Notes:
1. Anchor bolts: 1/2” Ø x 10”; minimum 7” embedment, with minimum 2 anchor bolts per plate section, located not more than 12” or less than 4” from each end of the section.
2. All foundation plates or sills and sleepers on a concrete or masonry slab, which is in direct contact with earth, and sills that rest on concrete or masonry foundations, shall utilize preservative treated wood (AWPA U1) & field-cut ends, notches and drilled holes shall be field treated (AWPA M4). Fasteners, including nuts and washers, for preservative treated wood or fire-retardant treated wood shall be of hot-dipped, zinc-coated galvanized steel or stainless steel.
3. Minimum concrete Strength: 2500psi
4. Bearing walls and braced wall panels require continuous footings (R403.1).
5. Soil report is required if the proposed construction is located in a liquefaction, landslide, Alquist-Priolo, Sierra Madre or other earthquake fault zone.
6. Where interior walls are shear wall panels, wall framing and sheathing shall extend to the roof sheathing.
7. Under floor spaces shall be ventilated by openings into the under-floor space walls. Such openings shall have a net area of not less than 1 sq. ft. for each 150 sq. feet of under-floor area. Openings shall be located within 3 ft. of each corner of the building and provide cross ventilation. The openings shall be approximately equally distributed along the length of at least two sides. Corrosion resistant mesh w/ 1/4” openings.
8. The net free ventilating area of enclosed attics & enclosed rafter spaces shall not be less than 1/150 of the space ventilated and shall have cross ventilation for each separate space.
10. Provide a minimum of 1” airspace between insulation and the roof sheathing.
11. Exterior walls of dwellings and accessory structures closer than 5 ft. to the property line shall be limited to 25% of the wall area. The area of exterior wall openings shall be limited to 25% of the area of exterior wall openings.
12. The area of exterior wall openings of non-sprinklered dwellings and accessory buildings located ≥ 3-ft. and < 5-ft. the property line shall be limited to 25% of the area wall. The area of exterior wall openings is unlimited when exterior walls are located ≥ 5-ft. for non-sprinklered buildings and ≥ 3-ft. for sprinklered buildings.
13. Footings on or adjacent to slopes shall meet the requirements of Section R403.1.7.
14. Exterior plaster (stucco) walls shall be provided with corrosion-resistant weep screeds.
15. Roof edge fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided form the wall top plate to the underside of the roof sheathing.

2017 COUNTY OF LOS ANGELES RESIDENTIAL CODE
WOOD FRAME PROVISIONS
DEAD LOAD SHALL NOT EXCEED 15 PSF FOR COMBINED ROOF / CEILING OR EXTERIOR WALLS AND 10 PSF FOR FLOORS OR PARTITIONS.

THIS SHEET IS FOR INFORMATION AND REFERENCE ONLY AND IS NOT A SUBSTITUTE FOR ACCURATE DRAWINGS PREPARED FOR EACH PROPOSED CONSTRUCTION PROJECT.
### Roof Rafter Spans (DF-Larch #2)

<table>
<thead>
<tr>
<th>Rafter Size</th>
<th>Spacing</th>
<th>Allowable Span</th>
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</thead>
<tbody>
<tr>
<td>2x6</td>
<td>24&quot;</td>
<td>11'-11&quot;</td>
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<tr>
<td>16&quot;</td>
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<td>12&quot;</td>
<td>9'-5&quot;</td>
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</tr>
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<td>2x8</td>
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<tr>
<td>16&quot;</td>
<td>18'-5&quot;</td>
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<tr>
<td>10&quot;</td>
<td>12'-5&quot;</td>
<td>15'-9&quot;</td>
</tr>
<tr>
<td>2x10</td>
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<td>18'-5&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>22'-4&quot;</td>
<td>23'-4&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>16'-0&quot;</td>
<td>19'-9&quot;</td>
</tr>
<tr>
<td>2x12</td>
<td>24&quot;</td>
<td>21'-4&quot;</td>
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<tr>
<td>16&quot;</td>
<td>26'-3&quot;</td>
<td>26'-3&quot;</td>
</tr>
<tr>
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<td>28'-0&quot;</td>
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### Ceiling Joist Spans (DF-Larch #2)

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<td>2x4</td>
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<td>12&quot;</td>
<td>7'-3&quot;</td>
<td>8'-11&quot;</td>
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<td>2x6</td>
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<td>19'-1&quot;</td>
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<tr>
<td>2x10</td>
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</tr>
<tr>
<td>12&quot;</td>
<td>28'-2&quot;</td>
<td>28'-2&quot;</td>
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</tbody>
</table>

