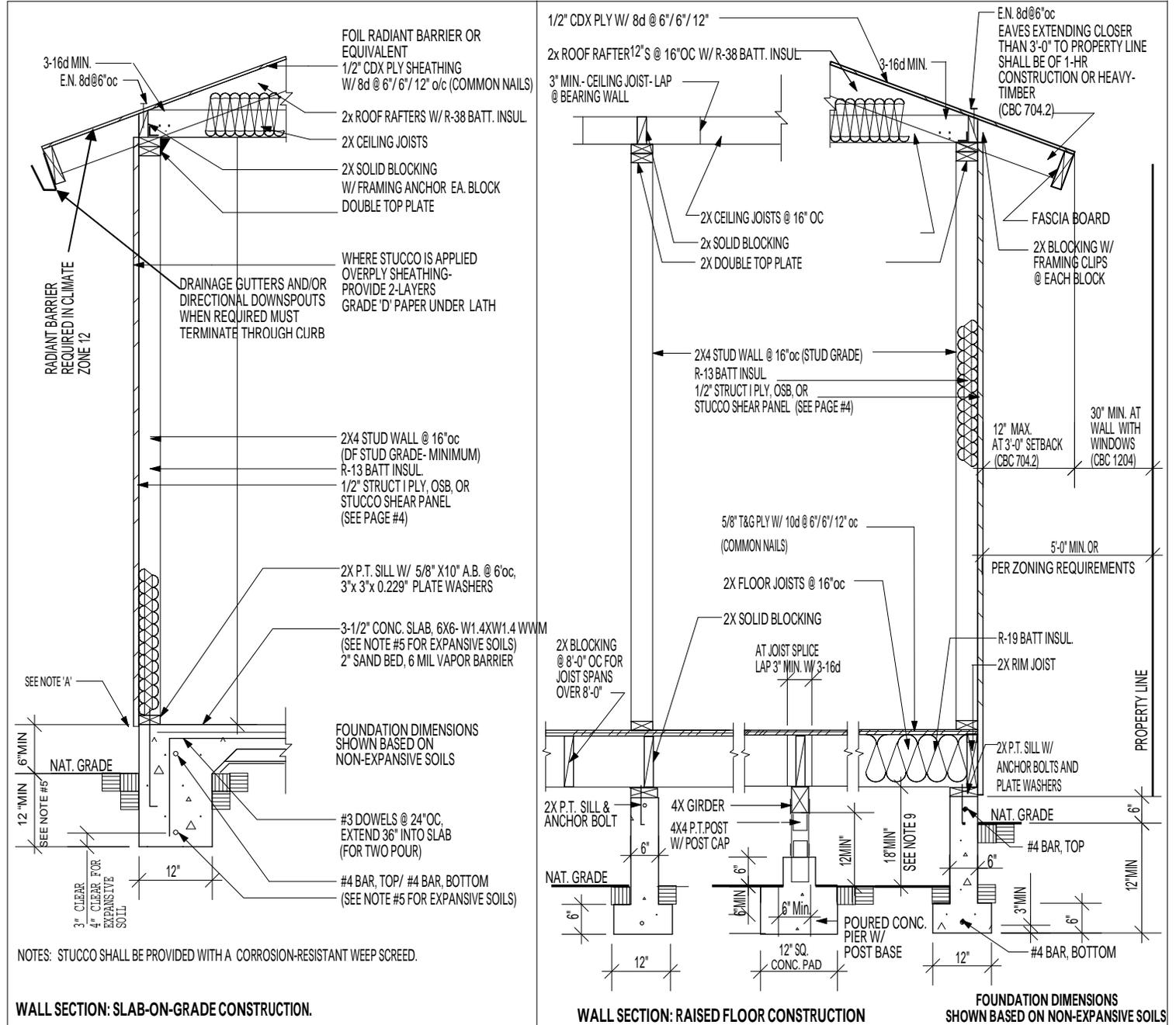




CITY OF SAN RAMON CONVENTIONAL CONSTRUCTION HANDOUT

TYPE V CONSTRUCTION- WOOD FRAME RESIDENTIAL BUILDINGS (CBC CHAPTER 23, DIV IV, SEC. 2308) ONE-STORY CONSTRUCTION

TYPE V CONSTRUCTION IS A CLASSIFICATION OF BUILDINGS BY CONSTRUCTION MATERIALS AND METHODS. IT IS THE LEAST RESTRICTIVE PERMITTED BY THE UNIFORM BUILDING CODE AND INCLUDES LIGHT, WOOD-FRAME CONSTRUCTION. THIS SHEET CAN BE USED IN LIEU OF SUBMITTED DETAILS IF APPROVED BY THE DESIGNER/OWNER OF RECORD. IT MUST ACCOMPANY OTHER DOCUMENTS AND/OR PLANS AS REQUIRED BY THE CITY OF SAN RAMON BUILDING AND SAFETY DIVISION.



