

LITTER DRY STACK STRUCTURE DESIGN WORKSHEET (THREE WALLS)

Conservation District: _____ Field Office: _____

Cooperator: _____ Location: _____

Identification No.: _____ Field No.: _____

V_L = Volume of litter stored (See Form FL-ENG-317B, "Storage Requirement"): _____ ft^3

W_b = Width of building (dimension from inside of post to inside of post): _____ ft.

h_m = Height of pile (Max. 7 ft.): _____ ft.

h_w = Height of wall (h_s + Freeboard): _____ ft.

h_s = Height of pile at side walls (Max. for wooden wall = 5 ft.): _____ ft.

h_e = Height to gable end closure wall: _____ ft.

Z = Side slopes: _____ (If Z is not known, use 1.5)

A_x = Cross sectional area of pile (calculate below)

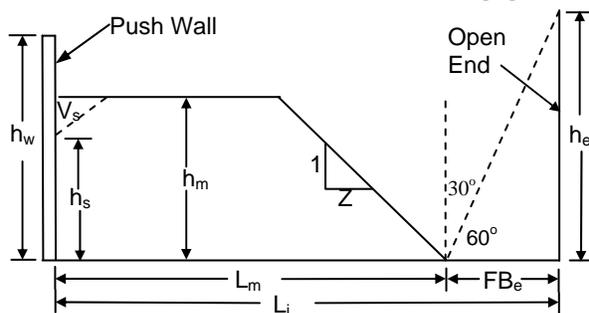
L_m = Length of manure pile (calculate below)

L_i = Length of building (initial calculation) including freeboard (FB_e).

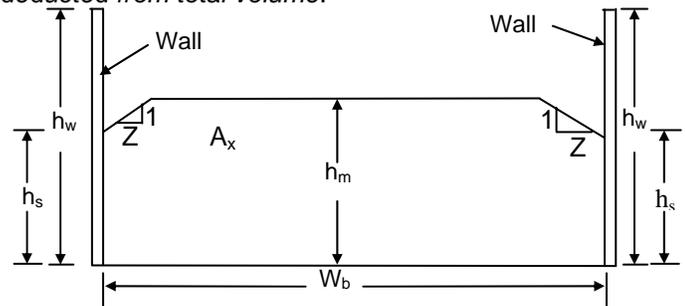
L_T = Total length; L_i adjusted to account for spacing between side posts

FB_e = Horizontal freeboard between toe of pile and open end (calculate below). Recommend 30 degrees from the vertical on all exposed sides to prevent windblown rainfall from impacting on the containment area.

Note 1: When $h_s < h_m$, the volume V_s is negligible and is not deducted from total volume.



SIDE VIEW



END VIEW

$$A_x = h_m W_b - Z(h_m - h_s)^2 = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} - [\underline{\hspace{1cm}} \times (\underline{\hspace{1cm}} - \underline{\hspace{1cm}})^2] = \underline{\hspace{1cm}} \text{ ft}^2$$

$$FB_e = h_e / \tan 60^\circ = \underline{\hspace{1cm}} / \tan 60^\circ = \underline{\hspace{1cm}} \text{ ft.}$$

$$L_m = V_L / A_x + (0.5 \times Z \times h_m) = \underline{\hspace{1cm}} / \underline{\hspace{1cm}} + (0.5 \times \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}) = \underline{\hspace{1cm}} \text{ ft.}$$

$$L_i = L_m + FB_e = \underline{\hspace{1cm}} \text{ ft.} \quad \text{Post Spacing: } \underline{\hspace{1cm}} \text{ ft. c-c}$$

$$L_T = \underline{\hspace{1cm}} \text{ ft. (NOTE: Round } L_i \text{ up or down to accommodate post spacing.)}$$

$$\text{Floor area} = L_T \times W_b = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}} \text{ ft}^2$$

Designed by: _____ Date: _____

Checked by: _____ Date: _____

Approved by: _____ Date: _____