

NEW HOUSE NUMBERING SYSTEM FOR PORTLAND

Introduction

The City of Portland, Oregon, was until quite recently, one of the notable exceptions among American cities of having its house numbers on some basis other than one hundred numbers to each block from some designated base line. In addition to the topographic conditions which would make any system of house numbering a difficult matter, Portland is one of the oldest cities on the Pacific Coast, having been settled in 1844 and incorporated in 1851. The complicated old house numbering system of Portland, which has just recently been changed, dates back to the first ordinance passed by the Council and approved by the Mayor on September 18, 1862 which provided for the numbering of streets in Couch's Addition. Previous to that time the system of twenty numbers to the block had been in practice in the original incorporation of the City of Portland. This old ordinance in addition to establishing the house numbering system and authorizing the placing of standard house numbers at $37\frac{1}{2}$ each, also renamed the streets in Couch Addition. The basic ordinance No. 2125 for numbering of city streets for the City of Portland, entitled "to provide for numbering of buildings" was passed by the Council and approved on February 8, 1878. Ever since that time, the house numbering system of the City has been further complicated by the addition or merging of small municipalities such as the City of East Portland, the City of Albina, the City of St. Johns, the City of Linnton, and the

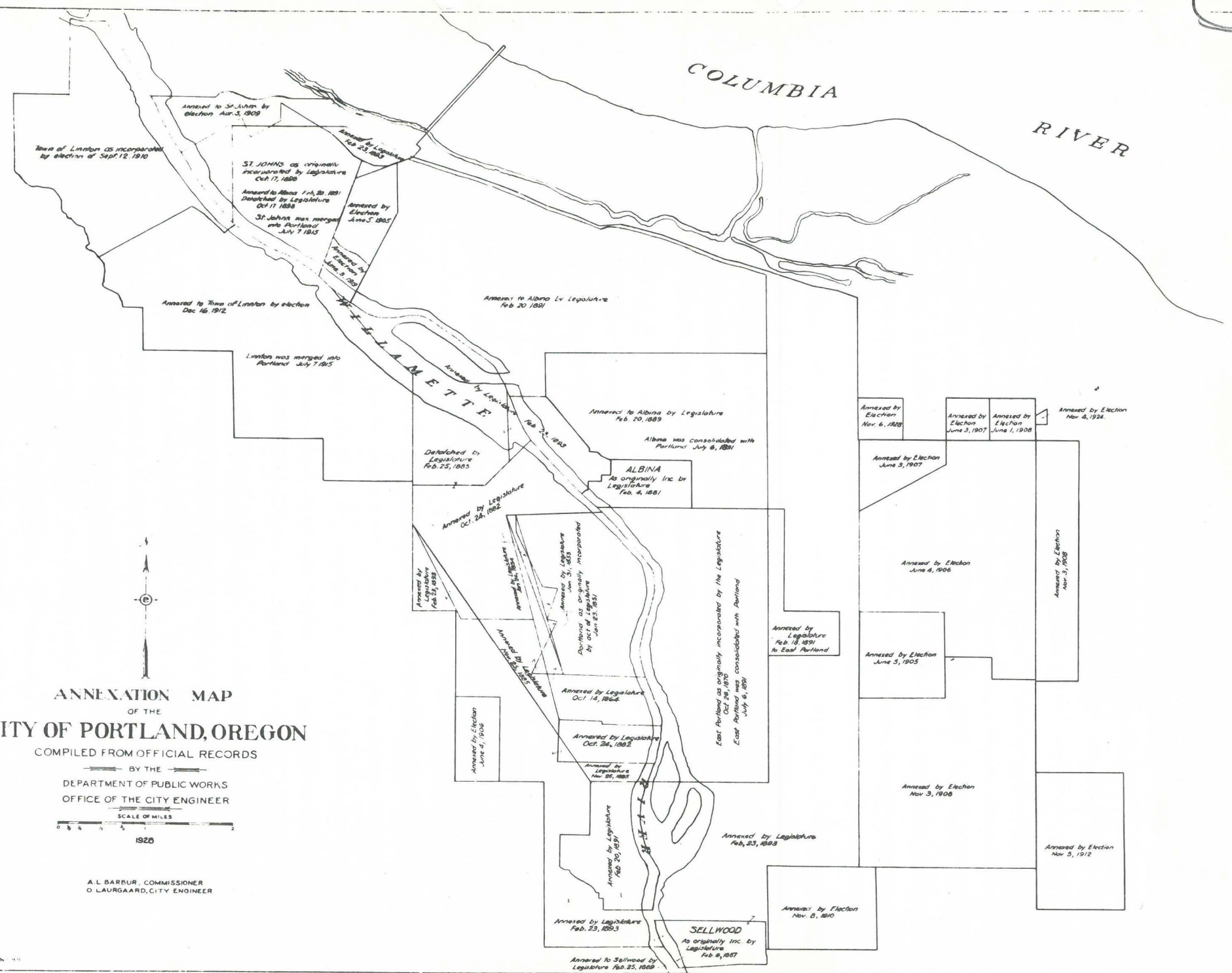
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City of Lents. No attempt has been made to co-ordinate the various house numbering systems of these various small municipalities with the house numbering system established for the original City of Portland on the west side of the Willamette River. Plate No. 1 shows the accretions and the boundaries of the City of Portland from the original incorporation in 1851 up to the present time. The important additions and the dates upon which they were annexed to the City of Portland as well as the area is shown on the tabulation below. This shows that the area of the City of Portland at the present time is 66.70 square miles. The census in 1930 gave the City of Portland a population of 301,815, from which it is estimated that the present population is approximately 315,000.

Date Annexed		Square Miles
1851	Original City	1.62
1854		.49
1864		.81
1883	North Portland, Kings Heights, etc.	2.53
1885		.85
1891	Albina, Fulton & East Portland	16.97
1893	Sellwood, Irvington Park, Portions of West Side, etc.	14.37
1905		1.54
1906	Rose City, Council Crest Park, etc.	4.65
1907	Rose City Park, etc.	.81
1908		.28
1909	Woodstock, etc.	5.81
1911	Eastmoreland	1.18
1913	Mt. Scott District	1.56
1915	Linnton & St. Johns	12.76
1919		.22
1928		.25
Total		66.70

