APPLICABLE CODES:

1) California Fire Code 2019 Edition California Building Code 2019 Edition 3) California Mechanicle Code 2019 Edition 4) California Plumbing Code 2019 Edition 5) California Electric Code 2019 Edition 6) California Energy Code 7) California Residential Code 2019 Edition 8) California Green Building Standards 2019 Edition

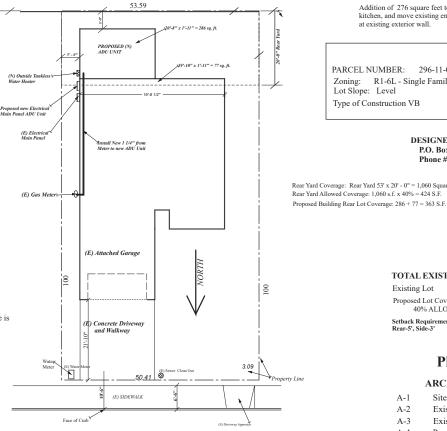
Fire Alarm Suppression

Please Note this project does not require a New Fire Sprinkler System as per CRC section R313.2, because the project requires less then 50% Removal and Replacement of the Exterior and Interior Walls, and the Residence does not currently have a sprinkler system. Please see Sheet A-2 for demolition of existing walls.

SITE PLAN NOTES:

Provide a minumum 5% slope for 10' away from proposed structure at pervious ground, and 2% for 10' at Impervious surfaces Provide spashblocks at ends of downspouts for positive drainage away

- a. Application for which no permit is issued within 180 days the date of application shall automatically expire, per CRC R105.3.2.
- b. Every permit issued shall become invalid unless work authorized is commenced within 180 days or if the work authorized is suspended or abandoned for a period of 180 days. A successful inspection must be obtained within 180 days. A permit may be extended and an extention fee is recieved prior to experation of the permit and granted by the Building Official. No more then ONE extention may be granted. Permits which have become invalid shall pay a reactivation fee of approximately 50% of the original permit fee amount when the permit has been expired for up to 6 months. When a permit has been expired for a period in excess of 1 year, the reactivation fee ahell be 100% of the original permit fee, per CRC R105.5.



ATHERTON DRIVE



Vicininity Map

Site Plan

Scope of Work:

Addition of 276 square feet to existing single family home and alterations. Move and completly renovate kitchen, and move existing entry area. Build new 283 square foot ADU with 1 hour wall at existing exterior wall.

Project Data:

PARCEL NUMBER: 296-11-020

OWNER: Cheryl Knepler

Zoning: R1-6L - Single Family Lot Slope: Level

JOB ADDRESS: 3080 Atherton Drive Santa Clara, Ca. 95126

Type of Construction VB

DESIGNER: Gregg Jones DBA (Diversified Builders) P.O. Box 320308, Los Gatos, Ca. 95032 Phone #: (408) 316-3207 Signature Grego C. June

Rear Yard Coverage: Rear Yard 53' x 20' - 0" = 1,060 Square Feet Rear Yard Allowed Coverage: 1,060 s.f. x 40% = 424 S.F.

PROJECT DATA:

Existing Single Family Home Living Space: New Proposed Addition:

1,260 Square Feet 276 Square Feet

Total Proposed Main House: Existing Attached Garage: Proposed Covered Patio: TOTAL LOT COVERAGE:

1,536 Square Feet 428 Square Feet 17 Square Feet 1,981 Square Feet

Proposed ADU Structure

283 Square Feet

TOTAL EXISTING & PROPOSED:

Existing Lot 5,300 Square Feet

Proposed Lot Coverage % Calculation: 1,981 - 5,300 =37.38 % 40% ALLOWED

Setback Requirements Allowed: Front-5' beyond front setback of main dwelling,

Plan Index:

ARCHETECTURAL:

A-1

A-2 Existing and Demolition Floor Plan

A-3 Existing Exterior Elevations

A-4 Proposed Floor Plan & Cal Green Notes

A-5 Proposed Roof Plan

A-6 Proposed Cross Section

A-7 Proposed Exterior Elevations

A-8 Proposed Electrical, Mechanical, & Plumbing

A-9 Low Rise Energy Mandatory Measures

T-1 Title 24 Main Residence

T-2 Title 24 Main Residence

T-3 Title 24 ADU Unit

T-4 Title 24 ADU Unit

STRUCTURAL

S-0 Cover Sheet

S-1 Foundation Plan

Foundation Details S-2

S-3 Roof Framing

Framing Details

REVISIONS

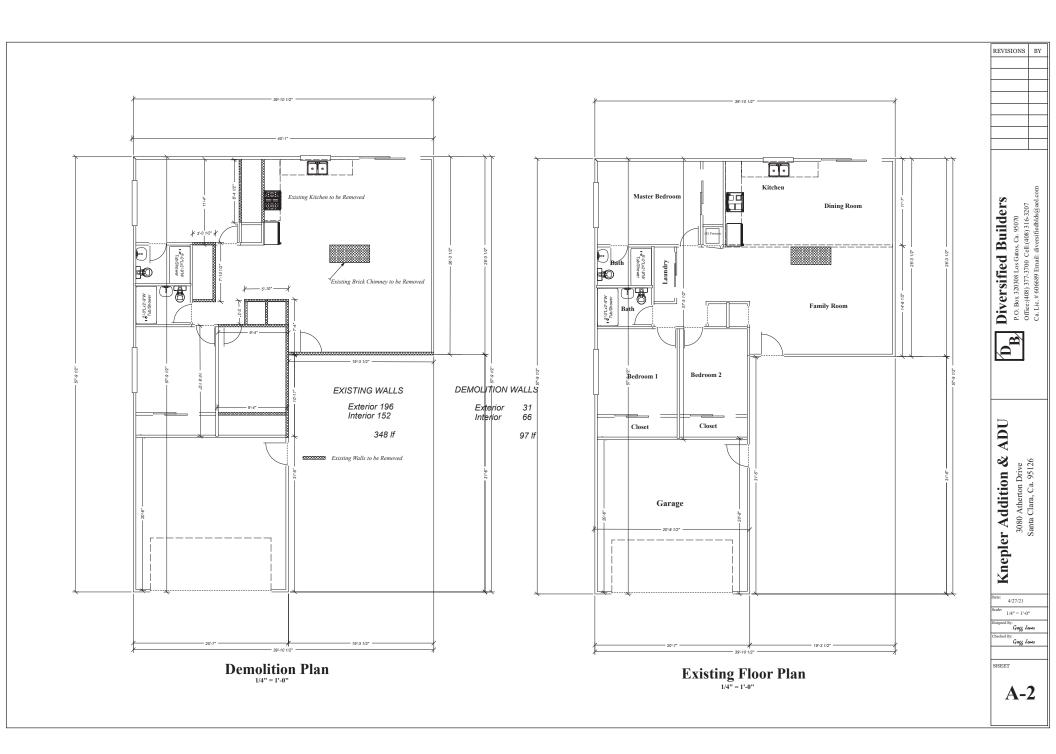
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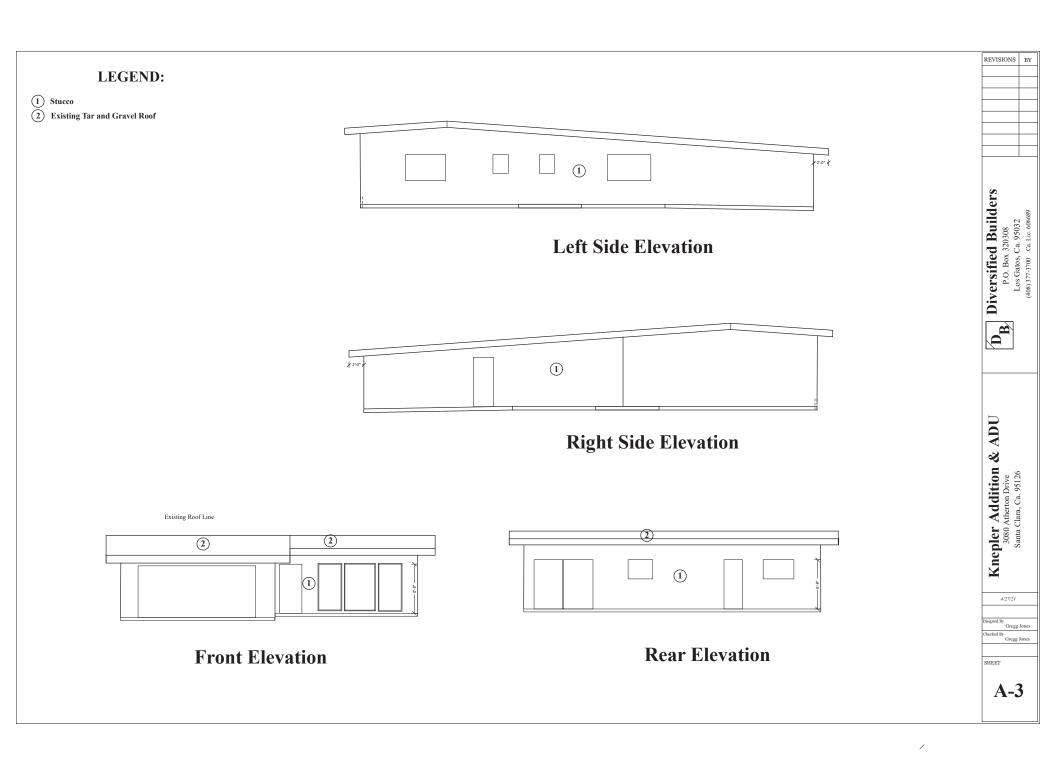


ADU Ø 3080 Atherton Drive Santa Clara, Ca. 95126 Knepler Addition

4/27/21

SHEET





Proposed Plan Keynotes

- 1 Minumum 15" clear Space each side to centerline& 24" front @ Tiolet
- A door may open at a landing that is not more than 7-3/4" lowerthan the floor level if the door does not swing over the landing (CRC R311.3.1 & R311.3.2)
- 3 Window or door meets all egress code compliance.
- (6) Provide & Install crawl space access minumum size 18" x 24"
- Shower dimension to be a minumun area of 1,024 sq. inches, and a minumum finish dimension of 30 inches in any direction Tile over approved Moisture Barrier Flash as necessary to make weather tight.
- Attach to wall and flue to exterior wall per manufactures recommendations
- Provide & Install cooktophood w/FAN and venting through exterior wall.
- (10) 5/8" Type X Fire rated sheetrock at walls & ceiling ajoining living space. All joints to be mudded tight and taped. All penetrations to be fire caulked. No ABS piping to penetrate 1 hour system.

LEGEND

Smoke Alarm Shown

(SD) Smoke Alarm W/ Carbon Monoxide (SD)

T.G. Tempered Glass

GENERAL NOTES

Bedroom windows shall have max. 44" high from sill and min. net clear openings of 20" in width & 24" in height w/ min. clear opening of 5.7 feet per

Door Glazing notes: All exterior doors w/glass to have dual pane glazing w/ low "E" & Tempered Glass

Water-resistant sheetrock to be used in areas subject to continuous high humidity

Underfloor & Attic Access to be sized to meet UBC requirements. Min. 18" 24" for crawl space access, and min. 22" x 30" with 30" head clearance or more for attic access Provide 1 access within 20' of kitchen & bathroom plumbing (i.e. clean out). Provide size requirments for attic furnace large enough for repairs or replacement. Provide double 2x around entire opening, and provide weather strips to prevent back draft.