ALLOWABLE SPANS FOR DF #2 ROOF RAFTERS (DF-LARCH) Light Dead Load (up to 15 psf) Max. Roofing Load: 6 psf (Asphalt Shingles) Live Load: 20 psf			ALLOWABLE SPANS FOR DF #2 CEILING JOISTS (DF-LARCH) Dead Load: 10 psf/ Live Load: 10 psf		
RAFTER SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN
			2x4	24" 16" 12"	9'-10" 11'-3" 12'-5"
2x6	24" 16" 12"	8'-8" 10'-8" 12'-4"	2x6"	24" 16" 12"	15'-6" 7'-8" 19'-6"
2x8	24" 16" 12"	11'-0" 13'-5" 15'-6"	2x8"	24" 16" 12"	20'-5" 23'-4" 25'-8"
2x10	24" 16" 12"	14'-0" 17'-2" 19'-10"	2x10	12"	26'-0"
2x12	24" 16" 12"	17'-0" 20'-10" 24'-1"			

ALLOWABLE SPANS FOR DF #2 FLOOR JOISTS (DF-LARCH) Light Dead Load (up to 10 psf) Max. Flooring Load: 1.5 psf (Carpet or Vinyl) Live Load: 40 psf			ALLOWABLE SPANS FOR DF #1 FLOOR GIRDERS (DF-LARCH) Max. Floor Dead Load: 15 psf Max. Tributary Width: 8'-0"			ALLOWABLE SPANS FOR DF#1 HEADERS (DF-LARCH) Maximum span of tributary load: 20'-0"	
JOIST SIZE	SPACING	ALLOWABLE SPAN	SPAN		GIRDER SIZE	SPAN	BEAM SIZE
			PARTITIONS	NO PARTITIONS			
						Up to 4'-0"	4x4
2x6	24" 16" 12"	8'-6" 9'-9" 10'-9"	5'-3"	5'-8"	4x6	4'-1" to 6'-0"	4x6
2x8	24" 16" 12"	11'-3" 12'-10" 14'-2"	6'-10"	7'-4"	4x8	6'-1" to 8'-0"	4x8
2x10	24" 16" 12"	14'-4" 16'-5" 17'-4"				8'-1" to 10'-0"	4x10
2x12	24" 16" 12"	17'-5" 19'-11" 21'-11"				10'-0" to 12'-0"	4x12*

* 4x12 DF No.1 may be used over a 16'-0" garage door in one-story garages without ceilings or open patio or carport structures.

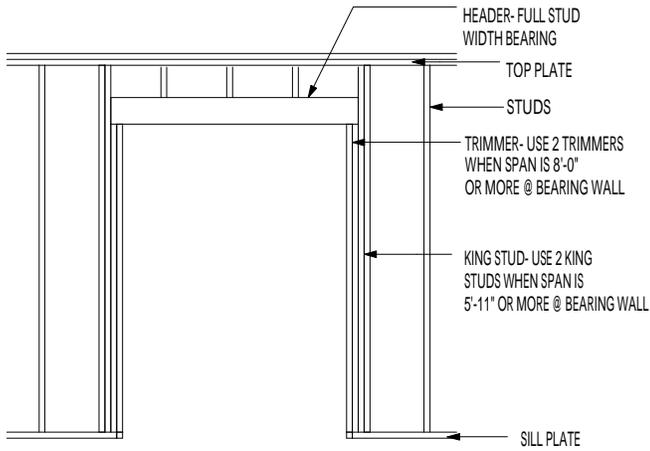
ALLOWABLE SPANS FOR PLYWOOD OR OSB FLOOR AND ROOF SHEATHING CONTINUOUS OVER TWO OR MORE SPANS-PERPENDICULAR TO SUPPORTS

NOTE: APPLIES TO PANELS 24" OR WIDER (CBC TABLE 2304.7.3)

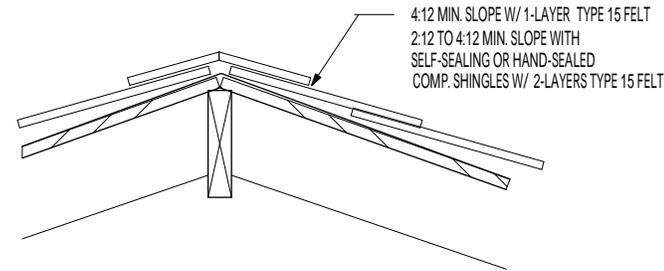
SHEATHING GRADES		ROOF				FLOOR
SPAN RATING	SPAN THICKNESS	MAX. SPAN (IN)		LOADS (PSF)		MAX. SPAN (IN)
Floor/Roof Span		EDGE SUPPORT (2X BLOCKING)	NO EDGE SUPPORT FOR 1/2" MAX. SPAN +24"	TOTAL LOAD	LIVE LOAD	Panel edges with tongue and groove joints or with blocking
24/0	7/16, 1/2	24	20	40	30	
24/16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

NAILING SCHEDULE (CBC TABLE 2304.9.1)

