

MSU Extension Publication Archive

Archive copy of publication, do not use for current recommendations. Up-to-date information about many topics can be obtained from your local Extension office.

Standard Dimensions Used in Laying Out Barn Plans
Michigan State University Extension Service
C.H. Jefferson, Agricultural Engineering
Reprinted March 1941
4 pages

The PDF file was provided courtesy of the Michigan State University Library

Scroll down to view the publication.

Standard Dimensions Used In Laying Out Barn Plans

C. H. JEFFERSON

Floor plans of barns should be carefully considered before building operations begin. The future arrangement of equipment is dependent upon the spacing of supporting columns. If the plan is not made at the time of construction and if it is later desirable to install equipment, a column may be in the center of a proposed alley, stall, or manger. It is often very discouraging to attempt a rearrangement after construction.

The purpose of the accompanying plan is to avoid any such difficulties when the barn is planned and to aid in remodeling an old barn. The dimensions shown are for barns 32, 34, and 36 feet wide. They are virtually standard but could be slightly changed to meet conditions in barns of different widths. For instance, if a barn were 34 feet wide outside, with two-foot stone walls, the dimensions shown would need to be altered. It is suggested that the dimensions of the alleys be changed rather than the gutter, stall platform, or manger, which should be about as shown.

For cows facing in, perhaps the minimum for litter alley would be $3\frac{1}{2}$ feet, although alleys as narrow as 3 feet have been used. It is difficult to keep the walls clean, and it is inconvenient to clean the barn or to carry pails of milk along the alley behind the stock if the litter alleys are narrow. For cows facing out, the litter alley should be not less than 4 feet 6 inches.

The 16-inch gutter is commonly used. Only in extreme cases would one be justified in changing this dimension. A narrow gutter results in a littered platform and alley. Gutter depths are shown in Fig. 2.

The length of the stall platform may be varied to fit the particular size of animal housed. See table on length of stall platform for different breeds of stock. It is a good plan to taper the platform from the longest to the shortest dimension shown for each breed. Then the largest animals are stabled in one end with the smaller animals in the opposite end. The depressed platform in front of curb is optional. It prevents the cows from slipping while reaching for feed. The curb should be 6 inches wide to anchor securely the steel equipment or columns.

MICHIGAN STATE COLLEGE

EXTENSION DIVISION

R. J. Baldwin, Director

Printed and distributed in furtherance of the purposes of the co-operative agricultural extension work provided for in the Act of Congress May 8, 1914, Michigan State College of Agriculture and Applied Science and U. S. Department of Agriculture, co-operating.