Install fire stops along 10 foot intervals (Both horizontal and vertical) along the length of any balloon framed wall above 10 feet height. Fireblocking shall shall be provided at openings between attic spaces, and chimney chases, and all interconneted / concealed coved and soffited ceiling. All glazing shall be tempered glass in hazardous locations:
-Panels in all doors

-shower/ tub enclosures including doors -glazing adjeent to doors within 2' of vertical edge of closed door and within 5' of standing surface. Glazing 18" from finished floor to be tempered

All nails exposed to weather to be Hot Dipped Galvanized

Cal Green Notes Applicable Mandatory Measures

The effective flush volume of all water closets shall not exceed 1.28 gpm (CGC 4.303.1.1)

The flow rate for single showerhead and multiple showerheads serving one shower shall not exceed 1.8 gallons per minute at 80 pt., and shall be certified to the perfomance criteria of the U.S. EPA Water-Sense Specifications (CGC 4.305.1.30

Residential lavatory faucets The flow rate shall not be more than 1.2 gpm at 6 psi, and not less then 0.8 gpm at 20 psi (CGC 4.303.1.4.1)

Kitchen Faucets flow rate shall not exceed 1.8 gpm at 60 psi (CGC 4.303.1.4.4)

Standards for plumbing fixtures and fittings-plumbing fixtures and fittings shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code per CGC 4.303.2

Rodent proofing-Annular spaces around pipes, eletrical cables, conduits or other openings in sole-bottom plates at exterrior walls shall be rodent proofing by closing such openings with cement mortar, concrete masoury or similar method acceptable to the City per CGC 4-406.1

Construction waste management- Reycycle andor salvage for re-use a minumum of 65% of nonhazardous construction and demolition waste in accordance with Section 4.408.2, 4.408.3 or 4.408.4 or meet a more strigent locl construction and demolition waste management (CGC 4.408.1

At the time of rough installation, during storage on the construction site and until final startup of the heating, cooling, and ventalation equipment, all ducts and other related air distribution components opening shall be covered with tape, plastic, sheetmetals, or other methods acceptable to the City to reduce the amount of water, dust or debris, which may enter the system per CGC 4.504.1

Verifications-Documentation shall be provided at the request of the Building Division to verify compliance with VOC finish materials per CGC 4.504.2.4

Paints, stains, and other coatings shall comply with VOC limits per CGC 4.504.2.2

Aerosol paints and coating shall meet the product-weighted MIR limits for ROC and other requirements per CGC 4.504.2.3

Adhesive, sealants, and caulks shall meet the VOC or other toxic combound limits per CGC 4.504.2.1 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall comply with the formaldehyde requirements of $\mathrm{CGC}4.598.4$

Moisture content of building material. Building materials with visable signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content Moisture content shall be checked prior to finish material being

Heating and air conditioning system shall be sized, designed and have their equipment selected using the following methods per CGC 4 507.2 $\,$

applied per CGC 4.505.3

 Heat Loss Gain values in accordance with ANSI/ACCA 1 manual J-2016 or equavalent Duct systems are sized according to ANSI/ACCA 3 manual D-2016 oe equivalent.
 Select heating and cooling equipment in accordance with ANSI/ACCA 3 Manual S-2014 or equivalent.

HVAC installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a recognized training or certification program per CGC 702.2

Uon request veification of compliance with this code may include construction documents, plans, specifications order or installer certification, inspection reports, or other methods acceptable to the building department which show substantial conformance per CGC 703.1 REVISIONS

Diversified Builders . Box 320308 Los Gatos, Ca. 95070 ice:(408) 377-3700 Cell:(408) 316-3207 Lic. # 606689 Email: diversifiedblds@aol.



ADU Addition & 3080 Atherton Drive Santa Clara, Ca. 95126 Knepler A

1/4" = 1'-0"

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A-4

PROPOSED FLOOR PLAN

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

ROOFING NOTES:

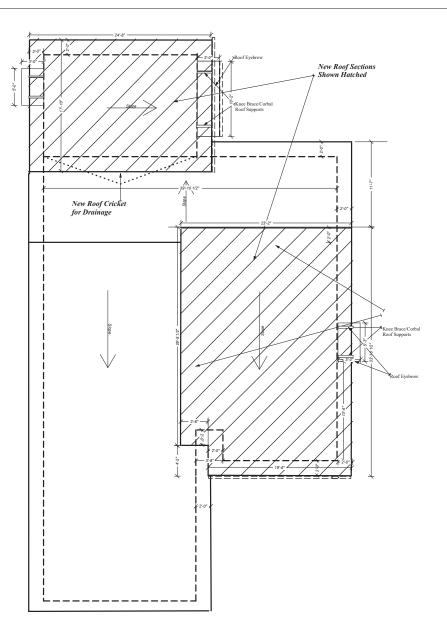
- 1) NEW ROOFING at 1 & 12 Slope to be Covered with Modified Bitumum Roofing
- 3) FURNISH AND INSTALL NEW GUTTER AS SHOWN ON PLANS
- 4) NEW DOWNSPOUTS FURNISHED AND INSTALLED AT LOCATION DEFMED NECESSARY
- 5) SPLASH BLOCKS TO BE FURNISHED AT THE END OF DOWN SPOUTS TO PROVIDE APPROPRIATE DRAINAGE AWAY FROM BUILDING
- 6) ROOFING TO BE "MINUMUM CLASS C ROOFING.
- 7) PROVIDE SPLASH BLOCKS AT THE ENDS OF DOWNSPOUTS, AND ASSURE GRADE IS SLOPED TO PROVIDE DISCHARGE FOR MINUMUM OF 5' AWAY FROM FOUNDATION.
- 8) ALL ROOF OVERHANG TO BE 2'-0" AT ALL PEREMITER.

(Note): New Rafter bays to be filled with closed cell sprayed foam insulation. No venting.

LEGEND

Gutte

Down Spou



PROPOSED ROOF PLAN

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

 Diversified Builders
 P.O. Box 320308

 P.O. Box 320308
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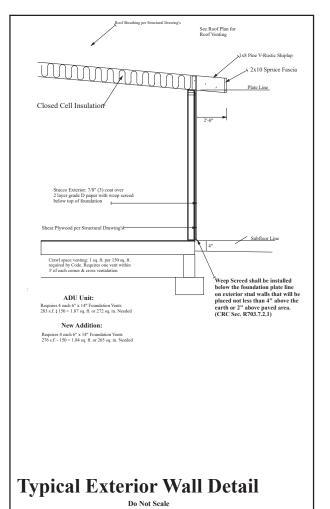
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Knepler Addition & ADU 3080 Atherton Drive Santa Clara, Ca. 95126

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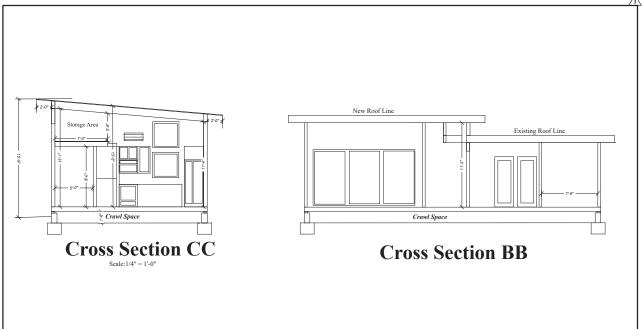
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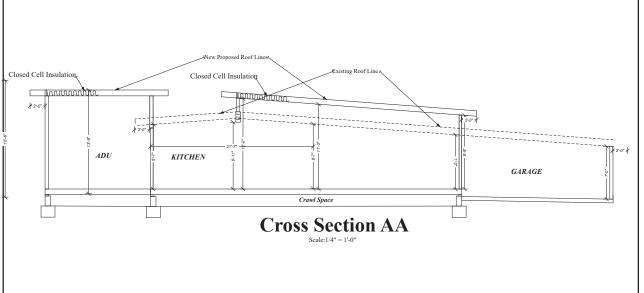
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STUCCO:

7/8" portland cement exterior plaster, three coat application, consisting of 3/8" thick keyed scratch, a coat of brown, a coat of fine finish each coat thickness 1/4". Allow scratch to dry for two full days, and thoroughly soak prior to brown coat application. 1 1/2" galvenized wire lathing over 2 layers of Pladtekraft" paper. Provide and install all corner beads, drip screed, expansion joint, etc. as required for crack free installation. Install all weep screed at the bottom of Stucco. Maintain a 2" min. clear from hard surfaces, and min. 8" from soft surfaces.





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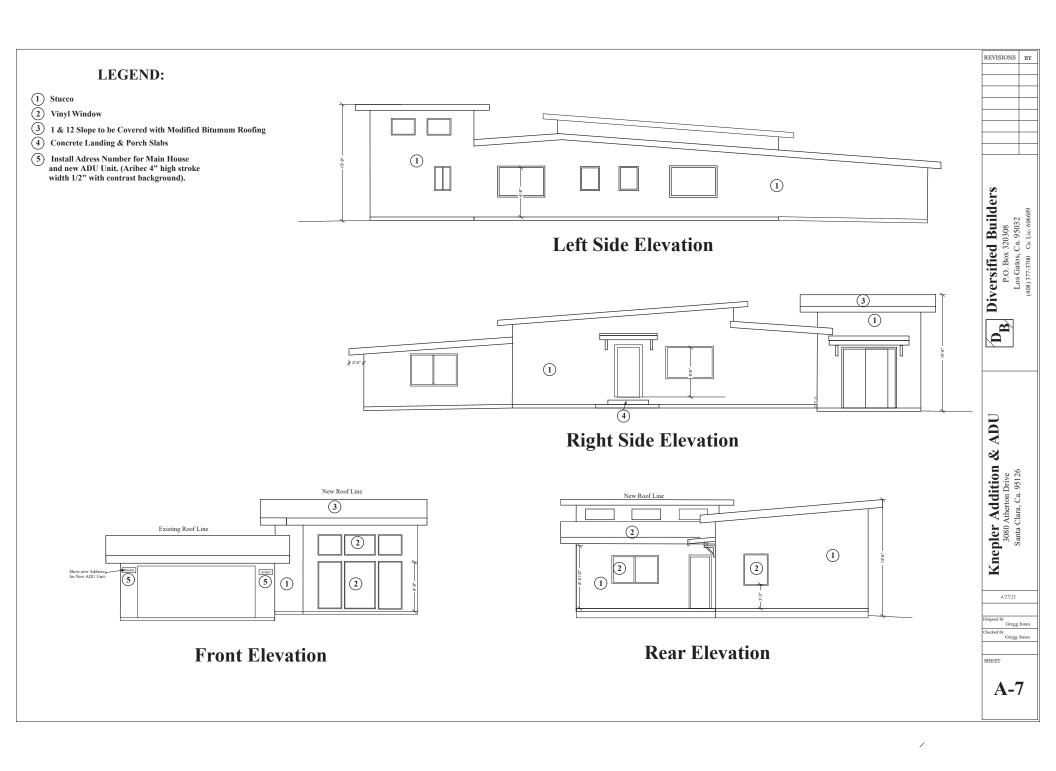
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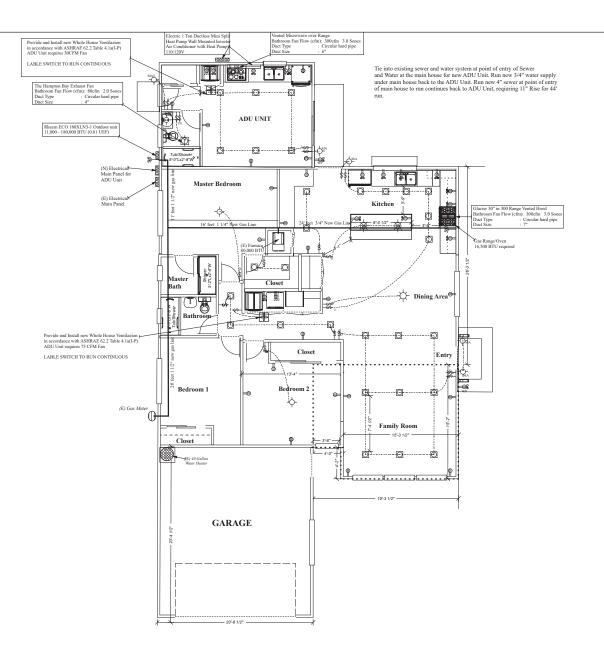
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cale As Noted

