

630.71
Or 3c1
no. 351

OREGON STATE LIBRARY

Extension Circular 351

JUL 19 1940

May 1940

C.3

DOCUMENT
COLLECTION
OREGON
COLLECTION

~~DISCARD~~

O.S.C. FARM BUILDING PLAN SERVICE

Listing

Farm Building Plans Available

by

Everett H. Davis,
Extension Specialist in
Agricultural Engineering

Federal Cooperative Extension Service
Oregon State College
Corvallis

Cooperative Extension Work in Agriculture and Home Economics

Wm. A. Schoenfeld, Director

Oregon State College and United States Department of Agriculture, Cooperating
Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914

630.71
Or 3c1
no. 351
c. 3
DOCUMENT
COLLECTION
OREGON
COLLECTION

OREGON STATE LIBRARY

O.S.C. FARM BUILDING PLAN SERVICE

Introduction

Blue prints for the construction of the farm buildings listed in this circular may be obtained at low cost through the Oregon County Agricultural Agents, or directly from the Department of Agricultural Engineering, Oregon State College, Corvallis, Oregon. For more detailed information regarding the plans listed in this circular, please consult your county agent who has manuals giving full description of them.

A few building plans are included in publications released by the college and the United States Department of Agriculture. No charge is made for these bulletins.

Drawings to meet unusual needs are not furnished by the College or the Extension Service. The services of architects and reputable commercial agencies are recommended for altering these plans for special requirements, and for the specification of materials different from those shown.

IMPORTANT - ORDER PLANS BY FILE NUMBER.

FARM BUILDING ESSENTIALS

Most of the structures listed in this circular have gone through the test of actual use which has proved them suitable from the standpoint of sound construction, convenience, sanitation and economy under the conditions for which they were intended. Climatic conditions are not uniform over the state but vary with the altitude, rainfall, wind and influence of foggy weather. These factors must be considered in the construction of buildings so that provision is made for foundations of proper size and depth, enough insulation, adequate bracing and suitable roof covering.

The circular lists a fairly wide range of plans so that in most cases, the prospective builder can select a plan or set of plans that meet his particular requirements with respect to the size of family, the size and type of farm, and the number and kind of livestock.

The cost of a structure depends on many factors, such as local prices of materials, amount of material and labor to be supplied by the farm, and whether the work is to be on the day-labor basis, on the basis of cost of material and labor plus a certain bonus, or by contract. The most accurate method of determining the cost is to submit the plans and specifications to two or three local builders and obtain written bids for which they will erect the structure complete.

Mow Capacities per Foot of Length for Barns of Various Widths

Width	Type of Barn	Loose Hay	Chopped Hay*
18'	Gable-2 story	1/4 T per ft. of length	3/4 T per ft. of length
20'	Gambrel-2 story	1/4 T " " " "	3/4 T " " " "
22'	Gambrel-2 story	1/3 T " " " "	1 T " " " "
24'	Gambrel-2 story	1/2 T " " " "	1-1/2 T " " " "
26'	Gothic Arch-2 story	3/5 T " " " "	2 T " " " "
28'	Gambrel-2 story	3/5 T " " " "	2 T " " " "
30'	Gambrel-2 story	3/5 T " " " "	2 T " " " "
32'	Gambrel-2 story	4/5 T " " " "	2-2/5 T " " " "
34'	Gambrel-2 story	4/5 T " " " "	2-2/5 T " " " "
36'	Gothic Arch-2 story	1-1/4 T " " " "	3-3/4 T " " " "
36'	Gambrel-2 story	1 T " " " "	3 T " " " "
36'	Gambrel-1½ story	4/5 T " " " "	2-2/5 T " " " "
36'	Gable-1½ story	1/3 T " " " "	1 T " " " "

* Floor joists and girders must be designed to carry this increased load.

LIST OF FARM BUILDING PLANS*

Order Plans by File Number

Farm House Plans

One-Story Growing Houses**
(Planned so that additions can be built by owner)

Expansion from 3 to 6 rooms	1.11
Expansion from 4 to 6 rooms	1.12
Expansion from 5 to 7 rooms	1.13
Expansion from 4 to 8 rooms	1.14
Expansion from 5 to 7 rooms	1.15

One-Story Houses**

4 rooms - log cabin	1.21
5 rooms	1.22
4 rooms	1.23
4 rooms and work room	1.24
4 rooms	1.25
6 rooms and laundry	1.26

* Compiled by E. H. Davis, Extension Specialist in Agricultural Engineering.