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COLUMBIA RIVER



ANNEXATION MAP
OF THE
CITY OF PORTLAND, OREGON

COMPILED FROM OFFICIAL RECORDS
BY THE
DEPARTMENT OF PUBLIC WORKS
OFFICE OF THE CITY ENGINEER



1920

A. L. BARBUR, COMMISSIONER
O. LAURGAARD, CITY ENGINEER

The Old House Numbering System

The old system which has been recently changed on both sides of the Willamette River was on the basis of twenty numbers for each 200-foot block. The base line from the best available information for the west side of the river was apparently established at Hood Street in South Portland with No. 80 so that with an increase of twenty numbers to a block in a westerly direction, Front Street acquired the number 200, Tenth Street, 400, etc. On the east side of the river it appears that the zero base was originally intended to be Patton Avenue or what is now Interstate Avenue, and extended in an easterly direction twenty numbers to the block so that at Grand Avenue, which is the same as 5th Avenue, the number was 401, and East 25th Street was 801. The zero base line from which the house numbers on north and south streets were numbered was Ankeny Street and twenty numbers were allowed for each 200-foot block in a north and south direction. All streets on the east side of the river were designated by the prefix "East" and all streets north of Ankeny by the suffix "North". There were several exceptions to the use of prefixes and suffixes. There was one notable exception in the system of twenty numbers to the block, namely in "that district east of 41st Street and South of Division Street" which had one hundred numbers to the block; the house numbers on the avenues (east and west streets) corresponded to the numbered streets which ran north and south. All addresses in this district had the suffix "Southeast". The base line for the old sys-

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tem of numbering the streets in the S. E. District appear to be Williams Avenue on the west for the numbering of east and west avenues, and the base line was Burnside Street for numbering the north and south streets.

Those portions of the City known as St. Johns and Linnton also retained the system of house numbers and street names that they had before they were consolidated with the City of Portland. Some of these were on the basis of one hundred numbers to the block and some on the basis of twenty numbers to the block. Some had prefixes and some had suffixes.

Proposed Changes in the House Numbering System

Shortly after July 1, 1917 the City Engineer proposed to establish a new house numbering and street naming system. This was deemed advisable not only on account of the complicated system in effect throughout the major portion of the City which caused confusion and annoyance to visitors and others, but also on account of the great difficulty that the Post Office Department had with duplicate numbers, duplicate street names, and the use of both prefixes and suffixes; this condition was aggravated by having only twenty numbers to the block when the generally accepted systems throughout cities of the United States is one hundred numbers to the block and made to correspond with the numbered streets or avenues.

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In 1920, the City Engineer again proposed a new system of house numbering, wrote a report on the proposed system, prepared a map showing the system of base lines and quadrants and recommended the use of prefixes. This system was approved by the Commissioner of Public

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Works Mr. A. L. Barbur who made recommendations in the budget for the necessary funds to commence work on the new basis. On account, however, of the rather high cost of changing the mailing list to the various City departments affected; the amount of the necessary appropriations to make the change; the great amount of inconvenience, trouble and expense that would be incurred by the utilities, banks, large commercial organizations and others who had large mailing lists, the project was temporarily defeated. The subject of a new house numbering system, changing the base lines and renaming some of the streets was kept alive and the subject received a great deal of comment through the various civic clubs and newspapers. Items were inserted from time to time in the budget of the Commissioner of Public Works but on account of lack of funds and the pressure of the opposition was consistently defeated.

The Appointment of Committee

In 1927 due to the interest that was created on the subject, the City Club of Portland appointed a committee to study the question, after which some interest was aroused. On November 6, 1930 the Commissioner of Public Works named a committee composed of delegates from all districts of the city including representatives of the press, the Postmaster, and other public-spirited citizens who were instructed to investigate and study the matter of changing our house numbering system and making such changes in the street names as would be deemed advisable. The members of this committee were:

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Ivan C. Anderson,	Federation of Community Clubs
A. J. Freum,	St. Johns Business Men's Club
Paul A. Aufranc,	Killingsworth Club
Warren Keeler,	Kenton Commercial Club
J. H. Goldstaub,	Central East Portland Community Club
Paul A. Sayre,	Greater Sandy Boulevard District, Incorporated
J. M. Wallace,	Belmont Improvement Association
H. Jacobson,	S.E. Portland Commercial Club
Walter Judd,	Joseph Lane Community Club
Arnold H. Earnshaw	Westmoreland Community Club
W.P. Bodway,	Whitwood Court Community Club
R. E. Sheriff,	Fulton Park Community Club
Milo Mack,	East Side Commercial Club
A. W. Cauthorn,	Oregon Journal
James Ruddiman,	Brooklyn District
Sinclair Wilson	Linnton District
L. H. Morgan,	Sellwood District
John M. Jones,	Post Office Department
E. L. Knight,	(Chamber of Commerce, and (Retail Merchants Ass'n.
Robt. R. Rankin,	Portland Heights Club
J. S. Haughey,	Central Labor Council.
Bert J. Grocock,	Sr., Oregon Building Congress
U. L. Upson,	Uptown Portland Association
Geo. Lawrence,	Downtown Association
E.T. Stretcher,	School Board
John Heitkemper,	South Portland Neighborhood Club
C. A. McClure,	City Planning Commission
A. L. Barbur,	Commissioner of Public Works
O. Laurgaard,	City Engineer
Lieut. W.C. Epps,	Bureau of Police
A. J. Matot,	Progressive Business Men's Club
A. G. Teepe,	Realty Board
Ben Riesland,	Territory west of Portland, Multnomah, etc.

Mr. Ivan C. Anderson was elected chairman and U. L. Upson of the Uptown Portland Association was elected secretary.

After holding many meetings, appointing sub-committees to study various phases of the problem, consulting with various civic clubs, City officials, representatives of the Post Office Department, the public utilities, and all of the newspapers, this committee finally rendered a report under date of December 27, 1930 which was transmitted to the Council under date of April 17, 1931 by the Commissioner of Public Works with the recommendation that hearings be held before the Council on the report of the Committee.



were as follows:

(1) To divide the city into five general districts, as follows:

The section north of the Willamette River and west of Williams avenue to be designated "North (N)".

The section north of East Burnside street and east of Williams avenue to be designated "North East (NE)".

The section south of East Burnside street and east of the river to be designated "South East (SE)".

The section north of Burnside street and west of the river to be designated "North West (NW)".

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The section south of Burnside Street and west of the river (to Jefferson street) to be designated "South West (SW)".

(2) That all east and west streets in the entire city be changed to Avenues, and that north and south streets be designated as "Streets".

The use of the words "Boulevard" or "Drive" may be advisable to designate widened streets.

(3) That the east and west streets in the extreme southeastern section of the city, now designated as "South East" be changed from numbered avenues to named avenues; and that the names of streets next to the river be continuous, where practicable, through to the extreme eastern boundaries of the city.

(4) That all streets in the city carrying more than one name be changed to one name for the entire length of the street.

(5) That the designations "NE", "N", "NW", etc., be used as prefixes; as, for example, 1001 SW Morrison av-

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enue would designate that the address was the first building on the north side of the present Morrison street, west of Tenth street.