Gregg Jones
Checked By
Gregg Jones

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ELECTRICAL NOTES

- All electrical work shall be in compliance with the latest adopted CEC Codes
 Electrical layout is a schematic only. The Owner, General Contractor, and Electrical Contractor to determine final lay out.
 Fluorescent lighting in Kitches and Bathrooms shall obtain 40 Lumens Wattsor greater as General Lighting.
- All recessed light fixtures in insulated ceilings shall be IC rated and air-tight (AT) labeled and shall have an electronis ballast Fixtures not IC rated can be used in non-insulated areas, and shall be at least 1/2" from combustible materials.
- 5) A dedicated 20-amp branch circuit shall be provided to supply the laundry receptacle outlet.
- 6) GFCI protection is required at all receptacles serving the kitchen and bathrooms any utility rooms, garage, and exterior outlets and any outlet within 6' of a sink.
- 7) A dedicated 20-amp circuit to serve the required bathroom outlets. This cannot supply any other receptacles, lights, fans, etc. (exception-where the circuit supplies a single bathroom, outlets for other equipment within the same bathroom shall be permitted to be supplied.
- 8) Provide are-fault circuit interrupter (AFCI) protection for all branch circuits that supply 120-volt, 15 & 20 amp outlets (for receptacles, lights, & smoke alarms) installed in dwelling unit bedrooms.
- 9) All hard wired 120 volt smoke detectors shall be interconnected with a battery back up
- 10) Installation instructions for all listed equipment shall be provided to the field inspector at the time of inspection
- 11) New receptacle outlets shall be (12') feet on center maximum, and within (6') feet of of the end of wall and any wall space 2 or more feet wide. Hallway which is more then 10 feet in length.
- Zot more new white. Trainway which is more time to use in inequal.

 1) All outdoor lighting permanently mounted in a residential building or to other buildings on the same lot are high efficacy luminaries or comply with the exceptions as follows:

 1. Lights are to be centrolled by a motion sensor with intregal photo control.

 2. Lighting not attacked to building (i.e. landscape lighting) are exempt.

 3. Outdoor lighting all lighting to be light efficiency, with electronic ballasts or may be non high efficiency, if swithing is

by a motion sensor with intregal photo, or swimming pools, and water features.

- 13) An arc-fault circuit interpreter shall protect all receptacles in the house that are Not required to be GFCI. 14) Install energy star bathroom fans on timer or humidistat. All exhaust fans shall be switched seperately from lighting systems.
- 15) All new showers and tub/shower combination shall be provided with individual control valves of the thermostatic mixing, pressure balance or combination valve type per CPC Sec. 408.3

Provide prevention back flow devices on all Hose Bibbs. Provide 6" clearance on sides & back of furnace.

Symbol	Electrical Symbols List
0	110V Duplex Outlet
95	110V Duplex Outlet GFCI
⊜≅ [}]	110V Outlet GFCI Waterproof Cover
₽	220 V Outlet
₩-	Single pole switch
1803	Single pole w/dimmer switch
69- W	3 way switch
(M)	Pendant Down Lights
Ó	Recessed High Efficiant LED Canned Light
ф-	Mounted Light Fixture
\	Ceiling Mounted Fixture (Chandelier)
ф-	Bath Fan / Flourescent Light
	Paddle fan w/ light
₩	Whole House Fan
9	Smoke Detector
(A) (A)	Smoke & Carbondioxide Detector
Э	Thermostat
® D	Telephone Outlet
Δ	T.V. Outlet
+9	Water Hose Bibb
⊣ ≌	Gas Hook up Supply
E3	Heat Register

Return Air Grill

Specific Legend Notes

HE---- High Efficency Light

VS---- Vacancy Sensor

HE VS- High Efficancy with Vacancy Sensor

MS---- Motion Sensor

MS PH- Motion Sensor & Photocontrol

MA---- Motion Sensor & Astronomical time clock

WP---- Water Proof



Air Conditioning Unit

PROPOSED ELECTRICAL, PLUMBING, HVAC PLAN

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

REVISIONS

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2019 Low-Rise Residential Mandatory Measures Summary

Requirements	for Ventilation and Indoor Air Quality:
§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(a)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occepitable spaces, up to the property of the property of the provided at raises determined by SRHRAE 622 Section 4.1.1 and 4.2 and as specified in § 150.0(o)(10.
§ 150.0(o)1E:	Multifamily Attached Dwelling Union. Multifamily stached dwelling union must have mechanical wreliation airDox provided at other in occordance with Equation 150,0-8 and must be other a balanced system or conformate supply or conformate sentents system in a balanced system is not used, all union in the building must use the same system type and the dwelling-writt envolces leadage must be s 0.3 CFM at 9.9 by (2.2 lich window) or expanse bot of dwelling unif envolces purchase area and writted in a coordance with Reference Residential Approxime RASI.8.
§ 150.0(a)1F:	Multifamily Building Central Vertilation Systems. Central vertilation systems that serve multiple dealing units must be balanced to provide vestilation airflow for each dealing unit served at a rate equal to or greater than the rate specified by Equation 150.0-8. All unit airflows must be within 20 percent of the unit with the leavest airflow rate as it relates to the instruction enrichment progress driven are needed for compliance,
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAF 62.2.
§ 150.0(a)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appareix RA3.7.4 Altern range hood must be verified in accordance with Reference Residential Appareix RA3.7.4.3 to confirm it is rated by HVI to acritique the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASEINAE 62.2
Pool and Spa S	ystems and Equipment Measures:
§ 110.4(a):	Certification by Manufactures. Any pool or spa hashing system or exploresor must be castled be have all of the policioning, a thermal efficiency that complies with the Appliance Efficiency Regulations; an one-off evalution number doubled or the health state abusting of the health state abusting or an explored policies or and with operating instructions; and must not use electric resistance healths.
§ 110.4(b)1:	Piping. Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	Directional Inlets and Time Switches for Pools. Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-pools election depends.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, ploing, filters, and valves."
Lighting Measu	
§ 110.9:	Lighting Controls and Components. All lighting control devices and systems, ballsets, and luminaires must meet the applicable requirements of 6 110.9."
§ 150.0k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 160.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than the feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacaincy sensor control, or fan seed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Cellings. Luminaires recessed into cellings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0kt/tC.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an output fluorescent page from 20 kHz.
§ 150.0(k)1E:	Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are raised to consume no more than 5 watts of power and errit no more than 150 lumens.
§ 150.0(k)1F:	Lighting integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of 5 150.0kV.
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JAS."
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)11:	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.4 or to controlled by vacancy sensors provided that they are rested to consume no more than 5 wats of power, entit now than 150 lumens, and are equipped with controls that automatically sum the lighting off sharms the drawer, cabinet or linen obsert is closed.
§ 150.0(k)2A:	Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2B:	Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems."
§ 150.0(k)2C:	Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF."
§ 150.0(k)2D:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(k)2E:	Interior Switches and Controls. Controls must not bypass a dimmer, occupent sensor, or vacancy sensor function if the control is installed to comply with § 150.0(k).



2019 Low-Rise Residential Mandatory Measures Summary

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§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dryer
6 150,0(h)3B:	Liquid Line Orier. 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()1:	Storage Tank Insulation, Unfined not water tanks, such as storage tanks and backup storage tanks for solar water-healing systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the back
§ 150.0]]2A:	Water Polings, Solar Water-healing System Poling, and Space Conditioning System. Line Insulation, All domestic for saving right products in insulation as sportful in Receives (80). If the California Polintagin Color in addition, the Polintagin Color insulation as sportful intelligence of common insulation was difficulties of common insulation was difficulties of common insulation received in the california insulation common insulation received used in the california insulation continued insulative region of the control control control control insulation and control co
§ 150.0(j3:	Insulation Protection. Piping insulation must be protected from damage, including that due to unifyit, moisture, sugginant maintenance, and vide as required by Section 120.(10). It is unisation records to severable must be water mittant and protected from 10 leg for no deliver interval. Invalidant converting childred used priping and refigerant suction piping boards custed in the confidence space must include, or the protected by a Class in of thesis in Proper enterior. Pipe invalidant countries of the confidence of the proper enterior. Pipe invalidant the proper senter. Pipe invalidant the success of the confidence of the success of the confidence of the proper enterior. Pipe invalidant the success of
§ 150.0(n)1:	One or Prepare What the Meeting Spetters are good or opening water feature to sever includant always good or control and for following. Add earlier 15 to 45, 400 per spected respected consensels to the factor part with a 1500-bit or part of section 15 to 45, 400 per spected respected by 1500-bit or 1500 per section 1500 per sec
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of 6.110 3/4/6
§ 150.0(n)3:	Solar Water-heating Systems, Solar vater-heating systems and collectors must be certified and rated by the Solar Rating and Certification Corporation (SRCC), the International Association of Plambing and Mechanical Officials, Research and Testing (MPMO RRT), or by a listing agency that is approved by the Executive Director.
Ducts and Fans	
§ 110.8(d)3:	Ducts. Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	ONE Compliance. A little distribution system ducts and planners must made the expensions of the COMP (\$6.00.0.002.003.003.606.000.0000.0000.000
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and passers of duct systems and their components must not be sealed with cloth back subber adheated duct tapes unless such tape is used in combination with master and draw backs.
§ 150.0(m)3:	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)8:	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, expect combustion inlet and outlet air nomines and elevative shall write.
150.0(m)9:	Protection of Insulation, insulation must be protected from damage, surlight, moisture, equipment maintenance, and wind, insulation exposed to weather must be suitable for outdoor service. For example, protected by abunitum, shoet meets, painted cannas, or plastic owner. Calular from insulation must be protected as above or painted with a coating that is waster relational may convide a stellaring from outer relation.
§ 150.0(m)10:	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-norms lower between the inner core and order under basis.
150.0(m)11:	Duct system Sealing and Leskage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an completele space, the ducts must be sealed and duct leskage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m/s1) and Reference Residential Appendix RA3.
150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivernification. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pressure drops and labeling must meet the requirements in §150.0-(1)?. Either must be accessible for register service.*
§ 160.0(m)13:	Space Conditioning System Airhow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the piscoment of a sixtle pressure probe. or a permanently visibility sixtle district pressure probe in the supply setems. Airhow must be 2-300 CFM per to all control config capacity, and an air-harding with its efficiency of 5.6 sixtle pro CFM for goal formers. Bright service and 5.0 Sixtle pro CFM for all others. Small cut high visibility systems must provide an airhow 2.200 CFM per ton of certifical cooling capacity, and on air-ihanding unit to efficiency call visibility solved by systems must provide an airhow 2.200 CFM per ton of certifical cooling capacity, and on air-ihanding unit to efficiency call visibility solved provides and control in the discussion of solved size of CFM. Facility of the control control control control deference Residential Appendix R93.3.1



