Rafter Size __X___@___" o.c.

Span ___'-_____"   Eave ____"

(See Page 2 for Rafter Span Table)

Slope _____" per ft.
(Slope 1/4" per ft. minimum)
12

2X Blocking

Ledger:
(See Detail A)

2X ____ Ledger   (See Detail C)

Beam Size: ___X_____
(See Page 2 for Beam Span Table)

Existing Building

6'8" Minimum Height

7'0" Min. Ceiling Height

Post Anchors
(See Detail D)

Existing Footing/Slab

3-1/2" Concrete slab,
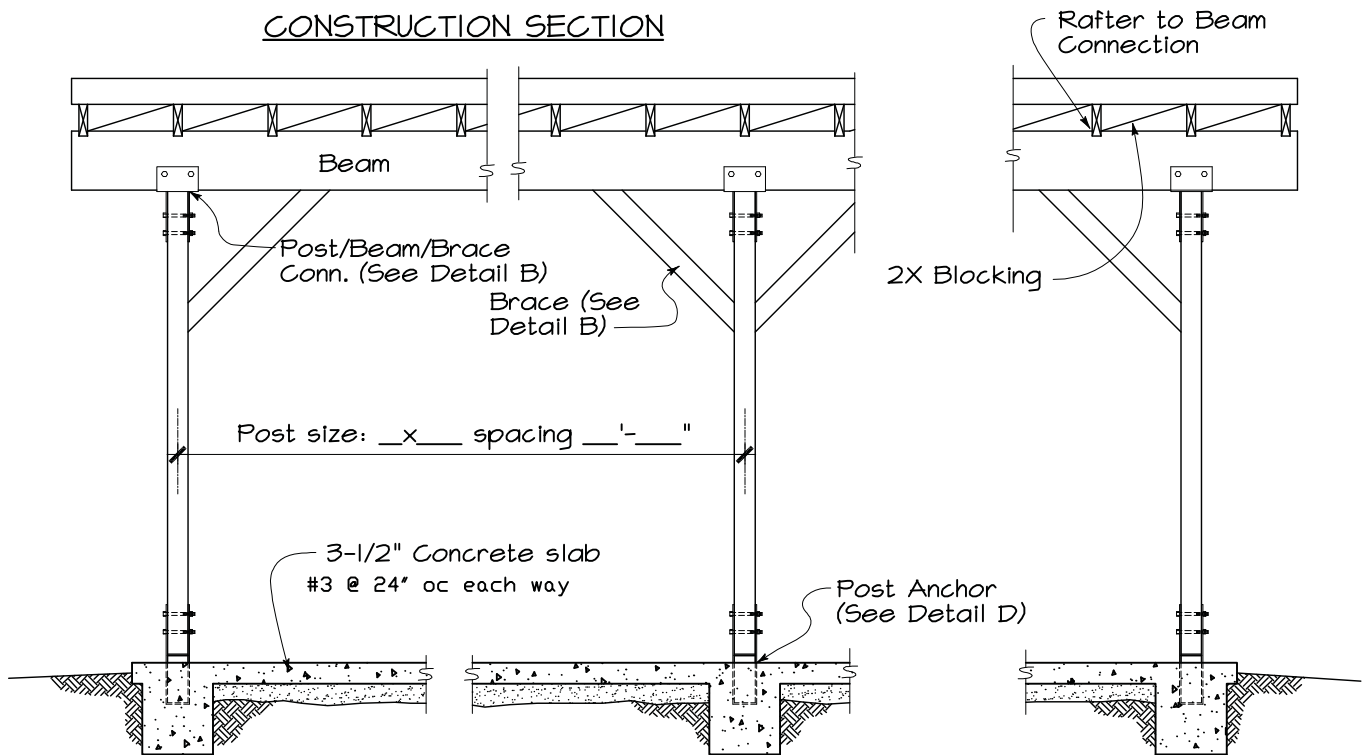#3 24" oc each way

Finish Grade

Remove grass & weed to natural grade
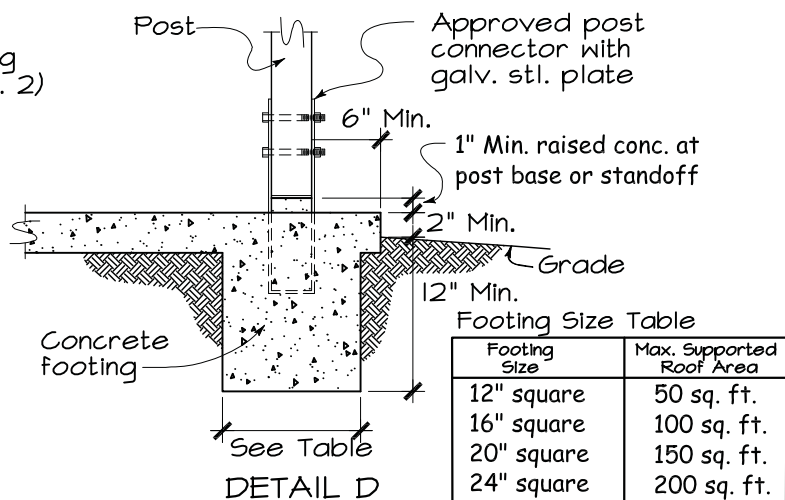
Sand Fill
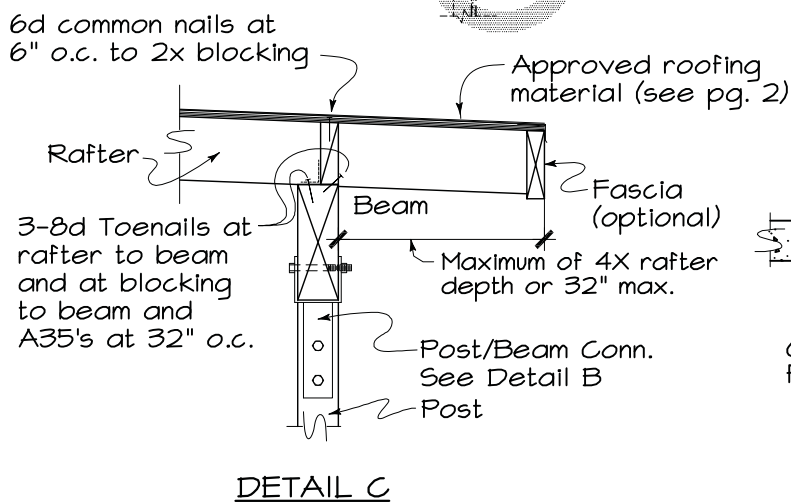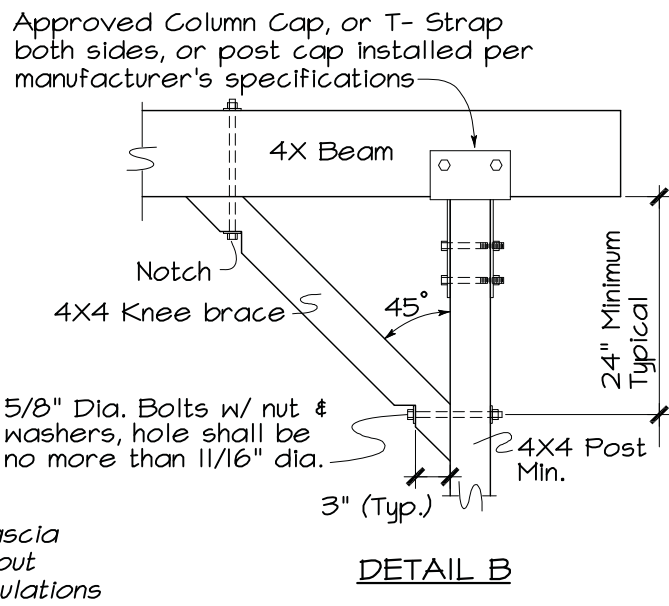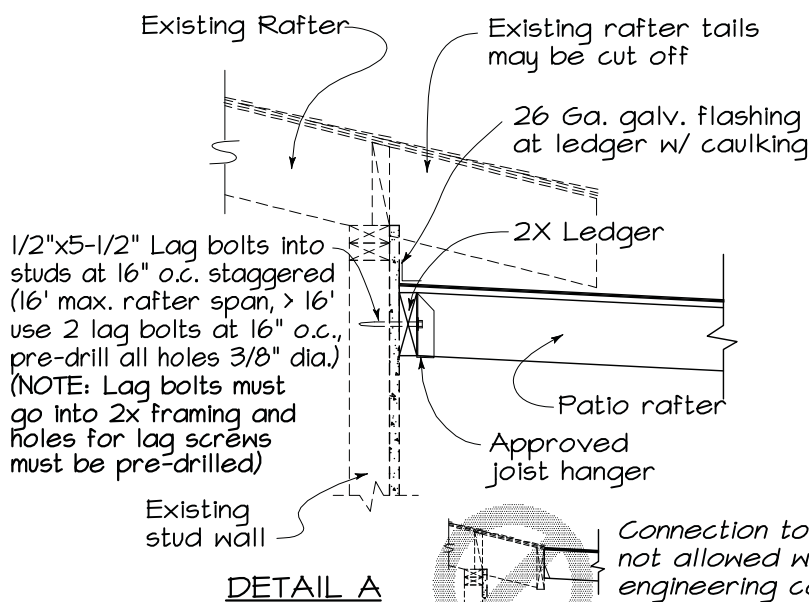
CONSTRUCTION SECTION

