685-5834  
Hurtado\_Assoc@earthlink.com

ADDITION/R E M O D E L P L A N  
DARREN & TINA BERITA  
236 ANGELA AVENUE, ALAMO, CONTRA COSTA COUNTY, CA

SCALE  
 $\frac{1}{4}" = 1'-0"$   
DATE  
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WINDOW FLASHING DET.

NO SCALE



REVISIONS

R.E. HURTADO & ASSOC.  
RESIDENTIAL / LIGHT COMMERCIAL  
P.O. BOX 6119  
CONCORD, CA 94524-6119  
925-685-5834  
hurtado.assoc@gmail.com

ADDITION/REMODEL PLAN

DARREN & TINA DEBITA  
236 ANGELA AVENUE, ALAMO, CONTRA COSTA COUNTY, CA  
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<u>SHEAR WALL SCHEDULE</u>		RIM/BLKG CONNECTION	PL NAILING	ANCHOR BOLT SPACING	SILL PLATE	
△	15/32" APA OR TECO PERFORMANCE - RATED PLYWOOD STRUC. I PANEL W/ 8d NAILS @ 6" O.C. AT ALL PLYWOOD EDGES AND 12" O.C. ON FIELD (6,6,12) .....	280 plf	A35 @ 24" O.C.	16d @ 6" O.C.	32"	2x
* △	15/32" APA OR TECO PERFORMANCE - RATED PLYWOOD STRUC. I PANEL W/ 8d NAILS @ 4" O.C. AT ALL PLYWOOD EDGES AND 12" O.C. ON FIELD (4,4,12) .....	430 plf	A35 @ 16" O.C.	16d @ 4" O.C.	24"	3x
* △	15/32" APA OR TECO PERFORMANCE - RATED PLYWOOD STRUC. I PANEL W/ 8d NAILS @ 2" O.C. AT ALL PLYWOOD EDGES AND 12" O.C. ON FIELD (2,2,12) .....	730 plf	A35 @ 6" O.C.	SDS 1/4" x 5 - 1/2" @ 5" O.C.	16"	3x
* FRAMING SHALL BE 3" NOMINAL AND NAIL SHALL BE STAGGERED. USE 3x STUD AT VERTICAL PANEL SPLICES AND (1) 3x BLOCK ON EDGES AT HORIZONTAL PANEL SPLICES.						
FOR DOUBLE SIDED SHEAR WALLS, USE HALF THE SPACING FOR A35'S & ANCHOR BOLTS.						

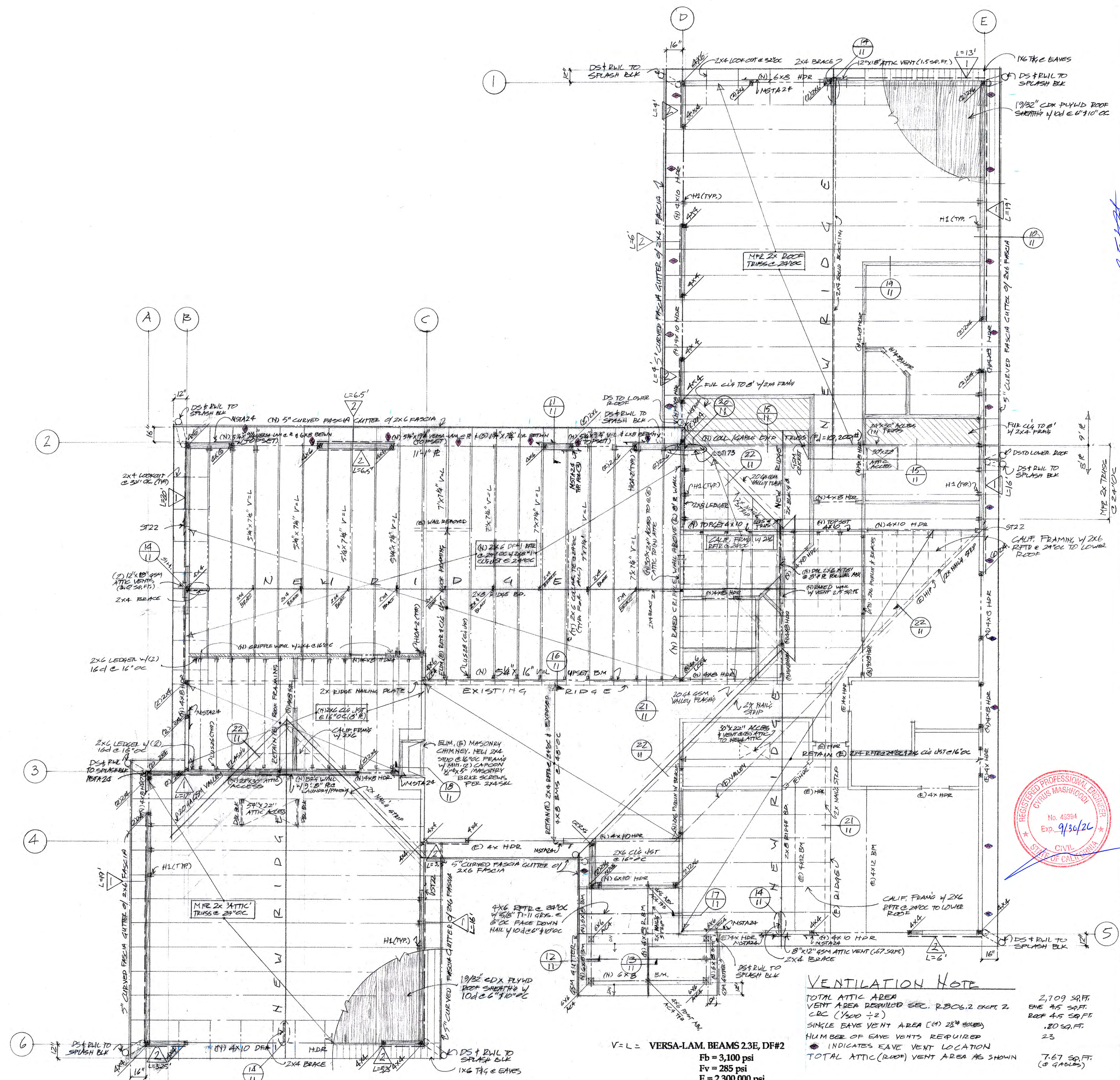
- SEE ARCH. ROOF PLAN FOR REQUIRE ROOF PITCH
  - SEE ARCH. SECTION AND/OR FLOOR PLAN FOR THE REQUIRE CEILING PITCH
  - THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL AND PRIOR TO CONSTRUCTION OR DEMOLITION
  - REFER TO ARCH. PLAN FOR ALL DIMENSIONS
  - VERIFY ALL DIMENSIONS PRIOR TO STARTING WORK. CONFLICTS, DISCREPANCIES OR QUESTIONS SHALL BE BROUGHT TO THE ATTENTION OF SUPERINTENDENT, ARCHITECT, OR THE ENGINEER.
  - CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY WALL IS FOUND TO BE A BEARING WALL.
  - CONTRACTOR SHALL VERIFY THAT INTERIOR WALLS TO BE REMOVED ARE IN FACT NON-BEARING WALLS.
- INDICATES NEW PLYWOOD SHEAR WALL WITH NEW END POSTS AND HOLD-DOWN.  
SEE SCHEDULE ON SHEET S-1. PROVIDE ST22 @ TOP PLATES SPLICE FOR THE ENTIRE WALL LENGTH U.N.O.