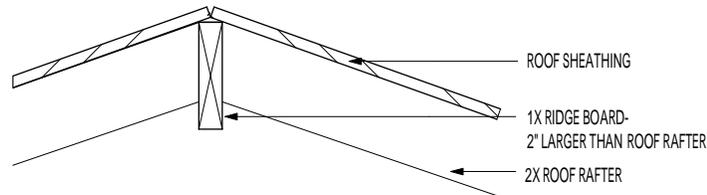
JOIST TO SILL OR GIRDER, TOE NAIL	3-8d
BRIDGING TO JOIST, TOENAIL EACH END	2-8d
SOLE PLATE TO JOIST OR BLOCKING, TYPICAL FACE NAIL	16d @ 16" oc
SOLE PLATE TO JOIST OR BLOCKING, AT BRACED WALL PANELS	3-16d per 16"
TOP PLATE TO STUD, END NAIL	2-16d
STUD TO SOLE PLATE	4-8d, TOENAIL, OR 2-16d, END NAIL
DOUBLE STUDS, FACE NAIL	16d @ 24" oc
DOUBLE TOP PLATES, TYPICAL FACE NAIL	16d @ 16" oc
DOUBLE TOP PLATES, LAP SPLICE	8-16d
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE, TOENAIL	3-8d
RIM JOIST TO TOP PLATE, TOENAIL	8d @ 6" oc
TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	2-16d
CEILING JOISTS TO PLATE, TOENAIL	3-8d
CONTINUOUS HEADER TO STUD, TOENAIL	4-8d
CEILING JOISTS, LAPS OVER PARTITIONS, FACE NAIL	3-16d
CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL	3-16d
RAFTER TO PLATE, FACE NAIL	3-8d
BUILT-UP CORNER STUDS	16d @ 24" oc
2" PLANKS	2-16d @ EACH BEARING



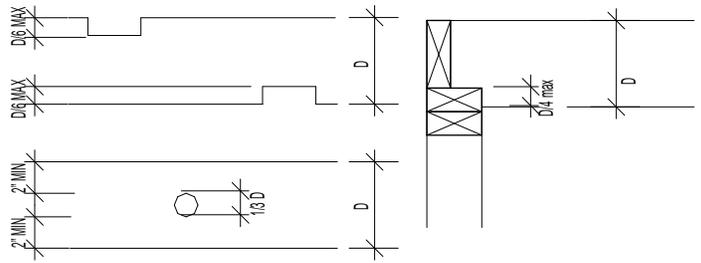
HEADER/ LINTEL (CBC 2308.9.5.1)



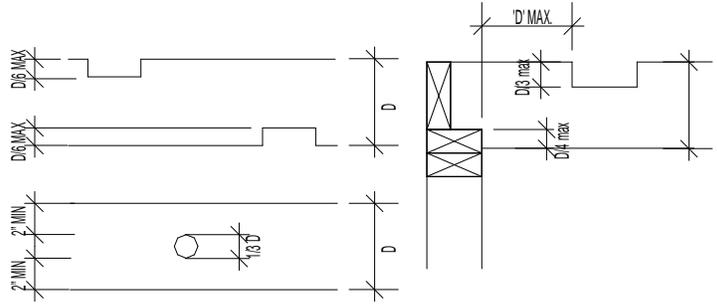
ROOF SLOPE- COMP SHINGLES (CBC 1507.2)



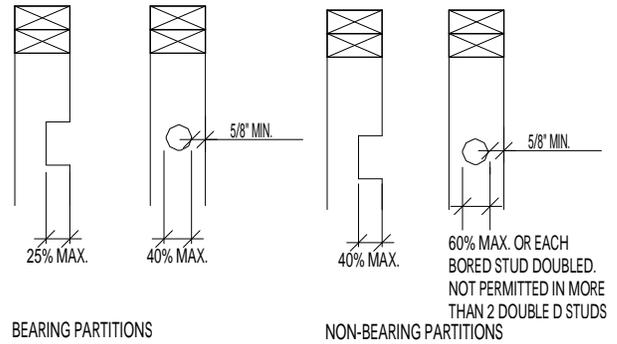
RIDGE (CBC 2308.10.4)



NOTCHING & BORING FLOOR JOISTS
(NOTCHING NOT PERMITTED IN MIDDLE 1/3 OF JOIST SPAN)



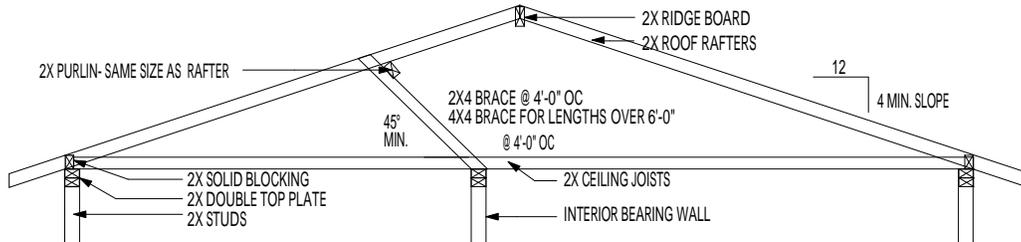
NOTCHING & BORING RAFTERS & CEILING JOISTS
(NOTCHING NOT PERMITTED IN MIDDLE 1/3 OF RAFTER OR JOIST SPAN)



