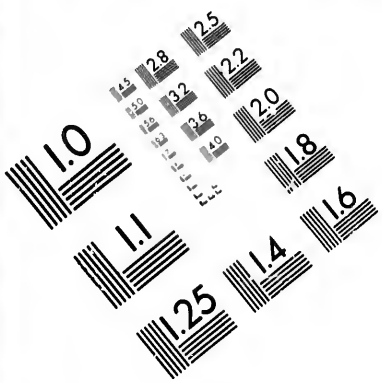

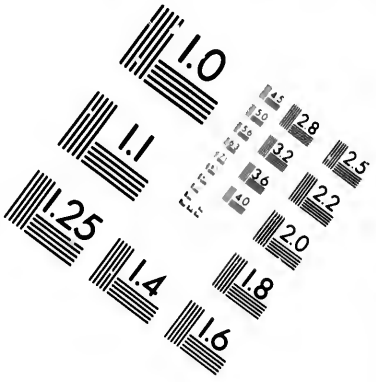

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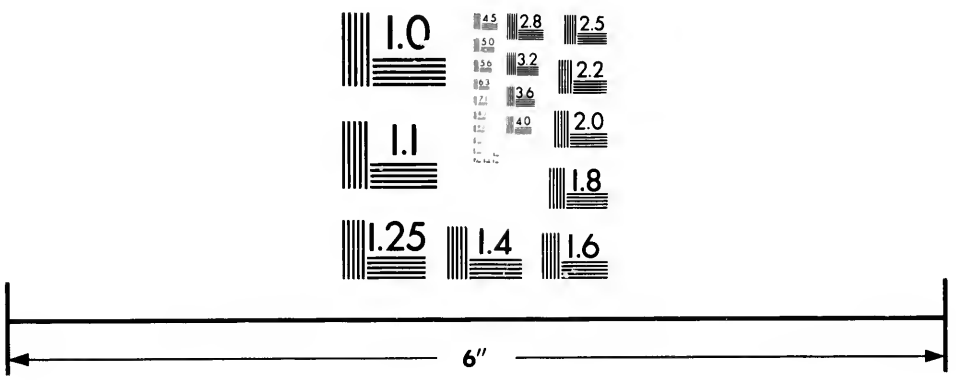

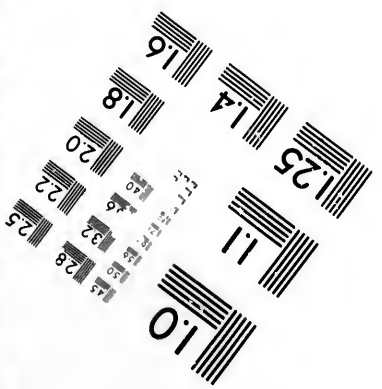

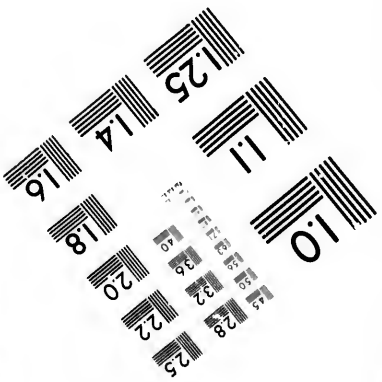

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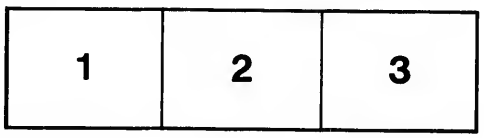