V = L - VERSA-LAM. LVL 2.3E BY BOISE CASCADE OR EQUIVALENT  
Fb = 3,100 psi  
Fv = 285 psi  
E = 2,300,000 psi

ROOF FRAMING: Manufactured Trusses, U.N.O.  
Design & Cals. By others

DL = 12 psf  
LL = 20 psf

Note: Fabricated trusses must be submitted to the building department for review at least two weeks prior to frame inspection. Two copies containing the following material bearing wet stamp and signature of the truss engineer and approval of the project engineer, (in the form of "shop drawing approval" or separate letter).  
(1) Truss layout drawings; and (2) truss calculations and details showing axial and bending stresses and joint designs, clearly indicating that design conform to the 2022 CBC.



NEW/EXISTING ROOF FRAMING PLAN



ELECTRICAL LEGEND	
1 SINGLE POLE SWITCH	10 CABLE TV/CONSUMER JACK
2 DIMMER SWITCH	11 HVAC FLOOR REGISTER
3 3-WAY SWITCH	12 HVAC CEILING REGISTER
4 4-WAY SWITCH	13 TOE-KICK/WALL REGISTER
5 DIMMER CONVENIENCE OUTLET	
6 120V GROUND FAULT CIRCUIT INTERRUPTER	
7 200V-120V CONV. OUTLET	
8 SURFACE MOUNT LED LIGHT FIXTURE	
9 WALL MOUNT LED LIGHT FIXTURE	
10 6" LED RECESSED CEILING FIXTURE	
11 1" FLUORESCENT RECESSED FIXTURE	
12 4" LOW VOLTAGE RECESSED FIXTURE	
13 DIRECTIONAL CEILING FIXTURE	
14 EXHAUST FAN W/ LED LIGHT 130 CFM CAPACITY	
15 EXHAUST FAN ONLY	
16 TELEPHONE JACK	

### ELECTRICAL NOTES

SPACE OUTLETS AS PER 210-52 NEC.  
PROVIDE METAL BOX @ ALL 230V OUTLETS.  
PROVIDE SNU AND HARD WIRE FURMACE.  
SMOKE DETECTORS SHALL BE 110V DIRECT WIRE, WITH BATTERY BACKUP IN NEW CONSTRUCTION, BATTERY POWER ONLY IN RE-MODELS AND ADDITIONS.  
SMOKE DETECTORS REQUIRED AND LOCATED AS PER SEC. 314.22 CBC.  
PROVIDE GFCI OUTLET @ PATIO AREA AND ALL BATHS AND KITCHENS.  
PROVIDE 24" HORIZONTAL CLEARANCE BETWEEN CEILING MOUNTED LIGHT AND ANY SHELF IN CLOSETS PER 410-8(a) NEC.  
PROVIDE BRANCH CIRCUITS AS PER 220-3 NEC.  
ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY A RECOGNIZED TEST LAB.  
ALL WIRING REQUIRES INSPECTION, INCLUDING LANDSCAPE WIRING.  
AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED AT EACH AT EACH COUNTER OTHER THAN KITCHEN.  
ALL RECEPTACLES SHALL BE TAMPER RESISTANT PER 2022 CEC 406.11.  
RECESSED LIGHT FIXTURES IN INSULATED CEILINGS SHALL HAVE IC RATED CANS (ZERO CLEARANCE RATED PER TITLE 24).

### PLUMBING NOTES

1 TUBSHOWER MIXING VALVE SHALL BE A PRESSURE BALANCE OR THERMOSTATIC TYPE (MAX. SETTING 120 DEGREES F.).  
2 SHOWER AND TUBSHOWER WALLS SHALL HAVE A MOISTURE RESISTANT UNDERLAYMENT (e.g. WATER RESISTANT GYPSUM OR MORTAR BOARD) TO A HEIGHT OF 70" ABOVE THE DRAIN INLET.  
3 SHOWER AND TUBSHOWER WALLS SHALL HAVE A SMOOTH, IMPERVIOUS SURFACE TO AT LEAST 70" ABOVE THE DRAIN INLET. MULTIPLE SHOWER HEADS SERVING A SINGLE SHOWER AND CONTROLLED BY A SINGLE VALVE SHALL HAVE A COMBINED FLOW RATE NOT TO EXCEED 2.5 gpm AT 80 PSI OR THE SHOWER SHALL BE DESIGNED TO ALLOW ONLY ONE SHOWER OUTLET TO BE IN OPERATION AT A TIME.  
4 SHOWER HEADS SHALL HAVE A MAXIMUM OF 2.5 gpm FLOW RATE.  
5 PIPING MATERIALS AND SIZES: WATER METER TO HOUSE SHALL BE 1/2" COPPER L. INTERIOR WATER PIPES COPPER M AND SIZED PER CPC TABLE 6.5.  
6 APPROVED AIR GAP FITTING SHALL BE PROVIDED AT DISHWASHER TO WASTE CONNECTION.  
7 AIR PRESSURE ABSORBING DEVICES SHALL BE PROVIDED DISHWASHING AND CLOTHES WASHING MACHINES.

### GENERAL LIGHTING NOTE

a. All installed luminaires shall meet the requirements of CEC Table 150.0-A.  
b. Bathroom shall have at least one luminaire controlled by a vacancy or occupancy sensor providing automatic-off functionality [CEC 150.0(k)(2)]. If an occupant sensor is installed, it shall be initially configured to manual-on operation.  
c. Exterior luminaires are to have a manual on/off switch and be controlled by a photocell and motion sensor or a photocell and time switch [CEC 150.0(k)(3)].  
d. All other luminaires that contain light sources that meet Reference Joint Appendix JAB requirements are to be controlled by a vacancy/occupancy sensor or dimmer [CEC 150.0(k)(2)]. Note that closets with an area less than 70 f2 and hallway lighting are exempt from this requirement.

### ARC-FAULT NOTE

ALL 120-VOLT, SINGLE PHASE, 15- AND 20-AMPERE BRANCH CIRCUITS SERVING OUTLETS INSTALLED IN DWELLING UNIT FAMILY, DINING AND LIVING ROOMS, PARLORS, LIBRARIES, DEN, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.

### EXHAUST FAN NOTE

BATH AND/OR LAUNDRY ROOM EXHAUST FAN TO BE HUMIDISTAT CONTROL CRC 308.3.1. FANS SHALL BE ENERGY STAR COMPLIANT.

### WATER PIPING NOTE

HOT WATER PIPE INSULATION SHALL HAVE A MINIMUM WALL THICKNESS OF NOT LESS THAN THE DIAMETER OF THE PIPE FOR A PIPE UP TO 2" IN DIAMETER, CPC 409.11.  
ALL HOT WATER PIPING WITH A NOMINAL DIAMETER EQUAL TO OR GREATER THAN 3/4" AND LESS THAN 1" SHALL HAVE A MINIMUM INSULATION THICKNESS OF 1" OR A MINIMUM INSULATION VALUE OF 7.7.

