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Modern Farm Improvements

Merton L. Walter

Modern Farm Improvements.

The subject of, "Modern Farm Improvements," is so broad and comprehensive that no writer has, as yet, more than fairly entered upon the subject.

The scope of this work shall of necessity be confined to a comparatively few of the salient points. The aim being to bring together some of the most up to date and satisfactory views and adaptations of modern methods and appliances to meet the needs of the farmer.

Conditions and tastes differ so greatly that no set of rules can be laid down to govern the individual needs of all. There are many things however that demand practically the same treatment under all conditions. We shall therefore consider some of those things which have a general adaptation to all cases.

The Revilding Cite.

The first and often the most difficult problem confronting the careful and con-

siderate farmer, is the location of his home site. Many farms offer no natural advantage in the way of a building site; and the farmer must needs put up with an unfavorable location or resort to artificial means. Other things being equal the farm buildings should be so located as to offer the greatest convenience in going to and from the fields. Much time is lost in making long hauls in harvesting crops and in returning the manure to the fields. But things are seldom equal and the buildings must be located so as to insure the greatest comfort, satisfaction, and healthfulness to the occupants. As a rule the buildings should occupy the highest point of the farm. This insures the best drainage of air and water, both of which are very essential. The soil should be porous and fertile; a porous soil drains better and it should be fertile so that the home may readily be surrounded with trees, shrubs, and lawns.

The Water Supply.
Proximity to an abundant supply

of pure water is very desirable, as is also natural protection from the vicissitudes of the climate, as offered by the contour of the country or by natural timber. In localities where good water in abundance is hard to obtain, most people locate their buildings near a water supply regardless of many other desirable things. In many instances greater satisfaction and more desirable sites could be obtained if the location were chosen with regard to other and nonreplaceable qualities, and a few hundred dollars spent in supplying water from a distant source by means of some sort of a pumping outfit and a system of pipes and tanks.

Dangers to Avoid.

The desire for timber wind breaks, has led a great many to make as great mistakes as those who seek water at the expense of other things. Many people have been led to locate their buildings and yards upon creek banks, where the manure from the yards

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is wasted by washing down stream, and the health of the farmer and his family is endangered by the proximity of stagnant water.

Drainage.

The drainage of the site is of paramount importance for upon it depend the sanitation of the home and much of the convenience in caring for the live stock and the crops. When natural drainage cannot be secured much can be accomplished by means of open ditches, grading, and tile drains. Great care must be taken that the water supply is not contaminated by seepage from barn yards, privys, drains, cesspools, or from surface water running into the well or spring.

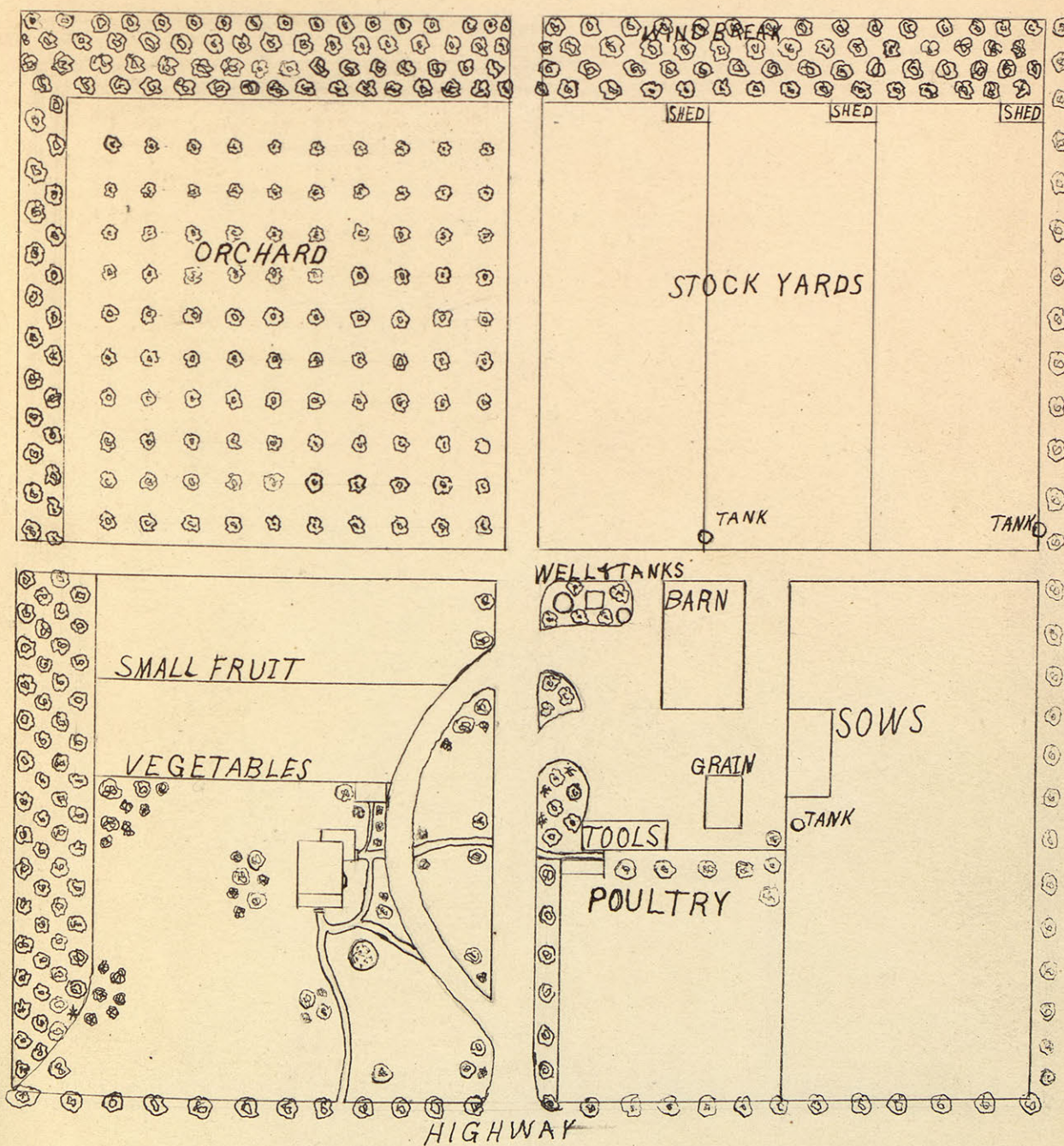
Arrangement of Improvements.