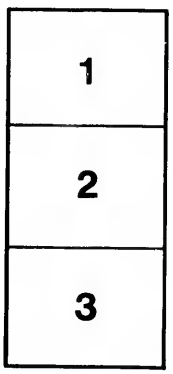

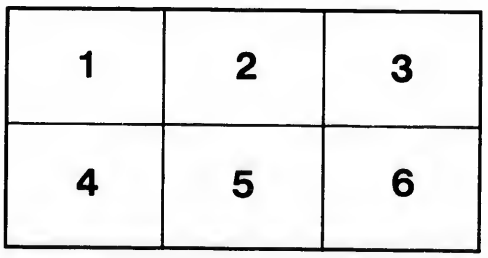

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THE LOWE FARM

Hydraulic-Colonization Syndicate

The Lowe Farm, comprising 16¼ sections of land, of one square mile or 640 acres each, is situate on the Brandon Branch of the Northern Pacific Railway, in Manitoba, about 10 miles west of Morris, on the Red River. It is a Railway Station, named "Lowe Farm." This station, on the north front of the farm, is nearly midway between its eastern and western boundaries. It has a frontage of six miles on the railway, with the station in the middle.

The land consists of a very rich, black, deep humus, and rests on a deep retentive clay sub-soil. It is in fact the very best of, having been specially selected in, the very heart of the almost world-renowned "Red River Valley."

This land, which is practically inexhaustible, yields, when cultivated, the largest crops in the Province of Manitoba. It is not surpassed in richness on the continent of America. It produces in the natural prairie state the richest herbage found in Manitoba; a condition highly favourable for obtaining the largest crops, with the minimum of labour, of prairie hay, for home use, or baling for export to Winnipeg.

Its situation in relation to railway lines and the centres of commerce, as well in Manitoba as in the older Provinces of the Dominion and the United States, is very favourable, as may be seen by a glance at the accompanying sketch map.

The water supply of these rich lands and favourable position, is deficient; and it is for the purpose of supplying this prime necessity, on an effective scale, and permanently, that it is proposed to form a Syndicate.

The opinion of an eminent Hydraulic Engineer, Mr. T. C. Keefer, has been obtained as to the feasibility of the project, and the comparatively moderate cost with which it may be carried out.

The water main would be a straight line from the Red River, at a depth of over seven feet from the surface (such being the depth at which the pipes are laid for railway water supply at Morris and elsewhere in Manitoba). This main would supply all farms to a width of two miles on each side, or four miles in all. These lateral supplies for individual farmers would be regulated by automatic shut-off stop-cocks, in receiving cisterns, about ten feet square, excavated in the blue clay. Each cistern to be supplied with a pump.

The water of the Red River runs deeply below the level of the prairie, in the course which it has worked out for itself. From the banks of the river the rise is very gradual, being about 20 feet in 10 miles, to the Lowe Farm.

These conditions are very favourable for the proposed hydraulic construction. And it may be added, the river bank lot on the east side of the base line, formerly used as a steamboat landing wharf, and situated in the best place for the building and pumping machinery on the bank of the river, is in the possession of the proprietor of the Lowe Farm, and has exceptional value for the purpose desired.

The estimated approximate cost of taking a water main and connections, over the area, above mentioned, from the Red River as far as the Lowe Farm, from informations to the present received, is about $60,000. But this estimate might be altered with the character of the work. The expense of the considerable item of excavation may be very much modified by the use of the most approved methods of ditching for pipe laying in the conditions of prairie soil.

It is to be observed that investments for hydraulic supplies, for promoting colonization, in large tracts of country, which could not otherwise be settled, in the neighbouring United States, are no new feature. On the contrary, very

large amounts of capital have been invested in such works with results in the highest degree advantageous to all concerned. It may be added, it has been found, that success and profits have always attended, when the conditions in relation to engineering and soil were favourable.

The essential condition of financial security of the present project is the fact of the exceptional value and favourable position of the lands affected by the proposed works, and equally favourable engineering conditions, coupled with the fact of the relatively very low prices at which lands can, at present, in the absence of water supply, be obtained. But with an efficient and permanent water supply, they would immediately go up to very high prices; and this particularly in the face of a generally rising market, in view of the rapidly augmenting population and wealth of the Province of Manitoba.

