

GENERAL NOTES

- The 2007 CBC, 2007 CMC, 2007 CPC and 2007 CEC (which is based on the 2005 NEC), as well as the 2008 California Energy Efficiency Standards & City of Livermore Security Ordinance, IB-25 are applicable to this project.
- This remodel shall require that smoke detectors be installed (or confirmed as existing) at all bedrooms, hallways leading to bedrooms, at the top of the stairs and at least one detector on each level per CBC 907.2.10.1 New smoke detectors shall be 110 volt with battery backup and the ones for non-altered spaces may be the battery only type.
- If the remodel or addition requires patching or new exterior wall material one or more of the following will be required:
 - Wood siding shall have a method of providing a weather-resistant barrier (i.e. over building paper) as per CBC 1405.2
 - New masonry veneer shall be either anchored with 22 ga. galv. anchors tie (Simpson BT-R) at one per sq.ft. of veneer or adhered with an approved adhesive material. CBC 1405.5/1405.9
 - Stucco shall be 7/8" thick (three coat) over two layers of grade D paper with wire. A 26 ga. galv. weep screed shall be used at the foundation line with at least 4 in. clearance to soil and 2 in. clearance at paved areas per CBC 2512
- New skylights shall be ICC approved per CBC 1610
- New electrical panels or existing panels requiring additional breaker(s) shall not be located in the area of easily ignitable materials such as clothes closets per CBC.
- All new tub/shower walls shall have a smooth, hard, nonabsorbent surface over building paper and w.r. gyp. or concrete backer bd. to a min. of 70 in. above the drain inlet.
- All new or relocated water closets shall be max. 1.6 gallon per flush and have a min. clearance of 30 in. width and a min. of 24 in. clearance in front per CPC 407.6 and CA health&safety.
- Doors and panels of shower and bathtub enclosures and windows adjacent to hazardous areas to within 60 in. above a standing surface/drain inlet shall be fully tempered, laminated safety glass or approved plastic per CBC 2406.3 Safety glazing is also required at windows within 24 in. of doors and within 18 in. of the floor.
- Showers and tub/shower combinations shall have pressure balance valves. The min. interior floor area of a shower shall be 1024 sq.in. and encompass a 30 in. circle.
- Light fixtures in tub or shower enclosures shall be labeled "suitable for damp locations" and listed for bathroom use.
- If a window of 1.5 sq.ft. opening is not provided from a bathroom or laundry an exhaust fan providing five air changes per hour shall be installed. They shall exit a min. of 3 ft. from operable windows and have backdraft dampers. CBC 1203.4.2.1
- Appliance branch circuits shall be on dedicated circuits.
- If new or relocated outlet receptacles are part of this construction the following shall be provided (including existing outlets not intended to be affected):
 - All countertop spaces over 12 in. wide shall have outlets located so that no point along the counter is over 24 in. from an outlet receptacle.
 - All outlet receptacles withing the kitchen shall be GFCI
 - Two (2) dedicated 20 amp GFCI circuits shall be provided for kitchen countertops and one (1) dedicated 20 amp GFCI for bathroom countertops.
 - Bedroom outlet receptacles shall be arc fault protected.
 - Provide waterproof/GFCI protected outlet at front and rear of home.
 - Additional receptacle outlets should be provided in the following locations:
 - 12 feet maximum on center and within 6 feet of openings.
 - At wall spaces 2 foot or more in length/
 - In any hallway 10 ft. or more in length/
 - If any lights in the kitchen or bathroom are new or relocated the entire room shall be required to be updated with high efficacy lighting per Title 24 energy requirements. MFIR Section and 150 (k) 3 and Kitchen Lighting WS-SR
- For clothes dryers a smooth metal duct shall extend to the outside with a backdraft damper. Four 90 deg. elbows shall be limited to 14 ft. with no more than two (2) 90 deg. elbows.
- New or remodeled fireplaces shall be prefabricated and ICC approved and installed per their listing. Livermore Municipal Code 15.30. For factory built metal direct-vent gas fireplaces see CBC section 2111.3.1 and C,C 90.2.1.
- All new exterior hose bibs shall have non-removable backflow prevention devices per CPC 603
- New glass blocks shall be installed with lateral support and anchorage to framing capable of transferring a min. design force of 200 plf with continuous panel anchors @ 16" oc or by channels etc. Block openings shall have a min. 3/8" clearance to accommodate supporting member displacements and openings shall be limited to 250 sq.ft. per CBC 2102.1 & 2110
- 5/8" type "X" gyp. bd. shall be used at useable space under stairways (soffits and walls) CBC 1009.5.3
- Kitchen or bathroom additions shall not reduce the required natural light and ventilation to rooms adjacent to the remodeled areas. The adjacent habitable rooms shall continue to have a natural light source, window or skylight, with an area of not less than 1/8th the floor area and ventilation area of not less than 1/16th per CBC 1203.4
- New attic spaces greater than 30 in. in height shall have a 22 in. x 30 in. min. attic access (30" sq. access required if FAU in attic requires a larger opening). Attics shall be vented at 1/150 of area (or 1/300 if half of the vents are located in upper 1/3 of attic). CBC 1203.2
- All remodeled kitchens and bathrooms shall have a min. ceiling height of seven (7) ft. All habitable rooms shall have a ceiling height of seven & one-half (7 1/2) feet. CBC 1208.2

