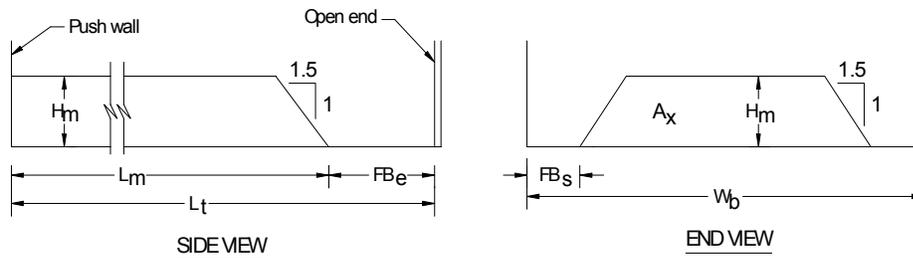


**POULTRY MANURE DRY STACK STRUCTURE**

**DESIGN WORKSHEET  
 (THREE OPEN SIDES)**

- Vol = Volume of litter stored (Form AL-ENG-25E, Item "O."): \_\_\_\_\_ cf  
 W<sub>b</sub> = Width of building: \_\_\_\_\_ ft. (Use actual inside working dimension; i.e., 39 ft.)  
 H<sub>m</sub> = Maximum height of pile in middle (Max. 7 ft.): \_\_\_\_\_ ft.  
 A<sub>x</sub> = Cross sectional area of pile (calculate below).  
 L<sub>m</sub> = Length of manure pile (calculate below).  
 L<sub>i</sub> = Length of building (initial calculation) including freeboard (FB<sub>e</sub>).  
 L<sub>t</sub> = L<sub>i</sub> adjusted to account for spacing between side posts.  
 FB<sub>s</sub> = Freeboard from toe of pile to posts on each side; use 6 ft. if no siding is used.  
 FB<sub>e</sub> = Freeboard between end of pile and open end of building. If composter occupies this space, let  
 FB<sub>e</sub> = length of composter = \_\_\_\_\_; otherwise FB<sub>e</sub> = 12.

Assume: (1) trapezoidal x-section of pile; (2) side slopes of pile = 1.5:1.



$$A_x = H_m(W_b - 2FB_s) - 1.5H_m^2 = \underline{\hspace{2cm}} \times (\underline{\hspace{2cm}} - \underline{\hspace{2cm}}) - \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ sq. ft.}$$

$$L_m = \text{Vol} / A_x + (0.75H_m) = (\underline{\hspace{2cm}} / \underline{\hspace{2cm}}) + (0.75 \times \underline{\hspace{2cm}}) = \underline{\hspace{2cm}} \text{ ft.}$$

$$L_i = L_m + FB_e = \underline{\hspace{2cm}} \text{ ft.} \quad \text{Post spacing: } \underline{\hspace{2cm}} \text{ ft. c-c}$$

$$L_t = \underline{\hspace{2cm}} \text{ ft. (NOTE: Round } L_i \text{ up or down to accommodate post spacing.)}$$

$$\text{Floor area} = W_b \times L_t \quad (\text{For } W_b \text{ use nominal width; i.e., 40 ft.)} + \text{Composter Area (See Drawings)}$$

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ sq.ft.}$$

$$\text{Floor area} \times \text{cost/sq. ft.} = \text{Estimated total cost of structure}$$

$$\underline{\hspace{2cm}} \times \$ \underline{\hspace{2cm}} = \$ \underline{\hspace{2cm}}$$