



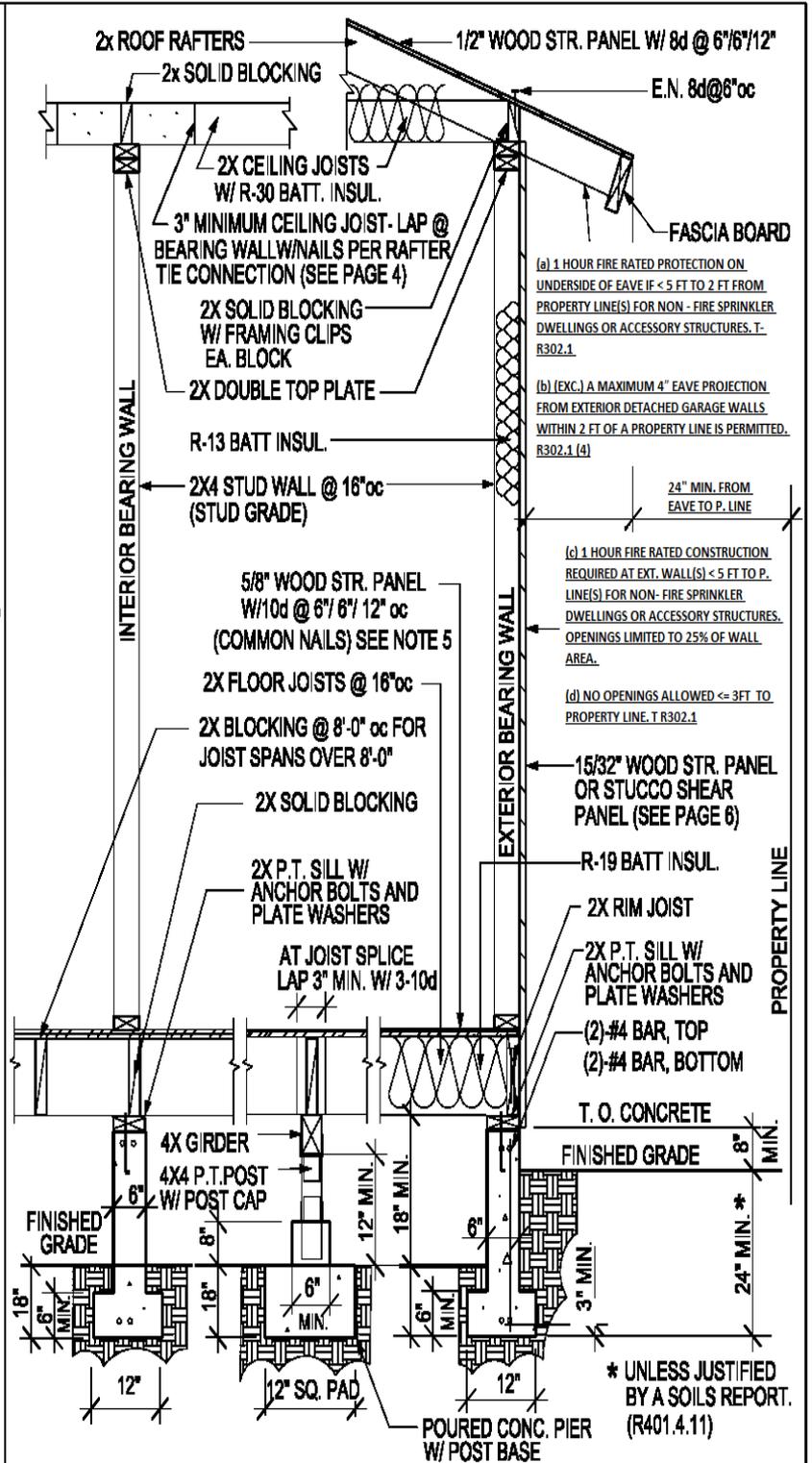
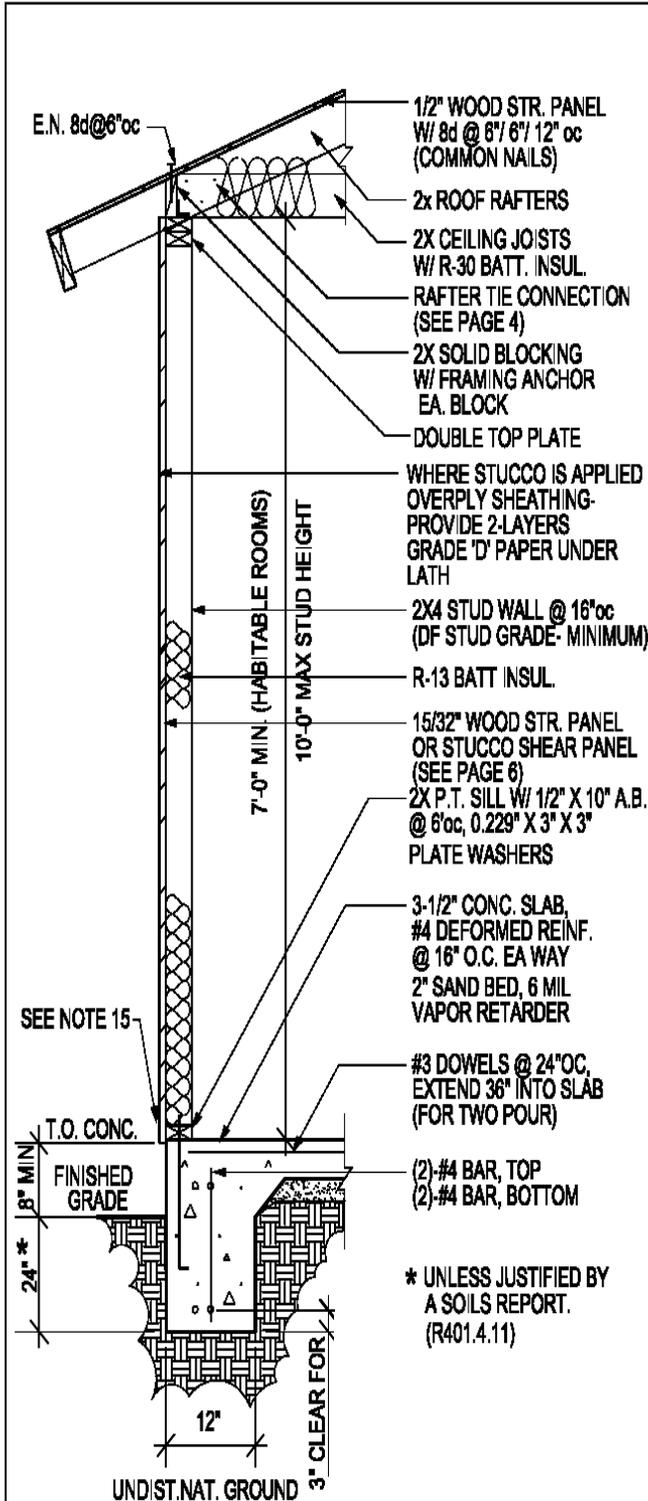
Building and Safety Division