### HOSE BIBB NOTE

ALL NEW HOSE BIBBS SHALL HAVE A LISTED NON-REMOVABLE BACKFLOW PREVENTER OR ATMOSPHERIC VACUUM BREAKER.

### GAS SHUTOFF VALVE NOTE

AN ACCESSIBLE SHUTOFF VALVE OF A TYPE SET FORTH IN SECTION 1312.13 CMC SHALL BE INSTALLED IN THE FUEL-SUPPLY PIPING OUTSIDE OF EACH APPLIANCE AND AHEAD OF THE UNION CONNECTION THERETO, AND IN ADDITION TO ANY VALVE ON THE APPLIANCE. SHUTOFF VALVES SHALL BE WITHIN 5 FEET OF THE APPLIANCE THEY SERVE, AND IN THE SAME ROOM OR SPACE WHERE THE APPLIANCE IS LOCATED.  
SHUTOFF VALVES MAY BE LOCATED IMMEDIATELY ADJACENT TO AND INSIDE OR UNDER AN APPLIANCE WHEN PLACED IN AN ACCESSIBLE AND PROTECTED LOCATION AND WHEN SUCH APPLIANCE MAY BE REMOVED WITHOUT REMOVAL OF VALVE.

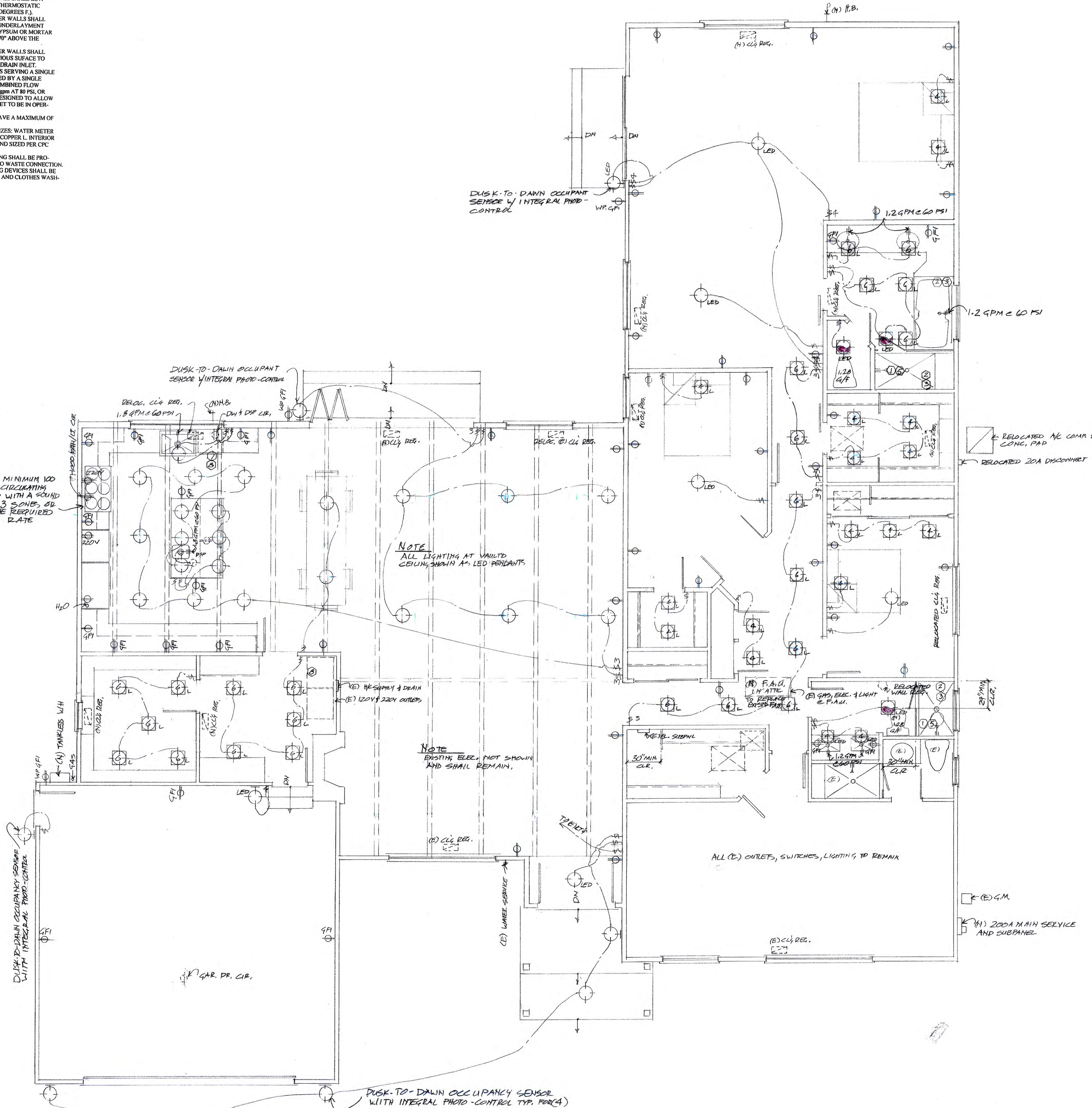
### MISCELLANEOUS NOTES

ELECTRICAL TWO 20-AMP SMALL-APPLIANCE BRANCH CIRCUITS ARE REQUIRED FOR THE KITCHEN, PANTRY, BREAKFAST AND DINING ROOMS, AND SIMILAR AREAS, AND ARE LIMITED TO SUPPLYING WALL AND COUNTER SPACE OUTLETS. THESE CIRCUITS CANNOT SERVE OUTSIDE PLUGS, RANGE HOOD, DISPOSALS, DISHWASHERS OR MICROWAVES, BUT CAN SERVE THE REFRIGERATOR. NEC 210.11(c)(1) and 210.52(b).  
A SEPARATE 20-AMP CIRCUIT IS REQUIRED FOR THE LAUNDRY. NEC SEC. 220.4.  
CONDUCTOR WIRES WITH AN INSULATED NEUTRAL AND A FOUR-PRONG OUTLET ARE REQUIRED FOR DRYERS AND COOKING UNITS. NEC SEC. 250.138 and 250.140.  
HVAC ALL NEW DUCTWORK SHALL USE PRESSURE-SENSITIVE TAPES, MASTICS, AEROSOL SEALANTS OR OTHER CLOSURE SYSTEMS MEETING APPLICABLE UL 181A & B REQUIREMENTS. DRAWNDS USED WITH FLEXIBLE DUCTS SHALL BE EITHER STAINLESS STEEL, WORM-DRIVEN HOSE CLAMPS OR UV-RESISTANT NYLON DUCT TIES. IN ADDITION, DRAWNDS MUST HAVE A MINIMUM TENSILE STRENGTH RATING OF 150 POUNDS AND BE TIGHTENED AS RECOMMENDED BY MANUFACTURER.  
IF APPLICABLE, THE NEW FURNACE SYSTEM(S) SHALL BE REGISTERED WITH A HERS PROVIDER PRIOR TO ISSUANCE OF BUILDING PERMIT.  
MECHANICAL EQUIPMENT: INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT SHALL BE PROVIDED TO THE FIELD INSPECTOR AT THE TIME OF INSPECTION.  
TERMINATION OF ALL ENVIRONMENTAL AIR DUCTS SHALL BE A MINIMUM OF 3 FEET FROM PROPERTY LINES OR ANY OPENINGS INTO THE BUILDING.