It is proposed to purchase by the Syndicate, in as far as may be found convenient, two sections of land, on each side of the base line, and railway, which run side by side, from the town of Morris, westward to the Lowe Farm, about ten miles; or further, if considered advisable, that is to say, two miles on each side, or an extent of width of land of four miles or four sections altogether.

The extent of land thus to be acquired in a distance of ten miles of road to the Lowe Farm is 25,600 acres, in addition to that of the Farm.

In relation to this consideration of extent of purchase of land there is the fact that the exclusive possession, of the essential condition of water supply by the Syndicate, would give it absolute control over all the lands within the reach of such supply, and also control of those lands further west as far as Myrtle, for the reason that the amount of capital which would be required to bring another main from the Red River would be out of the reach of individual proprietors.

If the Syndicate extend its operations only to the Lowe Farm, with a main of sufficient capacity, to continue the

supply as far as Myrtle, it would have monopoly, as respects the distance beyond, to the extent of the amount of capital necessary to construct its main to that point.

Assuming the estimated cost to be $60,000 for the water supply for two tiers of sections on each side of the railway and base line, for a length of ten sections, which is ten miles, we have a total of 25,600 acres to be supplied, or an added capital value of $2 34 per acre. This refers to the purchased lands to reach the Lowe Farm. The amount per acre would be very much reduced by taking in the 16¼ sections of the Farm. Including these the added capital value would be only $1.66 per acre. Such an addition is extremely moderate for procuring an essential condition of so much potentiality as to convert lands which are at present little sought after, into lands the most valuable and most desirable for farming purposes in the Province of Manitoba.

It is proposed to place the whole of the Lowe Farm in the stock of the Syndicate, at the present price of the surrounding lands, with the exception of section 31, township 4, range 2, 1 west.

This section, 31, contain sthe buildings, consisting of house, barns, granary, stables, workshops, etc., of the Lowe Farm, the railway station, and the railway section house; and it is on this section that it is proposed to construct a receiving reservoir and pumping works, for any desired extension of the water main. Grain elevators or stores will be required to be constructed on this section; together with a schoolhouse, church, blacksmith's shop, store and post-office, inn, etc.—in short, this section is a town site. The section containing these conditions, has some additional value, over the ordinary farming land.

It is to be observed that the most distant possible point from a railway station (soon undoubtedly to be also supplied with post-office and telegraph stations) is five miles; that is, from the tier of sections on each side of the railway; and the second tier would be only one mile further back. The facilities, therefore, for all farmers on these tiers for sending

produce to market and getting back all sorts of supplies, are the most favourable possible. In estimating an advantage of this kind it must be borne in mind that when a farmer has to team his grain and supplies for a distance as far as ten miles, the cost is equal to a value of 5 cents for a bushel of wheat, and no farmer would himself contract to do such teaming for less. If then we estimate the product of an acre at 30 bushels (but on the Lowe Farm much more has been obtained), proximity to a railway station is worth an annual rental of $1.50 an acre more than similar land only ten miles distant from a station, or in other words one-tenth of a capital value of $15 an acre more for the product of one acre teamed to market, to say nothing of a similar economy in teaming in all kinds of supplies.

It is believed that the foregoing combination of conditions constitute an unusual opportunity for very favourable and secure investment, resting on undoubted rising values of land.

To place the estimate of increase of values at its lowest terms, which would arise from the construction of the water works proposed, it may be stated that the lands which may now be acquired at moderate prices, by the Syndicate from the town of Morris to the Lowe Farm, and also ten miles further west if desired, would, the moment a reliable supply of water was secured, rise to the price of $20 per acre at the least. An offer is already made for farming land, forming part of the Lowe Farm, of $20 per acre, on the condition of water supply being afforded; and as high as $50 per acre has been offered for part of section 31, above alluded to, as the town site section, on the condition of such supply.

At the present time farming lands in themselves of less intrinsic value at Portage la Prairie, in Manitoba—but where there is the favourable condition of water everywhere obtainable in a gravel sub-soil, the railway facilities being the same, —sell at $50 an acre and upwards; and during the past year inferior lands in many respects have changed hands on

the Red River at $20 an acre and been held for more, owing to the fact of proximity to water.