125 E. College Street, Covina, CA 91723
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Information Bulletin:

17

RESIDENTIAL PRESCRIPTIVE WOOD FRAME PROVISION



WALL SECTION: SLAB-ON-GRADE CONSTRUCTION

WALL SECTION: RAISED FLOOR CONSTRUCTION

ALLOWABLE SPANS FOR DF #2 ROOF RAFTERS (DF - LARCH) Light Dead Load: up to 15 psf (Total including roof) Max. Roofing Load: 6 psf (Asphalt Shingles) Live Load: 20 psf L/Δ = 240			ALLOWABLE SPANS FOR DF #2 CEILING JOISTS (DF - LARCH) Dead Load: 10 psf Live Load : 20 psf L/Δ = 240 (T-R802.4(2))			ALLOWABLE SPANS FOR DF #2 FLOOR JOISTS (DF - LARCH) Light Dead Load : 10 psf Live Load : 40 psf L/Δ = 360 (T-R502.3(2))		
RAFTER SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN
2 X 6	24"	10' - 9"	2 X 4	24"	7' - 2"	2 X 6	24"	8' - 1"
	16"	13' - 0"		16"	8' - 9"		16"	9' - 9"
	12"	14' - 9"		12"	9' - 10"		12"	10' - 9"
2 X 8	24"	13' - 6"	2 X 6	24"	10' - 6"	2 X 8	24"	10' - 3"
	16"	16' - 7"		16"	12' - 10"		16"	12' - 7"
	12"	18' - 11"		12"	14' - 10"		12"	14' - 2"
2 X 10	24"	18' - 6"	2 X 8	24"	13' - 3"	2 X 10	24"	12' - 7"
	16"	20' - 3"		16"	16' - 3"		16"	15' - 5"
	12"	23' - 5"		12"	18' - 9"		12"	17' - 9"
2 X 12	24"	19' - 2"	2 X 10	24"	16' - 3"	2 X 12	24"	14' - 7"
	16"	23' - 6"		16"	19' - 10"		16"	17' - 10"
	12"	25' - 10"		12"	22' - 11"		12"	20' - 7"

ALLOWABLE SPANS FOR DF #2 HEADERS FOR EXTERIOR BEARING WALLS Max. Roof/ Ceiling Dead Load: 25 psf Max. Live Load: 20 psf (T-R502.5(1))							ALLOWABLE SPANS FOR DF #2 HEADERS FOR EXTERIOR BEARING WALLS Max. Roof/ Ceiling Dead Load: 25 psf Max. Live Load: 40 psf (Roof/ Limited Storage Attic) (T-R502.5(1))					
SIZE	20-ft. Building Width	NJ	28-ft. Building Width	NJ	36-ft. Building Width	NJ	20-ft. Building Width	NJ	28-ft. Building Width	NJ	36-ft. Building Width	NJ
2-2 X 6	5'-5"	1	4'-8"	1	4'-2"	1	4'-6"	1	4'-0"	1	3'-7"	2
2-2 X 8	6'-10"	1	5'-11"	2	5'-4"	2	5'-9"	2	5'-0"	2	4'-6"	2
2-2 X 10	8'-5"	2	7'-3"	2	6'-6"	2	7'-0"	2	6'-2"	2	5'-6"	2
2-2 X 12	9'-9"	2	8'-5"	2	7'-6"	2	8'-1"	2	7'-1"	2	6'-5"	2
3-2 X 8	8'-4"	1	7'-5"	1	6'-8"	1	7'-2"	1	6'-3"	2	5'-8"	2
3-2 X 10	10'-6"	1	9'-1"	2	8'-2"	2	8'-9"	2	7'-8"	2	6'-11"	2
3-2 X 12	12'-2"	2	10'-7"	2	9'-5"	2	10'-2"	2	8'-11"	2	8'-0"	2

- a. Building width is perpendicular to ridge measured to exterior wall.
b. NJ - Number of Jack Studs required to support each end of header.

ALLOWABLE SPANS FOR DF #2 HEADERS FOR INTERIOR BEARING WALLS Max. Roof/ Ceiling Dead Load: 25 psf Max. Live Load: 20 psf (T-R502.5(2))							ALLOWABLE SPANS FOR DF #2 HEADERS FOR INTERIOR BEARING WALLS Max. Roof/ Ceiling Dead Load: 25 psf Max. Live Load: 40 psf (Roof/ Limited Storage Attic) (T-R502.5(2))					
SIZE	20-ft. Building Width	NJ	28-ft. Building Width	NJ	36-ft. Building Width	NJ	20-ft. Building Width	NJ	28-ft. Building Width	NJ	36-ft. Building Width	NJ
2-2 X 6	4'-6"	1	3'-11"	1	3'-6"	1	3'-2"	2	2'-9"	2	2'-5"	2
2-2 X 8	5'-9"	1	5'-0"	2	4'-5"	2	4'-1"	2	3'-6"	2	3'-2"	2
2-2 X 10	7'-0"	2	6'-1"	2	5'-5"	2	4'-11"	2	4'-3"	2	3'-10"	3
2-2 X 12	8'-1"	2	7'-0"	2	6'-3"	2	5'-9"	2	5'-0"	3	4'-5"	3
3-2 X 8	7'-2"	2	6'-3"	2	5'-7"	2	5'-1"	2	4'-5"	2	3'-11"	2
3-2 X 10	8'-9"	2	7'-7"	2	6'-9"	2	6'-2"	2	5'-4"	2	4'-10"	2
3-2 X 12	10'-2"	2	8'-10"	2	7'-10"	2	7'-2"	2	6'-3"	2	5'-7"	3

- a. Building width is perpendicular to ridge measured to exterior wall.
b. NJ - Number of Jack Studs required to support each end of header.