### Floor Joist Spans (DF-Larch #2)

<table>
<thead>
<tr>
<th>Joist Size</th>
<th>Spacing</th>
<th>Allowable Span</th>
</tr>
</thead>
<tbody>
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<td>2x6</td>
<td>24&quot;</td>
<td>8'-3&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>9'-0&quot;</td>
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<td>12&quot;</td>
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</tr>
<tr>
<td>2x8</td>
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<td>15'-7&quot;</td>
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<tr>
<td>12&quot;</td>
<td>20'-11&quot;</td>
<td>22'-2&quot;</td>
</tr>
</tbody>
</table>

### Girder and Header Spans for Interior Bearing Walls

- **Size**: 2'-6" x 1-1/2" w/ 1 NJ
- **Spacing**: 5'-6" w/ 1 NJ
- **Allowable Span**: 10'-0" w/ 2 NJ

### Rafter Tie Connections

- **Size**: 2'-6" x 1-1/2" w/ 1 NJ
- **Spacing**: 5'-6" w/ 1 NJ
- **Allowable Span**: 10'-0" w/ 2 NJ

### Allowable Spans and Loads for Wood structural Panels for Roof and Subfloor Sheathing

<table>
<thead>
<tr>
<th>Sheathing</th>
<th>Roof</th>
<th>Subfloor</th>
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<tbody>
<tr>
<td>Span rating</td>
<td>Min. panel thickness (in.)</td>
<td>Max. span (in.)</td>
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<tr>
<td>24/0</td>
<td>3/8</td>
<td>34</td>
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<tr>
<td>24/16</td>
<td>7/16</td>
<td>30</td>
</tr>
<tr>
<td>32/16</td>
<td>15/32, 1/2</td>
<td>28</td>
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<tr>
<td>40/20</td>
<td>19/32, 5/8</td>
<td>30</td>
</tr>
<tr>
<td>48/24</td>
<td>23/32, 3/4</td>
<td>38</td>
</tr>
</tbody>
</table>

### Fastening Schedule

- **Number and Type of Fastener**: 4-8d box (2-1/2" x 0.113")
- **Spacing and Location**: Toe nail
- **Number and Type of Fastener**: 4-10d box (3" x 0.128")
- **Spacing and Location**: Face nail
- **Number and Type of Fastener**: 3-16d box (3-1/2" x 0.135")
  - **Spacing and Location**: Toe nail on one side and 1 toe nail on opposite side of each rafter or truss.
- **Number and Type of Fastener**: 4-16d box (3-1/2" x 0.135")
  - **Spacing and Location**: Toe nail
- **Number and Type of Fastener**: 3-16d box (3-1/2" x 0.135")
  - **Spacing and Location**: End nail
- **Number and Type of Fastener**: 16d common (3-1/2" x 0.162")
  - **Spacing and Location**: 24" o.c. face nail
- **Number and Type of Fastener**: 16d common (3-1/2" x 0.162")
  - **Spacing and Location**: 12" o.c. face
- **Number and Type of Fastener**: 16d common (3-1/2" x 0.162")
  - **Spacing and Location**: 16" o.c. each edge face nail
- **Number and Type of Fastener**: 8-16d common (3-1/2" x 0.162")
  - **Spacing and Location**: Face nail on each side of end joint (minimum 24" lap splice length each side of end joint)
- **Number and Type of Fastener**: 8-16d common (3-1/2" x 0.162")
  - **Spacing and Location**: 8-16d common (3-1/2" x 0.162")
  - **Spacing and Location**: 3 each 16" o.c. face nail
- **Number and Type of Fastener**: 8-16d box (3-1/2" x 0.135")
  - **Spacing and Location**: Toe nail
- **Number and Type of Fastener**: 3-16d box (3-1/2" x 0.135")
  - **Spacing and Location**: End nail
- **Number and Type of Fastener**: 3-10d box (3" x 0.128")
  - **Spacing and Location**: Face nail
- **Number and Type of Fastener**: 4-8d box (2-1/2" x 0.113")
  - **Spacing and Location**: Toe nail
- **Number and Type of Fastener**: 8d common (2-1/2" x 0.131")
  - **Spacing and Location**: 6" o.c. toe nail
- **Number and Type of Fastener**: 20d common (4" x 0.192")
  - **Spacing and Location**: Nail each layer as follows: 32" o.c. at top and bottom and staggered.
- **Number and Type of Fastener**: 4-16d box (3-1/2" x 0.135")
  - **Spacing and Location**: At each joist or rafter, face nail
NOTES:
1. BRACED WALL LINES AT EXTERIOR WALLS SHALL HAVE A BRACED WALL PANEL LOCATED AT EACH END OF THE BRACED WALL LINE.
   **EXCEPTION:** FOR METHOD WSP, THE BRACED WALL PANEL SHALL BE PERMITTED TO BEGIN NO MORE THAN 10 FEET FROM EACH END OF THE BRACED WALL LINE PROVIDED:
   - H (HEIGHT OF PANEL) 10’ MAX.
   - NO PENETRATIONS PERMITTED IN BRACED WALL PANELS

