

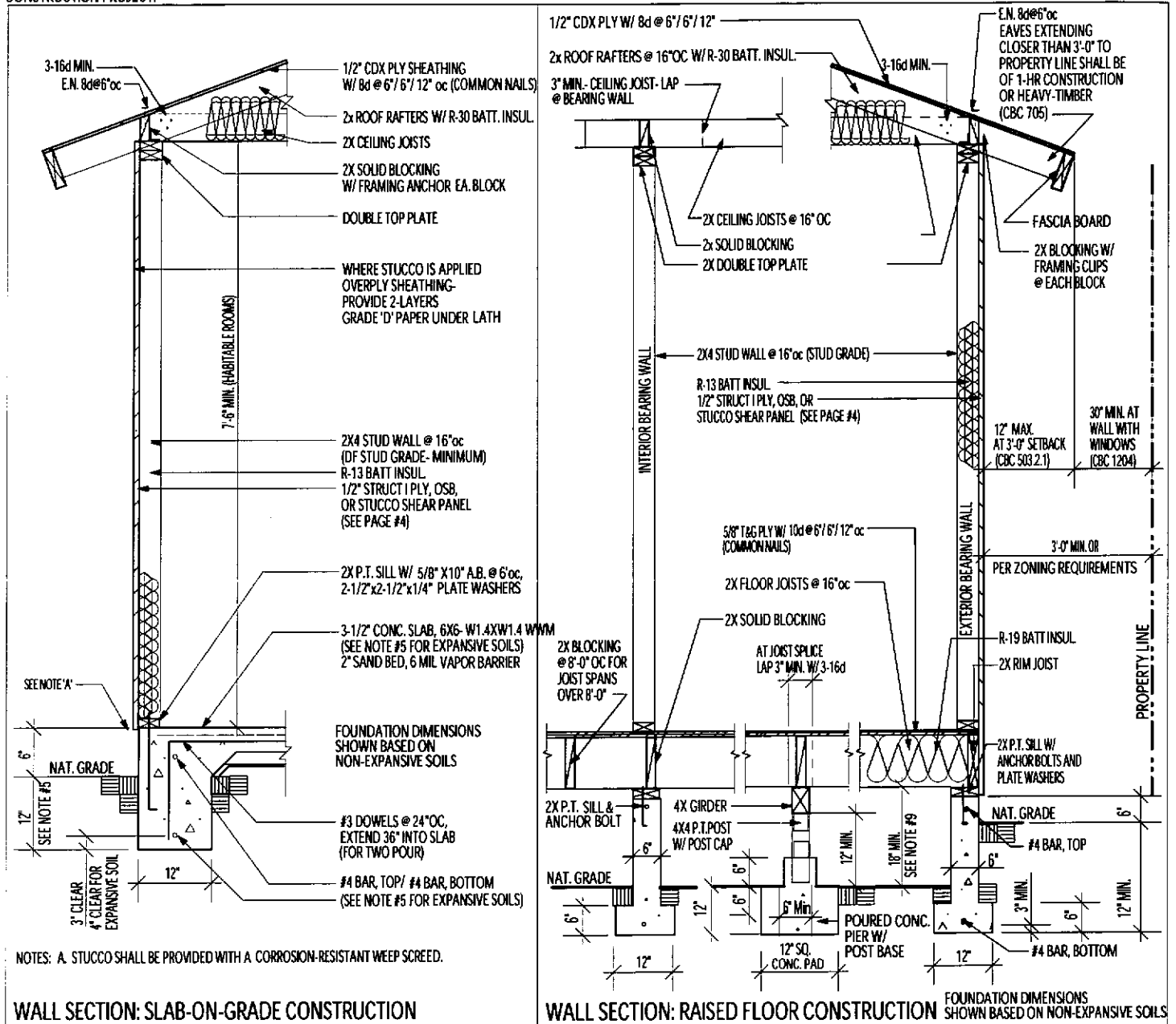


LOS ANGELES REGIONAL UNIFORM CODE PROGRAM

TYPE V CONSTRUCTION- WOOD FRAME RESIDENTIAL BUILDINGS
(CBC CHAPTER 23, DIV IV, SEC. 2320) 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 IS FOR INFORMATION AND REFERENCE ONLY AND IS NOT A SUBSTITUTE FOR ACCURATE DRAWINGS PREPARED FOR EACH PROPOSED CONSTRUCTION PROJECT.



- Notes:
1. Anchor bolts: 5/8"x10" embedded 7" and spaced 6'-0" oc with 2-1/2"x2-1/2"x1/4" plate washers, with minimum 2 anchor bolts per piece, located not more than 12" or less than 7 bolt diameters from each end of the piece.
 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 be pressure treated wood.
 3. Minimum Concrete Strength: 2500 psi.
 4. Bearing walls and braced wall panels require continuous footings.
 5. FOR EXPANSIVE SOIL: Refer to local jurisdiction requirements.
 6. Where interior walls are shear wall panels, wall framing and sheathing shall extend to the roof sheathing.
 7. Under floor areas shall be ventilated by approved mechanical means or by openings into the under-floor area walls. Such openings shall have a net area of not less than 1 square foot for each 150 square feet of under-floor area. Openings shall be located as close as possible to corners and provide cross ventilation. The openings shall be approximately equally distributed along the length of at least two sides. Corrosion resistant mesh w/ Minimum 1/4" openings.
 8. Enclosed attics and enclosed rafter spaces shall have cross ventilation for each separate space. The net free ventilating area shall not be less than 1/150 of the area of the space ventilated. The openings may be 1/300 of the area provided 50% of the opening area is provided with ventilators in the upper portion at least 3' above the eave or cornice with the balance of the ventilators provided by eave or cornice vents. Provide baffles to prevent attic insulation from blocking eave vents. (CBC 1505.3)
 9. For stem walls greater than 24" high: Refer to local jurisdiction requirements.
 10. For Fire Zone 4 and Very High Fire Hazard Zone: Refer to local jurisdiction requirements.

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" 17'-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 PARTITIONS	NO PARTITIONS	GIRDER SIZE	SPAN BEAM SIZE
						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.

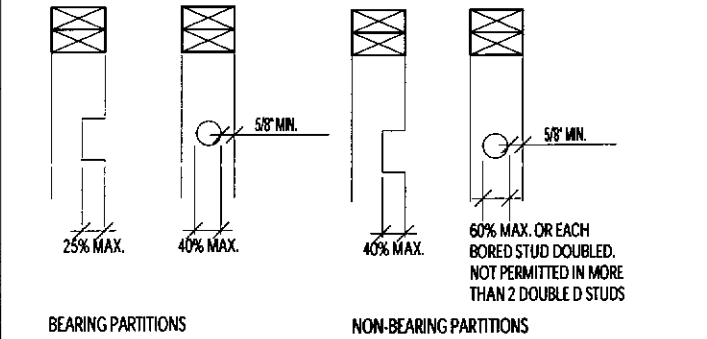
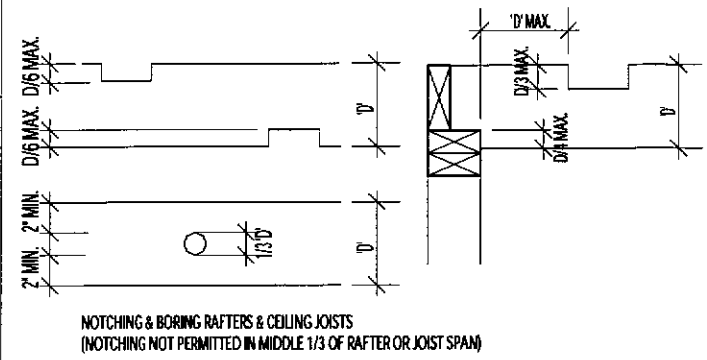
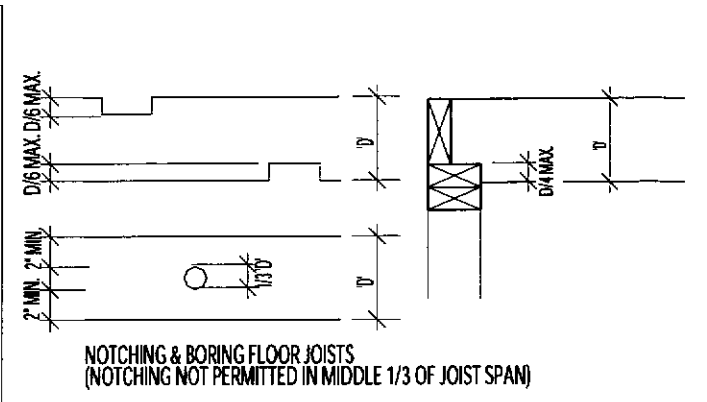
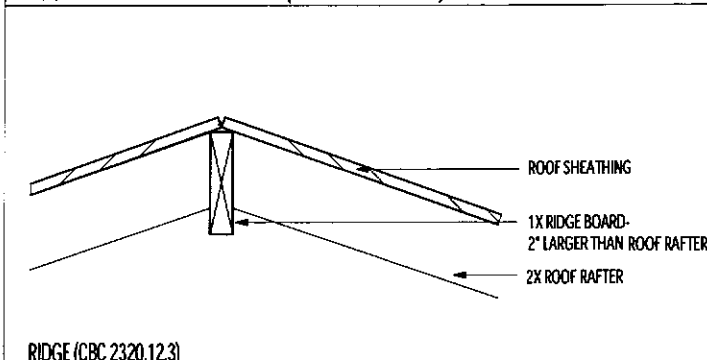
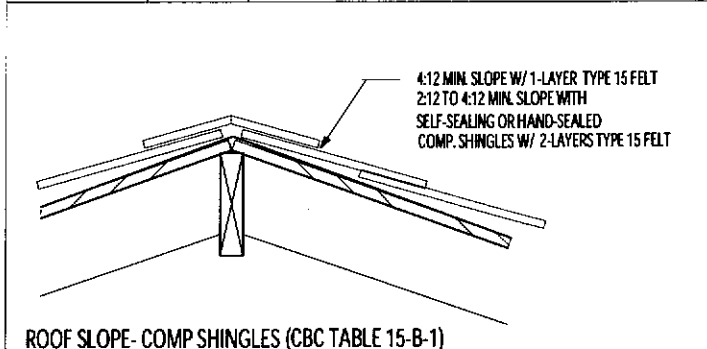
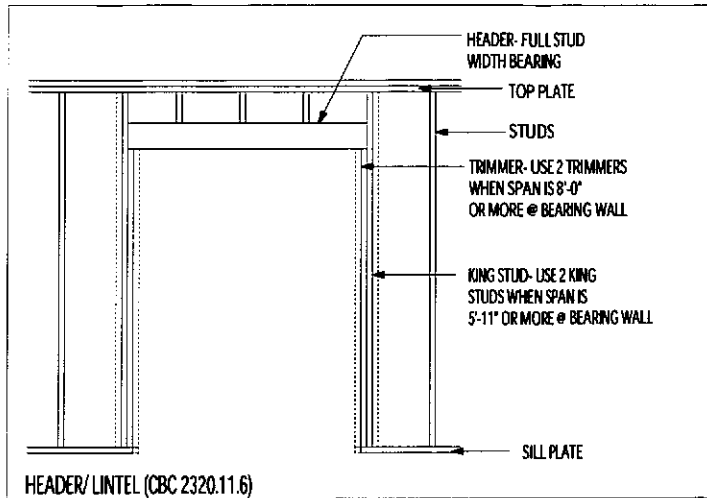
ALLOWABLE SPANS FOR PLYWOOD OR OSB FLOOR AND ROOF SHEATHING CONTINUOUS OVER TWO OR MORE SPANS-PERPENDICULAR TO SUPPORTS