BEARING PARTITIONS

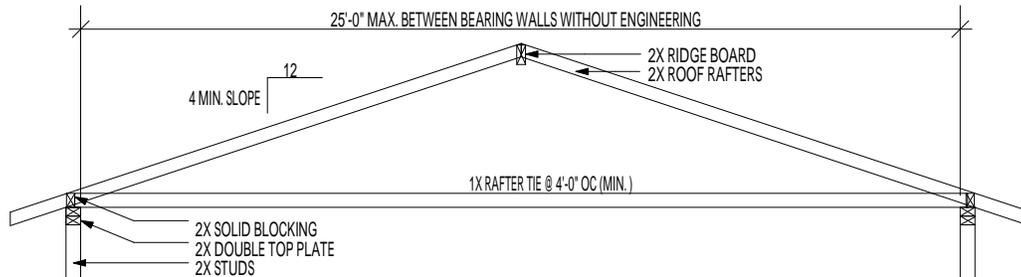
NON-BEARING PARTITIONS

NOTCHING & BORING:
WALL STUDS (CBC 2308.9.10/2308.9.11),
RAFTERS/CEILING JOISTS (CBC 2308.10.4.2)
FLOOR JOISTS (CBC 2308.8.2)

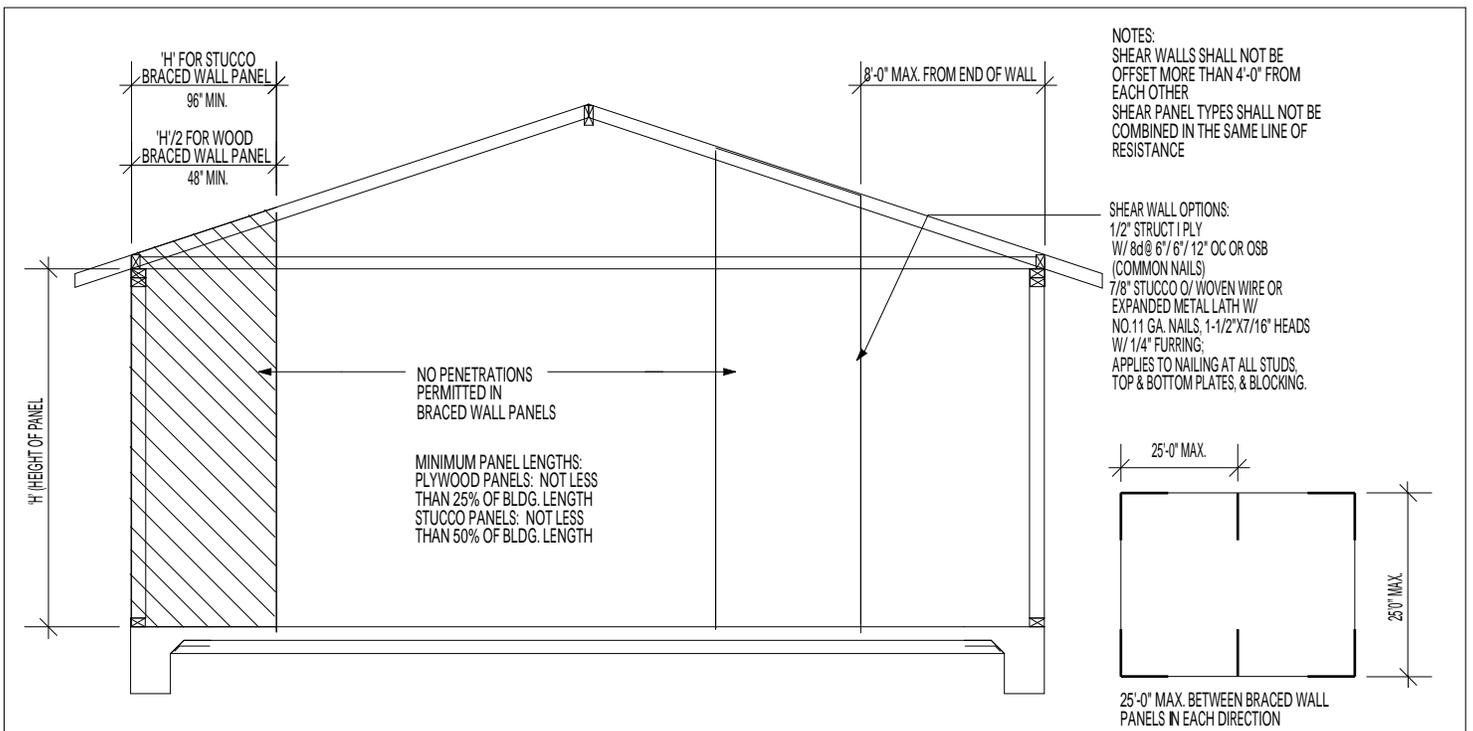


PURLINS (CBC 2308.10.5)