(6) That the portion of its report quoted above, covering work so far completed, be embodied in an ordinance or ordinances, so as to make available any sums for street signs which may be appropriated for use during the year 1931.

Action by the Council

The City Council adopted the report of the Commissioner of Public Works with the recommendation of the committee except that the Council designated the north and south streets which as a rule are distinguished by numbers as "Avenues" and the east and west streets as "Streets".

The project of changing the house numbers in the city was finally assured when the City Council in the fall of 1931 adopted a budget item of \$60,000.00 with which to purchase the necessary digits and frames to supply all of the residences and buildings with the new numbers free of charge and to provide the necessary personal service to make the change. The money was appropriated, however, on the basis of two fiscal years, namely 1932 and 1933. Only limited appropriations were available at that time for changing the street signs.

The ordinance providing for a plan of systematic renumbering of buildings and renaming of streets was passed by the Council on September 2, 1931. This ordinance which is attached hereto as Exhibit No. 1 provides for a uniform system of numbering all houses and buildings

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Investigations by the City Engineer

The special committee on house numbering and the City Engineer were in correspondence with the City Engineer of Milwaukee, Wisconsin, who was just completing the renumbering of the houses in Milwaukee. During June 1931, while in the East, the City Engineer was authorized by the Council to investigate the house numbering system in Milwaukee and obtain such information as might be applicable to our conditions in Portland. Much valuable information was received and many suggestions made that were helpful in working out our problem in Portland. Samples were obtained also of the house numbering digits and the aluminum frames that had been adopted by the City of Milwaukee for their standard house numbers.

We also had access to the results obtained by the Municipal Administration Service of New York City and in particular a publication called "House Number Signs" by Jos. W. Nicholson published in 1931. This article on the house numbering problem was very instructive, because it gave the results of various tests on different kinds of digits and house number signs, and gave the results of tests for size, appearance, color match, reflection factor, and durability. The City of Portland, therefore, in designing its house numbering system and in selecting the types of uniform house numbers had the advantage of the experience of the City of Milwaukee and results of tests conducted by the Municipal Administration Service and their recommendations.

Recommendations of Committee

The general recommendations of the committee

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in the City of Portland, outlines the procedure, designates the prefixes, designates streets, avenues, boulevards, drives, etc., and makes provisions for the actual placement of the numbers by the City Engineer. The ordinance describes and designates the base line or zero streets in both directions, provides for a unit of 10 feet of property frontage for each number wherever possible, provides for continuing with consecutive hundreds at each intersection whenever possible, provides for the maintenance of the old numbers concurrently with the new ones for a period of six months, the size and location of numbers, and provides penalties for violations.

Brief Description of System

The five districts into which the City was divided on the recommendations of the City Engineer and the special committee is shown on the accompanying plate No. 2. As will be noted, Burnside Street divides the city in a north and south direction and Williams Avenue and the center line of Willamette River completes the city into four quadrants which have been designated as "Northeast", "Southeast", "Southwest" and "Northwest". Due to the fact that the Willamette River flows through the City and especially the "Northwest" quadrant and does not follow any fixed geographical direction it was found necessary to add an additional district with a designation "North".

One of the important recommendations made by the committee, at the suggestion of the Post Master Mr. John M. Jones and the City Engineer was that the prefix indicating the district should follow the house number and precede the name of the street or avenue. The north and south

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streets being for the most part numbered avenues, the house numbers would clearly and definitely locate the premises in direction and distance from the base line; as for instance, 1630 N. E. 38th Avenue would clearly indicate a place about $16\frac{1}{2}$ blocks North of Burnside and 38 blocks East of the River (Williams Avenue). The same is true for a number of streets that run in an east and west direction, particularly where they are named in alphabetical order from the base line. The possibility or probability of omitting the district designation or abbreviation in an address would be quite remote when placed in the middle or preceding the street name; while it has been a common practice to omit suffixes. Due to the rather extensive program undertaken by changing all of the house numbers; changing all of the north and south numbered "streets" to "avenues"; changing a great many of the named streets to avoid duplications and some times in order to locate the streets in reference to additions or other well known boulevards or traffic arteries, it was not deemed advisable at this time to change the names of all of the east and west named streets.

Type of House Numbers Adopted

As soon as it became generally known that the house numbering system in the City was about to be changed and that new house numbers would be purchased, the City officials were flooded with applications from individuals and firms in person and by mail from all over the United States to not only establish various systems of house numbering, but also establish and supply numerous types of house numbers; some in the form of digits and frames, and others constructed complete, manu-

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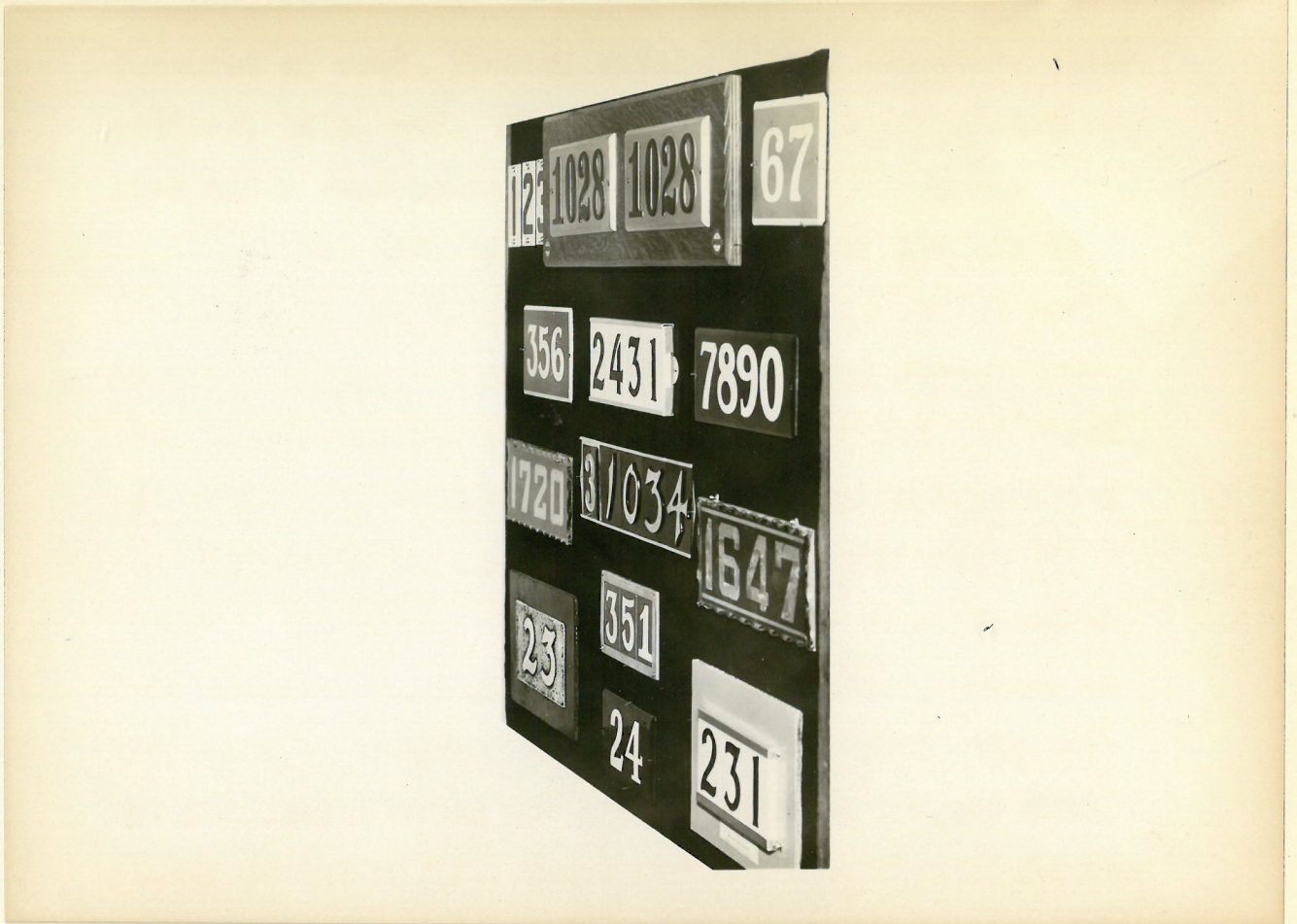
factured of wood, pressed metal, steel, aluminum, glass, pottery, tile, etc. Plate No. 3 shows a few of the samples which were submitted.