NOTE: APPLIES TO PANELS 24" OR WIDER (UBC SEC. 2312)

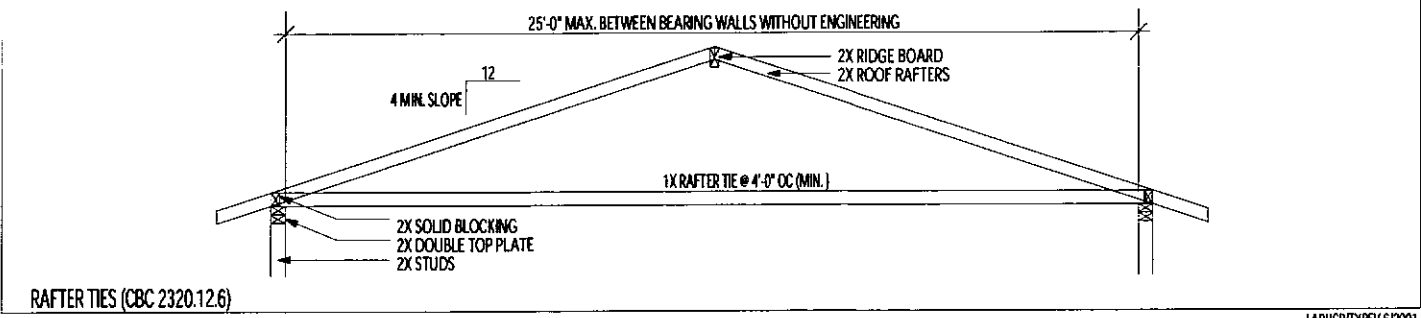
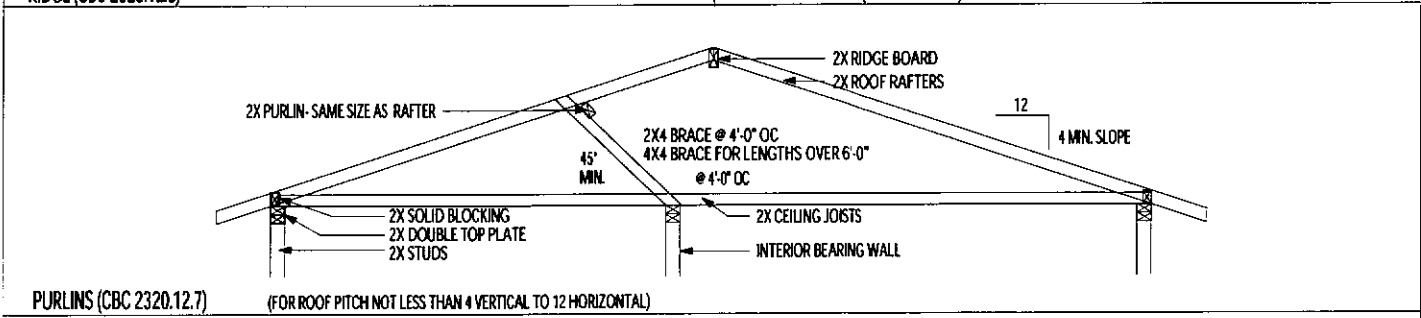
SHEATHING GRADES		ROOF				FLOOR
SPAN RATING	SPAN THICKNESS	MAX. SPAN (IN)		LOADS (PSF)		MAX. SPAN (IN)
Roof/Floor Span		EDGE SUPPORT (2X BLOCKING)	NO EDGE SUPPORT FOR 1/2" MAX. SPAN + 24"	TOTAL LOAD	LIVE LOAD	Panel edges with tongue and groove joints or with blocking
24/0	7/16, 1/2	24	20	40	30	
24/16	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

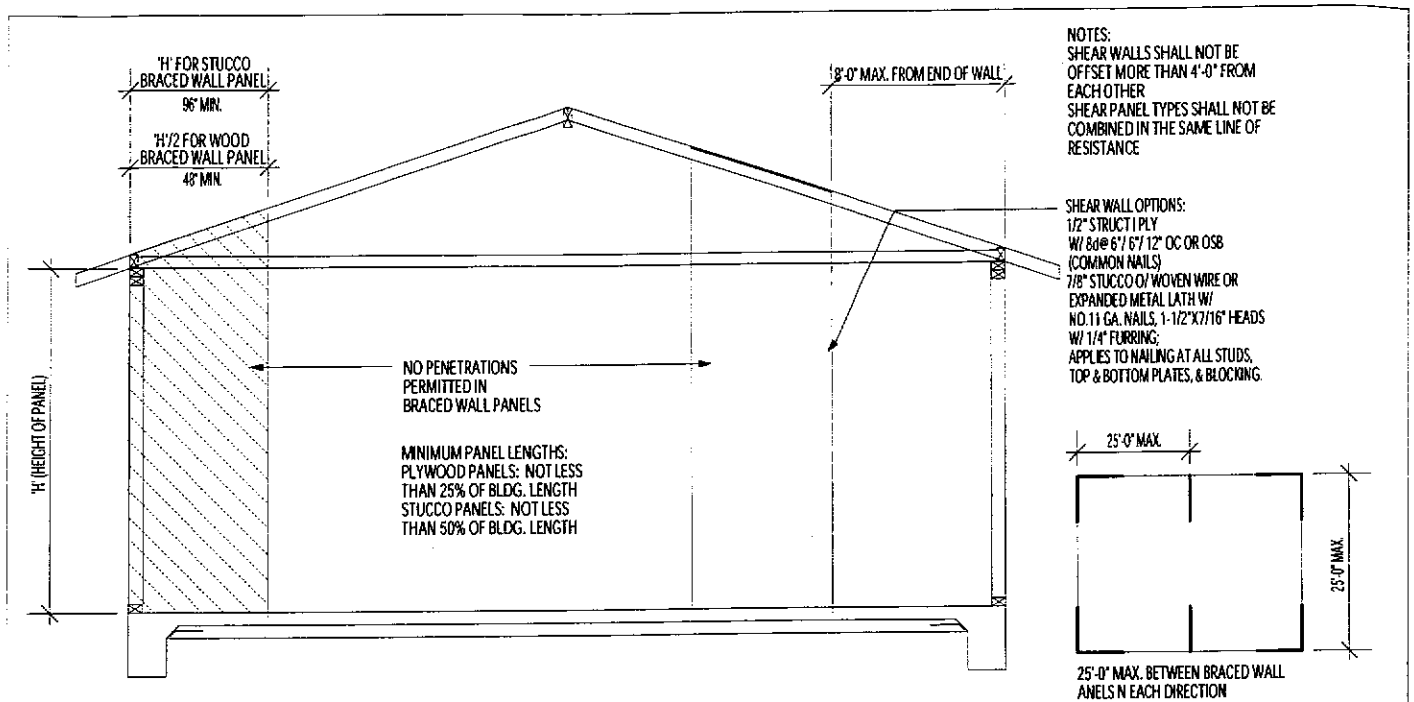
NAILING SCHEDULE (CBC TABLE 23-II-B-1)

