

1932

A valuation of the industrial property of the Amana Society

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A VALUATION OF THE INDUSTRIAL PROPERTY
OF THE AMANA SOCIETY

BY

Charles G. Parsons

A Thesis submitted to the Graduate Faculty
for the Degree of

MASTER OF SCIENCE

Major Subject Engineering Valuation

Signatures have been redacted for privacy

Iowa State College

1932

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I. INTRODUCTION

The object of this valuation was to determine the fair value of the Amana Society's industrial property for the purpose of issuing securities in connection with the abandonment of the communistic system.

This valuation was made by Anson Marston, Dean of the Engineering Division of Iowa State College, in his capacity as a consulting engineer. It was the writer's privilege to be an assistant and to be in charge of the work at Amana.

This valuation covered all the industrial property, consisting of 162 units, which ranged from woolen mills and water systems to meat plants and basket shops.

Several other appraisals were made by other parties, covering the homes, hydro-development, agricultural equipment and stores.

The contract for the execution of the work was entered into on March 16, 1932 and the certified copies of the valuation were delivered on April 18, 1932.

The purpose of this thesis is to present the theoretical principles used and the methods by which they were applied in making the valuation of the industrial property of the Amana Society. Besides a description of the method used, a brief history of the Society and a short description of the industrial property are given.

II. A BRIEF HISTORY OF THE AMANA SOCIETY¹

The Society was founded in Himbach, Germany in 1714 as a religious organization. The founders were Lutherans who denounced the corruption then prevalent in that church and who believed in true inspiration, as the name "The Society of True Inspiration" denotes.

As the years passed the teachings were carried outside the boundaries of Germany and the number of members gradually increased. One of the important principles of this faith was and is the refusal to take oaths; and because of this the members of the Society were often persecuted. The state of Hesse, however, was comparatively lenient, so many of the followers migrated there. By 1830 so many had arrived that the problem of providing work and a living for these people, the majority of whom were poor, was very great. The problem was solved by leasing an estate which was farmed in common and the proceeds divided among the workers. This activity marks the first communistic tendencies displayed by the Society. As more people congregated there more estates were leased and, as some were artisans and wished to follow their trades, factories were

¹This history is based upon:

Shambaugh, Bertha M. H. Amana The Community of True Inspiration, State Historical Society of Iowa, Iowa City, Iowa. 1908.

Perkins, W. R. and Wick, B. L. History of the Amana Society. University of Iowa, Iowa City, Iowa. 1891.

rented. It should be noted that at this time only a small percentage of the Society's members lived on the communistic plan and it was only incidental to their making of a living.

Persecution gradually increased even in Hesse, so the leaders were finally forced to decide to move to some other land. Accordingly, in 1842 a committee of four was selected to go to America to discover a suitable location for the Society. This committee went to New York and after considerable trouble purchased a five thousand acre tract near Buffalo where the community of Ebenezer was established in 1843.

During the following two years 800 persons came over although, for various reasons, many of the members of this faith remained in Germany. At Ebenezer two towns were established and woolen mills, saw mills and factories were erected.

It was here that the Society as a whole first became communistic but this did not occur immediately upon the founding of Ebenezer. The well-to-do members first made contributions to cover the cost of the land and other expenses, and the community was to hold the land and houses thus purchased in common for a period of two years. It was planned to return each member's contribution at the end of this period, together with interest, after the people had purchased their own land and homes. This plan was soon found to be unfeasible, as the members' strength, ability and wealth varied greatly. It was

then that the complete communistic system was adopted. Those having money received, for their contributions, non-interest bearing receipts that provided for the return of the principal whenever the member left the colony. Personal property, however, has always remained private property.

Although the community prospered at Ebenezer, the leaders came to the conclusion that the colony should move. As the population had increased rather rapidly, a shortage of land had developed; and as there was no adjacent land to be had at a reasonable price it was impossible to expand in that location. In addition to this economic reason there was a religious one, which is explained by the following quotation from Shambaugh. (5, p. 71)

"In addition to the lack of available land another more serious problem from the standpoint of the Community now daily confronted the First Brethren. The thriving city of Buffalo with its worldly influences and attractions was too easily accessible to the young people for the peace of mind of the Elders who considered the salvation of the soul of paramount importance in this world. They were profoundly convinced that in order to 'cultivate humility, obedience to God's will, faithfulness and love to Christ' (and to that end preserve in its simplicity their divinely ordained brotherhood), it was best, as far as possible, to keep apart from the world with its

strifes, temptations, and anxieties. 'Have no intercourse with worldly minded men', wrote Eberhard Ludwig Gruber in 1715, 'that you be not tempted and led away.'

In 1854 a committee of four was again sent seeking a new home for the Society; this time to Kansas. Several months were spent looking at land there but without finding a suitable location. A committee was then sent to the new state of Iowa. This committee reported so very favorably that the Society, in 1855, purchased a tract of about 18,000 acres in Iowa County. The community moved there in the ensuing decade and has remained in this location ever since. Some additional land was purchased a few years later, making the total about 26,000 acres, which is approximately the amount now held. All the land is in one tract.

The first village laid out in Iowa was Amana, which was commenced in the summer of 1855. Other villages were located as the people gradually moved from Ebenezer. In 1861 the town of Homestead, which was at that time the western terminus of the newly extended Mississippi and Missouri Railroad and a busy trading center, was purchased. By 1862 the five other Amanas (East, Middle, High, West and South) had been established. A map of Iowa County showing the location of each village is included in Appendix B.

Although the sale of the old property at Ebenezer was

difficult and tedious, since it had to be sold in small blocks, it was accomplished by 1865 and since then all the Society's activities have been carried on at the present location.

Since that time the Society has operated successfully, but gradually changing conditions have caused new ideas and ambitions to creep in which have culminated in the present re-organization. That this change was eventually expected by some is shown by the following quotation taken from a monograph on the Society, written by Perkins and Wick in 1891. (4, p. 69)

"The seclusion, which to some extent induced the Society to establish itself in Iowa, becomes less and less easy to preserve; the growth of population, the militant character of our civilization and the pressure of competition tend to the destruction of such barriers as must fence in a Community if it preserve its simplicity and antique characteristics. The attractions of a world more cosmopolitan can not but have their legitimate results and lessen by degrees the desire upon the part of the newer generation for the methods of their fathers. As progress is a distinctive principle in our American civilization,--a civilization which is strictly aggressive,--it would be almost too much to hope that the distinctiveness of life which has thus far characterized the Society will be immutable, and remain unaffected by the intense influences from without which require adaptation to themselves

in what is unlike them, and, if too strongly opposed, become destructive to what stands in their way."

III. THE REORGANIZATION

A force powerful enough to change entirely the fundamental economic principles of a whole community must be irresistible, especially when these principles have been intimately associated with the religious teaching for very nearly a century. Such a force is the one that has produced the change in the Amana community. Although outwardly and physically, except for such customs as cooking and eating in community kitchens, there will be very little change in their mode of living, at least at first, it is nevertheless a basic and complete change from communistic life to one of individual initiative.

This force, naturally, has not developed suddenly but has been increasing for many years. More than ten years ago a public meeting was held for the purpose of considering a change and probably various individual members have been desirous of such a change for many years.

As the years have passed the outside world has increasingly exerted more influence on the members of the colony. Radios are common in the homes of the people; and even privately owned automobiles, while not numerous, are not rare. Three of the towns are on paved roads and two are on the busy Iowa City-Des Moines highway. Probably the development of paved roads

has affected the community and the lives of the people to a very marked degree.

The reasons for the removal from Ebenezer are also reasons for the present change but since there is no desirable land in secluded locations (there are now no really "secluded" locations, at least not in this country), and due to their very large investment in fixed property in their present location, it was entirely impracticable to move again. It was therefore inevitable that a change in economic practice would ensue.

The "Plan of Reorganization" (1) provided for a change from a corporation formed not for pecuniary profit to one organized for profit. It was proposed that the new corporation should take over all the secular assets of the old corporation in exchange for common and preferred stock. One share of the Class A stock (there was to be no other common issued at that time), which has sole voting power, was issued to each member over twenty-one years of age. Provision was made that when a holder of this stock dies or moves from the community the stock must be sold only to the corporation, the price to be determined by the book value. When a minor comes of age he is entitled to purchase one share of this stock at the book value. In this way the resident members are assured of keeping control of the Corporation. The par value of all the stock is fifty

dollars per share.

The stock issued, besides the Class A common, is Prior Preferred. The method of issuing this stock was as follows:

"From the sum total of the net value of the secular property to be conveyed to the new corporation there shall be deducted: (1) a sum equal to the outstanding obligations and debts of the present Society to its members and all others, including taxes, county, state and federal due at the time its secular property is transferred to the new corporation; (2) the sum of \$20,000.00 for purchasing prior preferred stock for the minor children of the Society, as hereinbefore provided, and any amounts remaining of said sum shall be placed in the corporate surplus; (3) a sum equal to 25% of the remainder of the appraised value of said property which shall be set aside and used as surplus for the new corporation; (4) an amount equal to the sum total of the par value of the entire issue of the Class A common voting stock, one share of which shall be issued to each member of the present Society subscribing hereto, and the balance then remaining shall be apportioned among the members as follows: The sum total of the years service of all the members of the Amana Society shall be determined and a sum equal to the balance aforesaid shall be divided by the sum total of said years service; the result of such division will be the money value of one year's share into which

the balance should be divided. One of such shares shall be apportioned to each member of the present Society for each year of time he has heretofore served the present Society, and the sum total of the value of such shares that each member is to receive shall be issued to him in shares or fractional shares of Prior Preferred stock. ...

"A year of service within the meaning hereof shall be any period of one year during which any member of the Society at the time of the transfer of the property, as herein contemplated, shall have lived as a member or a prospective member of the present Society under the rules and regulations, subsequent to the time said member attains the age of twenty-one years if a male, or eighteen years of age if a female." (1, p. 9-10)

The stock has the following provisions:

"The Prior Preferred stock shall be of the par value of \$50.00 per share and shall entitle the holder to receive a non-cumulative dividend in each year at the rate of 7% upon the par value thereof, payable annually, out of the net earnings of the company for the calendar year preceding the date the dividend is declared and before any dividends shall be declared or paid on the common stock and on dissolution shall be entitled to a preference and priority of payment of \$65.00 per share and no more over the common stock or any other issue of preferred stock in any distribution of the property of said corporation,

except as hereinafter provided, but if the net earnings of the Company, after proper reservations for working capital and depreciation have been set up, are such that the dividend or any part thereof can be paid therefrom, such dividend or any part thereof shall be ordered paid by the Board of Directors. ...