### CALGREEN NOTES

ANNULAR SPACES AROUND PIPES, ELECTRICAL CABLES, CONDUITS OR OTHER OPENINGS IN SOLE/BOTTOM PLATES AT EXTERIOR WALLS SHALL BE PROTECTED AGAINST THE PASSAGE OF RODENTS BY CLOSING OPENINGS CEMENT MORTAR, CONCRETE MASONRY OR SIMILAR METHOD APPROVED ENFORCING AGENCY.  
AT THE TIME OF FINAL INSPECTIONS, THE CONTRACTOR SHALL PROVIDE A BUILDING MAINTENANCE AND OPERATION MANUAL, CD, WEB-BASED REFERENCE, OR OTHER MEDIA ACCEPTABLE TO THE ENFORCING AGENCY WHICH INCLUDES THE INFORMATION OUTLINED IN SEC 4410.1 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE.  
ANY INSTALLED GAS FIREPLACE SHALL BE A DIRECT-VENT SEALED-COMBUSTION UNIT.  
HEATING AND AIR CONDITIONING SYSTEMS SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE METHODS DESCRIBED IN SEC 4.507 OF THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE.

PROVIDE A MINIMUM 100 CFM NON-CIRCULATING RANGE HOOD WITH A SOUND RATING OF 3 SONES OR LESS AT THE REQUIRED AIR FLOW RATE.



## ELECTRICAL/HVAC/PLUMBING PLAN

### REVISIONS

R.E. HURTADO & ASSOC.  
RESIDENTIAL / LIGHT COMMERCIAL  
P.O. BOX 5152  
CONCORD, CA 94520-5152  
925-585-5834  
Hurtado.Assoc@gmail.com

ADDITION/REMODEL PLAN  
DARRIN TINA DERITA  
236 ANGELA AVENUE, ALAMO, CONTRA COSTA COUNTY, CA  
APN. 192-090-007

SCALE  
1/4"=1'-0"

DATE  
8-20-24

DOB No.  
R2309

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Derita Residence

Calculation Date/Time: 2024-08-19T10:27:36-07:00

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Calculation Description: California Title-24 Energy Code Compliance

Input File Name: REH0224v30.rbd22

GENERAL INFORMATION									
01	Project Name	Derita Residence							
02	Run Title	California Title-24 Energy Code Compliance							
03	Project Location	236 Angela Ave							
04	City	Alamo							
05	Zip code	94507							
06	Standards Version	2022							
07	Software Version	CBECC-Res 2022.3.0							
08	Climate Zone	12							
09	Front Orientation (deg/ Cardinal)	248							
10	Building Type	Single family							
11	Number of Dwelling Units	1							
12	Project Scope	Addition and/or Alteration							
13	Number of Bedrooms	4							
14	Existing Cond. Floor Area (ft²)	1455							
15	Number of Stories	1							
16	Existing Cond. Floor Area (ft²)	1657							
17	Fenestration Average U-factor	0.36							
18	Total Cond. Floor Area (ft²)	3112							
19	Glazing Percentage (%)	15.81%							
20	ADU Bedroom Count	n/a							
21	ADU Conditioned Floor Area	n/a							
22	Fuel Type	Natural gas							
23	No Dwelling Unit	No							

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

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Calculation Description: California Title-24 Energy Code Compliance

Input File Name: REH0224v30.rbd22

ZONE INFORMATION						
01	02	03	04	05	06	07
Zone Name	Zone Type	HVAC System Name	Zone Floor Area (ft²)	Avg. Ceiling Height	Water Heating System 1	Status
Existing	Conditioned	Replace HVAC System	1657	8	Replace DHW System	Existing Unchanged
Addition	Conditioned	Replace HVAC System	1455	9	Replace DHW System	New

OPAQUE SURFACES										
01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft²)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
EeFront s2x4	Existing	Stud s2x4 160c R-0	248	Front	316	80	90	none	Existing	No
EeLeft s2x4	Existing	Stud s2x4 160c R-0	338	Left	32	6	90	none	Existing	No
EaLeft s2x4	Existing	Stud s2x4 160c R-15	338	Left	82	0	90	none	Altered	No
EeRight s2x4	Existing	Stud s2x4 160c R-0	158	Right	268	30.5	90	none	Existing	No
NnFront s2x6	Addition	Stud s2x6 160c R-21	248	Front	68	40.02	90	none	New	n/a
NnBack s2x6	Addition	Stud s2x6 160c R-21	68	Back	686	224.735	90	none	New	n/a
NnLeft s2x6	Addition	Stud s2x6 160c R-21	338	Left	33	0	90	none	New	n/a
NxLeft s2x4	Addition	Stud s2x4 160c R-15	338	Left	423	94.64	90	Extension	New	n/a
NxRight s2x4	Addition	Stud s2x4 160c R-15	158	Right	333	16	90	Extension	New	n/a
NnDemising s2x4	Addition>>Garage	Demising Stud 2x4 160c R-15	n/a	n/a	230	17.8	n/a	n/a	New	n/a
NeCeiling	Existing	Ceiling Joist 2x6 160c R-0	n/a	n/a	1657	n/a	n/a	n/a	Existing	No
NnCeiling	Addition	Ceiling Joist 2x6 160c R-38	n/a	n/a	511	n/a	n/a	n/a	New	n/a
NnCeiling at Truss	Addition	Ceiling Truss Joist R-38	n/a	n/a	944	n/a	n/a	n/a	New	n/a
GeCeiling	Garage	Ceiling Joist 2x6 160c R-0	n/a	n/a	506	n/a	n/a	n/a	Altered	No

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ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft²-yr)	Standard Design TDV Energy (EDR2) (kTDU/ft²-yr)	Proposed Design Source Energy (EDR1) (kBtu/ft²-yr)	Proposed Design TDV Energy (EDR2) (kTDU/ft²-yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0	77.64	0	75.15	0	2.49
Space Cooling	0	65.33	0	67.28	0	-1.96
IAQ Ventilation	0	3.39	0	3.39	0	0
Water Heating	0	14.89	0	15.23	0	-0.34
Self Utilization/Flexibility Credit						
Efficiency Compliance Total	0	161.25	0	161.06	0	0.19
Photovoltaics		0		0		
Battery				0		
Flexibility						
Indoor Lighting	0	6.86	0	6.86		
Appl. & Cooking	0	17.89	0	17.92		
Plug Loads	0	21.37	0	21.37		
Outdoor Lighting	0	1.68	0	1.68		
TOTAL COMPLIANCE	0	209.05	0	208.89		

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Calculation Description: California Title-24 Energy Code Compliance