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

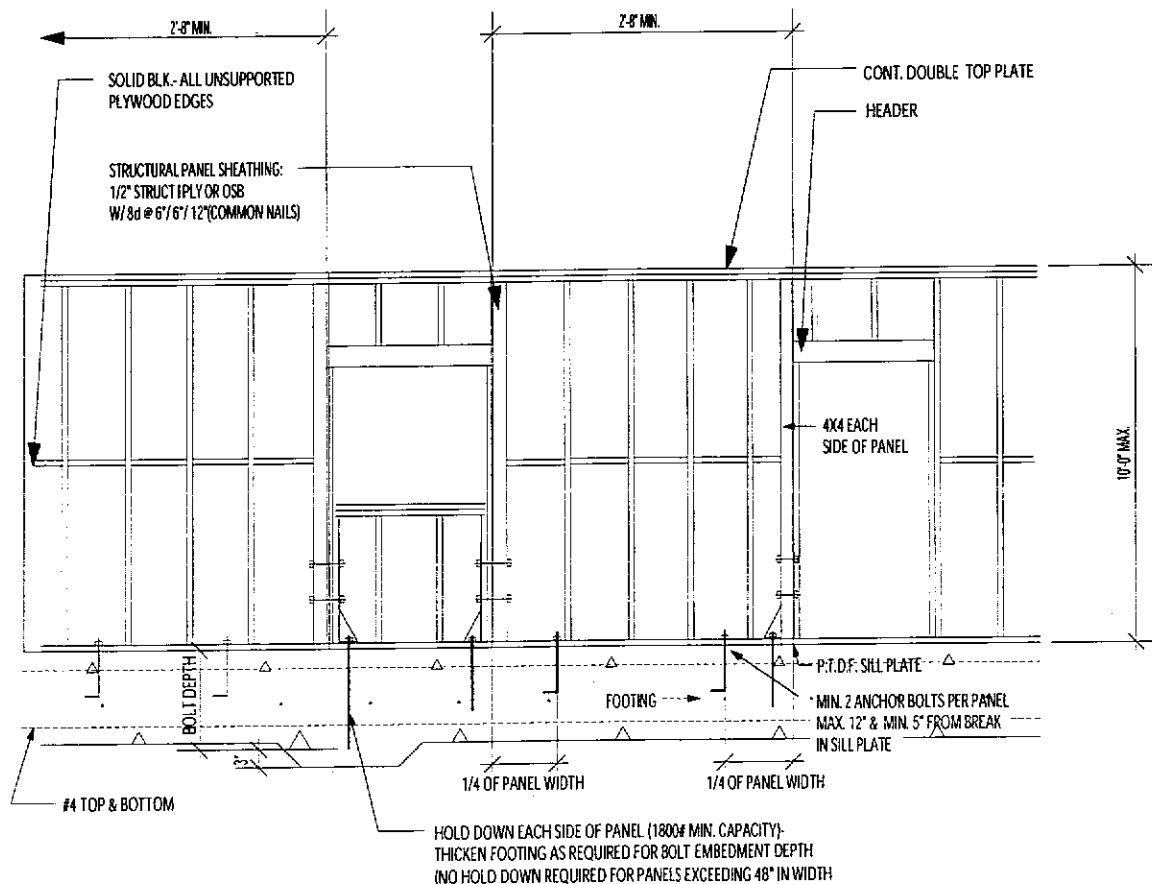


NOTCHING & BORING:
 WALL STUDS (CBC 2320.11.9/ 2320.11.10),
 RAFTERS/CEILING JOISTS (CBC 2320.12.4)
 FLOOR JOISTS (CBC 2320.8.3)





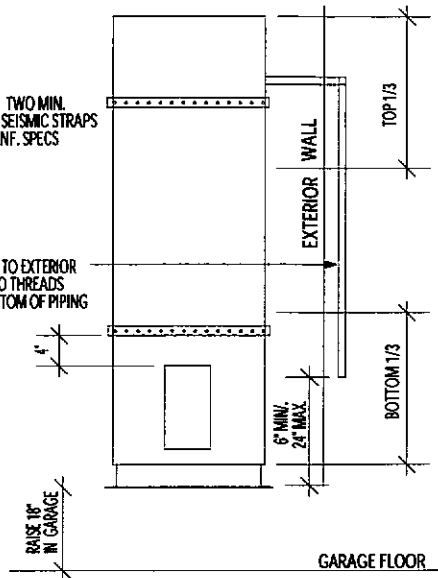
STANDARD BRACED WALL PANELS (CBC 2320.11.3)



ALTERNATE BRACED WALL PANEL (CBC 2320.11.4 AS AMENDED BY LARUCP)-
 1-STORY, 'U' OCCUPANCY ONLY (PRIVATE GARAGES, SHEDS, & AGRICULTURAL BUILDINGS)

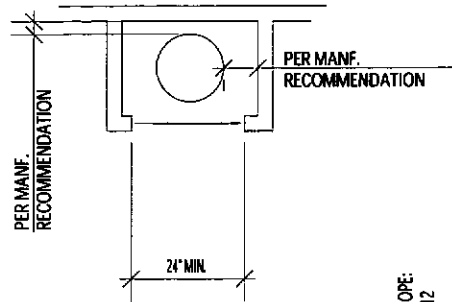
SEISMIC STRAPS: TWO MIN.
DSA APPROVED SEISMIC STRAPS
APPLIED PER MANF. SPECS

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



WATER HEATERS

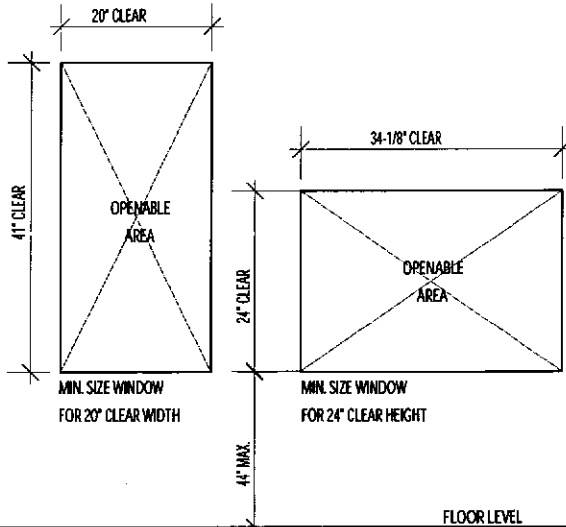
NOTE:
NO GAS-FIRED WATER HEATER
ALLOWED IN BEDROOMS,
BATHROOMS, CLOTHES CLOSETS,
OR ANY SPACE OPENING INTO
A BEDROOM OR BATHROOM.



PROPERTY LINE

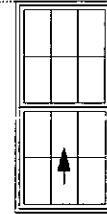
VENT

THE FOLLOWING WINDOW SIZES WILL BE THE MINIMUM ALLOWED FOR
EGRESS UNLESS MANF. DATA IS SUPPLIED

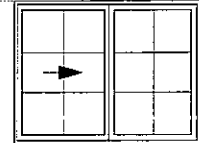


STANDARD 6'-8" HEADER HEIGHT

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:
NONE W/O MANF. DATA
BAY W/ FIXED CENTER:
NONE W/O MANF. 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 MANF. DATA



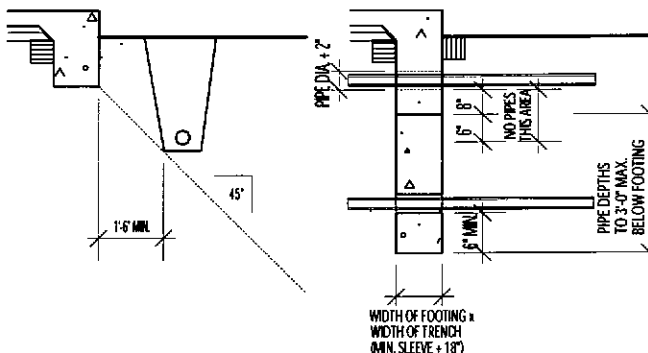
SLIDER:
4-0 x 4-0
5-0 x 3-6
6-0 x 3-0
SLIDER/ FIXED COMBO:
8-0 x 4-0
10-0 x 4-0
12-0 x 3-0

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

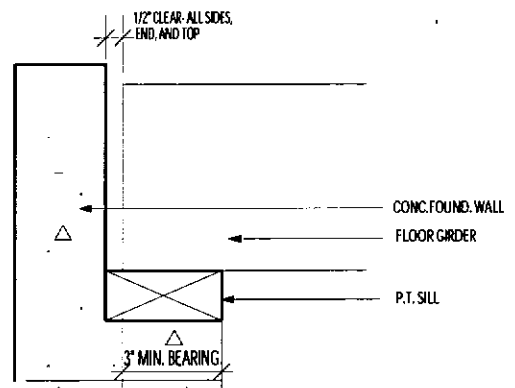
- 20" MIN. CLEAR WIDTH
- 24" MIN. CLEAR HEIGHT
- 5.7 SF MIN. OPENABLE AREA

EMERGENCY ESCAPE/ EXIT WINDOW (CBC 310.4)