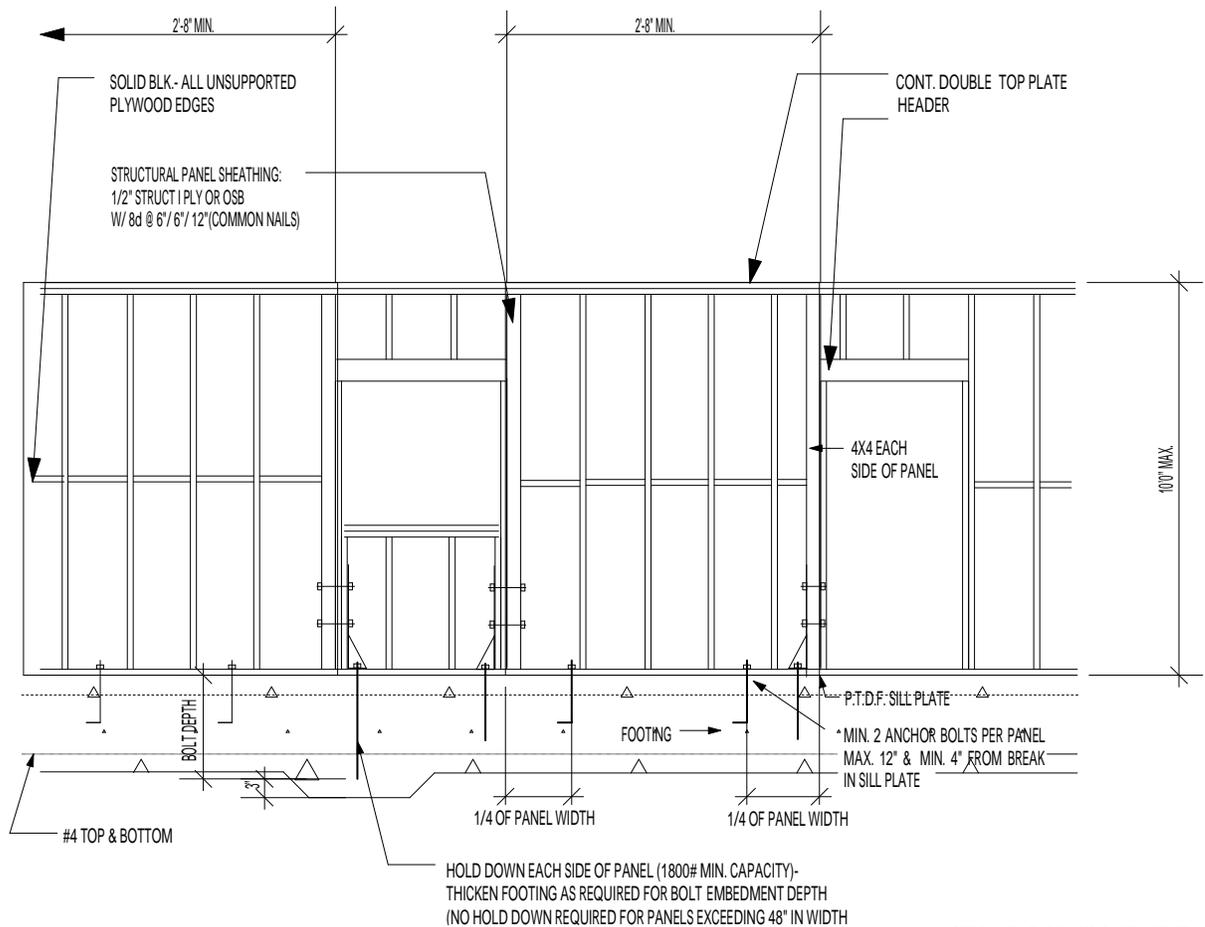
(FOR ROOF PITCH NOT LESS THAN 4 VERTICAL TO 12 HORIZONTAL)



RAFTER TIES (CBC 2308.10.4.1)



STANDARD BRACED WALL PANELS (CBC 2308.12.4)



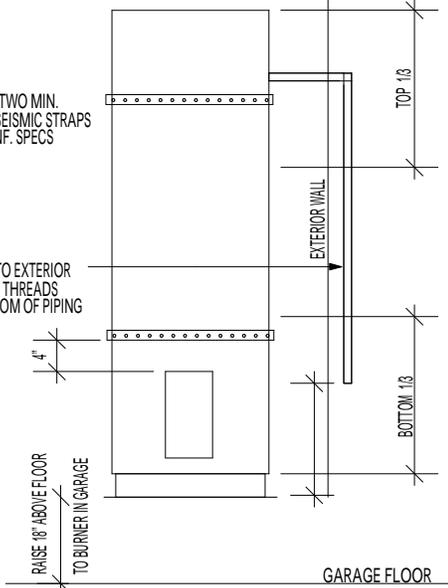
ALTERNATE BRACED WALL PANEL (CBC 2308.9.3.1) -
 1-STORY, 'U' OCCUPANCY ONLY (PRIVATE GARAGES, SHEDS, & AGRICULTURAL BUILDINGS)

SEE PAGE 7 FOR BASIC COMPONENTS OF LATERAL BRACING SYSTEM.

