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UNITED STATES DEPARTMENT OF AGRICULTURE

FARM SECURITY ADMINISTRATION

STANDARD FARMSTEAD PLANS

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**WISCONSIN
STATE PLANNING
BOARD**

OFFICE OF THE CHIEF ENGINEER
DISTRICT THREE
INDIANAPOLIS, INDIANA

INTRODUCTION

The plans in this booklet were developed by the Farm Security Administration, primarily for the use of farmers in the North Central States who are purchasing land with the help of government loans under the Bankhead-Jones Farm Tenant Act.

These plans are the result of the experience of Farm Security Administration engineers in building and remodeling several thousand farmsteads, in the North Central area, plus the research and experience of other federal agencies, private builders, and state colleges.

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MAY 29 1998

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**WISCONSIN
STATE PLANNING
BOARD**

HOUSES

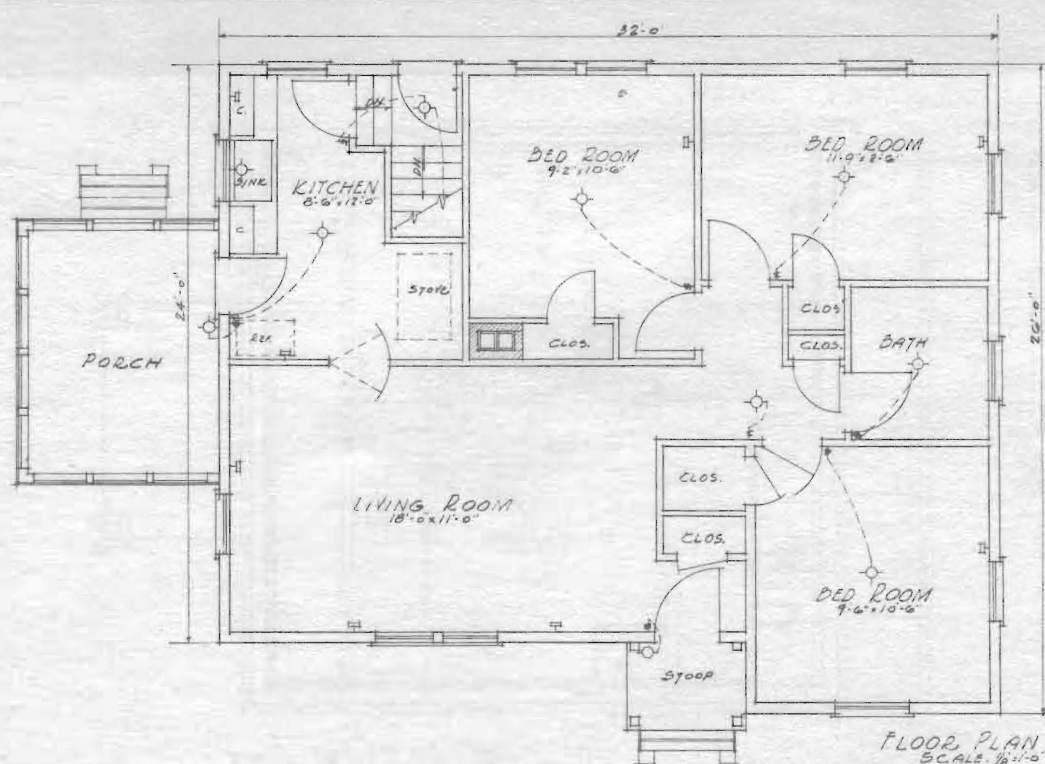
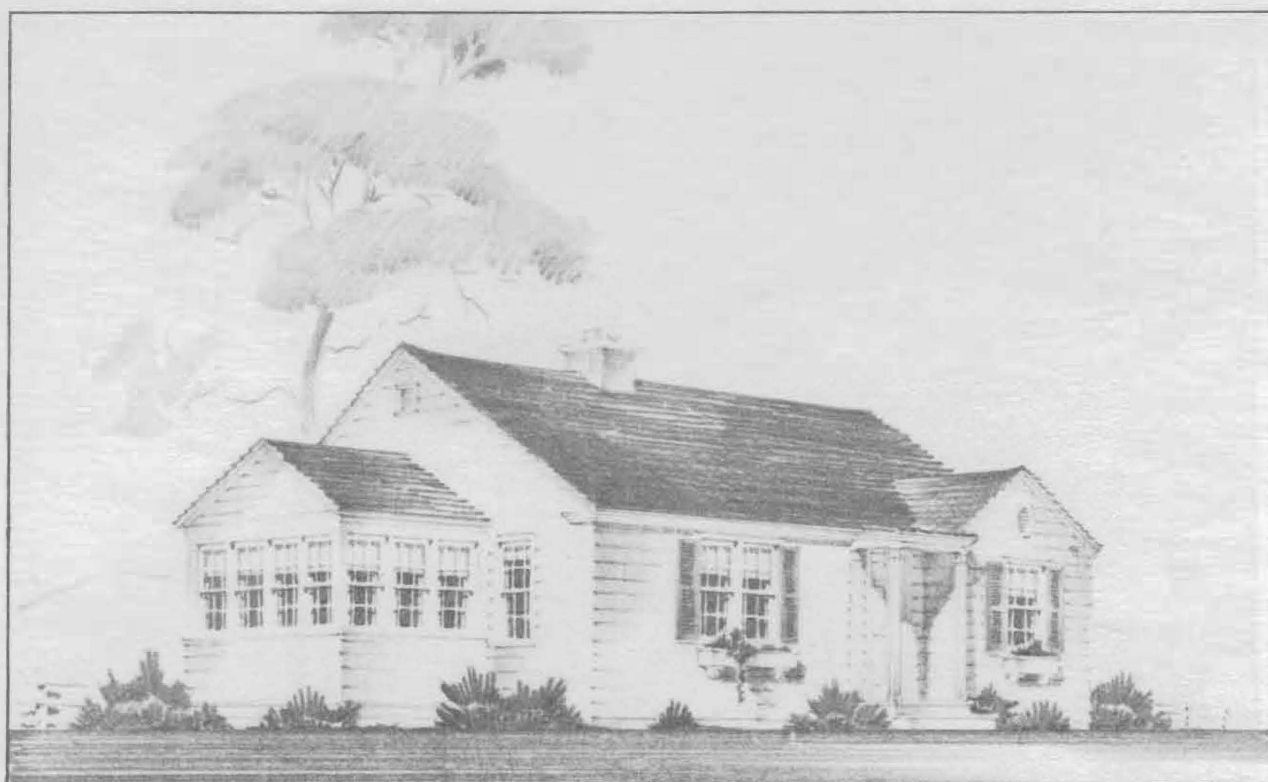
Modern plumbing has not been included in the house plans shown. Most of these plans are arranged so that modernization can be easily added either when building or at a later date.

RECEIVED

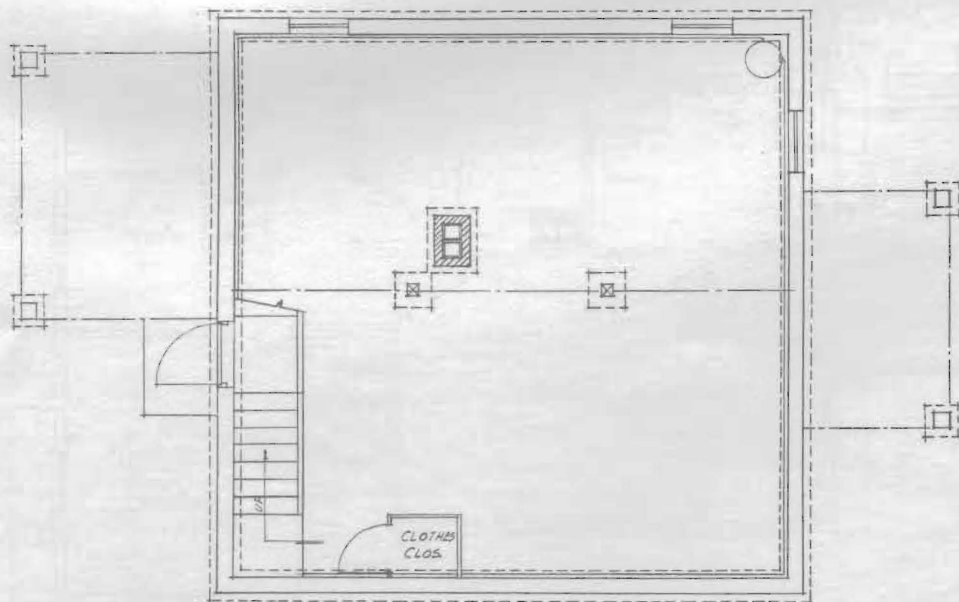
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U.S. DEPT. OF AGRICULTURE

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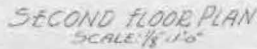


HOUSE PLAN
NO. 1

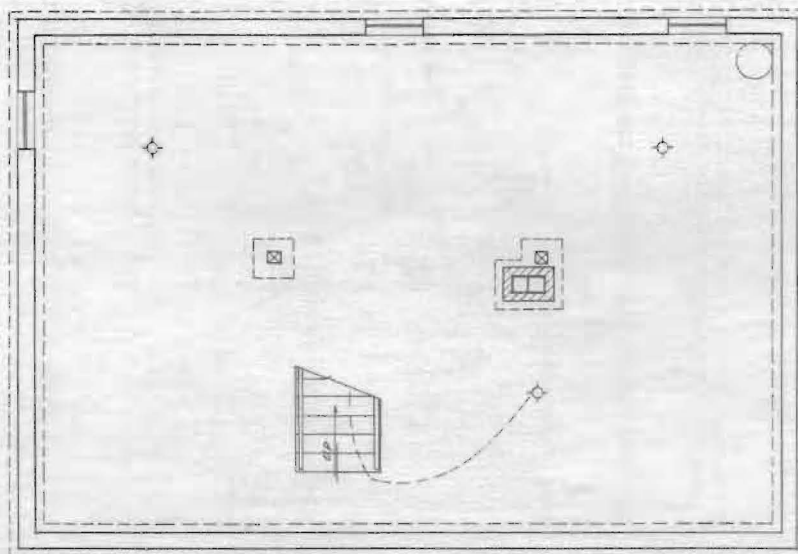


BASEMENT PLAN
SCALE: 1/8" = 1'-0"

HOUSE PLAN
NO. 2

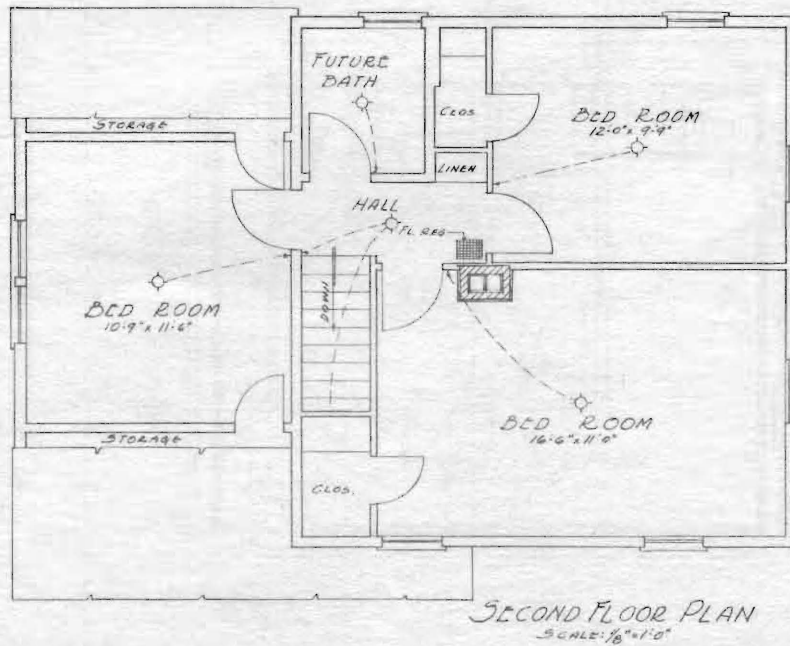
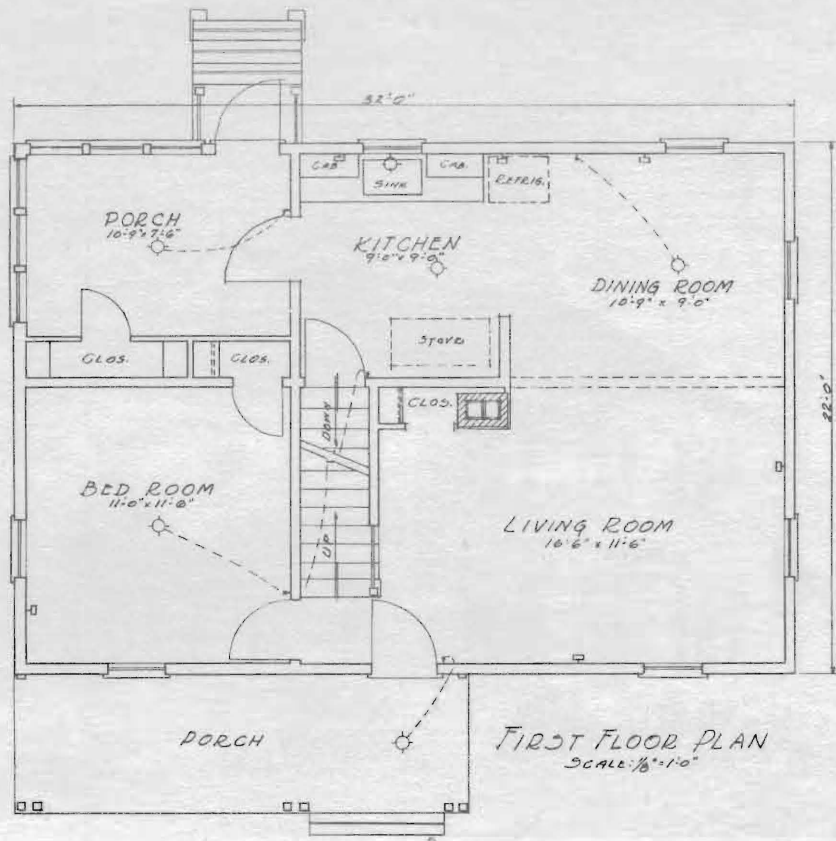


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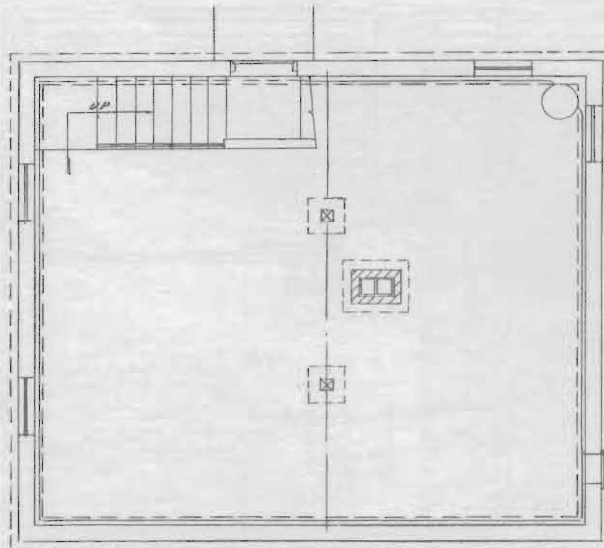
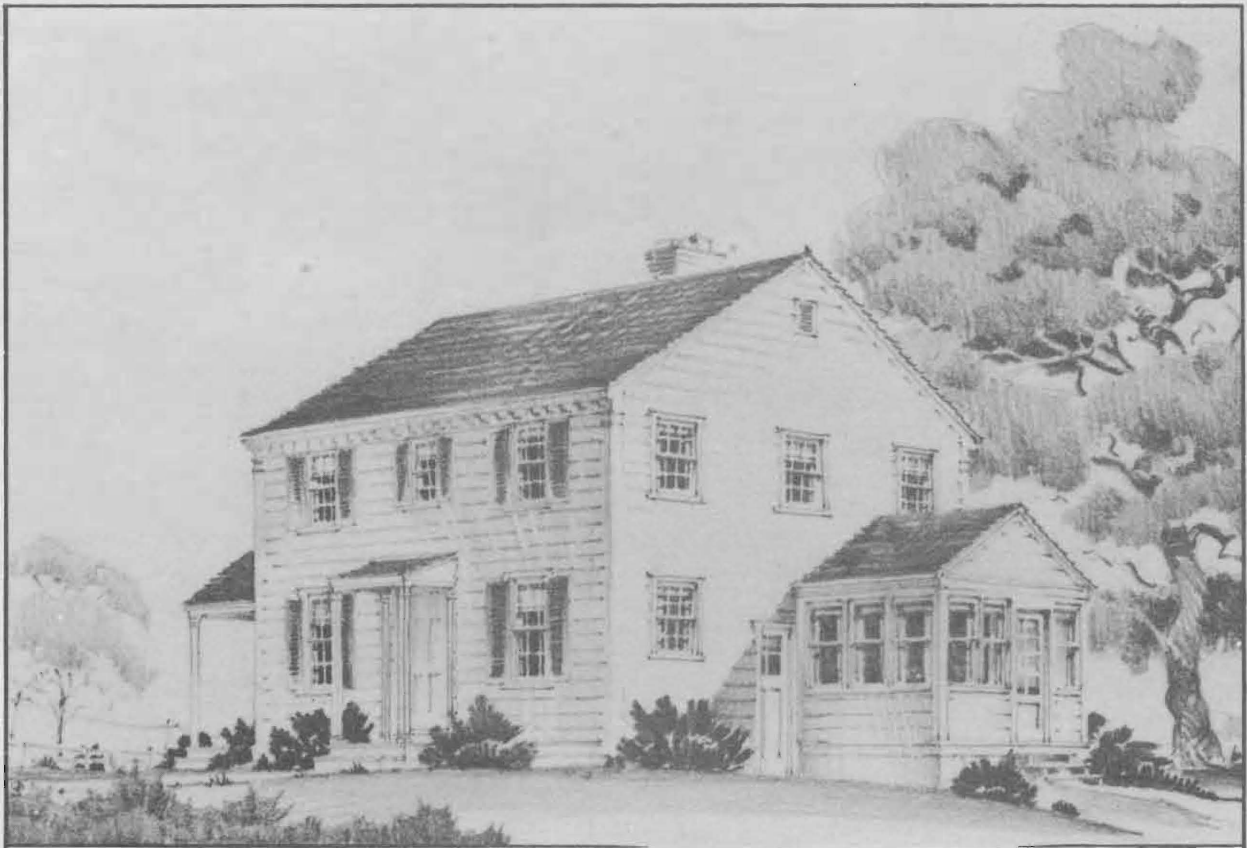



BASEMENT PLAN
SCALE: 1/4" = 1'-0"

HOUSE PLAN
NO. 3.



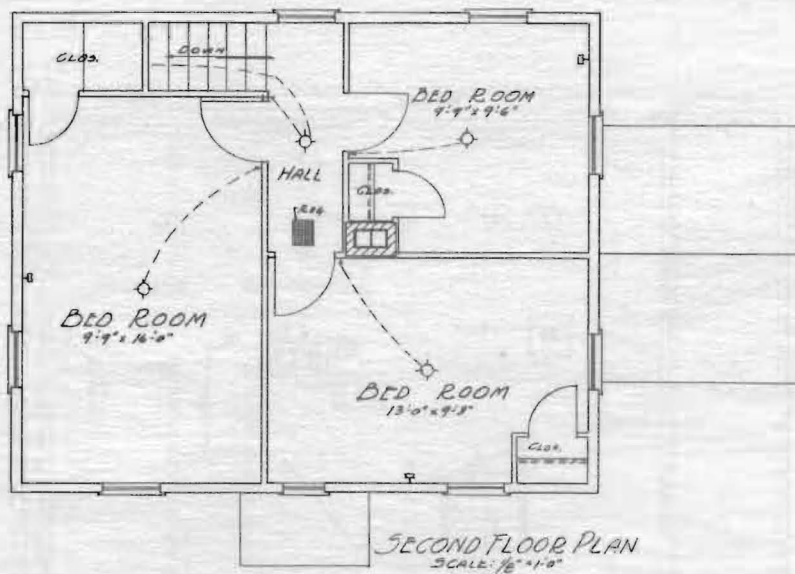
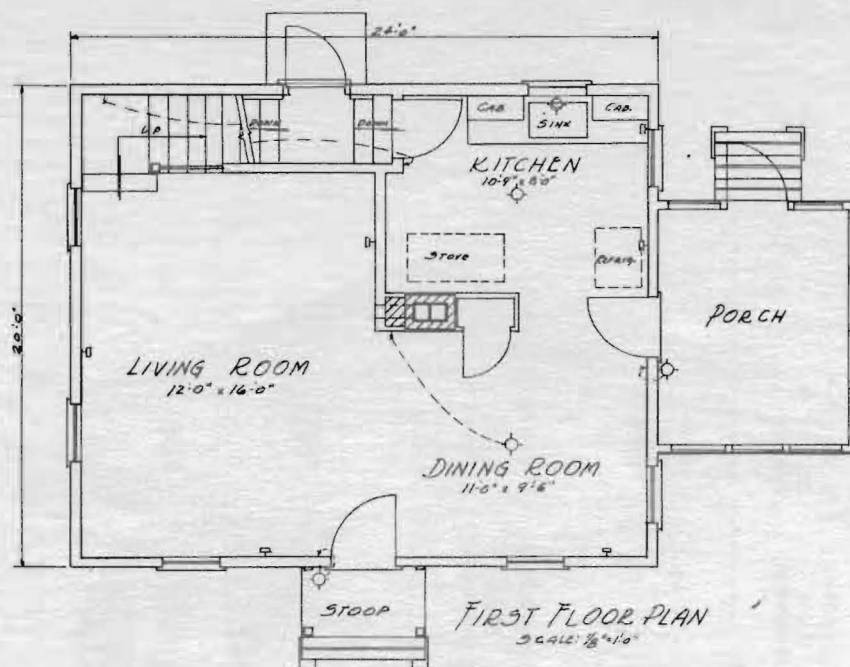
HOUSE PLAN
NO. 3



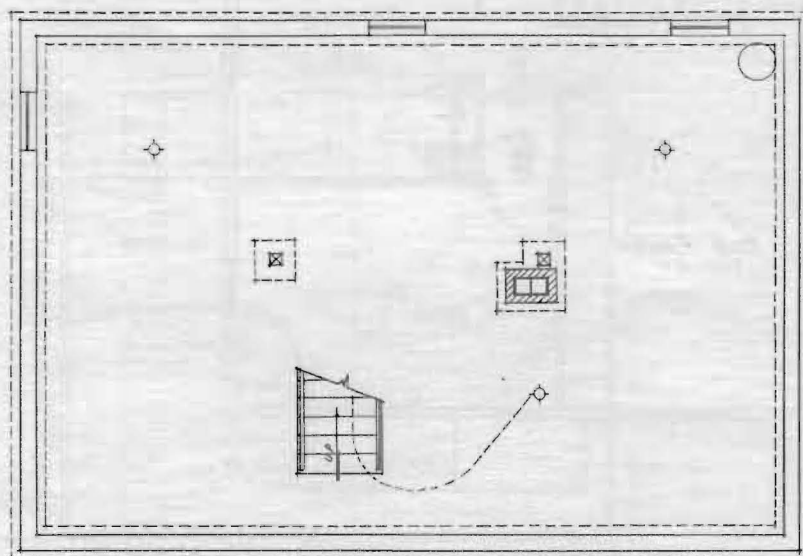


 BASEMENT PLAN
 SCALE: 1/8"=1'-0"

HOUSE PLAN
 NO. 4

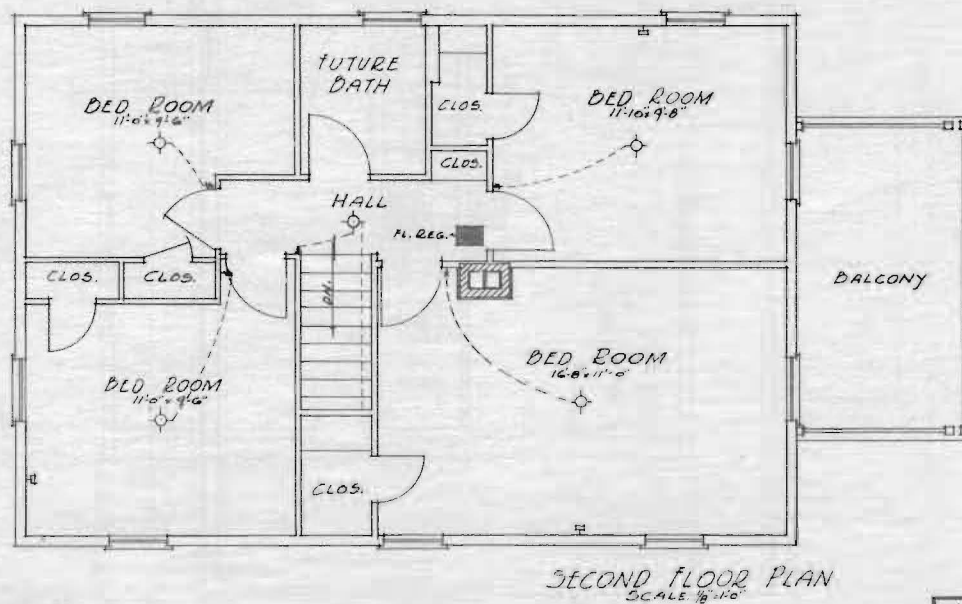
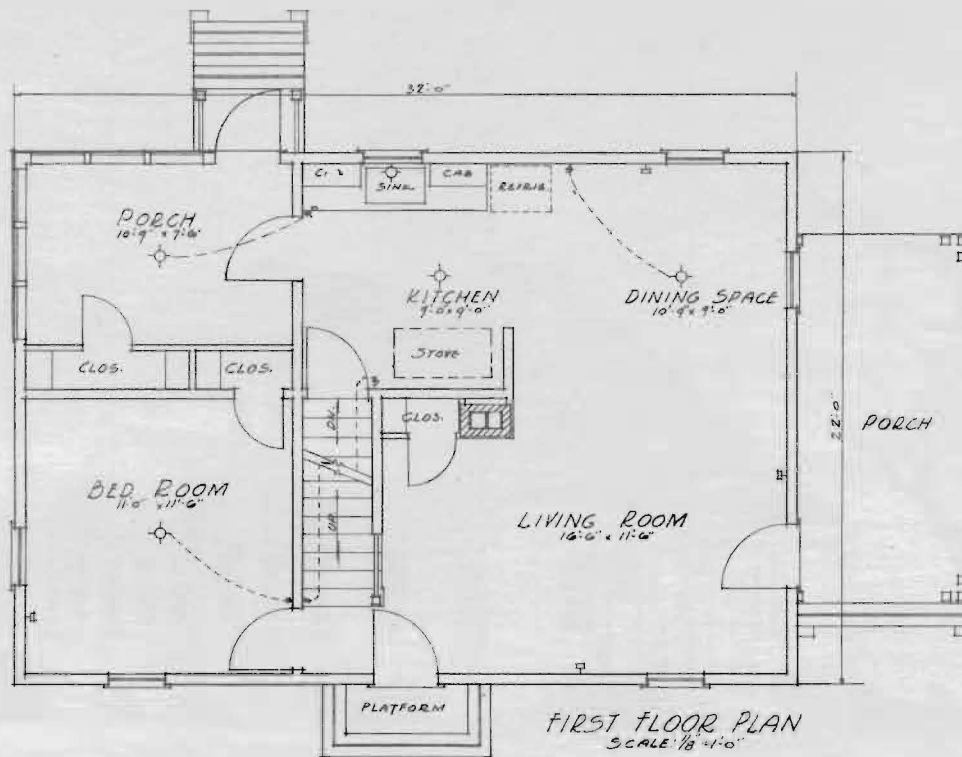


HOUSE PLAN
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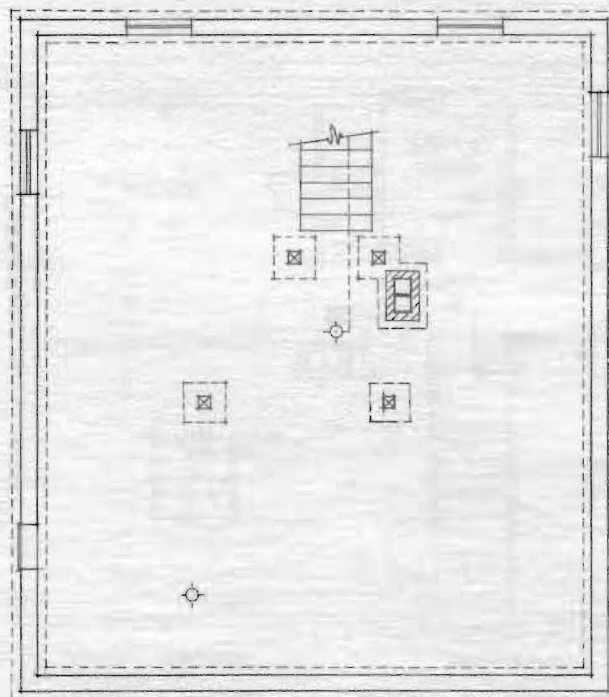


BASEMENT PLAN
SCALE: 1/8" = 1'-0"

HOUSE PLAN
NO. 5.

