Casa de Dios
Ventilated Improved Pit Latrine

Construction Plans

In Association with Baja Christian Ministries www.bajachristian.org
Rev. December 1, 2004

Downloads (PDF) available on-line at www.teamcasa.org
Also available – Casa House plans – Casita Plans
Special Thanks to Hector Rubio for his service and help in creating these plans.
CAD files available upon request.
©Copyright 2004, 2005 David Bower, Team Casa de Dios, Baja Christian Ministries
Permission is freely granted to copy and use for non-profit organizations.
All others must obtain prior permission.
Notes For Latrine Construction Plans

1. IMPORTANT Note: As the most common dimension for block is 8"x8"x16", I have added a course layout for this block size. If a different size of block is used, adjust the course layout to insure proper inside dimensions. Detail 2 - 3

2. The latrine should be orientated so the vent pipe is facing the equator (South in Mexico). This one of the most important features as the black (DO NOT PAINT THE VENT PIPE) ABS pipe must be heated by the sun to promote ventilation.

3. The ABS vent pipe must be at least 3 1/2". The larger the better, however, the hole in the concrete cap should not be any larger than 4".

4. The entire vent must stay on the outside of the latrine to permit good heating by the sun.

5. The pit should be as deep as manpower and or money can provide.

6. If the soil is hard clay, it will fill much faster. This soil will not require as many courses of block.

7. If the soil is sandy, then the block should go as deep as possible.

8. Use mortar sparingly on the lower courses or leave hole in the block as to allow for liquid to pass into the lower levels of the soil.

9. Make sure the mortar is good and tight for the top five or six courses. This will prevent liquids from seeping into the topsoil around the latrine.

10. Latrine framing can be nailed to the cap via RAMSET (powdered actuated nailer) type nailer or bolts can be cast into the cap.

11. Toilet risers are available from Fibrefab in Azusa CA

Written & designed by:
David C. Bower
304 N. Mountain Ave.
Monrovia, CA 91016
dave@teamcasa.org

Footnotes:
Toilet Risers
Fibrefab
1030 W. Foothill Bl
Azusa CA
+1 (626) 633-0288
Latrine Materials List

25 - 2"x4"x8' Studs
15 - 1"x4"x8' Trim
6 - 4'x8' plywood
1 - 10' ABS 4" pipe
2 - 4" ABS street L's 90 deg. Elbows
1 - 4" ABS connector
1 roll of plumbers tape
1 packet of roofing shingles
3 yards of Felt Paper
3 – 2" or 3" FLAT door hinges
2 yards of flyscreen
1 - screen door spring and latch
1 can of ABS glue
1 fiberglass taza
1 plastic toilet seat
2 tubes of caulk
1 toilet paper holder
5lbs 16p nails
5lbs 8p nails
5lbs roofing nails

In Ground List

120 concrete blocks (+or-)
4 sacks Portland cement
1 yard of sand
1/3 yard 3/4 rock
4 - #3 or #4 rebar
4 - 2"x4"x8' Studs
1 - 4'x4' plywood
10 - 6"x1/2" anchors with nuts and washers
4" ABS Coupler inserted during plate construction

Cut this section out after the sheeting is on and the anchor bolts are tightened.

Latrine Floor Plan

Casa de Dios - Latrine Plans

A -1

Rev. 12.1.2004
David Bower
www.teamcasa.org
Rear Elevation

Roof sheeting, 1/2" CDX plywood
W/ Standard composition roofing
Side Elevation 2 Required
Notch for 2" x 4"
Typical of 3

Cut down the middle of the 2" x 4"
This will provide a plywood.
An more substantial door
may be constructed using the
cut out as a pattern.

Add 1" x 4" Trim to all plywood
seems and around door.

3" Holes w/ fly screen
Stake 4'x 4' form onto a plastic sheet or flat/smooth ground.  
Soak inside of form w/ diesel fuel or other release agent.  
Pour concrete as per DETAILS 2 and 3  

Allow concrete to cure 3 - 5 days - keep wet.
Concrete Block Layout

8" x 8" x 16" Block

First Course layout

Alternate Courses

#3 Rebar in alternating cells

Blocks can be substituted
Provide a hole size of 3'-6" sq.
Depth is determined by soil types typically 6' 8' deep.

Second Course layout

Concrete Block Layout
8" x 8" x 16" Block
Outline of Hole for Riser
20 7/8" x 16 3/4" Oval

Outline of Riser
20 5/8" x 16 1/2" Oval
Reference Only

Latrine Riser Hole
Cut sheet
Latrine Concrete Plate Rebar Layout

4" ABS Coupler inserted during plate construction

All Bars #3 Rebar - All joints tied w/wire
Support above grade 2"

Edge of 4"x 4" plate

Latrine Concrete Plate Rebar Layout

Casa de Dios - Latrine Plans

G-4

Rev. 12.1.2004
David Bower
www.teamcasa.org
In-Ground Section

1/2" CDX Plywood w/ 8d 6" o.c. @ Edges
12" o.c. in field

1" x 4" Trim on seems
8d 12" o.c.

12" Concrete splash around base

2" x 4" Treated Sill

4" Concrete Plate

6' to 8' Deep - Soil Conditions to dictate

1/2" Anchor Bolt
7" x 1-3/4"
From edge of slab

Casa de Dios - Latrine Plans
G-5

Rev. 12.1.2004
David Bower
www.teamcasa.org
Vent and In-Ground Section

Cover vent w/ fly screen

Metal strapping. "Plumbers Tape"

4" ABS Street 90

4" ABS Street 90

2" x 4" Treated Sill

4" Concrete Plate

Roof sheeting, 1/2" CDX plywood W/ Standard composition roofing