One and a Half to Two-Story Houses**

5 rooms	1.31
8 rooms	1.32
7 rooms	1.33
4 rooms	1.34
6 rooms	1.35
6 rooms - log cabin	1.21a

Very Small Houses**

3 rooms	1.41
3 rooms and screened porch	1.42
4 rooms	1.43
3 rooms	1.44
3 rooms	1.45
4 rooms	1.46

** The above farm house plans are described and sketched in U.S.D.A. Farmers' Bulletin No. 1738 entitled "Farmhouse Plans". This bulletin is available in offices of county agents.

3 room houses	1.54, 6505
4 room houses	5444, 5448 (bunkhouse), 5486 (adobe), 6526 (log cabin)
5 room houses	1.51, 1.56, 5443, 5446, 5447, 6511, 6518
6 room houses	1.55 (two-story), 1.57 (two-story), 5445 (two-story), 6537 (two-story), 6538 (two-story).
7 room houses	6533 (one-story)
Kitchen remodeling plans	1.59
Combination laboratory, office, garage	1.61
Combination office - garage	1.62
Field laboratory	1.63
Rural community hall	1.66

Livestock Buildings

General Construction Plans

Stanchion Details

Steel	2.011
Wood	2.012

Roof Details

Iowa truss - Gambrel	2.021
Shawver truss - Gambrel	2.022

Gothic Rafter Details

Bent type	2.023
Sawed type	2.024

Oregon Arch Roof Details	2.025
Oregon Arch Rafter Details - 20' span . . .	2.026
Trussed Rafter Details - 40' span	2.027

General Purpose Barns

Mow capacities given in table on page 2.

18 x 32	
Shed roof	2.12
19 x 31	
Gable roof	5021
20 x 32	
Gambrel roof	2.10-3
20 x 38	
Gambrel roof	2.10-3 (alternate plan)
24 x 32	
Gambrel roof	2.10-4
26 x 38	
Gothic roof	2.10-2
28 x 38	
Gambrel roof	2.10-1
30 x 32	
Gambrel roof	5454
30 x 46	
Gambrel roof	2.10-7
Gambrel roof	2.10-7 (alternate plan)
32 x 32	
Gambrel roof - optional floor plan included . . .	2.11
32 x 36	
Gambrel roof	5453
32 x 44	
Gambrel roof	2.10-6
Gambrel roof	2.10-6 (alternate plan)
34 x 50	
Gambrel roof	2.10-5
34 x 72	
Gothic roof - 2 stories	5451 A
Gambrel roof - 2 stories	5451 B
Gambrel roof - 1½ stories	5451 C
Gable roof - 1½ stories	5451 D

	36 x 62	
Gothic roof - 2 stories	5452 A	
Gambrel roof - 2 stories	5452 B	
Gambrel roof - 1½ stories	5452 C	
Gable roof - 1½ stories	5452 D	
	36 x 64	
Gambrel roof	2.13	
	52 x 72	
Pole barn - gable roof	2.14	
Cattle shed - 20 x 68 - gable roof	2.15	
Dairy and Beef Pavilion - 187 x 240	2.16	
Livestock Pavilion and General Exhibit Bldg. - 51 x 100	2.17	
Isolation shed - 16 x 32 - hip roof	2.18	
Loafing Barn - 52 x 124	2.04	

Dairy Barns

Mow capacities given in table on page 2.