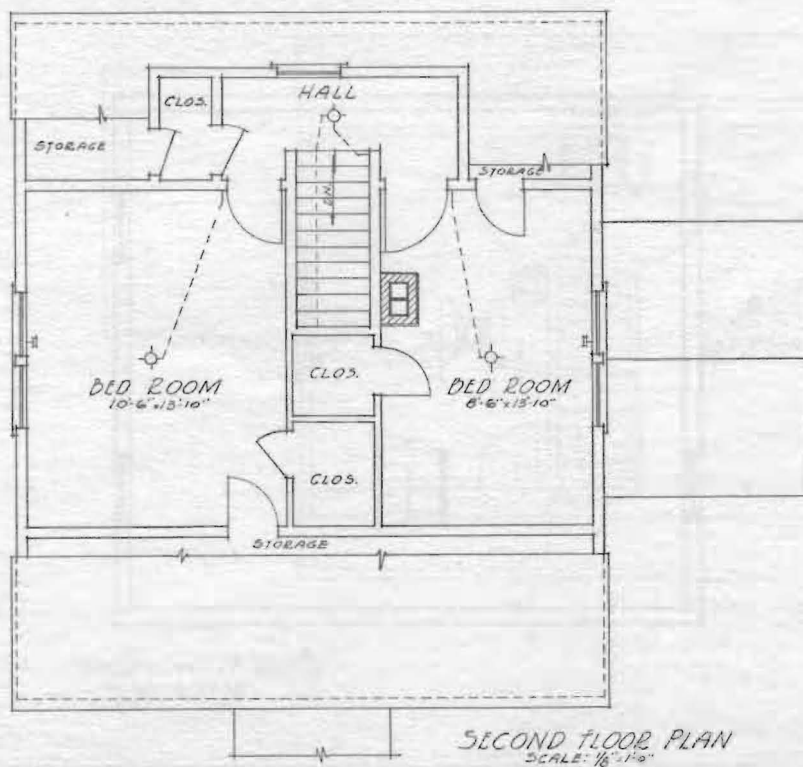
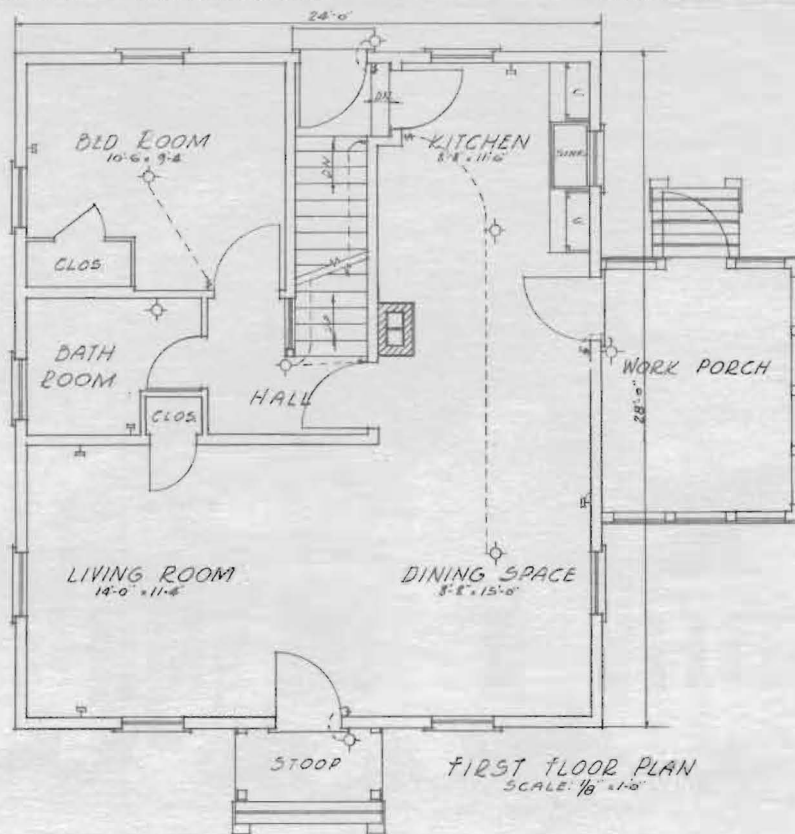


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NO. 5.

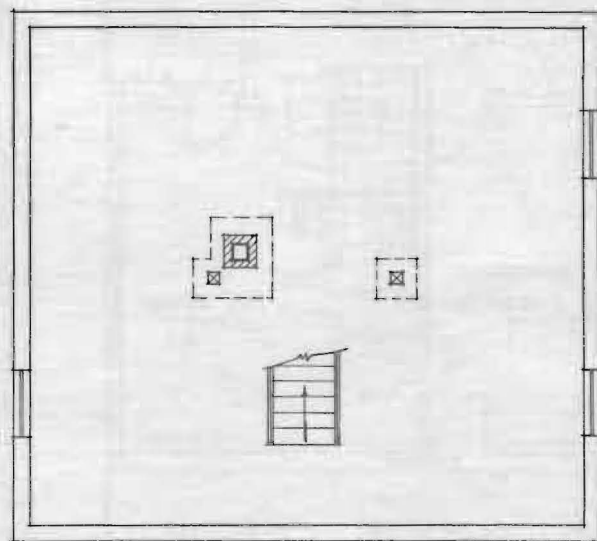


BASEMENT PLAN
SCALE: 1/8" = 1'-0"

HOUSE PLAN
NO. 6.

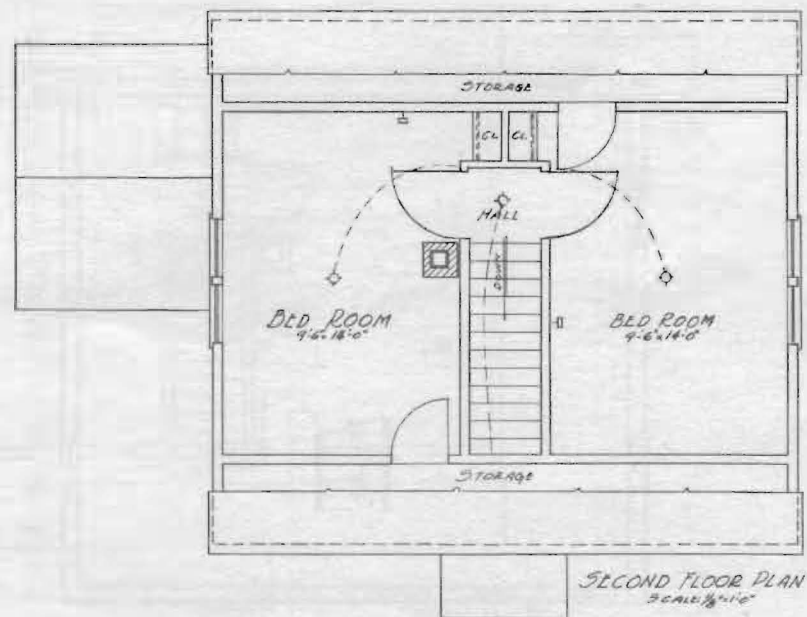
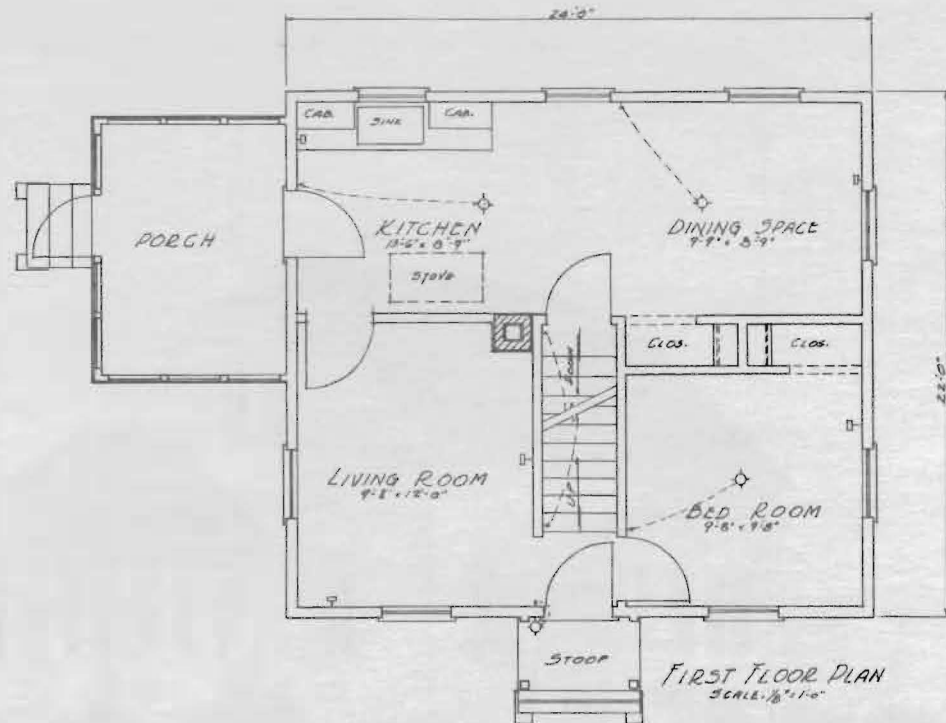


HOUSE PLAN
NO. 6.

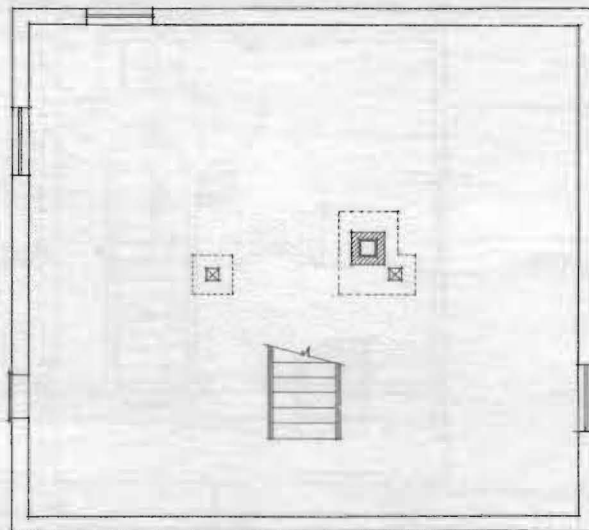
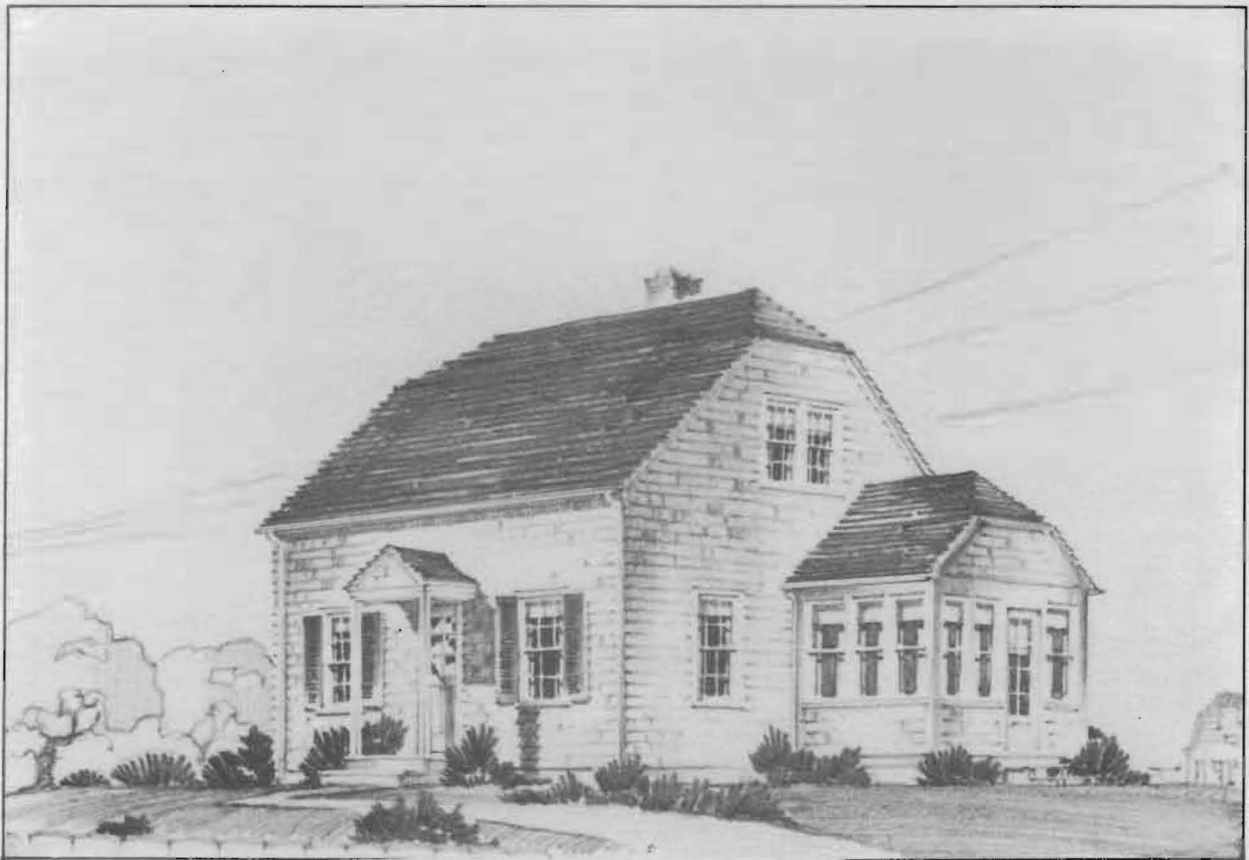


BASEMENT PLAN
SCALE 1/8" = 1'-0"

HOUSE PLAN
NO. 7.

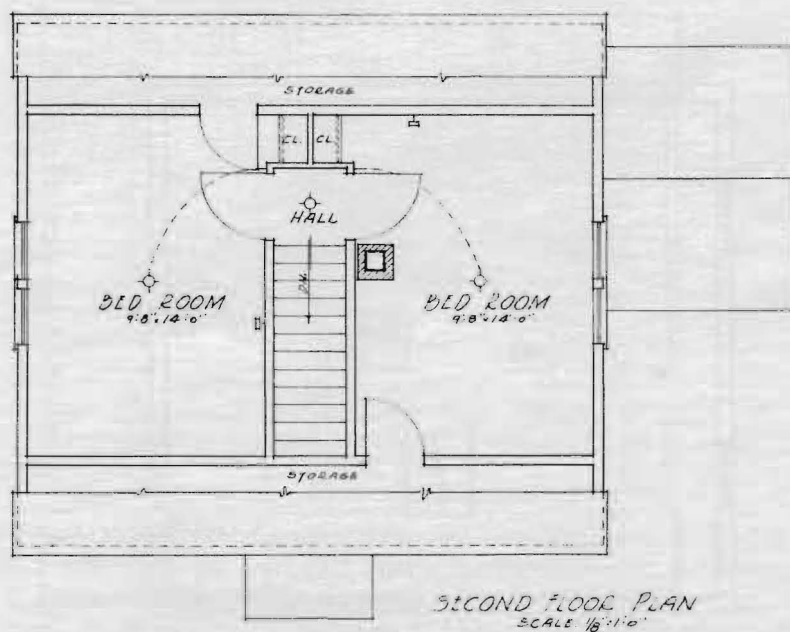
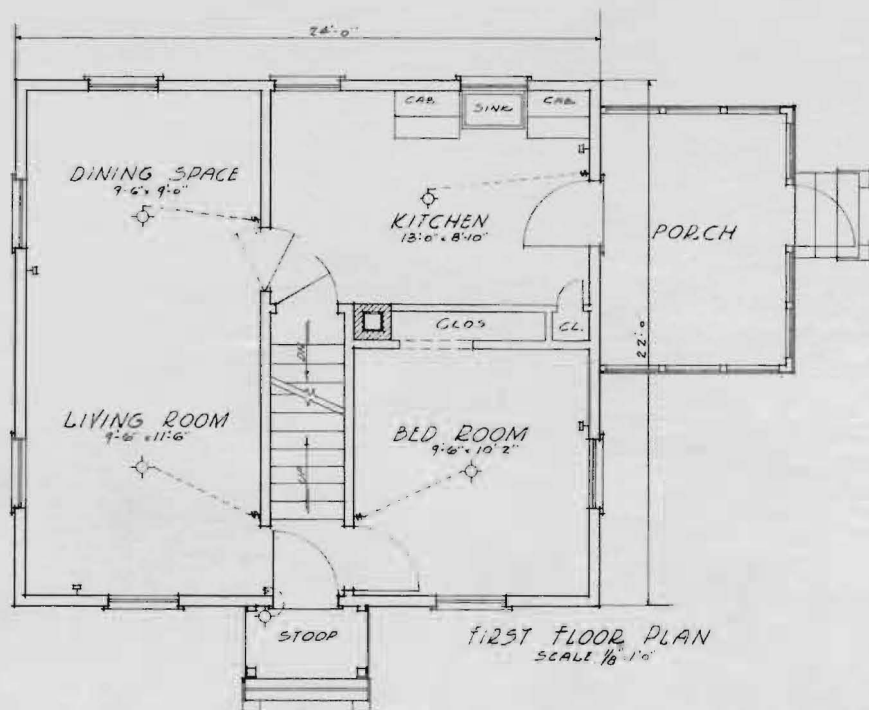


HOUSE PLAN
NO. 7.

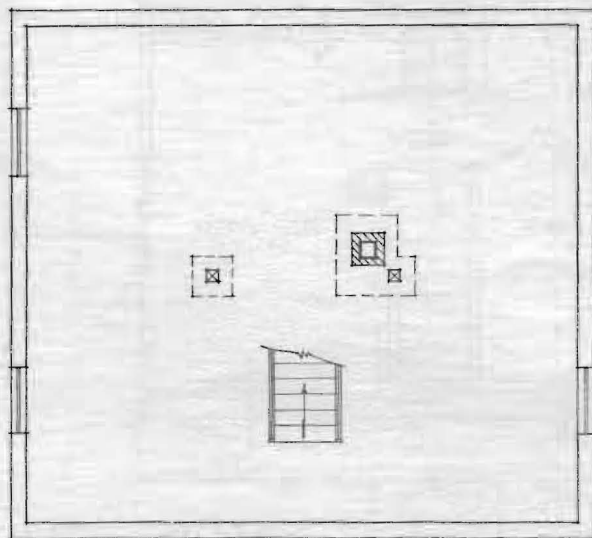
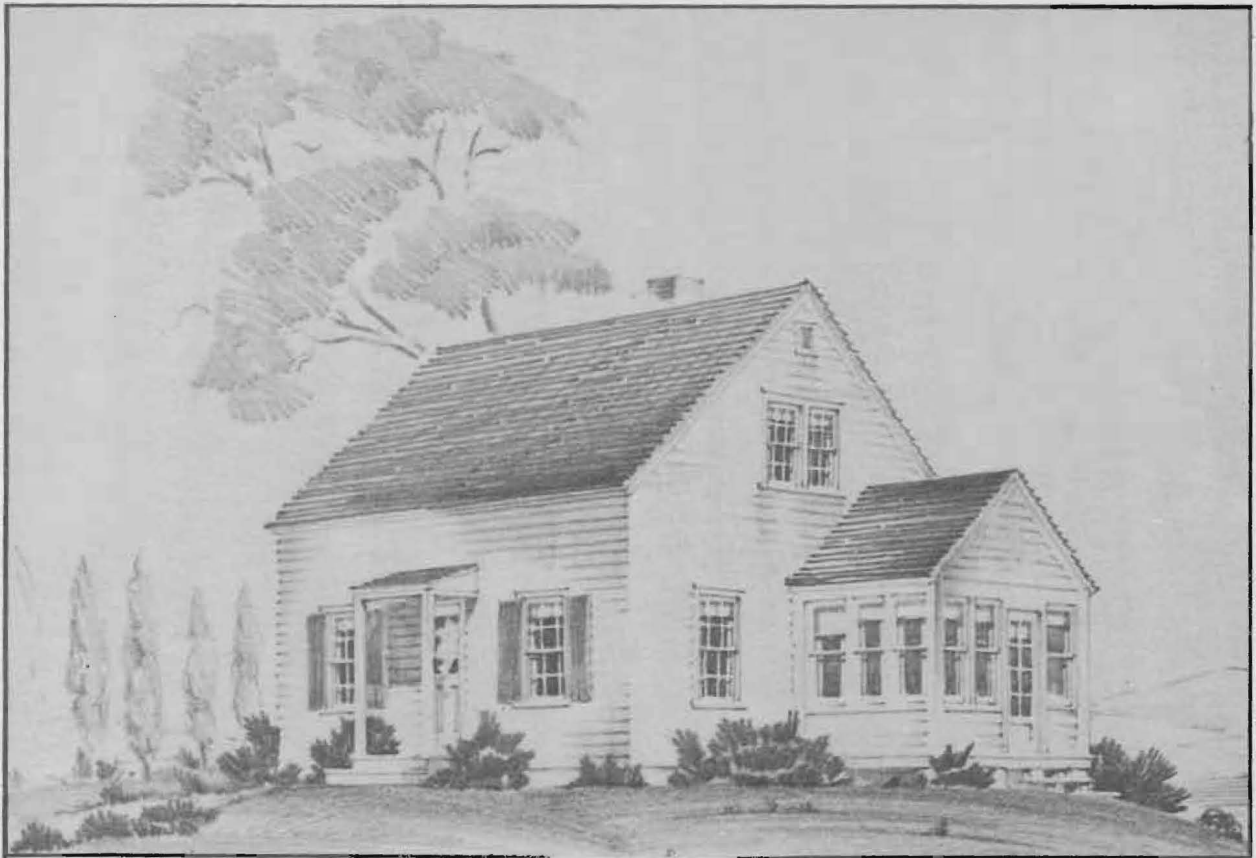


BASEMENT PLAN
SCALE: 1/8" = 1'-0"

HOUSE PLAN
NO. 8.

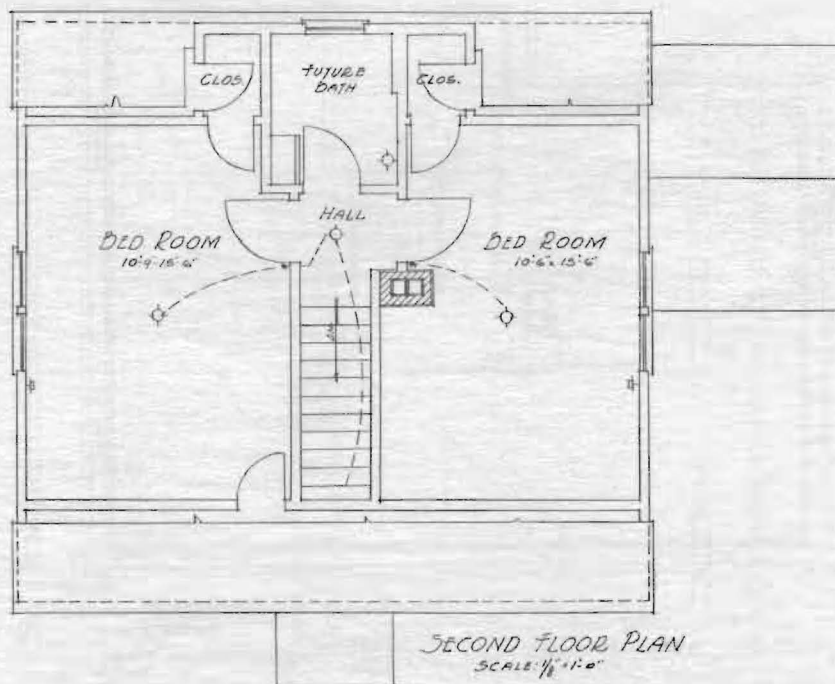
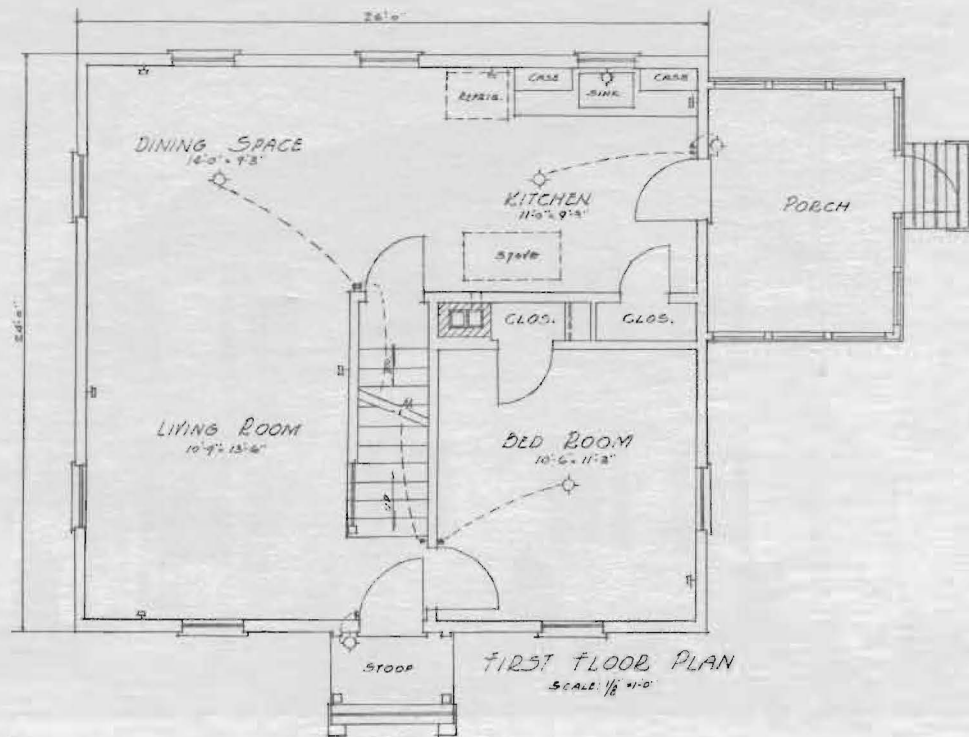


HOUSE PLAN
NO. 8.