2. MIXING BRACING METHODS WITHIN A BRACED WALL LINE IS NOT PERMITTED.

### INTERMITTENT BRACING METHODS BASED ON SEISMIC DESIGN CATEGORY (AS A FUNCTION OF BRACED WALL LINE LENGTH)

<table>
<thead>
<tr>
<th>ROOF/CEILING DEAD LOAD ≤ 15 PSF</th>
<th>WALL HEIGHT ≤ 10 FT</th>
<th>FLOOR DEAD LOAD = 10 PSF</th>
<th>BRACED WALL LINE SPACING ≤ 25 FT</th>
<th>SOIL CLASS = D</th>
<th>MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEISMIC DESIGN CATEGORY (SDC)</td>
<td>STORY LOCATION</td>
<td>BRACED WALL LINE LENGTH</td>
<td>METHODS GB&lt;sup&gt;b&lt;/sup&gt; AND PCP&lt;sup&gt;c&lt;/sup&gt;</td>
<td>METHOD WSP&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>SDC D&lt;sub&gt;1&lt;/sub&gt; OR D&lt;sub&gt;2&lt;/sub&gt;</td>
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<tr>
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<td>32</td>
<td>10</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>40</td>
<td>12.5</td>
<td></td>
</tr>
</tbody>
</table>

FOR SI: 1 foot = 304.8 mm, 1 pound per square foot = 47.89 Pa.

a. Based on Table R602.10.3(3) of the 2017 County of Los Angeles Residential Code.
b. Method GB (Gypsum Board) = 1/2” minimum thickness gypsum board with 1-1/2” galvanized roofing nail or 1-1/4” screws, Type W or S for exterior sheathing, or 5d cooler nails, 0.086” diameter, 1-5/8” long, 15/64” head for interior sheathing. Maximum spacing of fasteners shall be at 7” o.c. at panel edges, including top and bottom plates. When Method GB panels are applied to only one face of a braced wall panel, the minimum total length of braced wall panel in the Table shall be doubled.
c. Method PCP (Portland Cement Plaster) = 7/8” minimum thickness Portland cement plaster with 7/16” head nails at 6” spacing (for maximum 16” stud spacing only). Gypsum wall board (1/2” minimum thickness) shall be installed on the side of the wall opposite the bracing material, except if the minimum total length of braced wall panel in the Table is multiplied by a factor of 1.5.
d. Method WSP (Wood Structural Panel) = 15/32” minimum thickness wood structural panel with 8d common (2-1/2” x 0.131”) nails at 6” spacing (panel edge) at 12” spacing (intermediate supports), 3/8” edge distance to panel edge. Gypsum wall board (1/2” minimum thickness) shall be installed on the side of the wall opposite the bracing material, except if the minimum total length of braced wall panel in the Table is multiplied by a factor of 1.5.
e. Method GC and PCP braced wall panel h/w ratio shall not exceed 1:1.
f. Linear interpolation shall be permitted.
FOUNDATION SYSTEM ON EXPANSIVE SOIL FOR 1 OR 2 STORY R-3/ ACCESSORY U OCCUPANCIES

DOUBLE FLOOR JOIST UNDER PARALLEL PARTITION

INTERIOR BEARING WALL

EXTERIOR WALL

CONTINUOUS 2 #4 BARS, TOP AND BOTTOM

3" MIN. (TYP.)

18" MIN.

12" MIN.

12'/15" See Note 3.

16" SQUARE (SINGLE STORY)

18" MIN.

18" MIN.

18" MIN.

18" MIN.

18" MIN.

12" MIN.

12" MIN.

12" MIN.

12" MIN.

24" MIN.

24" MIN.

24" MIN.

CONTINUOUS 2 #4 BARS, WITHIN 4" OF TOP & BETWEEN 3" AND 4" OF BOTTOM

4" SLAB ON GRADE, REINFORCED WITH #4 @ 16" O.C. EACH WAY. SATURATE SOIL 18" DEEP PRIOR TO POURING SLAB

20" MIN.

#4 DOWELS @ 16" O.C. FOR TWO POUR TYP.

