

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Site Address: 61 BRENTFORD CR SAC  
Parcel No: 117-0081-005

CONTRACTOR

PAID

CITY OF SACRAMENTO

DEC 21 2005

NEW CITY HALL

OWNER  
NADLER WARREN R/TRUDY J  
61 BRENTFORD CR  
SACRAMENTO, CA 95823

Permit No: 0519476

Insp Area: 3

Thos Bros:  
Sub-Type: NOTHR  
Housing (Y/N): N

ARCHITECT

Nature of Work: NEW, 360sf 1-STORY, WORKSHOP

CONSTRUCTION LENDING AGENCY: I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name \_\_\_\_\_ Lender's Address \_\_\_\_\_

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class \_\_\_\_\_ License Number \_\_\_\_\_ Date \_\_\_\_\_ Contractor Signature \_\_\_\_\_

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_  
Date \_\_\_\_\_ Owner Signature \_\_\_\_\_

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 12-21-05 Applicant/Agent Signature Warren R. Nadler

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:  
 I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier \_\_\_\_\_ Policy Number \_\_\_\_\_ Exp Date \_\_\_\_\_

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 12-21-05 Applicant Signature Warren R. Nadler

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.



Downtown Permit Center  
New City Hall, 915 I Street, 3<sup>rd</sup> Floor, Sacramento, CA 95814  
North Permit Center  
2101 Arena Blvd., Suite 200, Sacramento, CA 95834

1-916-808-5656 or 1-866-EZ-PERMIT

RESIDENTIAL PLAN REVIEW  
2001 CBC Adopted Codes  
Effective November 1<sup>st</sup>, 2002

PROJECT ADDRESS  
& DESCRIPTION

61 Brentford Cr.

PERMIT NO: 0519476

These sheets, when attached to a set of plans, become part of those plans and must remain attached thereto. The approval of this plan and the specifications shall not be held to permit or approve the violation of any City ordinance or State or Federal law. (Note: Authorized agent must provide a letter from Owner verifying Authorization.) (The code requirements circled do not limit the code requirements for this project.)

I have read and will comply with the items in this document and as marked on the plans.  
Signature of: Warren L. Nadler Date 12/21/05  
 Owner  Authorized Agent  Contractor  Architect/Engineer

BUILDING CODE REQUIREMENTS

- B-1 **Smoke detector location within dwelling units.** In dwelling units, a detector shall be installed in each sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. When the dwelling unit has more than one story and in dwellings with basements, a detector shall be installed on each story and in the basement. In dwelling units where a story or basement is split into two or more levels, the smoke detector shall be installed on the upper level except that, when the lower level contains a sleeping area, a detector shall be installed on each level. When sleeping rooms are on an upper level, the detector shall be placed at the ceiling of the upper level in close proximity to the stairway. In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24 inches (610 mm) or more, smoke detectors shall be installed in the hallway and in the adjacent room. Detectors shall sound an alarm audible in all sleeping areas of the dwelling unit in which they are located. In new construction, required smoke detectors shall receive their primary power from a commercial source and have a battery back up. 2001 CBC, Section 310.9.1.
- B-2 When alteration, repairs, or additions having a value in excess of \$1,000 are made, provide an approved smoke detector to protect existing sleeping rooms. The detector may be battery operated as per 2001 CBC, Section 310.9.1.2.  
**Exception:** Repairs to the exterior surfaces of a Group R occupancy are exempt from the requirements of this section.
- B-3 **Emergency escape and rescue.** Basements in dwelling units and every sleeping room below the fourth story shall have at least one operable window or door approved for emergency escape or rescue that shall open directly into a public street, public way, yard, or exit court. Escape or rescue windows shall have a minimum net clear openable area of 5.7square feet / 821 SQ. inches. The minimum net clear openable height dimension shall be 24 inches. The minimum net clear openable width dimension shall be 20 inches. Emergency escape or rescue windows shall have a finished sill height not more than 44 inches above the floor. 2001 CBC, Section 310.4.
- B-4 **All Group U occupancies attached to Group R, Division 3 occupancies shall be separated by** materials approved for one-hour fire-resistive construction. The separation may be limited to the garage side only and requires a self-closing, tight fitting solid wood door 1 3/8 inches in thickness or a self-closing, tight fitting door having a fire protection rating of not less than 20 minutes. CBC, Section 302.4, Exception 3. **Note:** All members supporting such separation shall be equivalent fire-resistive construction as per 2001 UBC, Section 302. All electrical outlet boxes on opposite sides of the wall shall be separated by a horizontal distance on not less than 24 inches per 2001 CBC 709.7, Exception 1