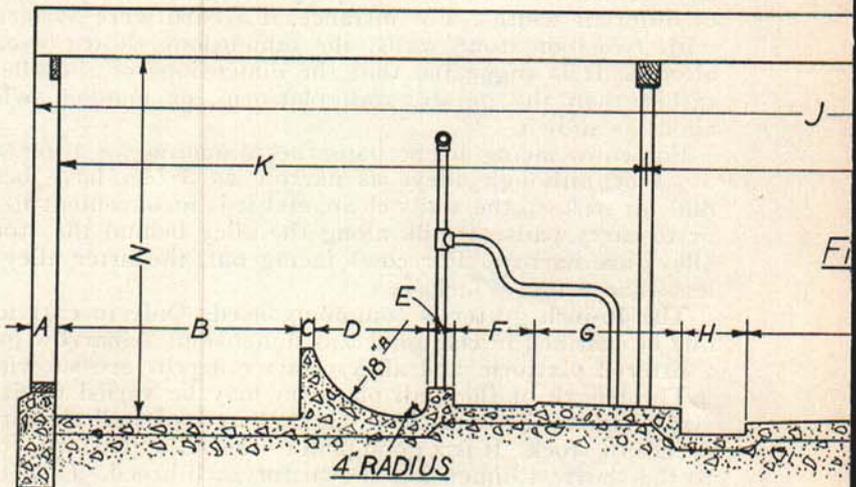
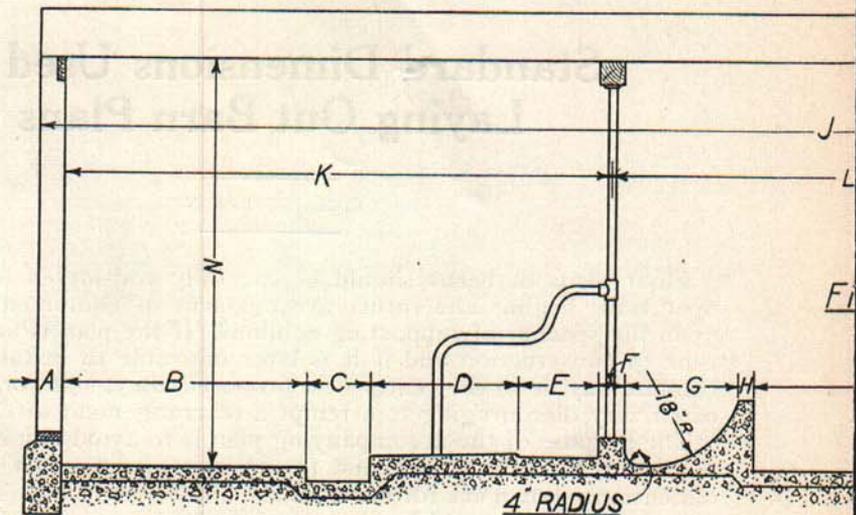
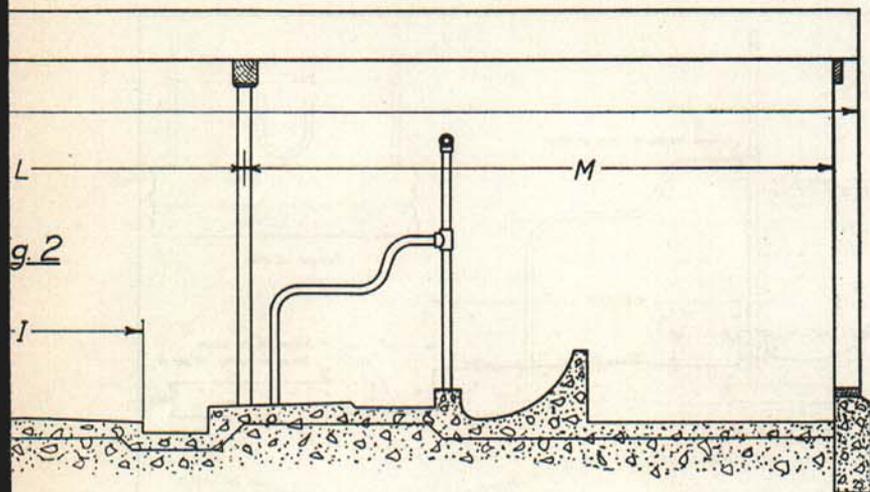
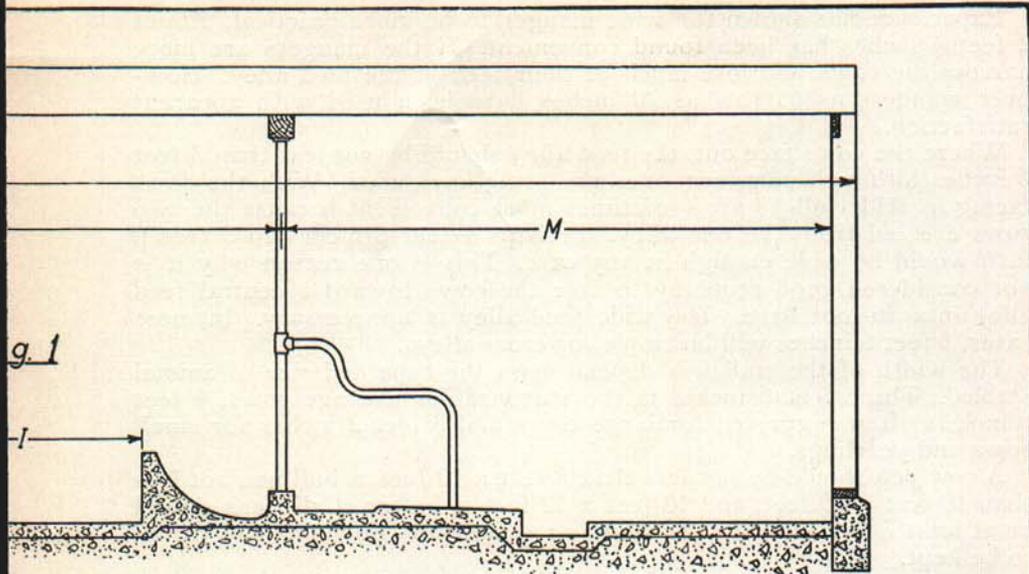


Fig. 1

J	WIDTH OF BARN	32 FEET	34 FEET	36 FEET
A	STUD	0'-6"	0'-6"	0'-6"
B	L. ALLEY	4'-5"	5'-0"	5'-0"
C	GUTTER	1'-4"	1'-4"	1'-4"
D	PLATFORM	3'-0"	3'-0"	3'-0"
E	DEPRESSED PLATFORM	1'-8"	1'-8"	1'-8"
F	CURB	0'-6"	0'-6"	0'-6"
G	MANGER	2'-4"	2'-4"	2'-4"
H	MANGER CURB	0'-3"	0'-3"	0'-3"
I	FEED ALLEY	4'-0"	4'-10"	6'-10"
K	LEFT BENT	10'-8"	11'-3"	11'-3"
L	CENTER BENT	9'-8"	10'-6"	12'-6"
M	RIGHT BENT	10'-8"	11'-3"	11'-3"
N	HEIGHT	7'-6"	7'-6"	7'-6"

