POULTRY COMPOSTER/LITTER DRY STACK STRUCTURE
DESIGN WORKSHEET
(TWO WALLS)
Composter and Litter Storage in Same Building

Conservation District: _____ Field Office: _____

Cooperator: _____ Location: _____

Identification No.: _____ Field No. _____

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

L_p = Length of Primary stage (Form FL-ENG-317A, "Dimensions of Linear Stack Bins"): _____ ft

L_s = Secondary stage length (>= L_P): _____ ft

W_c = Width of composter pile (Form FL-ENG-317A, "Dimensions of Linear Stack Bins"): _____ ft.

W_L = Width of litter pile (calculate below)

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

h_m = Max 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)

L_C = Length of linear stack bin required (calculate below)

A_x = Cross sectional area of pile (calculate below)

L_m = Length of litter pile (calculate below)

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

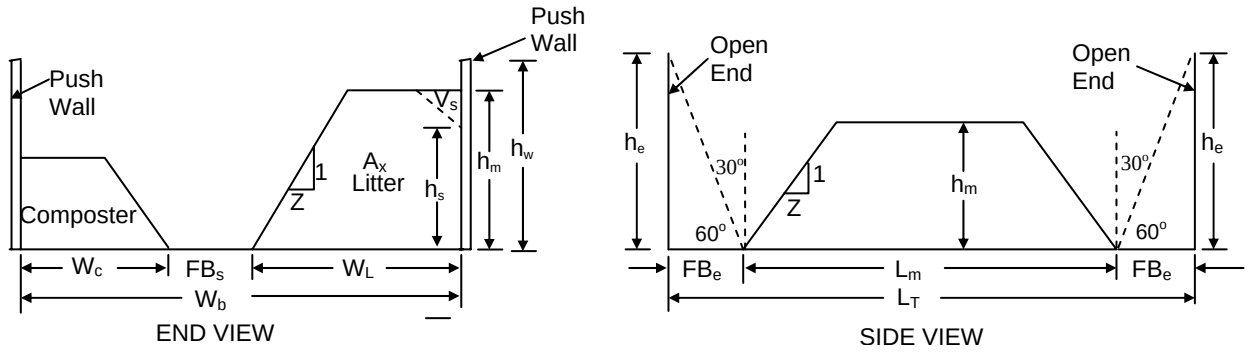
L_{CR} & L_{iR} = Recommended values for L_C and L_i (rounded to accommodate Post Spacing)

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

FB_s = Freeboard from toe of composter pile to toe of litter pile to accommodate equipment, minimum of 8 ft: _____ ft.

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.

Assume: (1) trapezoidal x-section of pile.



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

$FB_e = h_e / \tan 60^o =$ _____ / tan $60^o =$ _____ ft

$A_x = (h_m \times W_L) - ((Z / 2) \times h_m^2) =$ (_____ X _____) - ((_____ / 2) x _____^{2}) = _____ ft^2

$W_L = W_b – (W_c + FB_s) =$ _____ ft – (_____ ft + _____ ft) = _____ ft.

$L_C = L_P + L_S + 2FB_e =$ _____ ft. +_____ ft + 2 x (_____) ft = _____ ft

$L_m = V_L / A_x + Zh_m =$ (_____ / _____) + (_____ x _____) = _____ft.

$L_i = L_m + 2FB_e =$ _____ ft. Post Spacing: _____ ft. c-c

L_{CR} = _____ ft. (Recommended value for L_C)
L_{iR} = _____ ft. (Recommended value for L_i)

Calculate Recommended Values

L_T = _____ ft. (L_{CR} or L_{iR}, whichever is greater)

Floor area = $L_T \times W_b =$ _____ x _____ = _____ ft^2

Designed by:_____ Date:_____
Checked by:_____ Date:_____
Approved by:_____ Date:_____

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