The tile digit adopted was very similar to that used by the City of Milwaukee and for which exhaustive tests were made by the Municipal Administration Service of New York City. These showed the black and white tile were more satisfactory as to durability and visibility than any other types of numbers.

As soon as possible, the City Council authorized the advertising for bids for new house numbers on the basis of aluminum frames and tile digits, the successful bidder being the Gladding-McBean Company with plants on the Pacific Coast for the tile digits and the Portland Metal Spinning Works of Portland, Oregon, for the aluminum frames. For the reason that the appropriation was made for two separate years, it was necessary also to separate the purchase of frames and tile digits in several lots. The aluminum frame which was adopted and purchased, was practically the same as that used for the City of Milwaukee. The tile digits were changed to a small extent being made a little thinner and less expensive. An additional change was also made by inserting a thin piece of cardboard between the tile digits and the frames. This had the effect of eliminating the rattle and also of absorbing the small amount of moisture that might not be drained from the back of the frame. The general appearance of the finished plate was also improved by the use of the cardboard by pressing all of the digits against the front or outer edges of the frame

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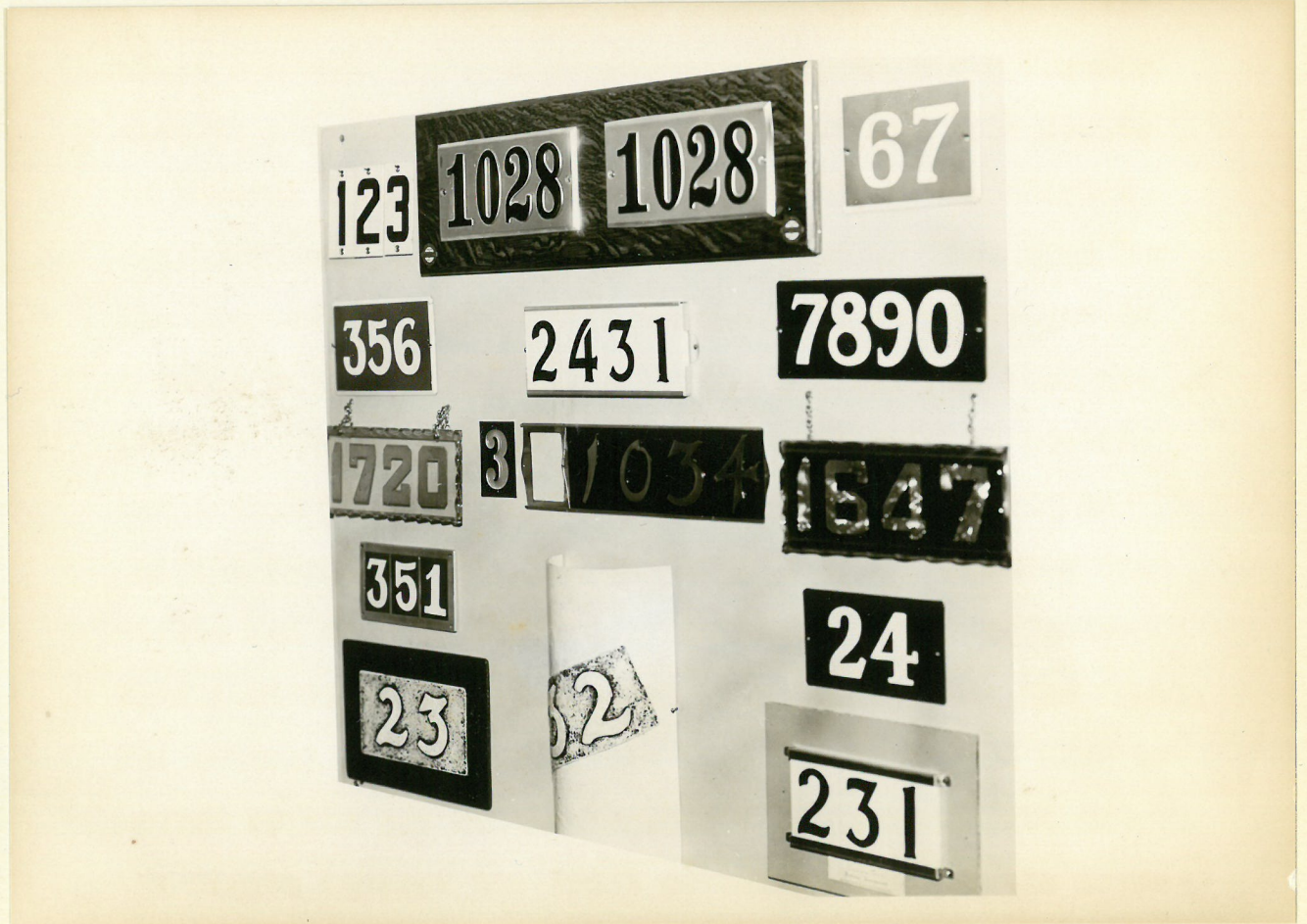


Plate 3.

and in this manner making all of the digits appear uniform.