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

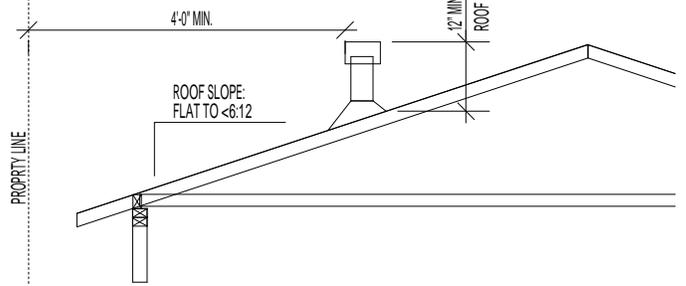
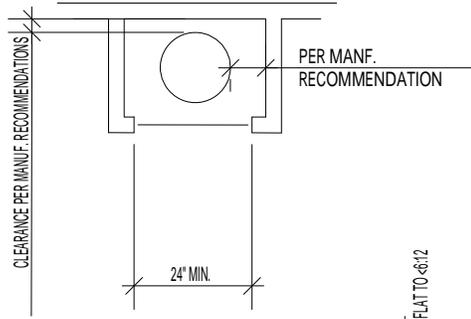
T&P VALVE PIPED TO EXTERIOR 3/4" MIN. PIPE, NO THREADS ALLOWED IN BOTTOM OF PIPING

RAISE 16" ABOVE FLOOR TO BURNER IN GARAGE



NOTE:
NO GAS-FIRED WATER HEATER ALLOWED IN BEDROOMS, BATHROOMS, CLOTHES CLOSETS, OR ANY SPACE OPENING INTO A BEDROOM OR BATHROOM, UNLESS AS PERMITTED IN CPC 505.1

WATER HEATERS

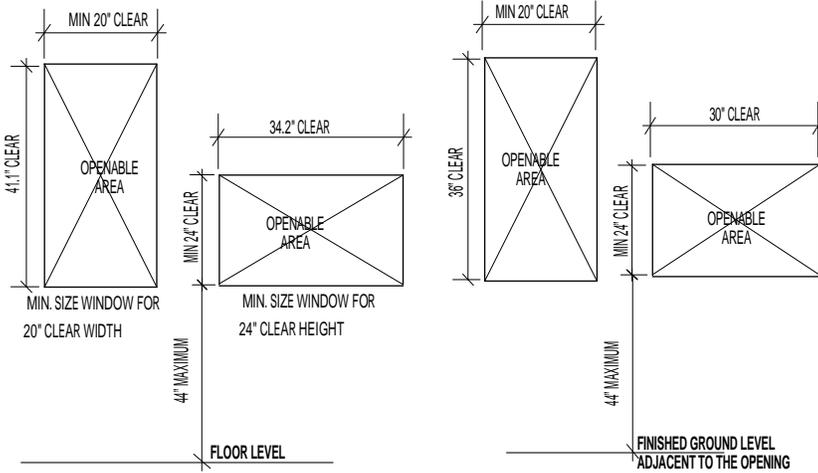


VENT

5.7 SF OPENABLE AREA

5.0 SF MIN OPENABLE AREA AT GRADE FLOOR LEVEL

THE FOLLOWING WINDOW SIZES WILL BE THE MINIMUM ALLOWED FOR EGRESS (5.7 SF OPENABLE AREA) UNLESS MANF. DATA IS SUPPLIED

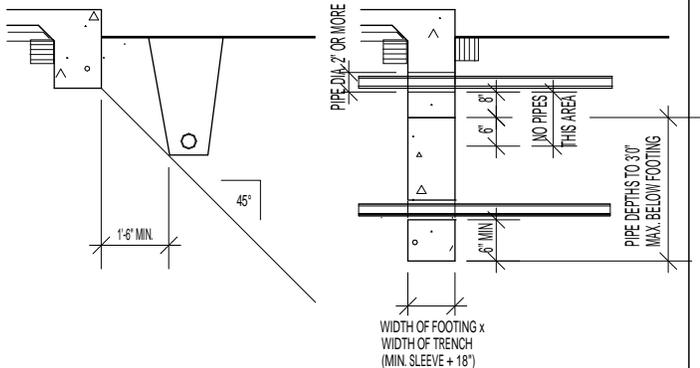


STANDARD 6'-8" HEADER HEIGHT

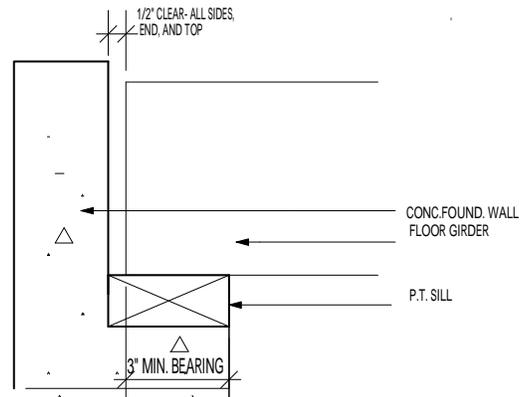
SINGLE CASEMENT: 2-4 x 4-0 2-6 x 3-6	SINGLE/ DOUBLE HUNG: 3-0 x 5-0 3-0 x 5-6	SLIDER: 4-0 x 4-0 5-0 x 3-6 6-0 x 3-0
DOUBLE CASEMENT: 4-8 x 4-0	OTHER WINDOW TYPES 7-0 x 4-0 3-4 x 5-0 3-8 x 5-0 4-0 x 5-0	SLIDER/ FIXED COMBO: 8-0 x 4-0 10-0 X 4-0 12-0 X 3-0
AWNING: NONE W/O MANF. DATA	BAY W/ FIXED CENTER: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

NOTE: SIZES ARE TAKEN FROM DATA SUPPLIED BY WINDOW MANUFACTURERS. HOWEVER THESE ARE GENERAL DIMENSIONS. IT IS THE OWNERS RESPONSIBILITY TO VERIFY THAT THE ACTUAL WINDOWS INSTALLED MEET THE MINIMUM EGRESS REQUIREMENTS.

