

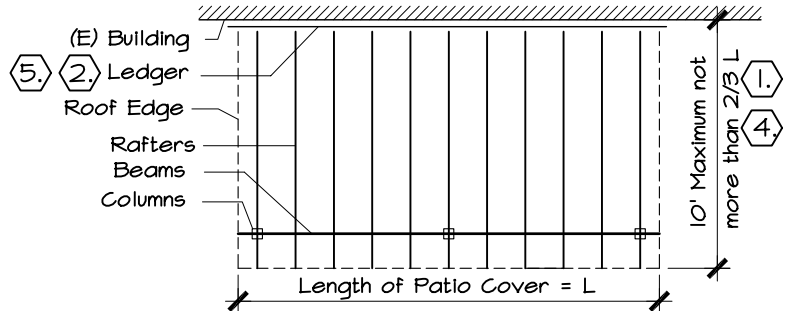
GENERAL NOTES:

- A. Knee Braces must be provided for all patio covers unless the construction of the patio cover meets one of the details and the related conditions shown on this handout.
- B. All conditions for use of the details shown on this sheet must be followed.
- C. ANY DEVIATIONS FROM THIS OR THE STANDARD PLAN REQUIRES COMPLETE PLANS BE SUBMITTED WHICH FULLY DETAILS ALL CONSTRUCTION AND SHOWS FULL CODE COMPLIANCE.

REMOVAL OF KNEE BRACES FOR SMALL COVERS:

A. Knee Braces must be provided for all patio covers. Small patio covers meeting the following conditions may be constructed without the installation of knee braces.

1. The patio cover must be attached to a main structure complying to conventional construction requirements of Chapter 23 Division IV of the UBC. The total span of the rafter cannot exceed $\frac{2}{3}$ of the length of the patio cover along the wall of the structure.
2. The patio cover cannot be connected to the fascia of the structure.
3. The patio cover must have a solid sheathed roof structure. (plywood)
4. The total span of the patio cover from house cannot exceed 10 feet from the structure.
5. Tension ties shall be provided between the dwelling and rafters of patio cover. Provide details for this connection during the plan review process.
6. The connection point for knee braces for lattice patio covers, meeting the above conditions, may be reduced from the 24" shown standard plan detail to 16".
7. Post to beam connections shall be a minimum of CC46, with 4x6 columns.



REMOVAL OF KNEE BRACES FOR CONTINUOUS ROOF DIAPHRAGMS:

Where the roof diaphragm from the dwelling and patio cover are structurally continuous and will act as one element this distance can be increased based on the construction of the dwelling. Consult Building Official for options, structural calculations from a licensed engineer may be required.

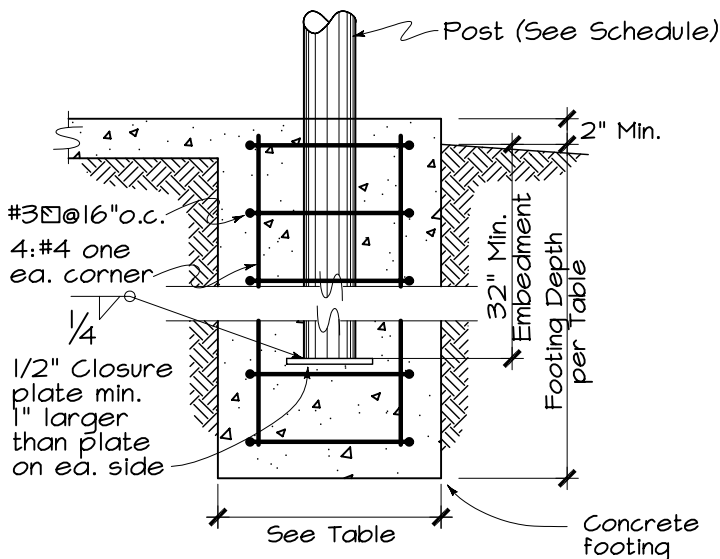
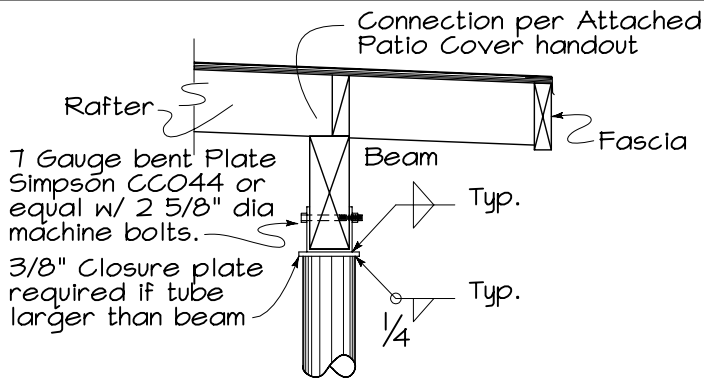
USE OF STEEL COLUMNS EMBEDDED IN CONCRETE FOOTING IN LIEU OF KNEE BRACES

Wood columns and knee braces may be replaced by steel columns and concrete footings provided columns of sufficient size and number are provided. All construction shall meet the details on page two of this handout.