The site for the farm house should be chosen first, and the other buildings and yards grouped around it in such a manner as to add to the beauty and comfort of the home stead. All feed yards should be located at such an angle of the compass as to prevent the prevailing

winds from bringing unpleasant odors to the house. The yards should be so arranged and concealed by trees, as to be inconspicuous from the house or highway: they should be far enough from the house to be inoffensive, but not so far as to cause inconvenience and unnecessary labor in caring for the live stock.

A broad expanse of green lawn is to be preferred to a yard filled with a hit and miss collection of trees and shrubs. Trees should be set in groups and flanked by clumps of shrubs. Trees and shrubs should be used for backgrounds wind breaks and landscape effects. On the north and west the planting needs to be rather close, but on the south and east the planting should be rather open allowing the eye to take in as much of the landscape as possible. The groups of trees and shrubs should be so arranged, that a person approaching the place along the highway will catch glimpses of the buildings nestlings in their background of green. Trees and shrubs should be selected for hardiness, and beauty of form,

PLATE, I.



BUILDING SITE 16 ACRES. SCALE, 1"=132'

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foliage, and bloom.

In plate I I have made an attempt to apply the foregoing directions in a practical and pleasing manner. In this case a south front was taken and improvements grouped accordingly. On the north and west a suitable wind break is provided. The orchard is so located as to receive the utmost protection and also serve as an additional protection to the buildings and yards. The small fruit and vegetable garden are located in a sheltered place near to the house and far from the poultry which is given a large enclosure in preference to inclosing every thing else to keep the poultry out. All barns are at a sufficient distance and in a suitable direction to prevent obnoxious odors from them gaining access to the house. The house is far enough from the highway to be partially secluded and yet command a good view of the highway.

The Farm House.

The farm house should be planned with care; for here the house wife must spend most of her time in providing for the

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needs, comforts, and pleasures of the family; here the farmer rests after his toil in his fields; and here the children grow up, owing much of their character to the environments of the home.

The Colonial style of architecture is very popular and lends itself most readily to the needs of the farm. The form is mainly the square house with spacious porches and simple but elegant outlines. The square house is the most economical in construction and allows the best arrangements for ventilation and the admittance of sun light. The living rooms should be on the south or east. On the farm it does not matter so much whether the kitchen is at the front or rear of the house, so that it is the pleasantest and most comfortable room in the house.

Joseph E. King says, that the kitchen should be on the side next to the road. If the side next to the road is the pleasantest side of the house, why I agree with him, otherwise I do not. Most housewives would rather be cool and comfortable than to be able to see every team that passes.

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Mrs. J. A. B. writing in the May 1, 1907 number of the Breeder's Gazette, sums up the kitchen question as follows. "First there should be at the back door a deep and well shaded porch, sheltered too if possible so that snow will not blow in it too much. It should face the east and north. Here much work may be done in the summer time. This porch should be screened in and have a concrete floor, about 12' x 12' is a good size. It need have no ornament other than what vines may add to it. Let there be wide ledges on two sides on which one may rest pans and buckets. If a pump can be placed there with no fear of well contamination all the better. Near let there be a commodious wood house, on the same level, well stored with dry and properly split wood and a bin for cobs."