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OPAQUE SURFACES										
01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft²)	Tilt (deg)	Wall Exceptions	Status	Verified Existing Condition
EeFloor	Existing	Floor Joist 2x8 160c R-0	n/a	n/a	1657	n/a	n/a		Existing	No
NnFloor	Addition	Floor Joist 2x8 160c R-0	n/a	n/a	1455	n/a	n/a		New	n/a
GnFront s2x4	Garage	Stud s2x4 160c R-0	248	Front	207	112	90	none	New	n/a
GnBack s2x4	Garage	Stud s2x4 160c R-0	68	Back	27	0	90	none	New	n/a
GnLeft s2x4	Garage	Stud s2x4 160c R-0	338	Left	203	17.8	90	none	New	n/a
GnRight s2x4	Garage	Stud s2x4 160c R-0	158	Right	40	0	90	none	Existing	No
GnRight s2x4	Garage	Stud s2x4 160c R-0	158	Right	111	0	90	none	New	n/a

ATTIC									
01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise (ft in 12)	Roof Reflectance	Roof Emissance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic at Existing	eAttic Rafter 2x4 240c w/Asphalt Roofing	Ventilated	4	0.1	0.85	No	No	Existing	No
Attic at Addition	nAttic Rafter 2x4 240c w/Asphalt Roofing	Ventilated	4	0.1	0.85	No	No	New	n/a
Attic at Addition Truss	nAttic Truss Rafter w/Asphalt Roofing	Ventilated	4	0.1	0.85	No	No	New	n/a
Attic at Garage	eAttic Rafter 2x4 240c w/Asphalt Roofing	Ventilated	4	0.1	0.85	No	No	Existing	No

FENESTRATION / GLAZING															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
F5J8040a S	Window	EeFront s2x4	Front	248	8	4	1	32	0.38	NFRC	0.29	NFRC	Bug Screen	Altered	No
F3J4040a S	Window	EeFront s2x4	Front	248	4	4	1	16	0.38	NFRC	0.29	NFRC	Bug Screen	Altered	No

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FENESTRATION / GLAZING															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
L3J3050n C	Window	NxLeft s2x4	Left	338	3	5	1	15	0.38	NFRC	0.26	NFRC	Bug Screen	New	NA
R4J4040n S	Window	NxRight s2x4	Right	158	4	4	1	16	0.38	NFRC	0.29	NFRC	Bug Screen	New	NA

OPAQUE DOORS					
01	02	03	04	05	06
Name	Side of Building	Area (ft²)	U-factor	Status	Verified Existing Condition
F5J2868n to Garage	NnDemising 2x4	17.8	0.2	New	n/a
F6J16070n Garage Door	GnFront s2x4	112	1	New	n/a
L5J2868n Man Door	GnLeft s2x4	17.8	0.2	New	n/a

OVERHANGS AND FINs																
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17
Window	Overhang					Left Fin				Right Fin				Status	Verified Existing Condition	Existing Construction
	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up			
F5J8040a S	1.3	0.5	28	36.5	0	16.7	1.3	3.5	0	3.7	1	2	0	Alte red	No	
F3J4040a S	1	5.3	11.5	19.5	0	0	0	0	0	0	0	0	0	Alte red	No	
F4J8040a S	1	4.5	19.3	8	0	0	0	0	0	0	0	0	0	Alte red	No	
L4J2030a SH	1	4.5	22.7	27.5	0	0	0	0	0	3	1.5	3.5	0	Alte red	No	

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01	02	03	04	05	06	07	08	09	10
Name	Zone	Area (ft <sup>2</sup> )	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated	Status	Verified Existing
GeSlab	Garage	506	61	none	0	0%	No	Existing	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
Stud s2x4 16oc R-0	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
Stud s2x4 16oc R-15	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.087	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Sheathing / Insulation: Wood Siding/sheathing/decking Exterior Finish: 3 Coat Stucco
Stud s2x6 16oc R-21	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.065	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: Wood Siding/sheathing/decking Exterior Finish: 3 Coat Stucco
Demising Stud 2x4 16oc R-15	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-15	None / None	0.085	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x4 Other Side Finish: Gypsum Board
eAttic Rafter 2x4 24oc w/Asphalt Roofing	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

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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
nAttic Truss Rafter w/Asphalt Roofing	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 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 Top Chrd
nAttic Rafter 2x4 24oc w/Asphalt Roofing	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
Floor Joist 2x8 16oc R-0	Floors Over Crawlspace	Wood Framed Floor	2x8 @ 16 in. O. C.	R-0	None / None	0.218	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no Insul. / 2x8
Floor Joist 2x8 16oc R-19	Floors Over Crawlspace	Wood Framed Floor	2x8 @ 16 in. O. C.	R-19	None / None	0.047	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x8
Ceiling Joist 2x6 16oc R-0	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O. C.	R-0	None / None	0.467	Cavity / Frame: no Insul. / 2x6 Inside Finish: Gypsum Board
Ceiling Truss Joist R-38	Ceilings (below attic)	Wood Framed Ceiling	2x4 Bottom Chord of Truss @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 Insul. Cavity / Frame: R-9.1 / 2x4 Btm Chrd Inside Finish: Gypsum Board
Ceiling Joist 2x6 16oc R-38	Ceilings (below attic)	Wood Framed Ceiling	2x6 @ 16 in. O. C.	R-38	None / None	0.026	Over Ceiling Joists: R-23.7 Insul. Cavity / Frame: R-14.3 / 2x6 Inside Finish: Gypsum Board

Registration Number: 424-P010178443A-000-000-0000000-0000  
 Registration Date/Time: 08/19/2024 10:32  
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 CA Building Energy Efficiency Standards - 2022 Residential Compliance  
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 Report Generated: 2024-08-19 10:29:00

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Derita Residence

Calculation Date/Time: 2024-08-19T10:27:36-07:00

CF1R-PRF-01-E

Calculation Description: California Title-24 Energy Code Compliance

Input File Name: REH0224v30.rbd22

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

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (H)	Status	Verified Existing Condition	Existing Water Heating System
Replace DHW System	Domestic Hot Water (DHW)	Demand Recirculation Sensor Controls	Tankless	1	n/a	None	n/a	Tankless (1)	Altered	No	

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Heating Efficiency Type	Efficiency	Rated Input Type	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	Tank Location	Status	Verified Existing Condition
Tankless	Gas	Consumer Instantaneous	1	0	UEF	0.96	80u/Hr	200000	0	n/a	n/a		Altered	No

WATER HEATING - HERS VERIFICATION

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

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Input File Name: REH0224v30.rbd22

01	02	03	04	05	06	07	08	09	10	11	12
Name	System Type	Heating Unit Name	Heating Equipment Count	Cooling Unit Name	Cooling Equipment Count	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Existing HVAC System
Replace HVAC System	Heating and cooling system other	FAU Gas AFUE=92	1	AC Split SEER=14 EER=12.2	1	Standard Fan	Ducts	Setback	Altered	No	

HVAC - HEATING UNIT TYPES

01	02	03	04	05
Name	System Type	Number of Units	Heating Efficiency	Heating Unit Brand
FAU Gas AFUE=92	Central gas furnace	1	AFUE - 92	n/a