2019 Low-Rise Residential Mandatory Measures Summary

§ 150.0(k)2G:	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirements if it: provides functionality of the specified control according to 6 110.9; meets the installation Certificate requirements of 6 130.4; meets the
g 100.0/kJzG.	EMCS requirements of § 130.0(e); and meets all other requirements in § 150.0(k)2.
§ 150.0(k)2H:	Interior Switches and Controls. A multiscene programmable controller may be used to comply with dimmer requirements in § 150.0(i) if it
3 recopper	provides the functionality of a dimmer according to § 110.9, and complies with all other applicable requirements in § 150.0(k)2. Interior Switches and Controls. In bathrooms, garages, laundry rooms, and utility rooms, at least one luminaire in each of these spaces m
5 450 00 OO	be controlled by an occupant sensor or a vecancy sensor providing automatic-off functionality. If an occupant sensor is installed, it must be
§ 150.0(k)21:	initially configured to manual-on operation using the manual control required under Section 150.0(k)2C.
	Interior Switches and Controls. Luminaires that are or contain light sources that meet Reference Joint Appendix JAS requirements for
§ 150.0(k)2J:	dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls."
§ 150.0(k)2K:	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling-installed lighting systems.
	Residential Outdoor Lighting. For single-family residential buildings, cutdoor lighting permanently mounted to a residential building, or to o
§ 150.0(k)3A:	buildings on the same lot, must meet the requirement in item § 150.0(x)3Ai (ON and OFF switch) and the requirements in either
	§ 150.0(k)3Aii (photocell and either a motion sensor or automatic time switch control) or § 150.0(k)3Aii (astronomical time clock), or an EMI
	Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, outdoor lighting for private patios, entrance
§ 150.0(k)3B:	balconies, and porches; and residential parking lots and carports with less than eight vehicles per site must comply with either § 150.0(x)3A
	with the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0. Residential Outdoor Lighting. For low-rise residential buildings with four or more dwelling units, any outdoor lighting for residential parking
	or carports with a total of eight or more vehicles per site and any outdoor lighting not requisited by 6 150,0(k)3B or 6 150,0(k)3D must comple
§ 150.0(k)3C:	the applicable requirements in Sections 110.9, 130.0, 130.2, 130.4, 140.7 and 141.0.
	Internally illuminated address signs. Internally illuminated address signs must comply with § 140.8; or must consume no more than 5 was
§ 150.0(k)4:	power as determined according to § 130.0(c).
	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply with the
§ 150.0(k)5:	applicable requirements for nonresidential garages in Sections 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
	Interior Common Areas of Low-rise Multifamily Residential Buildings, in a low-rise multifamily residential building where the total into
§ 150.0(k)6A:	common area in a single building equals 20 percent or less of the floor area, permanently installed lighting for the interior common areas in
	building must be comply with Table 150.0-A and be controlled by an occupant sensor.
	Interior Common Areas of Low-rise Multifamily Residential Buildings. In a low-rise multifamily residential building where the total interior
	common area in a single building equals more than 20 percent of the floor area, permanently installed lighting for the interior common areas that building must:
§ 150.0(k)6B:	L Comply with the applicable requirements in Sections 110.9, 130.0, 130.1, 140.6 and 141.0; and
	ii. Lighting installed in corridors and stainwells must be controlled by occupant sensors that reduce the lighting power in each space by at least
	50 percent. The occupant sensors must be capable of turning the light fully on and off from all designed paths of ingress and egress.
Solar Ready Bul	
	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the
§ 110.10(a)1:	application for a tentative subdivision map for the residences has been deemed complete and approved by the enforcement agency, which
	do not have a photovoltaic system installed, must comply with the requirements of § 110.10(b) through § 110.10(e).
A 440 401-10-	do not have a photovoltaic system installed, must comply with the requirements of \$ 110,10(b) through \$ 110,10(c). Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a cholovoltaic system installed must comply with the
§ 110.10(a)2:	do not have a photovothic visiten installed, must coresh with the requirements of 6 110.10(b) through 6 110.10(b). Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with the requirements of § 110.10(b) shrough § 110.10(d).
§ 110.10(a)2:	do not have a proteovistic system installed, must compty with the requirements of \$1.10,10(b) through \$1.10,10(c). Lowerise Multilating Suddings, Lowerise multi-family buildings that do not have a photovolatic system installed must comply with the requirements of \$1.00,10(b) through \$1.10,10(b). Milliams Solar Zene Avex. The solar core must have a minimum total area and described below. The solar zene must comply with access.
§ 110.10(a)2:	do not have a photocolisis state in installed, must core; with the requirements of £ 110.10(b) through £ 110.10(b). Low-rise Multifamily Buildings, Low-rise multi-family buildings that do not have a photocolisis open installed must comply with the requirements of § 110.00(b) through § 110.00(b). Militimum Solar Zone Area. The solar zone must have a minimum total area as described below. The solar zone must comply with access, possible and produced and pr
§ 110.10(a)2:	do not have a protectivitie carter included, must comply with the sequinments of \$1.500 (bit through £115.00). Leverée Buildinally, Modifieding, Loverie must flerin's buildings flow do not have a protectedain system installed must comply with the requirement of \$1.500.00) frompy \$1.50.00]. Milliamus floatiz and exert. The solid zo me must there a minimum total size was described below. The solid zone must comply with access, portions, and workfloor, and passing requirements as expected for 15th 6.40 or the part of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted a file of \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted and \$4.500 (bit of 15th 6.40 or the requirements adopted a
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§ 110.10(a)2:	On the last antiforming system intelligent, most contrict with the analysement of \$1.00,000 houses \$1.00,000
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	do not been a pollocation parties intended, must contract with the analysement of \$1.10,000 (most) or \$1.10,000 (most). This sold must contract with the analysement of \$1.10,000 (most) or \$1.000 (most) or \$1.00
§ 110.10(b)1:	On the less an administration parties intelled from the contract with the analysement of \$1.00,000 (most only 10.000 from the less and intelled from the less and intelled from the less and intelled parties maked an administration of the less and intelled from the less and intelled parties maked an administration of the less and intelled from t
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§ 110.10(b)1: § 110.10(b)2: § 110.10(b)3A: § 110.10(b)3B: § 110.10(c)4: § 110.10(c): § 110.10(c):	de not been authoritier quater hindelle mod contra with the analysement of \$1.00,000 (modes) in 10,000 (modes) and contra with the analysement of \$1.000 (modes) explain solution and contray with the Minimum been analysement of \$1.000 (modes) and contract the contract of \$1.000 (modes) and contract the c



2019 Low-Rise Residential Mandatory Measures Summary

NOTE: Low-rise residuation. Review the resp

01/2020)	
Building Envelo	pe Measures:
110.6(a)1:	Air Leakage, Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 1018.5 2/A440-2011.*
110.6(a)5:	Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JAA.5 for exterior doors. They must be caulked and/or weather-stripped.*
110.7:	Air Leekage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stipped.
110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
110.8(g):	Insulation Requirements for Heated Stab Floors. Heated stab floors must be insulated per the requirements of § 110.8(g).
110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
110.8():	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs
150.0(a):	Ceiling and Rather Roof Insulation. Minimum R-22 musition in wood-farms ceiling, or the weighted average U-factor must not exceed 0.043. Minimum R-18 or supplied average (U-factor of 0.064 of less in a rifer or old startion. And concess door must be were permanently attended insulation variety of the production of the control of the c
150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
150.0(c):	Wall insulation. Melman R-13 insulation in 2x4 inch vecod framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch vecod framing of have a U-factor of 0.012 or less, opeque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Mascony walls must meet Tables 150.1-4 or 8.
150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor."
150.0(f):	Stab Edge Insulation. Stab edge insulation must meet all of the following: have a water absorption rate, for the insulation material since without facing, no greater than 2,0 percent; have a unselve rapor permanene on greater than 2,0 perm per inch; be protected from physical damage and utiligit destroation; and, when installed as part of a headed dish floor, meet the negativements of \$1.00.8(g).
150.0(g)1:	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150,0(c).
150.0(g)2:	Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
150.0(q):	Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum Ufactor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58."
replaces, Deco	rative Gas Appliances, and Gas Log Measures:
110.5(e)	Pflot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
150.0(e)2:	Combustion Intake. Masonry or factory-built freplaces 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-fitting damper or combustion-air control device."
150.0(e)3:	Flue Damper. Mesonry or factory-built freplaces must have a flue damper with a readily accessible control."
ace Condition	ing, Water Heating, and Plumbing System Measures:
110.0-§ 110.3:	Certification. Heating, vantilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission."
110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.*
110.2(b):	Controls for feet Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater occurred when the heating load can be met by the heat pump about an in which the solid-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating in higher than the coul-off temperature supplementary heating.
110.2(c):	Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat."
110.3(c)4:	Water Heating Recirculation Loops Serving Multiple Dwalling Units. Water heating recirculation loops serving multiple dwalling units must meet the air release valve, boddhow provention, pump priming, pump isolation valve, and recirculation loop connection requirements of \$110.3(c)4.
110.3(c)6:	lectation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
110.5:	Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.
150.0(h)1:	Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMATCHA Residential Cornfort System Installation Standards Manuals; or the ACCA Manual Jurian design conditions socialised in \$100,000.

REVISIONS BY

Diversified Builders
P.O. Box 320308
Los Gatos, Ca. 95032
(408) 377-3700 Ca. Lic. 606689



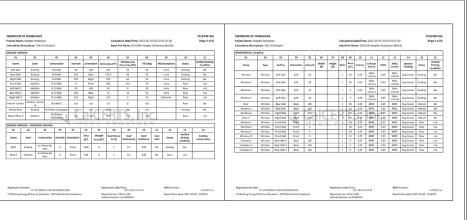
Knepler Addition & ADU 3080 Atherton Drive Santa Clara, Ca. 95126

Date 4/29/21 Scale No Scale

Disigned By Gugg Joses

Checked By Greek Joses





Description: Title 24 Analysis GRAMMON Project Name		Input F			7.00	(Page 1 of 9	
Project Name		_	ile Name: 0210346 Knepl	ler Residence.ni	bd19x		
	Title 24 Analysis						
	3010 Afredon Dr	-					
					0		
					1		
		13			3		
Addition Cond. Floor Area (ft ²)	276	15			1		
Existing Cond. Floor Area (R ²)	1260	17	Fenestration 8	werage U-factor	0.33		
Total Cond. Floor Area (ft ²)	1536	19	Glacing	17.58%			
ADU Bedroom Count	1/4	- 21	ADU Condid	oned Floor Area	1/4		
Is Natural Gas Available?	N (3 ()	- 3	SID				
200	a care		9,111	- C			
	HERS	PR	OVIDE	R			
		carson by a cen	tified HERS rater under the	supervision of a	CEC-approved H	EFS provider.	
This building incorporates one or	more Special Features shown below						
	ENERG	EY US SUMM	NCY				
Energy Use (kTDV) 'R ² -yr)	Standard Design		Proposed Design	Complian	re Margin	Percent Improvement	
Space Heating	35.81	_	38.78	-2.	937	4.3	
Space Cooling	22.7		30.35	2.3	9.9		
MQ Ventilation	0		0				
Water Heating	21.22		21.22			0	
Self Utilization/Wavibility Credit	r/a		0			1/4	
Compliance Energy Total	90.73		50.35	0.	18	9.4	
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221-PE+0006061A-000-000-00000	00-0000	garan can	2021-06-04 10:16:40		ATTIONS.	CUCERTS IN	
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05 06 07
Total Cavley Interior / Extenior Cereimoun R-value U-factor

RO None / None 0.351

8.0 None/None 0.277

None / None

.06

Assembly Layers

Inside Einish: Oypsum Board Cavity / Frame: no insul. / 2v6 Exterior Finish: 2 Cost Stucco

loofing Eight Roof (Asphalt Shing) Roof Deck: Wood SidingAheathing/decking Carts / Franse: 8-19 / 2x20 Inside Kirish: Ogpsum Board

Broide Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Ogssum Board

Report Senerated 2021 05:04 10:08:02

CERTIFICATE OF COMPLIANCE Project Name: Knepler Residence Calculation Description: Title 24 Analysis

R-O Wall

R-25 Well

Rewalls.

Surface Type Construction Type

Desiror Wells

Deterior Walls

Flears Over Crawlspace

Ricors Over Crawlspace

62 60 64

Wood Framed Celling

Framing

24 # 35 is. 0. C.