"The Prior Preferred stock shall have no vote and shall have a par value of \$50.00 and because there will be at the date of the transfer of the secular property to this corporation allocated to each share of Prior Preferred stock \$15.00 of the surplus, the holder of said Prior Preferred stock shall be entitled to receive for such stock a credit of \$65.00 per share in exchange of said stock for the homes of the members or for the purchase of any other property from the corporation, if such sale or purchase is made within one year from the date of the transfer of the property to this corporation. ...

"No sale or transfer of any Prior Preferred stock shall be permitted or made on the books of the corporation until the stockholder desiring to dispose of his shares shall have first offered them for sale, at the best price he is able to obtain, to the Board of Directors for a period of ten days. The corporation may within said period exercise its option and purchase said stock. If it is not so exercised by the corporation, the holder thereof may sell the same without other restriction." (1, p. 10-12)

Control of the new corporation is provided for as follows:

"All of the capacity of the corporation shall be vested in and all of its authority shall be exercised (excepting insofar as the approval of its acts by the stockholders is required by statute and these presents) by its Board of Directors which shall be composed of thirteen members to be elected by the voting stockholders from among the holders of voting stock only.

"One director, who resides in each of the following villages, respectively, shall be elected: East, High, Middle, West, Amana, Homestead, and South Amana. Six of said directors shall be elected without regard to place of residence. ...

"The resident holders of Class A common stock in each of said villages respectively, shall at said meeting select one member of said nominating committee for each fifty Class A common stockholders residing in such village. ...

"The nominating committee shall select two candidates for each office to be filled at the next election of directors; and shall, not later than three weeks prior to said election of directors, certify by the secretary and chairman of the committee its selection of such candidates for the respective directorships to be filled, upon which certification said nominating committee shall stand discharged.

"Each director shall be elected for a term of two years. Such term shall expire when a successor is elected and qualified.

"All elections shall be held in secret and upon ballots furnished by the Board of Directors, with the names of the two candidates for the respective offices printed thereon, together with a blank space for writing in an additional name by the voter, of a third choice for such office. ...

"All voting shall be done at a place provided for that purpose in each of the respective villages, and a resident of one village shall not be permitted to vote in any excepting the village of his residence.

"The election of directors shall take place on the first Monday in February in each of the respective years. ...

"Voting shall take place from the hours of four P.M. to seven P. M. at each election, and all voting shall be done during the said hours." (1, p. 12-14)

The powers of the corporation are so broad that practically any form of legal business can be engaged in.

Special rights, obligations and provisions are as follows:

"To appropriate from the revenues of the Corporation such amount to be expended for welfare work among the employees of the Corporation and their families and dependents, and in

the communities included within the limits of the physical properties owned by the Corporation, such sum as in the judgment of the Board of Directors is necessary to promote the health and welfare of the community and within the means of the corporation. The work to be conducted is to be described in appropriate by-laws and is to include free medical and dental service to the present members of the community who will be the stockholders of the new Corporation and their dependents, and also to provide for the expenses of a simple burial and embalming as authorized by the directors. It shall also provide for giving aid to those individuals who, through misfortune, sickness or old age, shall be in want or suffering. This will be limited, either to a specific amount performed or to a given proportion of the earnings of the Corporation though it is recognized that in the transition period, it will be necessary to contribute a fixed amount for the support of the church and the benevolence herein contemplated, even though it take more than the earnings in the early years. In such event the appropriation will be made from surplus, but it is not contemplated that after the transition period proper the appropriations for this purpose shall seriously interfere with the earnings to be distributed to the stockholders. It is, however, the intent that the new Corporation shall include within its powers the altruistic and benevolent features which have been

a part of the Society since its organization. ...

"In this respect, it is also contemplated that the Board of Directors shall be authorized to set aside either from surplus or earnings, by reserve or otherwise, such amount as shall be necessary to provide for the support and maintenance of those present members of the Society who shall be unable to support themselves by the wages or other allotments which they shall receive until such time as dividends may be paid upon the stockholdings of the members, sufficient to support them and from these funds advances may be made to worthy or needy members, without provision for repayment, but otherwise to be ultimately repaid by the members through the transfer to the Corporation of dividends or stock.

"The officers of the Corporation should consist of a president, one or more vice presidents, a secretary and a treasurer. ... All of such officers shall be elected by the Board of Directors from their own number, excepting that the secretary and the treasurer may be elected from the holders of Class A common stock, or from outside the membership of the corporation." (1, p. 15-17)

All the members signed the reorganization agreement, thereby signifying their approval of the plan.

On May 20, 1932, the Executive Council of the State of Iowa, as reported by the Des Moines Register of May 21, 1932,

approved the proposed change and authorized the issuance of \$1,700,000 of stock to be exchanged for the assets of the old corporation in accordance with the aforementioned plan. The total assets amounted to \$2,704,556.61 while the total liabilities amounted to \$490,639.35. The stock issued amounted to approximately three-fourths of the net value, the remainder going to surplus, in accordance with the provisions quoted from the "Plan of Reorganization".

The total reported values of the various classes of property, as reported by the Des Moines Register of the same date, are as follows: Real Estate, \$1,361,590; buildings, \$439,681; equipment, \$213,442; merchandise, \$286,837; cash, \$41,716; accounts receivable, \$23,155; bills receivable, \$19,167; conditional sales contracts and mortgages, \$9,217; members' support money, \$30,624; securities owned, \$208,338; and water power, \$70,790.

IV. THE INDUSTRIAL PROPERTY

Soon after Amana was established a quarry was opened that furnished a rather attractive and serviceable light brown and tan sandstone, with which many of the homes and commercial buildings were built. A kiln was soon constructed to furnish brick for the erection of homes and factories. Although neither stone nor brick is produced today, their production was formerly of considerable importance for it provided a serviceable construction material that cost the Society no actual money. Of still more importance was the fact that it was produced locally, thereby saving transportation costs, which were very great before the railroads reached Amana.

A saw mill was erected at each town, and since there was abundant timber, principally oak and walnut, a great saving was effected by producing their own lumber. Six of these mills are standing at the present time. Although they are not of nearly so much importance now, they are still used to a considerable extent.

Two flour mills, one at Amana and one at West Amana, were established very early and did a thriving and profitable business for many years, not only making flour for the community but also producing large quantities of flour of various kinds for the market. At the present time there is only one

mill standing, for the one at Amana was destroyed by fire in 1923. This mill, unfortunately, is several miles from the nearest railroad; so for this reason, and the fact that it is small and not completely up-to-date, it is not able to compete successfully with other mills in the outside market.

The Society owns and operates three grain elevators, two of which are rather large. The one at South Amana was built forty years ago; the one at Homestead, which is the largest, was built thirty-two years ago; and the one at Amana, which is the smallest but does the largest business, was erected eight years ago, after the flour mill there was destroyed by fire. The business of these elevators, and especially the ones at South Amana and Homestead, has been adversely affected, in common with the majority of the elevators in Iowa, by the trend in recent years toward feeding grain and shipping animals rather than shipping the grain directly to market.

The establishment of woolen mills dates back to the very beginning of the Society's communistic activity in Germany. When they came to this country, the members brought with them some of the woolen mill equipment they had used there. The production of woolen goods was one of the principal industries established at Ebenezer, and when the Society moved to Amana the woolen mills naturally were re-established there. Much of the equipment was brought from Germany to

Ebenzer and removed to Amana. There is still in use an interesting old carding machine that was brought over from Germany in 1844, where it had been in use for a number of years.

One of the woolen mills is located at Amana. This mill is rather new, since all the old buildings, with the exception of the weaving building, were partially destroyed, together with most of the equipment, in the disastrous fire of 1923. Some of the equipment, such as a Corliss engine, boilers and some of the mill machinery, that went through the fire is still used, but most of the equipment has been installed since then. This mill has been electrified to a limited extent since the fire. An alternating current generator, which may be driven either by the steam engine or the water turbine, was installed to furnish light and power. Although the machines are not individually motor driven, there is at least one motor in a building and in a few buildings there are two or more. The machines themselves are driven from a main drive shaft by the use of belts and pulleys.

The other woolen mill is located at Middle Amana. While the size of the two mills is very nearly equal, there being approximately twenty buildings at each location, the value of the Middle Amana mill is considerably less because the buildings and equipment are much older. This mill was rebuilt about 1882, after the original structures had been gutted by fire. This

mill is also provided with water and steam power but no electric power is used, all the machines being driven mechanically from the prime mover. Drive shafts go from one building to another, even though a space of many feet separates some of them. Plans showing the location and size of the buildings are shown in Appendix B.

Although, of all its products, the Society's blankets are best known to the general public, the principal woolen product at the present time is flannel. This flannel is produced from specially prepared "plucked" wool, which is the finest obtainable for this purpose. The wool, when received, has been cleaned and washed, so the first process at the Amana mills is dyeing the wool. A mixture of white and colored wool is put through the picker, the resultant mixture producing the desired shade. The wool then goes to the carding machines which spin it into a soft yarn. The yarn goes to the spinning mules where it is spun into a tight thread. The thread then goes to the looms where it is made into flannel. The flannel is then washed and shrunk from 72 inches in width to 56 inches. It is dried, run through the napper, the shear, the cloth brush, the presser and the folding machine. It is then wrapped, boxed and shipped. Blankets are made in a similar way, except that native sheared wool is used, which must be dusted and washed before it is dyed.

The water power is derived from a canal that conveys

water from the Iowa River. This canal, which is seven miles long, was completed in 1866. It was constructed by hand labor and the use of oxen, and required three years to build. It was made, of course, for the power it would furnish; but the canal, whose water in many places runs higher than the surrounding land, and a large mill pond produce a picturesque landscape.

A soap works, about seventy years old, is operated at Amana, producing soft bulk and bar soap used in the various villages for laundering.

A meat plant, where animals are killed to produce the meat as required, and where fairly large quantities of hogs are killed each winter and ham, bacon and various kinds of sausages are produced, is operated in each village. Large quantities of meat products are sold outside the community where they enjoy a reputation for high quality and good flavor.

Each village has a bakery where all the bread for its own consumption is baked, as well as some for outside sale. The bread is baked in old Dutch ovens and a large, distinctive loaf is produced.

Small shops that produce a great number of things for home consumption are located in each of the villages; in fact, practically everything that the people originally needed was produced in these shops.

V. ENGINEERING VALUATION PRINCIPLES
AND THEIR APPLICATION TO THE ALAMA SOCIETY INDUSTRIAL PROPERTY

Engineering valuation has been defined as "the art of estimating the fair exchange worths of specific properties where a professional engineering knowledge and judgment are essential". (3:102)

This field of valuation has developed largely since 1890. The basic principles were laid down in 1898 in the Supreme Court's decision on the now famous case of Smyth vs. Ames. Properties that are commonly the subject of this type of engineering work are public utilities, principally for regulatory or rate purposes and industrial properties such as mines, buildings and factories, for sale or taxation purposes.