Roofing Material: (Check One)

☐ Light Weight Roof: Fiberglass, lath or 2x2's or other spaced boards, other materials provided the material does not exceed 6 pounds per square foot.

or

☐ Normal Weight roofing < 2:12, 300# rock or gravel over 3 layers of 15 lb felt hot mopped between or approved built-up roof.

or

☐ For slopes greater than 2:12, composition shingles may be used with assemblies specified by the manufacturer.

or

☐ _____
_____
_____
_____

Beam

Post/Beam/Brace
Conn. (See Detail B)

Brace (See Detail B)

Rafter to Beam Connection

2X Blocking

Post size: __x___ spacing __'-___"

3-1/2" Concrete slab
#3 @ 24" oc each way

Post Anchor
(See Detail D)

ELEVATION

ATTACHED PATIO COVER

HELP FOR THE HOME OWNER
LAKE FOREST BUILDING AND SAFETY

Tony Dormanesh   *1/11/13*

Building Official: Date

Sheet 1 of 4   B810

DETAIL A

Existing Rafter

Existing rafter tails may be cut off

26 Ga. galv. flashing at ledger w/ caulking

2X Ledger

1/2"x5-1/2" Lag bolts into studs at 16" o.c. staggered (16' max. rafter span, > 16' use 2 lag bolts at 16" o.c., pre-drill all holes 3/8" dia.) (NOTE: Lag bolts must go into 2x framing and holes for lag screws must be pre-drilled)

Patio rafter

Approved joist hanger

Existing stud wall

Connection to fascia not allowed without engineering calculations

DETAIL B

Approved Column Cap, or T- Strap both sides, or post cap installed per manufacturer's specifications

4X Beam

Notch

4X4 Knee brace

45°

24" Minimum Typical

5/8" Dia. Bolts w/ nut & washers, hole shall be no more than 11/16" dia.

4X4 Post Min.

3" (Typ.)

DETAIL C

6d common nails at 6" o.c. to 2x blocking

Approved roofing material (see pg. 2)

Rafter

Beam

Fascia (optional)

3-8d Toenails at rafter to beam and at blocking to beam and A35's at 32" o.c.

Maximum of 4X rafter depth or 32" max.

Post/Beam Conn. See Detail B

Post

DETAIL D

Post

Approved post connector with galv. stl. plate

6" Min.

1" Min. raised conc. at post base or standoff

2" Min.

Grade

12" Min.

Concrete footing

See Table

Footing Size Table

Footing Size	Max. Supported Roof Area
12" square	50 sq. ft.
16" square	100 sq. ft.
20" square	150 sq. ft.
24" square	200 sq. ft.

