

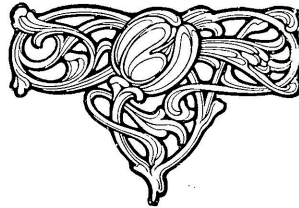
THE IDEAL BARN



THE METAL
SHINGLE AND
SIDING CO. LTD.



The Ideal Barn



*The
Metal Shingle & Siding Co., Limited
Preston, Ont.*

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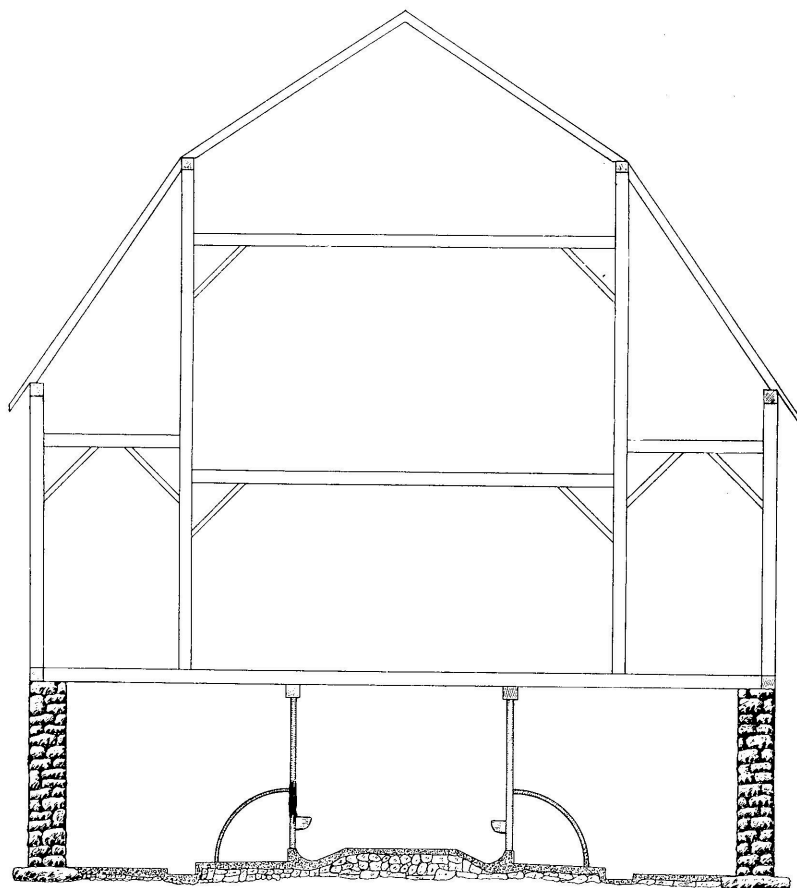
MODERN BARN



EARLY every framer has some special design which he thinks is just a little bit better than any other. To meet the demands of everyone, we have made a special study of barn framing as practised through the Provinces of Ontario and Quebec, and after examining many styles of timber as well as some plank frames, we are satisfied that we have the best design of each frame for the farmers of Canada.

We went into this study very deeply and collected much valuable data on the quantities of all sorts of material which enter into the construction of a modern barn of any kind; the prices at which it may be procured in different sections, and the cost and estimate of labor on farm building work. All of this has placed us in a position to give the farmer the most reliable information that it is possible for him to obtain on this important question.

***T**HE basement plans given in
this book can be but sug-
gestive and may be used for any
style frame.*



SECTION OF BARN

The Timber Frame Plan

THE TIMBER FRAME

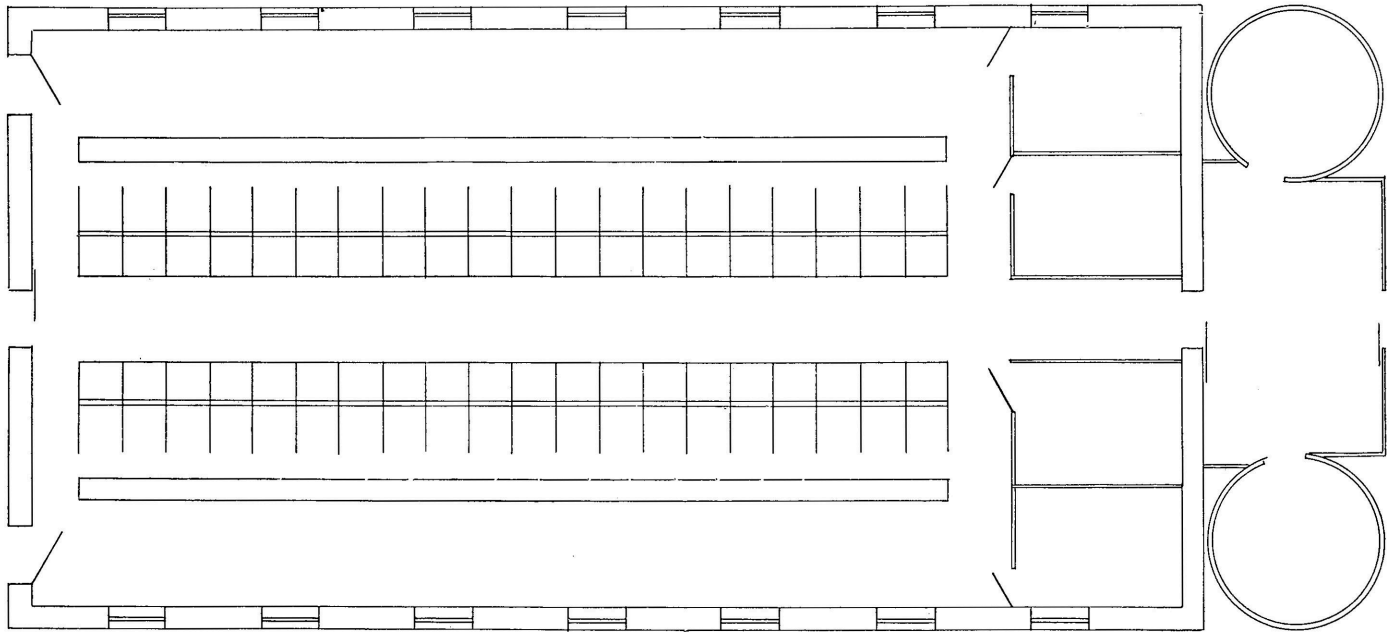
IN taking up the question of timber frames we are convinced that the style of frame shown in this book on page 5, is the best and cheapest to build and although, like all timber frames, it has its disadvantages, yet we believe in the frame shown here, we have overcome many of them. We can recommend it to the Canadian farmer, who decides in favor of this construction.