Valuations are often termed "original or historical cost" "reproduction cost" and "fair value"; the designation referring in each case to the basis used in pricing. The Supreme Court of the United States has decreed that in all cases a valuation to be legal and valid must give the fair value. To make a "fair value" valuation the following factors affecting value must be taken into consideration and given the proper weight.

1. The actual original cost of the property, including intangibles, less accrued depreciation.
2. The present reproduction cost of the property, including estimated reproduction cost of the intangibles, less

accrued depreciation.

3. The earning value. This is the present worth of the estimated future returns of the property. Although this factor is of negligible importance in the case of public utilities, at least successful ones, it is of paramount importance, in the case of properties other than those whose return is subject to direct or indirect regulation.

4. The market value, as gauged by the prevailing sale price of similar properties or as computed from the current quotations of the bonds and stocks representing the property. This factor is hardly ever relevant when determining the fair value of a public utility, although it is sometimes inadvertently given considerable weight. Its use in determining fair value of other properties is hardly reasonable as it is more likely to reflect the state of the market rather than sound value, even though it is the momentary collective opinion of the investing public.

5. The service worth value of the property. This is the earning value of the property with rates so adjusted that they just equal the reasonable worth of the services rendered.

6. "All other pertinent factors." This broad heading covers items that affect each individual property according to the type of enterprise, state of trade and similar conditions.

Although in ordinary exchanges of property the before-

enumerated factors affecting value are usually considered in an informal and more or less unconscious manner, a fairly well recognized formal process of engineering valuation has gradually developed.

The first step in this process is to make a preliminary general examination of the property. This should consist of a brief but careful inspection of all the principal units of the property. The plans for making the entire valuation are made at this time so that the work may be performed as rapidly as possible. The next and most laborious step is to make a complete, accurate, classified, detailed inventory of all items of the entire property. A thorough analysis of all available records relating to the property is then made. From the analysis of the records the original cost, age, time and expense of repairs, and, in many cases, valuable mortality data can be obtained. If the fair value is desired, as it generally is, separate estimates of value are first made, using each of the before-enumerated six factors affecting value as a basis. The fair value is then based on these figures giving the proper weight to each after carefully considering and judging all the available facts and data affecting the value of the property. The proper weight to be given to each estimate and fact must be determined on its merits in each case by the valuation engineer according to his experience and

best judgment.

The question of depreciation, its validity as a factor affecting value and proper methods of computing it, is one that vitally affects all valuations and those making them. That physical objects, with the exception of land and a few others, do depreciate with use or age is not generally disputed but the amount of depreciation and the proper and most accurate method of computing depreciation are often the subject of great differences of opinion. There are many methods of computing "theoretical depreciation" and many ways of computing "actual depreciation". The computation of actual depreciation, which has been declared by the Supreme Court of the United States to be the proper amount of depreciation to compute, requires an engineering examination of the units of the property.

The age and probable service life are the two items generally required for computing depreciation. Although most methods consider these factors, widely varying results are obtained and each method has many advocates. Although the writer favors the present worth method, as presented by Dean Anson Marston in his book "Engineering Valuation" (3), he will not give a discussion of the merits of the various methods.

The fundamental idea of the present worth method of determining present value is that at any time the value is

equal to the present worth of the future net returns. This is a logical assumption because a unit of property is owned and operated for the return it will give. Obviously, the present worth of the future returns must be less than the total returns due to the effect of interest. The future returns are discounted exactly as a note or other financial paper is discounted in commercial operations.

The mechanical process of computing the present worth of a piece of property is as follows: The age is determined. By the use of mortality curves and other available data the proper length of probable service life is determined upon. A reasonable rate of interest is determined upon for each property and from this data, by the use of condition per cent tables, the present condition per cent is determined. An operation return ratio is next decided upon. If the net return is expected to decrease during the remaining life of the property, due to such factors as lessened mechanical efficiency, increased maintenance charges, reduced output, obsolescence, or reduced demand, an operation return ratio must be decided upon, after the effect of these factors has been carefully considered. The next step is to multiply the original cost or the reproduction cost, as the case may be, by the condition per cent and the operation return ratio, if any. The resultant figure is the present worth of the unit.

In this way the present original cost value and the present reproduction cost value are determined. The fair value is based on these two figures, with the four other factors affecting value given careful consideration and due weight.

The result desired in the Amana valuation was a reasonable, conservative, fair value of the property. This result was obtained by applying sound valuation principles and giving proper weight to the factors that would produce this result.

In making a valuation as much data as possible on the original cost of the items of property should be obtained. As much cost data as possible were secured in the Amana valuation but, unfortunately, the data which were available did not give the entire cost in many cases because in the past no wages were paid to the people for their labor. So consequently no data regarding the cost of installing purchased equipment, the labor cost of articles made within the Colony, or labor costs of erecting buildings were available. The lack of complete information, of course, did not preclude the use of cost data, but necessitated the estimating of these various costs by the valuers.

The reproduction cost of the property was given a great deal of weight, in fact, in most cases it was the dominating factor in determining the present fair value. Reproduction costs of all main items of equipment were obtained and the installation charges estimated.

In all cases the earning value was considered and in many cases the expected future earnings were such that this factor was the predominating one in determining the present fair value. This was especially true in the case of the grain elevators whose business, and consequently earnings, has declined to a low level in recent years. An operation return ratio as low as 25% was used in determining the value of two of the elevators. This ratio was determined upon after a study had been made of the amount of business done during the past decade and careful consideration given to the expected rate of operations in the future. The earning value of the machinery in the various units was always given consideration but in many cases the future net returns were estimated to be such that the earnings would not decrease appreciably, so this value required little consideration in these cases.

The market value was, in general, impossible to determine since there were no bonds or stocks outstanding from which the stock and bond value could be computed, nor were there any prevailing sale prices known for many, if any, of the units of property. Since most of the Society's business activities are in competition with other industrial organizations the service worth value was not of importance.

"Other pertinent factors" were given proper weight and consideration. The value of the equipment in the woolen mills

was based to a certain extent on the expected future type of material to be produced, the feasibility of changing the equipment to produce different styles of material in the future, and the probable rate of activity of the mills in the next few years.

A description of the work performed in connection with this valuation and the method of applying these valuation principles are given in the following section.

VI. THE VALUATION

The Preliminary Survey

The first negotiations leading to this valuation were made early in March, when Mr. Peter Stuck, secretary of the new Amana corporation, and Assistant Attorney-General Swift called upon Dean Marston and asked him to consider making the valuation of the industrial property. He agreed then to make the preliminary examination and to consider the proposition. This, accordingly, was done on March 16, 1952 at which time all the principal plants and factories and many of the shops were inspected. The object of this inspection was to determine the extent of the properties involved, to determine whether to undertake the work, and to plan the details of procedure.

A contract was entered into specifying that the industrial property, only, was to be included in this valuation. The principal properties consisted of two woolen mills, seven water supply systems, six saw mills, seven meat plants and a telephone system. Besides these large units there were approximately 100 small shops and business establishments to be valued. The other property, as before mentioned, was to be valued by other parties.

A provision inserted by Dean Marston in the contract required the Society to furnish in advance detailed inventories

of all the property to be valued. These were made by designated members, familiar in each case with the particular property. On the Society's inventory form was recorded, besides the name of the item and the quantity, cost if known, date of purchase if known, whether it was purchased new, second hand or made in the community and the fair value of the article in their opinion.

It is always a laborious and costly process to make a detailed inventory but in this valuation the advance work thus performed by the members of the Society greatly facilitated and shortened the preparation of the final inventory; and, since labor had no direct cost under the old regime, saved the Society a considerable amount.

Field Inspection

The detailed field inspection which was made for Dean Marston by Charles G. Parsons, Wallace A. Rogers and Dudley W. Day, was commenced on March 17. As the advance inventory for each unit was completed by the Society, it was given to the members of the aforementioned valuation party, who then visited that shop or factory and carefully inspected each item whose value was at least \$25. For each of these items the age was ascertained, its physical condition noted, its operating efficiency estimated and the foreman's or manager's opinion as to

its probable future length of life obtained. From this information the "Probable Service Life" was estimated, according to the valuator's best judgment. This figure is equal to the present age plus expected future life.

A sufficient number of the items of lesser value was inspected in a similar manner to enable the total correct value of the group entitled "Minor Equipment", which included all items whose value was under \$25, to be determined with reasonable accuracy. In this way data were obtained for computing the correct value of each item in every shop and factory. In the smaller shops the inspection was generally made by one man, while in the larger shops and factories two or three men inspected the equipment in order to secure as broad and reasonable an estimate of the Probable Service Life as possible.

In the case of the woolen mill equipment, which ran into many thousands of dollars, considerable time was spent in conference with Mr. Zimmerman, the general superintendent of the mills, discussing the physical condition of the equipment, its adequacy, its efficiency as compared to that of new equipment, the possible lines of goods to be manufactured in the coming year, the effect of change in style on the use of the equipment, and conditions in general in the woolen industry which affect or might affect the present value of the equipment. From this information and the data obtained at the time

each unit was inspected, a Probable Service Life and a proper Operation Return Ratio were determined upon.

Field Office Work

Although office work is a distinct phase of valuation, the work, as is usual, was done concurrently with the field inspection, in this case principally at night and at other times when the shops and factories were not open. This work consisted of recording on the valuation sheets, samples of which are shown in Appendix A, the main equipment in detail and a total figure for the minor equipment of each shop. The item, quantity, age, probable service life, cost and the present fair value as shown on the Society's inventory were recorded on the forms. By the use of Condition Per Cent Tables (2), a condition per cent was determined by using the age and the probable service life as previously recorded. An interest rate of 5% was considered the fair and proper rate to use in this valuation. The cost was then multiplied by the figure thus obtained. This resultant value was then multiplied by the operation return ratio, which is based on such factors as the extent of obsolescence, inadequacy, reduced efficiency, increased maintenance charges, reduced output and reduced value of operations. The resulting figure is the present value based on the original cost. If the reproduction cost differed

radically from the original cost, a similar procedure was gone through with, using the reproduction cost figure instead of the original cost figure. The fair value was determined upon after considering the present value original cost figure, the present value reproduction cost figure, the operation return ratio, which takes into account the earning value and "other factors" affecting value; all of which were taken into account in accordance with the best final judgment of Dean Marston and the members of the valuation party. In this valuation there generally was not enough difference between the original cost and the reproduction cost to justify such extensive computations, but in many cases actual reproduction costs were obtained (for example, on much of the woolen mill machinery) while for other equipment, where the amounts involved were not so large, an estimated reproduction cost was often used.