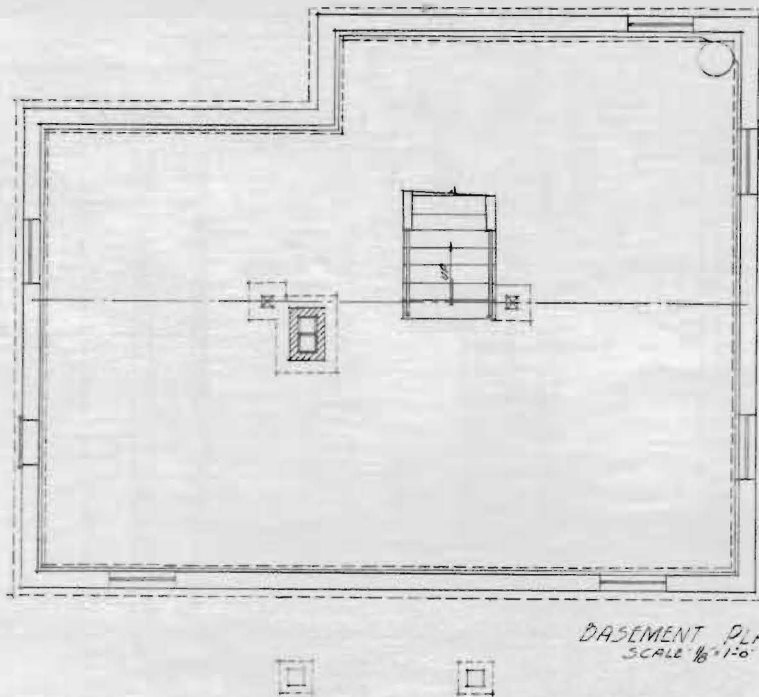


BASEMENT PLAN
SCALE: $\frac{1}{8}$ " = 1'-0"

HOUSE PLAN
NO. 9

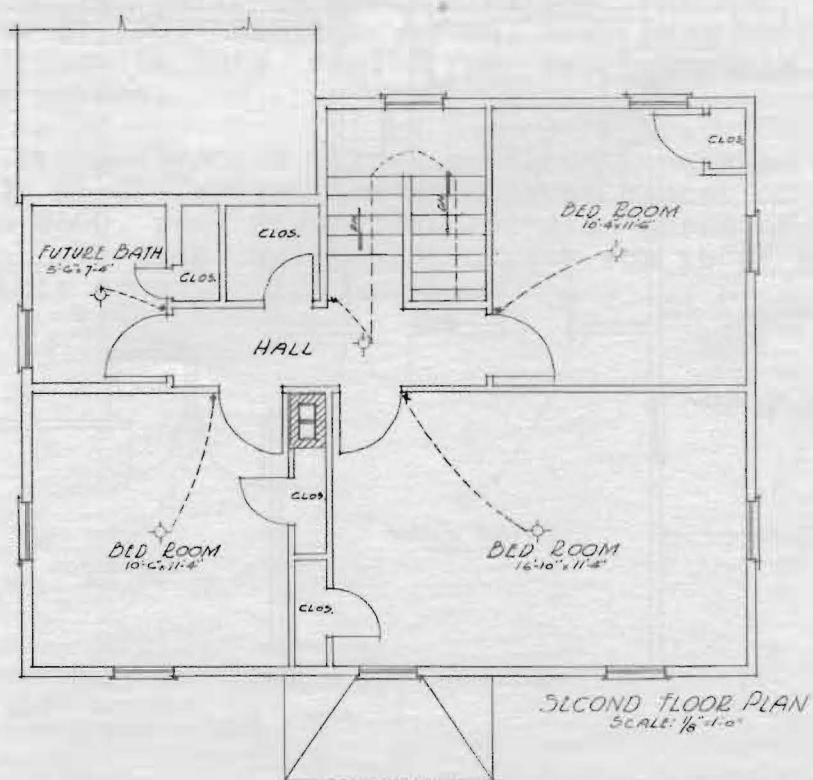
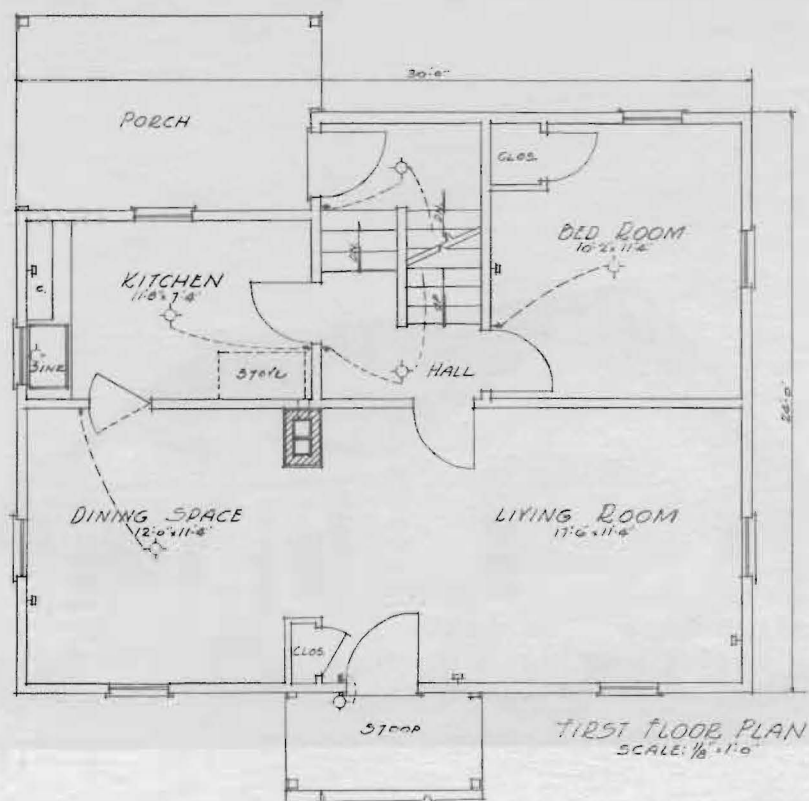


HOUSE PLAN
NO. 9.

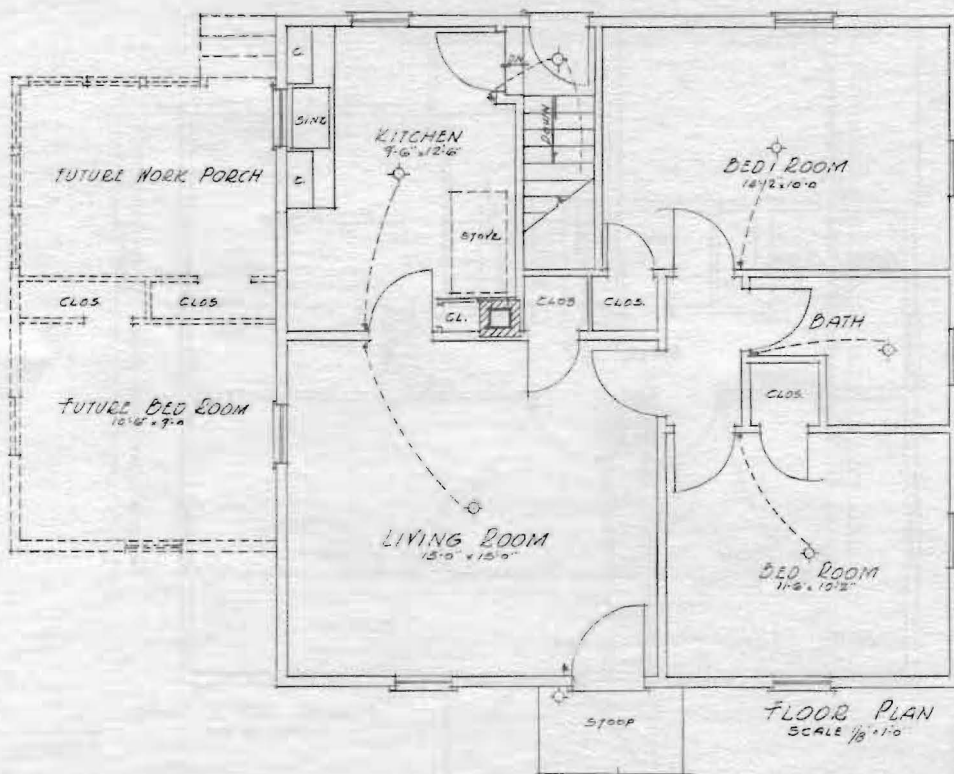


BASEMENT PLAN
SCALE 1/8" = 1'-0"

HOUSE PLAN
NO. 10.



HOUSE PLAN
NO. 10.



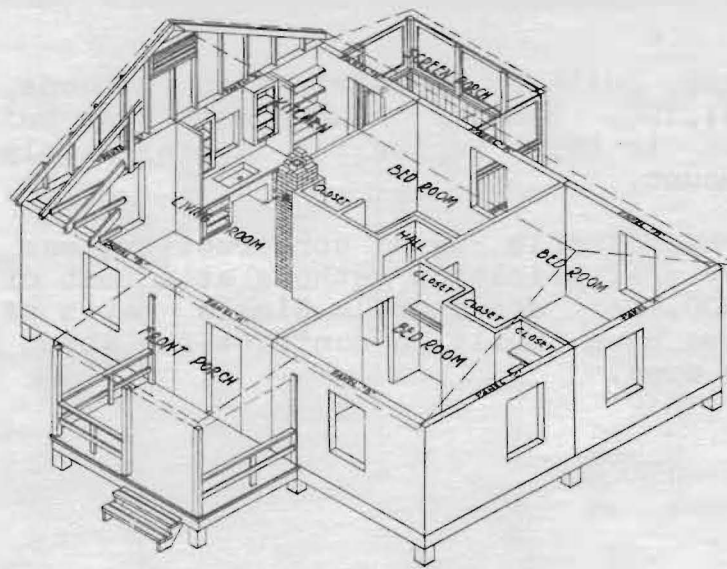
HOUSE PLAN
NO. 11.

SPECIAL FARMSTEAD BUILDINGS

Special farmstead buildings, designed for use on the Southeast Missouri Project, were built by Government force account operations during 1938. One hundred complete farmsteads were constructed at a total average cost of less than \$2500. per unit.

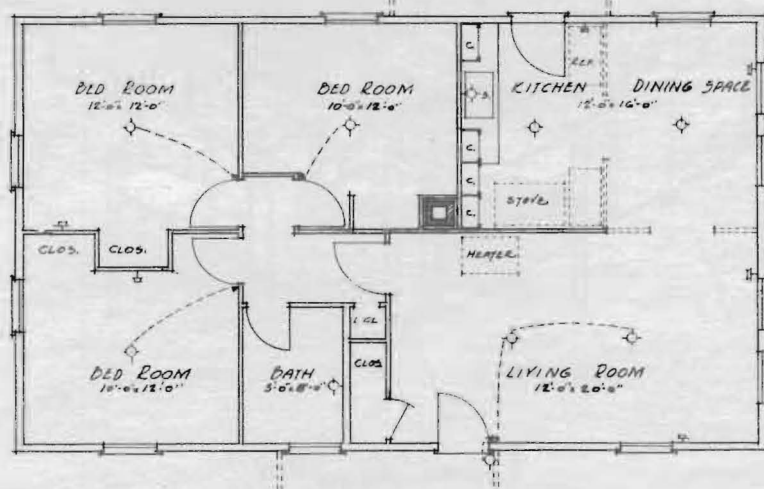
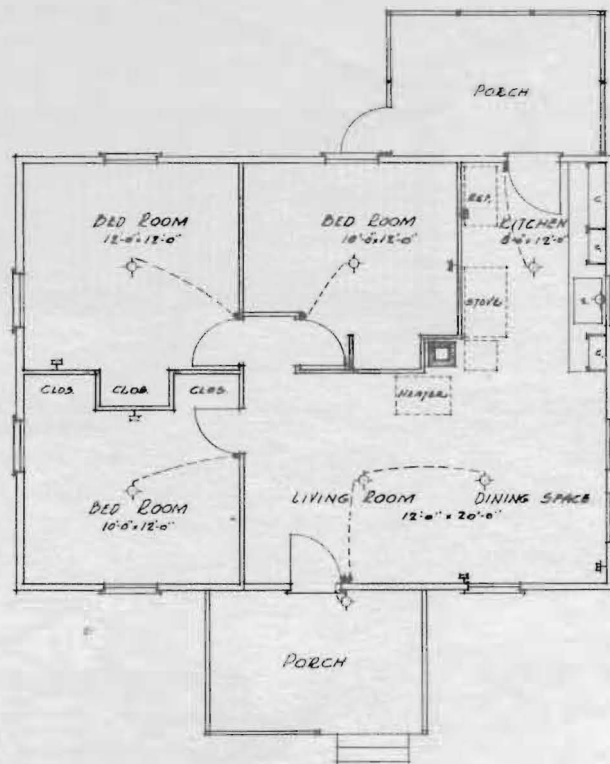
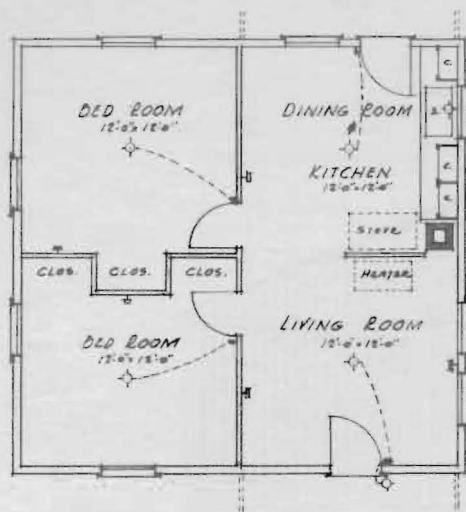
The house, built by prefabrication methods, cost about \$1,100. Similar houses have been built by contract in this region for approximately the same amount.

The barn, of pole type construction, was also built by prefabrication methods at a cost of less than \$500. per structure. Single barns of this type have been built by contract for about \$600. in this area.

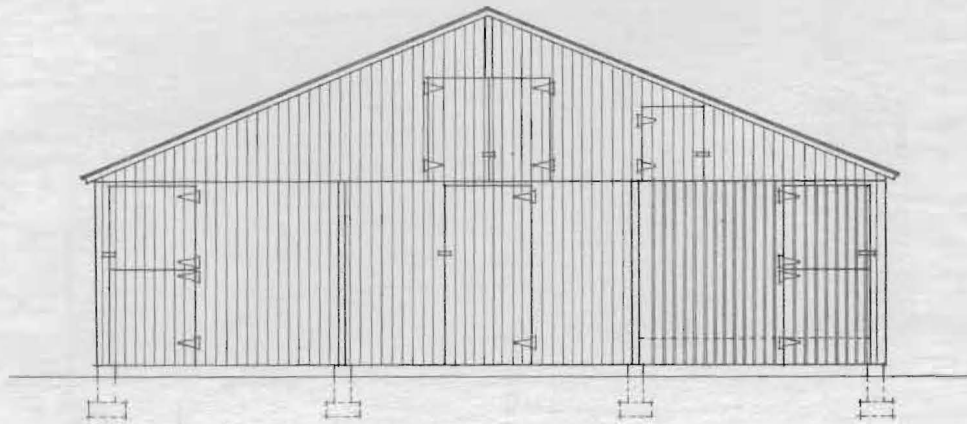


ISOMETRIC VIEW

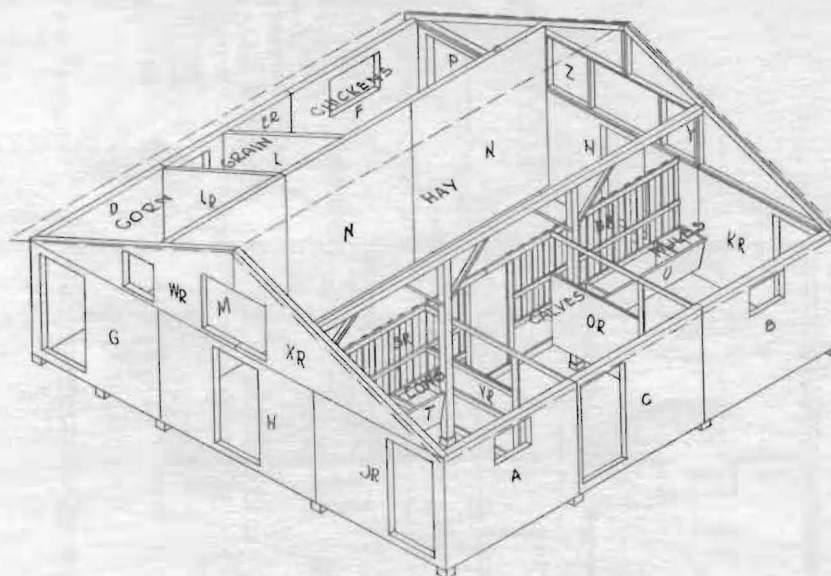
S. E. MC.
HOUSE



SCALE: $\frac{1}{8}$ " = 1'-0"
 S. E. MO.
 HOUSE.

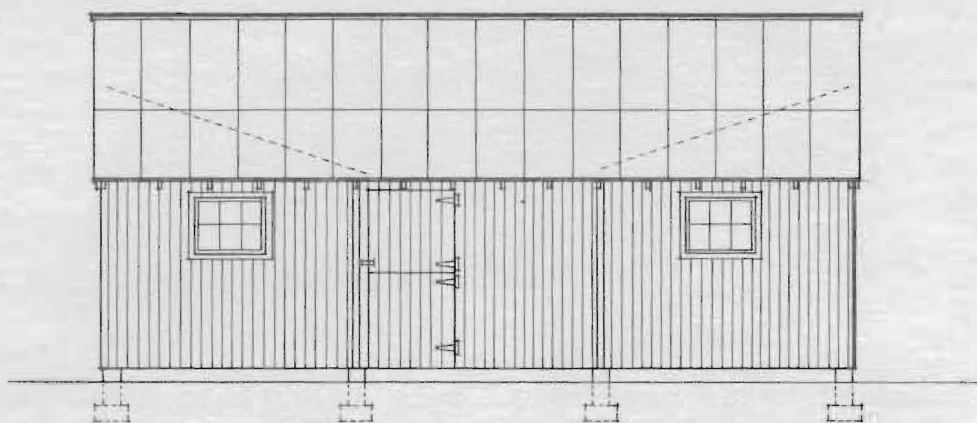


FRONT ELEVATION
SCALE: $\frac{1}{8}" = 1'-0"$

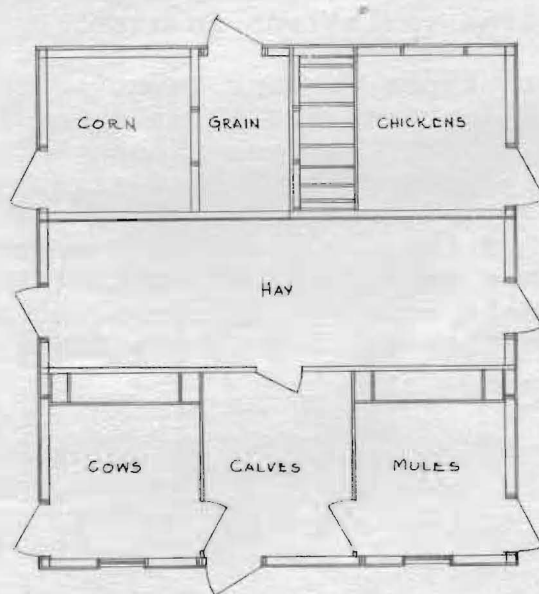


ISOMETRIC VIEW

S. E. MO.
BARN



SIDE ELEVATION
SCALE: 1/8" = 1'-0"



PLAN

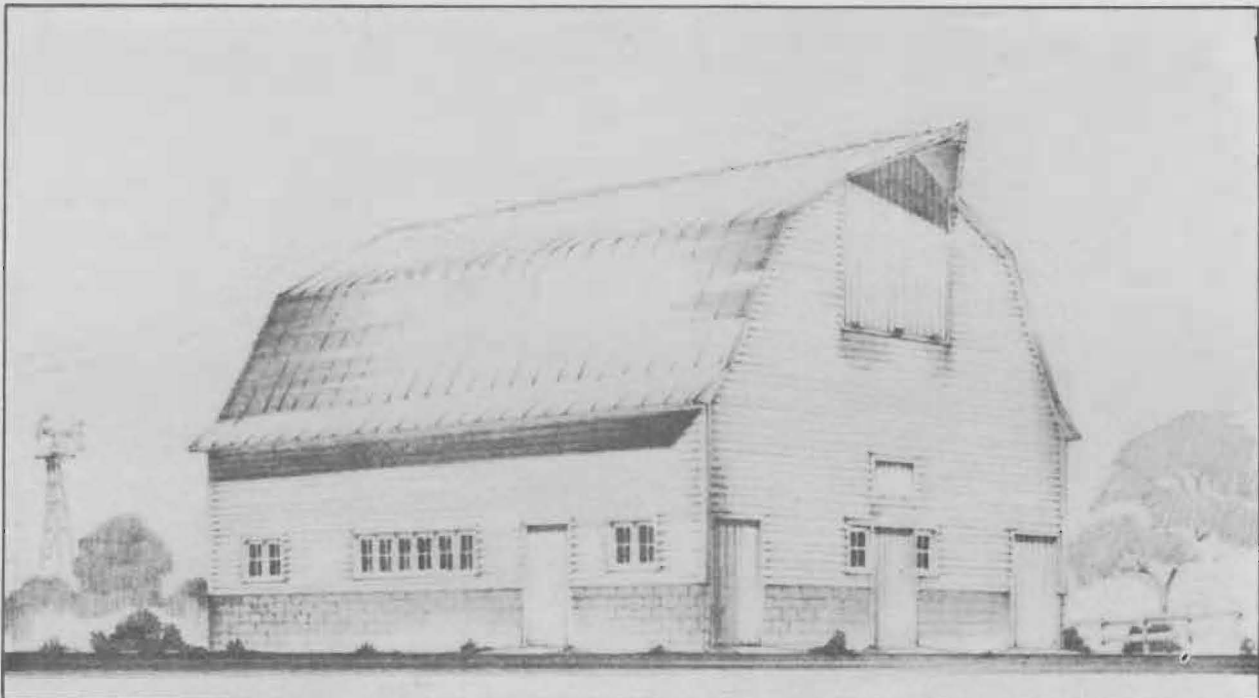
S. E. MO.
BARN

BARNs

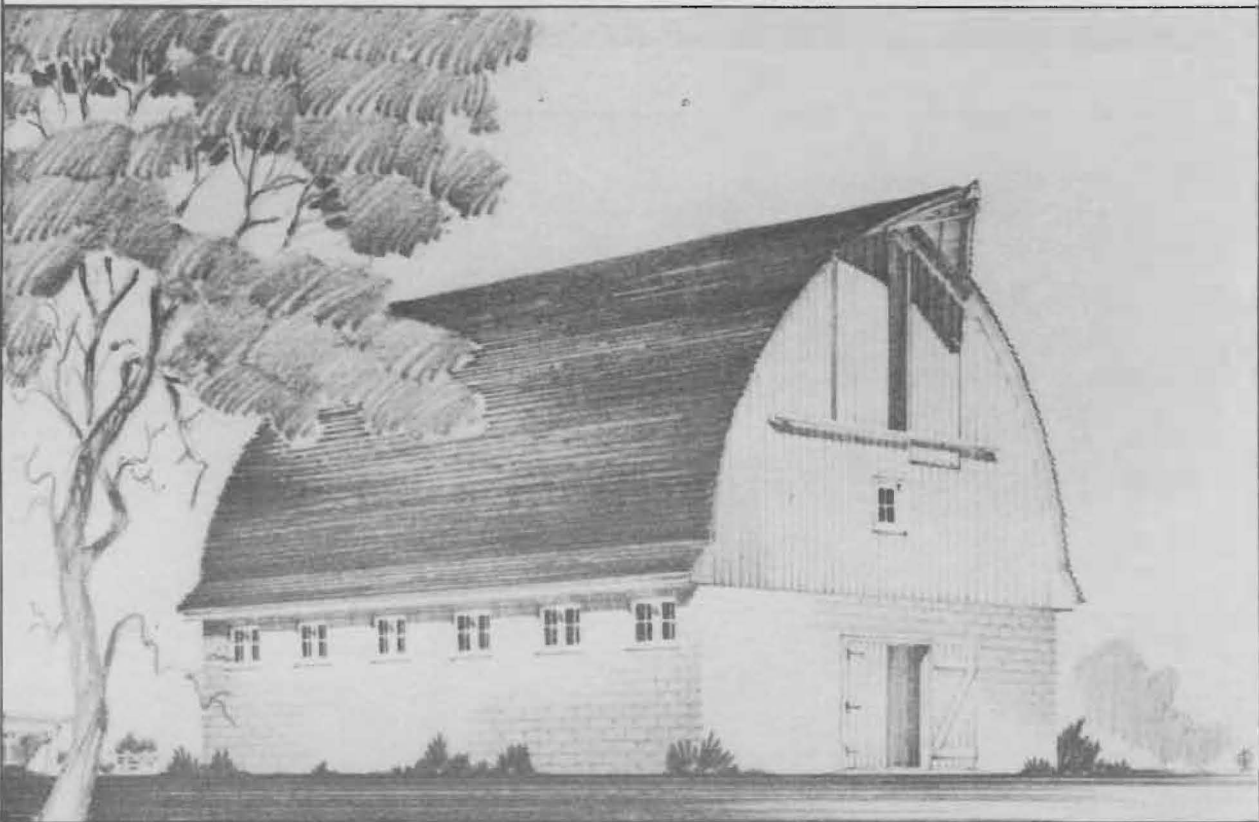
Standard barns need vary only in certain details of design and arrangements. These standard plans are arranged to give a maximum flexibility. Three types of roof construction - gable, gothic, and gambrel - are shown, using one selected plan size, 32' X 48', and various types of roof and side wall materials. The floor plans show a center litter alley type, a center feed alley type, and an adaptation of the center feed alley which provides for housing cattle across one end of the barn, with several variations in size.

Certain special types, a bank barn, a pole-type barn, and a cattle barn, are illustrated in addition to these standard types. These barns cannot be varied in size without re-design.

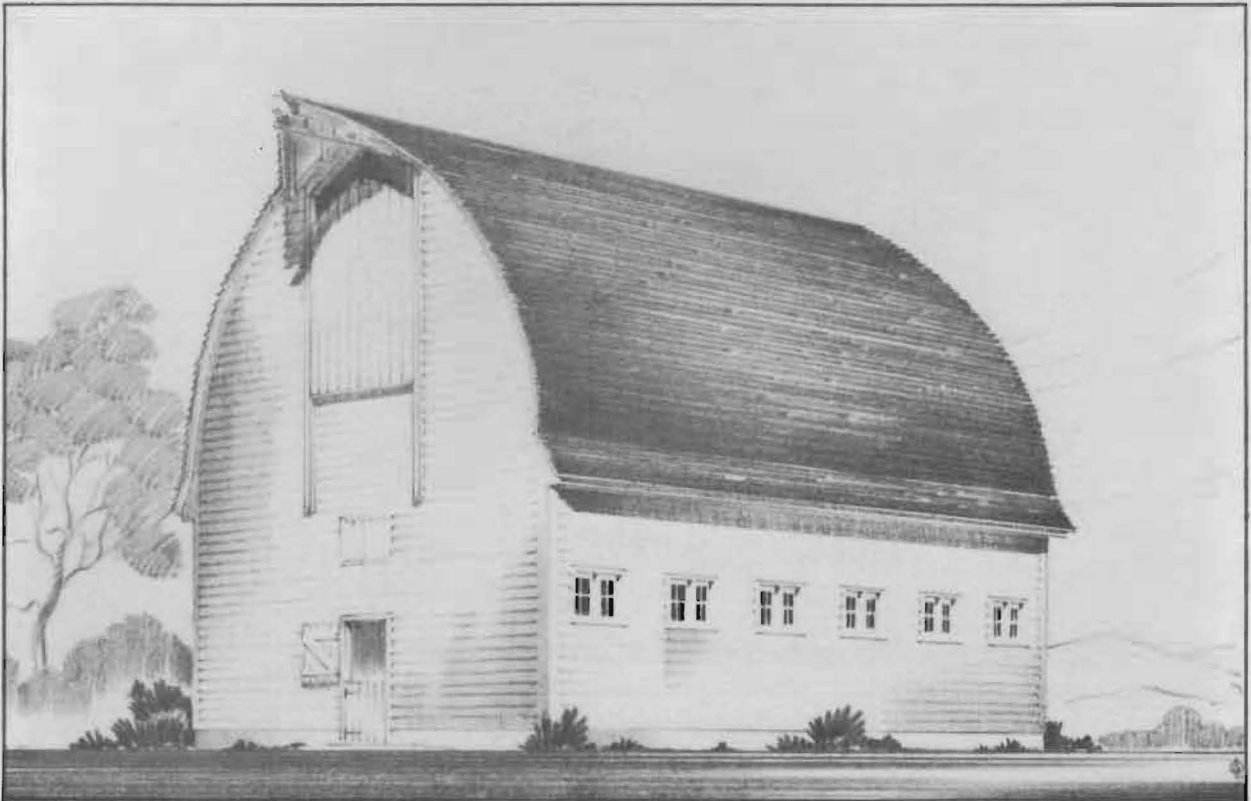
The selection of the type of wall material and roof material may vary. Adjustments to the estimates given can be made by any competent material dealer or contractor-builder in the field.



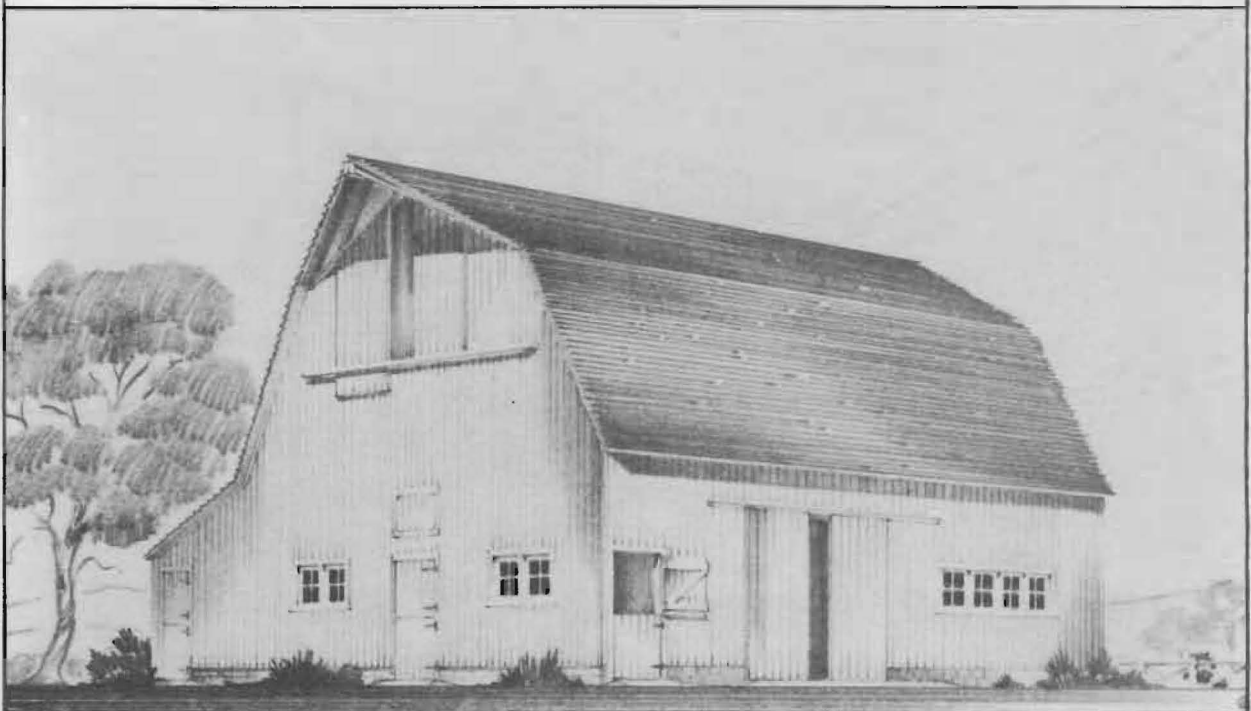
BARN-----NO 1.