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08	09
Name	System Type	Number of Units	Efficiency Metric	Efficiency EER/EER2/CEER	Efficiency SEER/SEER2	Zonally Controlled	Multi-speed Compressor	HERS Verification
AC Split SEER=14 EER=12.2	Central split AC	1	EER/SEER	12.2	14	Not Zonal	Single Speed	AC Split SEER=14 EER=12.2-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge
AC Split SEER=14 EER=12.2-hers-cool	Not Required	0	Not Required	Not Required	Required

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Input File Name: REH0224v30.rbd22

HVAC - DISTRIBUTION SYSTEMS															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Design Type	Duct Ins. R-value		Duct Location		Surface Area		Bypass Duct	Duct Leakage	HERS Verification	Status	Verified Existing Condition	Existing Distribution system	New Ducts >= 25 ft
			Supply	Return	Supply	Return	Supply	Return							
Ducts	Ducts located in multiple places	Non-Verified	R-6	R-6	Attic	Attic	n/a	n/a	No Bypass Duct	Sealed and Tested	Ducts-hers-dist	Existing + New	No		Yes

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
Ducts-hers-dist	Yes	10.0	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
Standard Fan	HVAC Fan	0.45	Standard Fan-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
Standard Fan-hers-fan	Not Required	0

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Input File Name: REH0224v30.rbd22

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE/ASRE	Includes Fault Indicator Display?	HERS Verification	Status
5Fam IAQVentRpt	127	0.35	Exhaust	No	n/a / n/a	No	Yes	

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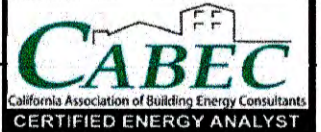
Calculation Description: California Title-24 Energy Code Compliance

Input File Name: REH0224v30.rbd22

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Lanny Dana	Documentation Author Signature: <i>Lanny Dana</i>
Company: West Coast Energy Design	Signature Date: 08/19/2024
Address: 1075 Victorine Road	CEA/HERS Certification Identification (if applicable): R19-22-30117
City/State/Zip: Livermore, CA 94551	Phone: 925-243-1767



RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

- 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.
- I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- The building design features 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: Rod Hurtado	Responsible Designer Signature: <i>Rod Hurtado</i>
Company: R.E. Hurtado & Associates	Date Signed: 08/19/2024
Address: PO Box 6152	License:
City/State/Zip: Concord, CA 94524	Phone: 925-685-5834

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

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REVISIONS	DATE

COMPLIANCE BY:

*West Coast*  
ENERGY DESIGN

1075 VICTORINE ROAD LIVERMORE, CA 94551

Project:

THE DERITA RESIDENCE  
256 ANGEL AVE  
ALAMO, CALIFORNIA

CALIFORNIA TITLE-24  
ENERGY CODE COMPLIANCE

DRAWN  
DANA  
STAGE


DATE  
08/14/2024


FILE  
REH0224


PROJECT  
DER17A


SHEET


T24.2

2022 Single-Family Residential Mandatory Requirements Summary	
<div><b>NOTE:</b> Single-family residential buildings subject to the Energy Codes must comply with all applicable mandatory measures, regardless of the compliance approach used. Review the respective section for more information. (CAGC22)</div>	
<b>Building Envelope:</b>	
§ 110.6(a)1:	<b>Air Leakage.</b> 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 AIAA/MNMA/USCA-1014 S-2004-02011. *
§ 110.6(a)5:	<b>Labeling.</b> Fenestration products and exterior doors must have a label meeting the requirements of § 10.111(f).
§ 110.6(b):	<b>Field-fabricated exterior doors and fenestration products</b> must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA-5 for exterior doors. They must be caulked and/or weather-stripped. *
§ 110.7:	<b>Air Leakage.</b> 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):	<b>Insulation Certification by Manufacturers.</b> Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(b):	<b>Insulation Requirements for Heated Slab Floors.</b> Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(c):	<b>Roofing Products Solar Reflectance and Thermal Emittance.</b> The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(f) and be labeled per §10.113 when the installation of a cool roof is specified on the CEFIR.
§ 110.8(d):	<b>Radiant Barrier.</b> When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	<b>Roof Deck, Ceiling and Rafter Roof Insulation.</b> Roof decks in newly constructed areas in climate zones 4 and 6-16 area-weighted average U-factor not exceeding U-0.184. Ceiling and rafter roofs minimum R-22 insulation in wood-frame ceiling, or area-weighted average U-factor must not exceed 0.043. Rafter roof alterations minimum R-19 or area-weighted average U-factor of 0.054 or less. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with roof or ceiling which is tested 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):	<b>Loose-fill Insulation.</b> Loose fill insulation must meet the manufacturer's required density for the labeled R-value. *
§ 150.0(c):	<b>Wall Insulation.</b> 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):	<b>Raised-floor Insulation.</b> Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor. *
§ 150.0(f):	<b>Slab Edge Insulation.</b> 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(i):	<b>Vapor Retarder.</b> 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(i). *
§ 150.0(j)2:	<b>Vapor Retarder.</b> 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(k):	<b>Fenestration Products.</b> Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.45, or area-weighted average U-factor of all fenestration must not exceed 0.45. *
<b>Fireplaces, Decorative Gas Appliances, and Gas Log:</b>	
§ 110.6(a):	<b>Pilot Light.</b> Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	<b>Closable Doors.</b> Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	<b>Combustion Intake.</b> 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 light-filling damper or combustion-air control device. *
§ 150.0(e)3:	<b>Flue Damper.</b> Masonry or factory-built fireplaces must have a flue damper with a readily accessible control. *
<b>Space Conditioning, Water Heating, and Plumbing Systems:</b>	
§ 110.0-S, 110.3:	<b>Certification.</b> 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):	<b>HVAC Efficiency.</b> Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-N. *
§ 110.2(b):	<b>Controls for Heat Pumps with Supplementary Electric Resistance Heaters.</b> Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone, and in which the cut-on temperature for compression heating is higher than the cut-off 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):	<b>Thermostats.</b> All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat. *
§ 110.3(c)3:	<b>Insulation.</b> Unfired service water heater storage tanks and solar water-heating backup tanks must have adequate insulation, or tank surface heat loss rating. *
§ 110.3(c)6:	<b>Isolation Valves.</b> Instantaneous water heaters with an input rating greater than 6 BtU 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. *
5/6/22	