The weak points in all timber frames are the ends, which either bulge out from weight of the contents or inward from wind pressure. In this frame the long purlin posts are a great help in preventing this, and, at the same time, have two other valuable advantages over other brace frame constructions. The first of these is: the discarding of all long cross timbers, which formerly were used to carry short purlin posts set on top of them. The second is: that a long post frame can be raised far more speedily than a long beam frame, owing to the whole bent going up at one time; whereas, in the latter case, the purlin bents were raised on top of the beams after all the main bents were up and required as much time to erect as the main bents.

One reason why timber frames require so much heavy material is that the horizontal ties are buried under tons of contents, which causes an enormous strain on them, and often leads to failure, where the real use of the timber would never cause trouble. This is the greatest fault of these frames, where much material is used to preserve the safety of the member itself. This is why the cost comes high and why we have used a design with only short horizontal members so these could be considerably smaller than would otherwise be possible.

In order that the farmers may be able to decide which barn to build, it is necessary for us to give a close estimate of the cost of a barn built according to each of our selected designs. To simplify

THE TIMBER FRAME PLAN—*Continued.*



BASEMENT PLAN OF DAIRY BARN 40X80ft.

THE TIMBER FRAME—*Continued.*

the matter, we will use the same dimensions and basement in all our calculations. We have taken \$25.00 per M. as the average cost of timber in Canada. As the price of timber and labor is different in many sections of the country, we had to strike an average so our figures may not be exactly right. We think, however, they will not be more than \$50. out either way.

These measurements will be for a barn 40' x 80', with 16' side-walls standing on a 12" basement wall, 9' high, built of concrete.

This wall will take 146 bbls. cement, 63 yards sand and 106 yards gravel and the total cost will be \$669.48 for materials, labor, door frames, doors and windows.

The superstructure as shown in this book and of the dimensions given will require 6,268 sq. ft. long timber at \$30.00 per M. and 12,448 sq. ft. medium and short lengths at \$25.00 per M., making cost of \$499.16

Work framing 224.59

Nails, spikes, etc. 5.00

————— \$728.75

Covering sides and ends, 6,461 sq. ft. $\frac{7}{8}$ matched lumber at
\$30.00 per M. \$193.83