EMERGENCY ESCAPE/ EXIT WINDOW IN SLEEPING ROOMS (CBC 1026.2, 1026.3)



TRENCHES AT FOOTINGS



GIRDER (CBC 2308.7)

LIGHT : (CBC 1205)
 ALL HABITABLE ROOMS REQUIRE NATURAL LIGHT BY MEANS OF EXTERIOR WINDOWS OR SKYLIGHTS @ 8% OF THE FLOOR AREA OF THE ROOM OR ARTIFICIAL LIGHT THAT IS ADEQUATE TO PROVIDE AN AVERAGE ILLUMINATION OF 10 FOOT-CANDLES OVER THE AREA OF THE ROOM AT A HEIGHT OF 30 INCHES ABOVE THE FLOOR LEVEL.

VENTILATION: (CBC 1203.4)
 ALL OCCUPIED SPACES REQUIRE NATURAL VENTILATION BY MEANS OF OPENABLE WINDOWS OR DOORS OF 4% OF THE FLOOR AREA OF THE ROOM. (NATURAL VENTILATION MAY BE SUBSTITUTED WITH MECHANICAL VENTILATION).

MINIMUM ROOM DIMENSIONS: (CBC 1208.3)
 AT LEAST ONE ROOM 120 SF
 ALL OTHER ROOMS EXCEPT KITCHEN 70 SF WITH A MIN. DIMENSION OF 7'-0"

SHOWER & TUB ENCLOSURES SHALL BE TEMPERED (CBC 2406.3)
 WINDOWS AT SHOWERS & TUBS SHALL BE TEMPERED, IF LESS THAN 60" ABOVE A STANDING SURFACE AND DRAIN INLET (CBC 2406.4)
 70" HIGH NON-ABSORBENT FINISH @ SHOWER WALL (CPC 411.7)

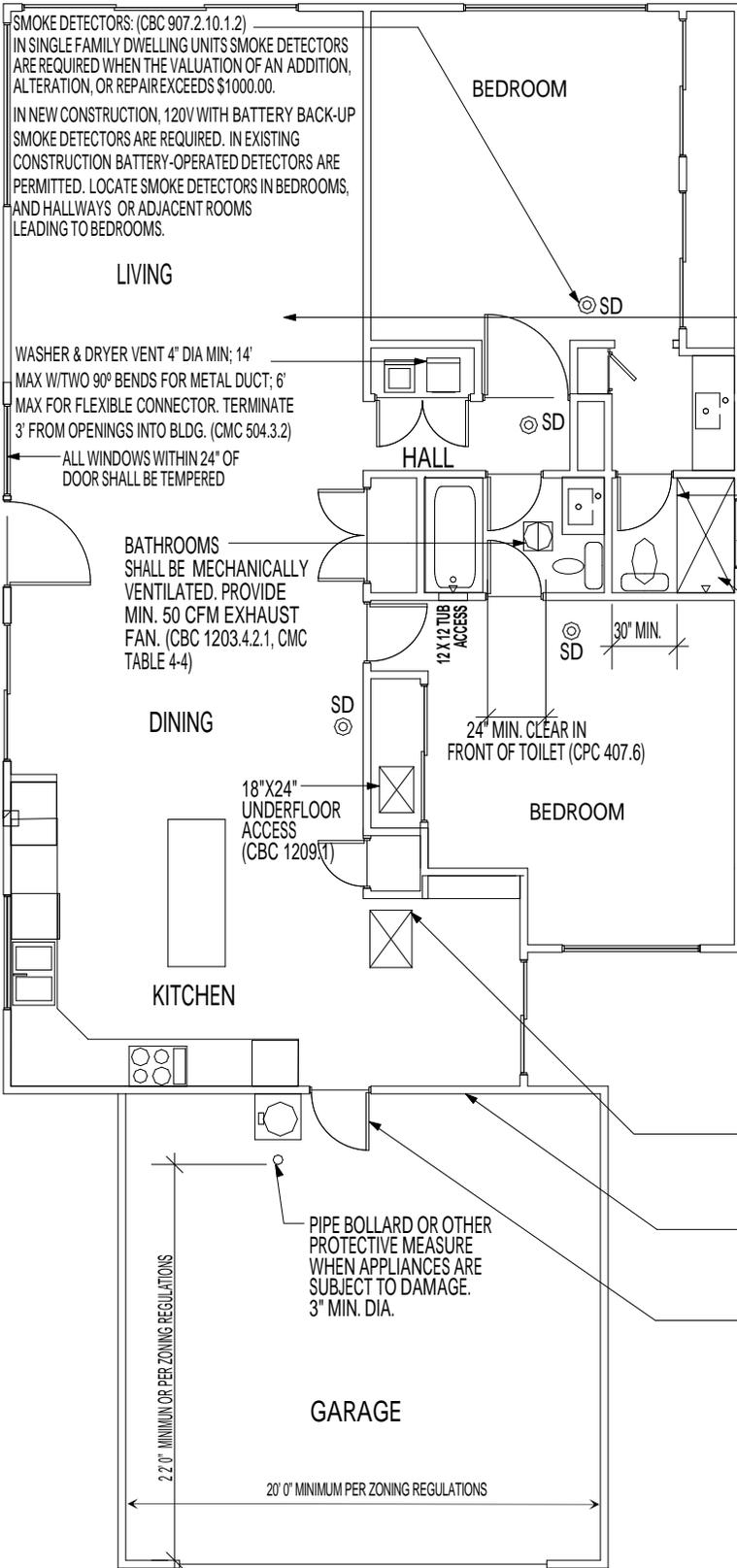
ALTERNATE 18"x24" UNDERFLOOR ACCESS FROM EXTERIOR