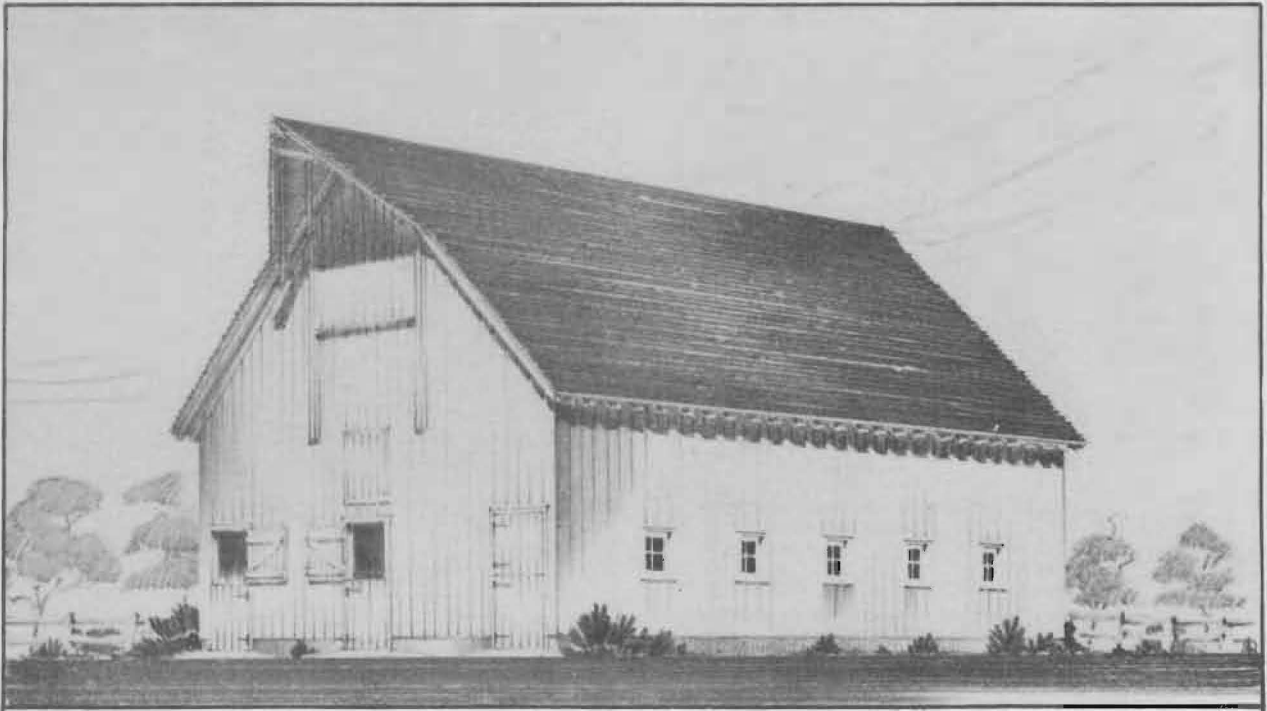
BARN-----NO 2



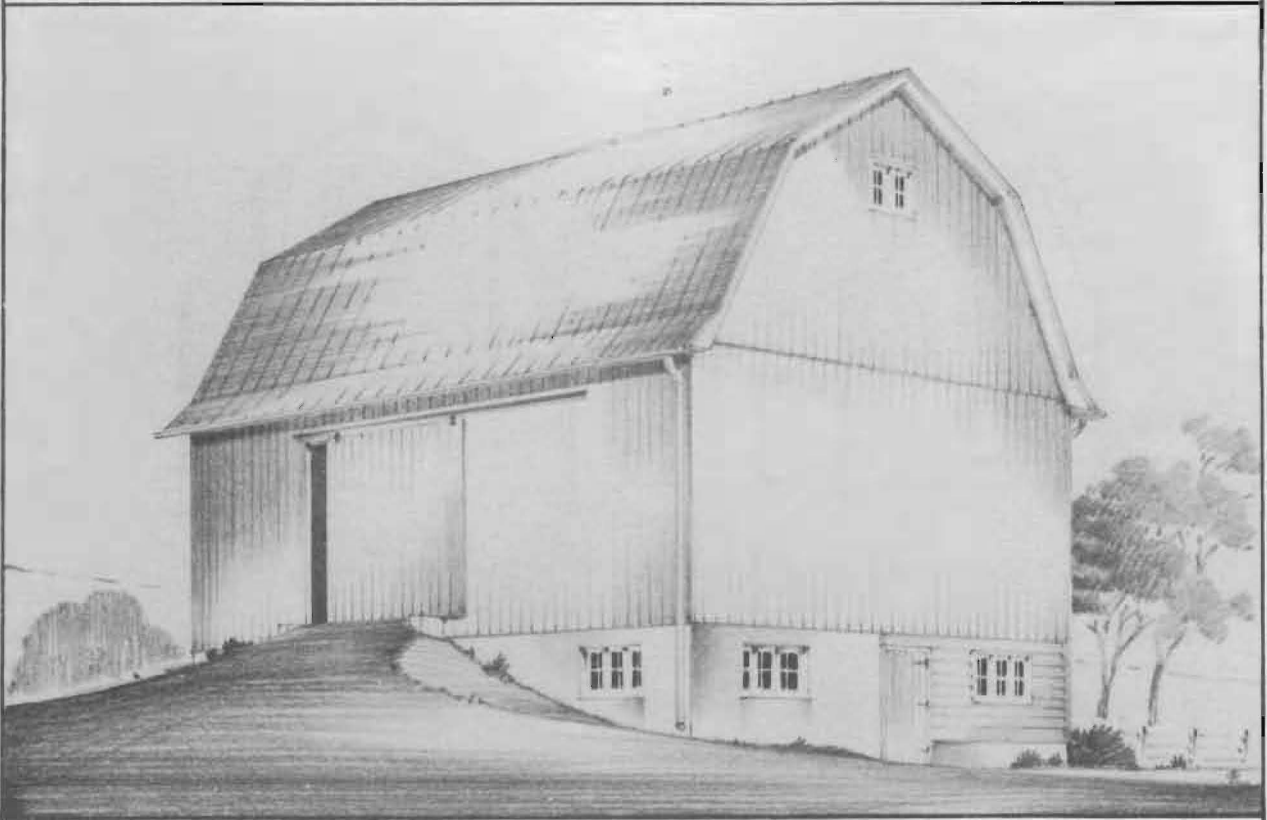
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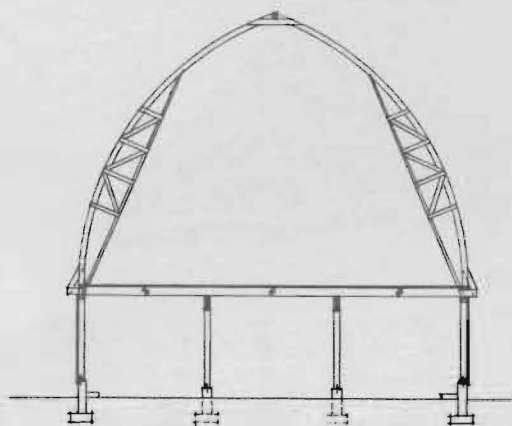
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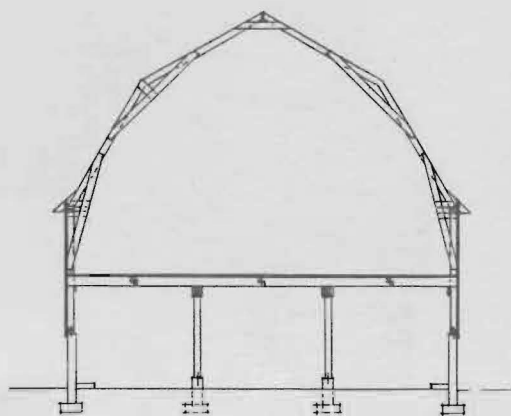
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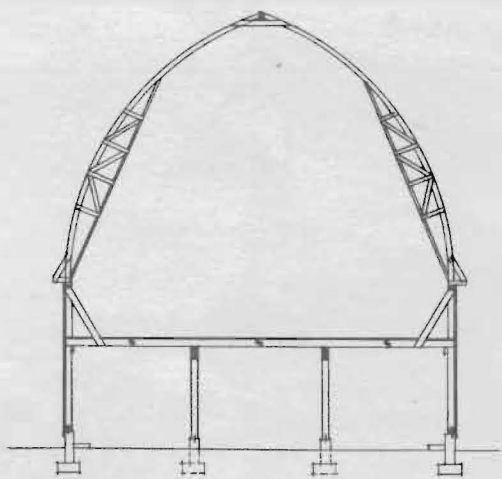
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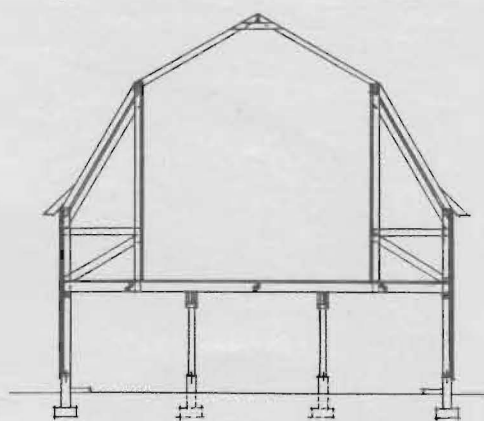
A



C



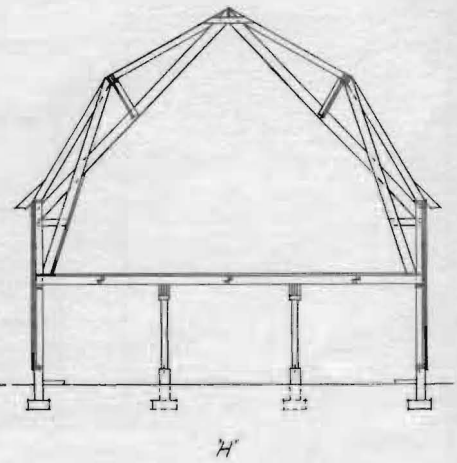
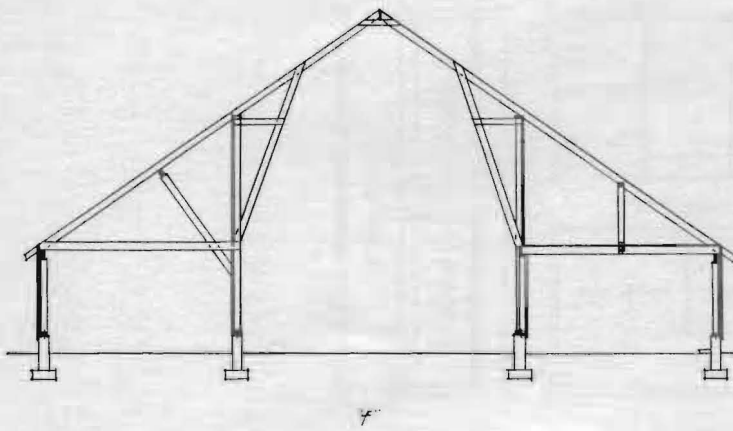
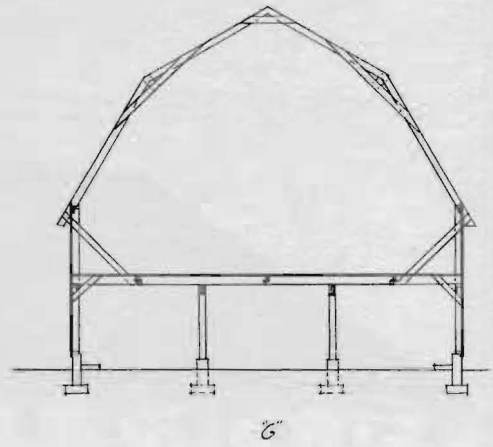
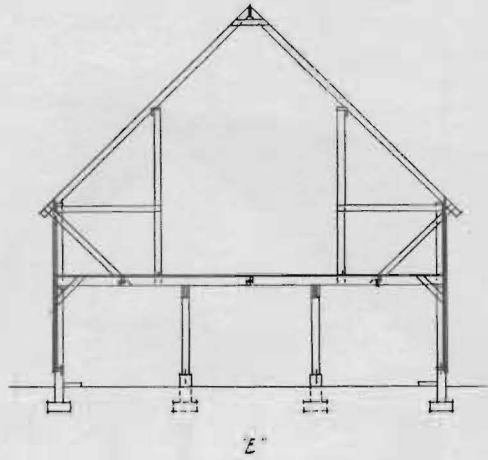
B



D

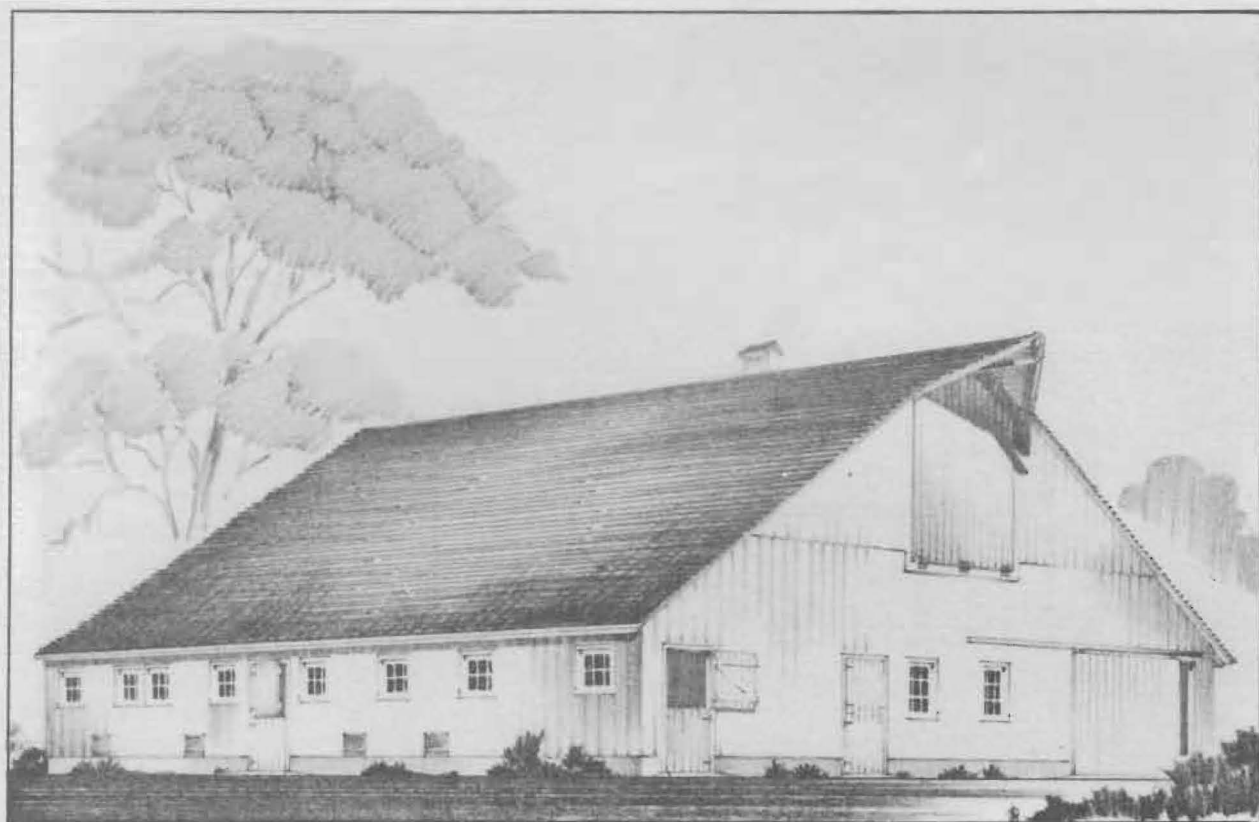
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BARN SECTIONS

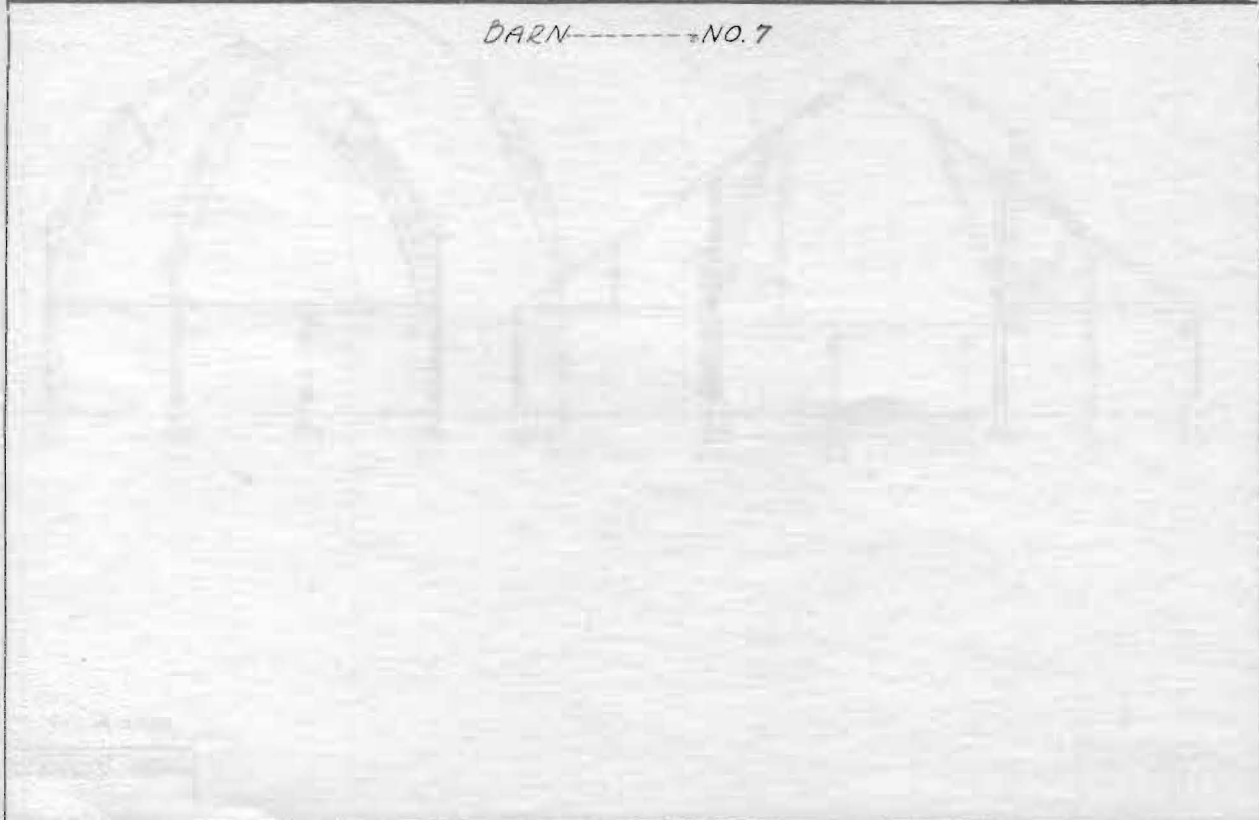


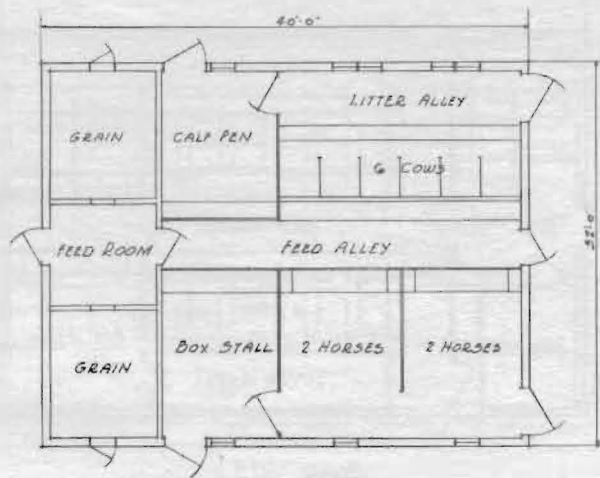
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BARN SECTIONS

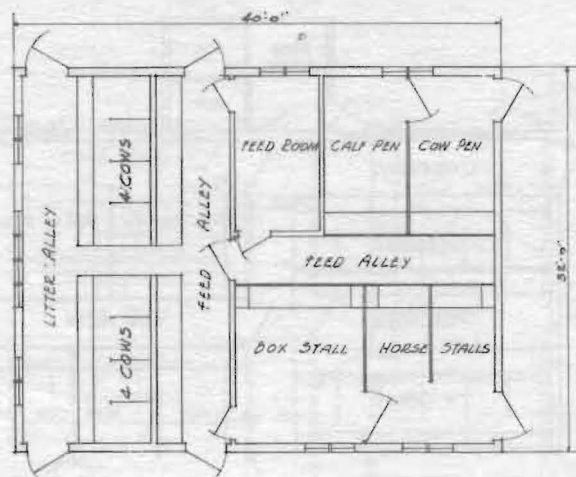


BARN-----NO. 7



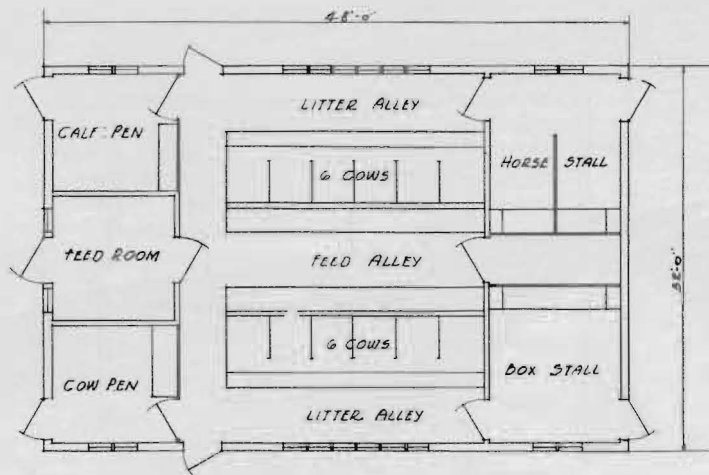


PLAN 101
SCALE: $\frac{1}{16}" = 1'-0"$

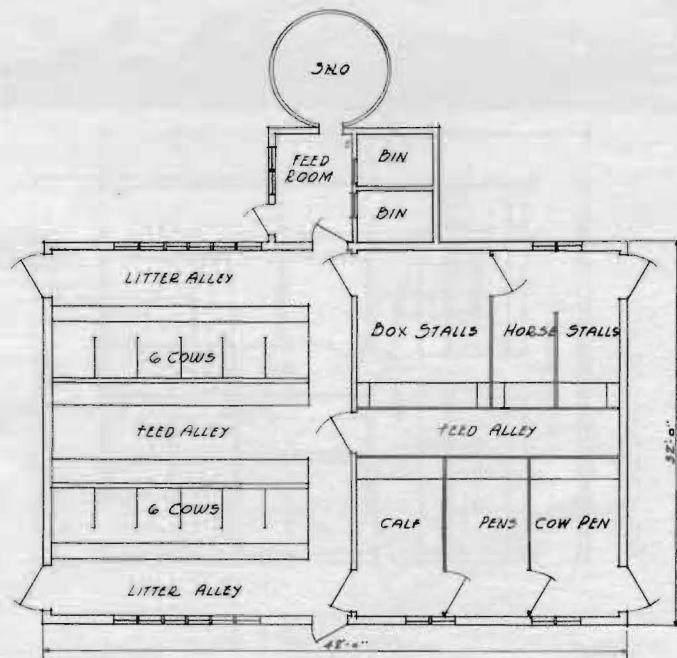


PLAN 102
SCALE: $\frac{1}{16}" = 1'-0"$

BARN PLANS

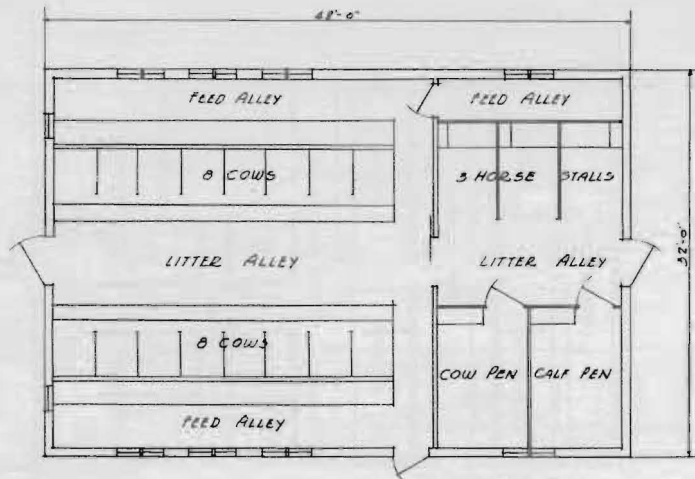


PLAN 103
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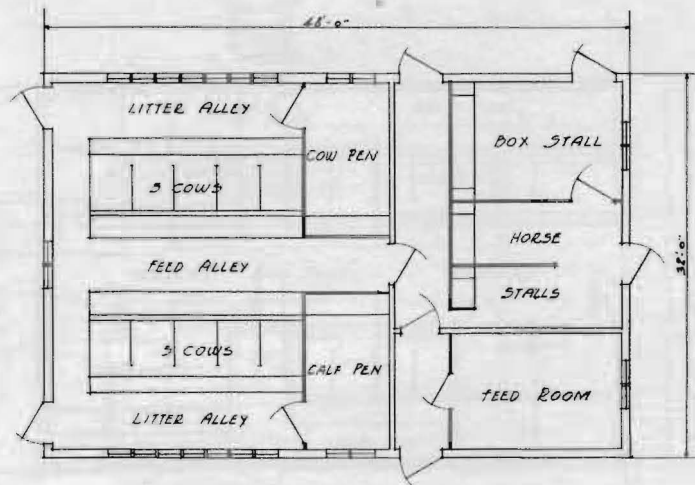


PLAN 104
SCALE: 1/16" = 1'-0"

BARN PLANS

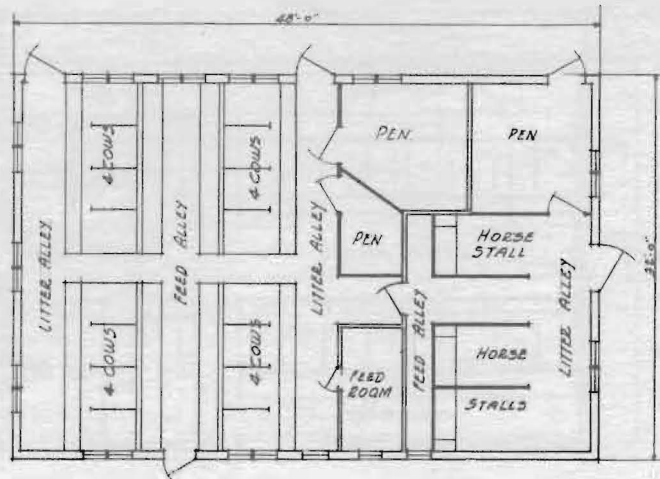


PLAN 105
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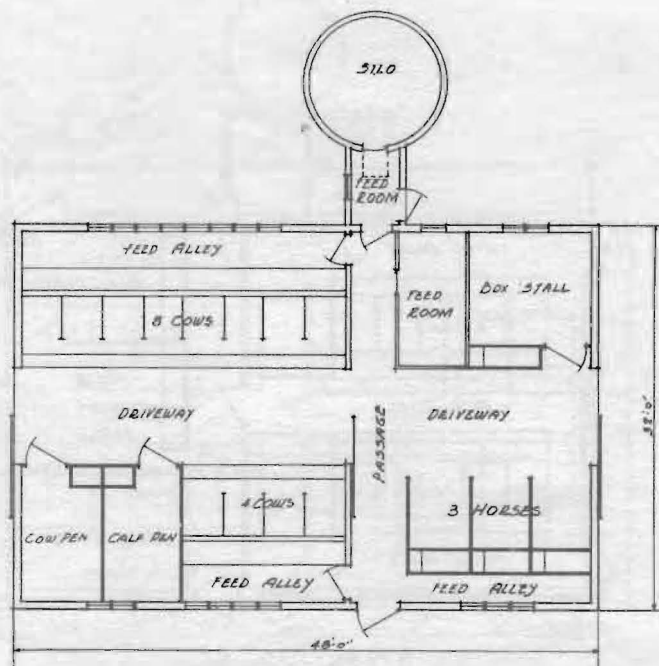