Labor 77.53

————— \$271.36

Roof, 5,248 sq. ft. boards at \$20.00 \$104.96

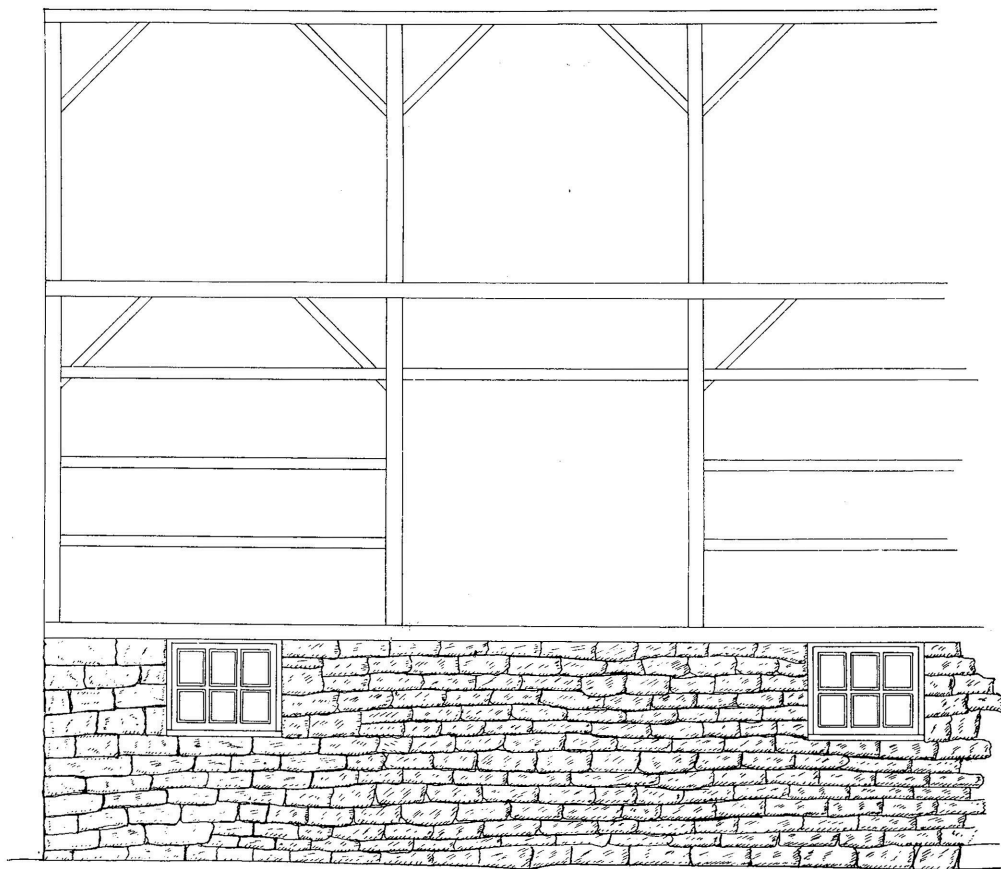
Labor 52.48

44 M. shingles at \$3.60 per M. 158.40

Labor laying same 44.00

————— \$359.84

THE TIMBER FRAME PLAN—*Continued.*



SIDE ELEVATION

THE TIMBER FRAME—*Continued.*

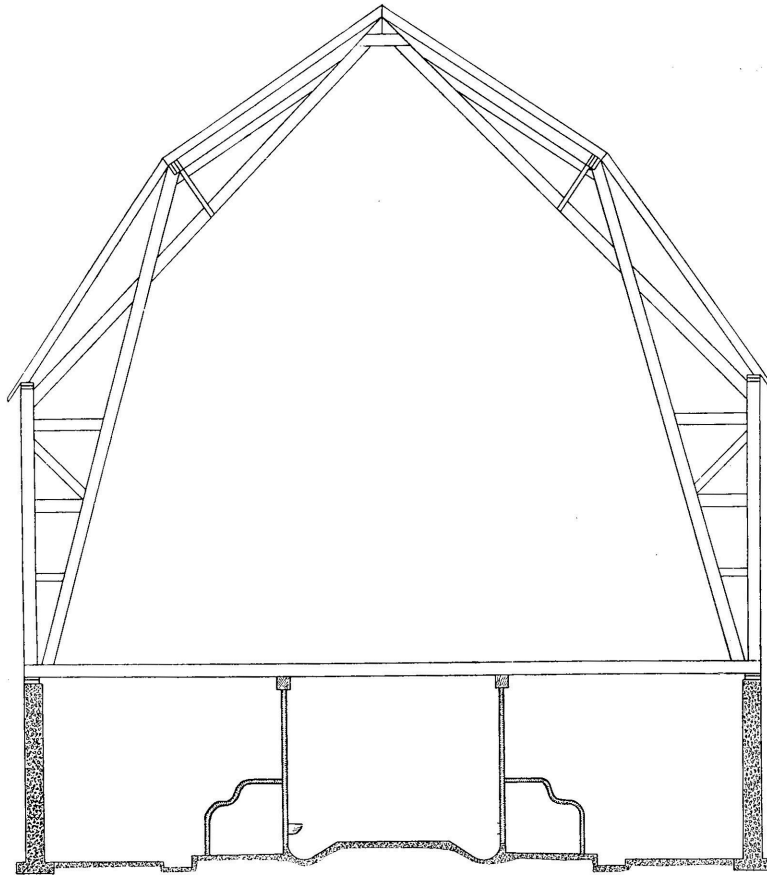
| | |
|---|----------------|
| Floor, 3,900 sq. ft. $\frac{7}{8}$ " matched lumber at \$30.00..... | \$117.00 |
| 1,120 sq. ft. 2" plank..... | 33.60 |
| Labor..... | 50.00 |
| | <hr/> \$200.60 |

| | |
|------------------------------------|----------------|
| Extras: | |
| Cornice..... | \$ 32.00 |
| Ridge boards..... | 3.19 |
| 2 Round end windows, complete..... | 10.00 |
| 3 Wooden cupolas..... | 55.89 |
| Hardware..... | 40.00 |
| | <hr/> \$141.08 |

| | |
|-----------------------|----------|
| Painting: | |
| 598 yards at 20c..... | \$119.60 |

Making a total cost of \$2,490.91 for the whole barn—built along lines as laid down above and this estimate is made carefully from figures and data that took us months to collect.

The long time it takes to frame such a building should be considered by the farmer, for he must board the men as well as pay the above amount and this question of board means a whole lot to the farmer's wife and daughters and the worry of having a crew of men in the hot weather is considerable and should not be forgotten.



SECTION OF BARN.

THE PLANK FRAME

THE scarcity of timber and the advance in wages has caused the timber frame to become expensive and in consequence the modern plank frame as shown on page 11 has become very popular and in many cases, especially in sparsely wooded sections, many of these frames are being erected.

The reason for this popularity is easy to see, for the structure is much like the modern steel bridge with its ribbon like members, which have replaced the ponderous wooden timbers of the old timber truss bridge.

Although the members of the plank frame are small, the stresses are all calculated and each member has some particular strain to overcome and the precise direction in which the stress comes

THE PLANK FRAME—*Continued.*

is carefully outlined and the member set so as to exert the greatest resistance. In fact, it means that the weights are all evenly distributed, besides all the members are so set as to be clear of loads from the settlement of the contents and so prevent sprung roofs, bulged walls and unsafe frames.

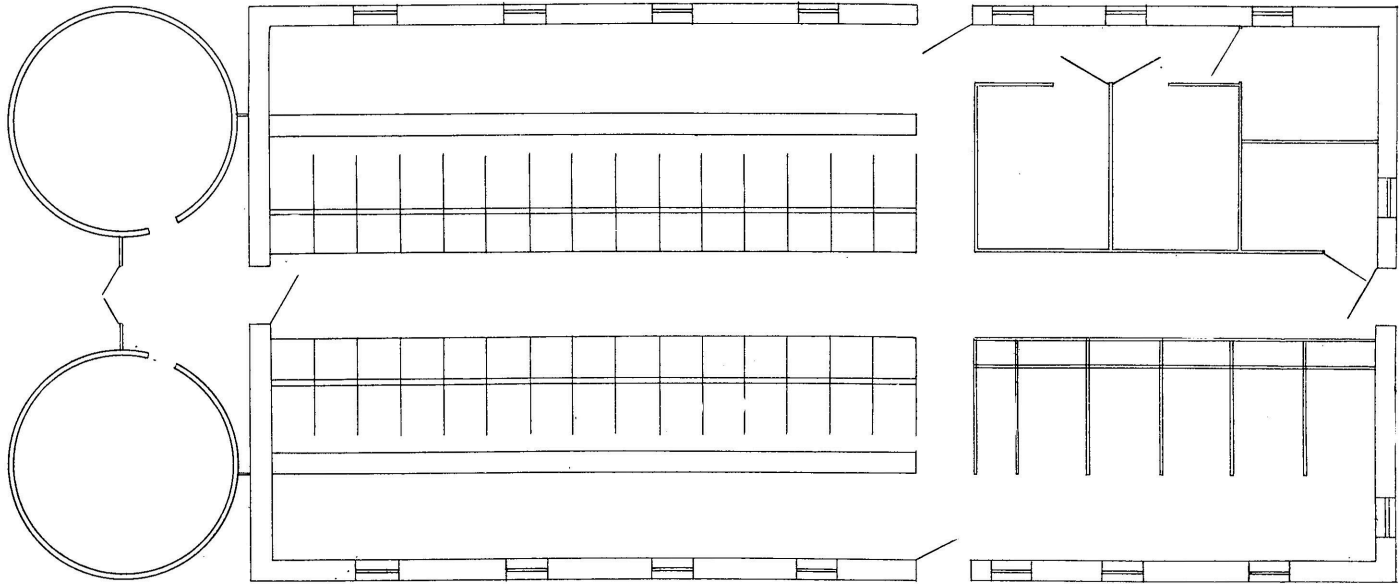
The interior has few timbers, none horizontal, and an entire open centre to allow of quickly storing the contents. It offers no obstruction to the complete and rapid settlement of the hay and grain, so the greatest amount can be stored in a mow with the least work and at the lowest cost.

