To determine footing width you need to figure the weight the footing supports. The weight consists of:

1. The base wall weight 150 pounds per cubic foot.
2. The cob wall will also weigh 150 pounds per cubic foot.
3. The red area tributary to the wall will weigh 30 pounds per square foot or 80 pounds per square foot for a 4’x 8’x depth.
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 loft area tributary to the wall & multiply this x 80 pounds.

Figure the red area tributary to the wall & multiply this x 30 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 Preliminary width x 10%.

Divide this preliminary 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.

Free form cob wall will also weigh 150 pounds per cubic.

To determine the weight of the wall that will determine footing width you need to figure the weight the footing supports. The weight consists of:

1. The base wall, the cob wall, the roof, and any loft or upper floors supported by the wall.

**FOOTING WIDTH**

- Wall centerline
- Verify to fit corner
- Ties at corner layout
- #3 smooth rebars vertical ties at 24” center in straight wall sections
- Footing bond beam lap, as required
- 2x12 top plate, a cant strip for each additional foot of height

**WOOD BOND BEAM CORNER LAP DETAIL**

- Fascia on a cant strip
- 2x12 top plate, nail to bond beam as required
- Top plate reveal 3/4”
- Wood bond beam detail, verify wood rafter, verify size & layout
- Wood bond beam: 2-24’, perpendicular w/ 16” rds @ 4” spacing
- Lap corners per detail plan
- Bond beam attachment:
  1. Allow vertical ties to be taller than required
  2. Cob up to 6” below finish Cob height
  3. Trim vertical tie at 2.5” above Cob height
  4. Thread top 6” of tie rod with threading die.
  5. Assemble double 2x4 bond beam on rods
      6. Hold in place with 3/8” x 2” nuts and washers
      7. Finish cobbing wall till flush with top of bond beam

**WALL WITH WOOD BOND BEAM**

- Cob wall
  - 12” wide at top
  - Verify width at bottom: maximum 1:7 ratio = 7
  - #3 smooth rebars vertical ties at 24” o.c.
- Stone wall of mortared broken concrete slab
  - Interior earth floor
  - Rebar anchor tie rod around intersection of horizontal footing rebars
- Footing width

**WALL WITH CONCRETE BOND BEAM**

- Cob wall
  - 12” wide at top
  - Verify width at bottom: maximum 1:7 ratio = 7
  - #3 smooth rebars vertical ties at 24” o.c.
- Stone wall of mortared broken concrete slab
  - Interior earth floor
  - Rebar anchor tie rod around intersection of horizontal footing rebars
- Footing width

**WALL WITH UPPER LOFT AND CONCRETE BOND BEAM**

- Cob wall
  - 12” wide at top
  - Verify width at bottom: maximum 1:7 ratio = 7
  - #3 smooth rebars vertical ties at 24” o.c.
- Stone wall of mortared broken concrete slab
  - Interior earth floor
  - Rebar anchor tie rod around intersection of horizontal footing rebars
- Footing width

**COB WALL DESIGNS**

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