PLAN 106
SCALE: $\frac{1}{16}" = 1'-0"$

BARN PLANS

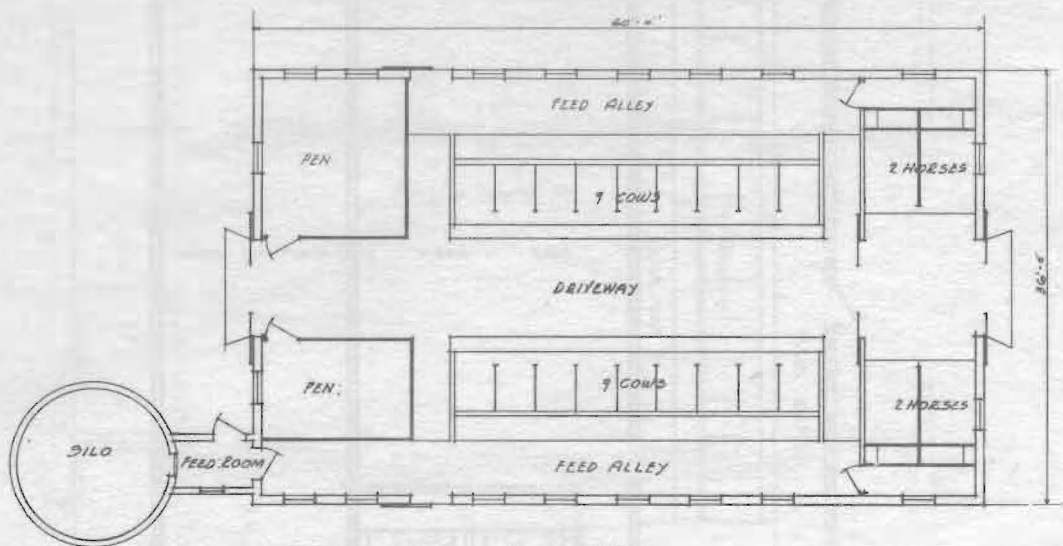


PLAN 107
SCALE: 1/16" = 1'-0"

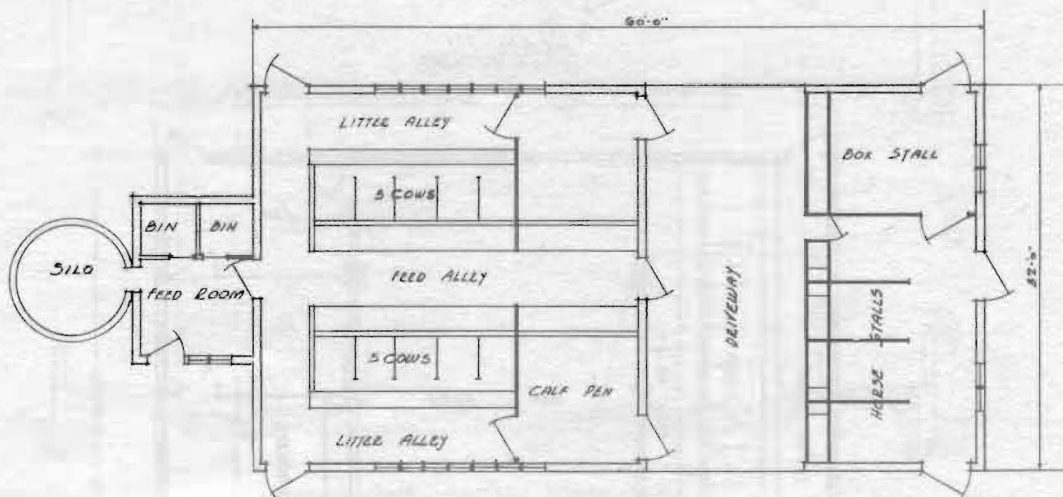


PLAN 108
SCALE: 1/16" = 1'-0"

BARN PLANS

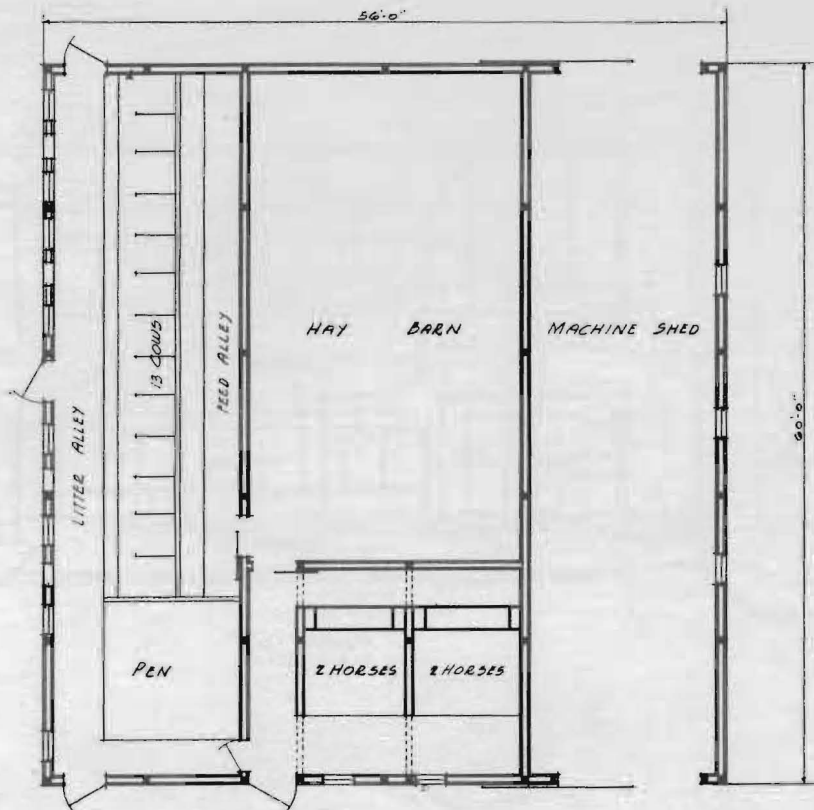


PLAN 109
SCALE: 1/16" = 1'-0"

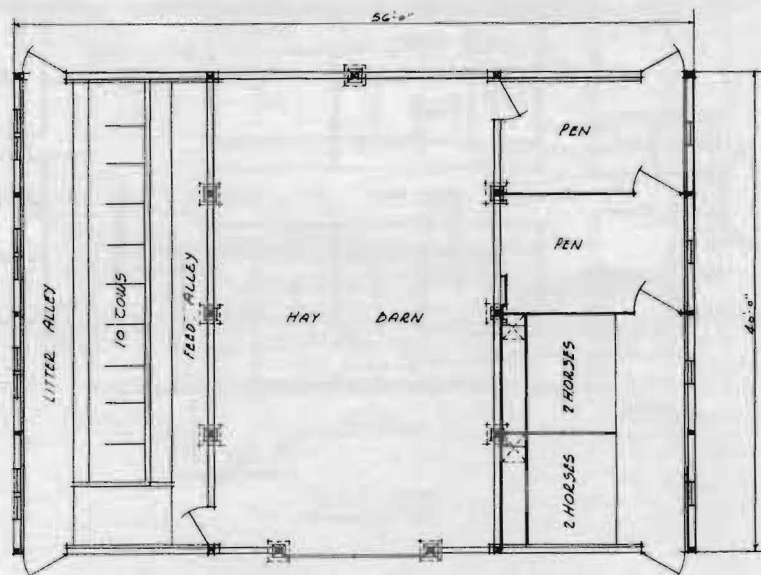


PLAN 110
SCALE: 1/16" = 1'-0"

BARN PLANS

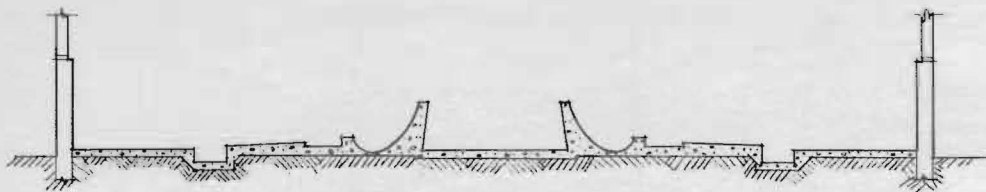


PLAN 111
SCALE: 1/16" = 1'-0"

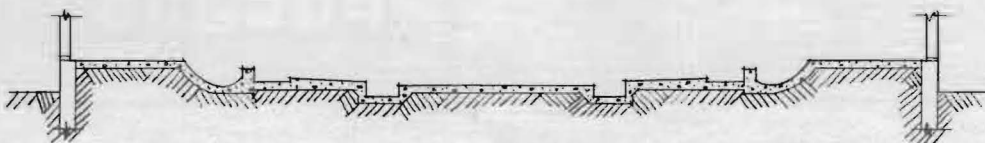


PLAN 112
SCALE: 1/16" = 1'-0"

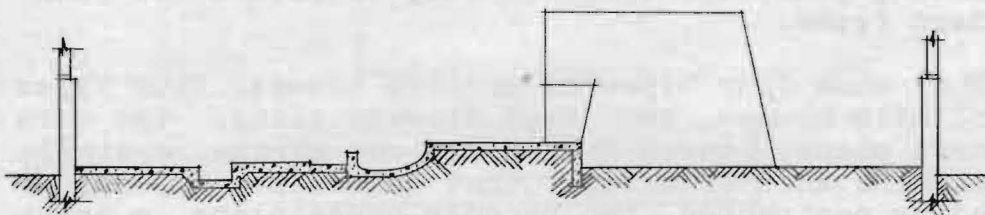
BARN PLANS



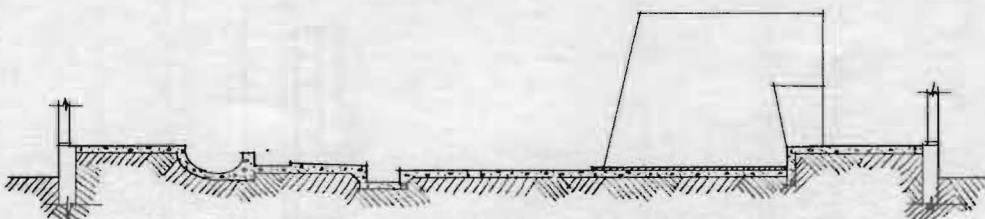
COWS FACE IN



COWS FACE OUT



COWS AND HORSES FACE IN



COWS AND HORSES FACE OUT

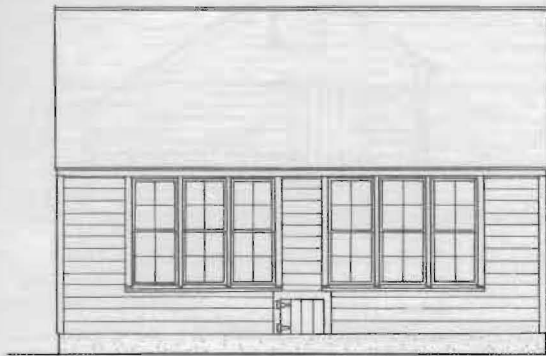
SCALE: $\frac{1}{8}$ " = 1'-0"

BARN FLOOR
SECTIONS

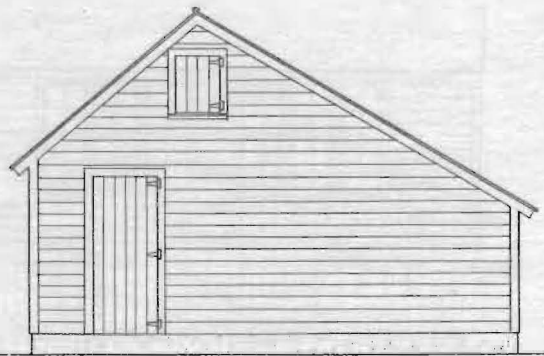
OUTBUILDINGS

Since outbuilding needs vary so greatly, the following plans are intended only to give a few standard types.

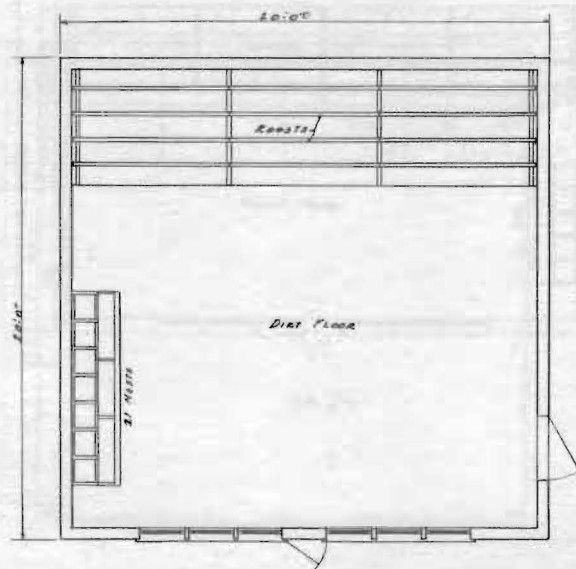
They show four types of poultry houses, four types of milk houses, two food storage plans, two corn crib plans, three granaries, one garage, a single machine shed of a type that can easily be expanded or contracted, two brooder house plans, a smoke house plan, two portable hog house plans, and a sheep shed.



FRONT ELEVATION



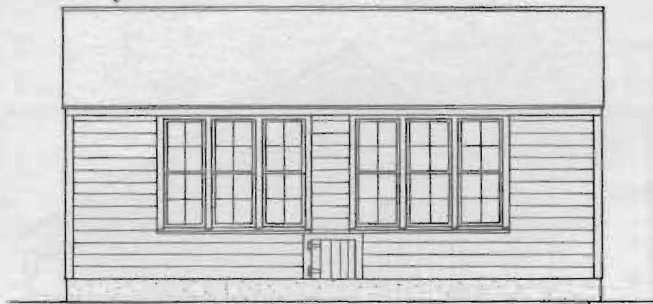
END ELEVATION



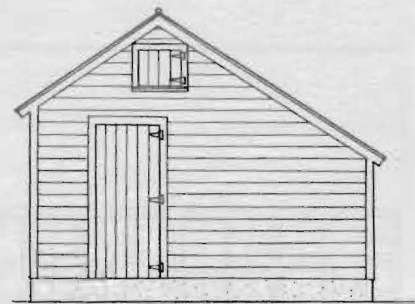
PLAN

SCALE $\frac{1}{8}'' = 1'-0''$

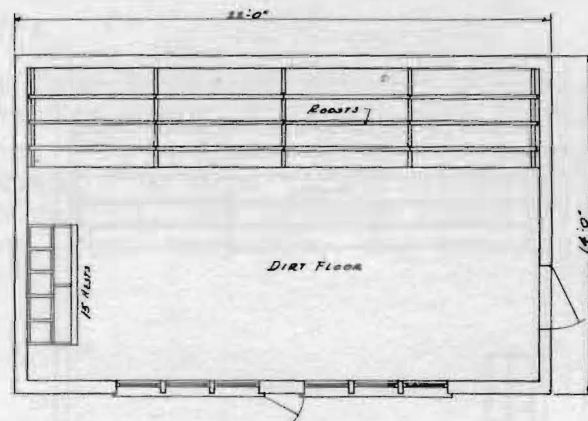
POULTRY HOUSE
NO. 1



FRONT ELEVATION



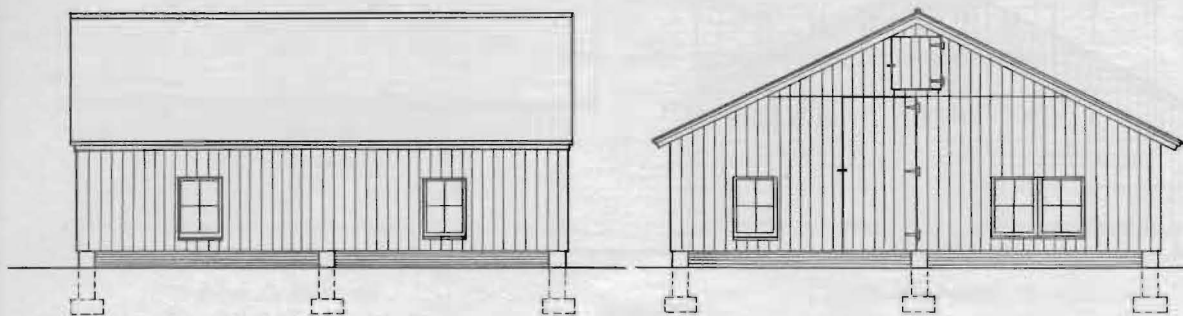
END ELEVATION



PLAN

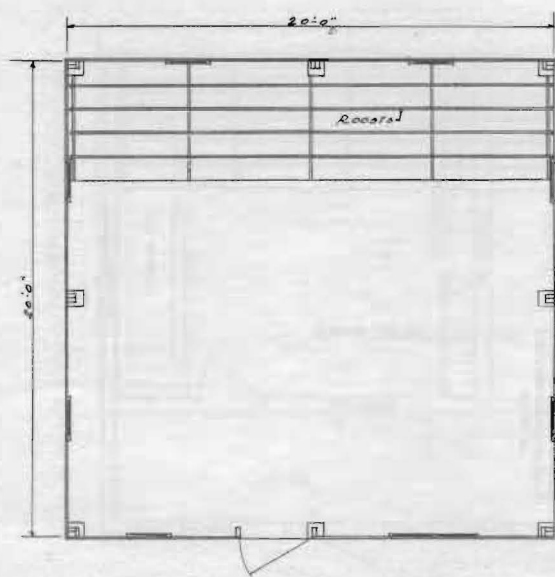
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POULTRY HOUSE
NO. 2



SIDE ELEVATION

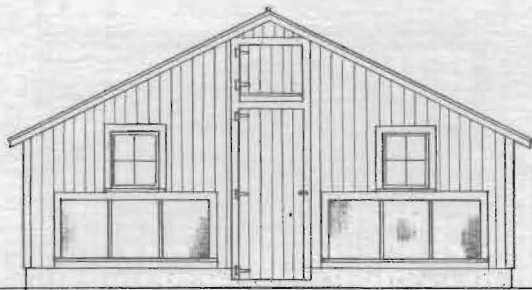
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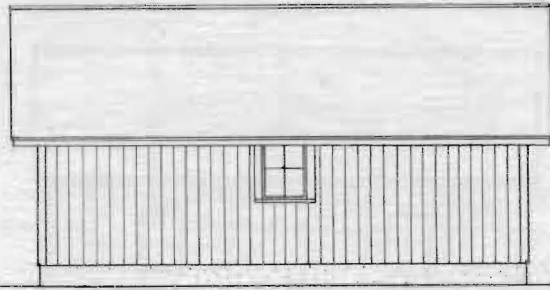
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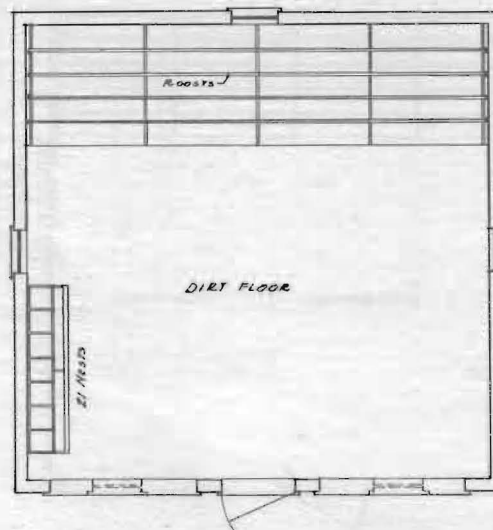
POULTRY HOUSE
NO. 3.



FRONT ELEVATION



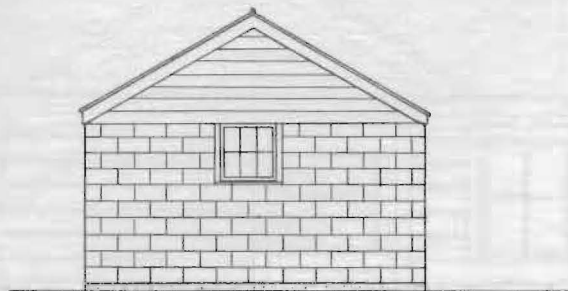
SIDE ELEVATION



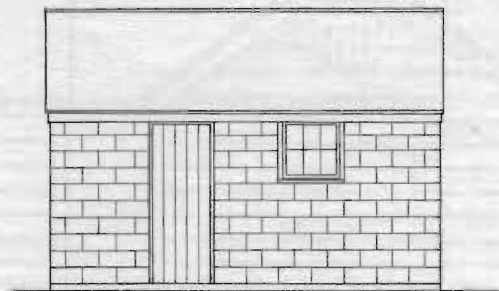
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SCALE 1/8" = 1'-0"

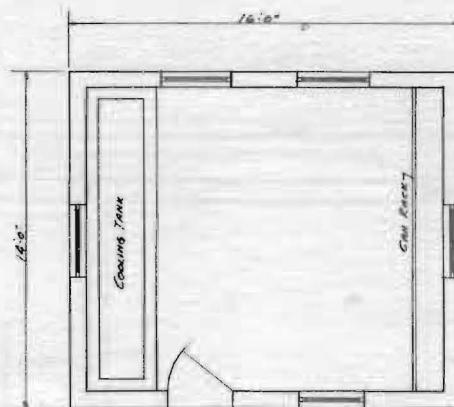
POULTRY HOUSE
NO. 4.



END ELEVATION



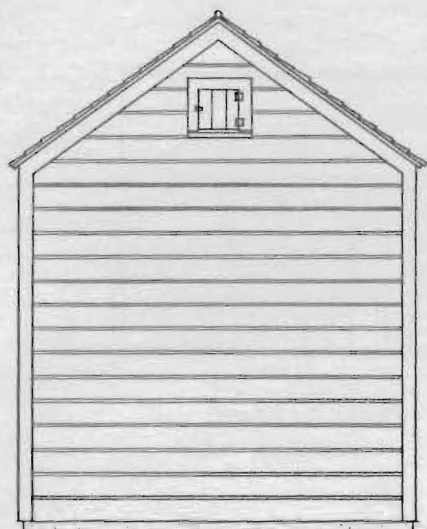
FRONT ELEVATION



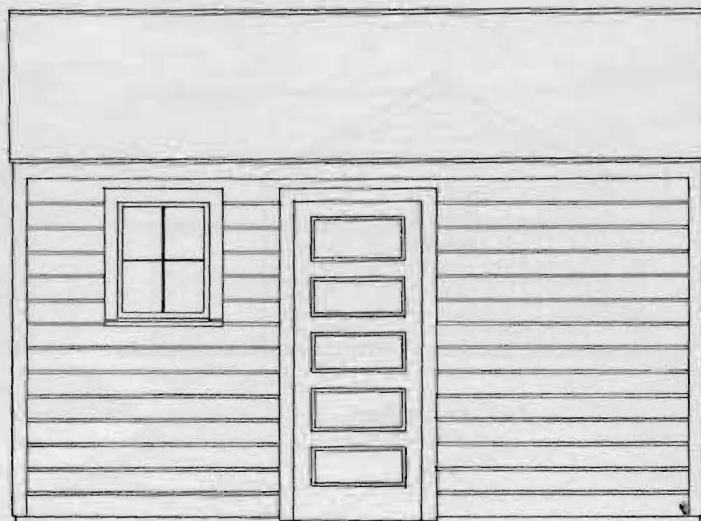
PLAN

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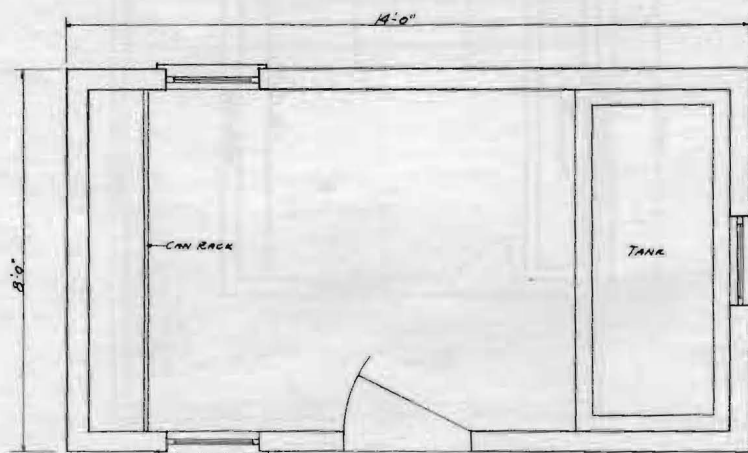
MILK HOUSE
NO. 1



END ELEVATION



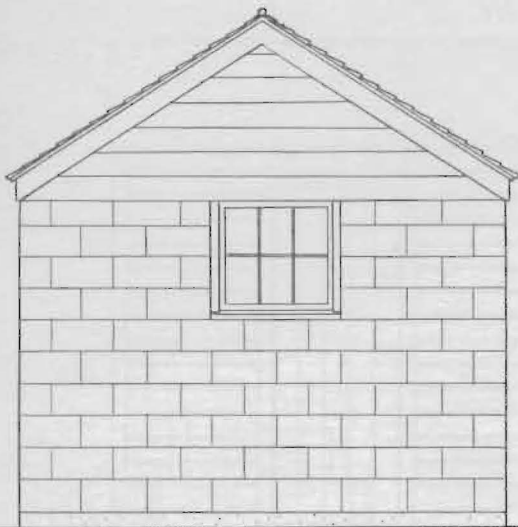
FRONT ELEVATION



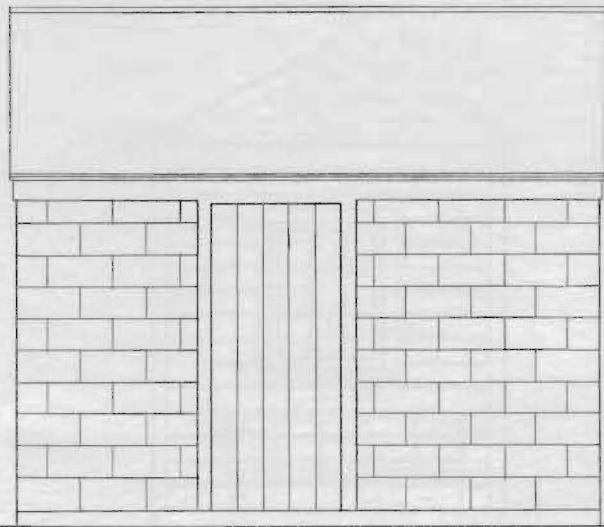
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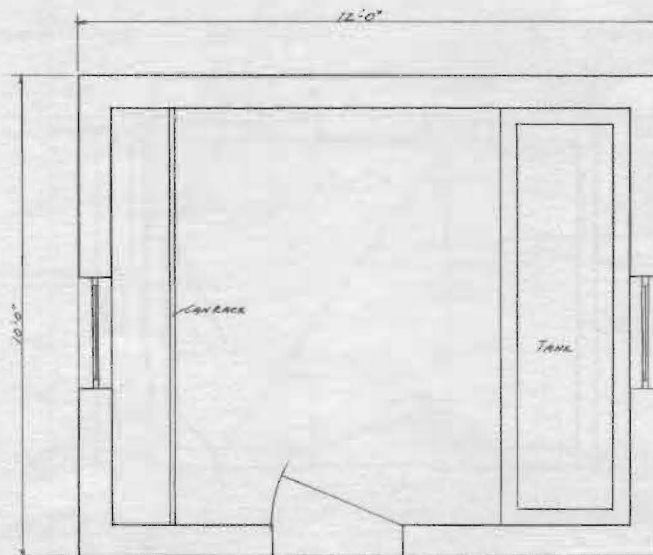
MILK HOUSE
NO. 2



END ELEVATION



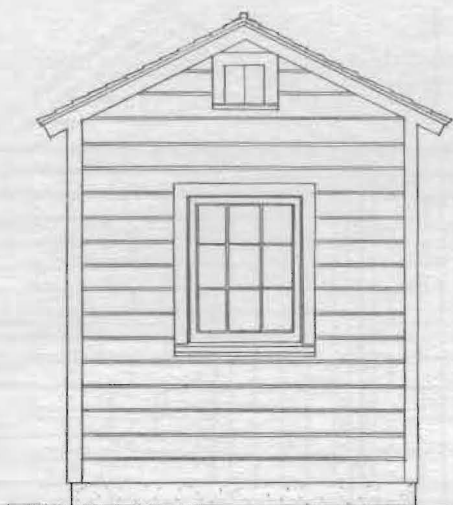
FRONT ELEVATION



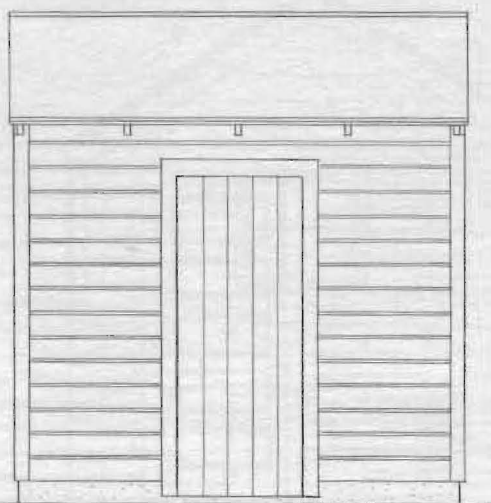
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SCALE 1/4" = 1'-0"

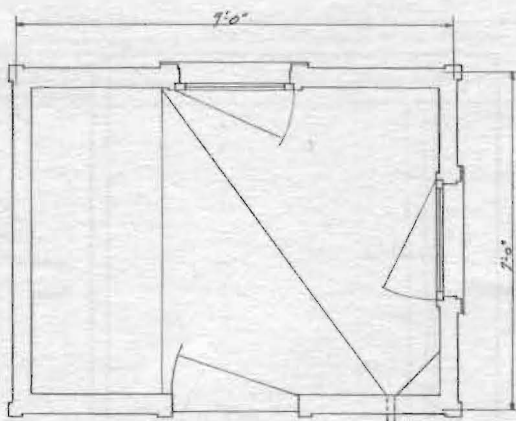
MILK HOUSE
NO. 3.