Prairie farming land in the older settled parts of the State of Minnesota of inferior intrinsic value sells at $40 and $50 per acre, and in the State of Illinois at very much higher figures. With the progress of settlement and accumulation of wealth in Manitoba, which are sure to come, and with the special advantages of richness of soil, favourable railway facilities, and the monopoly which the proposed hydraulic works would give, the prices of land would rapidly rise in sympathy.

The Syndicate, in addition to being able to offer the prime necessity of a permanent water supply to the settlers on the land it would acquire, could, if thought advisable, offer the inducement to contract to do ploughing for settlers by the Stephenson Steam Plough at a price of $1 per acre, which is about one-third of the ordinary price in Manitoba for such work.

The Syndicate would also be in a position to furnish at moderate cost to each settler, a straw burning stove (of which particulars are stated in an Appendix herewith) which would enable him to obtain all his fuel, both for warming and cooking, from his surplus or waste straw, or from the weeds and herbage of the prairie. He would thus gain an advantage also of prime importance, to settlers on the prairie. One of these stoves has been used with great satisfaction for a period of five years on the Lowe Farm for warming, cooking and baking, and condensing water for farm use, no other fuel of any kind whatever having been used.

The papers in the accompanying Appendix show actual operations which have been carried on, in connection with the Lowe Farm, but which have been largely hindered owing to the want of water supply.

Any or all of them might be taken up by the Syndicate, if thought advisable.

JOHN LOWE.

OTTAWA, July, 1891.