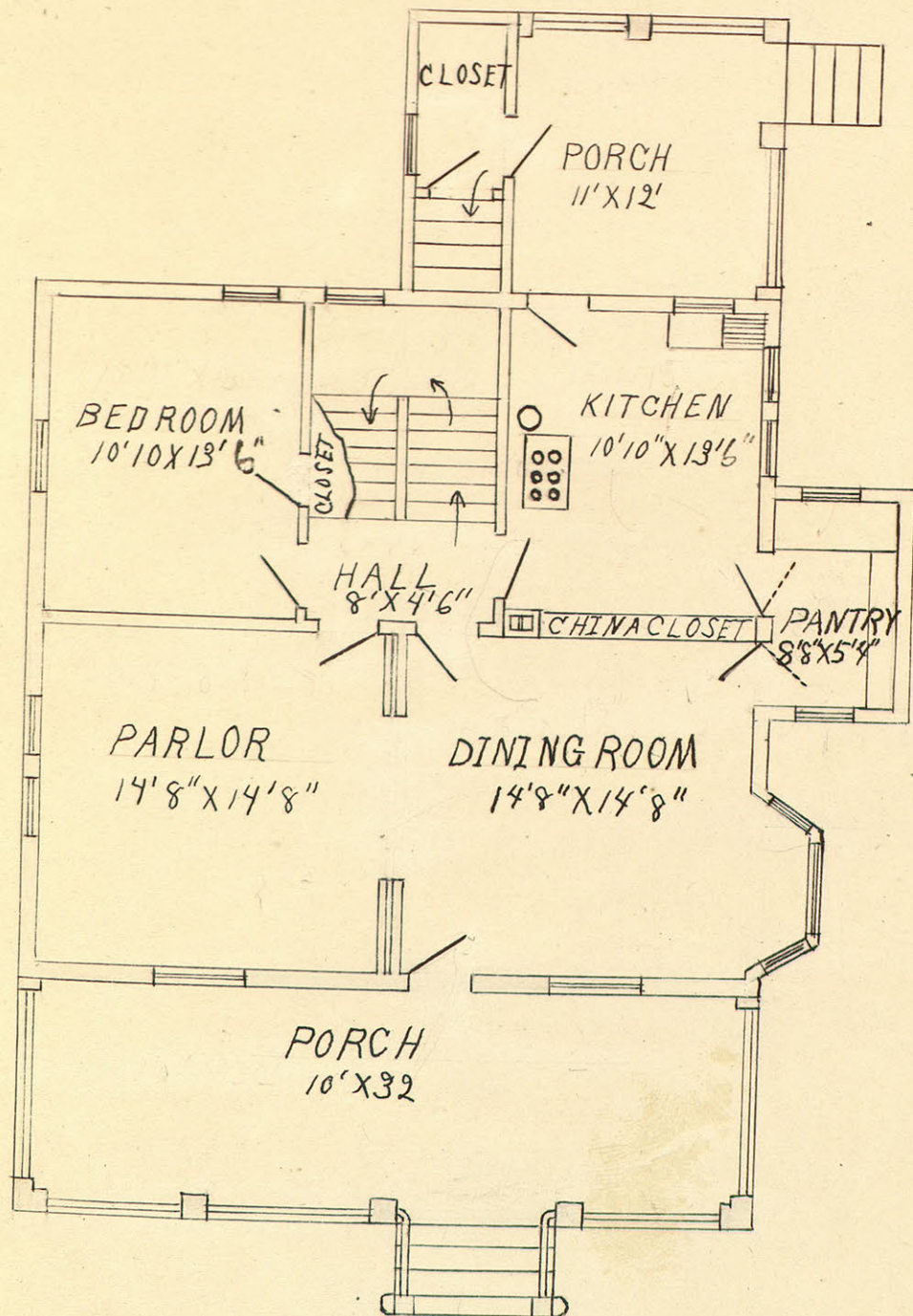
The kitchen should be of ample size and furnished with modern appliances for saving steps and work. A large well appointed pantry furnishes a good place to do much of the kitchen work away from the heat of the kitchen range. The range should have a water front connected with a

hot water supply tank, so that hot water may be had at the sinks and ⁱⁿ bath room. The dining room should adjoin the kitchen. A bath room is a necessity and should be fitted with modern conveniencies. The rest of the house is largely a matter of individual taste, and can be varied to suit.

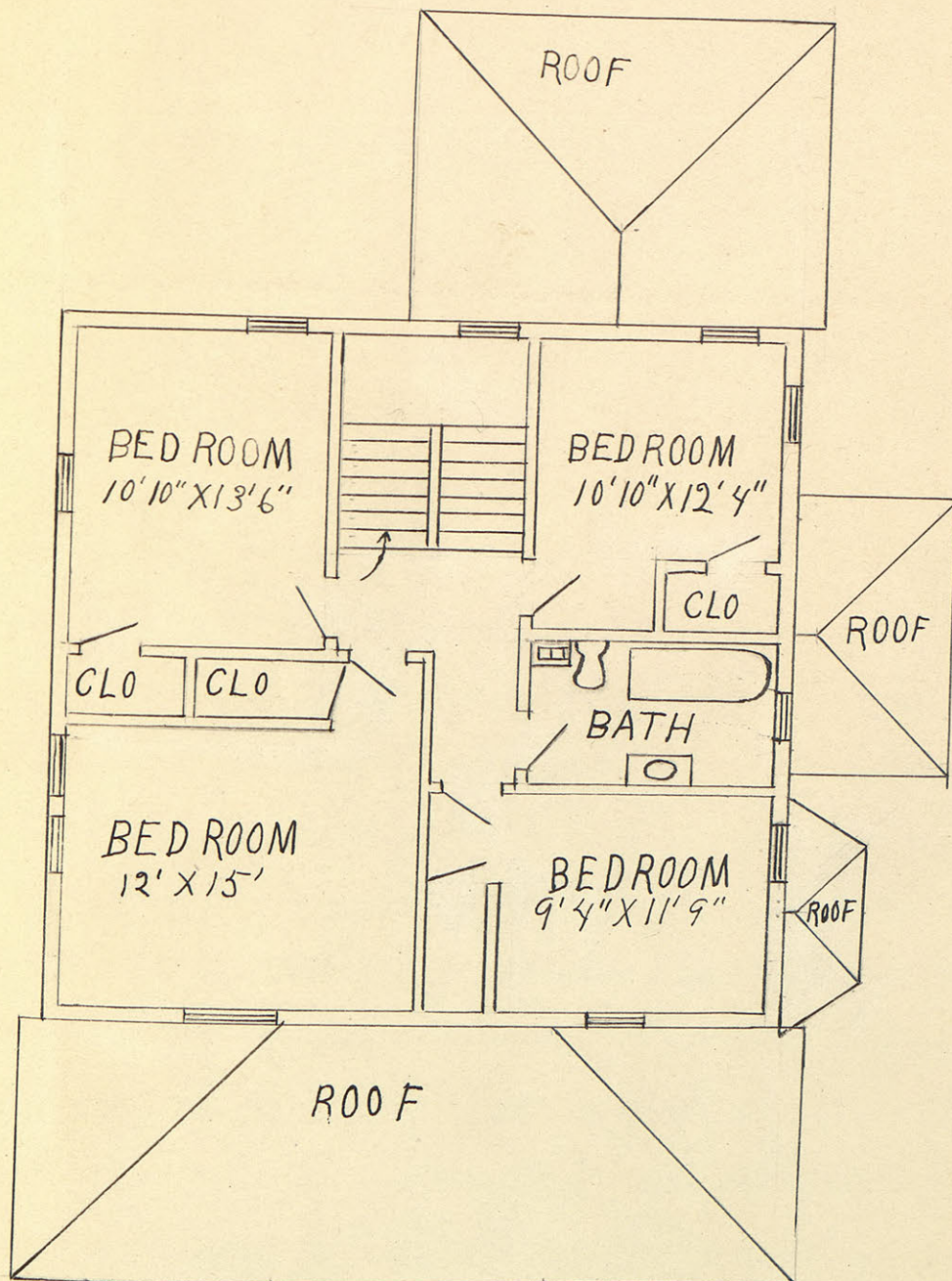
In plates II and III, I submit the floor plans of a house, in which, I have worked out my ideals of a comfortable, convenient, and roomy farm house. The plans speak for themselves and need no explanation. The house is planned to front the south, but it could easily be altered to front any way. If it should front the north or east, I should follow Mr King's suggestion and put the kitchen at the front of the house.