END ELEVATION



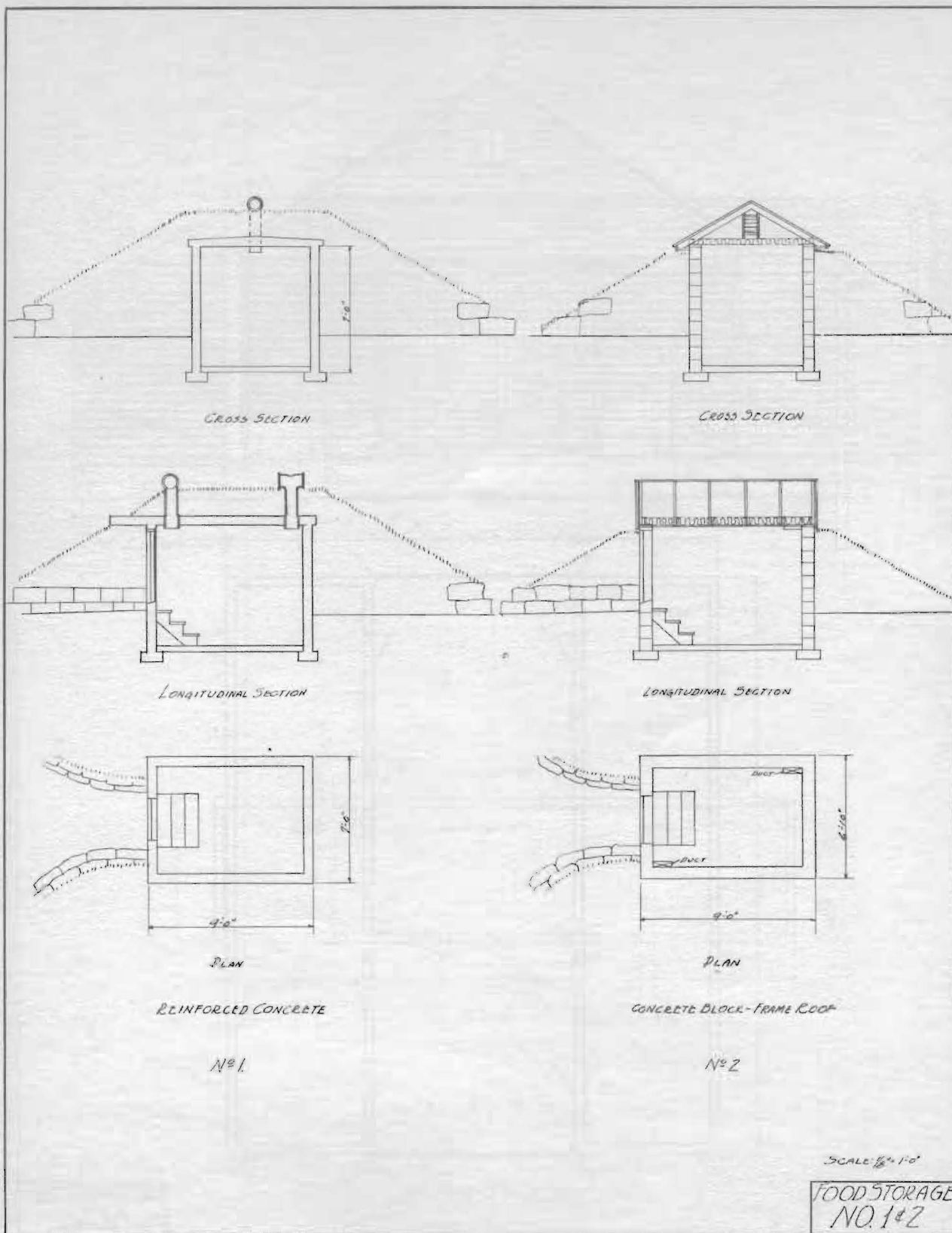
FRONT ELEVATION

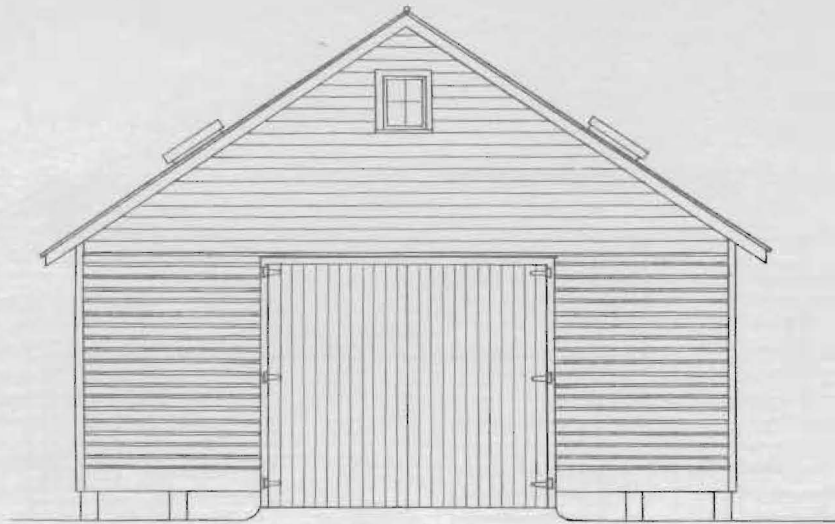


PLAN

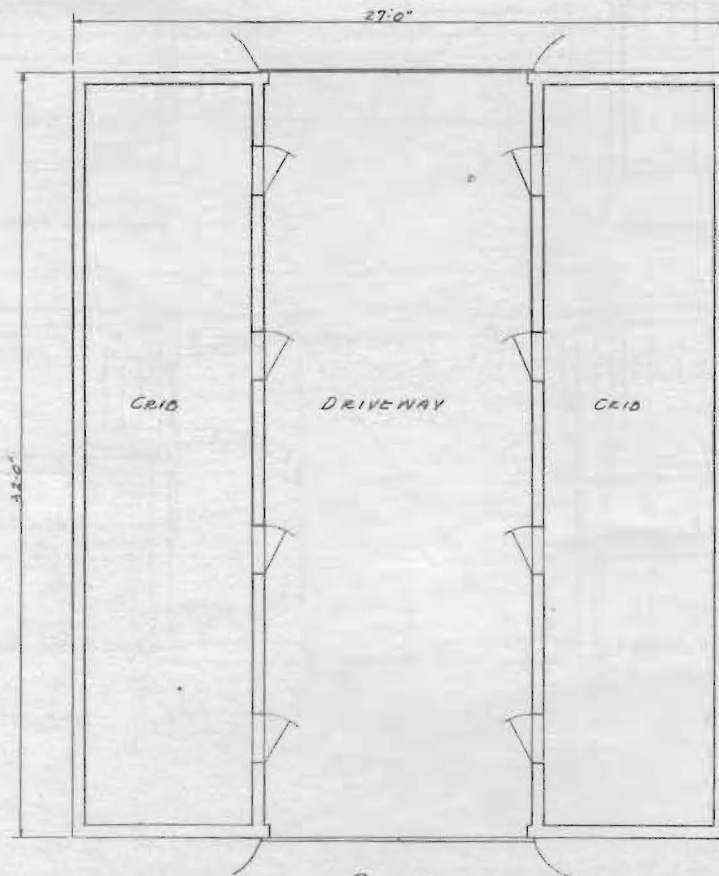
Scale 1/4" = 1'-0"

MILK HOUSE
NO. 4.





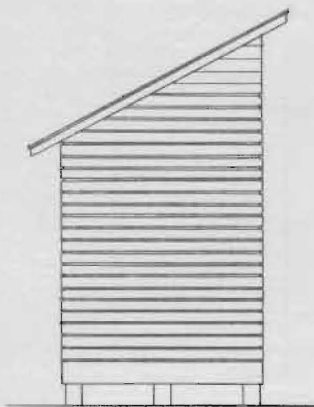
END ELEVATION



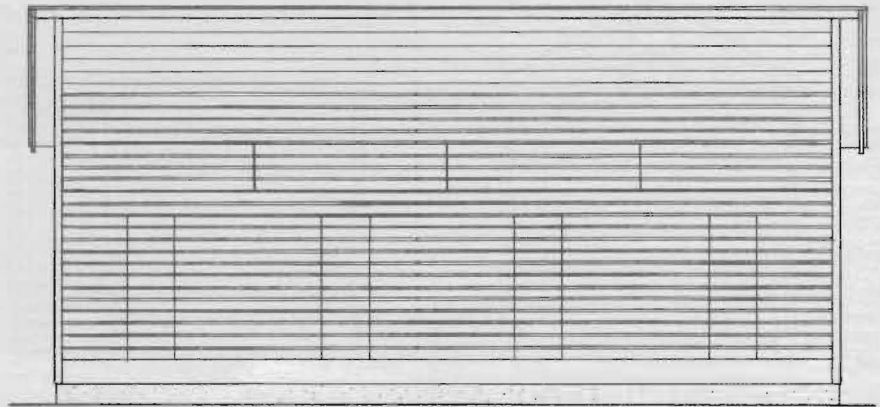
PLAN

SCALE: 1/8" = 1'-0"

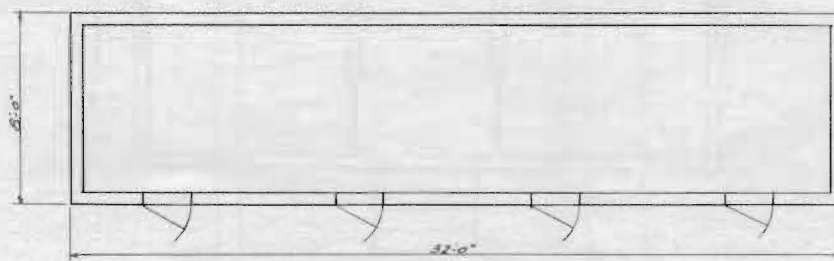
CORN CRIB
NO. 1.



END ELEVATION



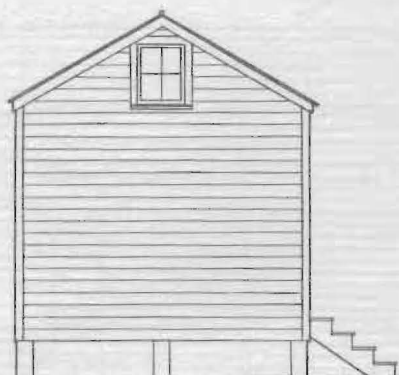
FRONT ELEVATION



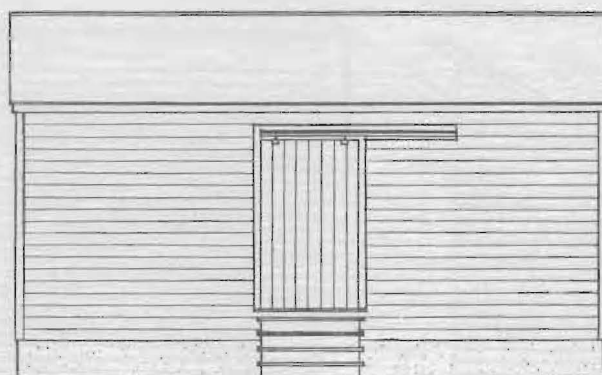
PLAN

SCALE: 1/8" = 1'-0"

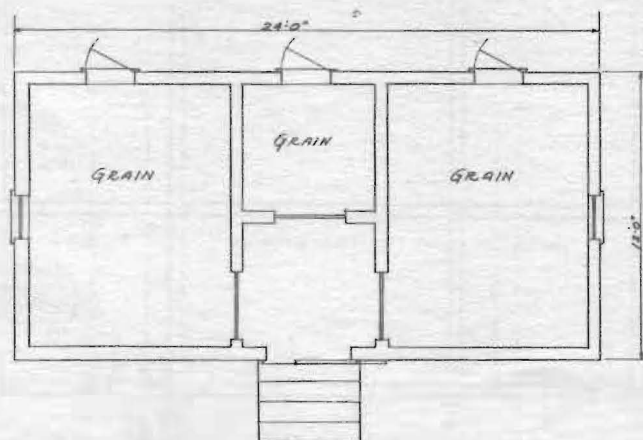
CORN CRIB
NO. 2



END ELEVATION



FRONT ELEVATION

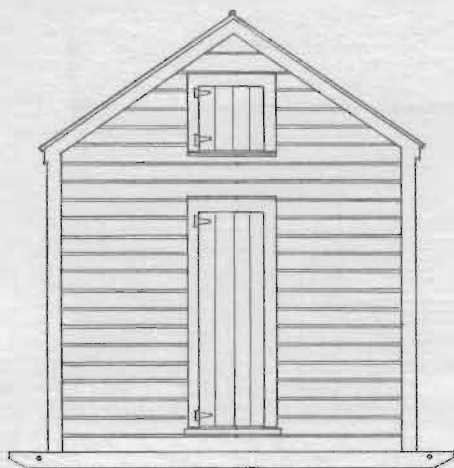


PLAN

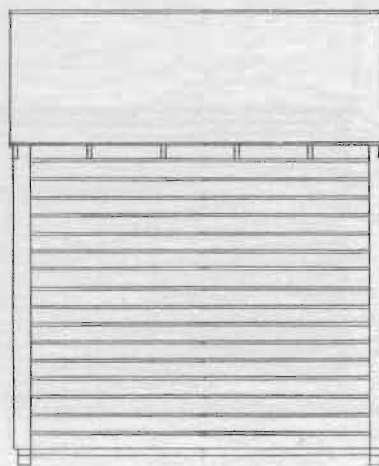
2000 BUSHELS

SCALE: 1/8" = 1'-0"

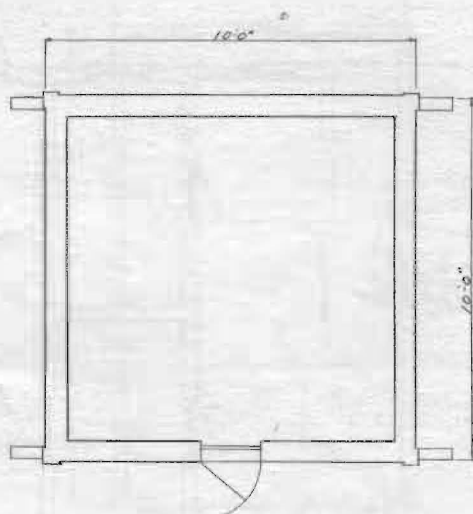
GRANARY
NO. 1



FRONT ELEVATION



SIDE ELEVATION

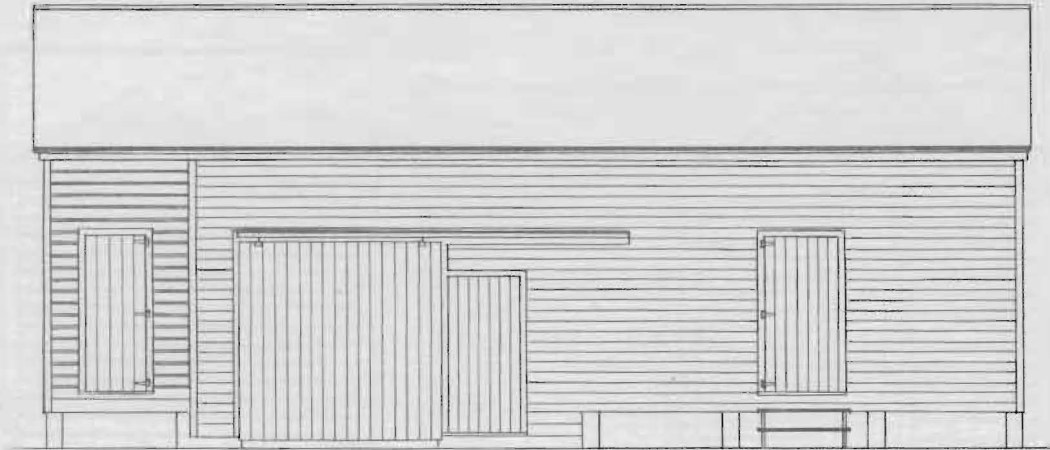


PLAN

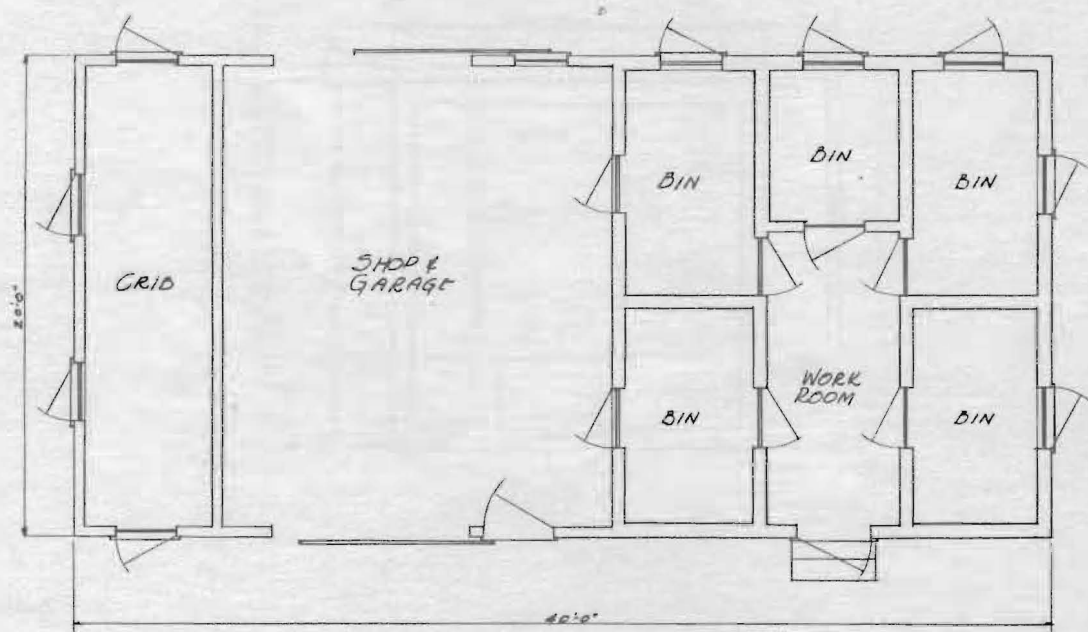
500 BUSHELS

Scale: $\frac{3}{8}$ " = 1'-0"

GRANARY
NO. 2.



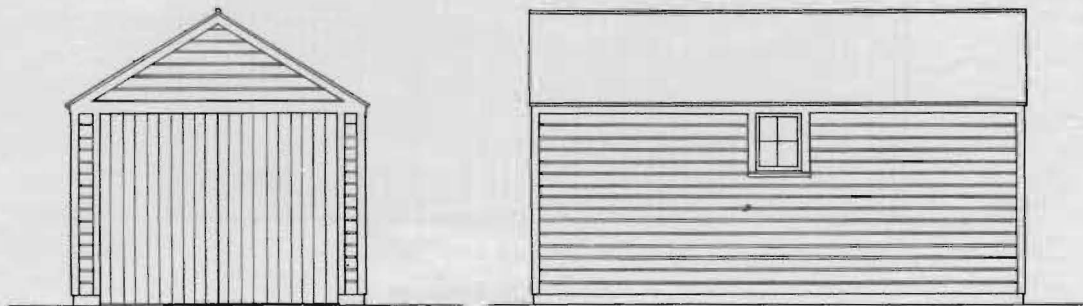
FRONT ELEVATION



PLAN

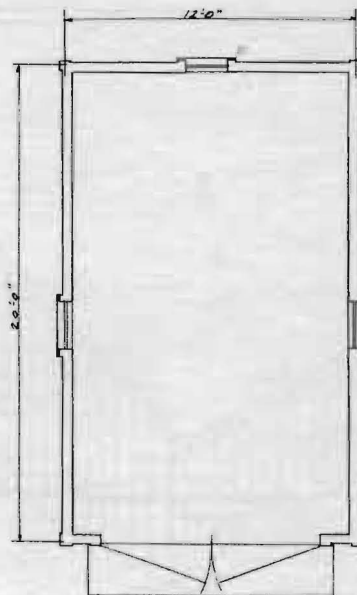
SCALE: 1/8" = 1'-0"

CRIB & GRANARY
NO. 3.



FRONT ELEVATION

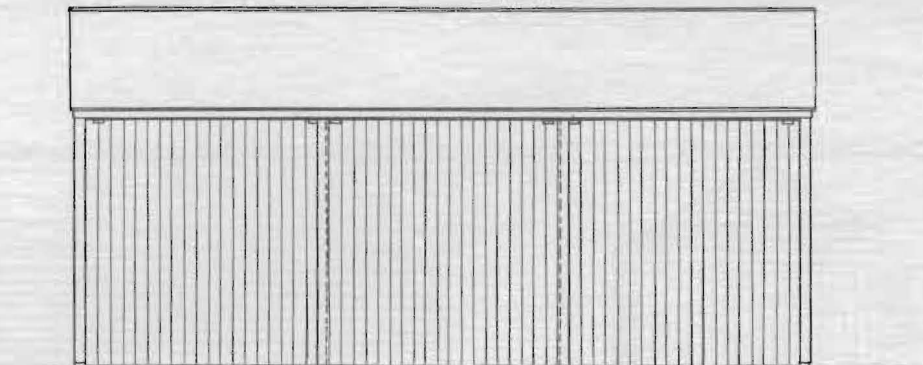
SIDE ELEVATION



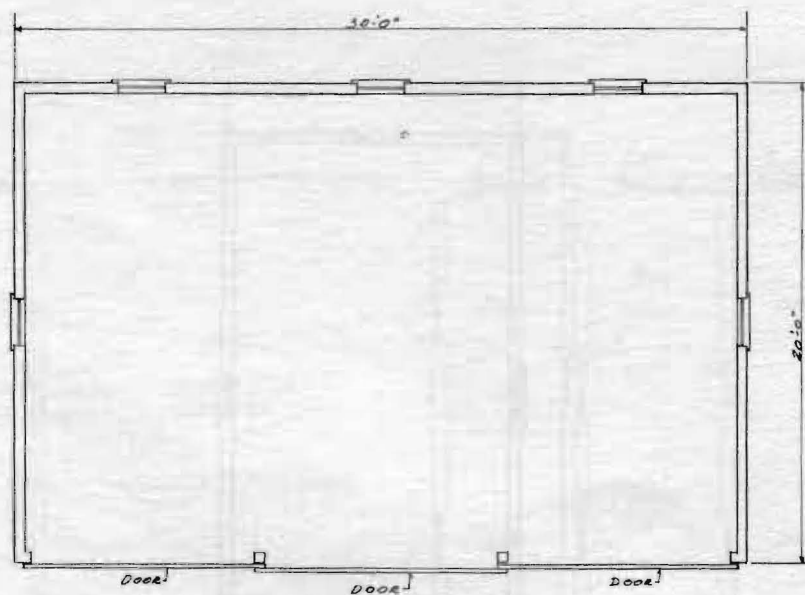
PLAN

SCALE: 1/8" = 1'-0"

1 CAR GARAGE
NO. 1



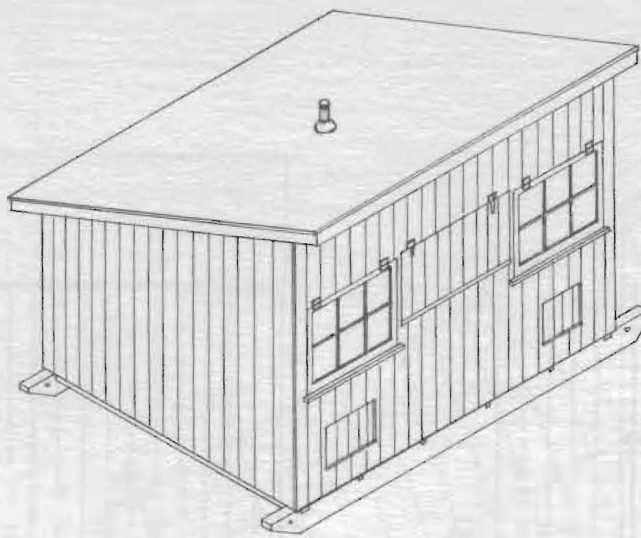
FRONT ELEVATION



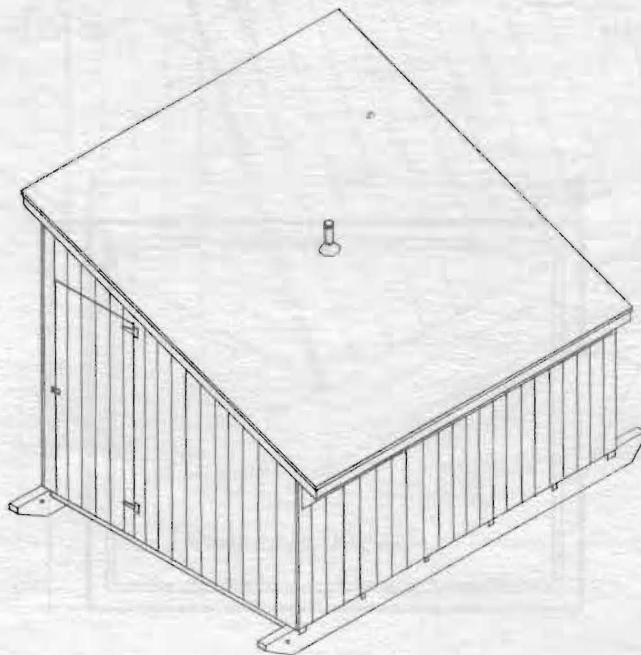
PLAN

SCALE 1/8" = 1'-0"

MACHINE SHED
NO. 1.



