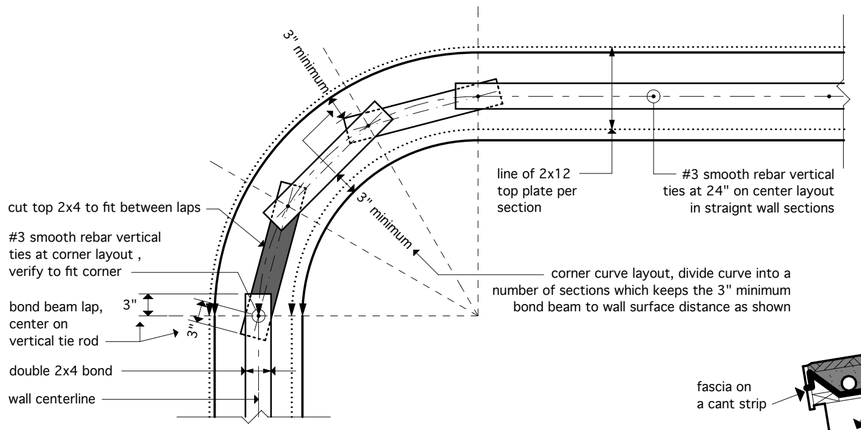
FOOTING WIDTH

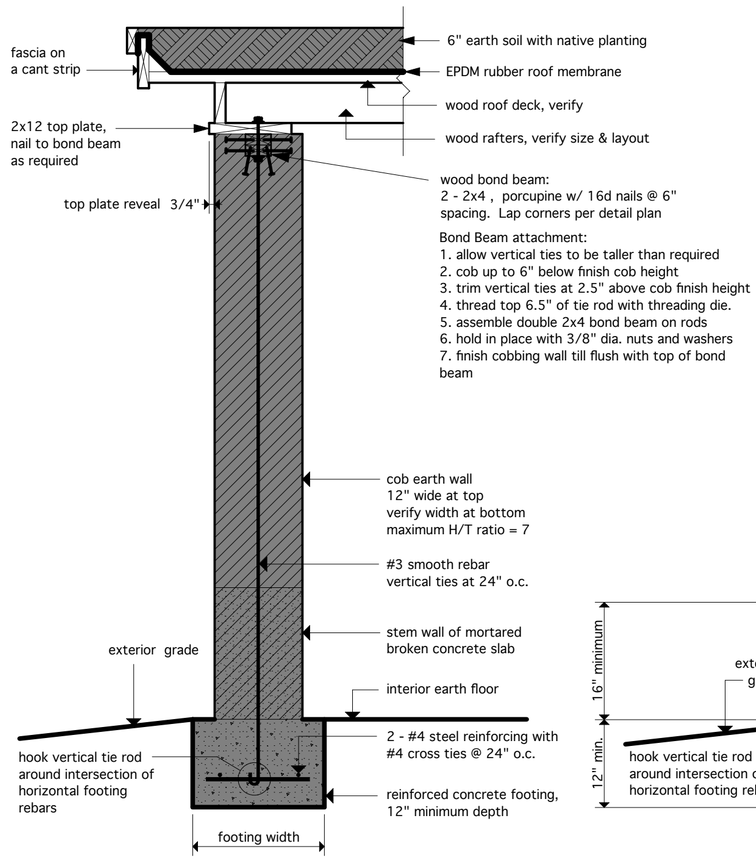
To determine footing width you need to figure the weight the footing supports. The weight consists of: the base wall, the cob wall, the roof, and any loft or upper floors supported by the wall.

1. The base wall will weigh 150 pounds per cubic foot.
2. The cob wall will also weigh 150 pounds per cubic foot.
3. The Roof area tributary to the wall will weigh 30 pounds per square foot / or 80 pounds per square foot for a 6" soil depth living roof.
4. The Loft or Upper Floor area tributary to the wall will weigh 50 pounds per square foot.