Every farm house should have a complete water system of its own. The storage tank may be placed in garret, ^{on} a tower apart from the rest of the house, or better yet it may consist of one of the modern pneumatic tanks located in the cellar or buried in the ground outside. The storage tank may be filled by a force pump driven by a wind mill, engine, tread power, or by hand.

PLATE II.



FIRST FLOOR PLAN



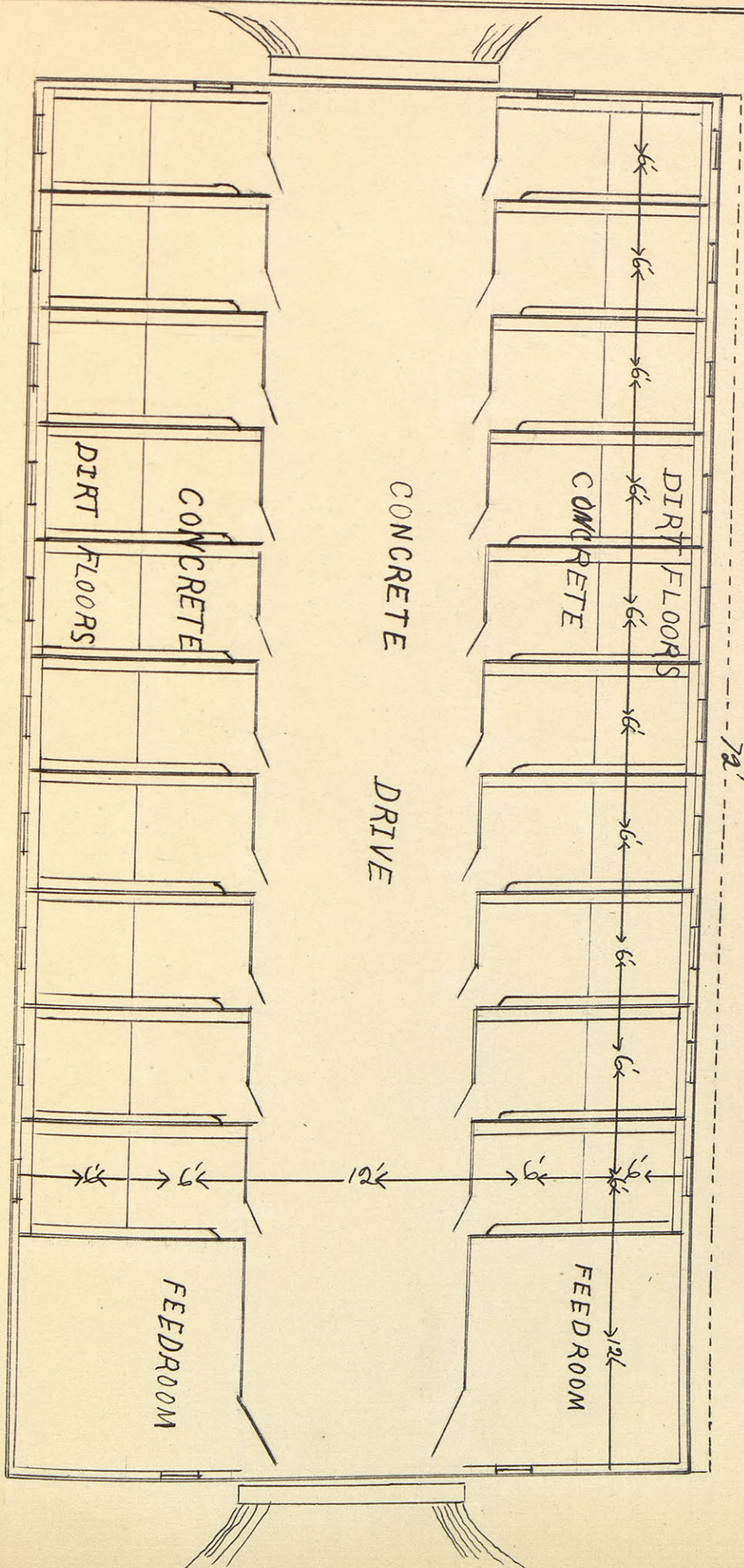
SECOND FLOOR PLAN

Farm Barns.