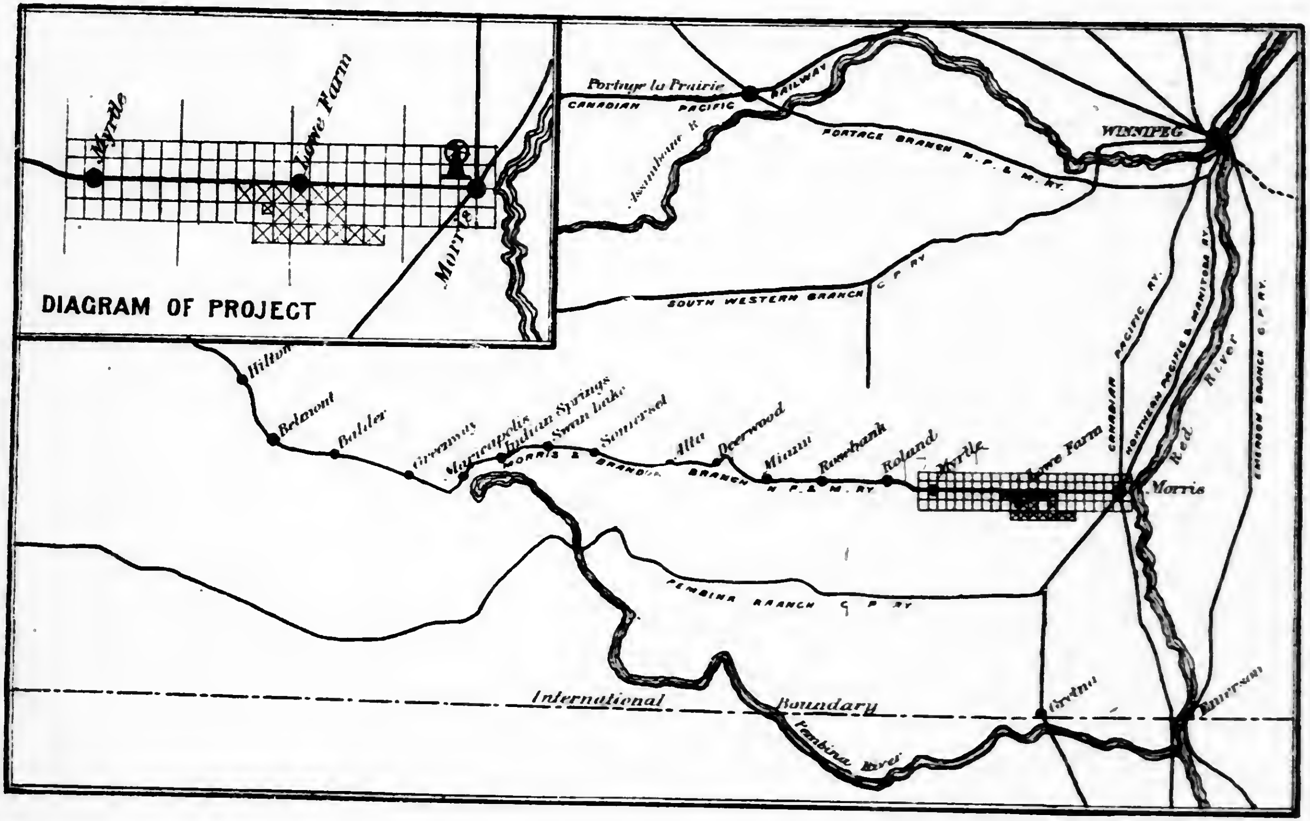

DIAGRAM OF PROJECT

APPENDIX.

The papers in this Appendix are intended to show the industries connected with the Lowe Farm, and the facilities and attractions which they may afford to settlers under the Hydraulic Syndicate project. Any or all of these industries might be connected with the Syndicate as might from time to time be thought advisable, in addition to its operations with land and water supply; or, as it might be thought advisable, to increase the sphere of its activity.

All the statements made are based on facts, which have been furnished by experience, and which can be demonstrated whenever desired.

STATEMENT OF COST OF GROWING WHEAT BY STEAM CULTURE.

Statement of cost to the Farm, in actual outlay, per bushel of wheat, based on expenditure per acre, at the present rates of wages and materials, in Manitoba, not including interest of investment nor cost of management:—

By Steam Plough—	Per Acre.
Ploughing, one man, two boys, with board	.17
One man and team for water, with board	.13
Oil for engine and packing	.02
One man and team with mower, cutting grass, for fuel of engine	.13
Harrowing by team	.10
Seeding by press drill	.15
Five pecks, or 1¼ bushels, wheat for seed	$1.25
Harvesting, cutting grain	.13
" binding cord, 2½ lbs	.38
" stooking	.10
" threshing from stook	.30
(If the grain were stacked, the stacking would cost $1 per acre, and the threshing from stack more than double above quotation for threshing.)	
Teaming grain one mile	.10
	$2.96
Add for unforeseen expenses, wet days, etc	.75
Total	$3.71

The ordinary herbage of the prairie is generally sufficient for the fuel of the engine ; but after the first year the surplus straw would be more than sufficient for all fuel.

Wheat at 30 bushels per acre thus raised would cost 12½ cents per bushel.

The product of wheat is put down in above statement at 30 bushels an acre ; but yields of 35 and 40 bushels per acre have been obtained at the Lowe Farm and other places in the vicinity.

The ordinary cost of breaking an acre of the prairie is $2.50, by horse or oxen power.

The ordinary cost of raising an acre of wheat in Manitoba by the methods commonly employed is $9.

The ordinary cost of raising an acre of wheat in Ontario, as officially stated by the Bureau of Agricultural Statistics, is $19.43 for fall wheat, and $15.50 for spring wheat.

If barley were cultivated instead of wheat, by the Steam Plough and Traction Thresher, with the Gathering Attachment, the cost of binding cord, stooking, and two men's wages would be saved, taking from the above figure of $3.71 per acre, 61 cents, making the cost $3.10 per acre.

Counting the product of barley at 40 bushels to the acre, the cost would be 7¾ cents per bushel.

Larger yields of barley have been obtained at the Lowe Farm. Fifty bushels and over have been grown.