2x4 @ 35 in. 0. C.

200 @ 25 in. O. C.
| The control of the control of

246 Ø 36 is, O, C. 8.0 None / None

246 @ 26 in. O. C. B.19

Report Version: 2009.1.300 Schema Version: rev 2000900

CERTIFICATE OF COMPL						CF1R-PRF-01
Project Name: Knepler			Calculation C	(Page 2 of 1		
Calculation Description	Title 24 Analysis		Input File No	me: 0210346 Knepler Re	niderce.ribd19x	
REQUIRED SPECIAL FEATU	res					
The following are features	that must be installed as condi-	ion for meeting the mode	led energy performance for ti	nis computer analysis.		
 New ductwork adds Ducts in crawl source 	ed is less than 40 ft. in length					
Buch in craw space						
HERS PEATURE SUMMARS						
the following is a summar detail is provided in the bu	y of the features that must be fi ilding tables below. Registered i	eld werified by a certified IF2Rs and CF3Rs are requi	MERS Rater as a condition for red to be completed in the HE	meeting the modeled ener 95 Registry	gy performance for this corn	puter analysis. Additional
Kinchen range haod Hone — Mone — Hone —	ne: Verifications: In Verifications	(ht²) Number of Owell Uselo	CERTO	Number of Zones	66 Number of Ventilation Ceeling Systems	07 Number of Water Heating Systems
Knepler Residence	1539	1	3	2		1
ZONE INFORMATION						
01	62	03	04	es	06	67
Zone Name	Zone Type	HNAC System Name	Zone Picor Area (% ²)	Avg. Ceiling Height	Water Heating System 1	Water Heating System
Dotting	Conditioned	HNAC Systems	1260	9	DHW Sys 1	K/A
Addition	Conditioned	MNAC Systems	276	11	DMW Sys 1	N/A
Registration Number:	PC+10000061A-2000-2000-20000000-200		Registration Date/Time	01 05 04 10 10 48	MERS Providen	CHESTS

Calculation Description: T	litte 24 Analysis				Input File No	me: 0210346 Knepler N	niderce.nbd15v		
REQUIRED SPECIAL FEATURE	is .								
The following are features th	at must be installed as con	dition f	r meeting the model	ied e	nergy performance for ti	nis computer analysis.			
	is less than 40 ft. in length								
 Duets in crawl space 									
HERS PEATURE SUMMARY		_		_					
the following is a summary of detail is provided in the build	of the features that must be ting tables below. Registers	e field w	or fied by a certified to and CF3Fa are require	es vdt	Rater as a condition for o be completed in the RE	meeting the modeled one ISS Registry	gy performance for this corn	puter analysis. Additional	
Building level Verifications: Eacher range hand Cooling System Verifications: - None - Heating System Verifications: - None - Hone - Hone - Domestic Hot Water System Ve - None - None - None - None - None - None -	rifeations		Cal		EDT	Sinc	,		
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BUILDING - PEATURES INFOR		7	450	Ξ		W 0 5 0			
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Project Name	Project Name Conditioned Floor Area (f		Number of Dwelling Units		Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems	
Knepler Residence	1536		1		3	2	0	1	
20NS INFORMATION		_		-					
91	62		03		04	es	06	19	
Zone Name	Zone Type	HV	C System Name	Zone Floor Area (N ²)		Avg. Celling Height	Water Heating System 1	Water Heating System 2	
Listing	Conditioned		NAC Systems	1260		9	DHW Sys 1	KA	
Addition	Conditioned		NAC Systems	П	276	11	DetW Sys 1 N/A		
Regissation Number: 225 PC CA Building Energy Efficienc	110006061.A000-0000.0000000 Iy Standards - 2023 Revider		apliance		Registration Date/Erne 2 Report Mirvion: 2595.3 Schema Version: nev 25	201-05-04 10:18:48 350	MERS Provider: Report Generated:	CUCERTS IN 2023 05-04 20:08:02	

	OF COMPL															F1R-PRF-01
	ne: Knepler i Description								21 05-04T10 07:0 Knepler Residence			(Page 6 of 9				
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CHLDON'S EN	VELOPE - HB	es verinca	TION	_							_	_				
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Quant			MP)	₽	nq			tion								
	Not Requ	ired		L		Not R	equired				Not Fi	dnisa	đ		n/a	
ATER HEAT	ING SYSTEMS															
65		66		28			it.	- 01			06		07	68	09	38
Name	Sym	am Type	Distribution Type Wi		Water Heat	star Name (#) Solar H						Status	Verified Existing Condition	Existing Water Heating System		
EHW Sys	Sundard Standard Standard Standard Standard Standard System			EHW H	sker1(1) = e/		/s Non		None		0/4	Einting	No			
NATER HEAT	***		7	=	-	-	216		2	F	=	Ŧ	nc			
01	62	03		04	95	06	47	08.	T	09 .	1.		11	12	13	14
Name	Heating Diement Type	Tank Tr		ef nim	Tanà Vel. (gal)	Energy Factor or Efficiency	Input Karling or Pilot	Tank Insulation Evalue (Ive/Ext)	La	endby EL OF Very EFF	1st Ratio	ng or	NEEA Heat Pum Brand or Model		Status	Verified Existing Condition
EHW Heater 1	Oss	Small Str	rage	1	50	0.6-67	or 75 littraftr			76	1	n/e		1/4	Existing	No
NATER HEAT	ING - HERS V	DRIFTCATTOR		-	_						_					
01	-	02		Т		43	64			05			06	07	\neg	06
Nam		Pipe Incui	lation	Г	Paral	lel Piping	Compact Dis	oribution		z Divolibi Tyge	ution	Reci	inculation Control	Central DHW Distribution		Drain Water Recovery
DHMI Sys	1-1/1	Not Req	uired	t	Not	Required	Not Req	uired	None			Not Required		Not Required	Not	Required

Project Name: Knepler Residence Calculation Description: Title 24 Analysis								Calculation Date/Firme: 2021 05-04T10.07.01.07.00 (Page 7 of Input File Name: 0210346 Kneptor Residence.nbd15x									
PACE CONE	ITTONING SYSTEM	15	_	_	_	_	_	_	_	_		_	_				
	es.		ų.	g) 01				05	Т	06	67	08	09	10	11		
	Same	System Type			Type Heating Unit				ng Unik une	Fan Nam		Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
MAC Systems Heating and or oth				nen e	Heating Coo Component Comp		mene	HNAC Fan	WAC Fan 1 Distribution System 1		-00	Loting	No	1	1.		
evac - neat	ING UNIT TYPES		_														
41					62 09							Т	94				
Name					System 1	194		-		umber of G	inits	-	Heating Efficiency				
Heating Component 1					ontrol gas	urrace			1.					AFUE 80			
	ALC LINET TYPES	_				17	-	12	FS	=	n/	_					
01		02	T	43	4	-	4	05 06					07		08		
Nan		lystem Type	Nu	Number of Units Offic			tts/ctts	CFT	clency SE	R 2	onally Controll		Mulit-speer Compresso		Verification		
Cooling Con	specient 1	No Cooling	1				n .		00		Not Zonal		Single Spee		0/9		
evac - prom	RIBUTION SYSTEM	ni .															
es	62	03	64	05	06	47	08	CO	10	11	12	13	14	15	16		
			Dux Inc	R-value	Duct	cation	Surfa	D Area		_	-						
Name	Type	Design Type	Supply	Return	Supply	Esturn	Supply	Return	Bypass Duct	Dust Leakage	HERS Verification	Status	Verified Existing Condition	Distribution system	New Ducts 40 ft		
Air Distributi on System 1	Aributi Unconditioned on grant space		R-6	R-G	Crawl Space	Crawl Space	1/4	1/4	No Eypons Duct	Existing (not specified	on System	Existing + New	No	n/a	n/a		

Report Version : 2001-06-06 10:16-68 Report Version : 2001-06-06 10:16-68 Schema Version : rev 2000/90

Registration Number: 221 PC10080011-A001-000-000000-0000 CA Building Energy Efficiency Standards - 2023 Residential Compliance

CERTIFICATE OF COMPLIANCE Project Marries Kingsler Resistence Calculation Descriptions: Title 24 Arallysis	Calculation Date/filme: 2021 05-04T10 07:01-07:00 Input File Name: 0210346 Knepler Residence.nibd15x	CF1R-P8F-018 (Page 8 of 9)
HERS RATER VERIFICATION OF EXISTING CONDITIONS		
La Calo	CERTS, Inc.	
HER	S PROVIDER	
Registration Number:	Registration Date/Time: MERS Provider:	
221-PE100M061A-000-0000000000000000000000000000000	2001-06-01 1016-88 Report Version: 2009.1.000 Report Senerated:	CUCERTS IN 2021-05-64 10:08:02

Project Name: Kinepler Residence Calculation Description: Title 24 Analysis DOCUMENTATION AUTHOR'S DICLARATION STATEMENT I. I certify that this Certificate of Compliance documentation is accurate an	Calculation Date/Time: 2021-05-04T10:07:01-07:00 (Page 9 o Input File Name: 0330345 Knepler Residence.ribd19x
DOCUMENTATION AUTHOR'S DECLARATION STATEMENT I. I certify that this Certificate of Compliance documentation is accurate at	Input File Name: 0230346 Knepter Residence.ribd19x
I. I certify that this Certificate of Compliance documentation is accurate as	
Documentation Author Name:	Documentation Author Signature:
Adam Balley	Adam Bailey
Company	Signature Date:
FRI Energy Consultants, LLC.	2021-05-04 10:16:48
Marin .	CLA/ HCRS Certification (dontification (if applicable):
21 N. Harrison Ave,	
Jeg/Snec/Eq:	Prove
Campbell, CA 95008	408-866-1020
RESPONSIBLE PERSON'S DECLARATION STATEMENT confly the following under annally of private, under the laws of the State of California, and the California annally of persons under the laws of the State of California annally of the California annally of the State of California annally of the California	
Adem Balley	Alam Bailey
Adem Balley Company: FRI Energy Consultants, LLC.	ERS Post-Squid: Adam Bailey ER 2021-05-04 10:16-48 ER
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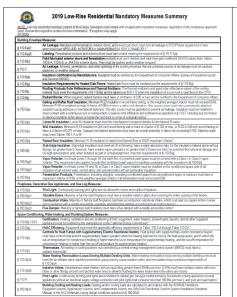
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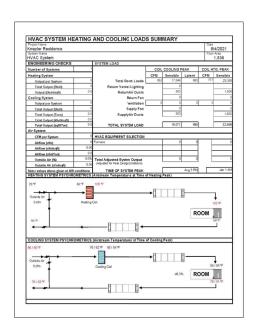
-24 - 2



