29L653

TOTAL BIN VOLUME (CU. FT.)					
NUMBER OF BINS	BIN LENGTH, L (FT.)				
	10	11	12	13	14
3	1120	1232	1344	1456	1568
6	2240	2464	2688	2912	3136
1	373	411	448	485	523

TABLE A: BIN VOLUMES

	BIN LENGTH, L (FT.)				
	10	11	12	13	14
RAFTERS					
Size, Nominal	2X8	2X8	2X8	2X8	2X10
Nominal Length, R	12'	14'	14'	16'	16'
POST HEIGHTS					
Front, H1	8'–2"	8'–5"	8'–8"	8'–11"	9'–2"
Middle, H2	6'–11"	7'–0"	7'–2"	7'–4"	7'–5"

TABLE B: BIN DESIGN

BILL OF MATERIALS	NUMBER OF BINS			
	3	3+1	6	6+1
CONCRETE FLOOR AND WALLS				
Concrete =_____ Cu. Yds.				
#4 Reinforcing Bar = _____ Lin. Ft.				
Gravel Base – Tons	15	20	29	34
CONCRETE SLAB (OR GRAVEL, SEE BELOW)				
Concrete, Cu. Yds.	7	10	14	16
#4 Reinforcing Bar = _____ Lin. Ft.				
Gravel Base – Tons	12	15	22	26
Gravel Pad (If Used), Tons	12	15	22	26
PRESSURE TREATED LUMBER, #2 SOUTHERN PINE				
Posts				
4"X6"X_____(H1) – Front	4	5	7	8
4"X6"X_____(H2) – Middle	4	5	7	8
4"X6"X4'–8" – Rear	4	5	7	8
Cross Braces				
2"X6"X12'–0"	3	4	6	7
2"X6"X16'–0"	2	2	2	2
NON–TREATED LUMBER, #2 SOUTHERN PINE				
2"X W=_____ X R=_____ – Rafters	4	5	7	8
2"X W=_____ X 6'–0" – Overhang Rafters	4	5	7	8
2"X6"X 4'–0" – Knee Brace/Gusset	8	10	14	16
2"X6"X 4'–0" – Knee Brace/Gusset	8	10	14	16
2"X6"X 12'–0" – Purlins = [(R=___+6)/2+2]X(#Bins=_____)=___BRDS				
ROOFING MATERIAL				
29–Ga. Corrugated Sheet Metal = (R=___+6)X[2+(10X #Bins=___)]=_____ Sq. Ft.				
BOLTS AND NUTS – 5/8" DIAM.				
4" Length	16	20	28	32
8" Length	32	40	56	64
WASHERS	96	120	168	192
FABRICATED POLE ANCHORAGE	12	15	21	24
FRAMING ANCHORS[(R=___+6)/2+2]X(#BINS=___+1)=_____ ANCHORS				

REQUIRED CONCRETE VOLUME (CU. YD.)					
NUMBER OF BINS	BIN LENGTH, L (FT.)				
	10	11	12	13	14
3	14	15	16	16	17
3+1	18	19	21	21	22
6	27	28	30	31	33
6+1	31	33	35	36	38

TABLE C: CONCRETE VOLUMES

(This does not include slab volume)

DESIGN INSTRUCTIONS

1. Using Table A, determine bin Length (L) and number of bins required for calculated compost volume. An additional bin may be included for storage, if desired.
2. Using Table B, determine post heights and rafter (R) values.
3. Using Table C, determine concrete volume.
4. Fill in values from Table B on Layout Sheet and Bill of Materials.
5. Calculate steel schedule values on Steel Details Sheet.
6. Calculate quantities in Bill of Materials.

NOTES:

1. Gravel for the base and pad shall be Type 3 aggregate as defined in Section 1007 of Missouri Standard Specifications for Highway Construction or equivalent (1 1/2" max. size).
2. Bolts for posts and Cross Braces are not included in Bill of Materials. Each bolt shall have 1 nut and 2 washers.

DRAFT

NOT FOR CONSTRUCTION

Revised 8/06 Sheet 4 of 6

Adapted from Indiana Standard Drawing IN–ENG–60

Date

Designed

Drawn

Checked

Approved

SWINE COMPOSTING FACILITY
4' REINFORCED CONCRETE STRUCTURE
DESIGN AND BILL OF MATERIALS

United States Department of Agriculture
NRCS Natural Resources Conservation Service

File Name

Drawing Name
29–L–653

Sheet of

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