A barn, large enough to shelter all stock, grain, hay, and implements on the farm, can be built cheaper than several smaller barns for the same purpose. The large barn however has its disadvantages. One does not care to have all kinds of stock in one place; few men have the money to build so large a barn at the start, and must get along with smaller barns and sheds for some time; and in case of fire the loss would be much greater. Horses and cattle do well under the same roof. Hogs, sheep, and poultry, machinery and grain do best by themselves. It is well to build rather larger than present needs, for it is difficult to add to the barn without extra expense and without spoiling the appearance of the barn. Hay mows should be made deep and narrow rather than wide and shallow. The deep mow holds considerably more hay per cubic foot than the shallow mow. Where a large amount of room is desired the round barn offers possibly the cheapest

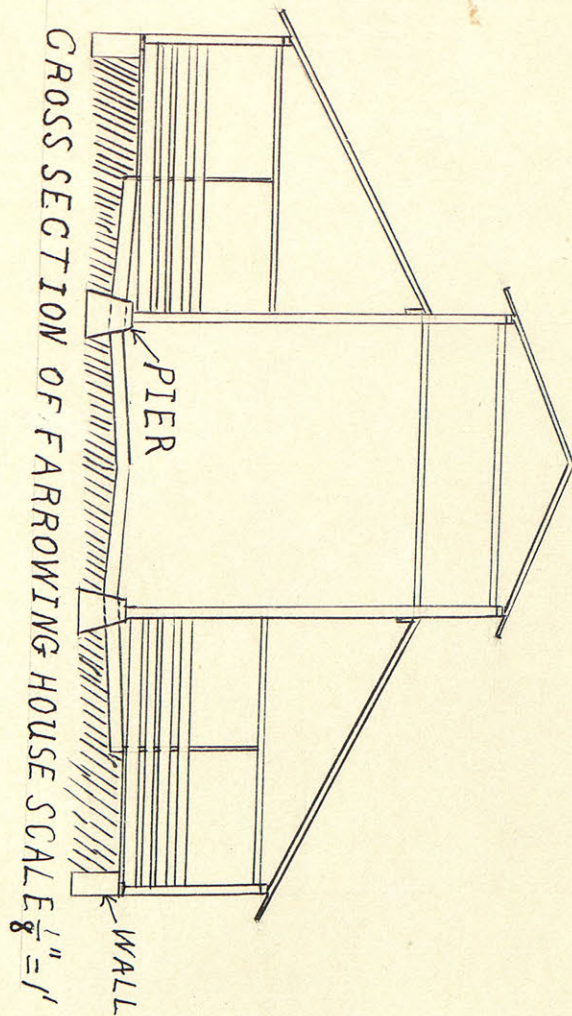
form of construction. The square barn probably lends it self to better arraignment and decoration and is more easily added to in the shape of sheds, but requires more material to enclose the same amount of space. A barn built into a bank, because of its dampness, is not desirable, but the basement barn is undoubtedly the prime favorite. The basement should be high and thoroughly lighted and ventilated. Except in a dairy barn where cleanliness is the great aim dirt floors are as good or better than any other. For dairy cows or hogs a cement floor is best. In the hog house, however, it is well to have a space large enough for the bed with a dirt floor. Many of the later cattle barns have the mangers, floors, and gutters made of concrete. Some of the best hog houses, also, have the floors, walls, partitions, troughs, and even the roofs made of concrete. The cement roof, however, is in the experimental stage and may not prove a success. A cement feeding floor is almost a necessity.

PLATE IV.

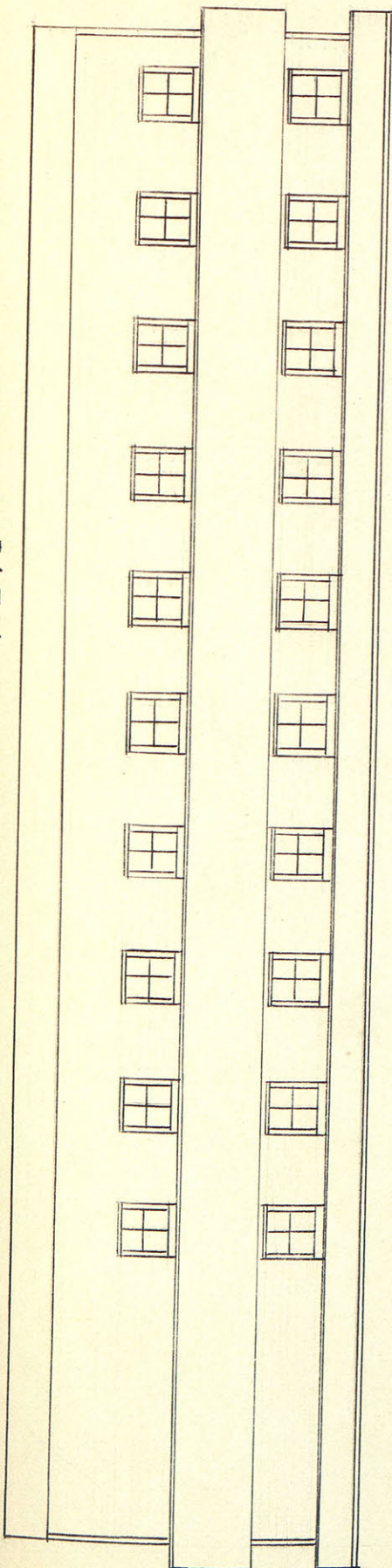


GROUND PLAN OF FARROWING HOUSE SCALE $\frac{1}{8}" = 1'$

PLATE V.