The great saving in material is very apparent, but the still greater saving in labor erecting is not always given due consideration. As an instance of how quickly these may be built, we have been informed that expert builders of this frame can erect a barn frame all complete in four to five days with five men. In that event the saving must be very great, but in our estimate of time in this book we did not figure on experts, but used figures high enough to allow the employment of the ordinary barn builder. These frames are extremely easy to erect when you get our standard blue prints and lists of material which are free to all our customers.

Any up-to-date farmer should build his new barn by the methods as laid down by us, for at present we are the only people in Canada who are prepared to give advice on the proper construction of barn frames along truly modern lines. All others are mere copies from papers and only deal with the general construction, while our barn architect will undertake to show you how to erect any style of plank construction, if you only ask for the help.

Another thing of great advantage in the plank construction is the ease with which a splice can be made by simply placing a plank between the two outside members and spiking them securely together. Again, in hauling the material home, one man can handle most any piece and the small amount required, makes considerable less teaming and work all around.

THE PLANK FRAME PLAN—*Continued.*



BASMENT PLAN OF MODERN BARN.

THE PLANK FRAME—*Continued.*

But like the timber frame, it is best for us to give the cost of one of the same dimensions and allow the farmer to form an opinion of his own, but let us first state, that, although the amount of material for a plank frame is less than that for a timber frame, we do not want you to think the former is the weaker, for the exact opposite is the truth. This is owing to the many long braces and the joints being bolted and spiked, whereas, in a timber frame the joints are only pinned together and often work loose and allow the frame to sag out of shape, like many barns we see.

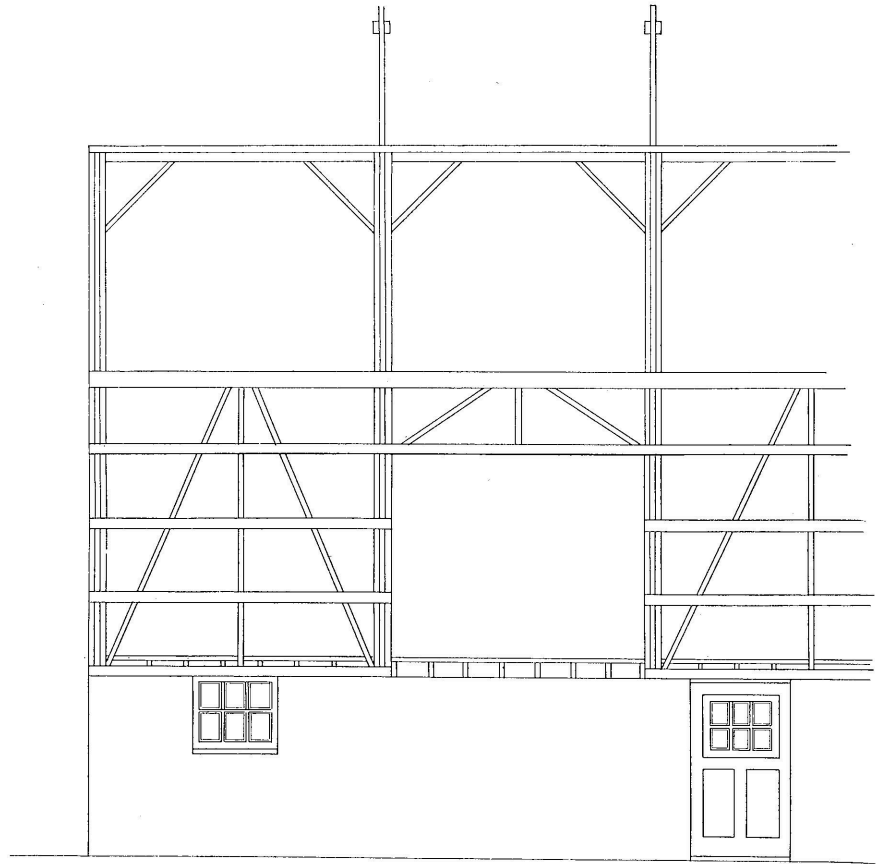
A great point in favor of the lighter frame is that all weights of the frame itself and snow or wind loads are transferred right to the basement walls and not carried by numerous small posts, set on doubtful footings in the basement. The elevation of a plank frame bent on page 11 shows how the long inclined purlin posts do this and anyone can see how strong a truss this makes.

The following is an estimate for one of these frames, and the data from which it is made was collected from the greatest builder and authority on this construction in Canada, and we would again remind our customers that we have much valuable matter concerning this work that we will not be able to present in this book.

ORDINARY PLANK FRAME 40' X 80'

| | | |
|--|--------|----------|
| Basement..... | | \$669.48 |
| Frame, 13,868 sq. ft. short timber at \$25.00 per M..... | | |
| 1,200 sq. ft. long timber at \$30.00 per M..... | | \$382.70 |
| Labor..... | 150.68 | |
| Nails, spikes, etc..... | 10.30 | |
| | ————— | \$543.68 |