3" MIN. (TYP.)

8" MIN.

8" MIN.

20" MIN.

3" MIN. (TYP.)

12'/15" See Note 3.

12'/15" See Note 3.

12'/15" See Note 3.

NOTES:
1. SOLID BLOCKED CRIPPLE WALLS (IF USED), SHALL NOT EXCEED 14" IN HEIGHT WITHOUT ENGINEERING ANALYSIS.
2. PERIMETER WALLS, INTERIOR BEARING WALLS AND POSTS SUPPORTED ON CONTINUOUS FOUNDATIONS.
3. 12'/15" - MIN. FOOTING FOR SUPPORTING ONE AND TWO FLOORS RESPECTIVELY.
4. SHEAR TRANSFER DETAILS AND OTHER REQUIREMENTS NOT SHOWN FOR CLARITY.
SEISMIC STRAPS: TWO MIN. APPROVED SEISMIC STRAPS APPLIED PER MANUF. SPECS

T&P VALVE PIPED TO EXTERIOR 3/4" MIN. PIPE. NO THREADS ALLOWED IN BOTTOM PIPING.

NOTE: NO GAS-FIRED WATER HEATER ALLOWED IN BEDROOMS, BATHROOMS, CLOTHES CLOSETS, OR ANY SPACE OPENING INTO A BEDROOM OR BATHROOM.

VENT INSTALLATION PER MANUF. SPECIFICATION

LISTED GAS VENT
LISTED CAP

ROOF SLOPE: FLAT TO <6:12

VENT (PC509.6.2)

TRENCHES AT FOOTINGS

CONC. FOUND. WALL
FLOOR GIRDER
P.T. SILL

PIPE Ø +1" 1/2" MIN. CLEAR ON TOPS, SIDES AND ENDS
3" MIN. BEARING

SLEEVES REQUIRED AT PENETRATION OF FOOTING FOR ANY PIPES

EMERGENCY ESCAPE/ RESCUE OPENING (R310)

NOTE: SIZES ARE TAKEN FROM DATA SUPPLIED BY WINDOW MANUFACTURERS. HOWEVER, THESE ARE GENERAL DIMENSIONS AND MUST BE VERIFIED WITH ACTUAL WINDOWS INSTALLED TO MEET MINIMUM EGRESS REQUIREMENTS.

1. 20" MIN. CLEAR WIDTH
2. 24" MIN. CLEAR HEIGHT
3. 5.0 SF MIN. OPENABLE AREA AT GRADE-FLOOR ONLY, 5.7 SF MIN. ELSEWHERE.

MIN. SIZE WINDOW FOR 20" CLEAR WIDTH AND 5.0 S.F.
OPENABLE AREA

MIN. SIZE WINDOW FOR 24" CLEAR HEIGHT AND 5.0 S.F.
OPENABLE AREA

FLOOR LEVEL

SINGLE CASEMENT: 2-4 X 4-0, 2-6 X 3-6
DOUBLE CASEMENT: 4-8 X 4-0
CASEMENT/FIXED COMBO: 7-0 X 4-0
OTHER WINDOW TYPES: AWNING & BAY W/ FIXED CENTER: NONE W/O MANUF. DATA
SINGLE/DOUBLE HUNG: 3-0 X 5-0, 3-0 X 5-6, 3-4 X 5-0, 3-8 X 5-0, 4-0 X 5-0
SINGLE/FIXED COMBO: NONE W/O MANUF. DATA
SLIDER: 4-0 X 4-0, 5-0 X 3-6, 6-0 X 3-0
SLIDER/FIXED COMBO: 8-0 X 4-0, 10-0 X 4-0, 12-0 X 3-0

NOTE: NO SURCHARGE ALLOWED ON SEWER PIPE
RESIDENTIAL REQUIREMENTS:

NOTES:
1. AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION R313.3 OR NFPA 13D FOR A NEW ONE- AND TWO-FAMILY DWELLING. (R313)
2. CARBON MONOXIDE (CMA) AND SMOKE ALARMS (SA) ARE REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS WHERE A PERMIT VALUATION EXCEEDS $1,000 (R314 & R315):
   A. CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN EXISTING DWELLINGS OR SLEEPING UNITS THAT HAVE ATTACHED GARAGES OR FUEL-BURNING APPLIANCES. LOCATE SUCH ALARMS OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S).
   B. SMOKE ALARMS SHALL BE INSTALLED IN EACH SLEEPING ROOM AND OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S).
   C. NEW CONSTRUCTION - 120V WITH BATTERY BACKUP AND INTERCONNECTED.
   D. EXISTING CONSTRUCTION MAY BE OPERATED.
   E. GARAGE FLOOR SURFACE SHALL BE OF APPROVED NON-COMBUSTIBLE MATERIAL. (R309)
   F. DUCTS PENETRATING WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MIN. 26 GAGE SHEET STEEL OR APPROVED MATERIAL. (R302.5)
   G. EVERY INTERIOR DOOR IN A DOORWAY THROUGH WHICH OCCUPANTS PASS SHALL HAVE A MINIMUM WIDTH OF 32".