ELEVATION



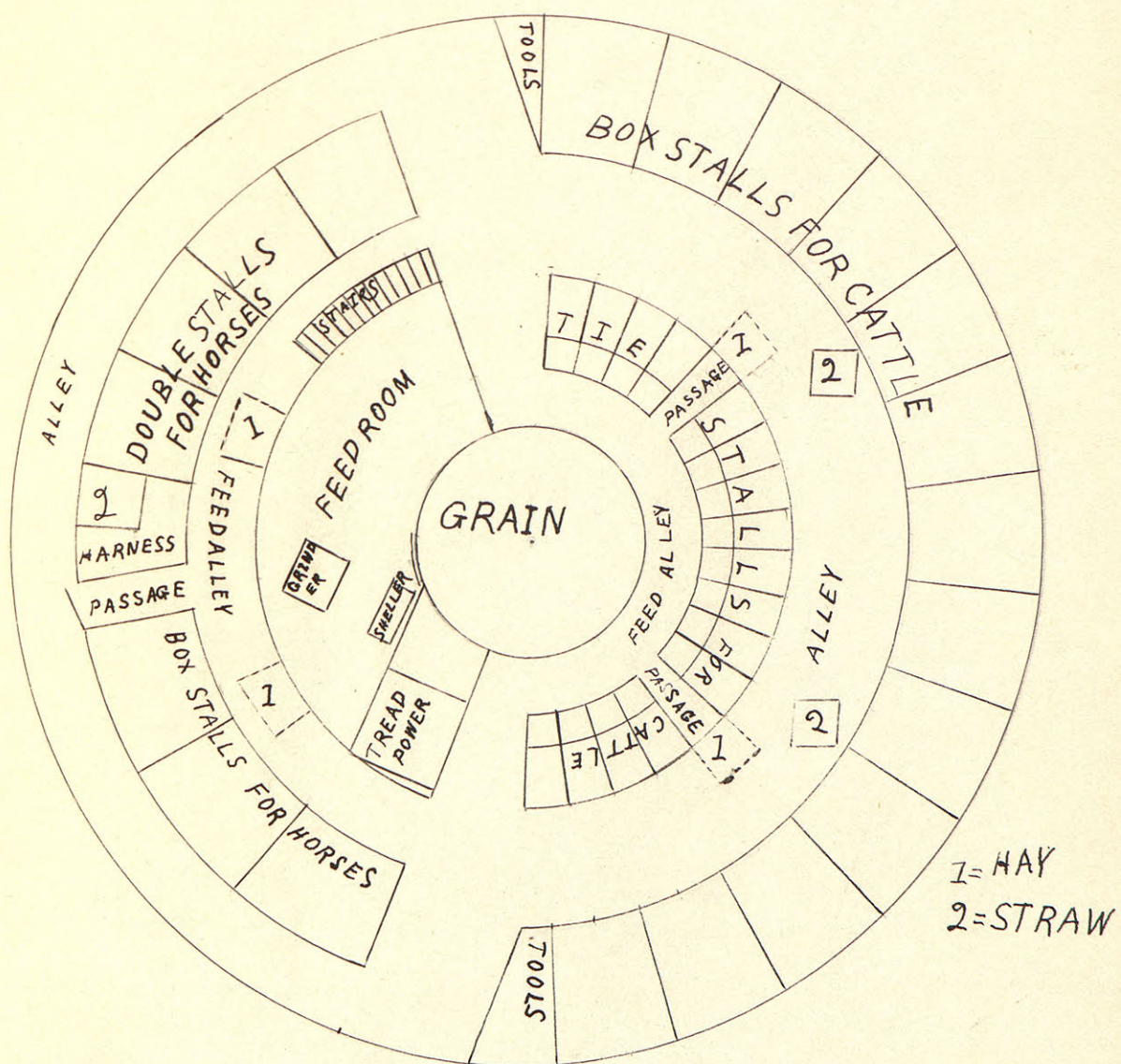
A Farrowing House.

In plates IV and V I have worked out a plan for a farrowing house for twenty sows. The house has a drive way twelve feet wide the entire length of the building, this gives access to the pens for putting in bedding, and in removing litter, and also serves as a feeding alley and allows a liberal run for small pigs. Each farrowing pen is six ft. by twelve ft. with a guard rail eight inches ~~wide~~ on three sides. The half of each pen next to the alley, and also the alley are floored with concrete with a slope together at each side of the alley. I would stand this house north and south, for, with the arrangement of windows, the sun would strike every part of the house some time during the day.

A Cattle and Horse Barn.

In plates VI, VII and VIII I have worked out a plan for a round barn suitable for breeding cattle and work horses. The barn has a diameter of 92 ft. The first story is eight feet, and the

PLATE VI.