THE PLANK FRAME PLAN—*Continued.*



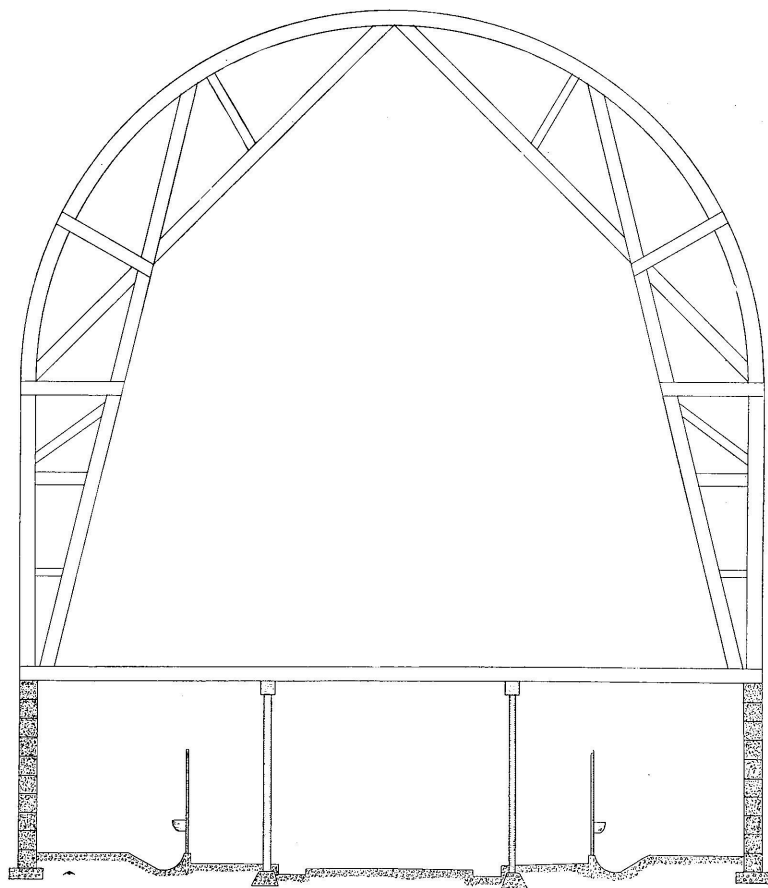
SIDE OF BARN.

THE PLANK FRAME—*Continued.*

| | | |
|--|--------|------------|
| Walls, same as for timber frame..... | | \$271.36 |
| Roof, Sheathing with lumber..... | 157.44 | |
| 52½ sqrs. Preston Safe Lock Shingles at \$5..... | 262.50 | |
| 82 ft. Acorn ridge at 7c..... | 5.74 | |
| Labor..... | 26.25 | |
| | | <hr/> |
| | | 451.93 |
| Floor..... | | 200.80 |
| Cornice..... | | |
| 3 Acorn Ventilators at \$5.55 each..... | | |
| 2 Round Gable windows..... | | 98.00 |
| Hardware..... | | 40.00 |
| Painting..... | | 119.60 |
| | | <hr/> |
| | | \$2,394.85 |

These figures show a saving of \$90.91, besides getting a better building in a shorter time and with fireproof, lightning proof and storm proof roof and a barn which will hold more contents and allow of the most rapid filling.

The cash saving of \$90.91 and the saving of board and trouble in lodging a gang of carpenters, is worth considering. Take the cash and put it down in your jeans and see your wife and daughters pleasure when the time required to build is lowered almost one-half and your own satisfaction in having the job done in time for your early hay crop. There is little use of us going on telling of the many advantages for all wide-awake farmers will seize this, their first opportunity to get real authentic information on modern barn building, for we are ready to answer any questions and are not reproducing cuts from farm papers or drawings prepared by advertising agencies, but true originals made from scaled working drawings, which are used by the builder of these structures.