- Installation of a new or relocation of existing water heater requires the following:
 - Seismic anchorage to include anchor straps at points within the upper and lower 1/3 of its vertical dim. The lower located to maintain a min. of 4" above controls per CPC 508.2
 - Water heaters generating a glow, spark or flame capable of igniting flammable vapors shall be installed 18" above garage floors and not under stairs.
 - A method and source of combustion air top and bottom for gas burning appliances.
 - A pressure/temperature relief valve with drain to outside pointing down with 6" clearance.
 - A 24 in. min. wide door to the water heater compartment (These are code minimums). Final location may require additional code requirements not listed and plan submittals.
- All structural lumber (studs, joists, rafters, beams and posts) shall be douglas fir #2 or better. Ridge boards, valley and hip members shall be not less in depth than the cut end of the rafter.
- Roof sheathing shall be 1/2" OSB or CDX plywood with panel index of 32/16 min. with 10d nails at 6" oc edge and 12" oc field. See Title 24 CR1R for radiant barrier requirement.
- Floor sheathing shall be 3/4" Tongue & groove with a min. panel index of 48/24 with subfloor adhesive and 10d nails at 6" oc edge and 10" oc field.
- Underfloor ventilation to be 1/150th of floor area of the addition, plus any vents at existing foundation lines eclipsed by the addition. Arrange vents for cross-ventilation and 24" x 18" minimum access to all areas of the foundation crawl space.
- All mudsills and ledgers in contact with concrete shall be pressure treated or foundation grade redwood. Anchor bolts in contact with P.T. wood shall be hot dipped galvanized. Hold down bolts and anchor bolts at shearwalls shall be set in place by template prior to foundation inspection.
- All roof rafter bays shall have four (4) 2 1/2" diameter holes with 1/4" sq. corrosion resistant mesh screens at exterior. Cross ventilation to be maintained at all rafter bays (top & bottom). (See note 21)
- Where double top plates intersect at existing a 48 in. lap is required or an Simpson ST6224 (min.) installed between new and existing top plates, rafters, ceiling joist or blocking.
- New foundations to match existing in design/configuration. Provide section of existing foundation for verification. If the new foundation's design/configuration does not match existing, provide a letter and supporting documentation from the project engineer clarifying that no differential settlement between the new and existing will occur.
- Concrete strength shall be 2500 psi at 28 days min.
- Reinforcing bars #5 & smaller to be grade 40 and grade 60 for larger than #5.
- Roof drainage shall be covered to the fronting street by through the curb drains. An encroachment permit form the Engineering Department may be required.
- Deferal of any submittal items (such as trusses, Fire Sprinkler plans, etc.) shall have prior approval of building official.
 - A list of the deferred submittals
 - Note that the "deferred submittal items shall be submitted to the design professional in responsible charge who shall review them and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and been found to be in general conformance to the design of the building".
 - Note that the "deferred submittal items shall not be installed until the building official has approved their design and submittal documents".