RAFTER SPANS (DFL #2)

Rafter Size	Rafter Spacing				
	12"	16"	24"	32"	48"
2x4	7'-9"	7'-1"	6'-2"		
2x6	12'-3"	11'-1"	9'-3"	8'-0"	6'-6"
2x8	16'-2"	14'-8"	11'-8"	10'-2"	8'-3"
2x10	20'-0"	18'-9"	14'-4"	12'-5"	10'-1"
2x12	20'-0"	20'-0"	16'-7"	14'-4"	11'-9"
4x6	16'-3"	14'-9"	12'-11"	11'-6"	10'-0"
4x8	20'-0"	19'-5"	17'-0"	15'-3"	12'-8"
4x10		20'-0"	20'-0"	18'-11"	15'-5"
4x12				20'-0"	17'-11"
4x14					20'-0"

BEAM SPANS or COLUMN SPACING (DFL #1)

Rafter Span	Beam Span									
	4x6	4x8	4x10	4x12	4x14	4x16	6x8	6x10	6x12	6x14
8'	10'-5"	13'-9"	16'-9"	19'-7"	20'-0"		16'-7"	20'-0"		
10'	9'-8"	12'-4"	15'-1"	17'-6"	19'-7"	20'-0"	15'-4"	18'-6"	20'-0"	
12'	8'-11"	11'-3"	13'-9"	16'-0"	17'-10"	20'-0"	14'-0"	16'-9"	19'-5"	
14'	8'-3"	10'-5"	12'-9"	14'-9"	16'-6"	19'-0"	12'-11"	15'-8"	18'-0"	20'-0"
16'	7'-8"	9'-9"	11'-11"	13'-9"	15'-5"	17'-10"	12'-1"	14'-8"	16'-10"	19'-9"
18'	7'-3"	9'-2"	11'-3"	13'-0"	14'-7"	16'-9"	11'-5"	13'-9"	15'-9"	18'-7"
20'	6'-11"	8'-9"	10'-8"	12'-4"	13'-10"	15'-11"	10'-9"	13'-1"	15'-0"	17'-8"
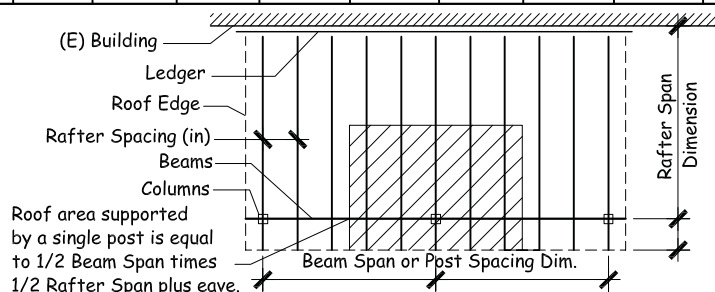
Loading: DL = 10 psf. (Roofing Material = 6 psf max.)
LL = 10 psf

Loading assumes 3/4" ply for spans <24" and 2x decking for spans >24". Other designs are possible but evidence must be submitted to establish their adequacy. No stucco finishes or roofing material exceeding 6 psf w/o engineering. Footing bearing pressures account for load duration and allowable bearing pressures of 1500 psf.

(E) Building
Ledger
Roof Edge
Rafter Spacing (in)
Beams
Columns

Roof area supported by a single post is equal to 1/2 Beam Span times 1/2 Rafter Span plus eave.

Beam Span or Post Spacing Dim.

Rafter Span Dimension

Sheet 2 of 4

INSTRUCTIONS

1. A building permit for a patio cover may be obtained using these City Sandard drawings. Simply fill in the blanks and information requested on these plans.
2. Draw a plot plan (instructions can be found on the City's "Sample Plot/Sit Plan" handout.) and bring three copies of the completed drawing to Building and Safety where it can be reviewed for Building and Zoning code requirements and permit issuance.
3. Deviations from the construction and designs shown in these drawings will require complete plans and details and must be reviewed by a plan check engineer prior to obtaining a building permit.