ALLOWABLE SPANS FOR DF #2 FLOOR GIRDERS SUPPORTING ONE FLOOR ONLY Max. Floor Dead Load: 15 psf ^{1,2}			
SIZE	20-ft Building Width	28-ft Building Width	36-ft Building Width
2-2X8	4'-6"	3'-11"	3'-6"
2-2X8	5'-9"	5'-0"	4'-5"
2-2X10	7'-0"	6'-1"	5'-5"
2-2X12	8'-1"	7'-0"	6'-3"
3-2X8	7'-2"	6'-3"	5'-7"
3-2X10	8'-9"	7'-7"	6'-9"
3-2X12	10'-2"	8'-10"	7'-10" ³

1. Building width is perpendicular to ridge measured to exterior walls.
2. Minimum 4x post.
3. Minimum 4x 6 post for 36 ft. building width and 3-2x12 member.

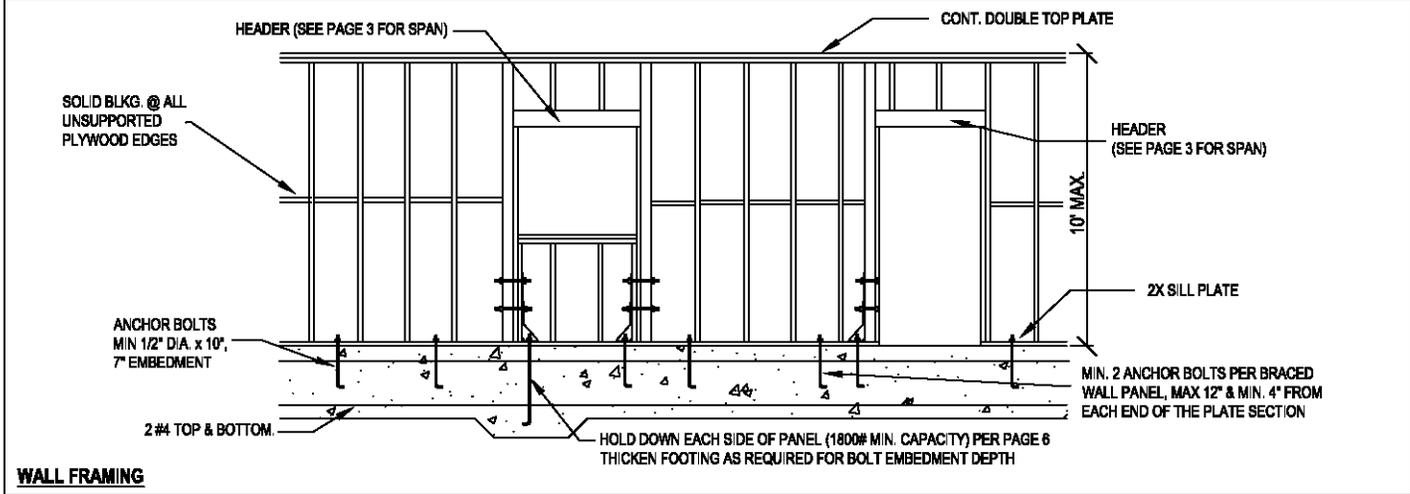