Fig. 2

J	WIDTH OF BARN	32 FEET
A	STUD	0'-6"
B	FEED ALLEY	4'-0"
C	MANGER CURB	0'-3"
D	MANGER	2'-4"
E	CURB	0'-6"
F	DEPRESSED PLATFORM	1'-8"
G	PLATFORM	3'-0"
H	GUTTER	1'-4"
I	L. ALLEY	4'-10"
K	LEFT BENT	11'-0"
L	CENTER BENT	9'-0"
M	RIGHT BENT	11'-0"
N	HEIGHT	7'-6"



34 FEET	36 FEET
0'-6"	0'-6"
4'-5"	4'-5"
0'-3"	0'-3"
2'-4"	2'-4"
0'-6"	0'-6"
1'-8"	1'-8"
3'-0"	3'-0"
1'-4"	1'-4"
6'-0"	8'-0"
12'-0"	11'-6"
9'-0"	12'-0"
12'-0"	11'-6"
7'-6"	7'-6"

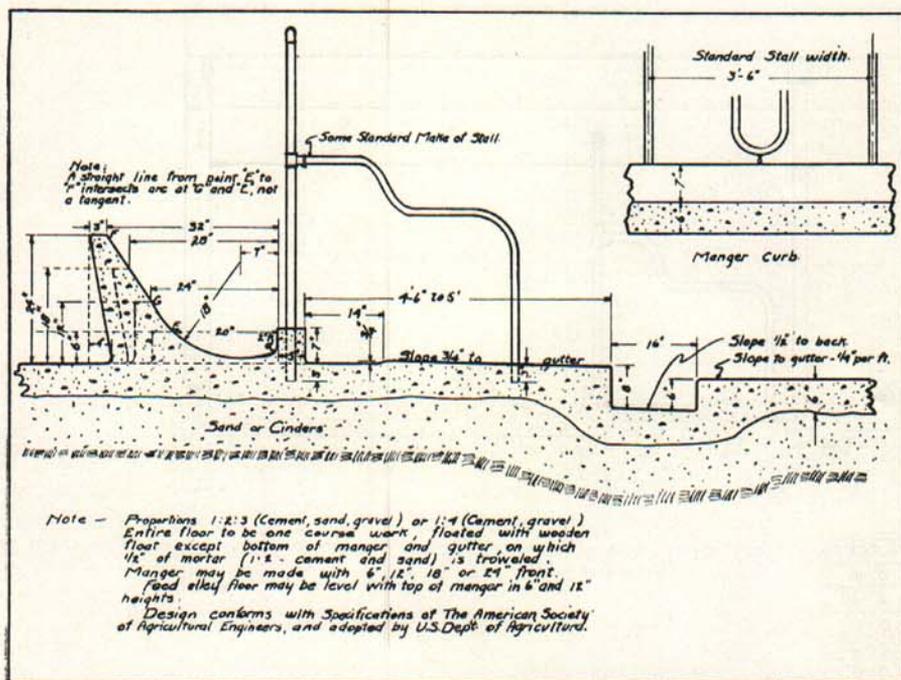
BREED	LENGTH OF PLATFORM		
	SMALL	MEDIUM	LARGE
HOLSTEIN	4'-10"	5'-2"	5'-8"
SHORTHORN	4'-8"	5'-0"	5'-6"
AYRSHIRE	4'-6"	5'-0"	5'-6"
GUERNSEY	4'-6"	4'-10"	5'-4"
JERSEY	4'-4"	4'-8"	5'-0"
HEIFERS	3' 8"	3'-10"	4'-2"

Experience has shown the wide manger to be more practical. About 2 feet 4 inches has been found convenient. If the mangers are more narrow the cows will lose much of their feed in the feed alley. However mangers as narrow as 20 inches have been used with apparent satisfaction.

Where the cows face out, the feed alley should be not less than 3 feet 6 inches although narrower ones are sometimes used. With the cows facing in, wider alleys are sometimes more convenient because the two rows are fed from the one alley. Perhaps 4 feet 6 inches to 5 feet 0 inch would be wide enough in any case. This is one reason why it is not considered good economy to face the cows toward a central feed alley in a 36-foot barn. The wide feed alley is unnecessary. In most cases, 3 feet 6 inches will be ample for cross alleys.

The width of the stall will depend upon the type and size of animal stabled. Three feet 6 inches is the standard for average cows, 4 feet 0 inch is often suggested for large cows, and 3 feet 2 inches for small cows and yearlings.

A cow pen should be not less than 8 feet x 10 feet, a bull pen not less than 10 feet x 10 feet, and 10 feet x 12 feet is better. Calf pens should be at least 7 feet wide and as long as required for the number of calves to be kept.



Issued July 1938
 First Reprinting, March 1941