- B-18C Cripple walls having a stud height exceeding 14 inches shall be braced in accordance with Table 23-IV-C-2. Solid blocking or wood structural panel sheathing may be used to brace cripple walls having a stud height of 14 inches or less. 2001 CBC 2320.11.5.
- B-19 Stud size, height, length, and spacing shall conform with Table 23-IV-B, 2001 CBC.
- B-20 Conventional wood foundation cripple walls shall be framed as per 2001 CBC Section 2320.11.5.
- B-21 Provide under-floor access a minimum size of 18" x 24". 2001 CBC, Section 2306.3.
- B-22 Provide under-floor ventilation as per 2001 CBC, Section 2306.7.
- B-23 All sills, plates, sleepers, posts, and columns that rest on concrete or masonry must be foundation grade redwood or treated and marked or branded by an approved agency. 2001 CBC, 2306.4 & .5.
- B-24 Foundation plates or sills shall have plate washers a minimum of 2 inch by 2 inch by 3/16 inch thick on each anchor bolt. 2001 CBC 1806.6.1.2.
- B-25 Cutting and notching of exterior walls and bearing partitions shall not be greater than 25 percent of the stud width. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition. 2001 CBC, Section 2320.11.9.
- B-26 Bored holes. A hole not greater in diameter than 40 percent of the stud width may be bored in any wood stud. Bored holes not greater than 60 percent of the width of the stud are permitted in nonbearing partitions or in any wall where each bored stud is doubled, provided not more than two such successive doubled studs are so bored. Leave 5/8" of wood from edge. 2001 CBC, Section 2320.11.10.
- B-27 Bearing walls. All bearing walls shall be supported on masonry, concrete, foundations, piles, or other approved foundation systems that will be of sufficient size to support all loads. Where a design is not provided, the minimum foundation requirements for stud bearing walls shall be as set forth in Table 18-I-C as per 2001 CBC, Section 1806.3.
- B-28 Post-beam connections. Where post and beam or girder construction is used, a positive connection shall be provided to ensure against uplift and lateral displacement. 2001 CBC, Section 2314.
- B-29 Provide rafter ties. Where rafters are not parallel with the ceiling joist, rafters shall be tied to 1" x 4" (nominal) minimum size crossties. Rafter ties shall be spaced not more than 4 feet on center. 2001 CBC, Section 2320.12.6.
- B-30 Provide attic ventilation as per 2001 CBC, Section 1505.
- B-31 Fire and draft stopping shall be installed according to 2001 CBC, Section 708.
- B-32 All gypsum board, stucco, plaster, and lath shall be installed as per 2001 CBC, Chapter 25.  
Note: When lath is applied over wood base sheathing, include two layers of grade D paper.
- B-33 Exterior wall coverings shall be applied as per 2001 CBC, Sections 1402 and 2310.
- B-34 Pier Height: Individual concrete piers shall project at least 8" above exposed ground. 2001 CBC 2306.5.
- B-35 Foundation Elevation: On graded sites, the top of all foundations shall extend above the elevation of the street gutter point of discharge or inlet device a minimum of 12" plus 2% per foot (1/4" plf distance measured from gutter to edge of footing). Where a gutter is not present, measure from the crown of road. 2001 CBC 1806.5.5.

## MECHANICAL CODE REQUIREMENTS

- M-1 Domestic clothes dryer moisture exhaust ducts shall terminate on the outside of the building and shall be equipped with a back draft damper. Sheet metal screws or other fasteners that will obstruct the flow shall not be used. Unless otherwise permitted or required by the dryer manufacturer's installation instructions and by the building official, domestic dryer moisture exhaust ducts shall not exceed a total combined horizontal and vertical length of 14 feet including two 90° elbows. Two feet shall be deducted for each 90° elbow in excess of two. 2001 CMC, Section 504.3.
- M-2 Make up air. When a closet is designed for the installation of a clothes dryer, a minimum opening of 100 square inches for make up air shall be provided in the door or by other approved means. 2001 CMC, Section 908.2.
- M-3 Installation of a Listed Cooking Appliance or Microwave Oven above a Listed Cooking Appliance. The installation of a listed cooking appliance or microwave oven over a listed cooking appliance shall conform to the conditions of the upper appliance's listing and the manufacturers' installation instructions. 2001 CMC, Section 906.3.
- M-4 Domestic range vents. Ducts for domestic kitchen downdraft grill-range ventilation shall be installed as per 2001 CMC, Section 504.2.
- M-5 Fuel burning equipment shall be assured a sufficient supply of combustion air as per Chapter 7, 2001 CMC.
- M-6 Warm air furnaces shall not be installed in a room used or designed to be used as a bedroom, bathroom, or closet or in any enclosed space with access only through such room or space. 2001 CMC, Section 304.5. See Section 304.5 Exception for other Alternatives.
- M-7 Attic furnace. The distance from the passageway access to the furnace shall not exceed 20 feet measured along the center line of the passageway. The passageway shall be unobstructed and shall have continuous solid flooring not less than 24 inches wide from the entrance opening to the furnace. A level working platform not less than 30 inches in depth and width shall be provided in front of the entire fire box side of the warm air furnace. If the furnace temperature limit control, air filter, fuel control valve, vent collar, or air handling unit is not serviceable from the fire box side of the furnace, a continuous floor not less than 24 inches in width shall be provided from the platform in front of the fire box side of the furnace to and in front of this equipment. A permanent electric outlet and lighting fixture controlled by a switch located at the required passageway opening shall be provided at or near the furnace. 2001 CMC, Section 307.3.
- M-8 Vent termination. Type B or BW gas vents with listed vent caps 12 inches in size or smaller shall be permitted to be terminated in accordance with Table 8-A, provided they are located at least 8 feet from the vertical wall or similar obstruction. All other Type B gas vents shall terminate not less than 2 feet above the highest point where they pass through the roof and at least 2 feet higher than any portion of a building within 10 feet. 2001 CMC, Section 806.4.  
*Note:* Single wall metal vent connectors shall not originate in an unoccupied attic or concealed space and shall not pass through an attic, inside wall, or concealed space.
- M-9 Approval of Equipment. Listed and unlisted equipment shall comply with the 2001 CMC, Section 302 provisions.
- M-10 Ignition source. Equipment covered by this code that is located in a garage and that generate a glow, spark, or flame capable of igniting flammable vapors shall be installed with sources of ignition at least 18 inches above the floor level. 2001 CMC, Section 303.1.3. When such equipment is mounted on stands, such stands shall be enclosed. 1999 SCC, Section 303.1.4.