MICROPASS v8.1 File-HEATHERA Wth-CT212S08 Program-FORM CF-1R User-MP0950 User-SGF Energy Calcs Run-L11101

MICROPASS ENERGY USE SUMMARY

Energy Use (kTWh/yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	36.83	37.90	-1.07	-2.9%
Space Cooling	36.21	37.38	-1.17	-3.2%
Ventilation Fans	1.74	1.74	0.00	0.0%
Water Heating	40.48	38.14	2.34	5.8%
Total	115.26	115.16	0.10	0.1%

*** Building complies with Computer Performance ***
*** HERS Verification Required for Compliance ***

GENERAL INFORMATION

HERS Verification	Required
Conditioned Floor Area	640 sq ft
Building Type	Single Family Detached
Construction Type	New
Natural Gas at Site	Yes
Building Front Orientation	Front Facing 180 deg (S)
Number of Dwelling Units	1
Number of Building Stories	1
Weather Data Type	FullYear
Floor Construction Type	Slab On Grade
Number of Building Zones	1
Conditioned Volume	7000 cf
Slab-On-Grade Area	640 sq ft
Glazing Percentage	50 % of floor area
Average Glazing U-factor	0.35 Btu/hr-sq-ft
Average Glazing SHGC	0.3
Average Ceiling Height	10.9 ft

BUILDING ZONE INFORMATION

Zone Type	Floor Area (sq ft)	# of Units	# of Cond. Le	Thermo- Ioned	Vent Type	Vent Height (ft)	Vent Area (sq ft)	Verified Housewrap
Residence	640	7000	1.00	4.0	Yes	Setback	2.0	Standard

ATTIC AND ROOF DETAILS

Roof Type	Roof Mass (lb/sqft)	Rise (ft)	Emis- sion	Frame Depth (in.)	R-Value (in.)	R-Deck	R-Vent	Value	Vent Ratio	Vent High	
Asphalt	Light	4:12	0.08	0.85	3.5	24	oc	0.00	0.00	1/150	0.03

OPAQUE SURFACES

Surface	Frame Area (sf)	U-factor	Sh- eath- ing Act	Solar R-Val	Appendix JAM	Location/ Comments					
1 Wall	Wood	150.0	0.74	19	0	180	90	Yes	4.3.1	A5	front 2x6 typ.
2 Wall	Wood	280.0	0.74	19	0	270	90	Yes	4.3.1	A5	left 2x6
3 Wall	Wood	230.0	0.74	19	0	90	Yes	4.3.1	A5	back 2x6	
4 Wall	Wood	280.0	0.74	19	0	90	Yes	4.3.1	A5	right 2x6	
5 AtticRad	Wood	200.0	0.49	19	0	180	21	Yes	4.2.1	A4	wault
6 AtticRad	Wood	440.0	0.32	30	n/a	0	Yes	4.2.1	A8	attic	

PERIMETER LOSSES

Surface	Length (ft)	F2 Factor	Insul R-Val	Solar Gains	Appendix JAM	Location/ Comments
7 SlabEdge	114	0.730	R-0/0in	No	4.4.7	All Standard Slab Edge

FENESTRATION SURFACES

Orientation	Area (sf)	U-factor	SHGC	Act	Exterior Shade	Location/Comments
1 Door Front (S)	80.0	0.350	0.300	180	90	Standard FL/Vinyl/Wood Patio Door
2 Door Left (W)	120.0	0.350	0.300	270	90	Standard FL/Vinyl/Wood Patio Door
3 Door Right (E)	120.0	0.350	0.300	90	270	Standard RL/Vinyl/Wood Patio Door