Upon the completion of the field work all items of importance were rechecked by Dean Marston and the fair values as previously determined were adjusted or approved as his judgment dictated after considering all the facts available.

Final Determination of Value

The final step in the valuation was the careful checking of all prices used and the values determined upon. The prices used in determining the value of the water systems were

worked out after consulting two engineers familiar with this type of work and considering other special data available. The value of the deep Homestead well was based on the present cost of drilling and casing such a well as quoted by a large well drilling firm.

Where feasible, the probable service life, as found by the previously described methods, was checked by using data and curves in the bulletin "Life Characteristics of Physical Property" (6). In this case, the general principles and type mortality curves, rather than the numerical data contained in this valuable bulletin had to be used; little use could be made of the curves on particular types of property.

An allowance of 5% was made for overhead costs and contingencies. Although this figure is less than that generally used in valuations, it was considered proper in this case because the Society's overhead charges have been small in the past, the costs for contingencies would be low because of the size of the units and the general conditions in the community, and, furthermore, it was desired that no factor should be introduced that would in any way tend to inflate the value. Although a real intangible value was present, due to the general good reputation that the Society bears and to the fact that many of its products, especially blankets, are well and favorably known throughout the United States, it was not desired to

capitalize this asset so no estimate of the fair amount was made for this valuation.

Curves used for the purpose of determining and checking prices and price trends are shown in Appendix C.

Valuation of the Buildings

The values of the buildings were determined somewhat differently than those of the equipment. Since the Society had built all or nearly all of the buildings with their own labor, and many with their own material, no data pertaining to the actual reasonable cost of construction were available. For this reason the Society did not inventory or attempt to set a fair value on any of the buildings.

The buildings were all carefully measured in accordance with customary architects' rules and the volume of each was computed. Assistance in selecting fair prices, on a cubic foot basis for each type of building, was secured from a prominent architect and a contractor, both of whom were familiar with current construction costs.

Classification

The remaining step consisted of dividing the various items into (a) buildings, (b) main equipment, (c) minor equipment, (d) materials, supplies and minor stock, and (e) stock inventory.

The item "buildings" included the buildings only, no land, no plumbing, heating or lighting equipment. The land was appraised by other parties and the other items mentioned were inventoried and valued separately. The classification "main equipment" consisted, as already noted, of all items whose value was at least \$25. "Minor equipment" comprised all items whose value was less than that amount. "Materials, supplies and minor stock" included besides the items the title denotes, the finished goods for sale or to be used in the community, that were produced in the small shops, and all material in process. The term "stock inventory" covered completed goods produced for sale, such as blankets, flannel, smoked meats, grains, etc.

All the buildings, equipment and inventories of the various units are shown classified in this way in the "Certified Valuation" sheets in Appendix A.

Special Problems

One of the outstanding features of the Amana valuation was the great variety of equipment encountered. Another factor making this valuation distinctive was that some of the equipment had been purchased second hand and a great deal was partly or wholly made within the Colony. This complicated the work, in that little if any useful cost data were available on

this class of equipment. A problem was presented by the fact that the policy of the Community had always been to use equipment as long as possible, keeping it in good repair by replacing parts as they wore out, even long after better and more efficient machines had been placed on the market. For this reason there was considerable equipment, physically in very good condition, whose value was hard to determine. If the spirit of change which seems to be prevalent continues, these various sound and serviceable machines will, in many cases, be replaced by newer and more efficient ones in the near future. The officials of the Society, however, stated that no policy of making immediate extensive changes will be adopted. It was upon this assumption that the property was valued.

A factor producing an additional element of uncertainty was that the future disposition of each shop or factory will depend upon the revenue to be derived from it. As no records have been kept on the individual shops which would give an indication of the revenue-producing possibilities, this probable return had to be estimated by the valuers and considered when determining the present fair value of each item of property.

VII. CONCLUSIONS

1. The circumstances at Amana were such that a sound, conservative value was desired. Although the prices used will not necessarily be as low as the lowest reached in this business cycle, they were indicative of reasonable and conservative values.
2. The Society by making the preliminary, detailed inventory made a substantial saving in time and money and added considerably to the accuracy of the valuation.
3. The principles upon which this valuation was made are sound, reasonable and applicable to all types of industrial properties.
4. Since conditions at Amana were peculiar to that type of economic organization many problems arose and had to be solved which would not be encountered in the normal course of industrial valuations.
5. Due to the conservative financial policy always pursued by the Society, the interest rate of 5% determined upon for the purpose of computing condition per cents was entirely correct and justified.
6. The overhead and contingency allowance of 5% which was determined upon was a reasonable one, in view of the fact that the Society's management costs have been lower in the

past than those of strictly industrial enterprises of similar magnitude and that fewer costs due to contingencies accrue in a community of this type.

7. No estimate of the intangibles was made, not because there was no intangible value present but because it was not deemed desirable under the circumstances prevailing at Amana to capitalize this value.
8. The total present fair value of the buildings and equipment covered by this valuation was found to be \$366,529. The value of the materials, supplies and stock inventories covered by this valuation was \$128,506, the total value found being \$495,035.
9. That the valuation was sound, reasonable and correct is evidenced by the fact that it was accepted by the Amana Society and the Securities Department of the State of Iowa as being the true value for the purpose of issuing securities in connection with the reorganization of the Society.

VIII. ACKNOWLEDGEMENTS

The writer wishes to express his most sincere appreciation of the help and guidance given him by Dean Marston in this and other work done under his direction.

Appreciation is also expressed for the work done by Mr. Wallace A. Rogers and Mr. Dudley W. Day, co-workers at Amana; and to Mr. Peter Stuck and the other officers and directors of the Amana Society for their assistance and their kind consent to the use of this material.

IX. LITERATURE CITED

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APPENDIX A

SUMMARIZED VALUATION SHEET

Total Value of the Industrial Property
Owned by the Amara Society, Amara, Iowa

GROUP	Value as of April 15, 1932	Value as of Inventory Dates
	Buildings and Equipment	Materials, Supplies, Stocks
GROUP 1. INDUSTRIAL PLANTS	\$ 275,950	\$ 72,113
	Equipment Only	
GROUP 2. UTILITIES	69,835	439
GROUP 3. CRAFTSMENS SHOPS	12,138	18,617
GROUP 4. MEDICAL OFFICES	2,780	195
GROUP 5. BUSINESS ESTABLISHMENTS	3,444	33,438
GROUP 6. MISCELLANEOUS EQUIPMENT	2,382	654
TOTAL PRESENT FAIR VALUES	\$ 366,529	\$ 128,506

CERTIFIED VALUATION SHEET NO. 1 OF 15

Value of Buildings and Equipment
as of April 15, 1932

Inventories on stated dates

	Page No.	(a)		(b)	(c)		TOTAL	DATE 1932	(d)		(e)	
		Buildings	Equipment		Main Equipment	Minor Equipment			Mat., Sup.,	Minor Stock		Stock Inventory
GROUP 1, INDUSTRIAL PLANTS												
ELEVATORS:												
(Grain)												
Amama	1	\$ 6,000	\$ 1,293	\$ 250	\$ 7,543	3/11	\$	3/11	\$	1,601		
Homestead	2	3,300	965	240	4,505	3/29		3/29		4,196		
South Amama	3	2,800	1,628	210	4,638	3/25		3/25		2,638		
East Amama	4	*	133	35	168	3/21		3/21		1,056		
(Grinding Mill) High Amama	4	*		90	90							
FLOUR MILL:												
West Amama	5	2,174	620	704	3,498	3/30		3/30		640		
MEAT PLANTS:												
Amama	6	*	397	550	947	3/22		3/22		1,279		
East Amama	6	*	293	230	523	3/31		3/31		638		
High Amama	7	*	345	325	670	3/2		3/2		627		
Homestead	8	*	980	283	1,263	3/21		3/21		1,073		
Middle Amama	8	*	265	480	745	3/23		3/23		1,055		
South Amama	9	*	835	450	1,285	3/		3/		1,542		
West Amama	9	*		202	202	3/23		3/23		1,240		
POWER HOUSE:												
East Amama	11	450	300	80	830							
JAW MILL:												
Amama	12	1,080	155	400	1,635	3/14		3/14		184		
Forward		15,804	8,209	4,529	28,542					1,891	15,889	

CERTIFIED VALUATION SHEET NO. 2 OF 15

		Value of Buildings and Equipment as of April 15, 1932			Inventories on stated dates		
Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	Total Bldgs. and Equipment	DATE 1932	(d) Mat., Sup., Minor Stock	(e) Stock Inventory
GROUP 1, (Cont.)	Forward	\$ 15,804	\$ 8,209	\$ 4,529	\$ 28,542	\$ 1,891	\$ 15,889
13	East Amana	250	58	163	471	3/19	107
14	High Amana	450	275	143	868	3/22	115
15	Homestead	240	145	230	615	2/26	105
16	Middle Amana	585	592	200	1,377	3/23	162
16	South Amana	None		50	50	3/18	207
17	West Amana	665	613	114	1,392	3/5	105
WOOLEN MILLS	Amans	94,620	46,506	5,046	146,172	3/	**46,292
	Middle Amana	58,154	22,769	2,400	83,323	3/	3,140
COLUMN TOTALS	38	170,768	79,167	12,875	262,810		52,124
5% for Contingencies and Overhead Expenditures					13,140		
TOTAL PRESENT FAIR VALUES, GROUP 1				\$275,950		\$ 52,124	\$ 19,989

Notes

* The buildings omitted were valued by W. H. Bailey.