EMERGENCY ESCAPE WINDOW
 REQUIRED FOR ALL BEDROOMS
 (SEE PAGE 5)

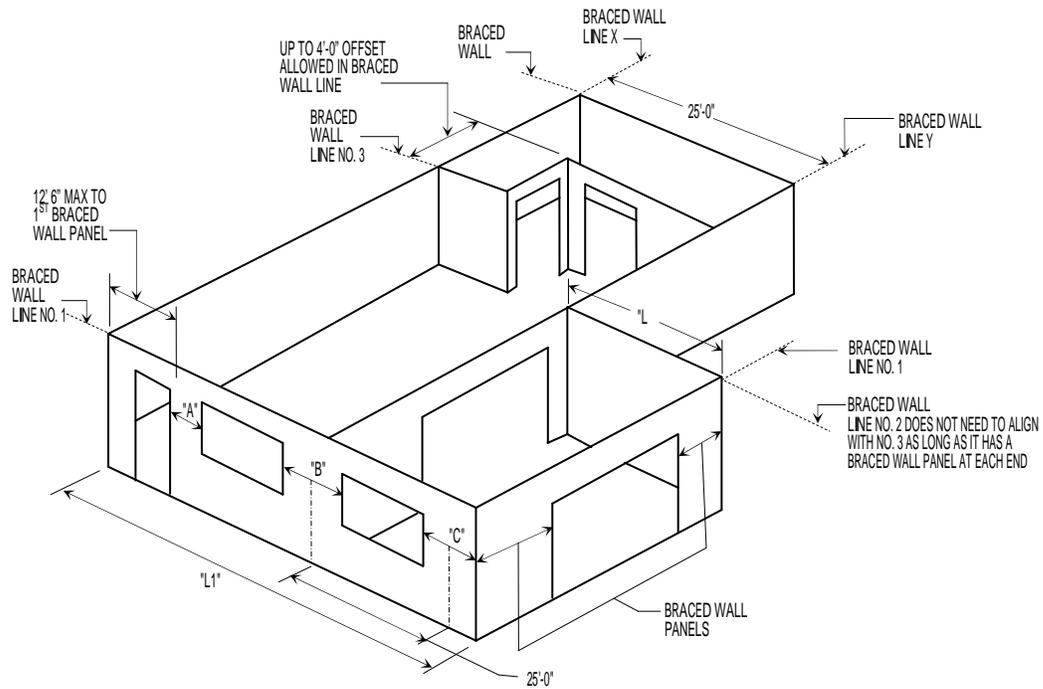
20"x30" ATTIC ACCESS, OR 30"x30" IF FURNACE IS IN ATTIC AND EQUIPMENT WILL NOT PASS THROUGH 22"x30" ACCESS. MIN. HEADROOM IS 30". (CBC 1209.2 & CMC 904.11)

WHERE GARAGES ARE ATTACHED TO THE RESIDENCE, THE WALL ON THE GARAGE SIDE SHALL BE PROTECTED WITH 1/2" GYP. BD. (CBC 406.1.4)

THE DOOR SHALL BE A SELF-CLOSING, TIGHT-FITTING 1-3/4" SOLID CORE DOOR. (CBC 406.1.4, ORD 227 SEC. C2-9)
 NOTE: THE GARAGE SHALL NOT OPEN INTO A SLEEPING ROOM.



RESIDENTIAL REQUIREMENTS



NOTE

BRACED WALL PANELS REQUIRED BY CBC 2308.12.4 MAY BE ELIMINATED FOR SEISMICALLY DETACHED GARAGES WHEN ALL OF THE FOLLOWING ARE MET:

1. One story seismically detached Group U occupancies not more than 25'-0" in depth, measured normal to the open front, not more than 25'-0" in width, and the width to depth does not exceed 1.
2. The roof and three enclosing walls are solid sheathed with 1/2" nominal thickness wood structural panels with 8d common nails placed 3/8" from panel edges and 12" on center along intermediate framing members. Wall opening for doors or windows are permitted provided a minimum 4'-0" wide structural braced wall panel with a maximum height to width ratio of 2:1 is provided at each end of the wall line and the wall line to be sheathed is a minimum of 50% of its length.