SACRAMENTO CITY CODE REQUIREMENTS

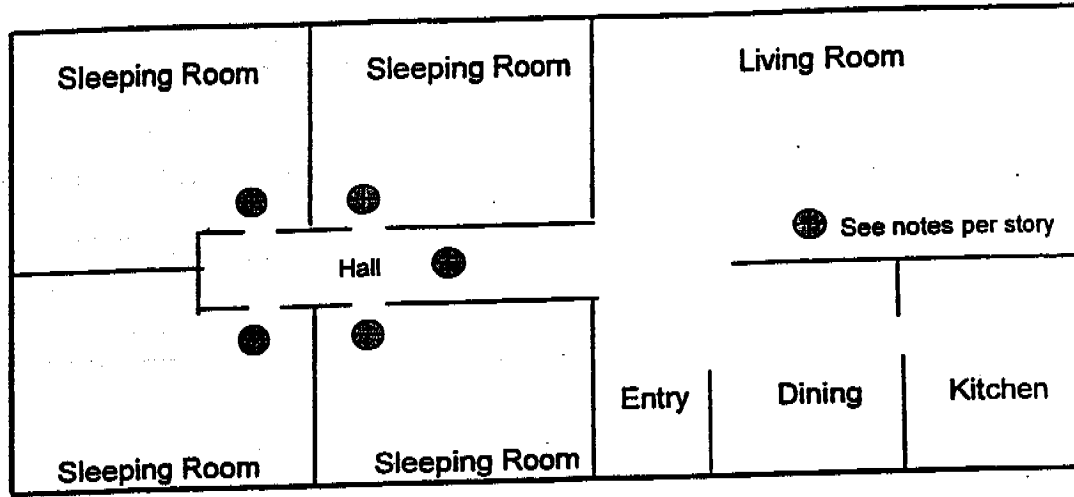
CSS-1 Ordinance # 84-056 CITY OF SACRAMENTO PERSONAL SAFETY BUILDING CODES.

1. All building numbers and street addresses shall be clearly visible from public or private access streets. The letters and numbers shall be no less than four inches in height and of a contrasting color to their background.
2. All entry doors shall be of the solid core type and be equipped with a single cylinder deadbolt lock meeting the following minimum standards:
  - A. The bolt shall have a throw of at least one-inch and be constructed so as to repel cutting tool attack.
  - B. The cylinder of the deadbolt shall be equipped with a guard to repel attack by prying or wrenching.
  - C. The deadbolt shall be of the pin tumbler type with a minimum of five pins for a maximum of two entry doors only. Additional entry doors may be fitted with keyless deadbolts.
  - D. Double cylinder deadbolt locks may be used only in accordance with the Uniform Fire Code.
3. Each exterior door hinge shall be secured with a minimum of two (2) number eight screws which must penetrate at least two (2) inches into solid backing beyond the frame to which the hinge is attached.
4. The strike plates designed to receive the deadbolt locks shall be constructed of a minimum 16 U>A> gauge steel, bronze or brass and shall be secured to a wood jamb with not less than (2) number eight screws which must penetrate at least two (2) inches into solid backing beyond the surface to which the strike is attached. Strike plates attached to metal jambs shall be secured with a minimum of four (4) number eight machine screws.
5. Sliding door assemblies shall have an auxiliary-locking device permanently mounted on the interior and which is not accessible from the exterior.
6. Sliding door and/or window assemblies shall be designed so that the door or window cannot be lifted from the track when in the closed position.
7. All primary egress doors shall be so equipped as to provide the occupant with a clear view of that area immediately outside the door. This view may be provided by a one-way door viewer designed to provide a 180-degree field of view. Such viewer shall not be mounted in excess of 54" inches from the interior floor.

An additional requirement of this ordinance is that all above items are retroactive for all non-owner occupied living units (dwellings, half plex, duplex, etc.) and must comply at the time of final inspection.

Ord. # 84-056, Eff. 10-21-84  
Added to Chap. 9, Art. XX111

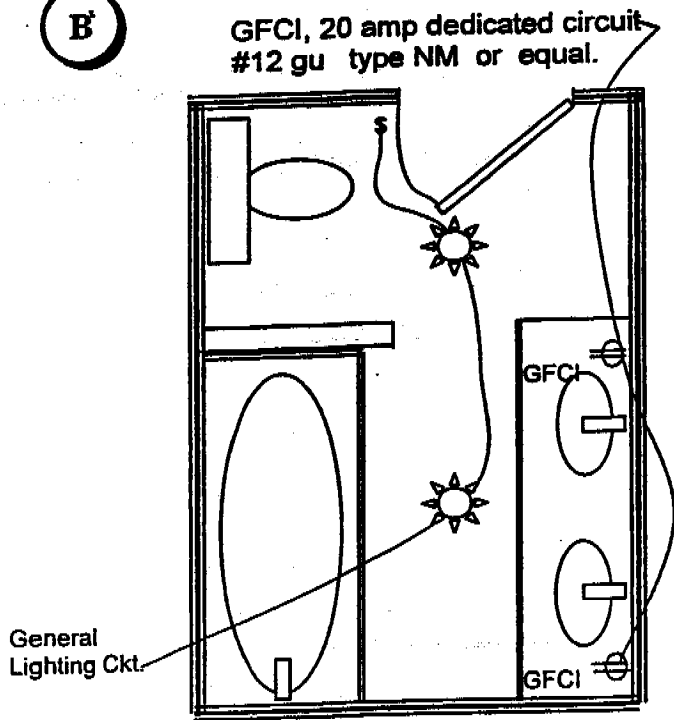
**A**



**● SMOKE DETECTOR.**

Additions or Remodel per 1997, UBC Sec. 310.9.1.2, in excess of \$1,000.00 dollars in value requires smoke detectors in each sleeping room and hallway. Homes 2-Story and/or with basements require a smoke detector at each story level other than hallways or sleeping rooms. Non-hardwired adhesive battery powered detector models are approved for remodels only.