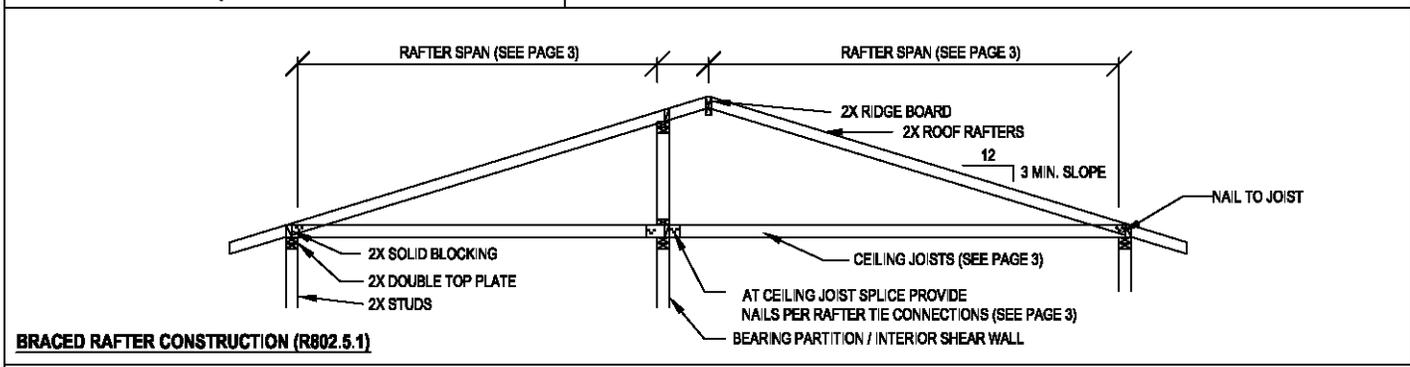
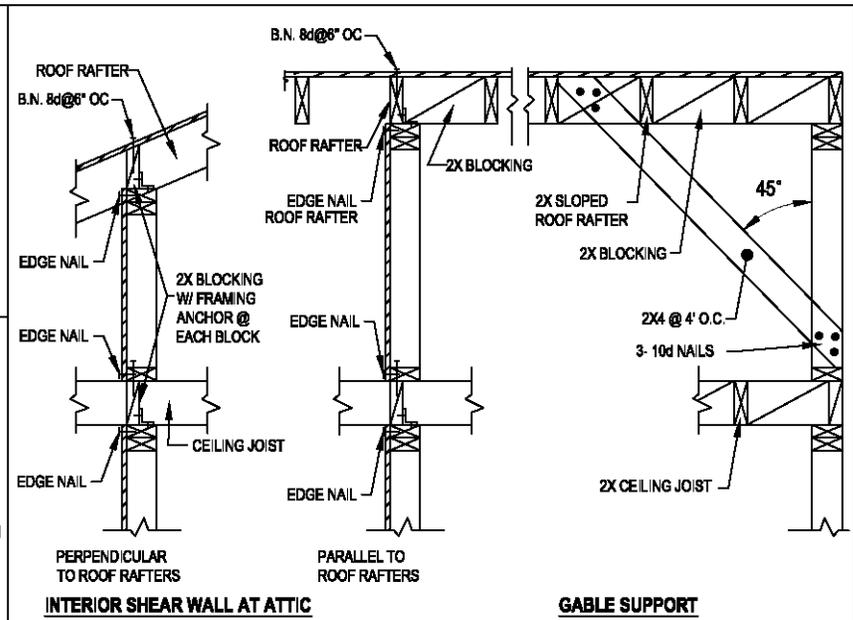
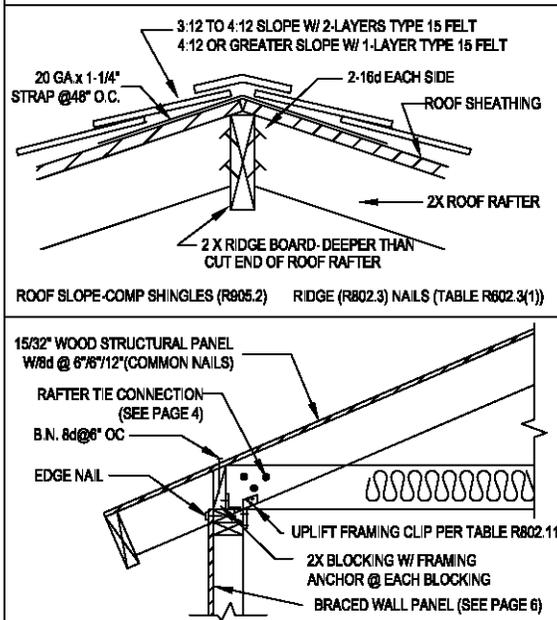
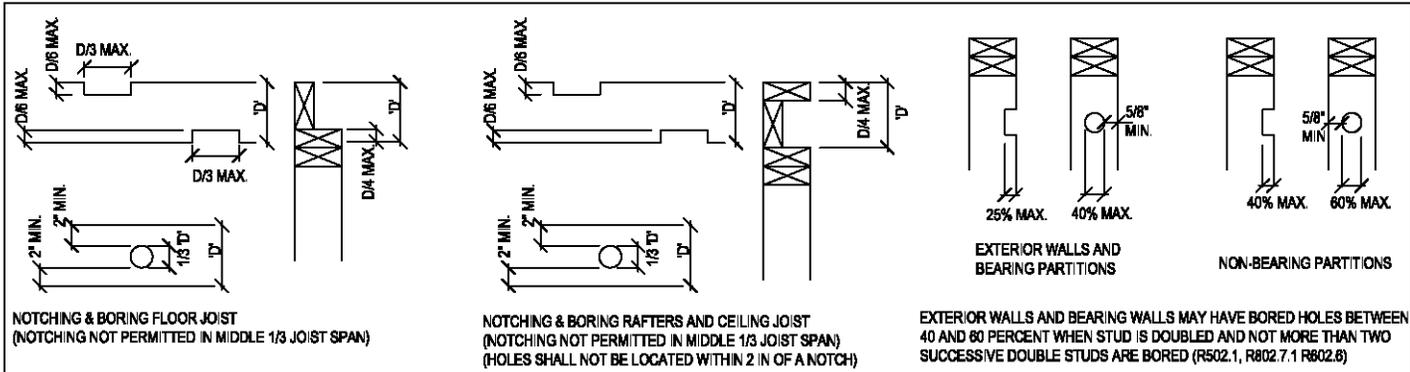
RAFTER TIE CONNECTION ROOF LIVE LOAD 20 psf [Table R802.5.1 (9)]					
Minimum number of 16d common nails at rafter tie connection					
Rafter Slope	Tie Spacing (in)	Roof Span (ft.)			
		12	20	28	36
3 : 12	16	5	8	10	13
	24	7	11	15	19
4 : 12	16	4	6	8	10
	24	5	8	12	15
5 : 12	16	3	5	6	8
	24	4	7	9	12

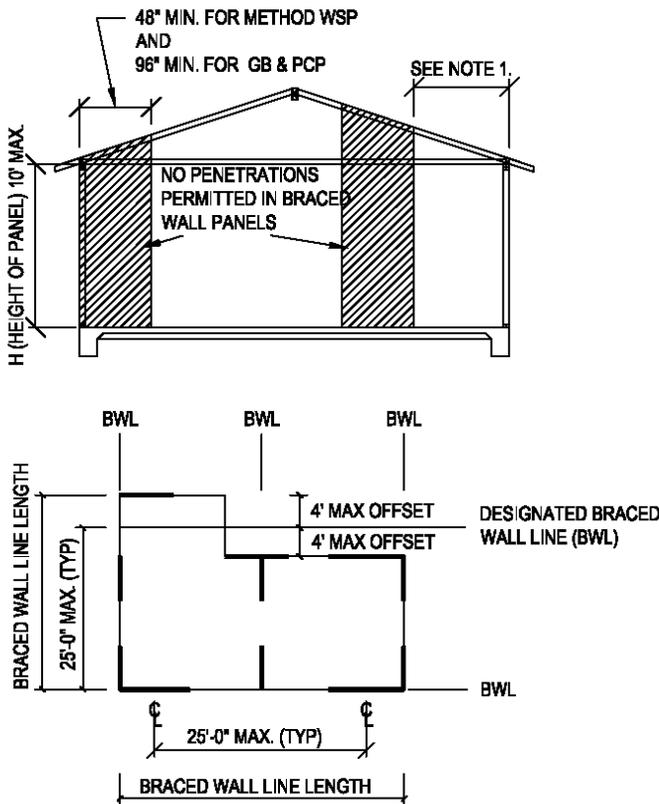
1. When nails are clinched, nailing may be reduced 25 percent.