Specifications for Tile Digits

Plate No. 4 shows a photograph of the various sizes and kinds of frames and digits that were selected and purchased for the new system.

Some of the specifications under which the digits were manufactured and delivered provide that the digits shall be of a tile body, completely covered with a white glaze, which possesses a true, pure white color. The glaze should be so made as to be perfectly opaque and should cover and obscure the tile body completely, thus giving an even white color to each piece. The numerals on the tile should be depressed approximately $1/32$ " ; should be of a smooth pure black glaze; should not possess any blue, brown, gray or green cast; and, should be thoroughly baked onto the tile. The digits should be exactly $3\frac{1}{2}$ " high, $2\text{-}1/4$ " wide and $5/16$ " thick.

Deliveries were all guaranteed at the Public Works assembly yard in the City of Portland. The digits should all be furnished in accordance with samples submitted, should be reasonably water-proof and should not easily disintegrate due to the action of the elements. It was also specified that they should not be unduly fragile so as to be easily destroyed or broken or too brittle or frail for handling and assembling and installing in the field with reasonable care. It was specifically provided that the digits should be carefully wrapped and boxed so as to insure as far as possible the receipt of

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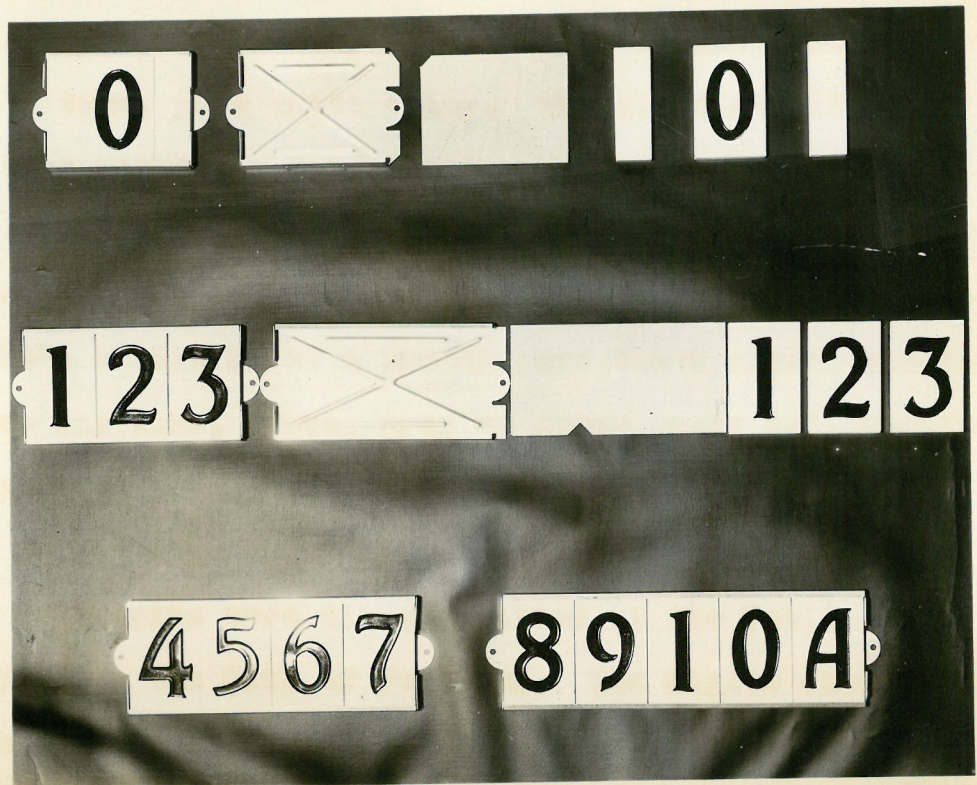


Plate 4.

the digits in good order without scratches, chipping or checking. The contractor agreed to replace any and all digits broken in transit.

In addition to the general specifications, the successful contractor was required to supply detailed specifications and also records of tests to be conducted according to the U. S. Bureau of Standards and the American Society of Testing Materials now in use.

The workmanship should be first class and the finished work should show no chipping from the edges, scale or nail scratch formation, cracks, blisters or pin holes, and the surface should be free from uneven coloring or transparent spots. The digits should be clear cut and without ragged edges. All materials should be reasonably flat and without warpage which would in any way interfere with the assembling or installing. After acceptance and at any time during the progress of the work the successful contractor agreed to replace any defective digits within 30 days of notice from the City of Portland.

All materials were finally inspected and accepted at Portland by the City Engineer or his duly authorized representative at Stanton Yard, headquarters for this work, and all materials which were unsatisfactory and did not comply with the specifications were rejected.

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Specifications for Aluminum Frames

The general specifications for the aluminum frames

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provided for the use of 20 B.& S. gauge, 3-S Alcoa 1/2 hard aluminum alloy, first class workmanship, free from scratches, cracks, ragged edges and uneven surfaces. The aluminum specified was sufficiently malleable to permit the embossing of the frame and to permit the bending of the lugs on the end without cracking or breaking after the numbers were inserted. At the same time it was required that the frames be sufficiently rigid to hold the digits in a compact manner, and to withstand any reasonable amount of bending, warping or spreading. The successful contractor agreed that all the frames should be carefully wrapped and boxed in order to insure delivery without damage and to replace any and all damaged frames. The successful contractor also agreed to assume all liability and to hold the City free from all damages arising from litigation and from possible patent infringements.

Cost of Digits and Frames

The digits were purchased in several lots under several advertisements. The total cost of 396,000 digits that were delivered was \$20,614.18, the price on the first and second order being 4 3/4 ¢ per digit and the third order 5 1/2 ¢. A total of 362,297 digits were actually placed at 93,596 locations or an average of 3.887 tiles per frame.

The tiles delivered and actually placed may be tabulated as follows:

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Digit	Number Delivered	Actually Placed
a	200	165
1	60,000	55,028
2	60,000	57,148
3	52,000	50,170
4	42,750	38,896
5	39,000	35,736
6	32,200	27,036
7	27,900	24,005
8	23,300	19,294
9	18,300	17,907
0	38,350	36,482
$\frac{1}{2}$ blank	<u>2,000</u>	<u>595</u>
	396,000	362,297

A tabulation of the number, size and cost of frames ordered may be made as follows:

First Order

2,535	- 2 Digit Frame	●	\$.10
17,500	- 3 " "	●	.05 $\frac{1}{2}$
66,650	- 4 " "	●	.06
800	- 5 " "	●	.19

Second Order

<u>13,000</u>	- 4 Digit Frame	●	.09 $\frac{1}{2}$
100,485	- Total Purchased		

A surplus of frames and digits were obtained in order that the Permit Division could assign and deliver the uniform house numbers when building permits are issued, for which a nominal charge will be made.