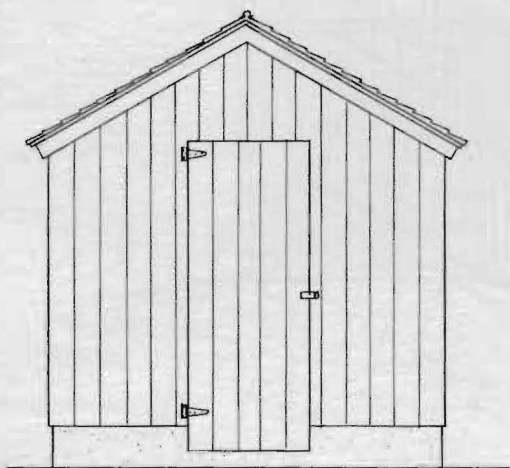
ISOMETRIC VIEW
OF FRONT & END



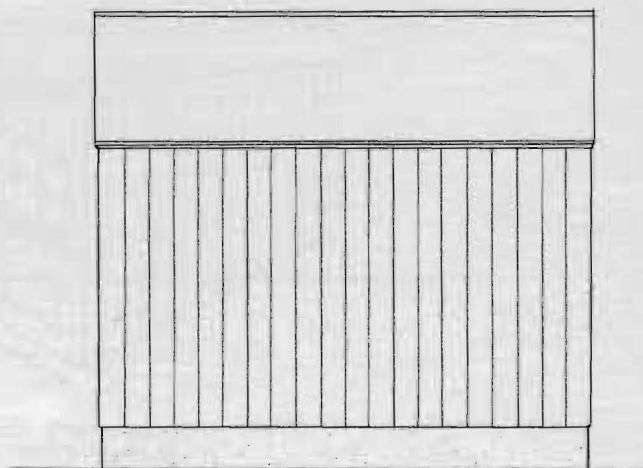
ISOMETRIC VIEW
OF REAR & END

SIZES: 8'-0" x 12'-0" N¹/₂"
10'-0" x 14'-0" N¹/₂"

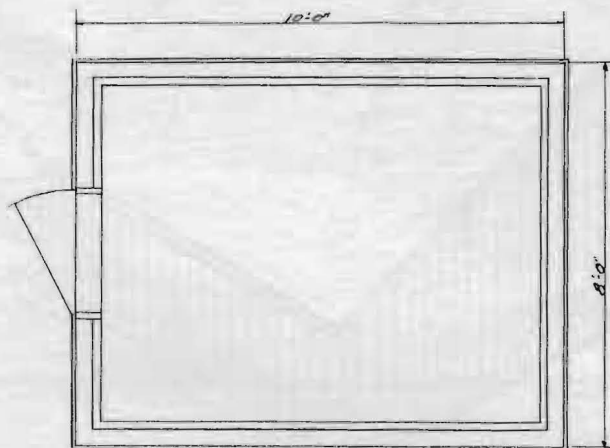
BROODER HOUSE
NO. 1 & 2



END ELEVATION



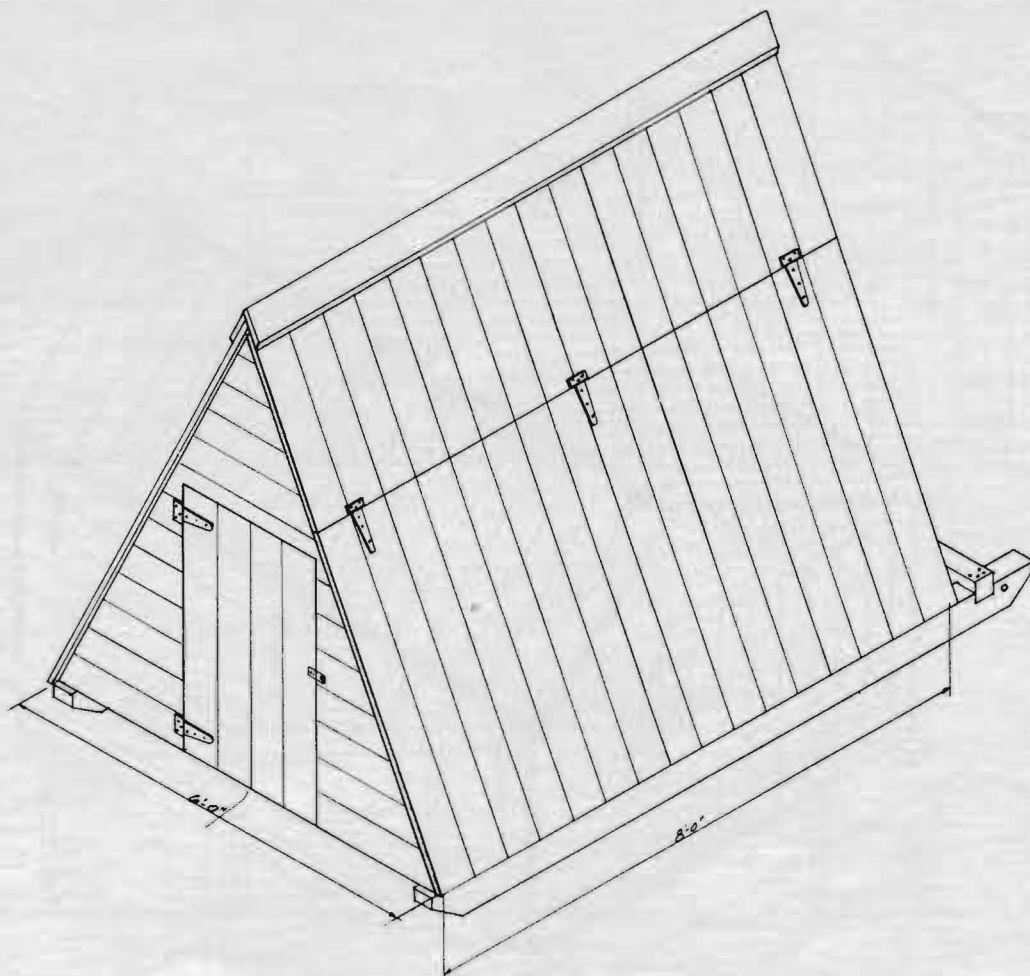
SIDE ELEVATION



PLAN

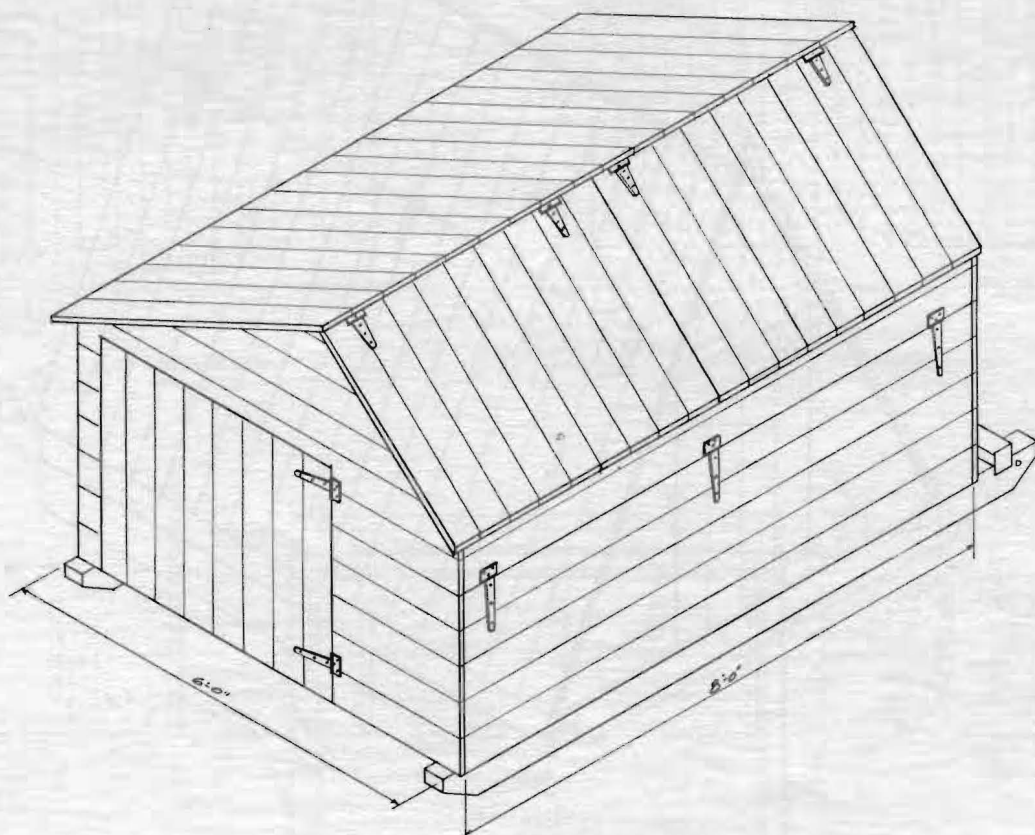
SCALE: 1/4" = 1'-0"

SMOKE HOUSE
NO. 1



ISOMETRIC VIEW

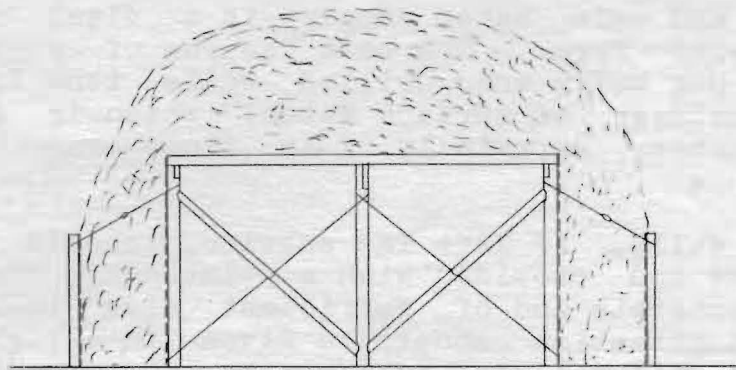
SCALE $\frac{1}{8}" = 1'-0"$
PORTABLE "A" TYPE
HOG HOUSE
NO. 1



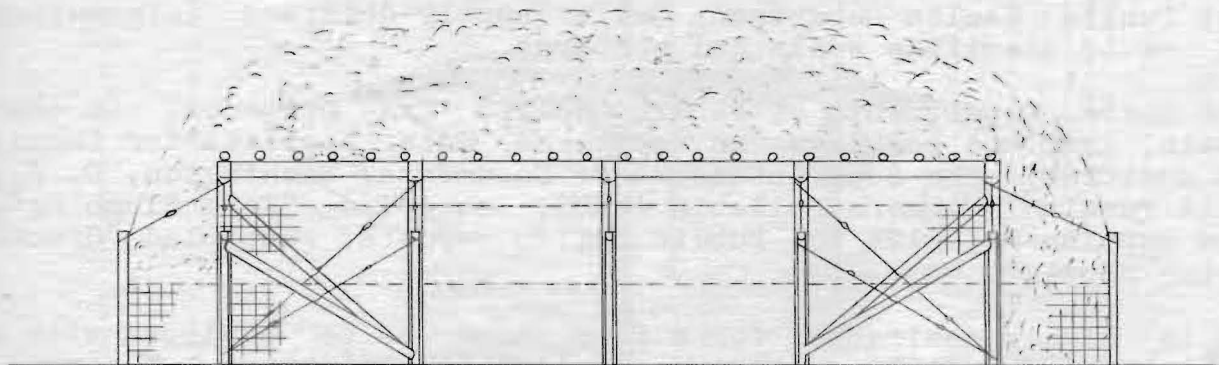
ISOMETRIC VIEW

SCALE: $\frac{3}{8}"=1'-0"$
MODIFIED GABLE TYPE

HOG HOUSE
NO. 2



CROSS SECTION



SIDE VIEW
IN PARTIAL SECTION

SCALE: $\frac{1}{8}'' = 1'-0''$
STRAW COVERED

SHEEP SHED
NO 1

WATER SUPPLY AND FARM SANITATION

An adequate and safe water supply is a vital requirement of every successful farm. The best source of supply is a good well. Both dug wells and drilled wells tend to become polluted from drainage of surface water, which is almost invariably contaminated, especially if it flows over barn or poultry lots.

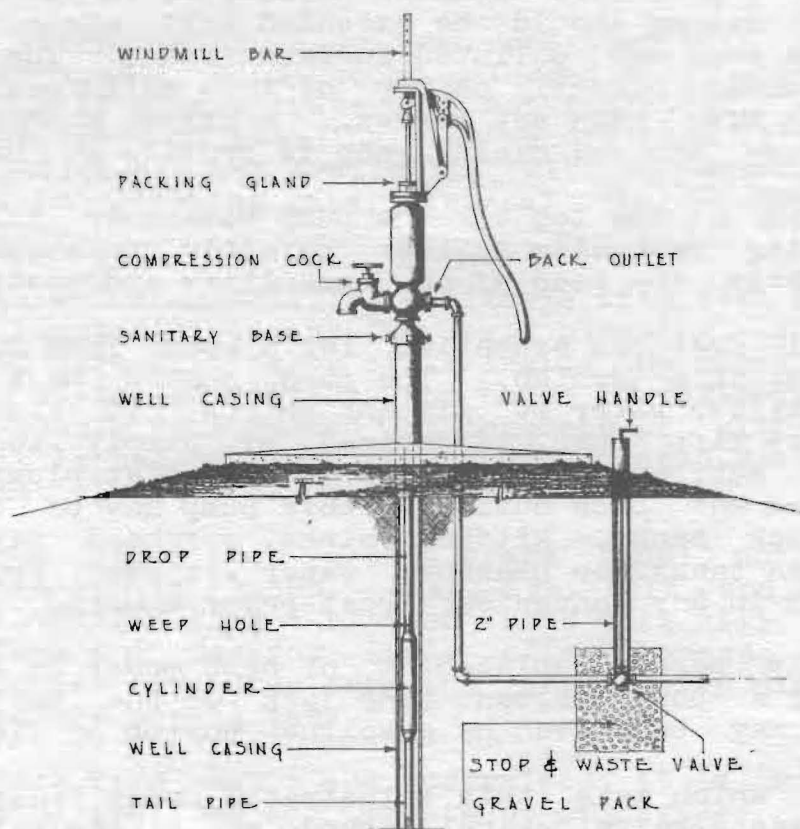
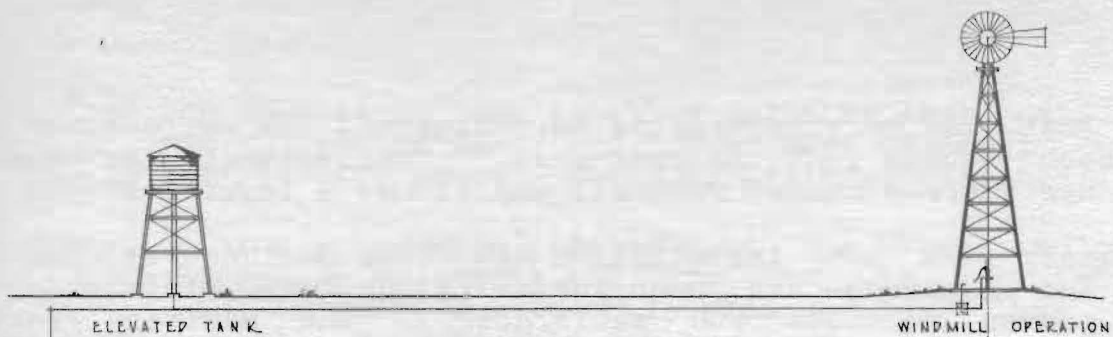
Existing dug wells, if left in service, should be thoroughly cleaned out and provided with a platform, preferably constructed of concrete and of sufficient size to cover the well top. Special attention should be given to a tight seal around the top of the well wall to prevent the entrance of bugs, frogs, worms, field mice and other pests. This platform must be provided with a man-hole for access to the well.

Steel-cased, drilled wells can be permanently protected against pollution. The ground surface surrounding the well platform should be graded so that all drainage is directed away from the platform. The well should be thoroughly sterilized. The nearest Public Health Department will supply detailed information on how to sterilize wells and cisterns.

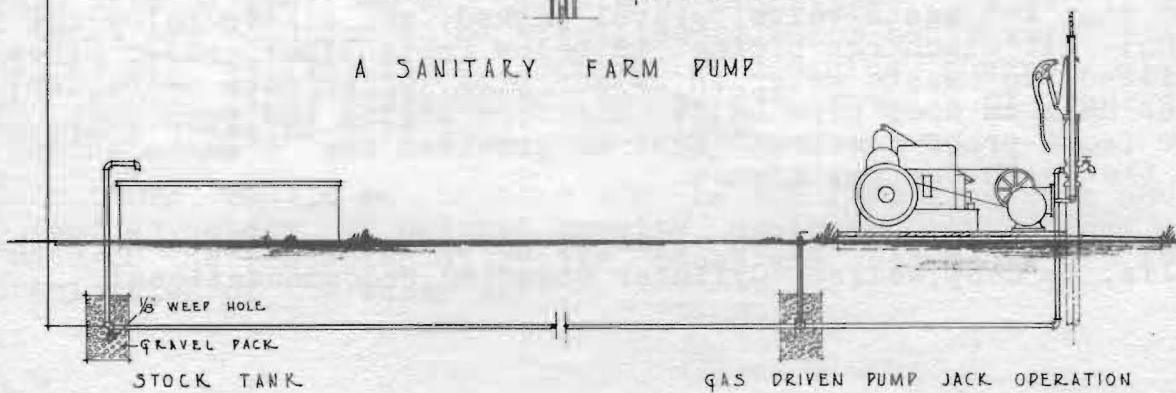
The State Department of Public Health has prepared, in each State, complete booklets on wells and water supplies for farms. In addition, the Superintendent of Documents, Washington, D. C., will furnish Farmers Bulletin #1426, entitled "Farm Plumbing", and supplement #124 to Public Health reports, entitled "Ground Water Supply".

It is highly desirable for a farm home to be equipped with a cistern, adequately protected against contamination. The proper construction of a cistern includes the installation of gutters and down-spouts to collect rain water from existing roof areas. Every farm building is improved through the installation of gutters and down-spouts, since buildings not so protected are subject to serious erosion around and under foundation walls and footings.

Cisterns should be located so that the rain water from roof area flows by gravity into the cistern through some form of strainer trap, which will catch leaves, string, feathers, and other trash. The size of the cistern will be determined by the annual rain fall and the requirements for soft water on the farm. Generally speaking, in the North Central States, the amount of rain



A SANITARY FARM PUMP



water that may be expected is approximately 20 gallons per year from each square foot of roof area. This estimate is based on 36 inches average annual rainfall and allows a loss of 10 per cent.

A sanitary farm pump installation has been designed by FSA engineers and hundreds have been installed in this District. They have proven reliable and satisfactory. The sanitary features essential for a good farm pump are illustrated by this design. The steel well casing should be extended well above the surrounding grade, to keep out polluted surface water. The pump should be rigidly mounted directly on top of this well casing, by means of a cast-iron base with set screws. A gasket should be placed between the base and the casing top to provide an hermetic seal.

A packing gland at the top of the pump reservoir is essential to seal the pumping mechanism against possible contamination. This design eliminates the need of an unsanitary and costly well pit.

The mechanical features essential for a good farm pump are also illustrated by this design. The pump should be a force-type, which will deliver water to distant points. It also may be used as an ordinary lift pump, if desired, by simply loosening the packing gland nut, and leaving the back outlet plugged. A pipe connection from the back outlet of this pump may be carried underground to stock tanks, kitchen sinks, overhead tanks, or into hydro-pneumatic tanks for pressure water systems. Pressure tanks may be located in any convenient frost-proof housing.

The pump should permit replacement of hand power by an over-head windmill or by a power-driven pump jack on the well platform. The pump jack may be driven by gasoline engine or electric power.

The features which make this illustrated pump frost-proof are: the stop and waste valve, gravel packed, are placed below the frost line; all discharge piping is below frost line; riser pipes are drilled, to waste water in riser pipe after each operation; the weep hole in drop pipe below platform drains the pump body. Similar frost-proof features must be provided for a satisfactory pump in the North Central States.

The pump illustrated is equally suitable for cisterns, shallow wells, or deep wells. Cylinder diameter recommendations:

$3\frac{1}{2}$ " for 30 feet or less (shallow wells or cisterns);
3" for 60 feet or less; $2\frac{1}{2}$ " for 90 feet or less;
and 1-13/16" for greater depth of cylinder settings.

The location of a privy with reference to the house, and particularly with reference to wells and cisterns, is very important. Privies should, in every case, be located not less than 100 feet from a water well and preferably farther away.

The farm kitchen sink should be provided with a grease trap. Drainage lines will soon become clogged with grease, soap and other residue if grease traps are not installed, and drain pipes will require frequent cleaning. Where drainage lines to a non-flooding outlet are not available, kitchen grease will quickly form a seal in leaching pits, disposal fields, etc., and render them worthless.

Grease traps are commercially available with cast or wrought iron bodies and removable covers for easy cleaning. These traps may be installed directly below sinks inside the house. Grease traps also may be installed outside the house if desired, in which case they are usually constructed of concrete or vitrified tile. In all cases it is necessary to remove accumulated grease periodically to prevent clogging of drainage lines.

The discharge lines from grease traps should not be connected directly into septic tanks. Soap, lye, salt and other chemicals commonly discharged from a kitchen sink will kill the bacteria in a septic tank and destroy their effectiveness. Kitchen drain lines should be connected from the grease trap discharge to the sewer beyond the septic tank.

In cases where farm homes are modernized, it is essential that a septic tank be provided for treatment of sewage. Commercial septic tanks are constructed of vitrified tile or heavy sheet steel, equipped with baffle board, removable cleaning covers, diving flues, etc. Tanks constructed onsite are usually of concrete, from plans drawn to meet local conditions.

Septic tanks should be located 100 to 300 feet from the house, and take advantage of natural gravity drainage. Attention must be paid to the location of septic tanks and cess pools to avoid contamination of the water well.

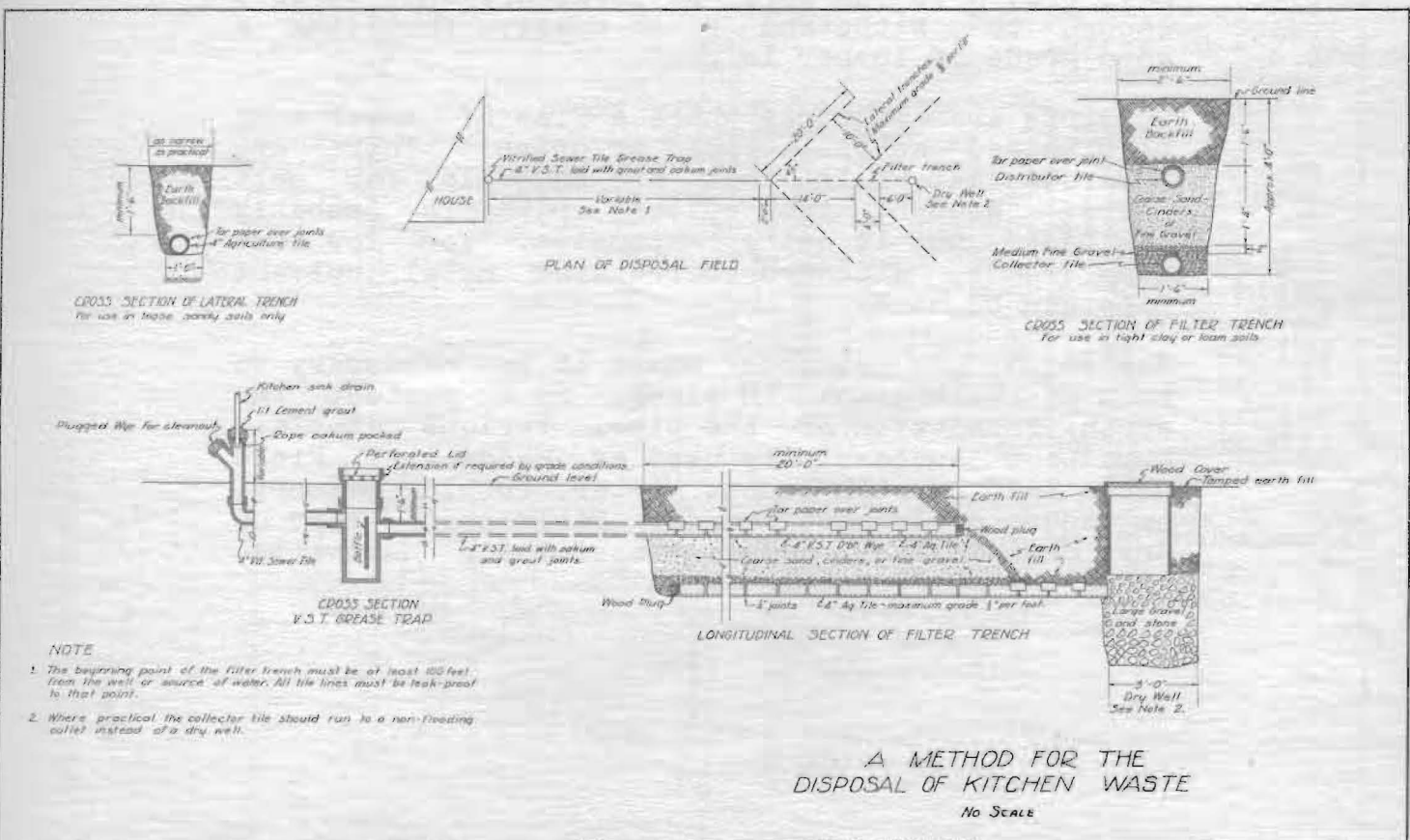
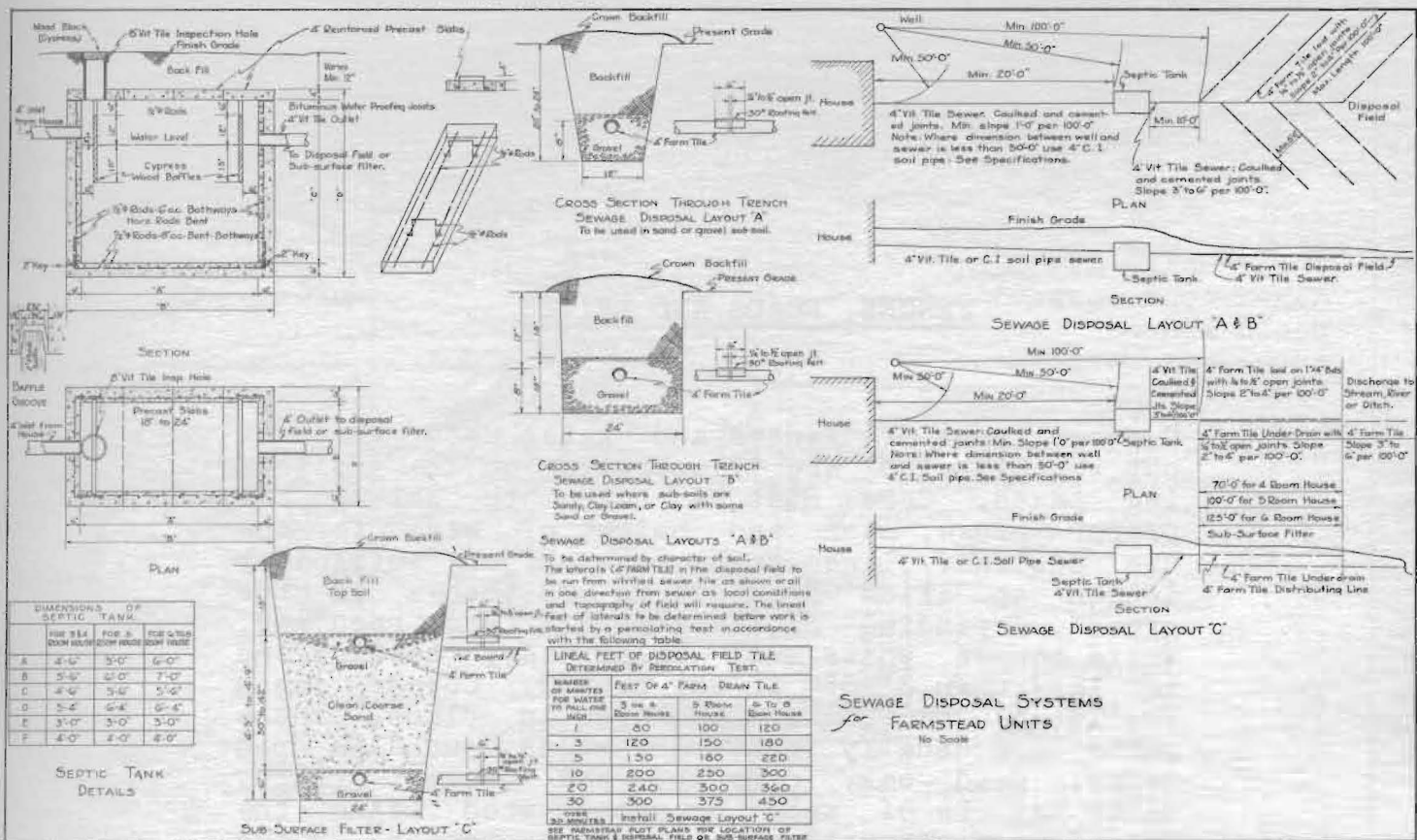
Cess pools, as distinguished from septic tanks, consist of an under-ground reservoir into which house drains are discharged. Cess pools are not provided with baffle board, diving flues, vents, etc., but merely serve to collect sewage. While there is some digestion of sewage waste in cess pools, they are not as effective as septic tanks, and for that reason are not recommended. Abandoned wells and similar holes in the ground should never be utilized as cess pools, because pollution is likely to find its way into water wells.

Since sewers are practically never found on farms, drainage lines from kitchen sinks, septic tanks and cess pools must be improvised to meet local conditions. These sewer drain lines should be carried to an open non-flooding outlet, at a point as remote as possible from farm buildings. Kitchen drains, basement drains and storm water drains should not discharge through the septic tank, but may be connected to the sewer line beyond the septic tank, provided that a suitable trap is installed in each such line before connected with the sewer.

In the absence of a sewer drain to a non-flooding outlet, it becomes necessary to dispose of kitchen refuse through a leaching pit or disposal field. Leaching pits and dry wells are usually walled with porous masonry or brick work with no mortar in the vertical joints. This arrangement permits the water to be absorbed by the surrounding soil. Disposal fields or beds are usually constructed of clay agricultural tile, ordinarily laid within 18" of the surface of the ground, and also depend upon the porosity of the surrounding soil to dissipate the water. The size of disposal field and the arrangement depend entirely upon the amount of water to be dissipated.