ALLOWABLE SPANS AND LOADS FOR WOOD STRUCTURAL PANEL SHEATHING AND SINGLE-FLOOR GRADES CONTINUOUS OVER TWO OR MORE SPANS WITH STRENGTH AXIS PERPENDICULAR TO SUPPORTS NOTE : APPLIES TO PANELS 24" OR WIDER

SHEATHING GRADES		ROOF				FLOOR
PANEL SPAN RATING Roof/ Floor Span	MINIMUM PANEL THICKNESS (INCHES)	MAXIMUM SPAN (INCHES)		LOADS (PSF)		MAX. SPAN (INCHES) Panel edges with tongue and groove joints or with blocking
		EDGE SUPPORT	NO EDGE SUPPORT	TOTAL LOAD	LIVE LOAD	
24/ 0	3/ 8	24	20	40	30	
24/ 16	7/ 16	24	24	50	40	16
32/ 16	15/ 32, 1/ 2	32	28	40	30	16
40/ 20	19/ 32, 5/ 8	40	32	40	30	20
48/ 24	23/ 32, 3/ 4	48	36	45	35	24

CONNECTION	FASTENING	REMARKS
ROOF		
Blocking between joists or rafters to top plate	3-8d (2-1/2" x 0.113")	Toe nail
Ceiling joist to plate	3-8d (2-1/2" x 0.113")	Toe nail
Ceiling joist not attached to parallel rafter, laps over partitions	3-10d (3" x 0.128")	Toe nail
Collar tie rafter, face nail or 20-gage ridge strap	3-10d (3" x 0.128")	
Rafter to Plate	2-16d (3-1/2" x 0.135")	Toe nail
Roof rafters to ridge, valley or hip rafters:		
Toe nail	4-16d (3-1/2" x 0.135")	
Face nail	3-16d (3-1/2" x 0.135")	
WALL		
Built-up corner studs	10d (3" x 0.128")	24" o.c.
Built-up header two pieces with 1/2" spacer	16d (3-1/2" x 0.135")	16" o.c. along each edge
Continued Header two pieces	16d (3-1/2" x 0.135")	16" o.c. along each edge
Continuous header to stud	4-8d (2-1/2" x 0.113")	Toe nail
Double studs	10d (3" x 0.128")	24" o.c.
Double top plates	10d (3" x 0.128")	24" o.c. Face nail
Double top plates, minimum 24-inch offset of end joints, face nail in lapped area	8-16d (3-1/2" x 0.135")	Face nail
Sole plate to joist or blocking	16d (3-1/2" x 0.135")	16" o.c. Face nail
Sole plate to joist or blocking at braced wall panels	3-16d (3-1/2" x 0.135")	16" o.c.
Stud to sole plate	3-8d (2-1/2" x 0.113") or 2-16d (3-1/2" x 0.135")	Toe nail
Top or sole plate to stud	2-16d (3-1/2" x 0.135")	End nail
Top plates, lap at corners and intersection	2-10d (3" x 0.128")	Face nail
FLOOR		
Joist to sill or girder	3-8d (2-1/2" x 0.113")	Toe nail
Rim joist to top plate (roof application also)	8d (2-1/2" x 0.113")	6" o.c.
Built up girders and beams, 2-inch lumber layers	10d (3" x 0.128")	Nail each layer as follows: 32" o.c. at top and bottoms and staggered. Two nails at ends and at each splice.
Ledger strip supporting joists or rafters	3-16d (3-1/2" x 0.135")	At each joist or rafter

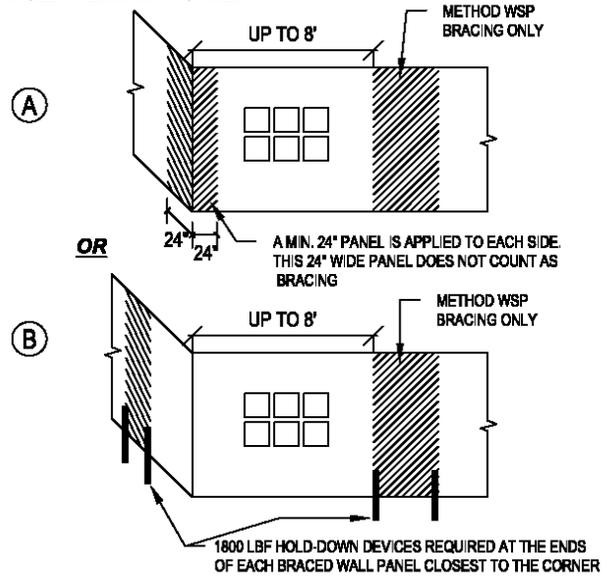




BRACED WALL PANEL REQUIREMENTS

NOTES:

- 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 8 FEET FROM EACH END OF THE BRACED WALL LINE PROVIDED:



- MIXING BRACING METHODS WITHIN A BRACED WALL LINE IS NOT PERMITTED.
- INTERIOR BRACE WALL PANEL SHALL BE LOCATED NOT MORE THAN 12.5-FT FROM THE END OF A BRACED WALL LINE AND THE TOTAL COMBINED DISTANCE FROM EACH END SHALL NOT EXCEED 12.5 FT AS DEMONSTRATED IN FIGURE R802.10.1.4(2) OF THE CRC.
- HOLD-DOWN DEVICE SHALL BE APPROVED BY CURRENT LOS ANGELES CITY RESEARCH REPORT OR A NATIONALLY RECOGNIZED AGENCY REPORT W/ 25% CAPACITY REDUCTION.