2022 Single-Family Residential Mandatory Requirements Summary	
<div></div>	
§ 110.5:	<b>Pilot Lights.</b> 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:	<b>Building Cooling and Heating Loads.</b> 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(i)2.
§ 150.0(i)3A:	<b>Cleanlines.</b> Air conditioner and heat pump outdoor condensing units must have adherence of at least five feet from the outlet of any dryer. *
§ 150.0(i)3B:	<b>Liquid Line Drier.</b> 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(i)1:	<b>Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation.</b> All domestic hot water piping and insulation as specified in § 10.111 of the California Plumbing Code. *
§ 150.0(i)2:	<b>Insulation Protection.</b> Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind as required by §10.3(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 watertight and non-crushable casing or sleeve. *
§ 150.0(i)1:	<b>Gas or Propane Water Heating Systems.</b> Systems using gas or propane water heaters to serve individual dwelling units must designate a space of at least 2.5' x 2.5' x 7' suitable for the future installation of a heat pump water heater, and meet electrical and plumbing requirements, based on the distance between this designated space and the water heater location, and a condensate drain no more than 2" higher than the base of the water heater. *
§ 150.0(i)3:	<b>Solar Water-heating Systems.</b> 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. *
<b>Ducts and Fans:</b>	
§ 110.8(d)3:	<b>Ducts.</b> Insulation installed on an existing space-conditioning duct must comply with § 10.01.0 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(i)1:	<b>CMC Compliance.</b> All air-distribution system ducts and plenums must meet CMC §§ 901.0-905.0 and ANSIS/MACNA-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 R-6.0 or higher; ducts located entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.9) do not require insulation. Connections of metal ducts and inner core of flexible ducts must be mechanically fastened. Openings must be sealed with mastic, tape, or other duct-sealing system that meets the applicable UL requirements, or aerosol sealant that meets UL 723. The combination of mastic and either metal or tape must be used to seal openings greater than 1/4". If mastic or tape is used, Bulking cavities, air handler support platforms, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned air. Bulking cavities and support platforms may contain ducts; ducts installed in these spaces must not be compressed. *
§ 150.0(i)2:	<b>Factory-Fabricated Duct Systems.</b> 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 non-adhesive duct tape unless such tape is used in combination with mastic and draw bands. *
§ 150.0(i)3:	<b>Field-Fabricated Duct Systems.</b> Field-fabricated duct systems must comply with applicable requirements for pressure-sensitive tapes, mastics, caulks, and other requirements specified for duct construction. *
§ 150.0(i)7:	<b>Backdraft Damper.</b> Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic shut-off damper. *
§ 150.0(i)9:	<b>Gravity Ventilation Dampers.</b> 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(i)9:	<b>Protection of Insulation.</b> Insulation must be protected from damage due to sunlight, moisture, equipment maintenance, and wind. Insulation exposed to weather must be suitable for outdoor service (e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover). Cellular foam insulation must be protected as above or painted with a water-repellent and solar radiation-resistant coating. *
§ 150.0(i)10:	<b>Porous Inner Core Flex Duct.</b> Porous inner cores of flex ducts must have a non-porous layer or air barrier between the inner core and outer vapor barrier. *
§ 150.0(i)11:	<b>Duct System Sealing and Leakage Test.</b> When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with Reference Residential Appendix RA3.1. *
§ 150.0(i)12:	<b>Air Filtration.</b> 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 micron depth or can be one inch in depth per Equation 150.0-A, clean filter pressure drop and loading must meet the requirements in § 150.0(i)12. Filters must be accessible for regular service. Filter racks or grilles must use gaskets, sealing, or other means to close gaps around the inserted filters to and prevent air from bypassing the filter. *
5/6/22	