** Includes materials, supplies and minor stock in both woolen mills.

CERTIFIED VALUATION SHEET NO. 3 OF 15

		Value of Buildings and Equipment as of April 15, 1932			Inventories on stated dates		
Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Sup., Minor Stock	(e) Stock Inventory
GROUP 2, UTILITIES							
	FIRE EQUIPMENT: Amarna	\$	\$	\$	\$		
39			250	250			
39	East Amarna Buildings		102	102			
39	High Amarna	315		315			
39	Honestead valued		25	25			
39	Middle Amarna		163	163			
39	South Amarna by		85	85			
40	TELEPHONE SYSTEM:	4,495		4,495			
40	High Amarna		21	21	3/27	10	
40	Honestead		43	43	3/15	7	
40	South Amarna		60	60	3/26	15	
	TRANSPORTATION, PUBLIC:						
41-43	Automobiles and Trucks	6,970		6,970			
44	Garage, East Amarna		19	19			
44	Garage, South Amarna	895	415	1,310	3/4	432	
44	Livery, South Amarna		145	145			
45	ATER SYSTEMS: Amarna	12,861		12,861			
Forward		25,536	1,333	26,869		464	

CERTIFIED VALUATION SHEET NO. 4 OF 15

		Value of Buildings and Equipment as of April 15, 1932				Inventories on stated dates	
Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932		
					Mat.	Sup.	
					Minor Stock	Stock Inventory	
GROUP 2, (Cont.)	Forward	\$ 25,536	\$ 1,533	\$ 26,869	\$	464	
	East Amara	46 Buildings	3,621	100	3,721		25
	High Amara	47-48 valued	2,519		2,519		
	Homestead	49	11,286	299	11,585		
	Middle Amara	50 by	4,886		4,886		
	South Amara	51-53 W.H. Bailey	11,919	413	12,332		
	West Amara	53	4,598		4,598		
COLUMN TOTALS		54	64,365	2,145	66,510		489
5% for Contingencies and Overhead Expenditures					3,325		
TOTAL PRESENT FAIR VALUES, GROUP 2					\$ 69,835	\$	489

CERTIFIED VALUATION SHEET NO. 5 OF 15

		Value of Buildings and Equipment as of April 15, 1932			Inventories on stated dates		
Page	(a)	(b)	(c)	TOTAL	DATE	(d)	(e)
No.	Buildings	Main	Minor	Bldgs. and	1932	Mat., Sup.,	Stock
	Equipment	Equipment	Equipment	Equipment	1932	Minor Stock	Inventory
GROUP 3, CRAFTSMAN SHOPS							
55	ASKET SHOPS: Amara	\$	\$	\$		\$	
55	East Amara	Buildings	10	10			
55	High Amara		10	10	3/19	19	
55	Homestead	valued	27	27	3/2	50	
55	Middle Amara		10	10	3/31	11	
55	West Amara	by	10	10	3/3	104	
58	BLACKSMITH SHOPS: Amara		91	362	453	304	
56	East Amara		53	125	176	263	
56	High Amara	W.H.Bailey		163	163	312	
57	Homestead			125	125	169	
57	Middle Amara		60	250	310	714	
57	South Amara		50	250	300	375	
57	West Amara			148	148	240	
58	BOOK BINDERY: Middle Amara			47	47	168	
58	ROOM SHOPS: Amara			41	41	32	
			254	1,605	1,859	2,761	
Forward							

CERTIFIED VALUATION SHEET NO. 6 OF 15

**Value of Buildings and Equipment
as of April 15, 1932**

Inventories on stated dates

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Sup.,		(e) Stock Inventory
						Minor Stock	Major Stock	
	GROUP 3, (Cont.)	Forward	\$ 254	\$ 1,605	\$ 1,859	\$	2,761	
58	East Amana		30	30	3/21		120	
58	High Amana	Buildings	40	40	3/20		75	
58	Homestead		40	40	3/28		233	
59	Middle Amana	valued	25	25	3/28		62	
59	South Amana		25	25	3/24		5	
59	West Amana	by	13	13	3/3		13	
59	CABINET SHOP; Amana		99	478	3/18		708	
60	East Amana		27	135	3/18		198	
60	Middle Amana	W.H. Bailey	80	350	2/22		1,338	
60	CARPENTER SHOPS; Amana		35	145				
61	East Amana		68	68	3/21		128	
61	High Amana		331	436	2/15		241	
61	High Amana (old)		10	10	3/20		120	
61	Homestead		138	510	3/28		1,259	
62	Middle Amana		250	250	3/24		143	
	Forward		964	4,125		5,089	7,402	

CERTIFIED VALUATION SHEET NO. 7 OF 15

Value of Buildings and Equipment
as of April 15, 1932

Inventories on stated dates

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Sup., Minor Stock		(e) Stock Inventory
						Inventory	Inventory	
	GROUP 3, (Cont.)	Forward	\$ 964	\$ 4,125	\$ 5,089	\$ 7,402		
62	South Amara		177	177	5/	795		
62	West Amara	Buildings	33	33	3/4	66		
62	Amara		32	32	3/19	23		
63	East Amara	valued	12	12				
63	Homestead		65	73				
63	Middle Amara	by	10	10	2/28	24		
63	South Amara		27	27	3/28	20		
63	COOPER SHOPS: Amara		69	69	3/6	54		
64	East Amara		17	17				
64	Middle Amara	W.H. Bailey	75	75	2/	158		
64	South Amara		50	50				
64	West Amara		18	18				
64	WIRELESS SHOPS: Amara		146	146	2/	605		
64	Amara (oilrig)		3	3				
65	High Amara		50	50	2/25	66		
	Forward		1,029	4,852		5,881		9,213

CERTIFIED VALUATION SHEET NO. 8 OF 15

Value of Buildings and Equipment
as of April 15, 1932

Inventories on stated dates

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Sup., Stock		(e) Inventory
						Minor Stock	Major Stock	
GROUP 3, (Cont.) Forward								
		\$ 1,029	\$ 4,862	\$ 5,891		\$	9,213	
65	Homestead	125	64	179	3/11		1,016	
65	Middle Amara Buildings	25	25	25	3/23		223	
65	South Amara	34	34	34	3/2		357	
65	West Amara	18	18	18	3/22		223	
66	Amara							
MACHINE SHOPS:								
66	Homestead	211	550	761	3/16		405	
66	Middle Amara							
66	West Amara	120	350	470	3/2		170	
67	Amara		200	200				
67	East Amara	13	13	13	3/21		3	
67	High Amara	45	45	45	3/26		62	
67	Homestead	37	37	37	3/10		2	
67	Middle Amara	76	75	75	3/30		189	
67	South Amara	54	54	54	3/18		24	
68	West Amara	18	18	18	3/3		17	
Forward								
		1,485	6,325	7,810			11,804	

valued by W.H. Bailley
See Amara Woolen Mill
See Middle Amara Woolen Mill

CERTIFIED VALUATION SHEET NO. 9 OF 16

		Value of Buildings and Equipment as of April 15, 1932			Inventories on stated dates		
Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Sup., Minor Stock	(e) Stock Inventory
GROUP 3, (Cont.)	Forward	\$ 1,485	\$ 6,325	\$ 7,810		\$ 11,804	
PLUMBING SHOP: West Amara	68		100	100	3/5	142	
PRINTING SHOP: Middle Amara	68	198	522	720	3/	811	
SHOE SHOPS: Amara (Deittrick)	69		34	34	3/11	60	
Amara	69		37	37	2/29	153	
East Amara	69		94	94	3/21	16	
High Amara	69						
Homestead	69						
Middle Amara	70						
South Amara	70						
West Amara	70						
TAILOR SHOPS: Amara	71						
Middle Amara	71						
South Amara (B)	71						
South Amara (G)	71						
Forward		1,795	7,891	9,686		12,965	

Jointly with Harness Shop

W.H. Bailey

valued

by

CERTIFIED VALUATION SHEET NO. 10 OF 15

		Value of Buildings and Equipment as of April 15, 1932			Inventories on stated dates	
	(a)	(b)	(c)	TOTAL	(d)	(e)
Page No.	Buildings	Main Equipment	Minor Equipment	Bldgs. and Equipment	DATE 1932	Mat., Sup., Minor Stock Inventory
	GROUP 3, (Cont.)	Forward	\$ 1,795	\$ 7,391	\$ 9,186	\$ 12,965
	TIN SHOPS:					
	Amara	71		204	3/10	465
	Homestead	72	Buildings	135	3/8	1,764
	UMBRELLA SHOP:	72	Arara	11	3/24	78
	Arara	72	valued	245	3/18	520
	East Arara	73	by	170	3/7	496
	High Arara	73		76	3/10	408
	Homestead	73		139	3/4	276
	Middle Arara	74	W.H. Bailey	239	3/10	441
	South Arara	74		325	3/12	675
	West Arara	74		91	3/4	419
	WATCH MAKER:	74	Arara	149	3/10	110
	COLUMN TOTALS	75		2,385	9,175	11,560
	5% for Contingencies and Overhead Expenditures					573
	TOTAL PRESENT FAIR VALUES, GROUP 3					\$ 12,138
						\$ 18,617

CERTIFIED VALUATION SHEET NO. 11 OF 15

Value of Buildings and Equipment

Inventories on stated dates

as of April 15, 1932

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d)		(e)		
						Mat.	Sup.	Stock	Inventory	
GROUP 4, MEDICAL OFFICES										
76	Buildings	\$ 710	\$ 375	\$ 1,085						
	Homestead	valued	360	790						
	Middle Arona	by	212	425						
78	Arona	W.H. Bailey	95	272	5/	\$	195			
COLUMN TOTALS										
78			1,443	1,219			2,667	195		
5% for Contingencies and Overhead Expenditures										
				113						
TOTAL PRESENT FAIR VALUES, GROUP 4							\$	2,780	\$	195

CERTIFIED VALUATION SHEET NO. 12 OF 15

Value of Buildings and Equipment
as of April 15, 1952

Inventories on stated dates

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	Inventories on stated dates	
					DATE 1952	(e) Stock Inventory
GROUP 5, BUSINESS ESTABLISHMENTS						
79	Arena	\$ 65	\$ 121	\$ 186	\$	\$
79	East Arena	55	25	80	3/22	33
79	High Arena	56	41	96	3/20	20
79	Homestead	60	53	113		
80	Middle Arena	250	45	305	3/30	26
80	South Arena	25	45	70	2/29	56
80	West Arena	40	50	90		
81	Arena		369	369		
81	Homestead		439	439		
81	South Arena (Lower)		518	518		
81	South Arena (Upper)		324	324		
81	JUMBER YARD: Arena		50	50	3/9	3,000
82	WHOLESALE HOUSE: Homestead	260	380	640	3/21	33,303
82	COLUMN TOTALS	820	2,460	3,280		135
	5% for Contingencies and Overhead Expenditures			164		
	TOTAL PRESENT FAIR VALUES, GROUP 5		\$ 3,444	\$	\$	\$ 36,303

1 50 1

CERTIFIED VALUATION SHEET NO. 13 OF 15

Value of Buildings and Equipment
as of April 15, 1932

Inventories on stated dates

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	Inventories on stated dates	
					(d) Mat., Sup., Minor Stock	(e) Stock Inventory
GROUP 6, MISCELLANEOUS EQUIPMENT						
83	CORDWOOD EQUIPMENT: Amara	\$ 25	\$ 210	\$ 235	\$	
83	High Amara		42	42		
83	Middle Amara	125	210	335		
83	South Amara		46	46		
83	West Amara	70	49	119		
84	South Amara	45	25	70		
84	High Amara		13	13		
84	FENCE REPAIRS: South Amara		22	22	3/14	270
85	HOG POWDER: Amara	32	60	92		
85	ICE TOOLS: Amara		132	132		
85	East Amara		21	21		
85	High Amara	170	20	190		
85	Homestead		42	42		
85	Middle Amara		20	20		
86	South Amara		33	33		
Forward		467	945	1,412		270