6 150.0 H3A	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any diver
§ 150.0(1)3B	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacture's instructions.
§ 150.0@1:	Storage Tank Insulation. Unfeed hot water tanks, such as straige tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150.0(j)2A	Water Print, Salar Water health given Piper, and Space Conditioning System Line Insulation. All direction has very print, must be invalided as position in Section Part of Sec
§ 150 Og/3	Insulation Protestion. Pignip insulation must be protected thin damage, including that due to surlight, modatine, equipment mantenance, and wind an required by Science (20.3%) Insulation exposed of evalent must be water entered and only protected from UV light in borderies to perceive insulation occentry children's wise proint year designent suction prior to located outside the conditioned space must include; or be protected by, a Class to of Class is of Class in the protection of the protecti
§ 150.0(n) 1:	Gas or Program Water Hading Systems. Systems surging or program water hadron to over included develop us this suit of stocks of the Soloring. Advisional CSV-90, Zoran pericles developed composit to send on the Soloring Advisional CSV-90, Zoran pericles developed composit to send on the Soloring Advisional CSV-90, Zoran pericles of the water header water of description of the soloring composit to send of the soloring composition of the soloring co
§ 150.0(4)2	Recirculating Loops. Recirculating loops serving multiple deiling units must meet the requirements of § 110.3(c)5.
§ 150.0(r)3	Salar Water-healting Systems. Solar water-healting systems and collectors must be certified and rated by the Solar Rating and Certification Companion (SRCO), the international Association of Plumbing and Mechanical Officials, Research and Testing (APMO RBT), or by a listing agrincy that is approved by the Executive Director.
Ducts and Fans	Measures:
§ 110.8(43	Ducts. Inculation installed on an existing space-conditioning suct must comply with § EDX 0 of the California Mechanical Code (CMC), If a contractor installs the insulation, the contractor must certify lathe customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	ORC Compliance. As a continuous policies and an apparets in state medicine in sequences of the CAM-SIGN COSC (2000 COSC) (2000
§ 150.0(n)2	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, commictions, and closures, joints and seams of duct systems and their components must not be sealed with clath back nubber adheave duct tapes unless challens is used in contribution with madric and dates bands.
§ 150.0(m)3	Field-Fabricated Duct Systems. Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between he conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(m)B.	Gravity Vertilation Dampers. Gravity vertilating systems seving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, exept combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	Protection of insulation, includion must be protected from arrage, suntight, mosture, equipment maintenance, and wind includion exposed to weether must be suitable for outdoor service. For example, protected by a fauntum, sheet metal, parted cames, or placts cover. Cellular from must can not be protected as above or parted with acceling that is water related and promotes trialing from out and addition.
§ 150.0(m) 10.	Porous Inner Core Flex Duct. Porous inner core flex ducts rust have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	Dust System Sealing and Leakage Test. When space conditioning systems use blood air dust systems to supply conditioned air to an occupiable space, the dusts must be seeled and dust leakagetested, as confirmed through field verification and diagnostic testing, in accordance with § 150(sp11 and Reference Persidential Agentic RAS
§ 150.0(m)12.	Air Pillertion. Space conditioning systems with dubs exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must are a two inch depth or can be one inch if sixed per Equation 1500-A. Pressure drops and labeling must meet the requirements in §100 (m)/2. Filters must be accessible for regular service.
§ 150.0(m)13.	Space Conditioning Systems Affaire Rate and Familitare. Space conditioning systems that use dutio is purply configurant have shall for the placement of a sidilic persuse prefix or permanent finalized side pressure price in the popyly prices. Affaire which we shall prefix not innested conting occurs, and an exhauding unit in efficacy of CRF shall pre CRF shall prefix the proper to not innested conting occurs, and an exhauding unit in efficacy of CRF shall prefix CRF shall prefix the proper to continue and to CRF shall prefix the proper to continue and the

sentence of the company of the compa		
self-consists industry Auduly influented throughput and the date; and the process of process of programs of the process of process o	Requirements f	
## SOURCE OF THE PROPERTY OF T	§ 150.0(q)1:	Requirements for Vertilation and Indoor Air Quality. All drelling units must meet the requirements of ASHRAE Standard 62.2, Vertilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150 O(s)1.
Section of the part of this plant to this plant to the part of this plant to the part of t	§ 150 0(c)1C:	Single Family Detached Dealing Units. Single family detained dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupied spaces, public garages, or commercial spaces must have reachenized ventilation airflow provided at rates determined by ASFRME 622 Seatons 4.1.1 and 4.1.2 and 4.1.5 pecified in §15.00(6)(1).
1900 Section Proceedings Proceedings Procedings	§ 150 0(o)1E:	Multifamily Attached Designa Units. Multilamily stached design units must have exchanged vertainton active provided at rates in accordance with requirent 50.09 earnings the either absoluted epistern controllment specify or increase and in a balamoid systems not used; all units in the building must use the same system high earling the design, and envision lesisage must be a 0.3 cPM at 50. (2) mits water per square four of design unit envision parties are and verteint an accordance with Poference Residential proposition RAS
\$ 90000. Agent North Co. All Andrean and Surgeories (see English See English). A price of the Co. All Andrean and See English	§ 150 0(o)1F:	Multifamily Building Central Ventilation Systems. Central retiliation systems that serve multiple dwalling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equals or greater than the rate specified by Equation 150.04. At unit airflows must within 20 percent of the unit with the lowest airflow rate as it fixed so the inclinidad unit on innimum required rathor wate needed for complain.
Secret SCY. As John mergany benderal towerful considerative with findings in the control of the	§ 150 0(c)1 G	
special processing special particles and a processing processing processing processing and a processing p	§ 150.0(d/2	Appendix RA3.7. A kitchen pages bood must be writed in approximate with Reference Residential Appendix RA3.7.4.3 to confirm it is:
The compare with the places of Compare Angulators, and on the throughout the compare with the places of Compare Angulators, and on the compare with the places of Compare Angulators, and the compare with the compare and the	Pool and Spa S	systems and Equipment Measures:
## Affine A pool or grateful registeries or appoint and an included and its wall. A creater of age, the even bit file and in hause, and in the control of th	§ 110.4(q)	essistance heating."
Observation from an of Time Seathern for hosts. In your case described from the case of th	§ 110.4(s)1:	Piping. Any pool or spa healing system or equipment must brinstalled with at least 36 inches of pipe between the filter and the heater, or
will also dis progression on consistenti on consistenti on progression and consistenti on consis	§ 110.4(b)2	
Foot given and Equipment fractalism. Second appropriate or a power and equipment fractalism. Second appropriate or appeared and mental production and prod	§ 110.4(t)(3.	
### (1900) ### (1	§ 110.5:	
1000	§ 150.0(s):	
1000	Lighting Measu	res:
S000 Similar discount in Journal of Michigan discount in Jo	§ 110.9.	Lighting Controls and Components. All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirement of § 1109.*
the descent subtraction of the descent subtracti	6 150.0 M 1A	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 1500-A.
## STORING ## STO	§ 150.0(q)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be not greater than the number of bedroom. These electrical boxes must be served by a dimmer, valcancy sensor control, of fan speed control.
SWONG	§ 150.0(k)1C:	
Broduce Services for United Services (Services Services Servi	6 150 ON 1P	Electronic Ballasts for Fluorescent Lamps. Ballasts for flurescent lamps rated 13 walls or greater must be electronic and must have an
1900065 Upday is foliated first project with related proper of the interface proper of the inter		Night Lights, Step Lights, and Path Lights. Night lights, sto lights and path lights are not required to comply with Table 150.0 A or be
S000 64 In the Contract of Contract		
I SOUGHE. 1500000000000000000000000000000000000	§ 150.0(q)1G	Screer based luminaires. Screw based luminaires must contin lamps that comply with Reference Joint Appendix J48."
\$ 90000. In only win Table 1000-to An executivable waxay a main provided that they ware feed to consider on even that a sile of power, many provided that they ware feed to consider on even that a sile of power, many provided that they ware feed to consider on even that a sile of power, many provided that they ware feed to consider the power fe	§ 150.0(q)1H	Light Sources in Enclosed or Recessed Luminaires. Lamp and other separable light sources that are not compliant with the J/B elevated temperature requirements, including marking requirements, rust not be installed in enclosed or recessed luminaires.
§ \$50,0920. Interior Settiches and Controls. All forward phases out dimensioned with LED light sources must comply with NEMA 503, TA § \$50,0920. Interior Settlebes and Controls. Exhibits all some tide controls disposately from lighting systems: \$50,00920. Light controls and Controls. Lighting must be received in special principal principal to the manually Lighting Controls and Controls. Lighting must be received in the control and out the signing to be manually Lighting Controls and Controls. Controls and Controls. Controls and controls with manufacturer's institutions.	§ 150.0(q)11:	Light Sources in Drawes, Cabinets, and Linen Closets. Light sources internal to drawers, cabinety or linen closets are not required to comply with Table 1500-A or becombiled by waxancy sensor provided that they are raised to consume no more than 5 waits of power, early more than 1500 junners, and are expapsed with controls that advantaged just the lighting of when the drawers, colored or inner closed is closed.
§ 950,00(20: Interior Switches and Controls. Lighting must have readily occessible well-mounted controls that allow the lighting to be manually surred 00 and 00°F? § 950,00(20: Interior Switches and Controls. Controls and equipment must be reduited in accordance with manufacturer's instructions.	§ 150.0(42A	Interior Switches and Controls. All forward phase out dimmes used with LED light sources must comply with NEMA SSL 7A
§ 150.0W,2c: turned ON and OFF.* § 150.0W,2c: Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.	§ 150.0(4)29:	
	§ 150.0(42C	turned ON and OFF.*
		Interior Settohes and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
8 950,019/26: Interior Switches and Controls. Controls must not bypass adminer, occupant sensor, or vacancy sensor function if the control is inste- comply with \$100,007. 8 950,0007. 1 Technology and Controls. Lighting controls must cominy with the application requirements of 6 110.9.	§ 150.0(420:	





KNEPLER ADU	3080 ATHERTON DR	SANTA CLARA, CA 95051

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(Page 1 of 8) (Page 2 of 6) CF1R-PRF-01E (Page 3 of 6) | Construction | Cons Complement being Wall 20, NY 2 | Opening | Opening | Open | O Window Boor 2 Existing Area (excl. new addition) (92) Addition Area (excl. existing) (92) R-15 Wall Deterior Walls 24 # 16 in 0. C. COMPLIANCE RESULTS Wood Framed Wall | The part and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider. Wood Framed Ceiling 2x32 @ 36 in. O. C. R-13 Well Interior Walls 244 @ 36 in. O. C. Registration Number: 221-P01008081A-000-000-000000-0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance 2021-06-64-09-67-00 Report forsion 2027-1,300 Schematersion: new 20290921 HERS Provided: Carcents inc. Report Senerated, 2021 05-04 09:52:12 Registration Number: 221 PC1009061 A 000-000 0000000 0000 CA Building Energy Efficiency Standards - 2023 Residential Compliance Report Senerated 2021 05-04 09:52:12 Report Severated 2021-05-04 - 09-52-12 2021-05-08 Report Version: 2009.1.300 Schema Version: rev 20200900 CA Building Energy E Report Version: 2015 Schema Version: rev

	E OF COMPL me: Knepler							Calculation Dat						F1R-PRF-01 (Page 5 of
		nou s: Title 24 Anshoi						nout File Name						(Prage 5 of
	REACE CONST		-	_				spat risk mane	EULO	AU Wayner	IDU.	231		
	14	1 42	\neg	_	-	_	66	- 05		06	07	_	- 04	
Construct		Surface Typ		Construction Type			Framing		avity inter	rior / Exterior certinuous K-value	U-facto		stembly Layers	
R-19 Floor	Crawlepace	Floors Over Crawlspace		Wood Framed Floor		26.0	9 36 in. O. C.	16 in O.C. 819		None / None 0.009		Street Street	Surface: Carp sor Bedic Woo Aheathing/do / Frame: R-15	od odking
BUILDINGEN	NVELOPE - HE	DIS VERIFICATION	_	=	_	0	=		01	_	_		94	
Overfix		Installation (QR)	+	1414		uc uy Foam Insula	elea .	Bulleton	Envelope A	No Landone	-		CENTO	
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EHW	5yn 1	Domestic Hot V (CHW)	Atter	or Standard Distribution System		jen	CHW Heat	er 1 (1)		n/a		None		n/a
WATER HEAT	N/S		_	_			_		_		_		_	_
01	62	- 03	64	05	06	67	08	09	10	11		12	13	14
Name	Heating Element Type	Tank Type	e of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rading or Place	Tank Insulation R-value (Int/Ext)	Standby Last or Recovery Eff	1st Mr. Rating or How Rate	NICEA Hea Brand or	t Pump Model	Tank Location or Ambient Condition	Status	Verified Existing Condition
Cenw Heater 1	Gas		1	50	93-3.0	cx 75 kBoylvr		78	n/a	0/4		1/4	Existing	1/4