MINIMUM ROOM DIMENSIONS: (R304 & R305)
1. HABITABLE ROOMS SHALL HAVE A FLOOR AREA OF NOT LESS THAN 70 SF.
2. HABITABLE ROOMS SHALL NOT BE LESS THAN 7 FT. IN ANY HORIZONTAL DIMENSION.
3. HABITABLE SPACE AND HALLWAYS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FT.
4. BATHROOMS, TOILET ROOMS, AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6'-8".
5. LIGHTING: (R303)
   A. ALL ROOMS REQUIRE NATURAL LIGHT BY MEANS OF EXTERIOR WINDOWS OR SKYLIGHTS MIN. 8% OF THE FLOOR AREA OF THE ROOM.
   B. VENTILATION: (R303)
   C. ALL ROOMS REQUIRE NATURAL VENTILATION BY MEANS OF OPENABLE WINDOWS MIN. 4% OF THE FLOOR AREA OF THE ROOM.
   D. IF LESS THAN 60" ABOVE STANDING SURFACE (R308.4), WINDOWS AT SHOWERS & TUBS SHALL BE TEMPERED.
   E. SHOWER DOORS SHALL SWING OUT.
   F. NET AREA OF SHOWER RECEPTOR SHALL BE MIN. 30 IN. Ø CIRCLE (PC 408.6)
   G. 6" HIGH NONABSORBENT SURFACE AT SHOWER WALLS (R307.2)

CARBON MONOXIDE (CMA) AND SMOKE ALARMS (SA) ARE REQUIRED:
A. CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN EXISTING DWELLINGS OR SLEEPING UNITS THAT HAVE ATTACHED GARAGES OR FUEL-BURNING APPLIANCES. LOCATE SUCH ALARMS OUTSIDE OF EACH SEPARATE DWELLING UNIT SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S).
B. SMOKE ALARMS SHALL BE INSTALLED IN EACH SLEEPING ROOM AND OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOM(S).
C. NEW CONSTRUCTION - 120V WITH BATTERY BACKUP AND INTERCONNECTED.
D. EXISTING CONSTRUCTION MAY BE OPERATED.
E. GARAGE FLOOR SURFACE SHALL BE OF APPROVED NON-COMBUSTIBLE MATERIAL. (R309)
F. DUCTS PENETRATING WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MIN. 26 GAGE SHEET STEEL OR APPROVED MATERIAL. (R302.5)
G. EVERY INTERIOR DOOR IN A DOORWAY THROUGH WHICH OCCUPANTS PASS SHALL HAVE A MINIMUM WIDTH OF 32".

UNDER-FLOOR AND ROOF VENTILATION (R408 & R806)
1. UNDER-FLOOR SPACES SHALL BE VENTILATED BY OPENINGS INTO THE UNDER-FLOOR SPACE EXTERIOR WALLS. SUCH OPENINGS SHALL HAVE A NET AREA OF NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER-FLOOR SPACE. ONE VENTILATION OPENING SHALL BE LOCATED WITHIN 3-FT OF EACH CORNER OF THE BUILDING AND PROVIDE CROSS VENTILATION. VENTILATION OPENINGS SHALL BE COVERED WITH CORROSION RESISTANT MESH W/ LEAST DIMENSION NOT EXCEEDING 1/4".
2. THE NET FREE VENTILATING AREA OF ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE VENTILATED. EXCEPT THAT REDUCTION OF TOTAL THE AREA TO 1/300 IS PERMITTED PROVIDED THAT AT LEAST 50% AND NOT MORE THAN 80% OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3- FEET ABOVE THE AVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION PROVIDED BY EAVE OR CORNICE VENTS. AS AN ALTERNATIVE, THE NEW FREE CROSS-VENTILATION AREA MAY BE REDUCED TO 1/300 WHEN A CLASS I OR CLASS II VAPOR BARRIER IS INSTALLED ON THE WARM-IN-WINTER SIDE OF THE CEILING. A MINIMUM OF 1-INCH CLEARANCE SHALL BE PROVIDED BETWEEN THE INSULATION AND ROOF SHEATHING.