GENERAL NOTES

1. A patio cover is a one story structure that does not exceed 12 feet in height above the adjacent grade.
2. Patio covers shall be used for recreational, outdoor living purposes only and shall not be used as carports, garages, storage rooms or habitable space.
3. The longer side and one additional side of the patio shall be 65% open, below 6'8" above the floor. Openings may be enclosed with insect screening, approved translucent or transparent plastic not more than 1/8" thick or glass conforming to the provisions of Chapter 24 or any combination of the foregoing.
4. A one hour firewall is required when the exterior face of post/wall is located less than 5'0" from from the property line.
5. Unless a licensed engineer or architect provides structural calculations to justify it, no patio cover/ structure will attach to or rely upon the existing rafter tails or roof projection for the purposes of supporting the new structure.
6. Patio covers are for outdoor living only. Use of these structures as habitable space requires a building permit and alterations to both the patio cover and the house to comply with code requirements. Conversion to habitable space may require upgrades to your foundation system, roof framing, electrical, fire life safety and many other items. Also you may need to provide a vapor barrier under the slab, a reinforced slab and footing, new wall bracing, heating, energy forms and insulation for the space to be converted.
7. These drawings are examples of the way an open patio cover may be installed. Other methods may be used provided they are approved by this Department prior to installation. All material types and sizes are subject to the approval of this Department.
8. Posts may be supported on a 3-1/2" thick reinforced concrete slab on grade when posts support a combined live and dead load less than 750 pounds per column. Approved connectors between post and concrete slab shall be capable of withstanding uplift and wind forces.

TYPICAL APPREVIATIONS

Conc. = Concrete
Conn. = Connection
DFL = Douglas Fir Larch
Dia. = Diameter
Dim. = Dimension
Ga. = Gauge
Galv. = Galvanized

DL = Dead Load
LL = Live Load
psf = Pounds per Square Foot
psi = Pounds per Square Inch
o.c. = on center (spacing)
stl. = Steel
> = Greater Than

REQUIRED INSPECTIONS

1. FIRST INSPECTION: shall be after excavation for the footing (before any concrete is poured) and verification of the solid wood backing for the ledger bolting.
2. SECOND INSPECTION: shall be the framing inspection when all framing has been completed. The roof sheating and nailing will be inspected at this time.
3. THIRD INSPECTION: will be the final inspection after the roof covering has been installed.

CONSTRUCTION NOTES

1. Roof Covering shall be Class A or better. Rafters shall be sized based on the table shown on page 2. Patio covers utilizing this sheet shall have roofing assemblies weighing less than 10 psf, including asphalt or fiberglass shingles, cap sheets, build-up roofs, hot mopped assemblies and some light weight roofs. Use of heavy weight roofs including concrete, clay or slate tile or stucco soffits require calculations and plans by a licensed engineer.
2. Rafters shall be marked Douglas Fir Grade #2 or better, beams shall be marked Douglas Fir Grade #1 or better.
3. Concrete shall have a minimum strength of 4500 psi in 28 days, and be Type II or V cement with a minimum w/c of 0.45
4. Framing hardware shall be ICC approved for the intended use and installed per manufacturer's specifications using all recomended fasteners.
5. Roof sheathing shall be continuous over 2 or more rafters, face grain shall be perpendicular to supports and maximum span shall be as follows:

SHEATHING	SPAN RATING	MAXIMUM SPAN	NAILING
3/8" CDX Plywood	20/0	16" o.c.	6d common or deformed shank
1/2" CDX Plywood	24/0	24" o.c.	6d common or deformed shank
5/8" CDX Plywood	40/20	32" o.c.	8d common or deformed shank
3/4" CDX Plywood	48/24	36" o.c.	8d common or deformed shank
1-1/8" CDX Plywood	60/48	48" o.c.	10d common or deformed shank
1x nominal lumber		24" o.c.	2-8d at each lap
2x Decking		48" o.c.	2-16d at each rafter

(all nail spacing for plywood sheathing shall be 6" on center (o.c.) at edges and 12" o.c. in the field)