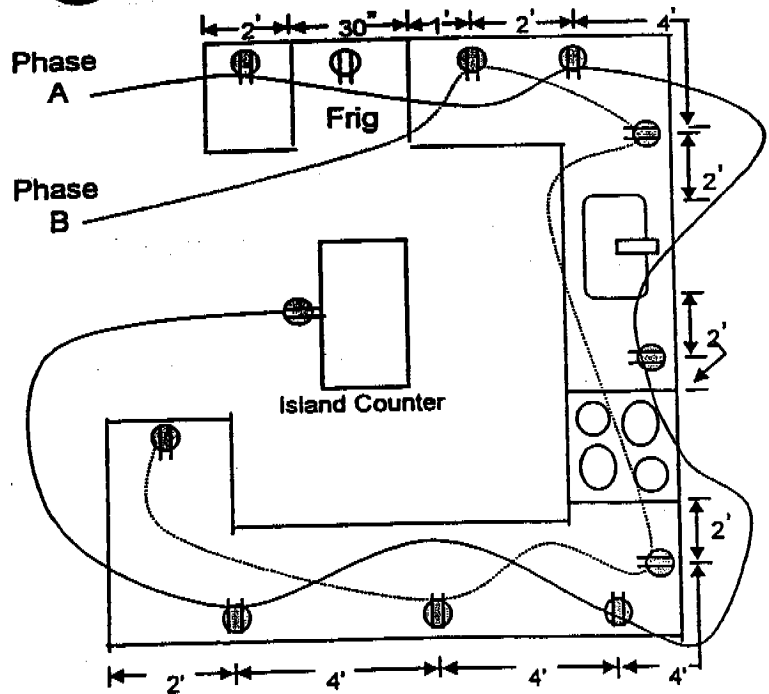
**B**



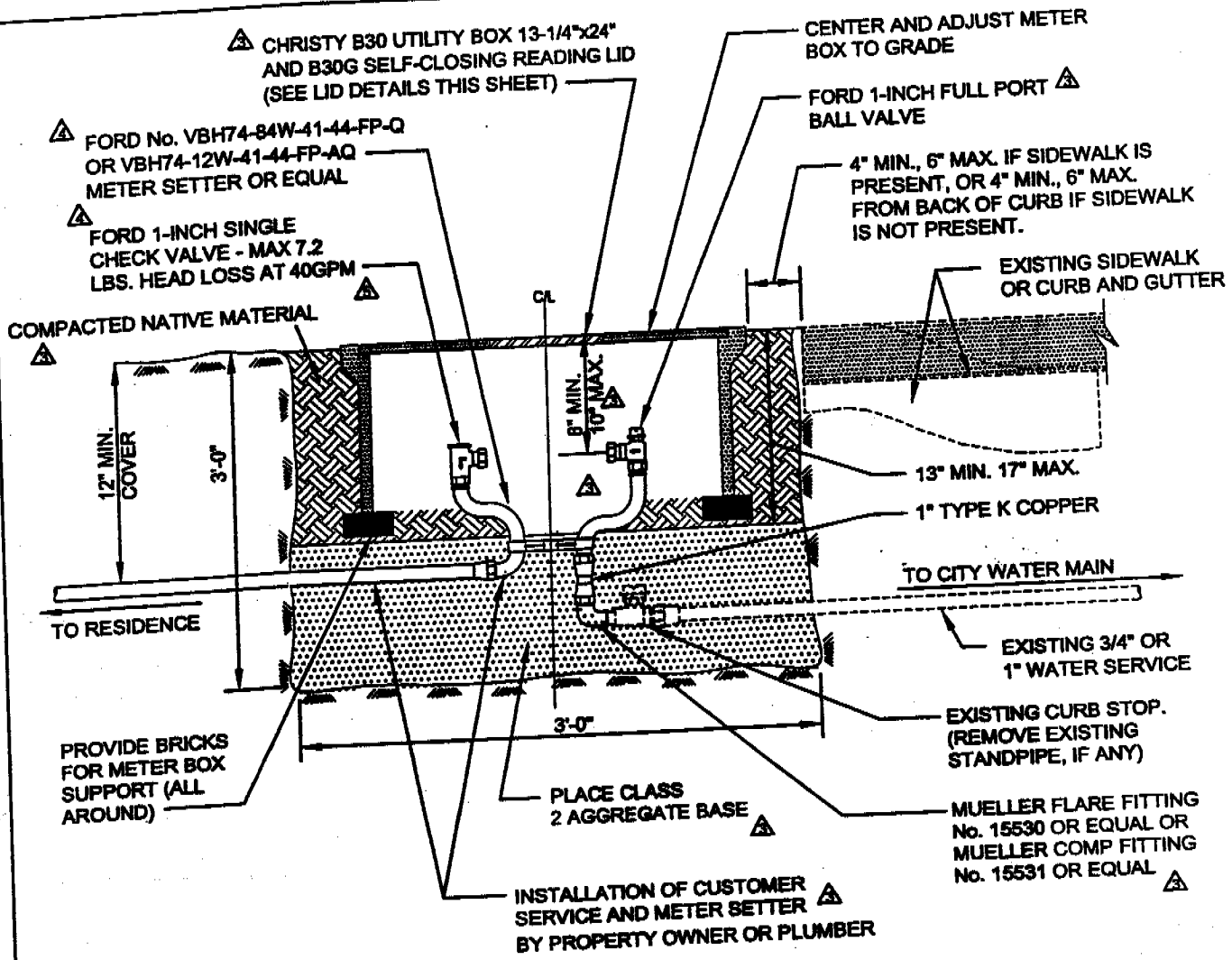
One GFCI circuit adjacent to each lavatory or center outlet between each sink with 36" max reach. More than one receptacle is allowed.

**C**

**GFCI All Counter Top Outlets Shown**

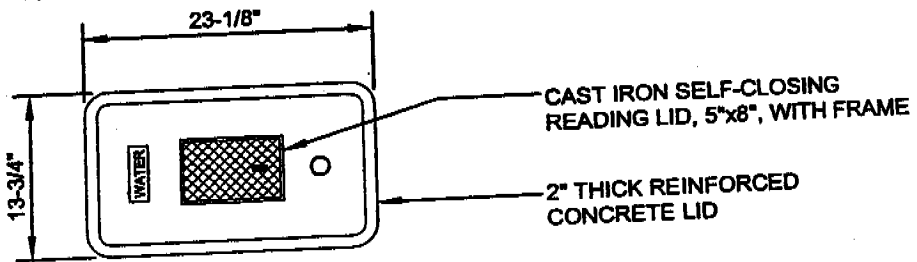


Countertop receptacles are required to be supplied with 2 dedicated 20 Amp circuits, #12 gauge, NM. Circuits are to be balanced. A & B phase. Refrigerator/Stove clock is allowed to be in A or B phase.