	17 x 48	
Shed roof - one-story	5459	
	18 x 30	
Gable roof	2.24	
	18 x 64	
One string milking barn, grain room, milk-house, gable roof - will accomodate 36 to 48 cows	5458	
Milking barn and milk house	2.30-2	
	19 x 45	
Parallel stall, walk through milking barn and milk house - gable roof - will accomodate 30 to 60 cows	5457	
	32 x 80	
Gambrel roof	2.21	
	34 x 64	
Gambrel roof	2.22	
Milking barn and milk house	2.30-3	
	34 Foot Barn - Face In	
Gothic roof - 2 stories	5115 A	
Gambrel roof - 2 stories	5115 B	
Gambrel roof - 1½ stories	5115 C	
Gable roof - 1½ stories	5115 D	
Gable roof-1 story-flat ceiling . . .	5115 E	
Gable roof-1 story-sloped ceiling. .	5115 F	

34 Foot Barn - Face Out		
Gothic roof - 2 stories	5116	A
Gambrel roof - 2 stories	5116	B
Gambrel roof - 1½ stories	5116	C
Gable roof - 1½ stories	5116	D
Gable roof - 1 story - flat ceiling	5116	E
Gable roof - 1 story - sloped ceiling	5116	F

34 Foot Barn - 6 Different Layouts		
Gothic roof - 2 stories	5117	A
Gambrel roof - 2 stories	5117	B
Gambrel roof - 1½ stories	5117	C
Gable roof - 1½ stories	5117	D
Gable roof - 1 story - flat ceiling	5117	E
Gable roof - 1 story - sloped ceiling	5117	F

36 x 43		
Gable roof	2.25	

36 x 56		
Oregon arch roof - sawed type	2.28	

36 x 72		
Face In		
Gothic roof - 2 stories	5111	A
Gambrel roof - 2 stories	5111	B
Gambrel roof - 1½ stories	5111	C
Gable roof - 1½ stories	5111	D
Gable roof - 1 story - flat ceiling	5111	E
Gable roof - 1 story - sloped ceiling	5111	F

36 x 72 - Face Out		
Gothic roof - 2 stories	5112	A
Gambrel roof - 2 stories	5112	B
Gambrel roof - 1½ stories	5112	C
Gable roof - 1½ stories	5112	D
Gable roof - 1 story - flat ceiling	5112	E
Gable roof - 1 story - sloped ceiling	5112	F

36 Foot Barn - 6 Different Layouts		
Gothic roof - 2 stories	5113	A
Gambrel roof - 2 stories	5113	B
Gambrel roof - 1½ stories	5113	C
Gable roof - 1½ stories	5113	D
Gable roof - 1 story - flat ceiling	5113	E
Gable roof - 1 story - sloped ceiling	5113	F

36 Foot Barn - 5 Different Layouts		
Gothic roof - 2 stories	5114	A
Gambrel roof - 2 stories	5114	B
Gambrel roof - 1½ stories	5114	C
Gable roof - 1½ stories	5114	D
Gable roof - 1 story - flat ceiling	5114	E
Gable roof - 1 story - sloped ceiling	5114	F

36 Foot Barn - 3 Different Layouts

Gothic roof - 2 stories	5118 A
Gambrel roof - 2 stories	5118 B
Gambrel roof - $1\frac{1}{2}$ stories	5118 C
Gable roof - $1\frac{1}{2}$ stories	5118 D
Gable roof - 1 story - flat ceiling	5118 E
Gable roof - 1 story - sloped ceiling . . .	5118 F

36 x 76

Gambrel roof	2.26
------------------------	------

36 x 132

Gable roof - 1 story	2.30
--------------------------------	------

42 x 80

Three alternate plans available	
Gable, gambrel or gothic roofs	2.30-1

O.S.C. Dairy Barn Plans - 3 wings - size
can be reduced as desired

2.27

Dairy barn plans are illustrated in U.S.D.A. Farmers' Bulletin #1342, "Dairy Barn Construction". This bulletin is available in offices of county agents.

Horse Barns

Mow capacities given in table on page 2.

20 x 30

Gable roof	2.33
Gable roof	5455

28 x 36

Hip roof	2.32
--------------------	------

36 x 58

Gambrel roof	2.31
------------------------	------

36 Foot Barn - 5 Different Layouts

Gothic roof - 2 stories	5110 A
Gambrel roof - 2 stories	5110 B
Gambrel roof - $1\frac{1}{2}$ stories	5110 C
Gable roof - $1\frac{1}{2}$ stories	5110 D

Riding Horse Barn - 22 x 34 - gable roof

5456

Beef Barns

Mow capacities given in table on page 2.