CERTIFIED VALUATION SHEET NO. 14 OF 16

Value of Buildings and Equipment
as of April 15, 1932

Inventories on stated dates

Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Minor Stock	(e) Sup., Stock Inventory
86	West Amara		38	38			
86	MISCELLANEOUS EQUIP.: East Amara		55	55			
86	NIGHT WATCH: Amara		3	3			
86	ORCHARD EQUIPMENT: South Amara	122	8	130			
86	POTATO STORAGE: Amara		10	10			
86	South Amara		10	10			
87	PRESS EQUIPMENT: Amara		57	57			
87	Homestead		46	46			
87	REPAIR, BUILDING: Amara		12	12			
87	South Amara Shingle		16	16	3/2	44	
87	Building		63	63	3/18	7	
87	West Amara		28	28			
88	SEWING EQUIPMENT: Amara		83	83			

Forward

589

1,374

1,963

321

CERTIFIED VALUATION SHEET NO. 15 OF 15

		Value of Buildings and Equipment as of April 15, 1932			Inventories on stated dates		
Page No.	(a) Buildings	(b) Main Equipment	(c) Minor Equipment	TOTAL Bldgs. and Equipment	DATE 1932	(d) Mat., Sup., Minor Stock	(e) Stock Inventory
	GROUP 6, (Cont.) Forward	\$ 589	\$ 1,374	\$ 1,963		\$ 321	
	West Arana	Buildings valued by W.H. Bailey	31	31			
	SOAP WORKS: Arana	175	100	275	3/18	333	
	COLUMN TOTALS	764	1,505	2,269		654	
	5% for Contingencies and Overhead Expenditures			113			
	TOTAL PRESENT FAIR VALUES, GROUP 6			\$ 2,382		\$ 654	

DATE 4/15/32 BY Marston

CLASSIFIED SUMMARY FOR VALUATION COMPUTATIONS

(1) M. T. G. - MORTALITY TYPE CURVE (L₁, L₂, L₃, L₄, S₁, S₂, S₃, S₄, S₅, R₁, R₂, R₃, R₄)
 (2) E. A. L. - ESTIMATED AVERAGE LIFE OF SIMILAR UNITS
 (3) P. S. L. - PROBABLE SERVICE LIFE OF THIS UNIT

ACCT.	ITEMS	QRC.	AGE	P.S.L.	UNIT PRICES			AMANA VALUES NEW			PRESENT VALUES							
					ORIG. COST	REPR. COST	FAIR VALUE	ORIG. COST	REPR. COST	FAIR VALUE	ORIG. COST	REPR. COST	FAIR VALUE					
	GRAIN ELEVATOR, HOMESTEAD																	
	(a) Building																	
1	Main Part Cellular, Wood, 25% 32 47 F																	
	Asbestos rf. Stone fnd.																	
	53' x 24' x 65' Abt.																	
	85,000 cu. ft. Wd. Add.																	
	(b) Main Equipment																	
1	Automatic Scale		19	22	F													
1	Conveyor, Screw		19	22	F													
1	Wagon Scale		32	35	P													
1	22 H.P. Gas Engine		32	35	P													
1	Fanning Mill		32	35	P													
1	Corn Cleaner		32	35	P													
1	Oats Separator		32	35	P													
1	Scale and Hopper		32	35	P													
	Bolting																	
	Pulleys and Gears																	
	Shafting																	
	Total Main Equip.																	
	(c) Minor Equipment																	
	(d) Office Supplies																	
	(e) Stock Inventory 3/29/32																	
	Total Grain Elevator, Homestead																	

8712-

INDUSTRIAL PLANTS CLASSIFIED SUMMARY FOR VALUATION COMPUTATIONS

(1) M. T. C. - MORTALITY TYPE CURVE (L1, L2, L3, L4, L5, S1, S2, S3, S4, S5, R1, R2, R3, R4)

(2) E. A. L. - ESTIMATED AVERAGE LIFE OF SIMILAR UNITS (3) P. S. L. - PROBABLE SERVICE LIFE OF THIS UNIT

NO.	ITEMS	M.T.C. AGE		NO. UNITS	% SALV.	UNIT PRICES			AMANA VALUES NEW			PRESENT VALUES					
		E.A.L.	P.S.L.			ORIG. COST	REPR. COST	FAIR VALUE	ORIG. COST	REPR. COST	FAIR VALUE	ORIG. COST	REPR. COST	FAIR VALUE			
2	Brought Forward																9326 -
4	Looms 85" 2nd H	12	14	G						200 -						2020 -	100 -
4	" 92"	42	43	P						400 -						3732 -	150 -
4	" 92" 2nd H	0	10	G						400 -			750 -			4104 -	750 -
2	" 92"	10	20	F						300 -						1836 -	550 -
2	" 108"	39	44	F						300 -						1922 -	290 -
2	" 108"	37	42	F						350 -						2010 -	315 -
4	" 114"	34	39	G						700 -						4320 -	715 -
1	Single Card			P						50 -						50 -	50 - ⁶⁴
1	Picker			P						50 -						50 -	50 -
1	Warp Dresser and Reel	40	41	P						100 -						100 -	100 -
1	Warp Compressor	40	41	P						50 -						50 -	50 -
2	240 Spindle Mules P.S.	9	19	F						2000 -						2500 -	2500 -
2	240 Spindle Mules D. F.	8	19	F						2000 -						2900 -	2900 -
1	3 set Cards P. S.	9	18	F						4000 -						9900 -	4300 -
1	3 set Cards D. F.	8	21	G						4000 -						9000 -	5800 -
1	Waste End Conveyor	9	15	G						100 -						103 -	103 -
1	Card Grinding Frame	9	15	F						100 -						370 -	171 -
1	Cloth Dryer	9	25	P						1200 -						1350 -	1350 -
1	" Napper	8	9-20	F						2000 -						3600 -	1890 -
1	" Shear	9	14	F						500 -						470 -	470 -
1	" Brush	9	20	G						450 -						650 -	650 -
1	" Press 60 1/2"	8	20	F						1500 -						1850 -	1850 -
1	Napper Grinding Frame	8	20	G						300 -						478 -	478 -
1	Forward																34908 -

-Labor

DATE 4/15/32 BY Marston

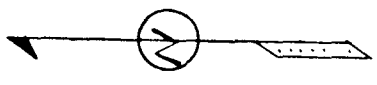
PROPERTY GROUP UTILITIES

CLASSIFIED SUMMARY FOR VALUATION COMPUTATIONS

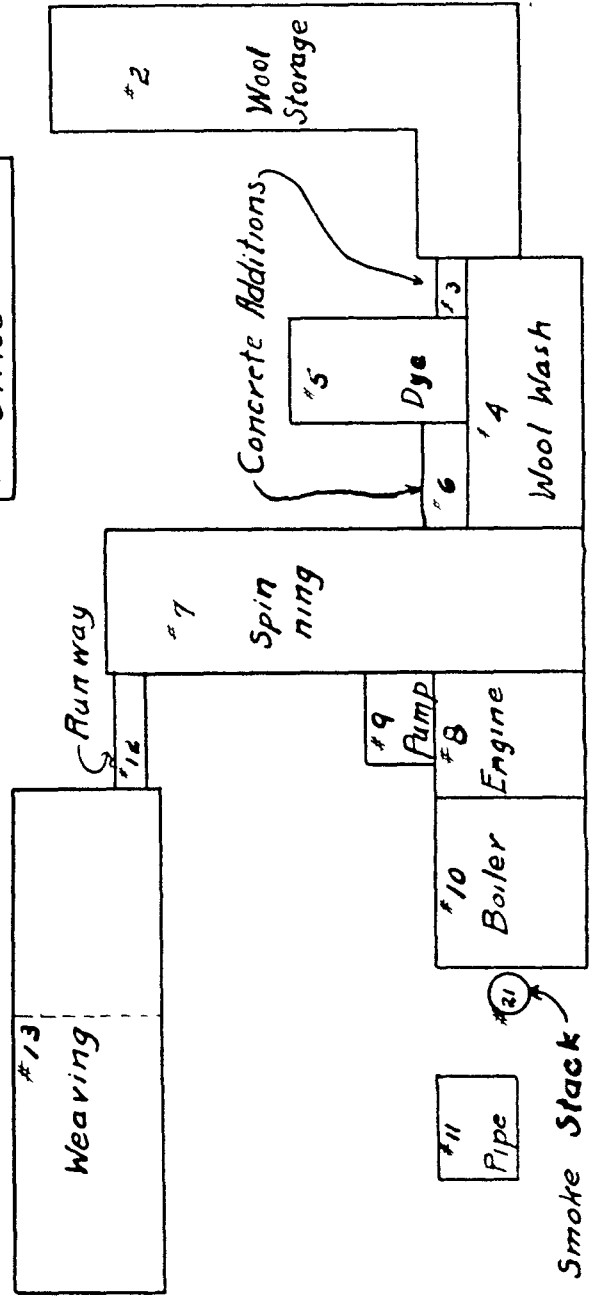
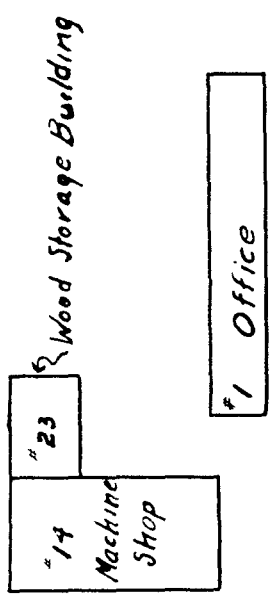
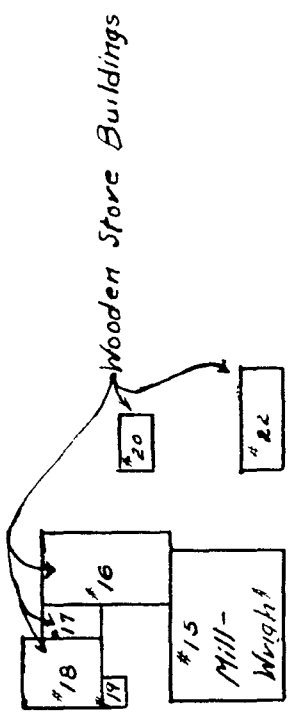
(1) M. T. C. - MORTALITY TYPE CURVE (L₁, L₂, L₃, L₄, S₁, S₂, S₃, S₄, S₅, R₁, R₂, R₃, R₄)
 (2) E. A. L. - ESTIMATED AVERAGE LIFE OF SIMILAR UNITS
 (3) P. S. L. - PROBABLE SERVICE LIFE OF THIS UNIT