OVERHANGS

Surface	Area (sf)	Window Width	Window Height	Overhang Depth	Overhang Height	Left Extension	Right Extension
1 Door	80.0	n/a	6.0	8.0	1.0	n/a	n/a
2 Door	120.0	n/a	6.0	8.0	1.0	n/a	n/a
3 Door	120.0	n/a	6.0	8.0	1.0	n/a	n/a

HVAC SIZING

System Type	Minimum Efficiency	Verified EER	Verified Refrig Adeq	Verified Cooling Capacity	Verified Maximum Capacity
Furnace	0.900 AFUE	n/a	n/a	n/a	n/a
AC/SPlit	13.00 SEER	11.4	No	n/a	n/a

GENERAL INFORMATION

Volume	Front Orientation	Slizing Location	Latitude	Winter Outside Design	Winter Inside Design	Summer Outside Design	Summer Inside Design	Summer Range	Interior Shading Used	Exterior Shading Used	Overhang Shading Used	Latent Load Fraction
640 sf	Front Facing 180 deg (S)	LIVERMORE	37.7 degrees	22 F	70 F	93 F	75 F	35 F	Yes	Yes	Yes	0.17

HEATING AND COOLING LOAD SUMMARY

Description	Heating (Btu/hr)	Cooling (Btu/hr)
Opaque Conduction and Solar	9728	1778
Glazing Conduction and Solar	5376	4412
Infiltration	2315	481
Internal Gain	n/a	2520
Ducts	2775	1519
Sensible Load	20194	10311
Latent Load	n/a	1814
Minimum Total Load	20194	12325

Note: The loads shown are only one of the criteria affecting the selection of HVAC equipment. Other relevant design factors such as air flow requirements, outside air, outdoor design temperatures, coil sizing, availability of equipment, oversizing, etc., must also be considered. It is the HVAC designer's responsibility to consider all factors when selecting the HVAC equipment.

Project Title: Heather Ln. Accessory Bld. Date: 11/09/10 21:18:57
 Project Address: 1395 Heather Lane, Livermore, CA
 Documentation Author: Scott Finn, SGF Energy Calcs, PO Box 251, Danville, CA 94526, 925-735-9121

Climate Zone: 12
 Compliance Method: MICROPASS v8.1 for 2008 CEC Standards (r02)

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Minimum Total Load	20194	12325

DUCT SYSTEMS

System Type	Duct Location	Duct R-value	Verified Leakt	Verified Surface Area	Verified Buried Ducts
Furnace	Attic	R-6	Yes	No	No
AC/SPlit	Attic	R-6	Yes	No	No

FAN SYSTEMS

System Type	Flow (cfm)	Power (W/cfm)
Standard	36.4	.25

WATER HEATING SYSTEMS

Tank Type	Heater Type	Distribution Type	Number in System	Tank Energy Factor	Tank Size (gal)	External Insulation R-value
1 Storage	Gas	Standard	1	0.60	40	R-n/a

- Items in this section should be documented on the plans, and
- Installed to manufacturer and CEC specifications, and
- Verified during plan check and field inspection.

This building incorporates a Radiant Barrier.

HERS REQUIRED VERIFICATION

- Items in this section require field testing and/or
- Verification by a certified home energy rater under
- the supervision of a CEC-approved HERS provider using
- CEC approved testing and/or verification methods and
- Must be reported on the CF-1R installation certificate.

This building incorporates HERS verified High Energy Efficiency Ratio (EER). This building incorporates HERS verified Duct Leakage. Target leakage is calculated and documented on the CF-1R. If the measured CFM is above the target, then corrective action must be taken to reduce the duct leakage and then must be retested. Alternatively, the compliance calculations could be redone without duct testing. If ducts are not installed, then HERS verification is not necessary.

REMARKS
Radiant barrier in attic required.

COMPLIANCE STATEMENT
This certificate of compliance lists the building features and performance specifications needed to comply with Title-24, Parts 1 and 6 of the California Code of Regulations, and the administrative regulations to implement them. This certificate has been signed by the individual with overall design responsibility.

DESIGNER OR OWNER
Name: Richard Lounsbury