



- Moisture Probe Position
- \* Deep Cup Sample
- X Temperature Probe Position
- Horizontal Trier Sample (Undisturbed area)

Figure 4. Minimum sampling plan for flat storage.

### Flat storage

A peak or high point in the grain mass should be considered as the center of a bin. Otherwise, the mid-point will be the actual center of the grain bulk. The sampler should exercise his judgment to obtain a surface trier sample and at least five other trier samples, or four other trier samples plus the deep cup samples if depth allows. The following top view diagrams (Figure 4) can serve as guides for possible probe sites.

Table 2. Distance from the center of the bin to the sample point associated with five equal volumes of grain for several sizes of grain bins.

Bin Diameter (ft)	Distance from Center of Bin to Point of Sampling-Ft.				
	(0.1580)*	(0.2740)*	(0.3535)*	(0.4185)*	(0.4745)*
	1	2	3	4	5
15	2.37	4.11	5.31	6.28	7.12
18	2.85	4.93	6.37	7.54	8.54
21	3.32	5.76	7.43	8.79	9.97
24	3.79	6.58	8.49	10.05	11.39
27	4.27	7.40	9.55	11.30	12.81
30	4.74	8.22	10.61	12.56	14.24
33	5.22	9.04	11.67	13.81	15.66
36	5.69	9.86	12.73	15.07	17.08
39	6.16	10.69	13.79	16.32	18.51
42	6.64	11.51	14.85	17.58	19.93
48	7.58	13.15	16.97	20.09	22.78
60	9.48	16.44	21.21	25.11	28.47

\*Multiply this number by the Bin Diameter to determine the distance from the center of the bin to the Point of Sampling.

### Maximum sampling plan

The more representative samples that are taken, the higher the accuracy of the measurement. The following procedure is suggested whenever possible. The grain surface of circular bins should be divided into five equal "pies" for bins under 24 feet and 10 equal "pies" for bins over 24 feet in diameter (Figure 5). Sampling distance from bin center to points of equal volume are shown in Table 2. Possible probe sites exist where equal diameter volumes and pie volumes intersect. The number of samples to take for temperature and moisture determination are listed in Table 3.

Table 3. The number of samples required to adequately sample circular bins for temperature and moisture.

Bin Diameter	Number of samples per Bin			
	Temperature Probes		Moisture Probes	
	Shallow	Deep	Shallow	Deep
Less than 24 ft		3	1*	5
Greater than 24 ft	1*	5	3	10

\*In bin center