SECTION OF CIRCLE ROOF BARN

*The
Curved
Roof
Plan*

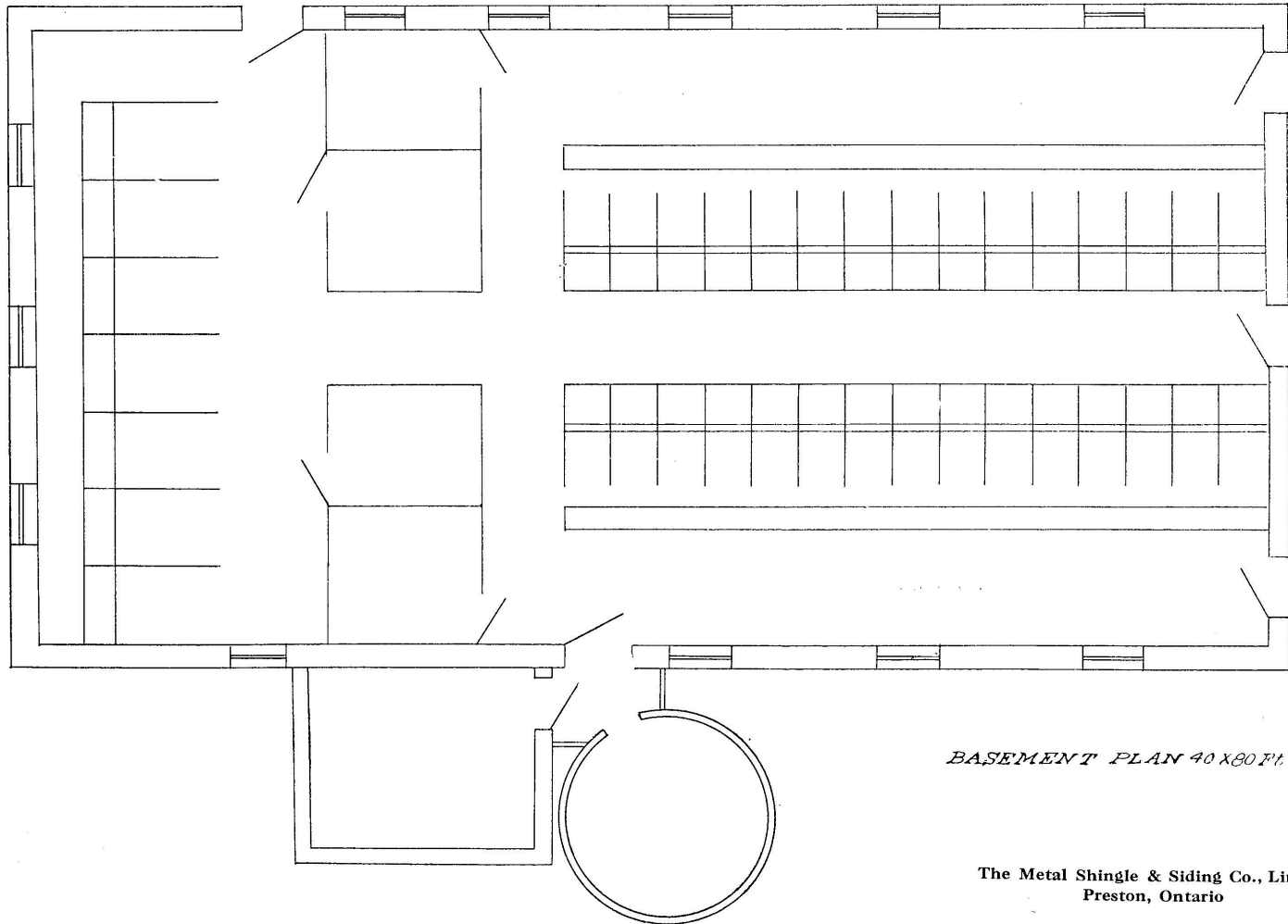
THE CURVED ROOF

IN order that we may meet all demands for right up-to-the-minute barns we also have presented an elevation of a bent of a round roofed barn on page 17, as quite a number seem to like this sort of structure. The frame up to the main plate is exactly like any other plank frame, but from this up there are no rafters, as these are replaced by purlins of 2" x 6" or 2" x 8", as the spans may demand, these being carried at each end on the circular rib and then covered by curved corrugated iron sheets nailed to these purlins.

This is a cheap construction and also quite pleasing in appearance, besides being very strong from its circular form and somewhat resembles the construction employed in building large structures like rinks, drill-halls, and train sheds. We are the first to adopt this idea in barn construction, as all others have used the old costly way of building many separate small curved rafters, which were set 3' to 4' apart and then covered with 1" lumber.

These required a great amount of labor in shaping them and also in erecting and seldom gave satisfaction from the fact that although strong enough to carry the load collectively, each one was too weak to keep the required shape all the way around with the consequent uneven roof and open joints in the iron from different curves caused by this variation.

THE CURVED ROOF PLAN—*Continued.*



BASMENT PLAN 40 x 80 Ft.

The Metal Shingle & Siding Co., Limited
Preston, Ontario

THE CURVED ROOF—*Continued.*

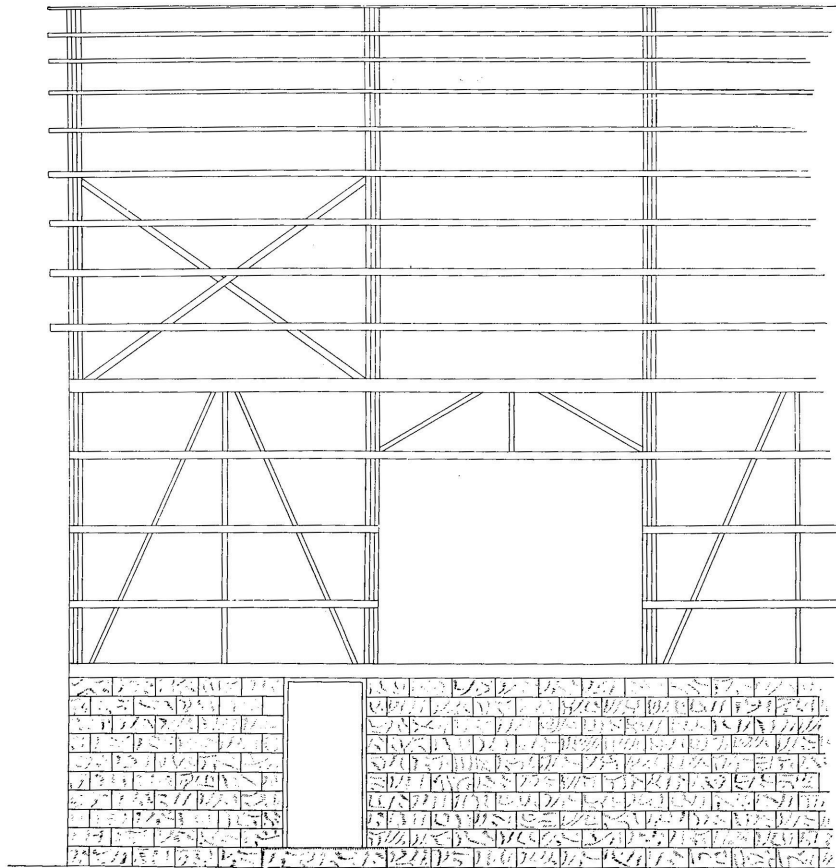
In our improved construction we preferred to use a larger and stiffer rib at certain points and truss it as shown to insure against any change in form and besides this, we have a roof that is very strong and is safely tied to the lower part of the frame.

One advantage a circle roof has over all others is the continuous tight joints right over the ridge and on this account can be quickly put on and cost less than where hip flashing and ridge coverings are required, and in our new construction the whole rib can be raised with the bent so the erection is quickly completed at a very low cost and in order to help our friends decide for or against this construction we have prepared an estimate for a circle roof barn of the same size as previously estimated—40' x 80' x 16', built on a concrete basement.

ESTIMATE OF CIRCLE ROOF BARN 40' X 80'

| | |
|---|------------|
| Basement..... | \$669.48 |
| Frame complete, erected..... | 643.65 |
| Wall covering, matched lumber..... | 271.36 |
| Floor covering, matched lumber..... | 200.80 |
| Acorn Quality Corrugated iron roof with roof lights, barn ventilators, etc..... | 405.32 |
| Hardware..... | 40.00 |
| Painting Walls..... | 119.60 |
| | <hr/> |
| | \$2,350.21 |