The total number of house numbers changed and frames actually placed in the City of Portland was as follows:

District N	-	15,867
" NE	-	29,988
" SE	-	32,449
" NW	-	5,794
" SW	-	<u>9,498</u>
Total		93,596

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These may be further classified in accordance with the size of the frame as follows:

2	Digit	Frames	-	2,026
3	"	"	-	14,895
4	"	"	-	75,955
5	"	"	-	720
Total Frames				93,596

Field Work

Upon the award of the contract for frames and digits the employes of the City Engineer's office began the preparation of field maps showing the beginning of each hundred, the prefix of the street name and change in street names. The actual work in the field was commenced as soon as materials were delivered, the first number, 7340 N. Philadelphia Avenue, being placed in the St. Johns district on August 5, 1932 on the Peninsula National Bank Building. From two to six field crews have been continuously employed since that time and it is expected that the work will be entirely completed by July 1, 1933.

The renumbering crew consisted of one instrumentman and two chainmen. Three additional men were supplied through the Civic Emergency Committee for the relief of the unemployed. The general procedure was for the chainmen to measure the distances from the corner of the block to each building entrance allowing one number for each 10 feet of frontage where possible. Sometimes the correct number was written on the sidewalk with chalk or crayon. The crew followed with a pushcart containing the frames and digits. While the instrumentman was making notes

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of the old and new number of each house, other members of the party obtained receipts from the occupants and installed the new numbers. The receipt was detached from the notice, which was given to each occupant showing both the old and new house number, and also the correct name of the street with the prefix. It also gave brief instructions for using the new house number and information relative to base line streets and the five districts.

Plate No. 5 is a photograph of a house numbering crew placing the new numbers on a residence and also shows the new numbers placed in a business district.

Plate No. 6 is a photograph of the push cart which was used by the field crews on this house numbering project. These carts were especially designed and manufactured for this purpose and proved very successful. It will be noted that ordinary bicycle wheels with pneumatic tires were used and that a canopy or awning was constructed over the cart so that the supplies were not injured by inclement weather; this also made it possible to work continuously during rainy weather. One man was generally detailed to push the cart and assemble the number as called. The cart carried at least one hundred of each of the different digits and a number of the various sizes of frames.

The crews working in the field made their headquarters as a rule at the nearest fire station where the carts were stored at night. In this manner, by the use of public buildings, it was possible to make deliveries of supplies and

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materials and deliver instructions to the crews, and leave our supplies over Sundays and holidays without danger of loss.

Generally from one hundred to two hundred numbers were delivered and placed daily. It was found more advisable for the City crew to place the numbers on the houses as the work progressed than leaving this to the individual home owner. Sometimes of course it was advisable to leave a notice, when no one was at home or in case houses or stores were run-down, abandoned and vacant. Upon presentation of the notices at the City Hall, the numbers were issued. The number of frames placed daily varied from the outlying districts where the houses were scattered in almost direct proportion to the close in downtown district where the store fronts were close together. During the summer and fall of 1932 and during the early stages of the program, most of the work was done in the outlying districts in order to obviate as many complaints as possible and to familiarize the crews with their various duties. The last work performed was in the principal retail downtown district and in the high class residential districts in the hills to the west of the City. In this residential district a large number of curved, circular or what has become known as "doughnut streets" are situated, where a great many intricate problems in house numbering were encountered.

As a general rule the house renumbering crew and the crew that changed the street signs co-ordinated their efforts so that the street signs were in position when the

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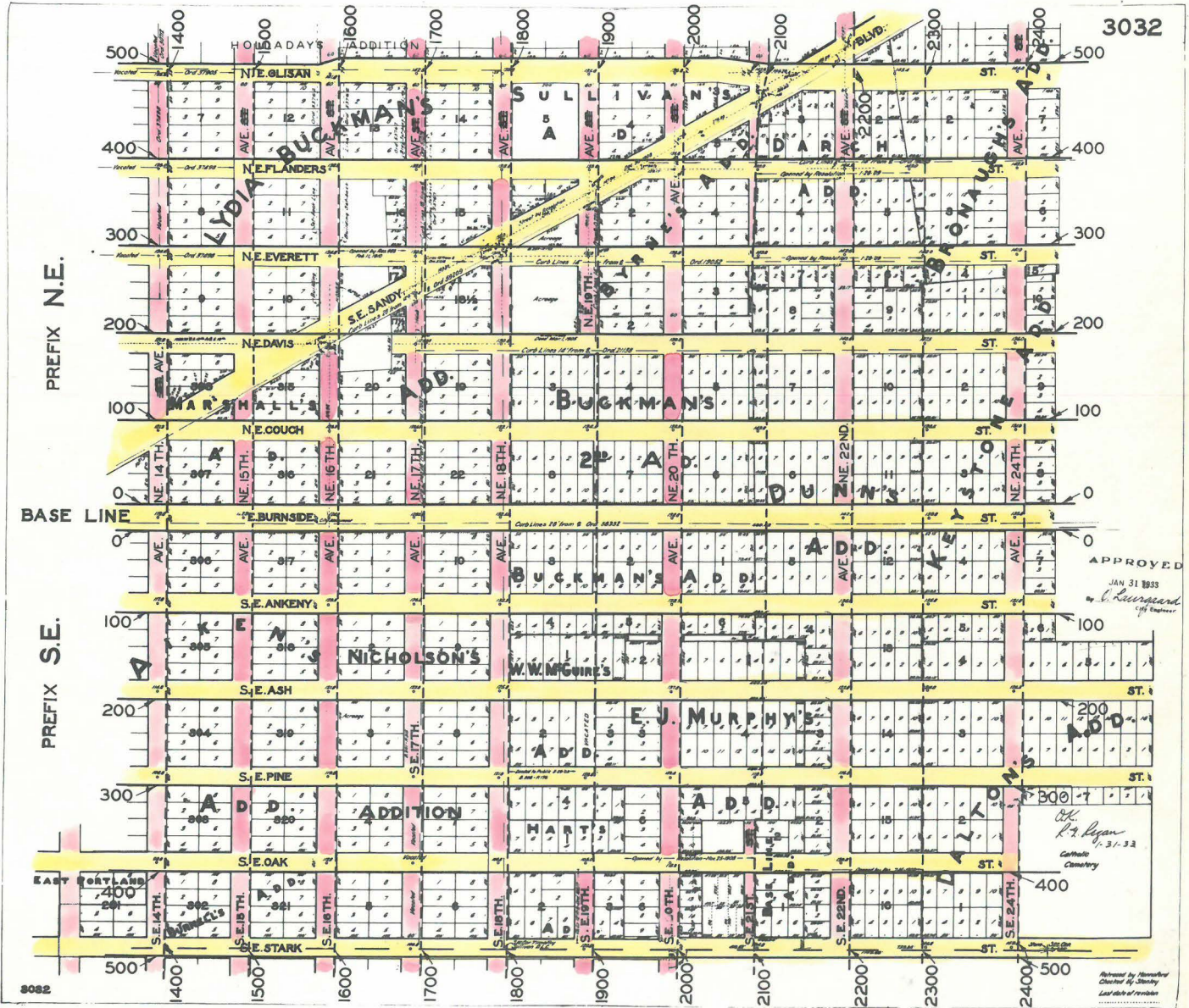
house numbering crew arrived on a certain quarter section, although an attempt was made so that the street signs should not be placed more than a day or two in advance.