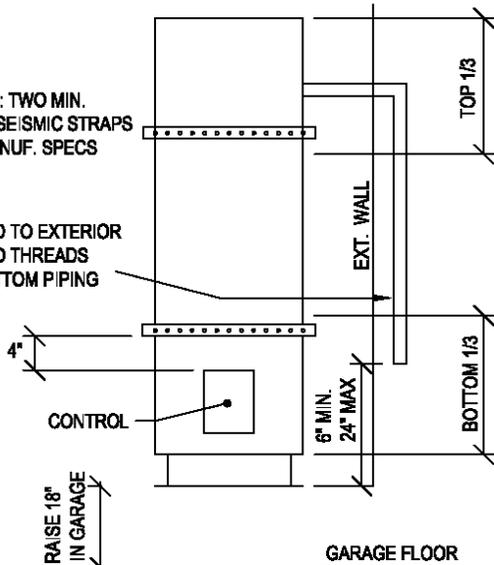
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

Roof/ Ceiling Dead Load = 15-psf Wall Height = 10-ft Floor Dead Load = 10-psf Braced Wall Line Spacing = 25-ft.			Minimum Total Length of Braced Wall Panels Required Along each Braced Wall Line (ft.)	
Seismic Design Category (SDC)	Story Location	Braced Wall Line Length	Method GB ^{a,d} and PCP ^{b,d}	Method WSP ^c
SDC D ₂		10	8	4
		20	16	5
		30	24	7.5
		40	32	10
		50	40	12.5

- Method GB** : $\frac{1}{2}$ inch minimum thickness gypsum board with 1-1/2 inch galvanized roofing nail, or 1-1/4 inch screws, Type W or S for exterior sheathing, or 5d cooler nail, 0.086 inch diameter, 1-5/8 inch head for interior gypsum board. Maximum fastener spacing shall be 7 inch o.c. at panel edges, including top and bottom plates, and along intermediate supports. When method GB panels are applied to only one face of a braced wall panel, the minimum total length in the table shall be doubled.
- Method PCP** : $\frac{7}{8}$ inch minimum thickness Portland cement plaster with 1-1/2 inch, 11-gage, $\frac{7}{8}$ inch head nails at 6 inch spacing (16 inch stud spacing required). $\frac{1}{2}$ inch minimum gypsum wallboard shall be installed on the side of the wall opposite the bracing material, except when the minimum total length of braced wall panel in the Table is multiplied by a factor of 1.5.
- Method WSP** : $\frac{15}{32}$ inch minimum thickness wood structural panel with 8d common (2-1/2 inch x 0.131 inch) nails at 6 inch spacing along panel edges, 12 inch spacing at intermediate supports, and $\frac{3}{8}$ inch distance to panel edge. $\frac{1}{2}$ inch minimum gypsum wall board shall be installed on the side of the wall opposite the bracing material, except when the minimum total length of braced wall panel in the Table is multiplied by a factor of 1.5.
- Method GB and PCP braced wall panel height to width ratio (h/w) shall not exceed 1:1.
- Multiply required braced wall panel lengths specified in the Table by 1.32 when combined Roof Ceiling Dead Load is between 15 psf and 25 psf.

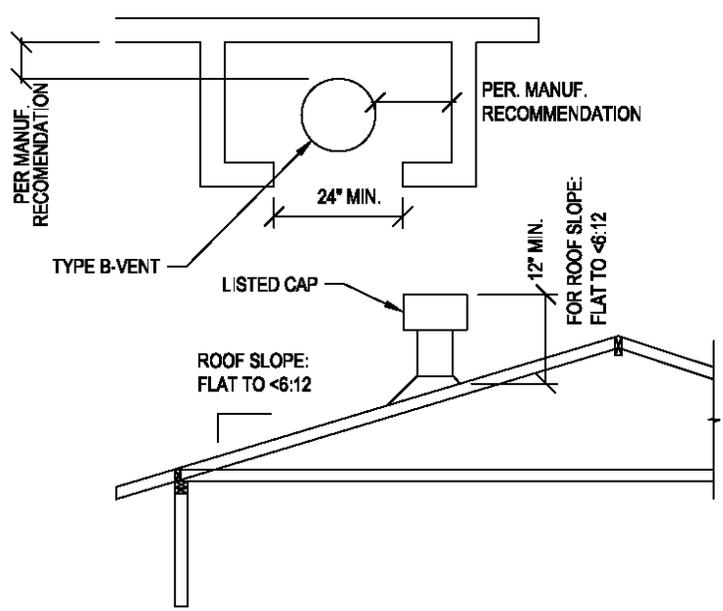
SEISMIC STRAPS: TWO MIN.
DSA APPROVED SEISMIC STRAPS
APPLIED PER MANUF. SPECS

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

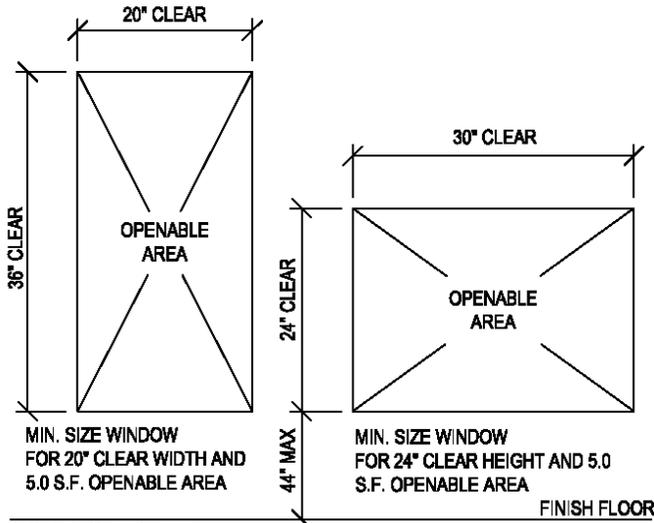


NOTE: NO GAS-FIRED WATER HEATER ALLOWED IN BEDROOMS, BATHROOMS,
CLOTHES CLOSETS, OR ANY SPACE OPENING INTO A BEDROOM OR BATHROOM.