NOTE: PROPERTY OWNER/PLUMBER SHALL PAY METER FEES AND THE RESIDENCE HAS PASSED PLUMBING INSPECTION PRIOR TO CONNECTION TO CITY WATER MAIN.

**PLACEMENT OF METER SETTER AND METER BOX TO EXISTING WATER SERVICE (BY PROPERTY OWNER OR PLUMBER)**  
NO SCALE



**LID DETAIL OF CHRISTY B30G OR EQUAL**  
NO SCALE

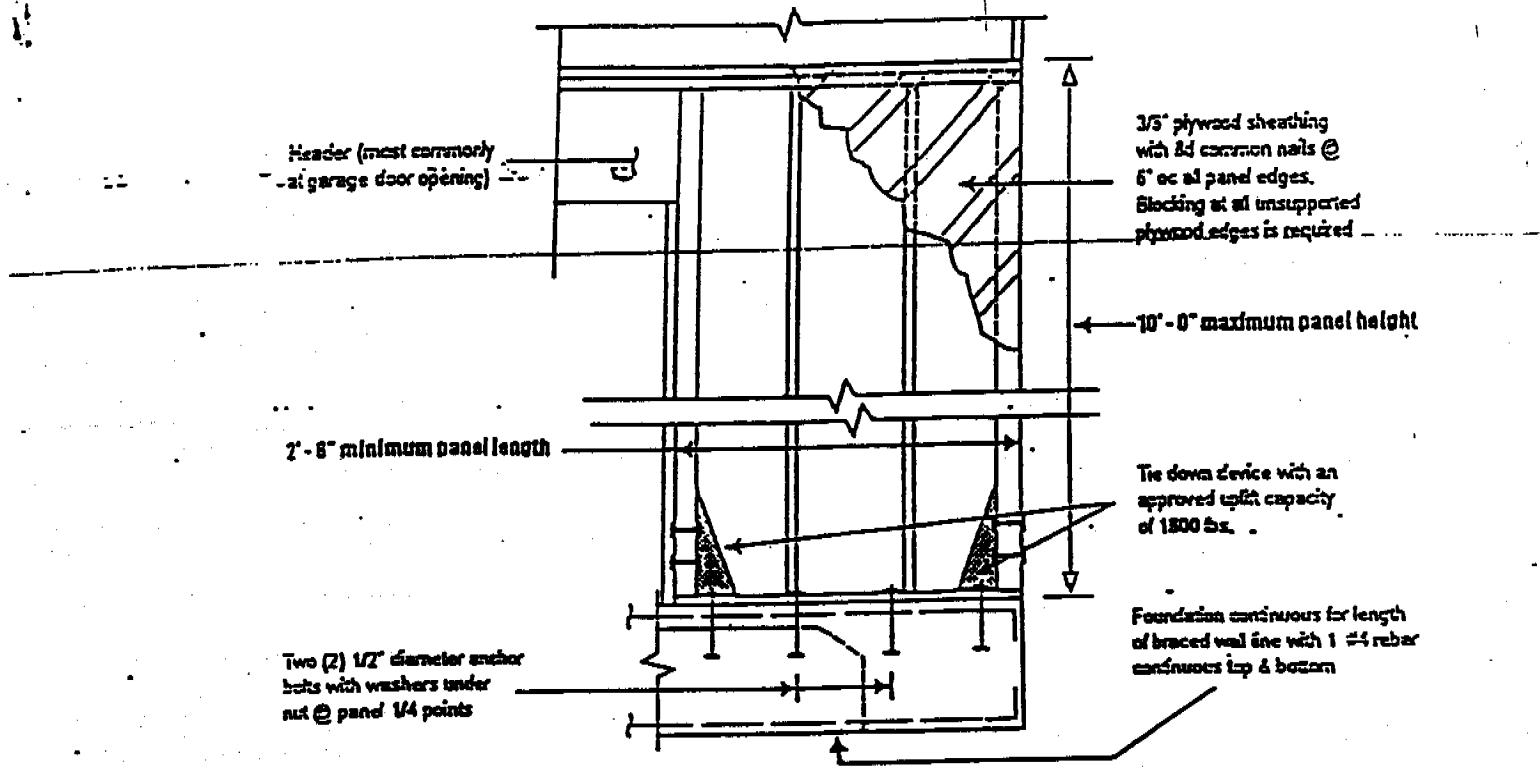
REV.	DATE	DESCRIPTION
3	8/18/99	METER SETTER CHGS.
4	10/3/99	CHG METER SETTER N
5	4/7/00	CHG IN MAX HEAD LOS