In oats 86 bushels per acre have been obtained.

It is believed that with careful cultivation a quality of barley may be grown in Manitoba suitable for the English market, with results more profitable than the growing of wheat.

(Signed) JOHN LOWE,

WM. STEPHENSON.

OTTAWA, April 17th, 1891.

STRAW AND PRAIRIE HERBAGE FOR FUEL.

One of the greatest difficulties and expenses for the settler on the prairie is to procure fuel for cooking and warming in the cold winters which prevail in Manitoba. In the early years of the establishment of the Lowe Farm, under the management of Mr. Asa Westover, the cost of procuring fuel for warming and cooking was found to be not only very onerous but almost ruinous. Mr. Wm. Stephenson, the present Manager, found such to be the fact during the first year of his occupation under his arrangement with Mr. Lowe. He, therefore, applied himself to overcoming this difficulty by the construction of a stove, suitable for burning straw and prairie herbage. He saw that if every farmer could grow or use his own fuel, or, in other words, use his surplus straw and the ordinary herbage of the prairie for that purpose, one of the very greatest, —in fact, the greatest—difficulties of prairie life would be solved. He accordingly invented a straw-burning stove which has been patented.

This stove has been used continuously on the Lowe Farm for a period of five years and not one stick of wood nor one pound of coal has been used during the whole of that time for fuel for household purposes. It has been found perfectly satisfactory for both cooking and baking and warming, and for converting many tons of snow into water both for household uses and supplying the animals on the Farm.

The straw for this stove can be used either in the form of bales, or loose in the form in which it comes from the threshing machine. It has been used in the loose form at the Lowe Farm. It is thrown from the waggon into an adjoining shed, constructed of boards outside the house. The stove is placed near the wall, fitted with an iron entrance through which the loose straw is thrust into the stove by means of an ordinary pitchfork. An automatic acting iron door falls as soon as the straw is put into the stove. All danger of fire is thus obviated.

In this way no litter of straw is made in the kitchen or the dwelling-room warmed, and the stove at the Lowe Farm is so constructed that the ashes when shaken fall into an iron receiver in the cellar and there retain a considerable heat under the floor, which has a warming influence.

The straw used for fuel might, if thought desirable, be pressed into bales, which would burn slowly away, and retain heat for several hours, by regulation of the draught, thus warming the house at night.

The stove in use on the Lowe Farm is constructed to serve both for the purpose of a heater and for cooking and baking and for condensing water,—hot water being supplied by a tap. It can be apportioned to the requirements of the very finest cooking, either in boiling, frying, roasting meat or baking any kind of pastry, from small articles such as pie, tart, or biscuit to twelve loaves of bread at once in the oven.

The heat from this stove, even in very cold weather, is pleasant and satisfying for warming purposes. This fire can be at all times immediately lit by the application of a match and it at once burns up. The stove can, with equal facility, be used as a furnace, adapted to the circulation of hot water in pipes or the distribution of heated air.

The draught can be regulated by a damper to give the heat required. The attendance, even when burning loose straw, is about the same as that required by a common wood stove burning soft wood.

A stranger entering the kitchen or dwelling-room warmed by one of these stoves would not perceive from appearance what kind of fuel was used. He would simply note the genial warmth.

Weight for weight the amount of heat in a ton weight of straw is about the same as that in a ton weight of wood. The straw is very easily drawn from the stack to the spot where it is required to be burnt. The flame emitted being a light blue, something similar to that from anthracite coal, but without the unpleasant smell which often arises from the escape of gas from the latter.

With the use of this stove on the Lowe Farm and ample supplies of straw, Mr. Stephenson would not draw either wood or coal from Morris, if offered to him gratis; or undertake to saw and split wood for fuel, if teamed to the farm, in preference to using straw.

HAY AND STRAW SUPPLY AND PRESSING INDUSTRY.

The prairie herbage suitable for hay for some miles around the Lowe Farm is the richest in all Manitoba. The supply at present is almost illimitable and may be for some time to come.