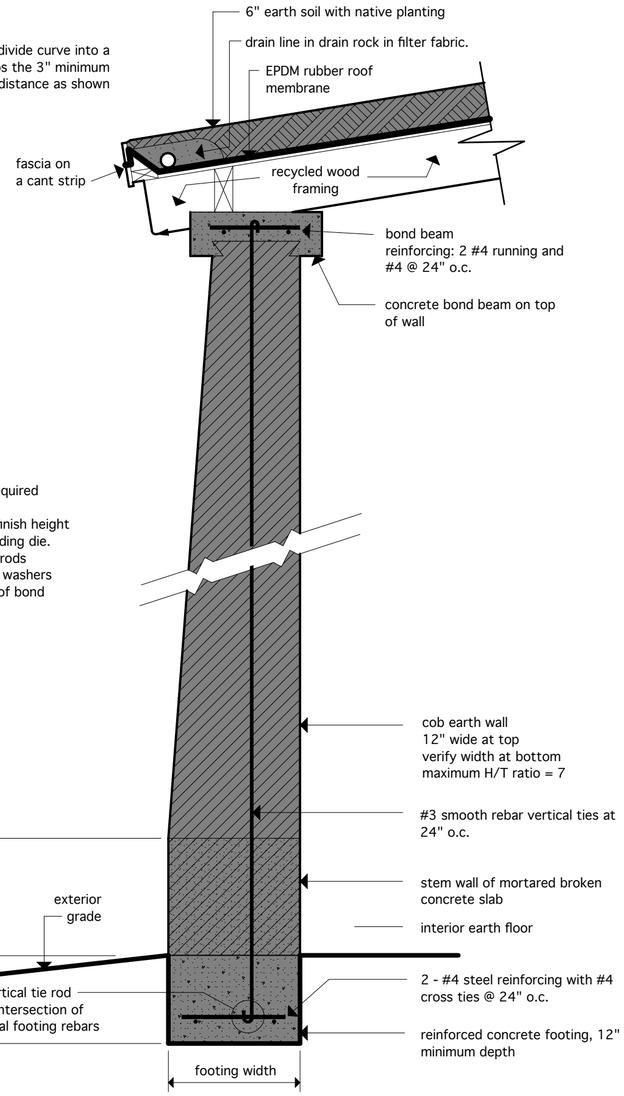
Figure the area of the base and cob wall section profile & multiply this X 150 pounds.
Figure the Roof area tributary to the wall & multiply this X 30 or 80 pounds.
Figure the Loft / Upper floor area tributary to the wall & multiply this X 50 pounds.
Sum all the above weights. This is the preliminary building weight which the foundation is supporting.
Divide this preliminary weight by 1000, this will give you the preliminary foundation width in feet.
Multiply the priliminary width x 150 (concrete weight per cubic foot). This gives the weight of the foundation.
Sum this foundation weight with the preliminary building weight. This gives the total weight bearing on the soil under your foundation.
Divide this total weight by 1000. This will give you the total weight foundation width. Multiply this total weight foundation width x 10%.
This will give you the Final Foundation Width in feet.