**DEPARTMENT OF UTILITIES**

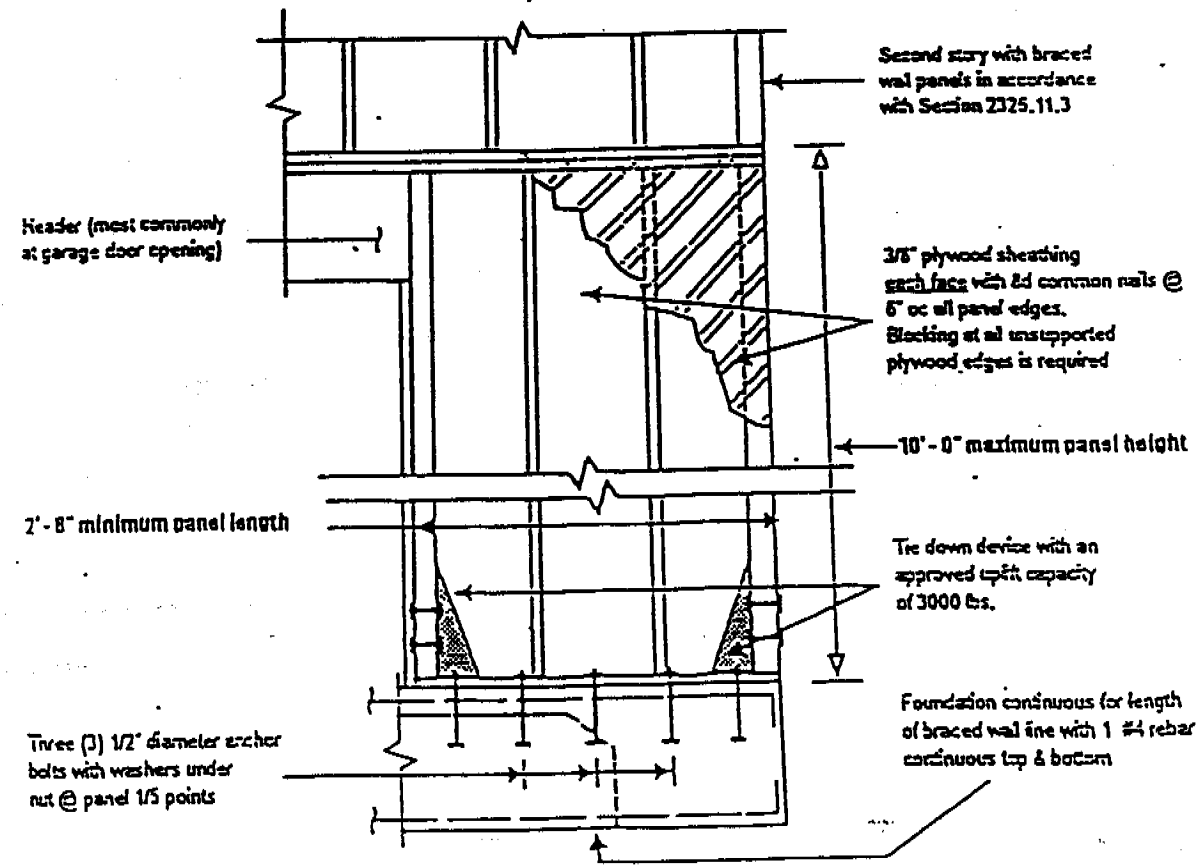
INSTALLATION OF RESIDENTIAL WATER METER BOX - FOR EXISTING SERVICES

APPROVED BY: \_\_\_\_\_ SCALE: None  
DATE: SEPTEMBER 1993 DWG. NO. SDW-40

ALTERNATE BRACED WALL PANEL at One-Story Building

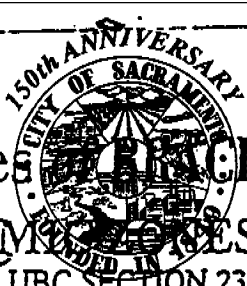


ALTERNATE BRACED WALL PANEL At First Story of a Two Story Building



CONVENTIONAL BRACING ... Seismic Zones 3 & 4





# Permitted Types OF BRACED WALL PANELS

SEISMIC ZONES 3 & 4  
(From UBC SECTION 2326.11.3)

CONSTRUCTION METHOD	DESCRIPTION	MIN. PANEL WIDTH
1	Nominal 1-inch by 4-inch (25 mm by 102 mm) continuous diagonal braces let into top and bottom plates and into studs at an angle not more than 60 degrees from horizontal, and attached to the framing in conformance with Tables 23-I-Q	
2	Wood boards of 5/8-inch net minimum thickness applied diagonally on studs spaced not over 24 inches on center	48"
3	Wood structural panel sheathing with a thickness not less than 5/16-inch for 16-inch stud spacing and not less than 3/8-inch for 24-inch stud spacing in accordance with Tables 23-I-M-1 and 23-I-N-1	48"
4	Fiberboard sheathing 4-foot by 8-foot panels not less than 1/2-inch thick applied vertically on studs spaced not over 16 inches on center when installed in accordance with Section 2315 and Table 23-I-P	48"
5 <sup>1</sup>	Gypsum board (sheathing 1/2-inch thick by 4-feet wide, wallboard or veneer base) on studs spaced not over 24-inches on center and nailed at 7 inches on center with nails as required by Table 25-1	95"
6	Particleboard wall sheathing panels where installed in accordance with Table 23-I-N-2	48"
7	Portland cement plaster on studs spaced 16 inches on center installed in accordance with Table 25-1	48"
8	Hardboard panel siding when installed in accordance with Section 2320.6 and Table 23-I-O	48"

<sup>1</sup> For method 5, each braced wall panel may be 48 inches when applied to both faces.

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TABLE 25A-I—ALLOWABLE SHEAR FOR WIND OR SEISMIC FORCES IN POUNDS PER FOOT FOR VERTICAL DIAPHRAGMS OF LATH AND PLASTER OR GYPSUM BOARD FRAME WALL ASSEMBLIES<sup>1</sup>