ITEMS	M.T.C. AGE		CON- DIT- ION	SALV. %	UNIT PRICES			AMANA VALUES NEW			PRESENT VALUES						
	E.A.L.	P.S.L.			ORIG. COST	REPR. COST	FAIR VALUE	ORIG. COST	REPR. COST	FAIR VALUE	ORIG. COST	REPR. COST	FAIR VALUE				
(Brought Forward)																	
2000 ft. 4" C. I. Pipe	20	75			85		1000 -		400 -		1700 -		5972 -				
2047 ft. 4" C. I. Pipe	38	75			70				123 -		1433 -		1626 -				
15 ft. 2 1/2" W. I. Pipe					65				2 -		10 -		6 -				
890 ft. 1 1/2" W. I. Pipe	18	40			40				30 -		356 -		273 -				
2031 ft. 1 1/4" W. I. Pipe	18	40			38				58 -		772 -		592 -				
165 ft. 1 1/4" W. I. Pipe					38				5 -		63 -		40 -				
7376 ft. 1" W. I. Pipe	18	40			35				159 -		2655 -		2030 -				
612 ft. 3/4" W. I. Pipe					30				9 -		184 -		100 -				
260 ft. 1/2" W. I. Pipe					27				3 -		70 -		50 -				
Total Main Equipment													11919 -				
(c) Minor Equipment									442 -				413 -				
TOTAL SOUTH AMANA WATER SYSTEM													12332 -				