10 x 40 and 10 x 60

L-shaped calving barn	5461
---------------------------------	------

20 x 68 and 20 x 44
L-shaped cattle shed - gable roof 5460

36 x 48
Gambrel roof 2.41
Gambrel roof - capacity 34 steers,
50 tons hay 5262

36 x 120
Gambrel roof 2.42

52 x 72
Gable roof - capacity 28 head loose cattle,
6 stalls, 85 tons hay 5265

Bull Barns

12 x 18
Gable roof 2.51

16 x 32
Bull barn and lots - gable roof 5462

Hog Houses

6 x 8
Individual modified "A" type 2.61

8 x 8
Individual modified "A" type 5478
Portable "A" type 5477

8 x 16
Farrowing house 5480

9 x 12
Gable roof 5479

13 x 37
Single row farrowing house - gable roof . . . 5475

20 x 42
Farrowing house - gable roof 5476

24 x 36
Gable roof 2.63

24 x 170
O.S.C. Hog house - gable roof 2.62

36 x 74
Gable roof 5481

U.S.D.A. Farmers' Bulletin #1487, "Practical Hog Houses" is available in
offices of county agents.

Sheep Sheds

12 x 76	
Lambing shed - gable roof	5472
16 x 24	
Gable roof	5019
Shed roof	5025
20 x 60	
Lambing shed	2.72
Lambing shed	2.73
20 x 80	
L-shaped shed	2.75
22 x 42	
Combination gable roof	2.71
26 x 76	
Sheep barn - gable roof - 20 tons hay storage	5471
28 x 60	
Shearing shed	2.74
68 x 96	
Night dropping shed - combination gable and shed roof	5473

Poultry Houses

12 x 14	
Portable brooder house - shed roof	5431
16 x 35	
Brooder house - gable roof	5291
18 x 22	
Isolation building - gable roof	2.84
18 x 40	
Shed roof	5489
20 x 20	
Shed roof	5131
Metal laying house - shed roof	5488
22 x 43	
Adobe laying house - shed roof	5487
22 x 100	
O.S.C. remodeled poultry house - gable roof - 2.82	

24 x 48	
Laying house - gable roof	5485
24 x 72	
Two-story house - gable roof	5133
26 x 100	
Two-story house - gable roof	2.81
Air Circulation Plan for Poultry House	
Floor Heating	2.801
Fan Box and Evaporative Pad for Egg	
Storage Room	2.83
Summer Range Shelter	5400

Poultry house plans are illustrated in Extension Bulletin #480, "Poultry Housing". This bulletin is available in offices of county agents.

Buildings for Housing Equipment and Supplies

Machinery Sheds

20 x 48	
Implement shed and shop - gable roof . . .	5338
Machinery shed - gable roof	3.09
20 x 45	
Machinery shed and shop - hip roof	3.16
20 x 60	
Implement shed - gable roof	5495
24 x 36	
Implement shed and shop - gable roof . . .	3.12
Machinery shed - gable roof	3.11
26 x 80	
Implement shed and shop - gable roof . . .	5341
30 x 98	
Machinery shed - gable roof	3.10

Farm Shops

24 x 30	
Gable roof	5146
18 x 24	
Farm shop and garage - gable roof	3.13
Workshop and garage - gable roof	3.13a

One-Car Garages

12 x 20

Gable roof	3.15
Gable roof	5150

	Two-Car Garages	
	18 x 20	
Hip roof		3.14
	20 x 20	
Gable roof		5149
Garage and apartment - apartment above has kitchen, bedroom and combination dining and living room - 20 x 22 - gable roof		5496
Utility building - 24 x 30 - gable roof. . .		5497
Utility building - 16 x 16 - shed roof . . .		5501
Ice house - 26 x 41 - gable roof		3.21
	and	5038

	<u>Manure Pits</u>	
Concrete - gable roof.		5499
Concrete - 18 x 37 - gable roof		3.31
Dimensions available for 10,20,30, and 40 cows - gable roof		3.32
Solids (hog barn) pit - 16 x 36 - concrete .		3.36

	<u>Liquid Manure Tanks</u>	
	10 by variable lengths	
Concrete		3.34
	16 x 48	
Wood		3.33
	20 x 51 x 6 deep	
Concrete		3.35
Liquid Tank (concrete)		3.37