WATER HEATERS (CPC 508)

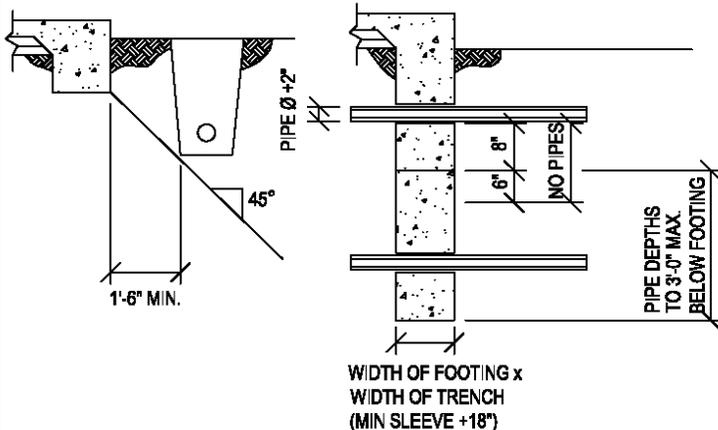


WATER HEATER VENT AND ACCESS REQUIREMENTS



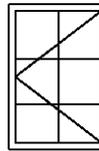
1. 20" MIN. CLEAR WIDTH
2. 24" MIN. CLEAR HEIGHT
3. 5.0 SF MIN. OPENABLE AREA AT GRADE-FLOOR ONLY, 5.7 SF MIN. ELSEWHERE.

EMERGENCY ESCAPE/ RESCUE OPENING (R310)

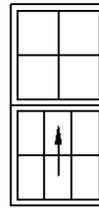


TRENCHES AT FOOTINGS

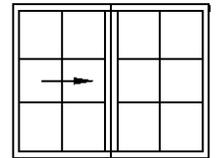
THE FOLLOWING WINDOW SIZES WILL BE THE MINIMUM ALLOWED FOR 5.0 SF.