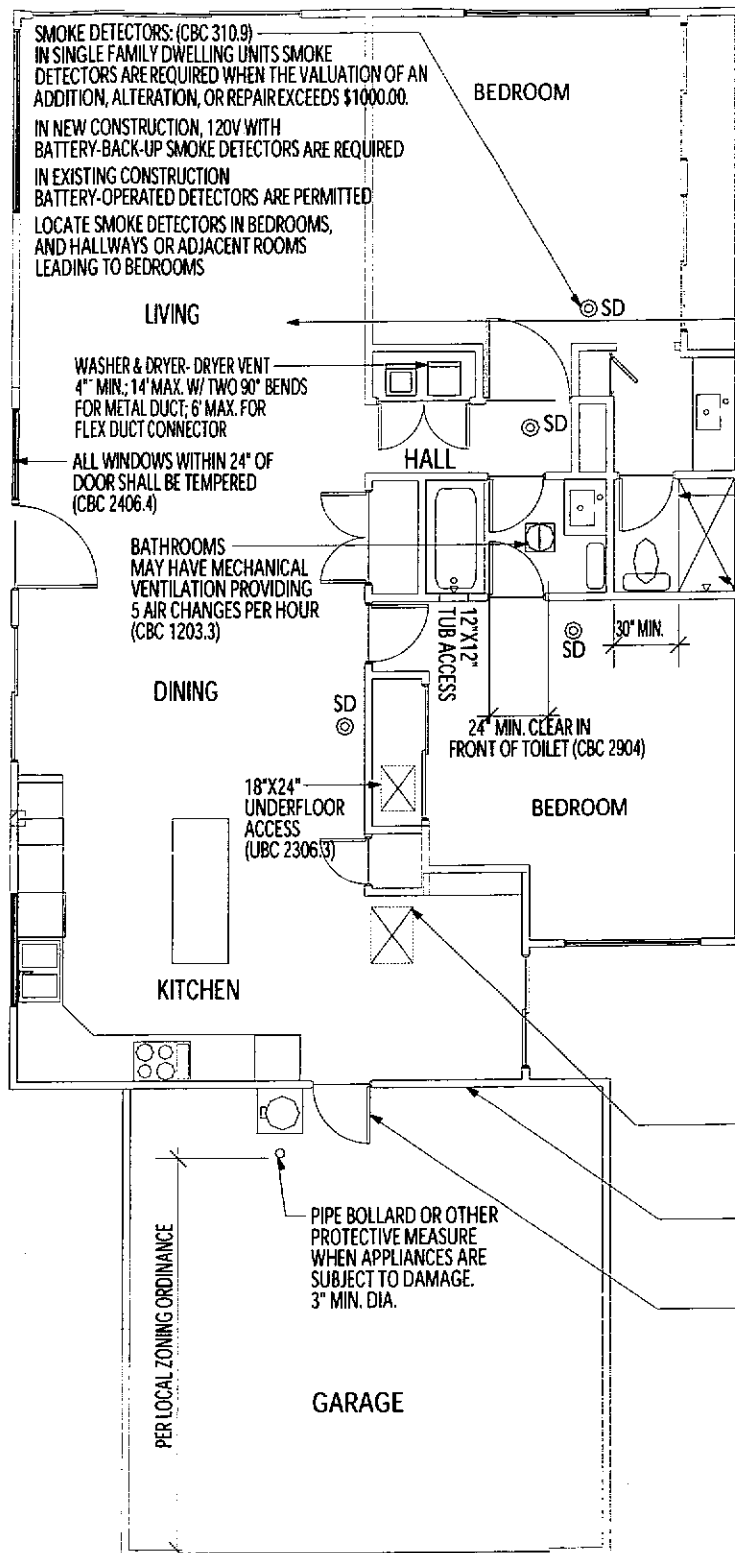
EMERGENCY ESCAPE/ EXIT WINDOW (CBC 310.4)



TRENCHES AT FOOTINGS



GIRDER (CBC 2320.7/ 2306.6)



SMOKE DETECTORS: (CBC 310.9)
 IN SINGLE FAMILY DWELLING UNITS SMOKE DETECTORS ARE REQUIRED WHEN THE VALUATION OF AN ADDITION, ALTERATION, OR REPAIR EXCEEDS \$1000.00.
 IN NEW CONSTRUCTION, 120V WITH BATTERY-BACK-UP SMOKE DETECTORS ARE REQUIRED
 IN EXISTING CONSTRUCTION BATTERY-OPERATED DETECTORS ARE PERMITTED
 LOCATE SMOKE DETECTORS IN BEDROOMS, AND HALLWAYS OR ADJACENT ROOMS LEADING TO BEDROOMS

LIVING

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

ALL WINDOWS WITHIN 24" OF DOOR SHALL BE TEMPERED (CBC 2406.4)

BATHROOMS MAY HAVE MECHANICAL VENTILATION PROVIDING 5 AIR CHANGES PER HOUR (CBC 1203.3)

DINING

18"X24" UNDERFLOOR ACCESS (UBC 2306.3)

KITCHEN

BEDROOM

HALL

12'X12' TUB ACCESS
 24" MIN. CLEAR IN FRONT OF TOILET (CBC 2904)

BEDROOM

LIGHT: (CBC 1203.2)
 ALL HABITABLE ROOMS, EXCEPT BATHROOMS, KITCHENS, AND LAUNDRIES REQUIRE NATURAL LIGHT BY MEANS OF EXTERIOR WINDOWS OR SKYLIGHTS @ 1/10 THE FLOOR AREA OF THE ROOM, OR 10 S.F. MINIMUM, WHICHEVER IS GREATER.

VENTILATION: (CBC 1203.3)
 ALL HABITABLE ROOMS, EXCEPT BATHROOMS, AND LAUNDRIES REQUIRE NATURAL VENTILATION BY MEANS OF OPENABLE WINDOWS @ 1/20 THE FLOOR AREA OF THE ROOM, OR 5 S.F. MINIMUM. (NATURAL VENTILATION MAY BE SUBSTITUTED WITH MECHANICAL VENTILATION).
 ALL BATHROOMS REQUIRE NATURAL VENTILATION BY MEANS OF OPENABLE WINDOWS @ 1/20 THE FLOOR AREA OF THE ROOM, OR 1-1/2 S.F. MINIMUM. (NATURAL VENTILATION MAY BE SUBSTITUTED WITH MECHANICAL VENTILATION, AS NOTED IN EXAMPLE).

MINIMUM ROOM DIMENSIONS: (CBC 310.6)
 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 2406.4)
 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 (CBC 807.1.3)

ALTERNATE 18"X24" UNDERFLOOR ACCESS FROM EXTERIOR

22"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 1505.1 & CMC)

WHERE GARAGES ARE ATTACHED TO THE RESIDENCE, THE WALL ON THE GARAGE SIDE SHALL BE PROTECTED WITH 5/8" TYPE 'X' GYP. BD.

THE DOOR SHALL BE A SELF-CLOSING, TIGHT-FITTING 1-3/8" SOLID CORE DOOR. (CBC 302.4)
 NOTE: THE GARAGE SHALL NOT OPEN INTO A SLEEPING ROOM.

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

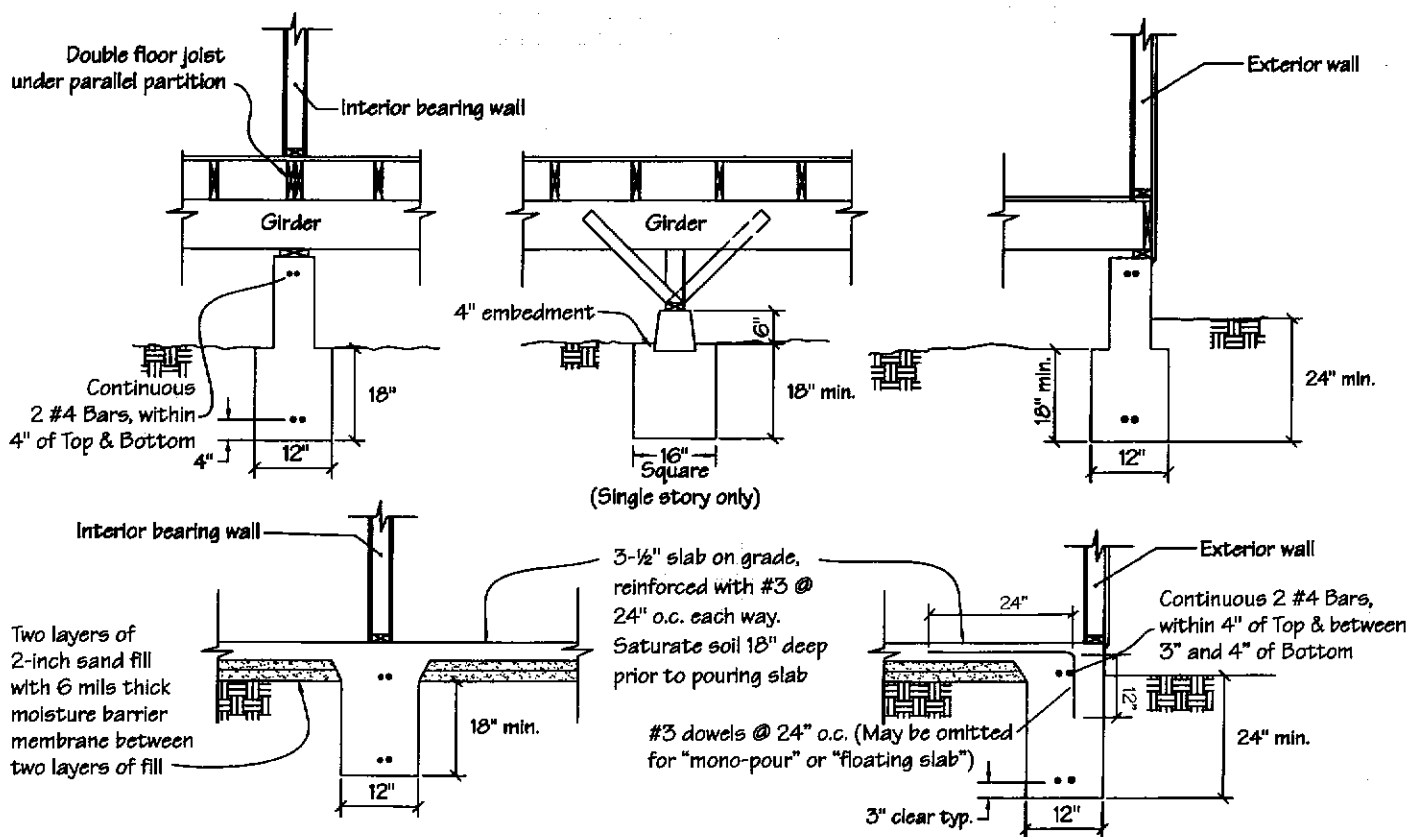
GARAGE

PER LOCAL ZONING ORDINANCE

RESIDENTIAL REQUIREMENTS

FOUNDATION SYSTEM ON EXPANSIVE SOIL

(Without a Geotechnical Report, per Sections 1803, 1804.4, 1806 and Table 18-1-C)