Buildings for Farm Products

	<u>Hay Sheds</u>	
	24 x 48	
Gable roof		4.12
	24 x 60	
Gable roof		4.11

	<u>Granaries</u>	
	10 x 10	
Movable - 500 bu. - gable roof		4.17
	12 x 14	
Movable - 1000 bu. - gable roof		4.18

	14 x 24	
4 bins - 1800 bu. - gable roof	4.16	
4 bins - 1800 bu. - gable roof	5528	
Gable roof - 1800 bu.	4.23	

	31 x 32	
Gable roof - 6400 bu.	4.19	
Gable roof - 4 lower bins, 2 upper bins, 6400 bu.	5529	

Storage shed - semicircular - adapted for movable bins	5145
---	------

Grain Elevators

	10,000 Bushels	
30 x 31 - gable roof	4.22	
30 x 30	5325	
30 x 30' - crib construction	5532	

	11,000 to 11,500 Bushels	
2 bins - 14 x 14 x 36 - gable roof	4.20	
Crib construction - 16 x 31	5093	

Corn Cribs

700 bu. - 6 x 32 - shed roof	5533
28 x 32 - gable roof	4.24
4 $\frac{1}{2}$ x 20 - gable roof	4.25
Combination crib and granary - 27 x 32 - 900 bu. ear corn, 2000 bu. small grain .	5535

Potato Houses

Above-ground house - 12 x 16 - 600. bu. . .	5492
Above-ground house - 18 x 28	5493
Potato cellar - 36 x 48 - dugout type. . .	5504
Root cellar - log construction - 16 x 20 .	5491
Root cellar - concrete - 10 x 11.	5330

Apple Storage House - 16 x 24 - gable roof	4.31
---	------

Fruit and Vegetable Storage - 20 x 36 - underground	4.32
--	------

Wooden Hoop Silo	5490
----------------------------	------

- U.S.D.A. Farmers' Bulletin #1820, "Silos - Types and Construction".
- U.S.D.A. Farmers' Bulletin #1442, "Storage of Sweetpotatoes".
- U.S.D.A. Farmers' Bulletin #847, "Potato Storage and Storage Houses".
- U.S.D.A. Farmers' Bulletin #879, "Home Storage of Vegetables".

Buildings for Manufacturing and Processing

Smokehouses

6 x 8	
Frame construction - gable roof	5.11
Frame construction - gable roof	5.13
Frame construction	5029
8 x 10	
Masonry construction	5.12

Milk Houses

7 x 9	
Gable roof.	5032
Gable roof.	5.23
8 x 16	
2 room - gable roof	5502
10 x 12	
Gable roof.	5.24
10 x 16	
2 room - gable roof	5.25
10 x 20	
Shed roof	5.22
12 x 14	
Gable roof	5.21
26 x 37	
Gothic roof - office, dressing room, bathroom, boiler room, milk and work rooms	5.29
Milk House for Producer-Distributor -	
14 x 36 - alternate floor plan	5.26
Three-room milk house - 12 x 24 -	
gable roof	5503
Farm Bottling Plant - 14 x 24 - gable roof.	5.27
Sixteen-Case Dairy Cooler - 5 x 6	5.28
Incinerator (animal)	5.14

Nut Driers

5 x 6 - gable roof - space for 16 trays . .	5.31
Walnut-filbert drier - 12x32-hip roof . . .	5.32
Walnut drier - 28 x 30 - gable roof	5.33
Recirculation type filbert drier - 20 x 32-	
gambrel roof	5.34
500 lb. nut drier	5.37
Filbert or walnut drier	5.37a
Filbert or walnut drier	5.38
Filbert or walnut drier	5.39

Corn Driers

Oregon shelled corn drier	5.35
Shelled corn drier - 8 ton capacity	5.351
Oregon shelled corn drier - steam heat.	5.36
Ear corn drier - 18 x 28 - gable roof	5.30
Experimental hop drier	5.40
Steam cabinet - 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ - wood or steel	5.41
Steam cabinet - 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ - concrete.	5.42
Nursery thresher for grass seed (adjustable)-	5.51

Potato Washers

Flood type	5.61
Spray type	5.62
Spray type with soaking tank	5.64
Spray type with soaking tank and recirculation system	5.65
Cylinder type	5.66
Rope Bottom Potato Hopper	5091
Apple Washer	5494