APPENDIX B



AMANA WOOLEN MILL
Location Plat of Buildings
Scale 1"=60' April 1-1932

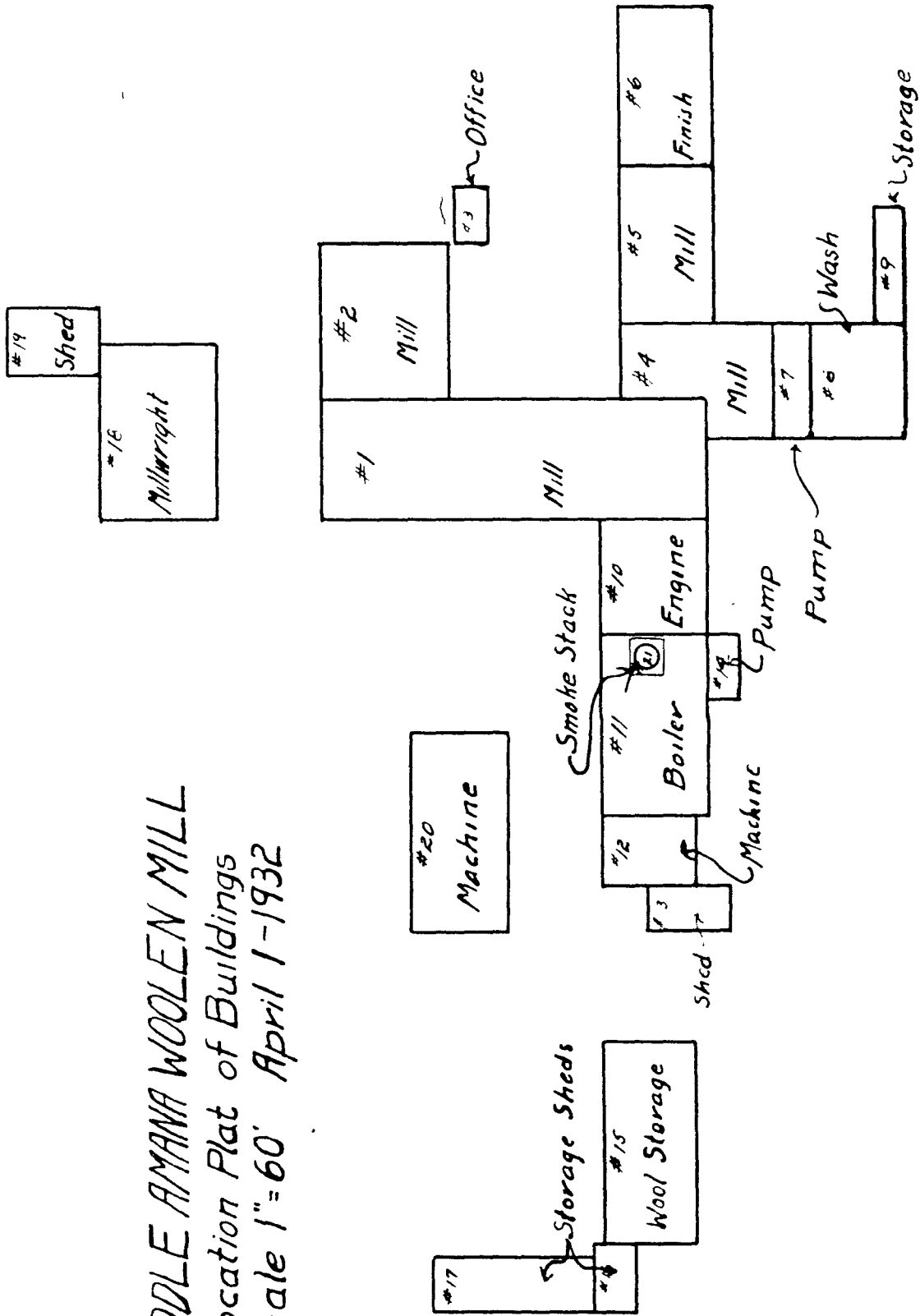




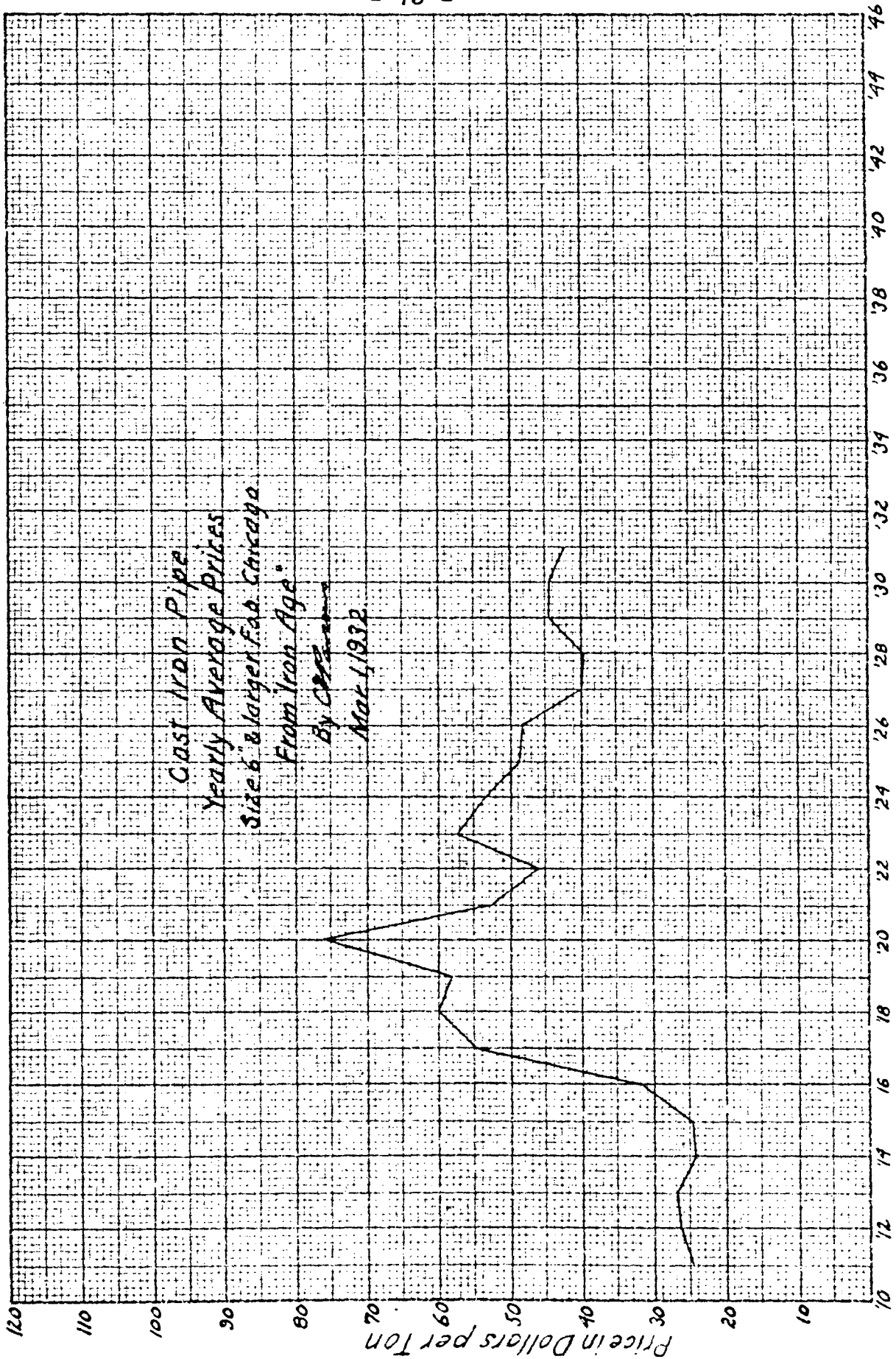
MIDDLE AMANA WOOLEN MILL

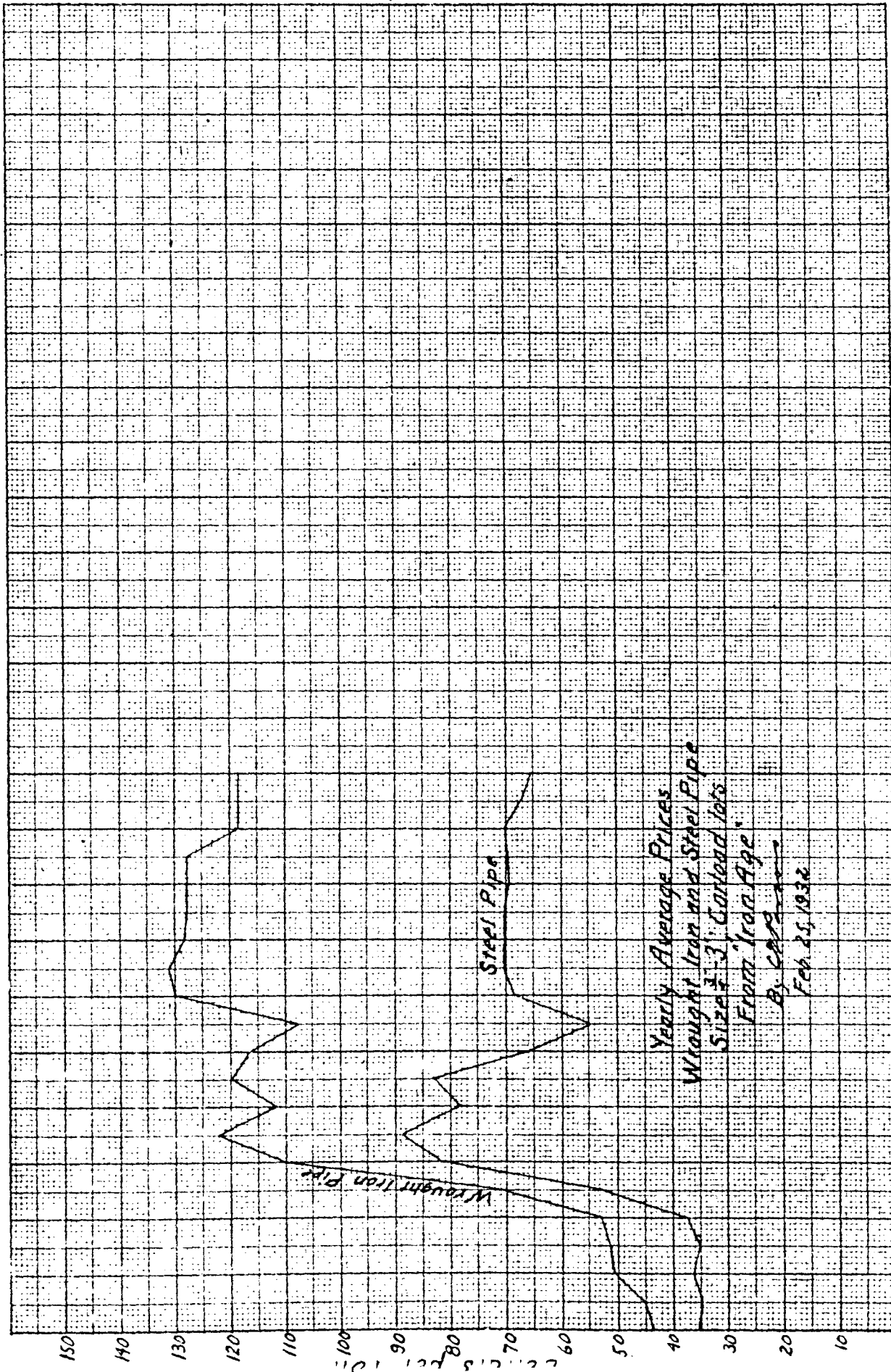
Location Plat of Buildings

Scale 1" = 60' April 1-1932

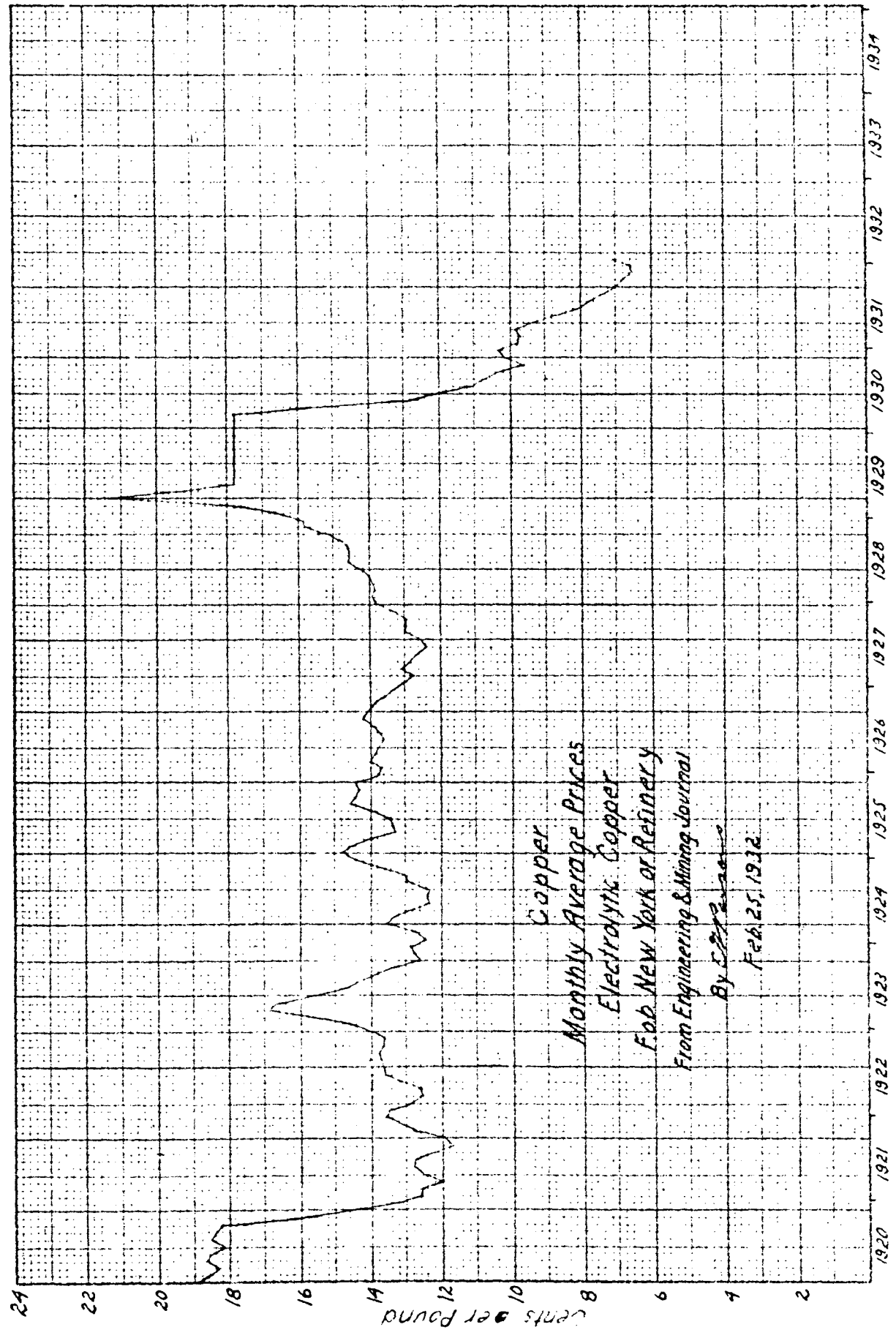


APPENDIX C





'11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33 '34 '35 '36 '37 '38 '39 '40



Copper
Monthly Average Prices
Electrolytic Copper
Fob New York or Refinery
From Engineering & Mining Journal
By *W. R. R. R.*
Feb 25, 1932

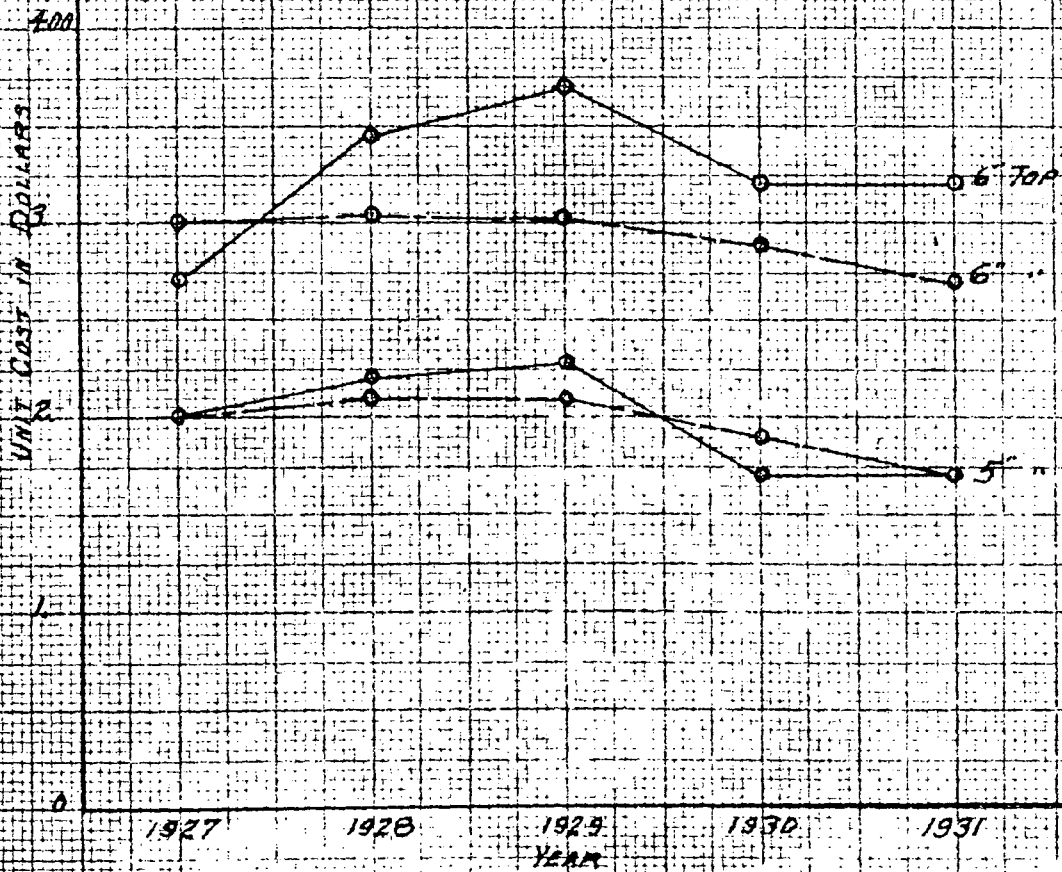
COST OF 20' POLES

— NORTHERN WHITE CEDAR

— WESTERN RED CEDAR

COST OF TREATING

	SPEC A	SPEC B	1/2 G. P.	3/4 P. N.
	NW	WR	NW	WR
5' 20'	0.45	0.48	0.77	0.86
6' 20'	0.53	0.65	0.91	1.05



COST OF 25' POLES

- NORTHERN WHITE CEDAR
- WESTERN RED CEDAR

COST OF TREATING

	SPEC. A		SPEC. B		1/2 G.P.		3/8 PEN.	
	NW	WR	NW	WR	NW	WR	NW	WR
5' 2 1/2"	1.25	1.25	1.25	1.25	1.24	1.27	—	1.92
6' 2 1/2"	1.79	1.79	1.40	1.27	1.80	1.73	—	1.56