The demand in Winnipeg for hay and straw is always very large and apparently increasing with the rapid increase of the city. Supplies are not found to come in as rapidly as desired.

Mr. Bawlf, a dealer in grain and cattle feed at Winnipeg, made an offer to Mr. Stephenson last winter to take 200 tons of straw at $7 a ton pressed. This order, however, Mr. Stephenson was not able to fill. Mr. Bawlf said that straw for bedding, owing to its scarcity, is almost as valuable as hay in Winnipeg.

With the machinery and appliances at present on the Lowe Farm, and at the present rates of wages, hay can be put up very cheaply. The following is a summary for cost, at the prices paid on the Farm, of 15 tons—

One man and two horses mowing, per day	$2.07
One boy and one horse raking, one day	.89
Five men and five horses stacking, half day	3.18
Grease and oil for machine	.11
	$6.25
Add for unforeseen expenses	1.40
	$7.65

Or about 51 cts. per ton for hay put up in stacks.

With a hay-loading machine, one and a half days' wages and board could be saved, amounting to $1.61, on stacking 15 tons—reducing the cost per ton below 50 cts.

There is at present on the Farm the iron work of a Dederick Straw Pressing Machine, the wood work of which was destroyed by fire. It would cost about $200 to replace the wood work of this machine and such castings as might be necessary. With this machine straw and hay can be pressed into bales for the Winnipeg market at times of the year when no other kind of work can be done, and always loaded directly on cars at the Lowe Farm Station. As large a trade may be developed in pressed hay and straw as in the growing of wheat on a large scale, at prices which cannot fail to be very remunerative, in view of the very small cost of stacking on the specifications above stated.

This work might, in fact, make a very important winter industry of great advantage to all concerned, as well in the supply of needed necessaries as in the profit of those who furnished.

Bales of straw or hay can be built into walls, being set in a puddle of clear blue clay, the same way as bricks are set in mortar. The strongest man could not separate two bales of straw joined in this manner after one day's adhesion. Walls built in this way are durable, frost-proof, fire-proof and rat-proof. A rat cannot eat through a pressed bale. The

bales can be pressed so hard as to hold with firmness a nail driven into them.

Bales of this nature may be used for the construction of out-buildings, which would be both warm and cheap. An ordinary frame house sheathed with tightly-pressed bales would be perfectly frost-proof in winter and cool in summer.

DITCHING BY MACHINERY.

At the present moment over 800 miles of ditches require to be made in the County of Morris, that is about two miles in connection with every section.

The Morris municipality is required by law to spend the whole of the commutation money received from the Statute Labour Tax every year in this construction. At present about $1,600 a year is spent in this way, an average of about $1,000 per annum has been paid for this work let every year. With the increase of population in the county, which would undoubtedly come if water were available, this commutation money would be very largely increased.

There is at present on the Lowe Farm the following ditching machinery :—

1st. A heavy four-horse plough, specially constructed for the excavation of ditches.

2nd. A two-horse ditch sward cutter.

3rd. A four-horse ditcher known as the Ditch Sward Scraper.

The plan adopted for ditching by the Municipal Council of the County of Morris is to make ditches nine feet wide and six inches deep and to lay out the roads between every section of land, which is one square mile, all the road tax, as stated, being used for this purpose.

The cost of doing one mile of ditching is as follows :—

One man and two horses, staking out and cutting the sward, one mile, one day	$2.50
One man and four horses ploughing, one day, one mile.....	3.50
One man and four horses, scraping out the dirt and putting it on the road two days, one mile.....	7.00
(This machine takes out of the ditch and throws on to the road one cubic yard of earth in every minute of time.)	
Time for measuring and taking the job, with draughting team and unforeseen expenses, in all..	5.00
Total cost for one mile	$18.00

The amount of payment received from the Council for one mile at 8 cents per cubic yard would be $70.40.

The amount received at 14 cents per cubic yard would be $123.20.