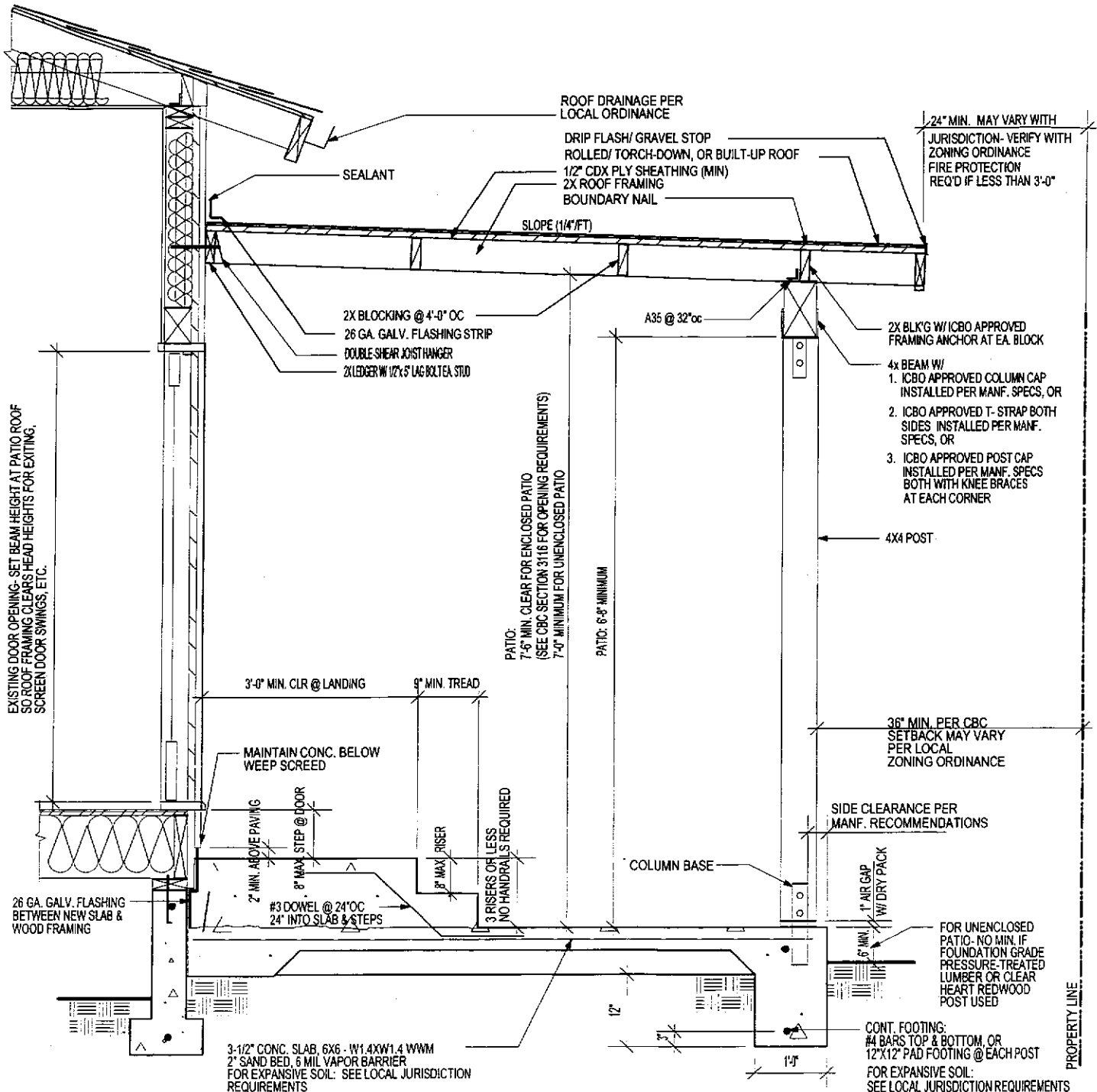


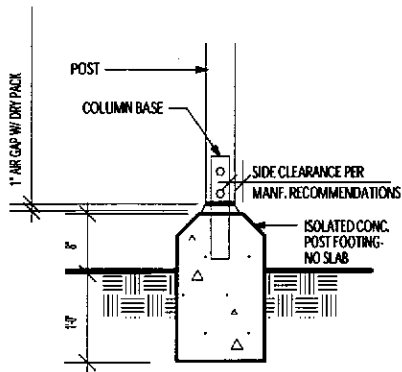
- Perimeter walls, interior bearing walls and posts supporting roofs shall be supported on continuous foundations.
- Dimensions not shown are the same as for non-expansive soil conditions



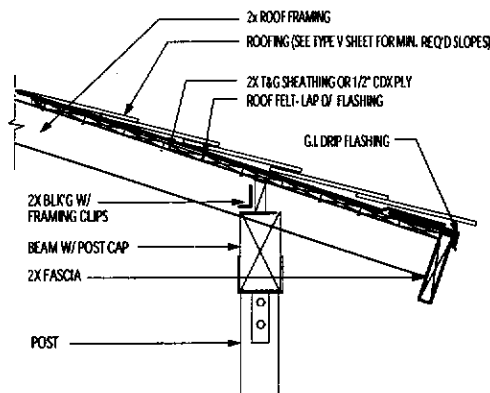
LOS ANGELES REGIONAL UNIFORM CODE PROGRAM PATIO COVER

TYPE V CONSTRUCTION - WOOD FRAME RESIDENTIAL BUILDINGS
(CBC CHAPTER 23, DIV IV, SEC. 2320) ONE-STORY CONSTRUCTION

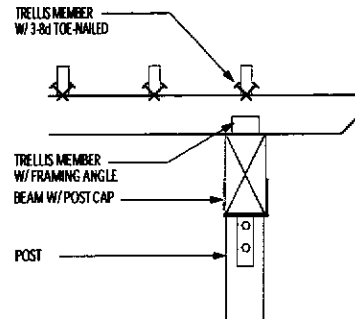




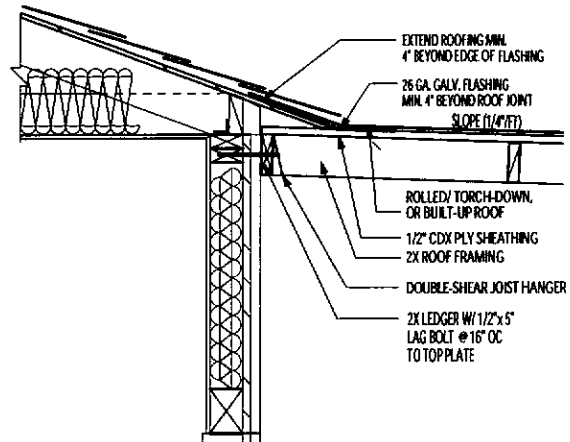
ALT. FOOTING DETAIL



ALTERNATE EAVE DETAIL



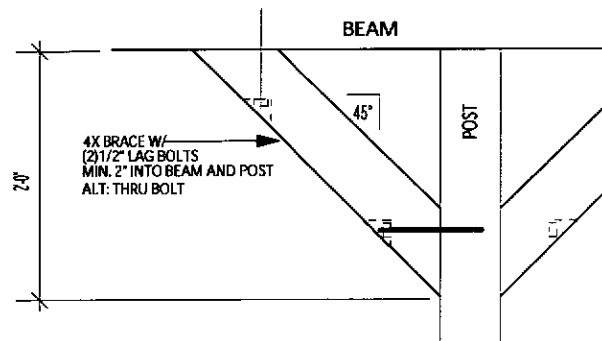
TRELLIS DETAIL



ALTERNATE CONNECTION DETAIL

ALLOWABLE SPANS FOR DF#1 HEADERS	
Maximum span of tributary load: 20'-0"	
SPAN	BEAM SIZE
Up to 4'-0"	4x4
4'-1" to 6'-0"	4x6
6'-1" to 8'-0"	4x8
8'-1" to 10'-0"	4x10
10'-0" to 12'-0"	4x12*

* 4x12 DF No.1 may be used over a 16'-0" garage door in one-story open patio or carport structures.