TYPE OF MATERIAL	THICKNESS OF MATERIAL	WALL CONSTRUCTION	NAIL SPACING <sup>2</sup> MAXIMUM (inches)	SHEAR VALUE	MINIMUM NAIL SIZE <sup>3</sup>		
	× 25.4 for mm × 304.8 for mm		× 25.4 for mm × 14.8 for N/m			× 25.4 for mm	
1. Expanded metal, or woven wire lath and portland cement plaster	7/8"	Unblocked	6	180	No. 11 gage, 1 1/2" long, 7/16" head No. 16 gage staple, 7/8" legs		
2. Gypsum lath	3/8" lath and 1/2" plaster	Unblocked	5	100	No. 13 gage, 1 1/8" long, 19/64" head, plasterboard blue nail		
3. Gypsum sheathing board	1/2" × 2' × 8'	Unblocked	4	75	No. 11 gage, 1 3/4" long, 7/16" head, diamond-point, galvanized		
	1/2" × 4' 1/2" × 4'	Blocked Unblocked	4 7	175 100			
4. Gypsum wallboard or veneer base	1/2"	Unblocked	7	100	5d cooler (0.086" dia., 1 5/8" long, 15/64" head) or wallboard (0.086" dia., 1 5/8" long, 9/32" head)		
			4	125			
		Blocked	7	125			
			4	150			
	5/8"	Unblocked	7	115	6d cooler (0.092" dia., 1 7/8" long, 1/4" head) or wallboard (0.0915" dia., 1 7/8" long, 19/64" head)		
			4	145			
		Blocked	7	145			
			4	175			
		Blocked Two ply	Base ply: 9 Face ply: 7	250		250	Base ply—6d cooler (0.092" dia., 1 7/8" long, 1/4" head) or wallboard (0.0915" dia., 1 7/8" long, 19/64" head) Face ply—8d cooler (0.113" dia., 2 3/8" long, 9/32" head) or wallboard (0.113" dia., 2 3/8" long, 3/8" head)

<sup>1</sup>These vertical diaphragms shall not be used to resist loads imposed by masonry or concrete construction. See Section 2513.2. Values shown are for short-term loading due to wind or due to seismic loading. Values shown must be reduced 25 percent for normal loading. The values shown in items 2, 3 and 4 shall be reduced 50 percent for loading due to earthquake in Seismic Zones 3 and 4.

<sup>2</sup>Applies to nailing at all studs, top and bottom plates, and blocking.

<sup>3</sup>Alternate nails may be used if their dimensions are not less than the specified dimensions.

TABLE 27  
SUMMARY OF USE OF FASTENERS FOR FRAMING<sup>1</sup>

CONNECTION 2,4	NUMBER, OR SPACING, OF FASTENERS REQUIRED PER CONNECTION												14 Gage Staples <sup>3</sup>	
	Nail lengths are minimum, nominal lengths, in inches Nail shank diameters are minimum, nominal diameters, in inches.													
	2-1/2 x 0.162	3 x 0.148	3-1/4 x 0.131	3 x 0.131	2-1/2 x 0.131	3-1/4 x 0.128	3 x 0.128	2-3/8 x 0.113	2 x 0.113	2-1/4 x 0.105	2-1/4 x 0.099	3-1/4"	3"	
Floor Framing														
Joist to band joist	3	5	5	5	N/A	6	6	N/A	N/A	N/A	N/A	5	5	
Ledger strip	3	4	4	4	6	4	4	N/A	N/A	N/A	N/A	4	4	
Joist to sill or girder	3	3	3	4	3	4	4	N/A	N/A	N/A	N/A	3	3	
Blocking between joist or rafter to top plate	3	3	3	4	3	4	4	N/A	N/A	N/A	N/A	3	3	
Bridging to joist	N/A	N/A	N/A	N/A	2	3	3	3	4	3	4	2	2	
Rim joist to top plate	8" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.	4" o.c.	6" o.c.	3" o.c.	3" o.c.	3" o.c.	6" o.c.	6" o.c.	
Built-up Girders & Beams - Spacing along edges, - # at ends & splices	24" o.c., 3	24" o.c., 3	24" o.c., 3	24" o.c., 3	16" o.c., 4	16" o.c., 3	16" o.c., 3	N/A	N/A	N/A	N/A	24" o.c., 3	24" o.c., 3	
Ceiling and Roof Framing														
Ceiling joist to plate	3	4	5	5	5	5	5	6	N/A	N/A	N/A	5	5	
Ceiling joists, laps over partitions	3	4	4	4	6	4	4	N/A	N/A	N/A	N/A	4	4	
Ceiling joist to parallel rafter	3	4	4	4	6	4	4	N/A	N/A	N/A	N/A	4	4	
Collar tie to rafter	3	3	4	4	5	4	4	N/A	N/A	N/A	N/A	4	4	
Jack rafter to hip, toe-nailed	3	3	4	4	5	4	4	N/A	N/A	N/A	N/A	3	3	
Jack rafter to hip, face-nailed	2	3	3	3	3	4	4	5	5	5	6	3	3	
Roof rafter to plate	3	3	3	3	3	4	4	5	5	5	6	3	3	
Roof rafter to 2-by ridge beam (driven through beam into end of ridge)	2	3	3	3	N/A	4	4	N/A	N/A	N/A	N/A	3	3	
Roof rafter to 2-by ridge beam (toe-nail rafter to beam)	2	3	3	3	3	4	4	N/A	N/A	N/A	N/A	3	3	
Wall Framing														
Top or sole plate to stud (end nailed)	2	3	3	3	5	4	4	N/A	N/A	N/A	N/A	3	3	
Stud to top or sole plate (toe nailed)	3	4	4	4	4	4	4	5	5	5	5	3	3	
Cap/top plate laps and intersections (each side of lap)	2	3	3	3	4	3	3	N/A	N/A	N/A	N/A	3	3	
Diagonal bracing	2	2	2	2	2	3	3	3	4	4	4	2	2	
Sole plate to joist or blocking at braced panels (number per 16" joist space)	2	3	3	4	N/A	4	4	N/A	N/A	N/A	N/A	4	4	
Sole plate to joist or blocking	16" o.c.	8" o.c.	8" o.c.	8" o.c.	6" o.c.	8" o.c.	8" o.c.	N/A	N/A	N/A	N/A	12" o.c.	12" o.c.	
Double top plate	16" o.c.	16" o.c.	12" o.c.	12" o.c.	8" o.c.	12" o.c.	12" o.c.	N/A	N/A	N/A	N/A	12" o.c.	12" o.c.	
Double studs	12" o.c.	12" o.c.	8" o.c.	8" o.c.	6" o.c.	8" o.c.	8" o.c.	N/A	N/A	N/A	N/A	8" o.c.	8" o.c.	
Corner studs	24" o.c.	16" o.c.	16" o.c.	16" o.c.	8" o.c.	12" o.c.	12" o.c.	N/A	N/A	N/A	N/A	16" o.c.	16" o.c.	