DERTHECATE OF COR Project Name: Knep Calculation Descript	ler ADU	nis				ion Date/Yim le Name: 0211							(Page 6 of 6)
HATER HEATING - HER	S VERIFICATION												
91	02	43		64		05		4		07			06
Name	Pipe Inculatio	n Parallel P	lping Compact Dirail		lbution Compa	t Distribution Type	Recirculation Control		Central DHW Distribution			Shower Drain Water Heat Recovery	
DMW 5ys 1 - 1/1	Not Require	Not Requ	ired	Not Requi	Net Ne	None		Not Required		Not Required.		Not Required.	
SPACE CONDITIONING	SYSTEMS								_				
66		02	63	64	05	- 05	67	- 0	6	09	1	10	11
Name	St	ntem Type	Heating Un Name	it Cooling L Name	ink Fan Name	Distributio Name	There	Required hermostat Sta Type		Verified Existing Condition	Heating Equipment Count		Cooling Equipment Count
MNAC System3	Host pur	op heating cooling	Heat Purin System 1	Host Pur System		1/0	Sette	ick N	iw	.86	-	1.	1.
91	62	03	(#5	(65		(e)	[66]	6	19	9	0		11
HVAC - HEAT PUMPS		10	00	$A \cap C$	I-1.	01	11.1	0					
Name	System Type	Number of Units	нянуса	P Cap 47	Gep 17	SEEK COO	BIF/CHF		rally rolled	Compr		HERS	Verification
Heat Pump System 1	VCHP-dustless	í	6.2 25000		19000	14	11.7	Not	Zonal	ral Single Speed		Heat Pump System 1 hers htpump	
HVAC HEXT PUMPS - H	ERS VERBRICATION								_				
91	62	03		24	65	- 06	\neg	67	П	CO		Т	09
Name	Verified Airflow	Airflew Target	Verifi	Verified EER Verified SEER		Verified Refu Charge	igerant	veifed HIPF		Verified Heating Cap 47		g Verified Heating Cap 17	
Heat Pump System 1-hers htpump	Not Required		Not 8	beniups	Not Required	Yes		No		Ye	s		Yes
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Description	Note 1	roject Name: Knepler ADU						tion Date/Time:					(Page 7 of 8
The contract The	The content of the	Moulation Description: Title	24 Analysis				Input F	ile Name: 02103	46AU	Knepler A	DU.ribd11x		
		WATABLE CAPACITY HEAT PUMP	COMPLIANCE OFFI	ON - HERS VE	RIFICATION								
	Company Comp	01	02	03	64	0	.5	06				09	10
		Name	Low-Static	Habitable	in Conditioned			& Pressure	Cor	outs in addisoned	Airflow per RA3.3 and	non-continuous	Running
Owning Unit IAQ CIM IAQ West(VM) IAA Type IAQ Reviews (Photoversit (N)) IAQ Reviews (Photoversit (N)) <td>6 6 6 9 4 95 88 Overling (int: M4QOM H42WHs/OM M4Q for Type M42 for oney Official Account Philipses (Int) M44 (Int)</td> <td>Heat Pump System 1</td> <td>Not required</td> <td>Required</td> <td>Required</td> <td>Filips</td> <td>uired</td> <td>Not required</td> <td>Not</td> <td>t required</td> <td>Not required</td> <td>Not required</td> <td>Not required</td>	6 6 6 9 4 95 88 Overling (int: M4QOM H42WHs/OM M4Q for Type M42 for oney Official Account Philipses (Int) M44 (Int)	Heat Pump System 1	Not required	Required	Required	Filips	uired	Not required	Not	t required	Not required	Not required	Not required
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Owelling Use IAQ CFM IAQ CFM IAQ Fan Type IAQ Receivery Effectivenes (N) SERIAR Receivery Effectivenes (N) 99am ASCHAD/metter (-1) 40 0.57% Balanced RRV 66 r/a	Owelling Unit H/Q CPM H/Q Whats/CPM H/Q Fan Type H/Q Restowey (Minorhames II)N SSEAQ Receiver yill Michiganes 99am ACU HAZIWITE(# 1-1) 40 0.175 Balanced MINV 66 n/a	66	62	\neg	03	\neg		64			05	$\overline{}$	05
		Owelling Unit	IAQ CRM		IAQ Worst/CFM			IAQ Fon Type		IAQ Recove	ery Effectiveness (N) SREIAQ Recov	ery Effectiveness
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HERS PROVIDER			1	1	HERS	E	K	0 1 1		IC.			

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT						
I certify that this Certificate of Compliance documentation is accusate and complete.						
Occurrention Author Name: Adam Bailey	tocomension surver Superiore. Adams Bailey					
Company	Signature Exter					
FRI Energy Consultants, LLC.	2021-05-04 09:57:00					
Affress 21 N. Harrison Awe,	CELV MERS Certification Identification (if applicable)					
Compbell, CA 95008	408-866-1620					
RESPONSIBLE PERSON'S DECLARATION STATEMENT Locality the following under peneity of persons, under the laws of the State of California.						
	for the building design identified on this Certificate of Compliance.					
 I contify that the energy features and performance specifications identified on this Conflicts The building design features or system design features identified on this Conflicts of Comparison shall be reformed by the property and approved with the reformed property and approved with 	e of Compliance conform to the requirements of Title 24, Part I and Part 6 of the California Code of Regulatio Siance are consistent with the information provided on other applicable compliance documents, worksheets.					
 I certify that the energy features and performance specifications identified on this Certificat. The building design features or report design features identified on this Certificate of Comparabilities, plans and specifications admitted to the entirespecific agency for appoint all features and report of the certification of the comparability of the performance. 	te of Compliance conform to the requirements of Title 24, Pars I and Pars 6 of the California Code of Regulation black are consistent with the information provided an other applicable compliance documents, workshorts, this spitting approximation of the control					
2. In the halling deep feature and professionant applications described in this Centifica. In the halling deep features in riginary described from the Centification in the Cent	ne d'Omplane confere ne the requirements of this 3.6 mm seither 6 of the California color of largains distracts are consistent and the alternation provided on other against a complanes documents, worksheen, in this building issuerit against and languardis foreigns "sprinters" Adams: Backley Outside Seriel Outside Serie					
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Calculation Date/Time: 2021 05-04T09 51:41-07:00 Input File Name: 0210346AU Knepler ADU ribd 19x

Total Cavity Interior / Extension Revalue U-factor

Inside Einish: Gypsum Board Cavity / Frame: R-15 / 2vt Exterior Finish: 3 Cost Stucco

oofing Light Boof (Asphalt Shing Boof Deck Wood Sidingshheathing/Ledding Cavity / Franci B-45 / 2×32 Imide Einlah: Ogsum Board

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None / None 0.002 Enside Einsch Gyphum Board Carley Framer 8-13 / 2-d Other Side Finish: Gyphum Board

R-15 None / None

B-13

Registration Number: 221-Photostos 1A-000-000-000000-0000	Registration Date/Time: 2001-06-04 0957-00	MERS Provider:	CHCERTS INC.
CA Building Energy Efficiency Standards - 2019 Residential Compliance	Report Version: 2009.3.300 Schema Version: rev 2000/900	Report Generated: 2021 (05-64 09:52:12

Registration Provider responsibility for the accuracy of the information Registration Number: 221 Poncossot A 800 000 000000 0000 CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Tension: 2023.1.300 Schemantersion: rev 20200901

CERTIFICATE OF COMPLIANCE Project Name: Knepler ADU

Easy to Verify at CalCERTS com HERS Provider: Cuctiffts inc.
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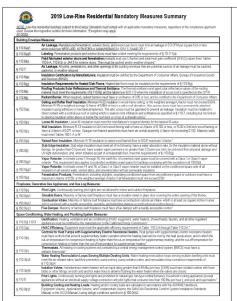
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6 150 O/H3A	Clearanges. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any diver-
§ 150.0(H)3B	Liquid Line Drier. Air conditioners and heat pump systems rust be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0g1:	Storage Tank Insulation. Unfired hot water tanks, such as strage tanks and backup storage tanks for solar water-heating systems, must have a minimum of R-12 external insulation or R-15 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.
§ 150 OUZA	Where Prints, Salar Water healting System Prints, and Space Conditioning System. Line Healthout A. Identicible have group must be invalided as positioned in Section 2011 to 1900 to a microbine have been described. The following Prints of the individual for the Section 1900 to 1900 to a microbine mentalized with following of an individual for a minimum invalidation following of 7.7 the first filt will feel of cold swater price from the strong last, of which a minimum invalidation following of 1900 the first Section 1900 to 1900 the first Section 1900 the first of the strong last last of the strong last last of the strong last last last price in the first last price price in an artificial distriction for the strong last or before the strong last last last last last last last last
§ 150 Og/3	Insulation Protection. Propry insulation must be protected from damage, including that due to surigif, modulus, equipment maintenance, and write an regarded by Scenic (20,3%) insulation exposed to worker must be water restorat and practicated from UV light if it is authorise begand, insulation covering children water paning and refigerent suction principated outside the conditioned space must include, or be protected by, a Gasta of Clista is found in Suprementation. The condition data was the conditioned space must include on the protected by a Gasta of Clista is found in Suprementation Scenarios and conditions and enterpolation in sustence of authorise such associations of severe.
§ 150.0(r) 1:	One or Program Water Meeting Systems Systems surging or grown water hadron to owner notestad develop ust must include the following. Advisor Gard Street (S. vog. Zamp electrical Street), and the following. Advisor Gard Street (S. vog. Zamp electrical street) and surginary street (S. vog. Zamp electrical street) and the surginary street (S. vog. Zamp electrical s
§ 150.0(4)2	Recirculating Loops. Recirculating loops serving multiple delling units must meet the requirements of § 110 3(c)5.
§ 150.0(r)3	Solar Water-heating Systems. Solar valer heating systems and collectors must be certified and raised by the Solar Rating and Certification Cooperation (SRCC), the International Association of Plumbin and Mechanical Officials, Research and Testing (APMO RBT), or by a listing agricy that is approved by the Esociative Director.
Ducts and Fans	
§ 110.8(43	Ducts. Insulation installed on an existing space-conditioning set must comply with §604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify fothe customer, in writing, that the insulation meets this requirement.
§ 150.0(n)1:	ORC Conglision. As a deministra operation and explanars and merit in sequences of the CR, 65 (4) CO (20) CO (20) CO (4) CO (5) CO (4) CO (5) CO (4) C
§ 150.0(n)2	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adherive duct
§ 150.0(m)3	tapes unless our hitane is used incremination with matrix and flow hands: Field-Fabricaned Duct Systems. Field-fabricated duct systems must comply with applicable requirements for pressure-sensitive tapes, matrix, sealants and other requirements second for duct continuous.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between he conditioned space and outdoors must have backdraft or automatic dampers.
§ 150.0(n)B	Gravity Vertilation Dampers. Gravity vertilating systems svving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, exept combustion inlet and outliet air openings and elevator shaft vents.
§ 150.0(m)9:	Protection of Insulation. Insulation must be protected from amage, surlight, mosture, equipment mantenance, and wind Insulation exposed to weather must be suited for custoor service. For example protected by aluminum, sheet made parted canner, or plastic over,
§ 150.0(m) 10.	Porous Inner Core Rex Duct. Porous inner core flex ducts rust have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	Dust System Sealing and Leukage Test. When space conditioning systems use forced air dust systems to supply conditioned air to an occupiable space, the dusts must be seeled and dust leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 1500(in)11 and Reference Residential Apendix RAG
§ 150.0(n)12	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of vertilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have at two inch depth or can be one inch if sized per Equation 1500-A Pressure drops and labeling must meet the requirements in §1500 [n] of Filters must be accessible for regular service:
§ 150.0(m)13.	Space Conditioning System Affaire Rate and Far Efface. Space conditioning systems that use duties to supply coding must have a hole for the placement of a static pressure price, or a permanent installed static pressure probe in the supply piece. Affaire must be a 550 CPM port to if nominal coding quality, and an arthrosful part for efficacy a C-55 valid per CPM for gast Lincox an handom and a C-50 valid per CPM for gast Lincox an handom and a C-50 valid per CPM for gast Lincox and handom and a C-50 valid per CPM and the code of