KNEE BRACE DETAIL

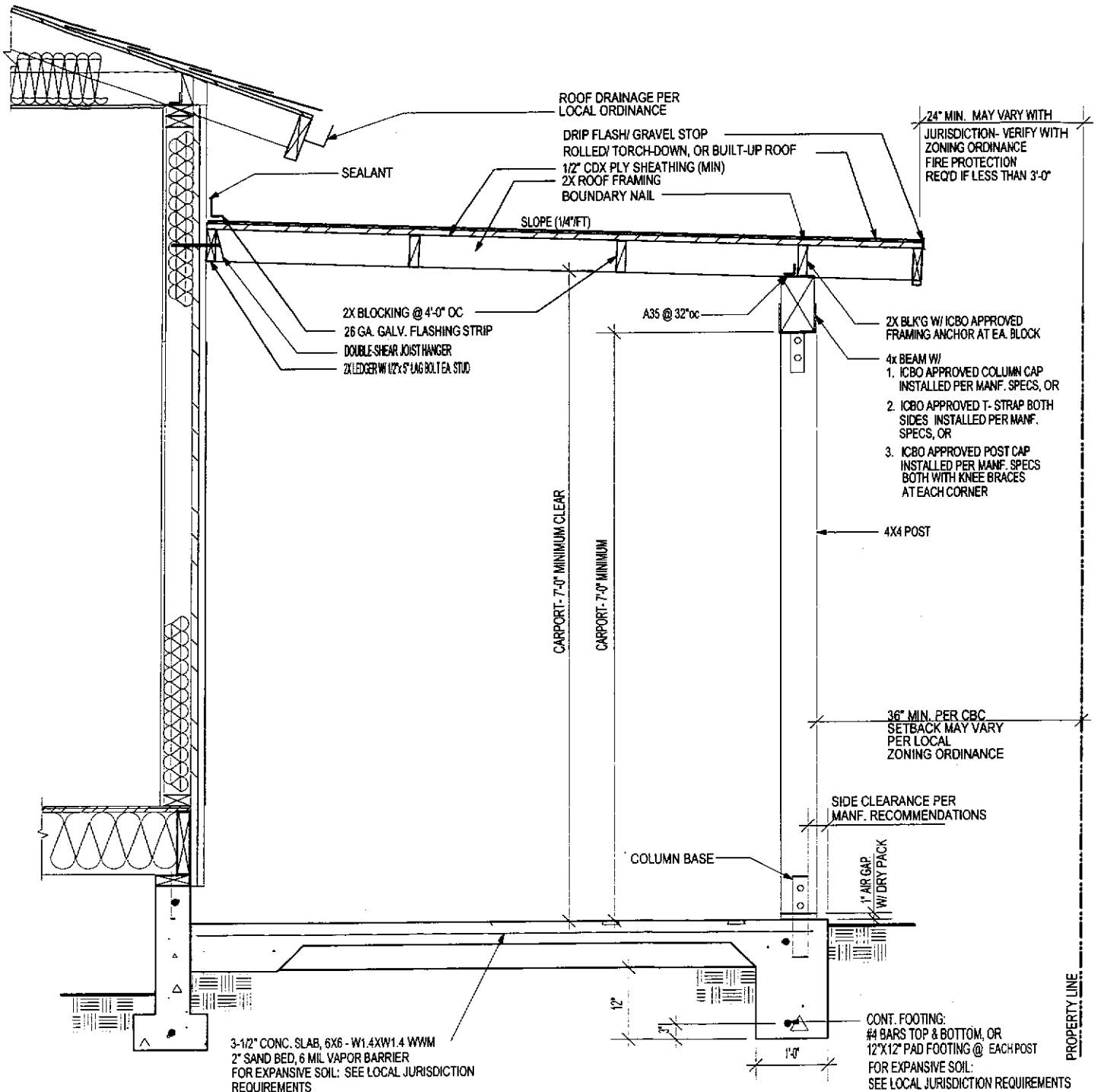
ALLOWABLE SPANS FOR DF #2 ROOF RAFTERS			ALLOWABLE SPANS FOR DF #2 CEILING JOISTS		
Light Dead Load (up to 15 psf) / Max. Roofing Load: 6 psf (Asphalt Shingles)			Dead Load: 10 psf / Live Load: 10 psf		
RAFTER SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN
2x6	24"	8'-8"	2x4	24"	9'-10"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

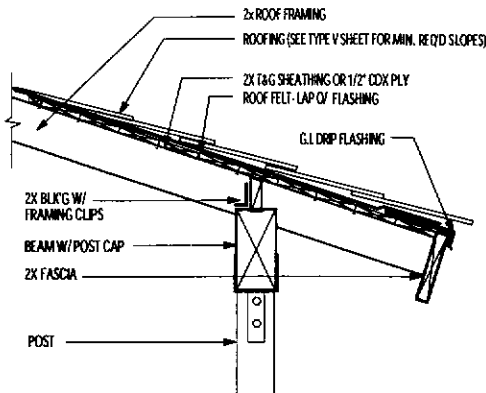
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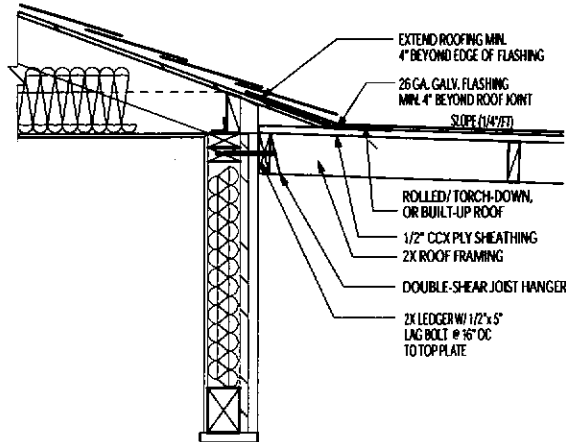
LOS ANGELES REGIONAL UNIFORM CODE PROGRAM CARPORT

TYPE V CONSTRUCTION- WOOD FRAME RESIDENTIAL BUILDINGS
(CBC CHAPTER 23, DIV IV, SEC. 2320) ONE-STORY CONSTRUCTION

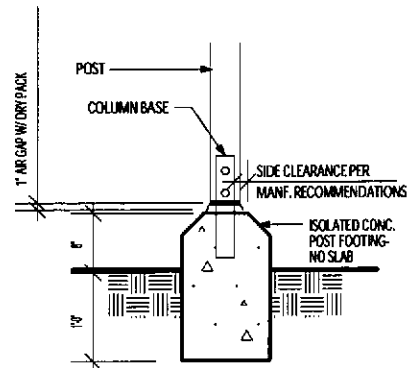




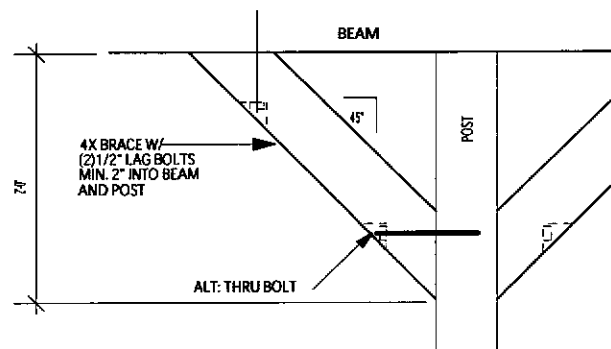
ALTERNATE EAVE DETAIL



ALTERNATE CONNECTION DETAIL



ALT. FOOTING DETAIL



KNEE BRACE DETAIL

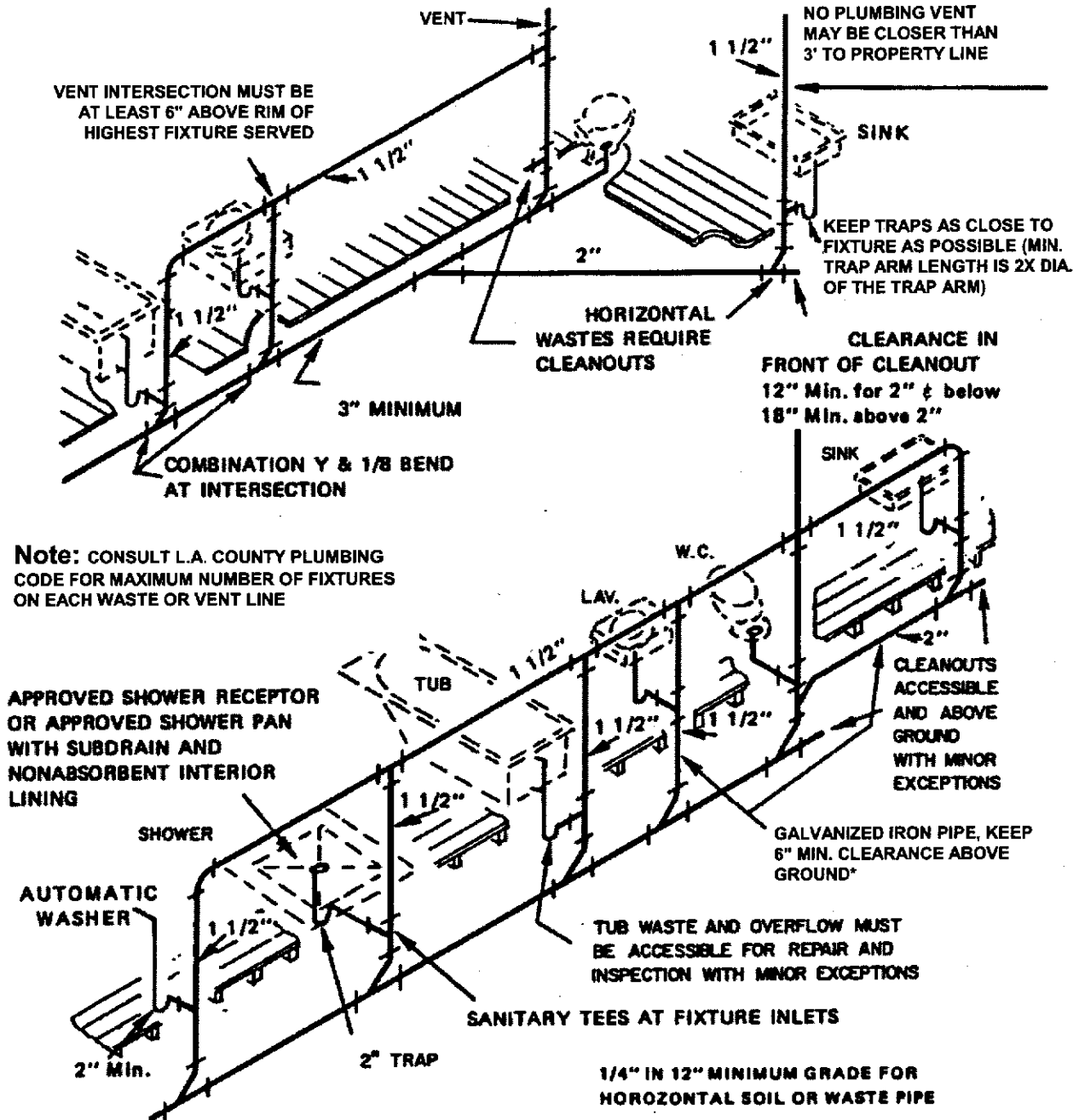
ALLOWABLE SPANS FOR DF#1 HEADERS Maximum span of tributary load: 20'-0"	
SPAN	BEAM SIZE
Up to 4'-0"	4x4
4'-1" to 6'-0"	4x6
6'-1" to 8'-0"	4x8
8'-1" to 10'-0"	4x10
10'-0" to 12'-0"	4x12*