The State Board of Public Health, located in the capital city of each state, will supply complete information on privy construction and farm sanitation in general.

In addition, the entire subject of sewage disposal is treated comprehensively in Farmers' Bulletin No. 1227, U. S. Department of Agriculture, available from the Superintendent of Documents, Washington, D. C.

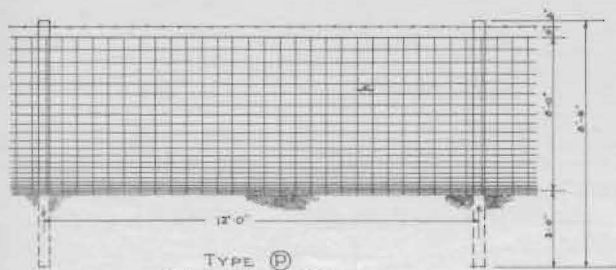


FENCES, ROADS AND DRIVES

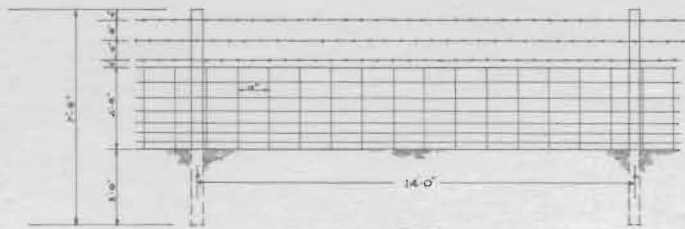
Common types of fences and gates used throughout the District are illustrated on the following pages. Care must be taken to select the proper gauge, mesh and height of wire for the use desired. Line posts must be of sufficient length to allow from 24 to 36 inches in the ground, depending on the kind of fence required, while corner posts must be of heavy section and not less than 3'-6" in the ground. Corner posts should be thoroughly anchored in place. These posts are usually cut from woods such as red cedar, dead oak, cypress, and Osage orange. Gates may be of wood or metal, wood being the cheaper. Construction as shown, wooden gates have proved to be very satisfactory and durable enough to withstand rough usage, providing a good grade of lumber is used.

Culverts are required where a flow of water must be directed across a road or drive. There are numerous materials that are suitable for culverts. Wrought iron culvert pipe is probably the best, but is quite expensive. For low cost farm roads, standard corrugated metal culvert pipe can be used.

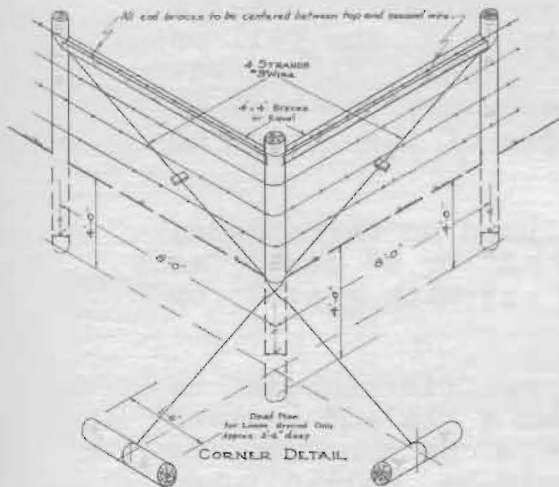
Headwalls are required where it is necessary to hold an embankment in place, or to protect the earth foundation of the pipe. Various materials have been successfully used as headwalls. Field stone laid up with cement mortar, rubble masonry, or concrete is most common. Field stone laid up dry ordinarily is not successful for headwalls.



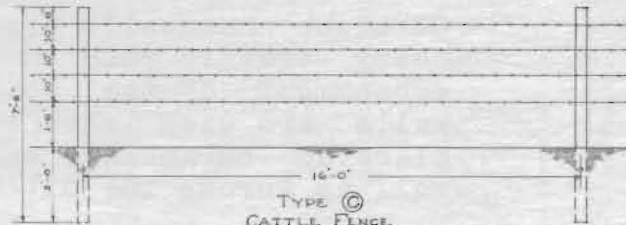
TYPE P
POULTRY FENCE



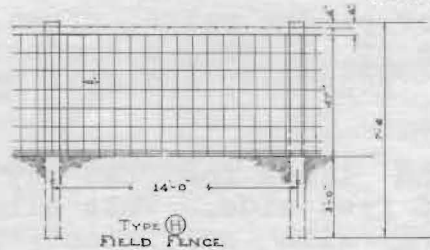
TYPE L-H
Low Field Fence



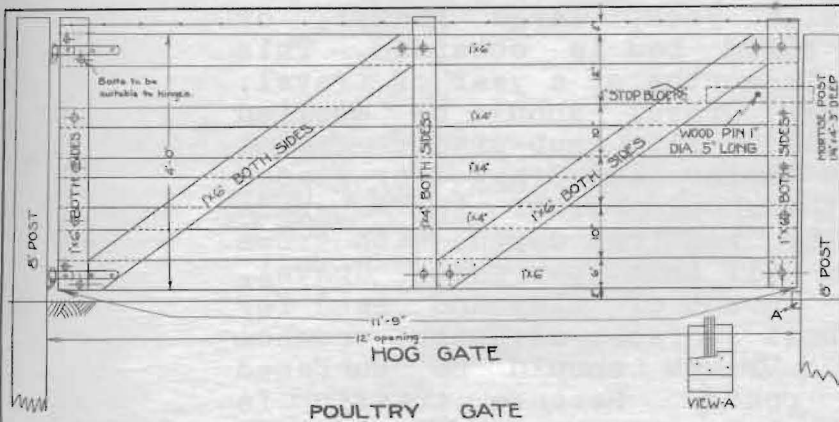
CORNER DETAIL



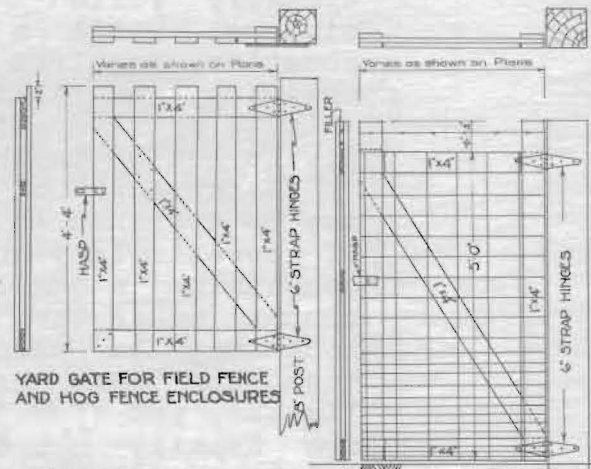
TYPE C
CATTLE FENCE



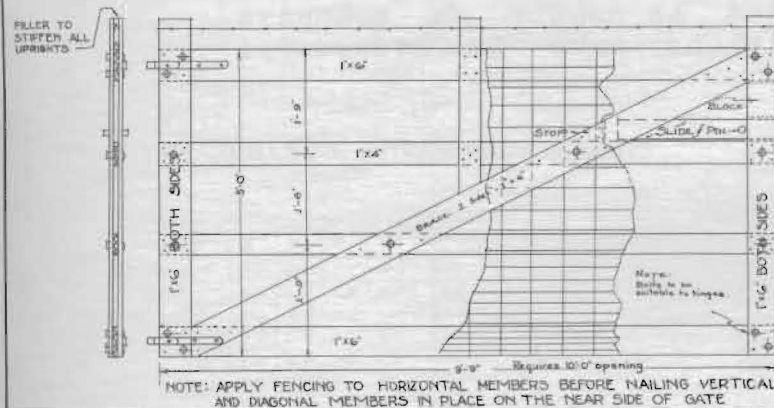
TYPE H
FIELD FENCE



POULTRY GATE



YARD GATE FOR FIELD FENCE
AND HOG FENCE ENCLOSURES



NOTE: APPLY FENCING TO HORIZONTAL MEMBERS BEFORE NAILING VERTICAL AND DIAGONAL MEMBERS IN PLACE ON THE NEAR SIDE OF GATE

SCHEDULE OF
POST LENGTHS

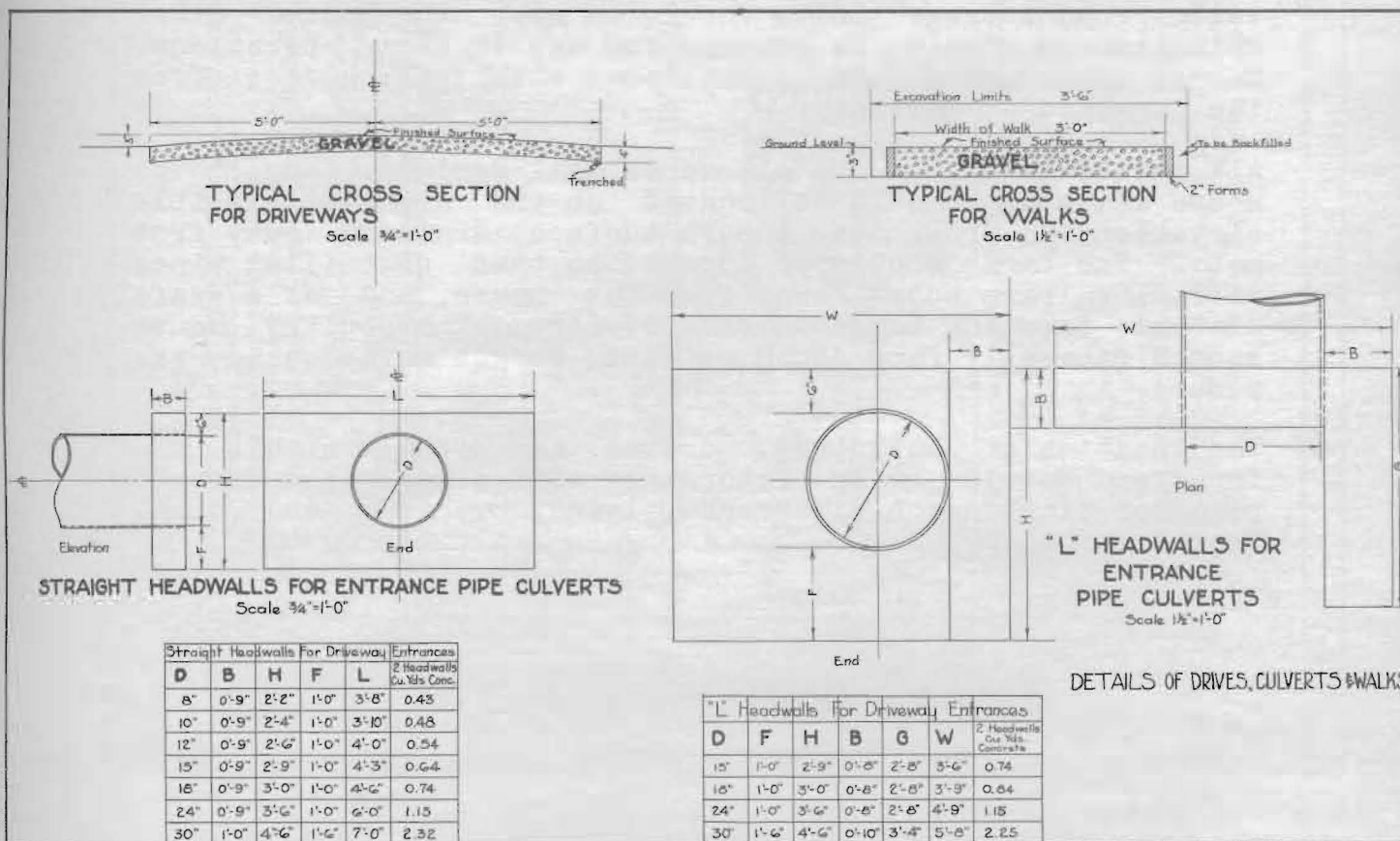
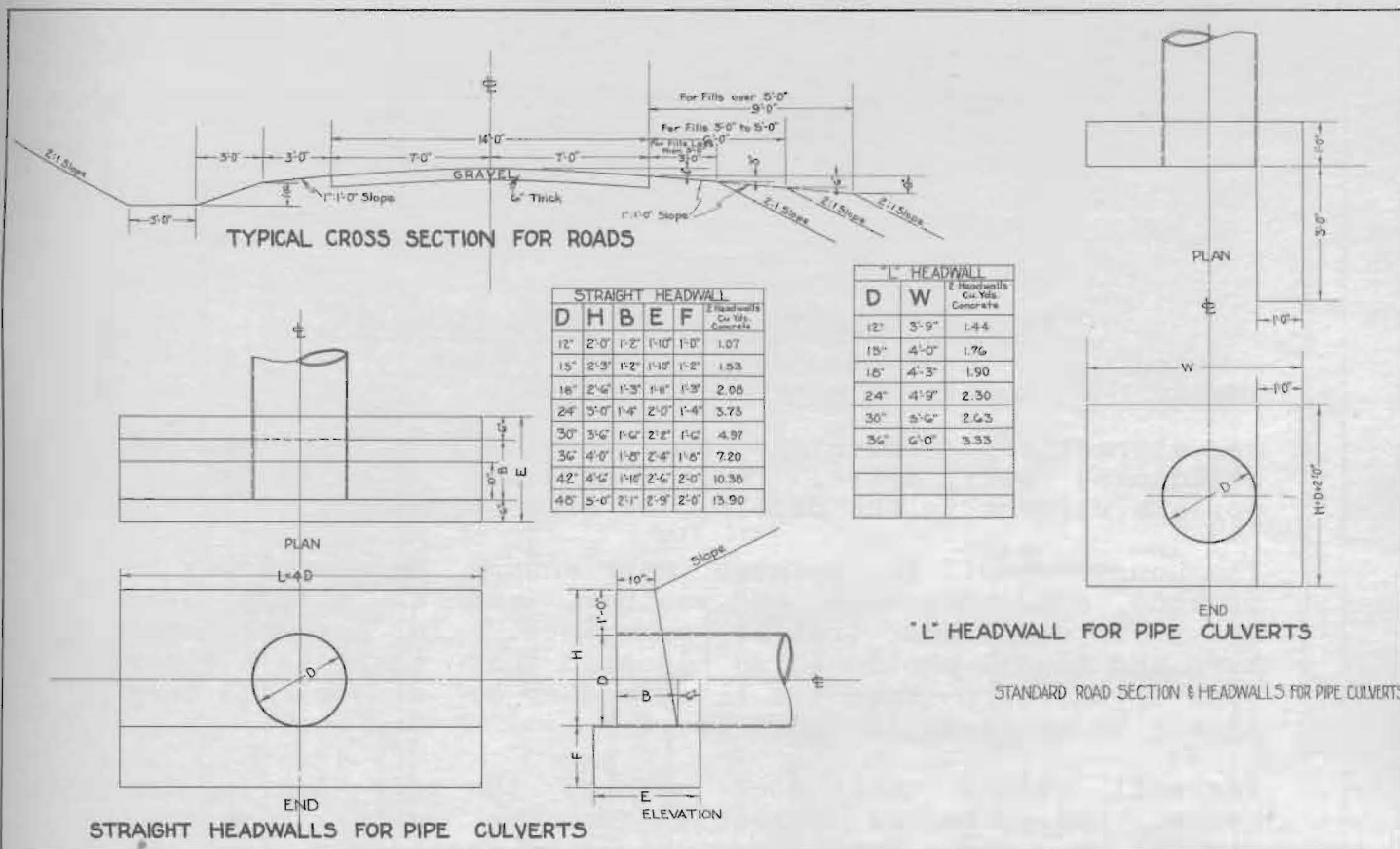
	P.F.	H.F.	F.F.	C.F.
GATE POST	9'-6"	8'-6"	8'-6"	8'-6"
COR. POST	9'-6"	8'-6"	8'-6"	8'-6"
BRACE POST	8'-6"	8'-6"	8'-6"	8'-6"
LINE POST	8'-6"	7'-6"	7'-6"	7'-6"

P.F. - POULTRY FENCE
H.F. - HOG FENCE
F.F. - BARBED WIRE FIELD FENCE
C.F. - BOLTS SUITABLE FOR HINGES

Straight headwalls are used on culverts under a heavy traffic road in order to hold the fill or embankment of the roadbed in place. "L" headwalls are used when it is necessary to hold in place an embankment on the side of the ditch as well as across the ditch.

Gravel or cinder walks, often used on farmsteads, are made by digging a channel 3" or 4" deep, as wide as required, and filling it with gravel or cinders.

Roads and lanes for two-way traffic should be 28 to 36 feet wide. This allows a 14'-0" gravel surfacing with sufficient berm or shoulder to hold the surface. Roads should be well-ditched for surface drainage and tiled if necessary for sub-surface drainage. Soft spots should be continually filled with rock, large gravel, or cinders, until a solid bed is obtained. This sometimes requires six months or a year of travel, dragging, and filling. Gravel should be applied only to settled fills or firm sub-grade. Gravel may be heaped in the center and dragged or graded to featheredge at the shoulders, or the subgrade may be trenched to the required depth, with crown of approximately one-half inch per foot. Gravel, containing a small amount of clay and sand for binder makes the best surface, although crushed rock may be used. Drives should be surfaced much the same as roads. Because traffic is lighter, and for the sake of appearance, drives are usually not ditched as deeply as roadways unless drainage conditions make it necessary.



FARMSTEAD LAYOUT AND BUILDING LOCATION

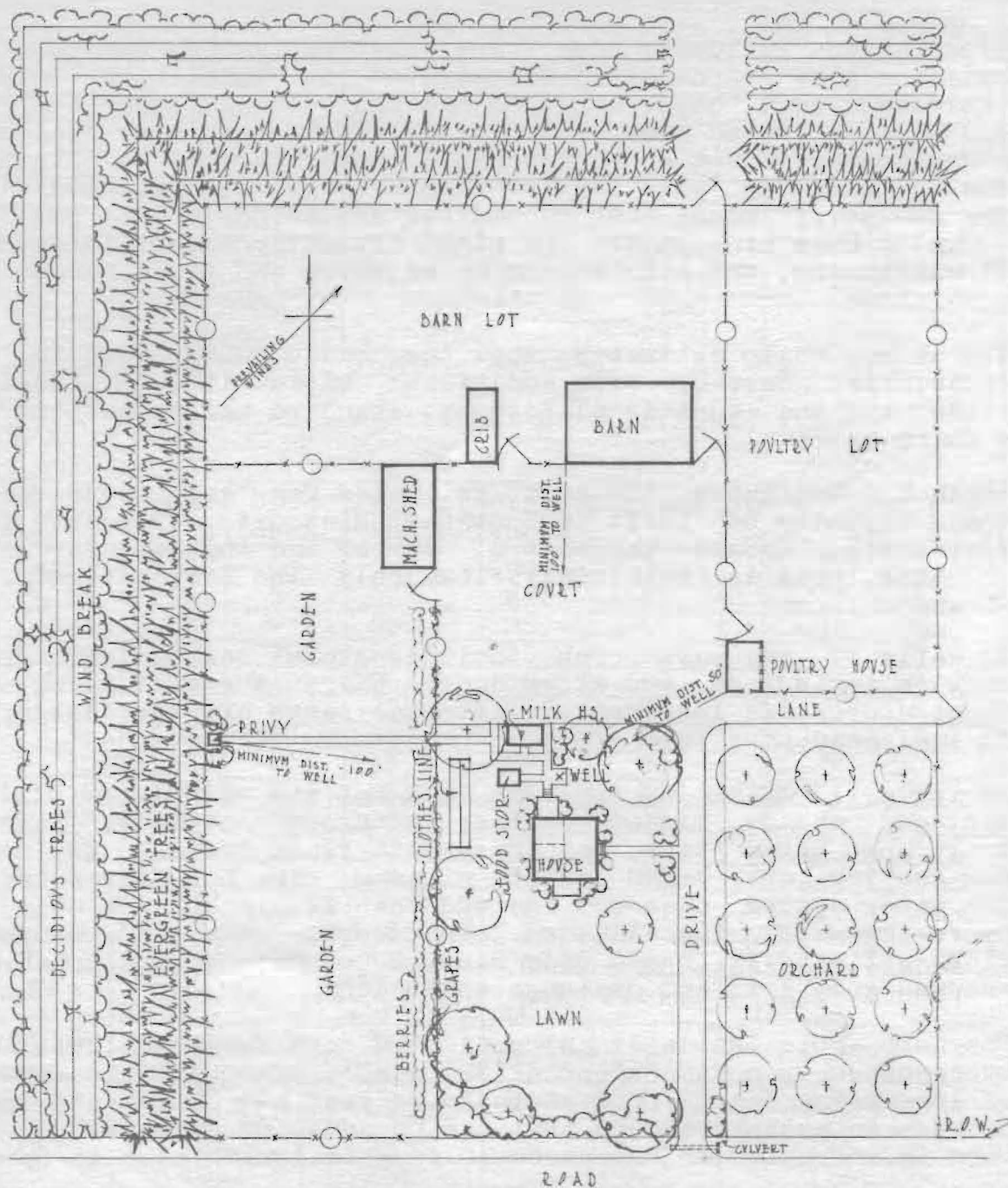
An attractive, convenient and sanitary arrangement of buildings, well, drive, fenced area and gates is an important element in the development of a farmstead.

The house should be located near enough to a roadway to provide convenience in bad weather, and far enough away to avoid dust and traffic annoyance. In general, the barn and house should be so located that there is a clear view of the barn from the kitchen door or window, and they should be at least 100 feet apart.

The well should be located near to the rear door of the house, and as far as possible from the privy, barnyard, and chicken run. The privy should be accessible from the rear door of the house, and at least 100 feet from the well. Food storage units should be near the house. Other outbuildings should be grouped for use in farm operations. Garden areas should be established with easy access from the farmyard and drive.

All buildings should be placed on well-drained land. The house and well should be located on the highest possible elevation in order to insure surface drainage away from both. The barn should be located so that prevailing winds will blow barn odors away from the house, and at a safe distance from the house in case of fire. The poultry house should generally face south or east, to get a favorable exposure.

The location of buildings, drives, and fences within the farmstead should be in accordance with a well thought-out plan for planting of windbreaks, lawns, orchards, and ornamental shrubbery.



TYPICAL FARMSTEAD LAYOUT

COST ESTIMATES

Experienced builders have carefully estimated the cost of building the structures illustrated in this book. These estimates have been arranged to indicate a low, average, and high estimated cost. (Table I). Where the lower scales of wages are prevalent and a favorable material cost is obtained, the low estimate will result. The average estimate indicates the amount of money that should be set aside in the building budget. When bids exceed the high estimate, except in unusual circumstances, the bids should be rejected and the contract re-advertised.

The house cost estimates show the basic house cost in one table, the cost of each additional basic item in a second table, and the additional cost of standard modernization in a third table.

Table I also shows the cost estimates for each house as it would normally be built in Southeast Missouri, or points further south. Because the cost of lumber and the rate for labor in this area is relatively low, only the low estimate is shown.

In Table II the work porch includes storm sash, screens and combination screen and storm door. Where the work porch and front porch are included as integral parts of the design, it is indicated thus (*).

In Table III plumbing includes all hot and cold water piping, vent and wastes, minimum 3-piece bathroom equipment, laundry tray, hot water tank, and basement floor drain. Estimates for heating are based on the minimum size hot air furnace. The water system does not include the well cost, but only the hydro-pneumatic installation. The septic tank and disposal field estimate is based upon minimum commercial equipment and assumes good soil and drainage conditions.

The barn table indicates an estimated cost for the illustrated types based upon dimensions of 32' x 48'. The additional cost of increasing the 32 foot width to 34 feet and 36 feet is indicated. An average amount that can be added or deducted if the barn is increased or decreased 10 feet in length also is shown.

The outbuilding table indicates the general description of each outbuilding and the low, average, and high cost estimates.

These estimates were made in March, 1939, and may be expected to vary from time to time.

HOUSE COST ESTIMATES

Table No. 1 - Estimated Cost - Basic House

No.	Low	Average	High	SE Mo - Low
1	1950.	2150.	2400.	1350.
2	2150.	2400.	2600.	1550.
3	2250.	2600.	2900.	1750.
4	1950.	2150.	2400.	1400.
5	2200.	2450.	2800.	1700.
6	2100.	2350.	2600.	1650.
7	1700.	1850.	2000.	1150.
8	2200.	2450.	2650.	1650.
9	2000.	2250.	2450.	1500.
10	2250.	2600.	2900.	1750.
11	1950.	2150.	2400.	1350.
12	(Must be redrawn for use North of S. E. Mo)			1050.

Table No. 2 - Additional Cost of Basic Items

No.	Front Porch	Work Porch	Open Porch	Wir- ing	Electric Fixtures	Screens	Storm Sash	Shutters Front Only
1	*incl	150.	90.	90.	20.	30.	30.	15.
2	35.	150.	90.	95.	25.	35.	40.	30.
3	*incl	*incl	-	95.	25.	50.	55.	25.
4	35.	150.	90.	95.	25.	35.	40.	30.
5	35.	*incl	110.	105.	30.	55.	55.	30.
6	35.	150.	90.	95.	25.	30.	35.	15.
7	35.	150.	90.	90.	22.	30.	30.	15.
8	35.	150.	90.	95.	25.	30.	35.	20.
9	35.	150.	90.	95.	25.	30.	35.	15.
10	35.	150.	90.	105.	30.	40.	40.	30.
11	35.	150	90.	70.	20.	25.	25.	15.
12	25.	-	40.	55.	20.	25.	-	-

Table No.3 - Additional Cost of Standard Modernization

No.	Hot Air Heating	Plumbing	Septic Tank and Field	Water Pressure System
1	165.	210.	100.	175.
2	175.	225.	100.	175.
3	175.	225.	100.	175.
4	170.	235.	100.	175.
5	185.	235.	100.	175.
6	185.	235.	100.	175.
7	170.	-	-	120.
8	185.	235.	100.	120.
9	185.	235.	100.	175.
10	185.	235.	100.	175.
11	150.	200.	100.	175.
12	-	-	-	120.

BARNs

Illus. Barn No.	Estimated Cost 32'X48' Plan			Approximate Added Cost For Increase in Width		Approx. Cost For 10-foot Increase or Decrease in Length
	Low	Average	High	34' Wide	36' Wide	
1	1300.	1700.	2100.	80.	180.	290.
2	1125.	1475.	1825.	65.	150.	250.
3	1200.	1575.	1950.	70.	160.	270.
4	1450.	1900.	2350.	80.	180.	330.
5	1100.	1450.	1800.	65.	150.	250.
6	1425.	1850.	2300.	85.	190. (Bank Barn)	320.
7*	1550.	2000.	2525.	(no estimates made) Pole Barn Type		
8**	875.	1150.	1400.	(no estimates made) Pole Barn Type		

The approximate added costs of extra width and extra length will depend upon the arrangement of the floor area, and the fittings required.

* 56' X 60'

** 56' X 40'

OUTBUILDINGS

Building and Size	Plan No	Low	Average.	High
Poultry House, 20' X 20', Gable Roof with Straw Loft and Inside Lining.	1	220.	290.	360.
Poultry House, 14' X 22', Gable Roof with Straw Loft and Inside Lining	2	190.	245.	300.
Poultry House, 20' X 20', Gable Roof-No lining	3	150.	180.	210.
Poultry House, 20' X 20', Gable Roof-No lining	4	180.	230.	280.
Milk House, 14' X 16', Concrete Block, Gable Roof	1	195.	225.	260.
Milk House, 8' X 14', Frame, Gable Roof	2	145.	165.	190.
Milk House, 10' X 12', Concrete Block, Gable Roof	3	140.	160.	185.
Milk House, 7' X 9', Frame, Gable Roof	4	55.	65.	80.
Cooling Tanks Not Included				
Food Storage, 7' X 9', Concrete	1	110.	130.	150.
Food Storage, 6'-10" X 9'-6", Gable Roof, Concrete Block	2	115.	140.	160.
No Grading Provided				
Double Corn Crib, 27' X 32', Gable Roof, Center Drive	1	700.	830.	980.
Single Corn Crib, 8' X 32', Shed Roof	2	290.	350.	410.
Granary, 12' X 24', Gable Roof	1	210.	250.	300.
Granary, 10' X 10', Portable, Gable Roof	2	75.	95.	120.
Granary, Shop and Crib, 20' X 40', Gable Roof	3	690.	810.	925.
Garage, 12' X 20', Gable Roof	1	160.	200.	235.
Machine Shed, 20' X 30', Gable Roof	1	275.	325.	375.
Add approximately \$85.00 for each extra 10-foot unit.				
Smoke House, 8' X 10', Frame with Gable Roof	1	50.	60.	70.
Brooder House, 10' X 12'	1	90.	120.	140.
Brooder House, 8' X 10'	2	80.	95.	120.
Hog Houses - 1	1	15.	17.	20.
Hog Houses - 2	2	20.	23.	26.
Sheep Shed	\$70.00 average cost at Thief River Proj.			