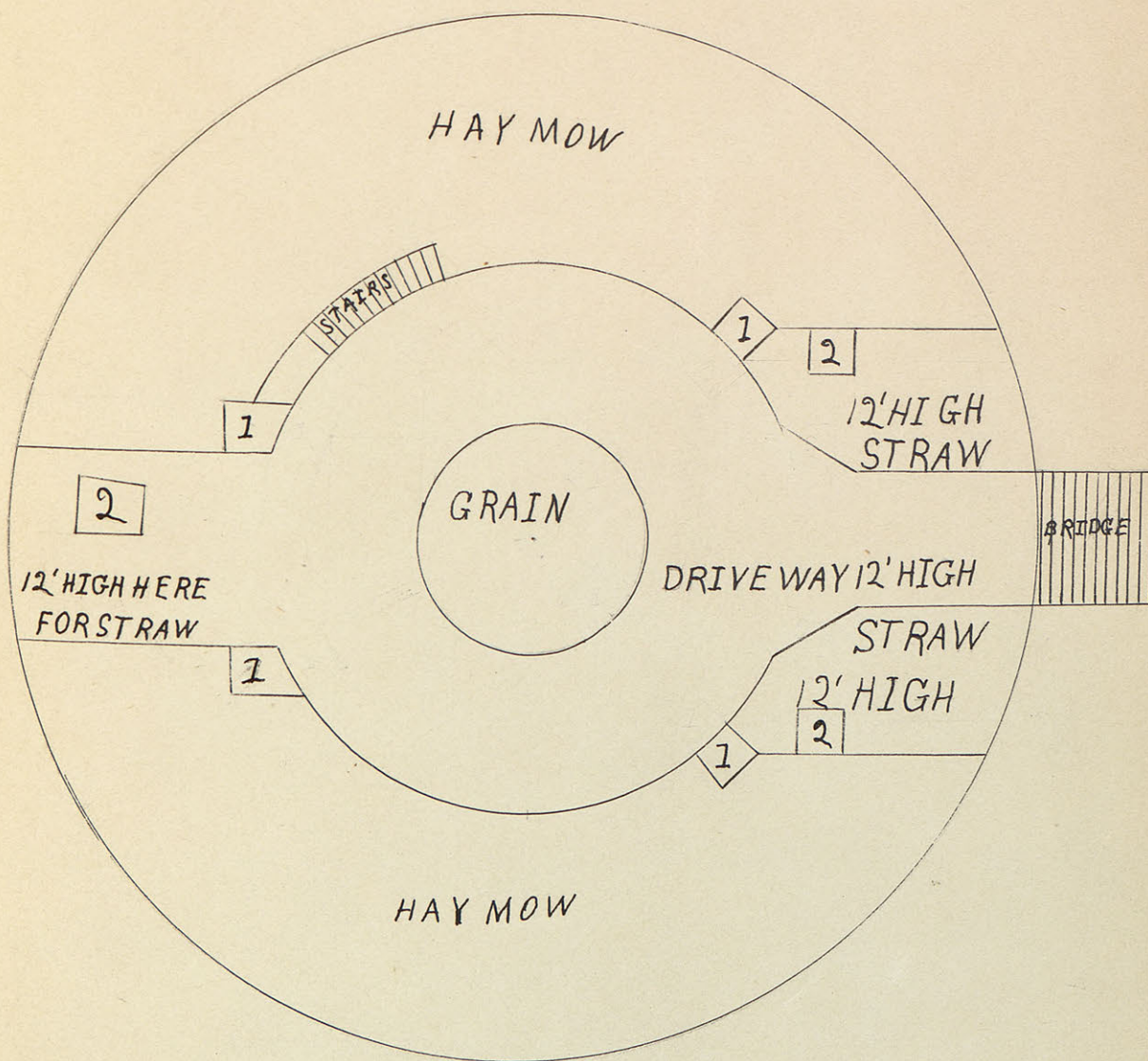


GROUND FLOOR PLAN SCALE 1"=16'.

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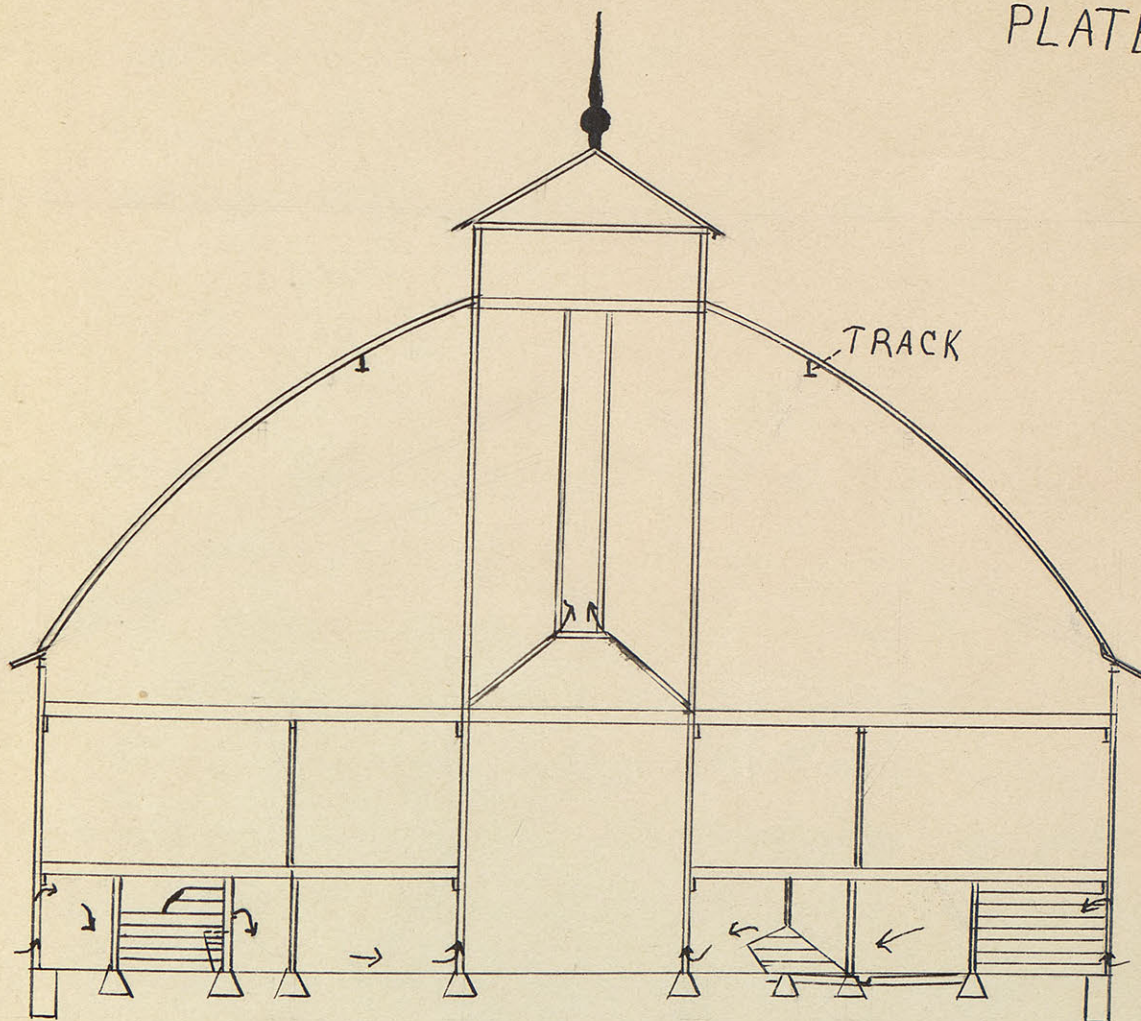
second and third stories combined are 18 feet in height. The centre of the barn is taken up with a corn crib twenty feet high and twenty feet in diameter. This is to be filled from the drive way on the second floor. A large feed room adjoins this crib on the basement floor. All stalls are on the basement floor. The floors of the horse stalls are of dirt as is also that of the box stalls for cattle. The floor of the tie stalls and the alley behind them are of concrete. All hay chutes are boarded tight to the basement floor with doors for removing the hay. Hay is unloaded from the second floor with a hay sling on a circular track.