* 4x12 DF No.1 may be used over a 16'-0" garage door in one-story open patio or airport structures.

ALLOWABLE SPANS FOR DF #2 ROOF RAFTERS 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 Dead Load: 10 psf/Live Load: 10 psf		
RAFTER SIZE	SPACING	ALLOWABLE SPAN	JOIST SIZE	SPACING	ALLOWABLE SPAN
2x6	24"	8'-8"	2x4	24"	9'-10"
	16"	10'-8"		16"	11'-3"
	12"	12'-4"		12"	12'-5"
2x8	24"	11'-0"	2x6	24"	15'-6"
	16"	13'-5"		16"	17'-8"
	12"	15'-6"		12"	19'-6"
2x10	24"	14'-0"	2x8	24"	20'-5"
	16"	17'-2"		16"	23'-4"
	12"	19'-10"		12"	25'-8"
2x12	24"	17'-0"	2x10	12"	26'-0"
	16"	20'-10"			
	12"	24'-1"			

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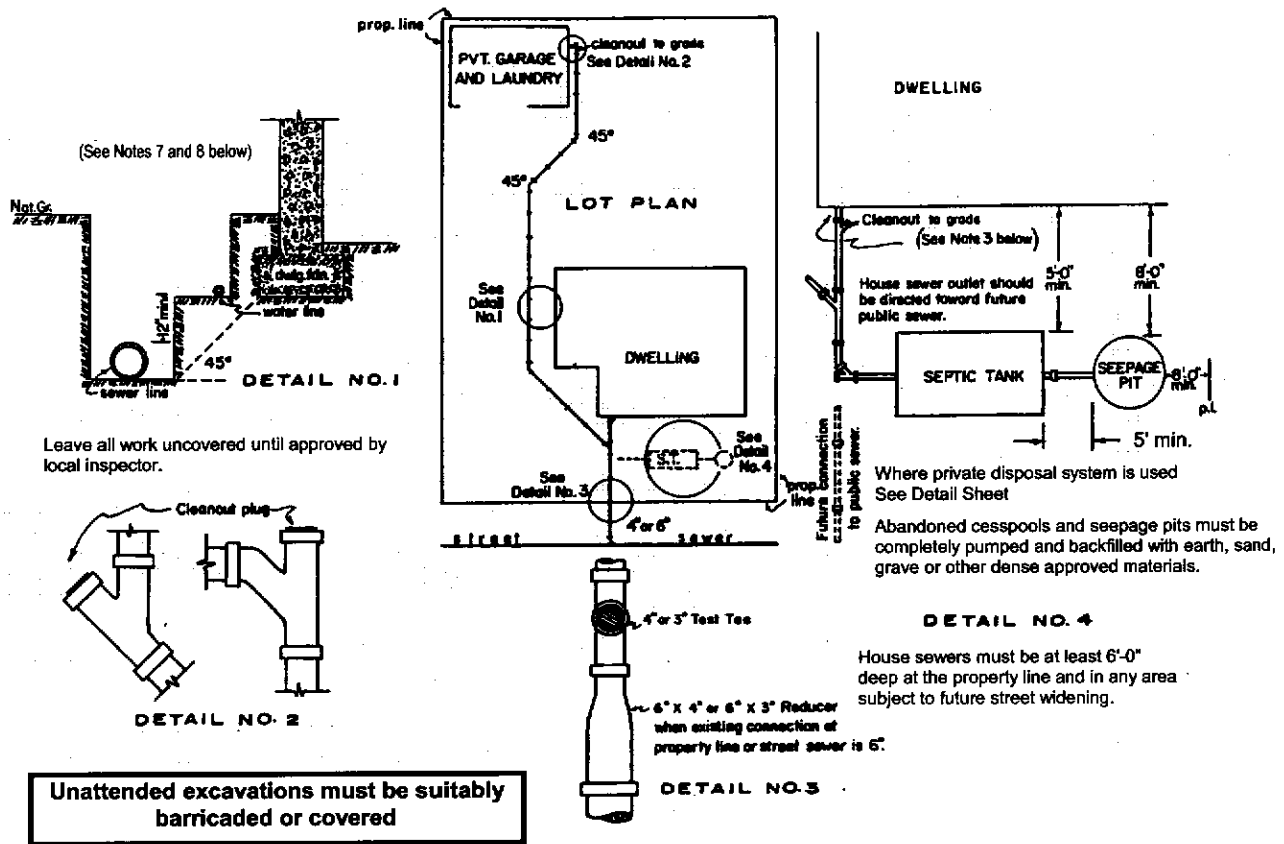
PLUMBING DETAILS



FOR ADDITIONAL INFORMATION CONSULT WITH LOCAL INSPECTOR

* ABS AND PVC DWV MAY BE USED FOR RESIDENTIAL CONSTRUCTION NOT MORE THAN TWO STORIES IN HEIGHT.

HOUSE SEWERS



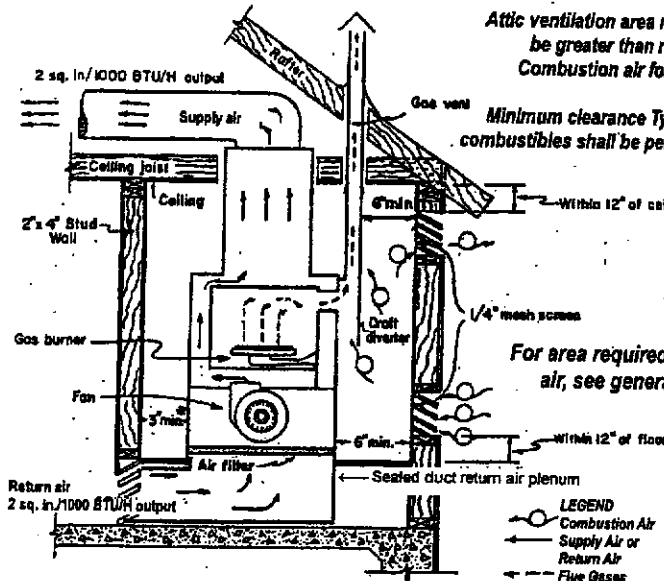
A permit must be obtained before commencing any house sewer disposal system construction. The legal description of the property to be connected will be necessary when applying for permission to connect to a public sewer. Consult your local building & safety office concerning approved materials and for any additional help or information.

NOTES

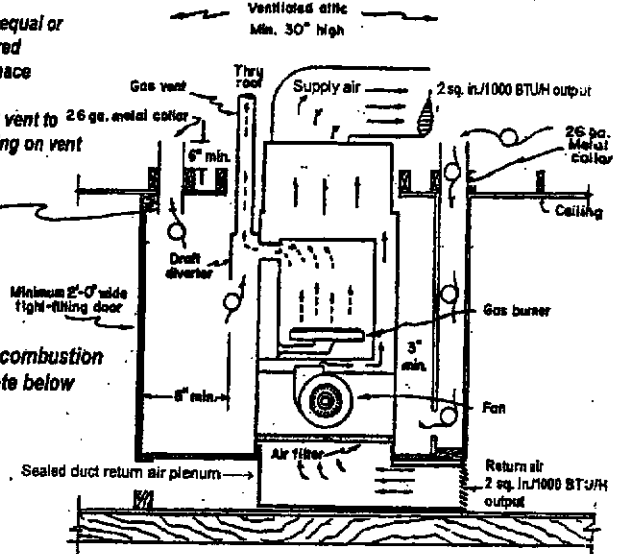
House sewers shall:

1. Be located only on the lot which they serve.
2. Be 3" minimum diameter and 12" below ground if nonmetallic.
3. Not be joined by means of cement mortar joints.
4. Be supported on a firm bed throughout their entire length.
5. Have a 3" per foot slope toward the street sewer or septic tank.
6. Be provided with a cleanout at their upper terminal, at each aggregate change in direction exceeding 135° and at intervals of not to exceed 100'-0" in straight runs.
7. Not be located in the same ditch with domestic water piping unless the water piping rest on a solid shelf to the side and 12" above the sewer or the sewer pipe is of drainage material.
8. Not be located in an excavation which is deeper than the bottom of a parallel foundation unless the bottom edge of the excavation is at least one foot away from the foundation for each foot of excess depth.