Requirements t	or Ventilation and Indoor Air Quality:
§ 150.0(q)1:	Requirements for Vertilation and Indoor Air Quality. All d-elling units must meet the requirements of ASHRAE Standard 62.2, Vertilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150 (lo)1.
§ 150 0(c) 1 C	Single Family Detached Develling Units. Single family detaned deeling units, and attached deeling units not sharing ceilings or focus with other deeling units, coopside spaces, space, or commercial spaces must have reachanced vertilation airflow provided at rates determined by SRFME CE2 2 described 4.1 and 4.1 2 and statements for § 150 (0) (4).
§ 150 0(o)1E:	Multi-sinkly Attached Desiling Lints. Multilanny statched seeling units must have mechanical verbilistion active provided at rates in accordance with Equation 150.08 Bearing to either a beliance of petiern controllment us poly or controllment and the absoluted systems and used, all units in the building must use the axim system type and the desting-unit envolope leakage must be a 0.3 CFM at 201. 20 cm/s wellop or spacered cut of destinguish envelope must be as and vertical for accordance with Reference Residential Equation (2014).
§ 150 0(a)1F:	Multifamily Building Central Ventilation Systems. Central rentilation systems that serve multiple dveiling units must be balanced to previde ventilation arribor for each dveiling unit served at a rate equato or greater than the rate specified by Equation 150.09. At it arribors must be within 20 provided of the unit with the lowest airliver site as it nivites to the included unit is minimum required rathor wite needed for compliance.
§ 150 0(a)1G	Kitchen Range Hoods. Kitchen range hoods must be rated fir sound in accordance with Section 7.2 of ASHRAE 62.2
§ 150.0(4)2	Field Verification and Diagnostic Testing. Diveling unit verification artifice must be verified in accordance with Reference Residential Appendix RA3.7. A Matchen range hood must be verified in aboundance with Reference Residential Appendix RA3.7.4.3 to confirm it is nated by HM to comply with the artifive rates and sound reculements as second of in Section of and 7.2 of SRHME 62.2.
Pool and Spa S	ystems and Equipment Measures:
§ 110.4(q)	Certification by Manufactures. Any pool of spin hearing system or suppress must be contined to have as if one bisoving a steman entirior that complex within the popiarior Efficiency Regulations, or of the with mounted outside of the heart that allows stating of the header without adjusting the thermostal setting, a permanent weatherood plate or card with operating instructions, and must not use electric resistance hearts.
§ 110.4(b) 1:	Piping. Any pool or spa healing system or equipment must brind alled with at least 35 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connotions to allow for future solar heating.
§ 110.4(t)/2	Covers. Outdoor pools or spas that have a heat pump or gasheater must have a cover.
§ 110.4gg3	Directional Inlets and Time Switches for Pools. Pools mus have directional inlets that adequately mix the pool water, and a time switch the will allow all pumps to be set or programmed to run only duriny off peak electric demand periods.
6110.5	Pilot Light, Natural gas pool and spa heaters must not have a continuously burning pilot light.
& 150.0gg	Pool Systems and Equipment Installation. Residential poolsystems or equipment must meet the specified requirements for pump sizing, fit rate, piping, filters, and valves."
Lighting Measu	
§ 110.9	 Lighting Controls and Components. All lighting control devotes and systems, ballasts, and luminaires must meet the applicable requirement of § 110.97.
6 150.0 kt 1A	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(q)1B:	Blank Electrical Baxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedroom. These electrical boxes must be served by a dimmer, vacancy sensor control, of an speed control.
§ 150.0(k)1C.	Recessed Downlight Luminaires in Cellings, Luminaires rossed into cellings must meet all of the requirements for insulation contact (IC) labeling, air leakage, sealing, maintenance; and socket and lifts source as described in § 150.0(k) (IC).
& 150.0ki1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 walts or greater must be electronic and must have an output frequency no less than 20 HHz.
§ 150.0(4)1E:	Night Lights, Step Lights, and Path Lights. Night lights, sto lights and path lights are not required to comply with Table 150.0 A or be controlled by vacancy sensors provided they are rated to comme no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of \$150.0(a).*
§ 150.0(4)1G	Screw based luminaires. Screw based luminaires must contin lamps that comply with Reference Joint Appendix J48."
§ 150.0(q)1H	Light Sources in Endosed or Recessed Luminaires. Lamp and other separable light sources that are not compliant with the JAB elevated temperature requirements, including marking requirements, rust not be installed in endosed or recessed luminaires.
§ 150.0(q)11:	Light Sources in Drawes, Cabinets, and Liner Closets. Light sources internal to drawers, cabinety or liner closets are not required to comply with Table 150.04 or be controlled by warancy sensor provided that they are raised to consume no more than 5 watts of power, ents more than 150 ultrams, and are coupped with controller that advantaged by the lighting of when the drawer, colored or inner closet is closed.
§ 150.0(42A	Interior Switches and Controls. All forward phase out dimmers used with LED light sources must comply with NEMA SSLTA.
§ 150.0(4)29:	Interior Switches and Controls. Exhaust fans must be contolled separately from lighting systems."
§ 150.0(k)2C:	Interior Settches and Controls, Lighting must have readly occasible wall-mounted controls that allow the lighting to be manually turned ON and OFE."
§ 150.0(420:	Interior Switches and Controls. Controls and equipment must be installed in accordance with manufacturer's instructions.
§ 150.0(4)2E	Interior Seltches and Controls. Controls must not bypass adimmer, occupant sensor, or vacancy sensor function if the control is installed to comply with § 150 000.

	Interior Switches and Controls. An energy management control system (EMCS) may be used to comply with control requirement
§ 150.0 kg 2G	provides functionally of the appointed control according to § 110.3 meets the installation Confinite requirements of § 10.3 meets the installation Confinite requirements of § 10.3 meets. BMS3 requirements of § 10.0 light so requirements of § 10.0 light s
§ 150.0pg2H	provides the functionality of a dimmer according to \$110.9, and complies with all other applicable requirements in \$150,0142.
§ 150.0pg 2t	Interior Switches and Controls. In batteroms, garages, laundy rooms, and utility rooms, at least one luminaire in each of these to be controlled by an occupant sensor or awaring sensor providing automatic off functionally. If an occupant sensor is initially of initially configured to manual-on operation using the manual control required under Section 1930(§2C.)
§ 150.0(42.)	Interior Switches and Controls. Luminares that are or contain light sources that meet Reference Joint Appendix JAB requirement dimming, and that are not controlled by occupancy or vacancy sensors, must have dimming controls.
6 150.0k/2K	Interior Switches and Controls. Under cabinet lighting must be controlled separately from ceiling installed lighting systems.
§ 150.0(43A	Residential Outdoor Lighting. For single-family residential buildings, outdoor lighting permanently incurted to a residential buildings on the same los, must meet the requirement in lent #50 Dig(3/4 (DN and OFF section) and the requirements in either \$150 Dig(3/4 (DN and OFF section) and in entirements in either \$150 Dig(3/4 (pilk) and Dig(3/4 (pilk)) are sectional time footo); or account of the pilk pilk pilk pilk pilk pilk pilk pilk
§ 150.0pq3B	Residential Outdoor Lighting: For low-rise residential buildings with four or more dwelling units, outdoor lighting for private pallon, balooning, and proches, and residential parting lots and carpots with less than eight erboting per site must comply with either § 15 with the populative requirements in Sociation 1109, 1300, 1362, 1309, 4,1407 and 1410.
§ 150.0(43C	Residential Outdoor Lighting. For low-rise residential buildings with four or more develong units, any outdoor lighting for residential or agreement of engine remove without page and any outdoor lighting not regulated by § 150 0p(39 or § 150 0p(30 mu) the applicable requirements in Sections 1109, 1300, 1302, 1304, 1407 and 1411.
§ 150.0(4	Internally Illuminated address signs. Internally illuminated actoress signs must comply with § 140 B, or must consume no more to power as determined according to § 130.0(c).
§ 150.0(4)5.	Residential Garages for Eight or More Vehicles. Lighting for residential parking garages for eight or more vehicles must comply applicable requirements for nonresidential garages in Section 110.9, 130.0, 130.1, 130.4, 140.6, and 141.0.
§ 150.0 MGA	Interior Common Areas of Love-itse Multifarity Residential Buildings. In a love-tier multifarity residential building where the common area in a single building equals 20 percent or less of the floor area, permanently included lighting for the interior common building must be oneign with Table 9500 A another contribution area on part operator.
§ 150.0(468:	Nation Common Areas of Learnine Multimarily Paulidential Buildings. In a lawner multimarily readerful building where the locomon area in a mile building equal secretion. Do perment the force ones, permanently malled lighting for the interior common than that digning must: 1. Correly within exploitable requirements in Sections 110.9; (300, 1301, 140, 6 and 141.0 and) 1. Lighting multiel or controls and started must be controlledly occupant sensors that triuscelle lighting power in each space. 2. Digning multiel or controls and started must be controlledly occupant sensors that the december of the started power forces and sensors.
Solar Ready Bui	ldings:
§ 110.10(a)1:	Single Family Residences. Single family residences located in subdivisions with 10 or more single family residences and where the application for a tertative subdivision map for the residences has been deemed one option and application of the processing of the processing services of the processing services and the processing services are serviced as the processing services and the processing services are serviced as the processing services and the processing services are serviced as the processing services and the processing services are serviced as the services ar
§ 110.10(a)2	Low-rise Multifamily Buildings. Low-rise multi-family buildings that do not have a photovoltaic system installed must comply with requirements of § 110.10(p) through § 110.10(q).
6 110 10bH:	Minimum Die Leitz Zeen Area. The size are menut have a enteren nited area as described below. The facility zeen end comply with purples, protein visibilities, and experience proteins are produced from East Park of the order part of the Size Zeen end comply with the Size Zeen area of the produced from East Park of the Complete Size Zeen East Park of the Complete Size Park of t
§ 110.10(b)2:	Azimuth. All sections of the solar zone located on steep-sloped roofs must be oriented between 90 degrees and 300 degrees of true
§ 110.10þj3A	Shading. The solar zone must not contain any obstructions, including but not limited to vents, chimneys, architectural features, an mounted equipment."
§ 110.10pj38:	Shading, Any obtaination located on the most or any other part of the building that projects above a solar zone must be located at lie shading, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal plane is the nearest point of this solar zone, measured in the vertical plane."
§ 110.10(b)4:	Structural Design Loads on Construction Documents. For areas of the roof designated as a solar zone, the structural design to dead load and roof live load must be clearly indicated on the construction documents.
§ 110.10(c):	Interconnection Pathways. The construction documents must indicate: a location reserved for invertiers and metering equipment a pathway reserved for routing of conduit from the solar zone to the port of interconnection with the electrical service, and for single the residences and certally water healing systems, a positively reserved for routing plumbing from the solar zone to the water healing sys-
§ 110.10(d):	Documentation. Acopy of the construction documents or a comparable document indicating the information from § 110.10(b) three § 110.10(c) must be provided to the occupant.
& 110.10(e)1:	Main Electrical Service Panel. The main electrical service panel must have a minimum busbar rating of 200 amps.
2	Main Electrical Service Panel. The main electrical service panel must have a reserved space to allow for the installation of a doub