Ventilation of the basement is accomplished by means of hollow spaces between the studs, in the outside walls with openings near the sill on the outside and near the ceiling on the inside, these provide inlets for fresh air. The corn crib is boarded and papered on both sides of the studs with a couple of boards left off near the base on the outside. The foul air is drawn up the spaces between the studs of the crib

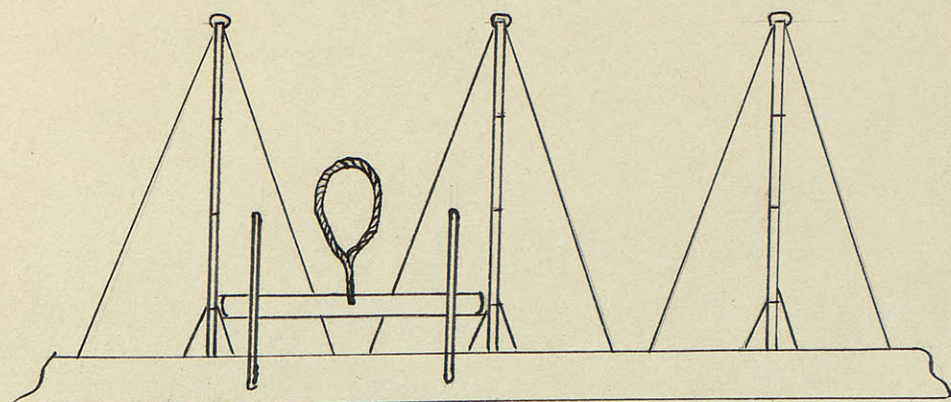


SECOND FLOOR PLAN

PLATE IV.



SECTION THROUGH DRIVEWAY



VAN NORMAN COW TIE SCALE $\frac{1}{2}'' = 1'$

and is collected, at the top of the crib, into an air shaft running to the cupola.

A driveway encircling the crib on the second floor, allows access to fill the crib and also to unload feed into bins in the feed room below. The spaces left for straw on the second floor can be easily filled from the driveway.

In speaking of the round barn, Professor King says, "The strongest possible structure for a barn, with the least amount of lumber in its frame and the least special attention to bracing, is secured when the barn is made cylindrical in form and the studding are set upon the circumference of a circle. In this type of barn not only is the smallest number of studding required to form the outer part of the frame but smaller sizes can be used for the reason that every board in the siding is a portion of a hoop which makes spreading impossible, while at the same time they are arched against the wind and take its pressure with a crushing stress." With barns of this type 2x4 studding set 2ft apart have ample strength

for all diameters up to 40 feet and 2 x 6 studding is large enough for barns 40 x 100 feet in diameter.

Stalls for Horses and Cattle.

Single stalls for horses should be 5' x 10'; double stalls 8' x 10'; box stalls at least 8' x 10' and preferably 10' x 12'. Single stalls for cattle should be 3 to 4 feet wide. Box stalls for cattle should be 8' x 8' or better 10' x 10'. Box stalls should have no mangers or projections on which animals may injure themselves. The box stall for horses should have the lower three or four feet of the wall flaring in toward the stall so that the bottom of the stall wall will flare at least 1' into the stall. This will prevent the horse from injuring himself against the side of the stall. A swinging feed box should be arranged in the box stall so that it can be swung in to the alley out of the way when the animal is through eating. The horse will eat his hay, without waste, from the floor of the stall. Cattle may waste some hay but mangers are so objectionable that many prefer to have some hay wasted

rather than have mangers. All doors should hang on rollers if possible. A liberal number of box stalls should be supplied.

Cement Construction.

Hydraulic cement concrete is becoming quite popular in all lines of building. Concrete rock is largely taking the place of wood and natural stone in construction.

The strong points in favor of concrete are the facts that cheap labor may be employed in its manufacture, and that, when properly made and seasoned, concrete is one of the most durable building materials known.

The Romans used a form of cement construction, samples of which yet exist in an almost perfect state of preservation.

Some one of the several brands of "Portland Cement" so common on the market, should be used in making concrete rock.

The materials used with the cement may be either crushed rock and sand, gravel and sand, cinders and sand or simply a good grade of plastering sand alone. All of the materials used must be free from clay, dirt or dust, as these

prevent the union of the cement to the other materials.

The ingredients should be thoroughly mixed by shoveling together several times. The mass should be wet down and mixed until thin enough to pour from a bucket. The wetter the mixture can be used in the forms, the better the quality of the stone that results. The mixture must be tamped in the forms until water stands over the whole mass, this shows that there ^{are} no air spaces left in the mass.

A simple rule for securing the correct proportions for ordinary work is as follows: take a bucket and fill it with the coarsest material to be used, then work in as much sand as possible around the coarser material; then fill the remaining spaces with water. Use the coarse material and the sand in the proportions they were in the bucket, and mix in a trifle more cement than there was required water to fill the spaces.

Floors and other places required to be water proof should receive a facing, about one thick, made of good sharp

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sand two parts, and cement one part, to be applied while the concrete is still wet.

An attempt has been made, in these few remarks, to bring out a few of those points, in relation to farm improvements, that the farmer is apt to ignore. The writer hopes for no less, than that the reader may be caused to stop ^{and} seriously consider some or all of the topics mentioned herein, and that more care and better taste may be used in planning farm improvements.

Finis