PATIO COVER - ALTERNATES TO KNEE BRACES
HELP FOR THE HOMEOWNER
CITY OF FILLMORE, BUILDING AND SAFETY

Steve Newman 9/3/03
Building Official: Date
Date: 9/3/03 Sheet 1 of 2 C-2



GENERAL NOTES:

1. Ultimate compressive strength of concrete at 28 days shall be $f'c = 2500$ psi. Concrete shall be a 5 sack ready-mix or machine mixed with 1 part cement, 1 part sand and not more than 4 parts $3/4$ " gravel, water content shall not exceed 7.5 gallons per sack of cement.
2. Steel Pipe Column $FY = 36$ KSI, ASTM A53
3. All reinforcing steel shall be ASTM A615 minimum Grade 40.
4. Structural Steel Tubes $FY = 46$ KSI, ASTM A500
5. All welding shall be done in the shop of a licensed fabricator or shall be done by a certified welder with special inspector approved by the Building Official. Written certification shall be provided to the City Inspector prior to or at the time of inspection.

MINIMUM COLUMN AND FOOTING SIZE

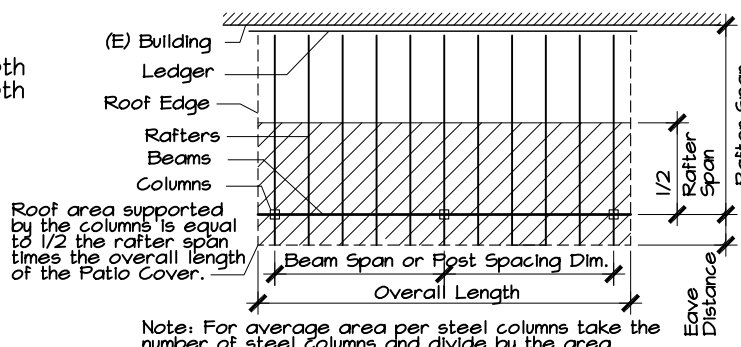
Max. Column Height	Average Roof Area Supported by Each Column							
	40 sqft. (276 lbs)	50 sqft. (345 lbs)	60 sqft. (414 lbs)	70 sqft. (483 lbs)	80 sqft. (552 lbs)	100 sqft. (690 lbs)	125 sqft. (863 lbs)	
8'-0"	TS 3.5x3.5x5/16 4" STD Pipe 2' 5Q.x4'-0" D 3' 5Q.x3'-6" D	TS 4x4x1/4 4" STD Pipe 2' 5Q.x4'-6" D 3' 5Q.x3'-4" D	TS 4x4x5/16 5" STD Pipe 2' 5Q.x4'-4" D 3' 5Q.x4'-0" D	TS 4.5x4.5x1/4 5" STD Pipe 2' 5Q.x5'-0" D 3' 5Q.x4'-3" D	TS 4.5x4.5x1/4 5" STD Pipe 2' 5Q.x5'-3" D 3' 5Q.x4'-6" D	TS 5x5x1/4 6" STD Pipe 2' 5Q.x5'-4" D 3' 5Q.x4'-9" D	TS 5x5x1/4 6" STD Pipe 2' 5Q.x5'-4" D 3' 5Q.x5'-0" D	TS 6x6x1/4 6" STD Pipe 2' 5Q.x6'-3" D 3' 5Q.x5'-3" D
9'-0"	TS 4x4x1/4 4" STD Pipe 2' 5Q.x4'-3" D 3' 5Q.x3'-4" D	TS 4x4x5/16 5" STD Pipe 2' 5Q.x4'-6" D 3' 5Q.x4'-0" D	TS 4.5x4.5x1/4 5" STD Pipe 2' 5Q.x4'-4" D 3' 5Q.x4'-0" D	TS 5x5x1/4 6" STD Pipe 2' 5Q.x5'-0" D 3' 5Q.x4'-6" D	TS 5x5x1/4 6" STD Pipe 2' 5Q.x5'-3" D 3' 5Q.x4'-9" D	TS 6x6x1/4 6" STD Pipe 2' 5Q.x5'-4" D 3' 5Q.x5'-0" D	TS 6x6x1/4 6" STD Pipe 2' 5Q.x6'-3" D 3' 5Q.x5'-6" D	
10'-0"	TS 4x4x5/16 5" STD Pipe 2' 5Q.x4'-3" D 3' 5Q.x3'-4" D	TS 5x5x1/4 6" STD Pipe 2' 5Q.x4'-4" D 3' 5Q.x4'-0" D	TS 6x6x1/4 6" STD Pipe 2' 5Q.x5'-0" D 3' 5Q.x4'-3" D	TS 6x6x1/4 6" STD Pipe 2' 5Q.x5'-3" D 3' 5Q.x4'-6" D	TS 6x6x1/4 6" STD Pipe 2' 5Q.x5'-3" D 3' 5Q.x4'-9" D	TS 6x6x3/8 6" STD Pipe 2' 5Q.x6'-0" D 3' 5Q.x5'-3" D	TS 6x6x3/8 6" STD Pipe 2' 5Q.x6'-6" D 3' 5Q.x5'-6" D	

Legend: TS 6x6x1/4 ← Steel Tube Size
 6" STD Pipe ← Round Pipe Size
 2' 5Q.x6'-3" D ← 2' Sq. or Round footing Depth
 3' 5Q.x5'-3" D ← 3' Sq. or Round footing Depth

Roof Area per Column is calculated by taking the total roof area supported by the columns divided by the number of steel columns.

A continuous footing can be used in lieu of the pier footing for the size and column shown below:

- TS 4x4x5/16 12"W 12"D w/2#4 T&B
- TS 5x5x1/4 15"W 15"D w/2#4 T&B
- TS 6x6x3/8 18"W 24"D w/3#4 T&B



Note: For average area per steel columns take the number of steel columns and divide by the area.



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