Livestock Equipment and Conveniences

Cattle Feeders

Cattle bunk - 4 x 12	6.11
Cattle self-feeder - 5 x 17 - gable roof. . .	6.12
Cattle self-feeder - chopped hay	6.121
Hay feeding rack - 15 x 18	6.13
Cattle feeder - long hay	6.131
Cattle hayrack - V openings - movable	5463
Cattle hayrack - slatted - movable	5464

Hog Feeders

Hog self-feeder - 4 x 6 - gable roof	6.14
Hog self-feeder - 12 pigs	5482
Hog self-feeder - 30 to 40 hogs	5483
Hog self-feeder - portable, large capacity - 10 x 10 by 8 high	5484

Range sheep feeder - 25 x 48 - 18 tons hay - 5474

Chutes

Cattle stocks	5066
Dehorning chute	6.62
Truck loading chute	6.63
Modified Nevada type chute	6.64
Chute and corral - Oliver plan	6.65
Movable hog loading chute	5388

Breeding Crates

Cattle breeding crate	6.31
Hog breeding crate	6.32

Dipping Vats

Concrete	6.21
Sheep vat - concrete	6.22

Cattle Guards

Wood	5468
Concrete and wood	5469
Concrete and steel	5470
Cattle guard	6.66

Farm Gates

Automatic gate	5467
Several types farm gates	5505
Cattle squeeze	5465
Calf creep	5466
Hog scalding equipment	5063
Low-down silage rack	6.41
Scale and corral layout	6.61
Autopsy table	6.71

U.S.D.A. Farmers' Bulletin #1490, "Hog-Lot Equipment", is available in offices of county agents.

Structural Equipment

Refrigeration

Refrigerator - side-icer - small walk-in type . . .	5027
Ice box	5510
Evaporator cooler	5511
Mechanical refrigerator - 80 cubic feet -	
semi-walk-in type	5513
Dairy cold box - 5 sizes of boxes included in	
plan - size of mechanical equipment given	5514

Water Supply

Water barrel (90 gallon) on sled	7.11
Fireproof pump house - 14 x 14	7.32
Plan of permanent pipe system for sprinkler	
irrigation of 12 acre pasture	7.31
Layout of complete hot and cold water system	5518
Simple water system - sink pump	5515
Simple water system - engine and tank	5516
Simple water system - hot water in kitchen	5517
Simple water system - pneumatic	5519
Open water tower - 3000 gallons	5520
Closed water tower - 3000 gallons	5521
Diversion works for gravity water systems	7.33

Meat curing box 5024

Extension circular #337, "Farm Water Systems", contains plumbing plans.

Extension circular #333, "A Concrete Septic Tank for the Farm", contains plans for concrete septic tanks and kitchen sink drain plans.

U.S.D.A. Farmers' Bulletin #1525, "Effective Haying Equipment and Practices".

All circulars and bulletins are available in the offices of county agents.

Miscellaneous

Camp Cabins

3 rooms	5185
5 rooms - log cabin	5506
3 rooms - log cabin	5507
Fresh air sleeping cabin - 12 x 16.	5508

Roadside Stands

Large stand - 20 x 24	5192
Small stand - 12 x 24	5193
Open stand	5194
Movable stand	5509

Mormon hay stacker	5522
Hay derrick	5523
Electric soil sterilizer	8.11
Cone feed mixer	8.12
16-foot overshot water wheel	8.13
Merry-go-round for playground	8.21
Playground layouts	5183
Trailer for scales	8.22
Air meter	8.23
Shingle making jig	8.24
Cross section of greenhouse	8.25
500 chick fan - type electric brooder . . .	8.30

Extension circular #332, "A Low-Head Turbine for Farm Hydro-Electric Development".

Extension circular #330, "4-H Club Rural Electrification Project", (Wiring diagrams showing use of 3 and 4-way switches).

Extension Bulletin #531, "Better Farm and Home Lighting", (contains plan for a homemade electric light reflector and a dimming assembly for poultry house lights).

U.S.D.A. Farmers' Bulletin #1318, "Greenhouse Construction and Heating".

All circulars and bulletins are available in the offices of county agents.

NOTE: List of plans on page 23 of Plan Service Manual.