2022 Single-Family Residential Mandatory Requirements Summary	
<div></div>	
§ 150.0(k)1G:	<b>Screw-based luminaires.</b> Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA9. *
§ 150.0(k)1H:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JAR elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. *
§ 150.0(k)11:	<b>Light Sources in Drawers, Cabinets, and Linen Closets.</b> Light sources internal to drawers, cabinet 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:	<b>Interior Switches and Controls.</b> All forward phase dimmers used with LED light sources must comply with NEMA SSL-7A. *
§ 150.0(k)2B:	<b>Interior Switches and Controls.</b> Exhaust fans must be controlled separately from lighting systems. *
§ 150.0(k)2A:	<b>Accessible Controls.</b> Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned on and off. *
§ 150.0(k)2B:	<b>Multiple Controls.</b> Controls must not bypass a dimmer, occupant sensor, or vacancy sensor function if the dimmer or sensor is installed to comply with § 150.0(k). *
§ 150.0(k)2C:	<b>Mandatory Requirements.</b> Lighting controls must comply with the applicable requirements of § 110.9. *
§ 150.0(k)2D:	<b>Energy Management Control Systems.</b> An energy management control system (EMCS) may be used to comply with dimming, occupancy, and control requirements if it provides the functionality of the specified control per § 110.9 and the physical controls specified in § 150.0(k)2A. *
§ 150.0(k)2E:	<b>Automatic Shutoff Controls.</b> In bedrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire must be controlled by an occupancy or vacancy sensor providing automatic off functionality. Lighting inside drawers and cabinets with opaque fronts or doors must have controls that turn the light off when the drawer or door is closed. *
§ 150.0(k)2F:	<b>Dimmers.</b> Lighting in habitable spaces (e.g., living rooms, dining rooms, kitchens, and bedrooms) must have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase dimmers controlling LED light sources in these spaces must comply with NEMA SSL-7A. *
§ 150.0(k)2K:	<b>Independent controls.</b> Integrated lighting of exhaust fans shall be controlled independently from the fans. Lighting under cabinets or shelves, lighting in display cabinets, and switched outlets must be controlled separately from ceiling-installed lighting. *
§ 150.0(k)3A:	<b>Residential Outdoor Lighting.</b> For single-family residential buildings, outdoor lighting permanently mounted to a residential building, or to other buildings on the same lot, must have a manual on/off switch and either a photocell and motion sensor or automatic time switch control, or an astronomical time clock. An energy management control system that provides the specified control functionality and meets all applicable requirements may be used to meet these requirements. *
§ 150.0(k)4:	<b>Internally Illuminated address signs.</b> Internally illuminated address signs must either comply with § 140.8 or consume no more than 5 watts of power. *
§ 150.0(k)5:	<b>Residential Garages for Eight or More Vehicles.</b> Lighting for residential parking garages for eight or more vehicles must comply with the applicable requirements for nonresidential garages in §§ 110.9, 130.0, 130.1, 130.4, 140.3, and 141.0. *
<b>Solar Readiness:</b>	
§ 110.10(a)1:	<b>Single-family Residences.</b> 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), (c). *
§ 110.10(b)1A:	<b>Minimum Solar Zone Area.</b> 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 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 130 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. *
§ 110.10(b)2:	<b>Azimuth.</b> All sections of the solar zone located on steep-sloped roofs must have an azimuth between 30-300° of true north. *
§ 110.10(b)3A:	<b>Shading.</b> 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:	<b>Shading.</b> Any obstruction located on the roof or any other part of the building that projects above a solar zone must be located at least twice the horizontal distance of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. *
§ 110.10(b)4:	<b>Structural Design Loads on Construction Documents.</b> 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):	<b>Interconnection Pathways.</b> The construction documents must indicate a location reserved for inverters and metering equipment and a pathway reserved for routing of conduit from the solar zone to the point of interconnection with the electrical service, and for single-family residences and central water-heating systems, a pathway reserved for routing plumbing from the solar zone to the water-heating system. *
§ 110.10(d):	<b>Documentation.</b> A copy of the construction documents or a comparable document indicating the information from § 110.10(b)-(c) must be provided to the occupant. *
§ 110.10(e)1:	<b>Main Electrical Service Panel.</b> The main electrical service panel must have a minimum busbar rating of 200 amps. *
§ 110.10(e)2:	<b>Main Electrical Service Panel.</b> 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." *
<b>Electric and Energy Storage Ready:</b>	
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§ 150.0(m)13:	<b>Space Conditioning System Airflow Rate and Fan Efficiency.</b> 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 ≥ 950 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 ≤ 0.53 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 RA3.9. *
<b>Ventilation and Indoor Air Quality:</b>	
§ 150.0(o)1:	<b>Requirements for Ventilation and Indoor Air Quality.</b> 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)1B:	<b>Central Fan Integrated (CFI) Ventilation Systems.</b> Continuous operation of CFI air handlers is not allowed to provide the whole-dwelling unit ventilation airflow required per § 150.0(o)1C. A motorized damper(s) must be installed on the ventilation duct(s) that prevents all airflow through the space conditioning duct system when the damper(s) is closed and/or controlled per § 150.0(o)1B and/or CFI ventilation systems must have controls that track outdoor air ventilation rate, and either open or close the motorized damper(s) for compliance with § 150.0(o)1C. *
§ 150.0(o)1C:	<b>Whole-Dwelling Unit Mechanical Ventilation for Single-Family Detached and townhouses.</b> 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 specified in § 150.0(o)1C-4. *
§ 150.0(o)1G:	<b>Local Mechanical Exhaust.</b> Kitchens and bathrooms must have local mechanical exhaust, nonenclosed kitchens must have demand-controlled exhaust system meeting requirements of § 150.0(o)1G-4 enclosed kitchens and bathrooms can use demand-controlled or continuous exhaust meeting § 150.0(o)1G-4. Airflow must be measured by the installer per § 150.0(o)1G-4, and rated for sound per § 150.0(o)1G-4. *
§ 150.0(o)1H-1:	<b>Airflow Measurement and Sound Ratings of Whole-Dwelling Unit Ventilation Systems.</b> The airflow required per § 150.0(o)1C must be measured by using a flow hood, flow grid, or other airflow measuring device at the fan's inlet or outlet terminal/signifies per Reference Residential Appendix RA3.7. Whole-dwelling unit ventilation systems must be rated for sound per ASHRAE 62.2 §7.2 at no less than the minimum airflow rate required by § 150.0(o)1C. *
§ 150.0(o)2:	<b>Field Verification and Diagnostic Testing.</b> Whole-dwelling unit ventilation airflow, vented range hood airflow and sound rating, and HRV and ERV fan efficacy must be verified in accordance with Reference Residential Appendix RA3.7. Vented range hoods must be verified per Reference Residential Appendix RA3.7.4.3 to confirm if it is rated by HVI or AHAM to comply with the airflow rates and sound requirements per § 150.0(o)1G. *
<b>Pool and Spa Systems and Equipment:</b>	
§ 110.4(a):	<b>Certification by Manufacturers.</b> Any pool or spa heating system or equipment must be certified to have all of the following: compliance with the Appliance Efficiency Regulations and listing in MACDAS, 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:	<b>Piping.</b> 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:	<b>Covers.</b> Outdoor pools or spas that have a heat pump or gas heater must have a cover. *
§ 110.4(b)3:	<b>Directional Heats and Time Switches for Pools.</b> Pools must have directional heat 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:	<b>Pilot Light.</b> Natural gas pool and spa heaters must not have a continuously burning pilot light. *
§ 150.0(p):	<b>Pool Systems and Equipment Installation.</b> Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves. *
<b>Lighting:</b>	
§ 110.9:	<b>Lighting Controls and Components.</b> All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9. *
§ 150.0(k)1A:	<b>Luminaire Efficacy.</b> All installed luminaires must meet the requirements in Table 150.0-A, except lighting integral to exhaust fans, kitchen range hoods, bath vanity mirrors, and garage door openers; navigation lighting less than 5 watts; and lighting internal to drawers, cabinets, and linen closets with an efficacy of at least 45 lumens per watt. *
§ 150.0(k)1B:	<b>Screw-based luminaires.</b> Screw-based luminaires must contain lamps that comply with Reference Joint Appendix JA9. *
§ 150.0(k)1C:	<b>Recessed Downlight Luminaires in Ceilings.</b> Luminaires recessed into ceilings must not contain screw-based sockets, must be airtight, and must be sealed with a gasket or caulk. California Electrical Code § 410.116 must also be met. *
§ 150.0(k)1D:	<b>Light Sources in Enclosed or Recessed Luminaires.</b> Lamps and other separable light sources that are not compliant with the JAR elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires. *
§ 150.0(k)1E:	<b>Blank Electrical Boxes.</b> The number of electrical boxes that are more than five feet above the finished floor and do not contain a control, low voltage wiring, or fan speed control. These boxes must be served by a dimmer, vacancy sensor control, low voltage wiring, or fan speed control. *
§ 150.0(k)1F:	<b>Lighting Integral to Exhaust Fans.</b> Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k). *
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*Exceptions may apply.	

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§ 150.0(q):	<b>Energy Storage System (ESS) Ready.</b> All single-family residences must meet all of the following: Either ESS-ready interconnection equipment with backed up capacity of 60 amps or more and four or more ESS-supplied branch circuits, <u>and</u> a dedicated raceway from the main service to a subpanel that supplies the branch circuits in § 150.0(q), at least four branch circuits must be identified and have their source collocated at a single panelboard suitable to be supplied by the ESS; with one circuit supplying the refrigerator, one lighting circuit near the primary exit, and one circuit supplying a sleeping room receptacle outlet; main panelboard must have a minimum busbar rating of 225 amps; sufficient space must be reserved to allow future installation of a system isolation equipment/transfer switch within 3' of the main panelboard, with raceways installed between the panelboard and the switch location to allow the connection of backup power source. *
§ 150.0(r):	<b>Heat Pump Space Heater Ready.</b> Systems using gas or propane furnaces to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the furnace with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready"; and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use." *
§ 150.0(q):	<b>Electric Cooktop Ready.</b> Systems using gas or propane cooktop to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the cooktop with circuit conductors rated at least 50 amps with the blank cover identified as "240V ready"; and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use." *
§ 150.0(q):	<b>Electric Clothes Dryer Ready.</b> Clothes dryer locations with gas or propane plumbing to serve individual dwelling units must include: A dedicated unobstructed 240V branch circuit wiring installed within 3' of the dryer location with circuit conductors rated at least 30 amps with the blank cover identified as "240V ready"; and a reserved main electrical service panel space to allow for the installation of a double pole circuit breaker permanently marked as "For Future 240V use." *
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*Exceptions may apply.	

REVISIONS	DATE

COMPLIANCE BY:

West Coast ENERGY DESIGN

1075 VICTORINE ROAD  
LIVERMORE, CA 94551

Project:

THE DERITA RESIDENCE  
236 ANGELO AVE  
ALAMO, CALIFORNIA

LOW-RISE RESIDENTIAL MANDATORY MEASURES

DRAWN  
DANA STAGE

DATE  
08/14/2024

FILE  
REMO224

PROJECT  
DERITA

SHEET

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