N/A = Fastener not applicable to connection.

<sup>1</sup>This fastening schedule applies to framing members having an actual thickness of 1-1/2" (nominal "2-by" lumber).

<sup>2</sup>Fastenings listed above may also be used for other connections that are not listed but that have the same configuration and the same code requirement for fastener quantity/spacing and fastener size (pennyweight and style; e.g., 8d common, "8-penny common nail").

<sup>3</sup>Staple shall have a minimum nominal crown width of 7/16 inch, outside legs.

<sup>4</sup>Fastening schedules only apply to buildings of conventional wood frame construction where wind or seismic analysis is not required by the code. In areas where wind or seismic analysis is required, required fastening shall be determined by structural analysis. *Uniform Building Code* requires structural analysis in areas where design wind speeds prescribed by the code are 80 mph or higher.



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# Title 24 Changes Effective 10/01/2005

## Residential

The requirements apply only to permanently installed luminaires, i.e., luminaires that are part of the house, as opposed to portable luminaires such as torchieres or table lamps that are provided by the occupant. Permanently installed luminaires include ceiling luminaires, chandeliers, vanity lamps, wall sconces and any other type of luminaire that is a permanent part of the house.

The new requirements may be summarized as follows:

- **Kitchens.** At least half the installed wattage of luminaires in kitchens shall be high efficacy and the ones that are not must be switched separately.
- **Lighting in Bathrooms, Garages, Laundry Rooms and Utility Rooms.** All luminaires shall either be high efficacy or shall be controlled by an occupant sensor.
- **Other Rooms.** All luminaires shall either be high efficacy or shall be controlled by an occupant sensor or dimmer. Closet that are less than 70 square foot are exempt from this requirements.
- **Outdoor Lighting.** All luminaires mounted to the building or to other buildings on the same lot shall be high efficacy luminaires or shall be controlled by a photocontrol/motion sensor combination.
- **Common Areas of Multifamily Buildings.** All luminaires in the common areas of multifamily buildings shall either be high efficacy or shall be controlled by an occupant sensor.

Luminaires that are recessed into insulated ceilings are required to be rated for insulation contact ("IC-rated") so that insulation can be placed over them. The housing of the luminaire shall be airtight to prevent conditioned air escaping into the ceiling cavity or attic, unconditioned air infiltrating from the ceiling or attic into the conditioned space.

An additional set of requirements apply to parking lots or garages with space for eight or more cars, which are typically for multifamily buildings. The nonresidential Standards for parking lots and/or garages apply in these cases (§132, §147).

### 6.1.3 Related Documents

There are a number of publications and documents available from the California Energy Commission and others that provide additional information about residential lighting. A summary of these is listed below:

- The Nonresidential Manual should be consulted for more details on the requirements for parking lots and parking garages.
- The Advanced Lighting Guidelines, available from the New Buildings Institute (<http://www.newbuildings.org>) is an informative resource for energy efficient lighting design, luminaires, and controls. While the document is mostly oriented for nonresidential lighting applications, it has generic information

### 6.2.1 Lumens per Watt

The lumen is the unit of visible light. To be rated as high efficacy, a lamp must produce a certain number of lumens for each watt of electrical power it consumes. Efficacy is therefore measured in lumens per watt.

Almost all fluorescent lamps equipped with electronic ballasts qualify as high efficacy light sources; incandescent lamps (including any screw-in incandescent lamps, like regular 'A' or reflector lamps, or quartz halogen lamps, or low voltage lamps, like halogen MR lamps) do not. To be classified as high efficacy, a lamp must meet the requirements listed in Table 6-1 (documented in Table 150-C of the Standards):

For simplicity, the power used by the ballast is ignored when determining the lumens per watt for purposes of compliance with the residential lighting requirements.

*Table 6-1 - High Efficacy Lamps*

Lamp power	Required lamp efficacy
< 15 W	40 lm/W
15-40 W	50 lm/W
>40 W	60 lm/W

*Note: the wattage of the ballast is not included when determining lamp efficacy.*

Mercury vapor lamps do not usually meet the requirements; metal halide or compact fluorescent lamps (CFLs) are good replacements. For other lamp types such as LEDs you should check with the lamp manufacturer and provide documents showing that the lamp meets the requirements.

To calculate the efficacy of a lamp, find out from the manufacturer how many lumens it produces, then divide this number by the rated wattage of the lamp. Do not include any watts consumed by the ballast.

# RESIDENTIAL KITCHEN LIGHTING WORKSHEET

WS-5R

Project Title \_\_\_\_\_ Date \_\_\_\_\_

At least 50% of the total rated wattage of permanently installed luminaires in the kitchen must be in luminaires that are high efficacy luminaires as defined in Table 150-C. Luminaires that are not high efficacy must be switched separately.

**Kitchen Lighting Schedule.** Provide the following information for all luminaires to be installed in kitchens.

Luminaire Type	High Efficacy?	Watts	x	Quantity	=	High Efficacy Watts	or	Other Watts
	Yes <input type="checkbox"/> No <input type="checkbox"/>		x		=		or	
	Yes <input type="checkbox"/> No <input type="checkbox"/>		x		=		or	
	Yes <input type="checkbox"/> No <input type="checkbox"/>		x		=		or	
	Yes <input type="checkbox"/> No <input type="checkbox"/>		x		=		or	
	Yes <input type="checkbox"/> No <input type="checkbox"/>		x		=		or	
Total:						A:	B:	

**COMPLIES IF A ≥ B** Yes  No