The Lowe Farm has done several miles of ditching within the last two years, at prices ranging from 6 cents to 14½ cents per cubic yard.

The above-mentioned machines, with which this work is done, and which have in practice been found in the highest degree remunerative, without any let or drawback in the working, are the inventions of and made by William Stephenson.

Very good profits could be made by doing work with these machines at 4 cents per cubic yard, a price which would defy all competition in the absence of similarly effective machinery. From 12 to 14 cents a yard are the ordinary price by the ordinary methods of ditching.

There is also on the Farm another powerful ditching and grading machine, known as the "New Erie Grader," capable of taking out 1,200 or 1,500 cubic yards of earth per day. This might be used with great efficiency for ordinary road work and ditching.

Parts of the above-mentioned machinery can be so adjusted as to do the whole, or the greater part of the work required for the excavations necessary for laying water pipes any distance from the Red River westward. No calculations have yet been made as to the savings in expense by the use of such machinary over the ordinary contract prices, but it is believed that they will be found to be relatively as great as any ordinary ditching.

MEMORANDUM—ESTIMATE OF REQUIREMENTS.

Water Used Per Day.

Ordinary farms with, say from five to ten animals, average 100 gallons per day.

One mile of road, for two sections deep, 800 gallons per day; or for both sides of the road, two sections deep on each side, 1,600 gallons.

For ten miles of road, two sections deep, 16,000 gallons, or, say 20,000, gallons daily.

Acres and Water Supply.

One farm of one quarter section, 160 acres; or, four farms, being one section, 640 acres.

Two sections deep, one mile of road, 1,280 acres; or, on both sides of the road, 2,560 acres.

For ten miles, 25,600 acres.

The cost of water works, five-inch pipe, including all connections, $60,000, would add in round numbers $2.34 to capital value of land per acre, that is for the purchase proposed as far as the Lowe Farm; but including the 16¼ sections of the Farm, the added capital value would only be $1.66 per acre.

Capacity of pipe, increase in square of diameter, 3 inch 9, and 5 inch 25.

Dr. Selwyn, the Director of the Geological Survey, says a three-inch pipe at the end of ten miles would give about 19,600 gallons in 24 hours, by gravitation from a tank 25 or 30 feet high; or, according to this, a five-inch pipe would give 120,000 gallons in 24 hours.

Mr. Ruttan, C.E., says a two-inch pipe would give at the end of ten miles 17,200 gallons in 24 hours, and a three-inch pipe 30,000 gallons in 24 hours at ten miles; or, by delivering a supply uniformly along the main 47,300 gallons in 24 hours.

If this calculation is correct a two-inch pipe would give more than twice the probable supply of water for the use required on the supposition that each farmer on a quarter section, for a width of four miles of road, ten miles in length, would require 100 gallons per day.

A five-inch pipe, increasing the delivery in the square of the diameter, would give a greater supply of water. The delivery would be more than six times greater.

A five-inch pipe would probably be ample for carrying the works to Myrtle, that is ten miles further west than the Lowe Farm. But in view of the not fully settled question of friction, in ten miles of pipe and connections, it might be more prudent to use a six-inch pipe.

Estimate of Values of Lands Affected by the Proposed Water Supply.

The 25,600 acres—that is, the ten miles between Morris and the Lowe Farm,—which can now be purchased at very moderate price, by the addition of the water works, would be immediately converted to a minimum value of $20 per acre, and would represent a value of $512,000.

The same calculations hold good for going as far as Myrtle (the limit of the breadth of country in which water cannot be got by wells), ten miles beyond the Lowe Farm; and a five or six-inch pipe at the Lowe Farm, with an excavated reservoir at that point, would control the price of land from the Lowe Farm to Myrtle in the same way as that below it, to Morris. The belt of land which would be thus supplied is of exceptional natural richness,—which cannot be anywhere exceeded.

[The Sketch Map at page 7 shows the position of the Lowe Farm, in relation to the Syndicate project.]