THE CURVED ROOF PLAN—*Continued.*

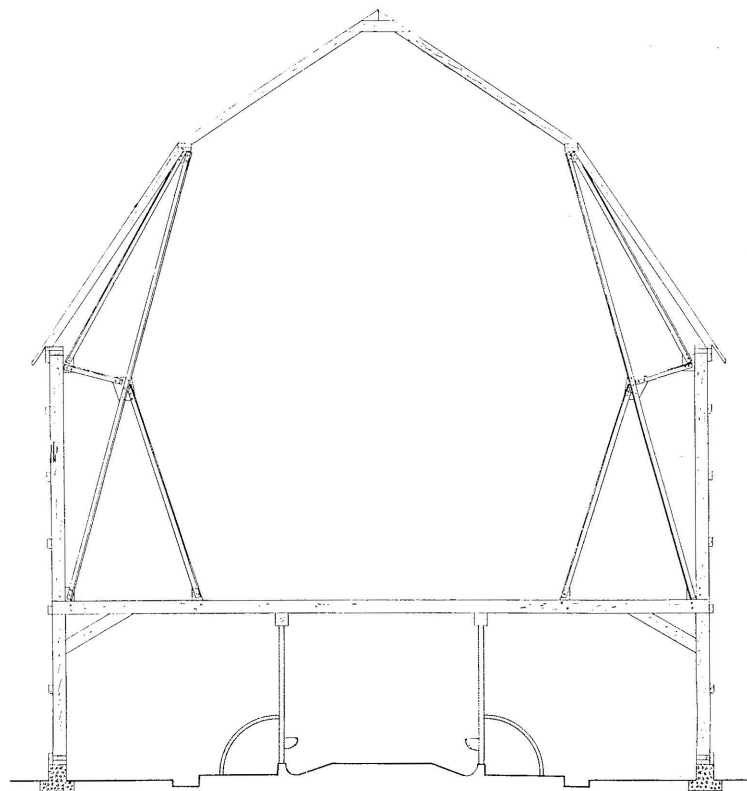


SIDE OF CIRCLE ROOF BARN

THE CURVED ROOF—*Continued.*

This price makes it apparent that a circle roof can be built for less money than a plank frame, but this is not due so much to the construction of the frame as to the manner of covering the roof. We use 2" x 6" strips set on 24" centres and on these, curved sheets are laid. At the same time our method of building this frame makes this possible, as the old way of having a larger number of curved ribs made the cost considerably higher than the ordinary plank construction, so you can see that we are continually working with the object of lowering the cost of barn construction. We are pleased to be able to lay information before our friends and customers which we feel will assist them in building better barns for less money.





SECTION OF ACORN FRAME PAT. APPLD FOR.

Interior Braces of Steel

The Acorn Ideal Barn Plan

A combination of
Steel and Wood

Patent applied for in Canada and United States.

THE ACORN IDEAL BARN

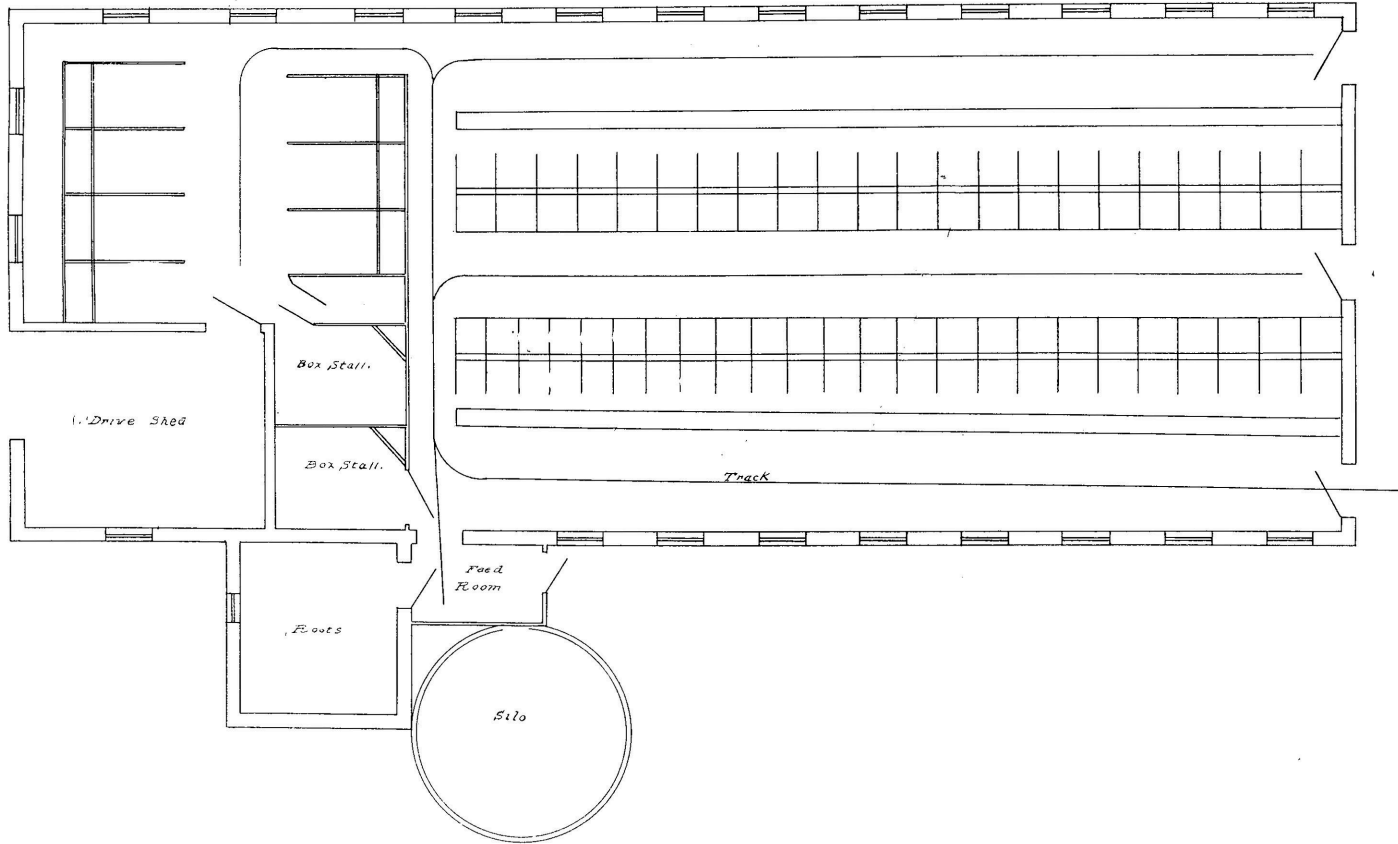
NOT content with these ordinary barn frames, all of which have some valuable features, we began a series of experiments along somewhat different lines and after much study, testing and designing, we have succeeded in perfecting a barn frame that is without a doubt the peer of all.