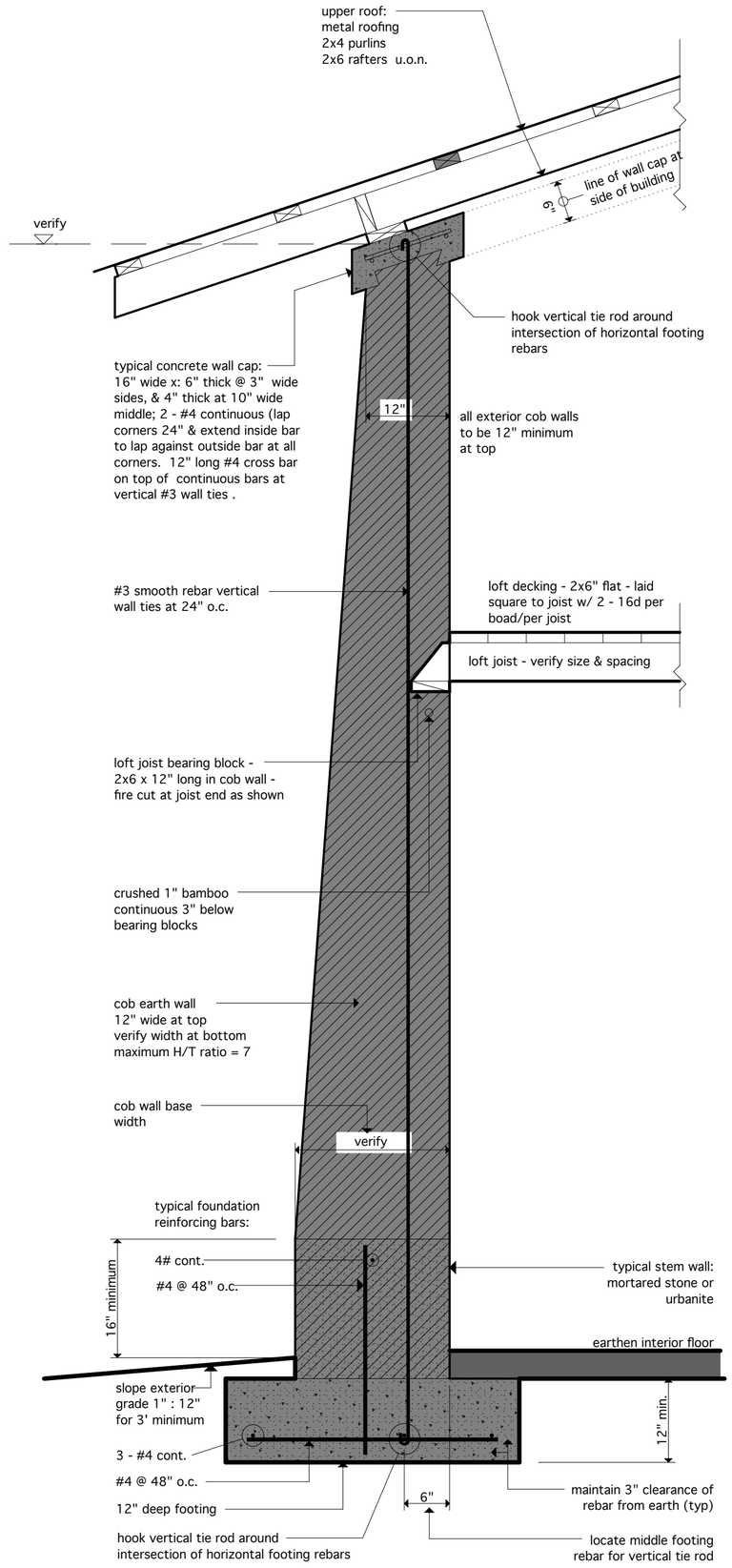
WOOD BOND BEAM CORNER LAP DETAIL



WALL WITH WOOD BOND BEAM



WALL WITH CONCRETE BOND BEAM



typical concrete footing

WALL WITH UPPER LOFT AND CONCRETE BOND BEAM

COB PORTION OF WALL THICKNESS TO HEIGHT RATIO = 1 : 7

The cob portion of walls to be a minimum of 12" thick. A seven foot (7') high cob wall is to be 12" thick for it's full height.
For any increase in the cob wall height beyond seven feet, add one and three quarter inches (1.75") to the base thickness for each additional foot of height.
Taper the wall to 12" at the top. Thus, an eight foot (8') high cob wall will be 13.75" thick at the base wall, and 12" thick at the top.
A nine foot (9') high wall will be 15.5" at the base & 12" at the top ..... etc.

COB WALL DESIGNS

john fordice / other fish architect
1828 fifth street / berkeley / CA 94710
510 549 1033 / otherfish@comcast.net

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