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

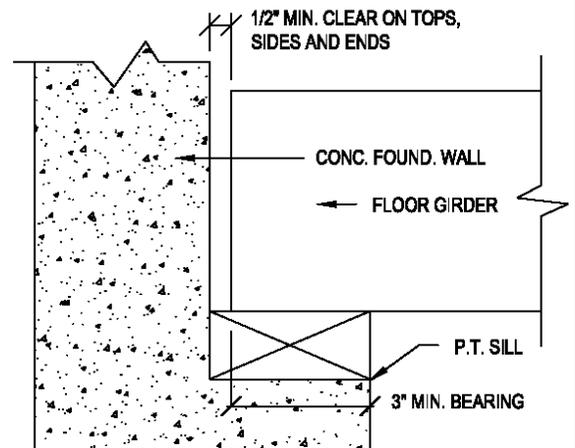


SINGLE/ DOUBLE HUNG:
3-0 X 5-0, 3-0 X 5-6, 3-4 X 5-0,
3-8 X 5-0, 4-0 X 5-0
SINGLE/ FIXED COMBO: NONE W/O
MANUF. DATA

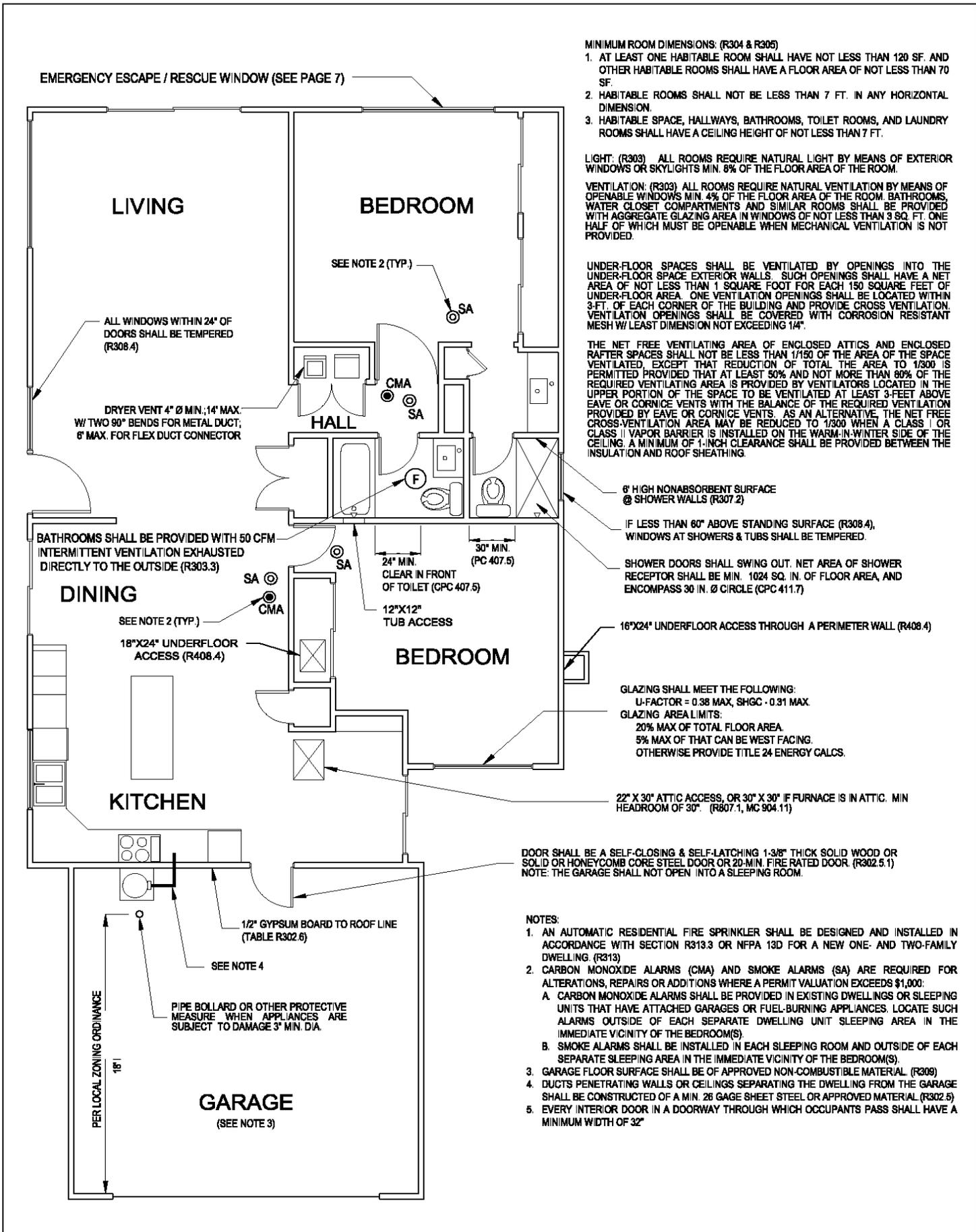


SLIDER:
4-0 X 4-0
5-0 X 3-6
6-0 X 3-0
SLIDER/ FIXED COMBO:
8-0 X 4-0
10-0 X 4-0
12-0 X 3-0

NOTE: 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.



GIRDER (R317.1 / R502.6)



EMERGENCY ESCAPE / RESCUE WINDOW (SEE PAGE 7)

LIVING

BEDROOM

SEE NOTE 2 (TYP.)

ALL WINDOWS WITHIN 24" OF DOORS SHALL BE TEMPERED (R308.4)

DRYER VENT 4" Ø MIN., 14" MAX. W/ TWO 90° BENDS FOR METAL DUCT; 6" MAX. FOR FLEX DUCT CONNECTOR

HALL

BATHROOMS SHALL BE PROVIDED WITH 50 CFM INTERMITTENT VENTILATION EXHAUSTED DIRECTLY TO THE OUTSIDE (R303.3)

DINING

SEE NOTE 2 (TYP.)

18"X24" UNDERFLOOR ACCESS (R408.4)

KITCHEN

SA

CMA

24" MIN. CLEAR IN FRONT OF TOILET (CPC 407.5)

12"X12" TUB ACCESS

BEDROOM

6' HIGH NONABSORBENT SURFACE @ SHOWER WALLS (R307.2)

IF LESS THAN 60" ABOVE STANDING SURFACE (R308.4), WINDOWS AT SHOWERS & TUBS SHALL BE TEMPERED.

SHOWER DOORS SHALL SWING OUT. NET AREA OF SHOWER RECEPTOR SHALL BE MIN. 1024 SQ. IN. OF FLOOR AREA, AND ENCOMPASS 30 IN. Ø CIRCLE (CPC 411.7)

16"X24" UNDERFLOOR ACCESS THROUGH A PERIMETER WALL (R408.4)

GLAZING SHALL MEET THE FOLLOWING:
U-FACTOR - 0.38 MAX, SHGC - 0.31 MAX

GLAZING AREA LIMITS:
20% MAX OF TOTAL FLOOR AREA.
5% MAX OF THAT CAN BE WEST FACING.
OTHERWISE PROVIDE TITLE 24 ENERGY CALCS.

22" X 30" ATTIC ACCESS, OR 30" X 30" IF FURNACE IS IN ATTIC. MIN HEADROOM OF 30". (R807.1, MC 904.11)

DOOR SHALL BE A SELF-CLOSING & SELF-LATCHING 1-3/8" THICK SOLID WOOD OR SOLID OR HONEYCOMB CORE STEEL DOOR OR 20-MIN. FIRE RATED DOOR. (R302.5.1)
NOTE: THE GARAGE SHALL NOT OPEN INTO A SLEEPING ROOM.

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. (R213)
2. CARBON MONOXIDE ALARMS (CMA) AND SMOKE ALARMS (SA) ARE REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS WHERE A PERMIT VALUATION EXCEEDS \$1,000.
 - 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).
3. GARAGE FLOOR SURFACE SHALL BE OF APPROVED NON-COMBUSTIBLE MATERIAL. (R309)
4. 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)
5. EVERY INTERIOR DOOR IN A DOORWAY THROUGH WHICH OCCUPANTS PASS SHALL HAVE A MINIMUM WIDTH OF 32"

PER LOCAL ZONING ORDINANCE
18'

GARAGE
(SEE NOTE 3)

PIPE BOLLARD OR OTHER PROTECTIVE MEASURE WHEN APPLIANCES ARE SUBJECT TO DAMAGE 3" MIN. DIA.

SEE NOTE 4

1/2" GYPSUM BOARD TO ROOF LINE (TABLE R302.6)

30" MIN. (PC 407.5)

12"X12" TUB ACCESS

BEDROOM

6' HIGH NONABSORBENT SURFACE @ SHOWER WALLS (R307.2)

IF LESS THAN 60" ABOVE STANDING SURFACE (R308.4), WINDOWS AT SHOWERS & TUBS SHALL BE TEMPERED.

SHOWER DOORS SHALL SWING OUT. NET AREA OF SHOWER RECEPTOR SHALL BE MIN. 1024 SQ. IN. OF FLOOR AREA, AND ENCOMPASS 30 IN. Ø CIRCLE (CPC 411.7)

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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. (R213)
2. CARBON MONOXIDE ALARMS (CMA) AND SMOKE ALARMS (SA) ARE REQUIRED FOR ALTERATIONS, REPAIRS OR ADDITIONS WHERE A PERMIT VALUATION EXCEEDS \$1,000.
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 - 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).
3. GARAGE FLOOR SURFACE SHALL BE OF APPROVED NON-COMBUSTIBLE MATERIAL. (R309)
4. 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)
5. EVERY INTERIOR DOOR IN A DOORWAY THROUGH WHICH OCCUPANTS PASS SHALL HAVE A MINIMUM WIDTH OF 32"