Nobody was in a better position to do this work than ourselves, for in our work, gleaned information to enable us to prepare this book, we heard many opinions on barn framing and saw many different structures. After taking notes and data concerning all, we began a thorough study of the barn building question, with the result that our Acorn Frame was invented, and in it you will find embodied all the good points of the rest along with many entirely new and valuable features never before used.

The objection of the interior members being in the way is entirely overcome by the slender but rigid steel supports, ties and braces which, to overcome the greatest possible strains, are arranged as carefully as the members of a steel structure many stories high. You are assured of its safety from the fact that every member was carefully designed by a structural engineer before we began to manufacture or applied for a patent on these trusses.

The placing of this frame on the market is the commencement of a new period in barn construction and enables the farmer to get the important members of his frame all assembled ready to erect.

THE ACORN IDEAL BARN PLAN—*Continued.*



THE ACORN IDEAL BARN—*Continued.*

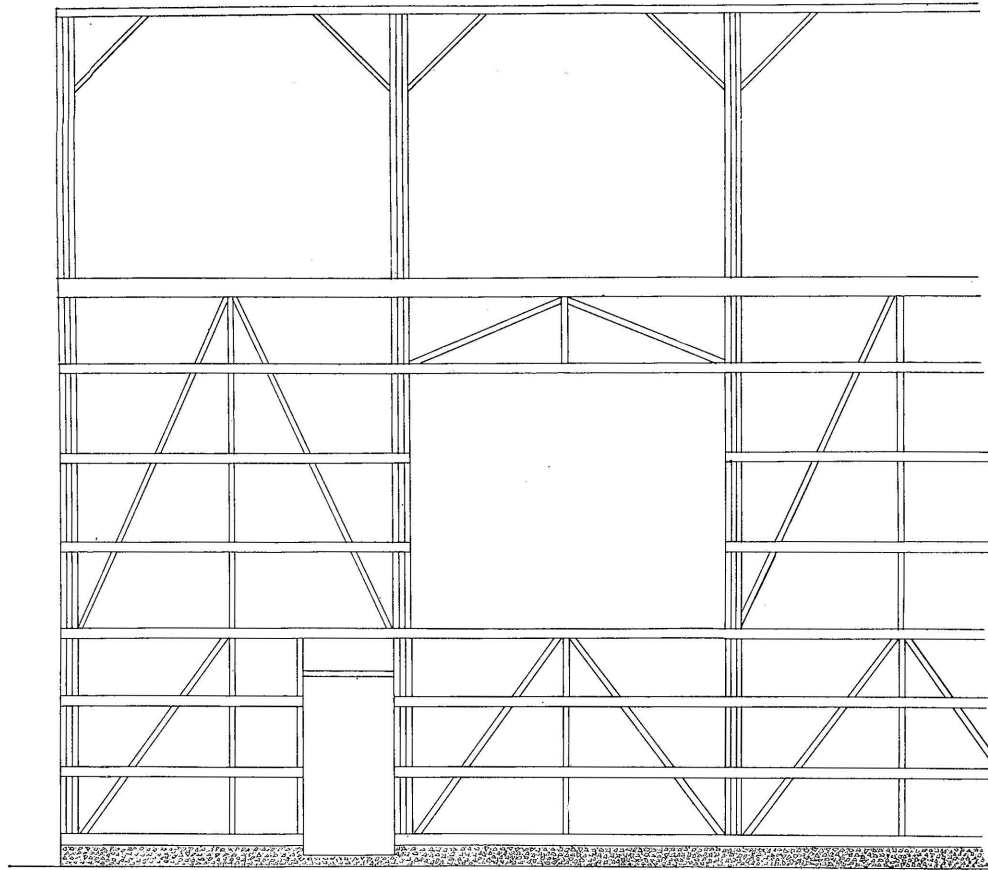
With our list of materials which we furnish, you can tell to a cent just what your building will cost. There will be no extras for lumber here and there. Our lists are complete in every way and your local builder will be in a position to quote you a full contract price without any trouble.

Our local builder agent will co-operate with you in reaching a decision concerning the size best suited to your needs and will supply you with plans and other data concerning stable lay-out, lighting, and ventilators and as we co-operate with him in every way, you may rest assured of getting the best possible information bearing on any sort of construction.

We can honestly say that the Acorn Frame which we describe here is far superior to any other frame used either here or in the United States. Some of the most noticeable advantages are the use of steel in place of wood for all the important members, all of which are cut, punched, and assembled in our works here, and go out ready to set in place. The clear space inside which allows of quicker storing of grains. The greater grain capacity, double strength braces, roof and sides weather-proof, decay-proof, fire and lightning proof. Never need paint or repairs and last as long as the cement foundation.

That is the sort of proposition we have for you in our Acorn Frame, which never sags, springs, or requires further attention after it goes up. In fact, it is there to stay and the only way you could destroy it, would be by cutting the rivets out with a steel cold chisel. Think of your oldest steel bridge, how long it has been there, how you never think of repairing it, how you have almost forgotten

THE ACORN IDEAL BARN PLAN—*Continued.*



SIDE OF ACORN FRAME

THE ACORN IDEAL BARN—*Continued.*

about it. It is the nearest like our Acorn Barn of anything we can think of and although the plank frame is a great advancement over the timber frame, the Acorn Frame is a still greater improvement on the plank frame.

Buy a scientifically designed barn as cheap as the old kind and then put your money into the bank instead of into repairs.

The following estimate gives you an idea of the cost of one of these new barns and if you need or think of any new buildings, alterations or improvements, get in touch with us at once. It doesn't cost anything and will mean money for you, protection for your crops, and comfort for your stock and satisfaction for all concerned.

ESTIMATE OF ACORN FRAME BARN 40' X 80'

| | |
|--|------------|
| Basement..... | \$669.48 |
| Acorn Frame and covering complete..... | 1,426.98 |
| Floors..... | 200.80 |
| Hardware..... | 40.00 |
| | <hr/> |
| | \$2,337.26 |

***F**OR the convenience of those who
want to see this Ideal Barn we
have erected one on our property here
in Preston and will be only too glad
to have the farmers of Canada call
on us and examine this building, and
get all information first hand.*