Maps and Records

Plate No. 7 shows one of the regular quarter section sheets of the City with the new street names indicated and in general the lines where the hundreds would change on the house numbers. Our official city map, on a scale of 100 feet to the inch, has been prepared on the basis of quarter sections, or one-half mile in each direction. The even hundreds of the house numbers were indicated on these quarter section sheets both for the north and south numbered avenues and the east and west named streets and each sheet was approved by the City Engineer before it was taken out in the field.

Plate No. 8 shows one of the more or less irregular quarter section sheets in a residential district where curved streets were encountered, and where the hillside meets the generally flat area of the city. It will be noted that on the flat area the numbered avenues run north and south; and, the named streets run east and west, alphabetical in order, and named for noted Oregon or Portland Pioneers. It will be noted that for some streets that are curved or do not follow one geographical direction that it becomes necessary to make an arbitrary selection, whether to classify them as numbered avenues or the named streets. The red lines on plate No. 8 indicates those streets that are numbered in a north and

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PREFIX N.E.

BASE LINE

PREFIX S.E.

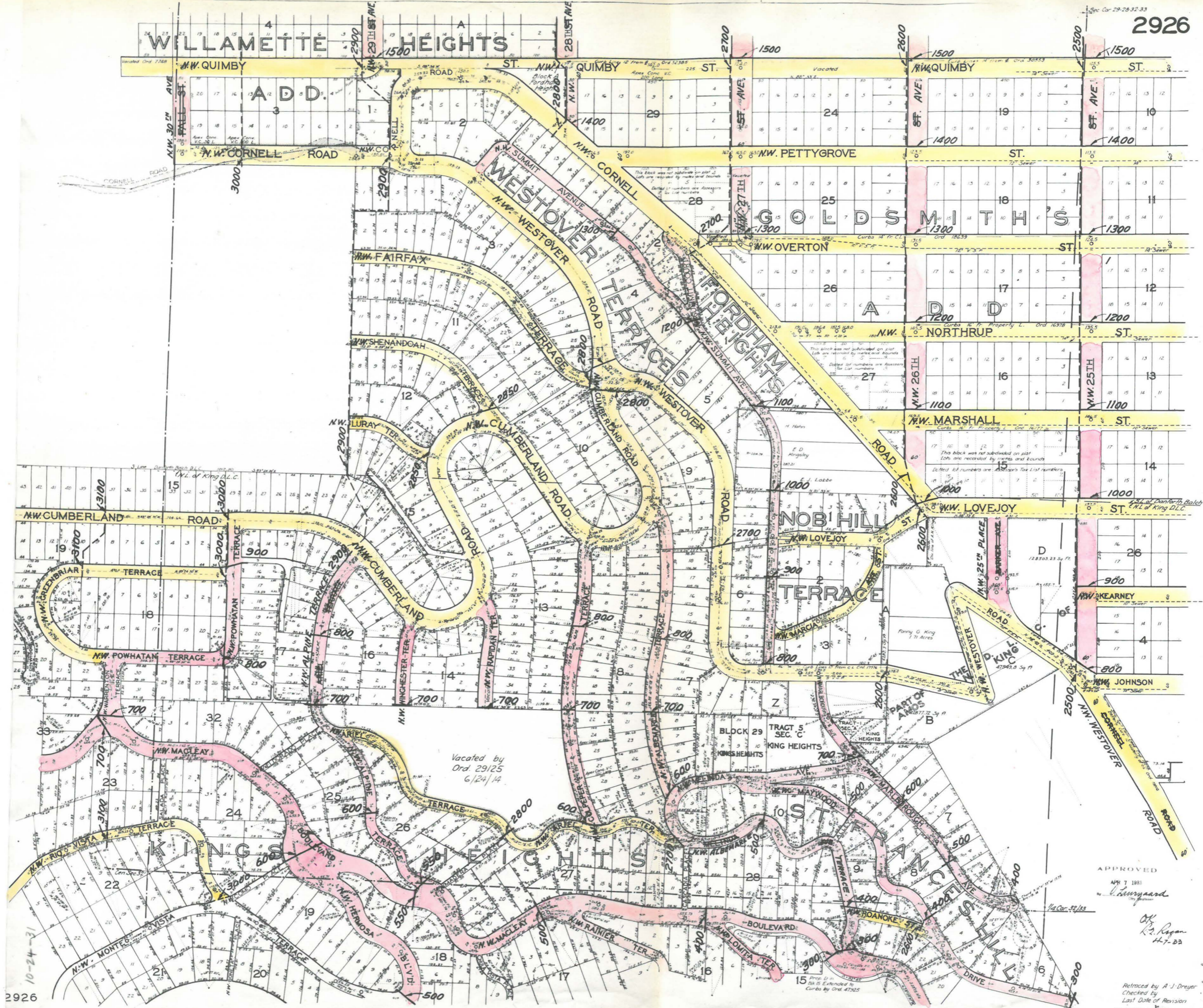
APPROVED
 JAN 31 1883
L. K. Keenan
 City Engineer

R. H. Ryan
 Catholic Cemetery
 1. 31. 83

Revised by Howard
 Clerk of City
 Last date of revision

Plate #7

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APPROVED
 APR 7 1933
[Signature]
 City Engineer
 Atty. R. P. Rogan
 4-7-33

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10-24-31

south direction as an "Avenue" and the yellow lines those that are numbered east and west as "Streets". In this City particularly on some of the choice view residential areas a great deal of difficulty was encountered by the Engineering Department in renaming the streets and assigning the house numbers. In some cases, particularly in outlying districts where the streets had no reference to geographical north, south, east or west, and where they are located on hillsides with no connection or contact with the rest of the city, all of the streets were numbered as avenues in order to identify the district. One thing we found to be essential and that was to have the house numbers run consecutively and continuously for some of those streets that were curved until the end of the street was reached, or the City limits encountered.

Plate No. 9 shows by the heavy line superimposed on the city map the location of those streets, the names of which were changed by special ordinances, separate and apart from the general Ordinance No. 61325 providing for changing names to "streets" and "avenues". Up to date about 400 ordinances have been passed changing the names of streets.