Forced Air Heaters



CONCRETE SLAB INSTALLATION



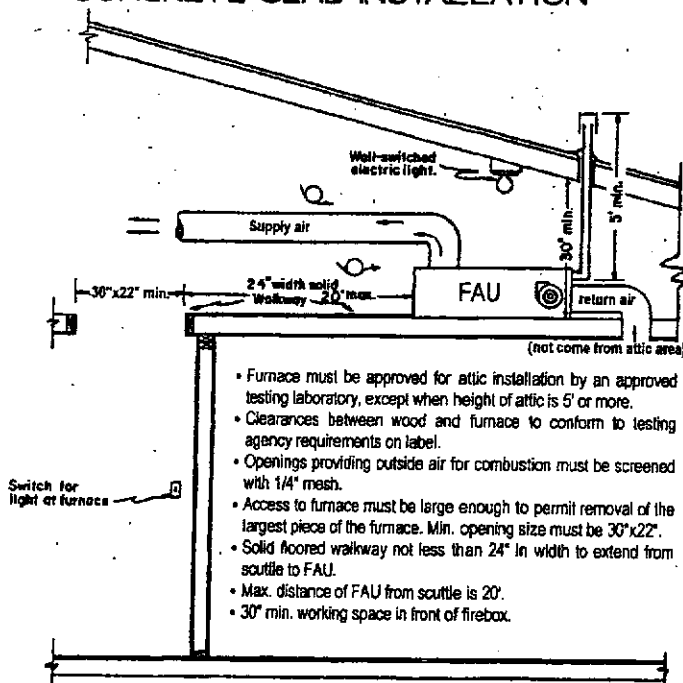
WOOD FLOOR INSTALLATION

GENERAL NOTES

- Equipment shall bear a permanent and legible nameplate on which shall appear a seal of approval of the listing agency.
- Appliances designed to be vented shall be connected to a venting system as specified in the L.A. Co. Mechanical Code.
- A room or space containing a fuel-burning appliance shall be provided with combustion air as specified in the L.A. Co. Mechanical Code.
- Combustion air ducts shall have a minimum dimension of 3 inches.
- When combustion air is supplied from the attic space, the attic space shall be ventilated by fresh air openings equal to at least the required supply.
- No forced air or gravity central heating furnace shall be located in any room used or designed to be used for sleeping purposes, bathroom, clothes closet, or in any confined space with access only through the above locations.

Exception - Access is allowed to attic furnace through closets, including closets in bedrooms and bathrooms.

- Minimum 3" clearance required to sides, back and top of furnace *
- Minimum 3" floor to ceiling clearance required from front of combustion air opening to front or firebox side of furnace.
- Minimum 6" in front of the firebox.
- Return air may be taken from outside the building, from rooms used for living quarters inside the building or from both sources.
- Return air shall not be taken from the following locations:
 1. Closer than 10'-0" from any appliance firebox or draft diverter which is located in the same enclosed space as the air supply inlet.
 2. A closet, bathroom, toilet room or kitchen.
 3. Where it will pick up objectionable odors, fumes of flammable vapors.
 4. Where it is located in the same enclosed space as the combustion air inlet.
- Compartment shall be at least 12" wider than furnace.



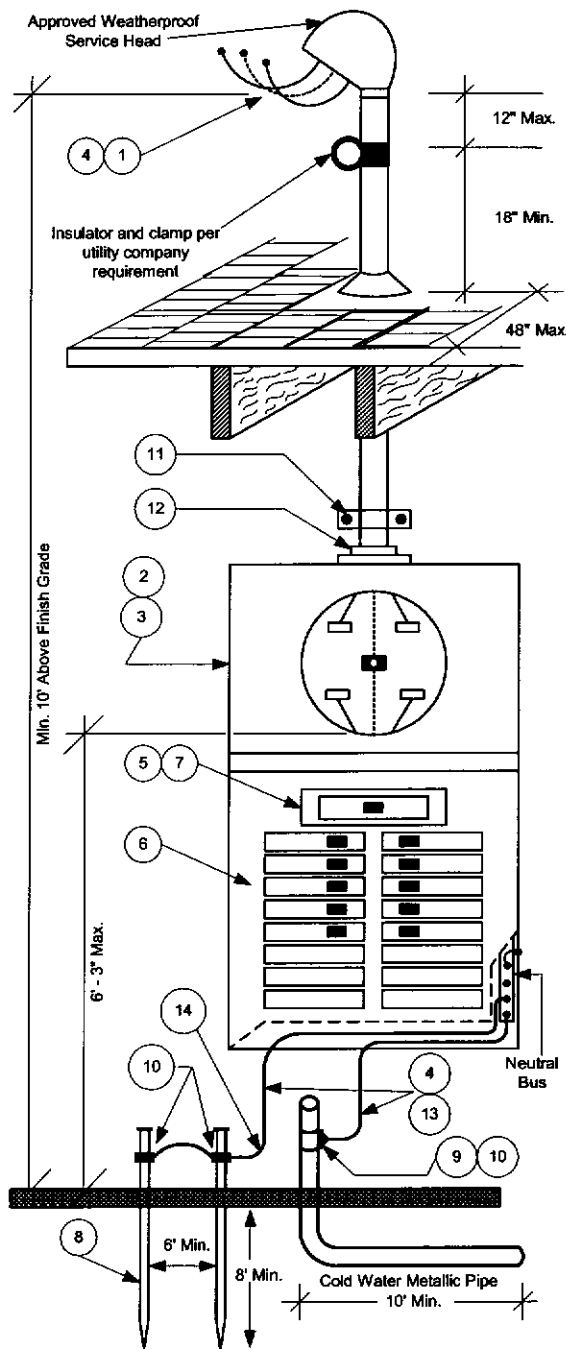
ATTIC INSTALLATION

Note: The above also applies to combination heating and cooling units.



Electrical Details

Single Family Dwelling



- Service entrance conductors shall be listed or marked for wet location and sunlight resistant. Minimum of 18" of free conductor is required for attachment to service drops.
- For service equipment/meter location and height, consult with the local utility company.
- For underground service requirements and conduit size, consult with local utility company. (Conduit shall be listed to satisfy the requirements of the Electrical Code).
- Minimum size of service entrance conductors and grounding electrode conductors.

Service or feeder rating	Service or feeder conductor THW/THWN-Copper	Grounding electrode and bonding conductor-Copper
100A	#4	#8
200A	#2/0	#4
400A	400 MCM	#1/0

- For single-family dwelling, the service disconnecting means shall have a rating not less than 100 amperes, 120/240 volts single phase, three-wire.
- Minimum required branch circuits:
 - 15A or 20A circuit(s) for general lighting and receptacles. The number of branch circuits is determined by desired use and the total square footage of the dwelling. Branch circuit feeding the receptacle in the bedroom shall be protected with an Arc Fault circuit breaker.
 - Two or more small appliance branch circuits for the kitchen counter top and dining room.
 - A dedicated 20-ampere branch circuit for the bathroom receptacles.
 - Additional branch circuits may be required for dishwasher and garbage disposer.
 - A dedicated 20-ampere branch circuit for laundry.
- Main disconnecting means may be omitted if there are no more than six disconnecting means (circuit breakers/fuses) per service.
- A metal underground water pipe shall be supplemented by an additional electrode as listed below:
 - Steel reinforcing bars (#4 or larger) for structural foundation, or
 - Two ground rods not less than 8 feet in length (each), minimum 6 feet apart. Rods shall be installed such that at least 8 feet of length is in contact with the soil. For single ground rod installation, it will be the responsibility of the homeowner/contractor to provide a test for verification of 25 ohms or less resistance to ground.
- Grounding connection to the interior metal water pipe shall be made within the first five feet of the main water pipe entrance to the building.
- Listed and accessible grounding clamp. If buried in the earth, the clamp shall be approved for direct burial.
- Service raceway to be secured within 36" of box and not to exceed 10'-0" intervals on service conduit.
- Threaded boss or hub.
- Grounding electrode conductor shall be protected from physical damage, if necessary by conduit, armored cable or other means.
- Where the supplemental electrode is a rod, pipe, or plate electrode, the portion of the bonding jumper that is the sole connection to the supplemental grounding electrode shall not be required to be larger than 6 AWG copper wire or 4 AWG aluminum wire.

GENERAL NOTES:

- All 125-volt, single-phase, 15 and 20 ampere receptacles installed in the following locations shall have GFCI protection for personnel: *bathrooms, garages, outdoors, crawl spaces, unfinished basements, kitchens (countertops), and wet bar sinks.*
- Nonmetallic sheathed cable (NM, NMC) with grounding conductor is permitted for installation in single-family dwellings where it is not subject to physical damage (concealed in walls, attic space, etc.)
- All electrical equipment shall be listed.
- A hard-wired smoke alarm with a battery back up 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.
- Switch lighting outlets required for all habitable rooms, hallways, stairways, garages, attics, basements, and entrances and exits on exterior of building.
- All outlets installed in dwelling unit bedrooms shall be protected by an ARC-Fault circuit interrupter listed to provide protection to the entire branch circuit.