In order to keep the public fully informed of the changes in house numbers and streets, a contract was made with the Daily Journal of Commerce, the present official newspaper of the City of Portland. Each day lists were prepared in the office of the City Engineer of the house number changes, which were carefully checked and submitted to the

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newspaper which would publish the lists for the information of the public. All of the utilities, large department stores, banks, telephone company, Polk's Directory and public officers that have continual use for mailing lists of the city, kept a complete record by clipping the published lists from this newspaper and binding them into volumes for general use.

In order that the City Engineer's office records might be complete, a set of quarter section maps of the entire city was daily kept up to date by supplying all changes in the names of streets and all house numbers assigned. This record was carefully checked by the purchase and use of a set of the insurance maps of the Sanborn Map Company. These maps contain all buildings in the city and the old house numbers as well as the distances between buildings. While in nearly all cases the distances from intersections were chained in order to obtain the proper house number, these Sanborn Maps were very valuable in locating isolated buildings in the outlying districts where the numbers were sometimes assigned by scaling the distance from the maps.

Costs

A complete record of establishing the comprehensive and uniform system of numbering the houses and buildings in the City was desired so careful detailed costs have been kept of all features of the work. While the payroll cost for personal service might have been increased slightly due to the employment, on a rotational basis, of unemployed from the Civic

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Emergency Committee, the cost of materials and supplies was no doubt reduced due to the economic conditions. The total number of house numbers assigned for the entire city in establishing this uniform system was 93,596. The cost of any one feature per house number therefore can easily be obtained by dividing the following features by the total of the house numbers established. The costs of the various features have been estimated for the month of June but should be accurate.

1. Payroll (personal service)	\$17,063.91
2. Miscellaneous small tools and materials and charges for maintenance stock	588.23
3. Stationery, photostats and maps	3,138.74
4. Tile digits	20,614.18
5. Aluminum frames	6,515.00
6. Carts, wheels and repairs to same	272.99
7. Screws for fastening frames	303.79
8. Paper boxes and cardboard cards	274.00
9. Filing cabinets	251.00
10. Incidental Engineering charges	<u>223.42</u>
Total	\$49,245.26

Street Signs

To make the house numbering system effective as soon as the numbers were placed or assigned, it was important that the street signs also be changed. On account of the lack of funds it was impossible to purchase the necessary

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number of new signs to change all of the street signs. Therefore a system was devised whereby most of the old street signs in use could be altered and changed so as to be effective under the new system. On the basis of the old street names, prefixes and suffices were used, and nearly all streets were designated as streets, there being very few avenues. A few avenues, however, did exist in various portions of the City and in what was called the old Southeast District.

Most of the old signs were utilized by designing and building a machine especially for the purpose of removing the enamel for a limited area on the metal signs and cutting off the signs so as to preserve the old suffixes and prefixes of "SE", "N", "E", "St.", "Ave.", etc. In some districts where it was difficult to obtain sufficient prefixes to properly label the street names in accordance with the new program, it was necessary to paint the board in front of the signs and stencil the prefixes. Small appropriations were made, however, to purchase a number of these prefixes or suffixes called clips such as "NE", "SE", "SW" and "NW", "St.", "Ave.", "Blvd.", etc., which were superimposed on the street sign boards in front or after the names of the streets. Wherever it was necessary also to rename streets on account of the abandonment of the Southeast District, and also on account of conflicting names in the various districts, a few new signs were purchased.

Procedure On Street Sign Changes

The method of procedure on the removal, manufacture

and placement of the street signs may be briefly described as follows: Workmen removed all of the signs within a given quarter section, all of which were brought to the Stanton Yard of the Public Works Department. Here the signs were cut off, retouched, assembled, classified and indexed and filed. Other workmen would then assemble the necessary signs for this same quarter section and place them in the field with their proper prefix, "NE", "N", etc., and the proper suffix of either "street" or "avenue". This procedure is undoubtedly the first of this character ever undertaken in any city of appreciable size.

The removal of old signs and replacement of new ones embraced work on 15,112 intersections of the City. The old signs were removed from 195 complete and 30 partial quarter sections, and the new signs installed over the same area. Two signs are placed as usual on each post and, where signs are necessary, we place two posts per intersection. In outlying districts where streets are not improved and where houses are very scattering and where signs were not previously installed, only a limited number of signs were placed.

The following tabulation may be made of the number of street signs removed and replaced.

Signs torn down and removed	
From 195 complete quarter sections	18,812
" 30 incomplete "	<u>2,880</u>
Total	21,692

Signs replaced after corrected			
From 195 complete quarter sections (metal)	13,869		
" 195 " " " (stencil)	3,350		
" 30 incomplete quarter sections	2,640		
Shortage to be replaced about	<u>1,500</u>		
Total Signs Placed			21,359

Plate No. 10 shows a typical sample of the manufactured sign, first, the original signs, then the cut off and the new signs as they were placed. Plate No. 11 shows the specially manufactured machine operating and cutting these signs. Plate No. 12 shows the street signs assembled and in place at intersections on the new basis.

While the general ordinance, Exhibit No. 1, covers the change of street names, it was found necessary to pass numerous ordinances to change various streets to make them conform to the ordinance; about 400 ordinances having been passed for this purpose. Often it was necessary to alter and change these street names on more than one occasion in order to satisfy the needs of the City and the desire of the residents in the community.

Cost of Street Sign Program

While a number of the regular employees of the Public Works Department were employed to supervise the removal and replacement of street signs, most of the work was performed on a rotational basis by unemployed from the Civic Emergency Relief Committee. Most of the street sign work was done during the year 1933 for the reason that in 1932 most of the signs were temporary and merely stenciled on wood boards. The permanent

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36TH AVE. S. E.

S. E. 36TH AVE.

E. 12TH ST. N.

N. E. 12TH AVE.

DEKUM AVE.

N. DEKUM ST.

Plate 10

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Plate 12.

signs were made up of enameled signs which were reconstructed. To complete the estimate of cost, the expenses for June have been closely approximated. A regular schedule will be established for the future on the basis of approximately \$10,000 per annum for the supplying of new signs in order that the entire city might be completely covered in this respect. A total number of 21,359 signs have been placed throughout the city on this change of street name program. In accordance with the method of procedure described herein and on the basis of the placement of the signs, the unit costs per sign on an intersection may be easily determined. On account of using men on a rotational basis of the unemployed in this program the unit costs are high. The cost may be tabulated as follows:

1. Labor, removing and placing signs	\$19,430.00
2. Hired trucks or transportation	1,695.00
3. Miscellaneous incidental engineering charges	97.45
4. Portable electrical cutting machine	215.44
5. Spruce boards	1,081.23
6. Stationery and miscellaneous supplies	10.97
7. Paints, lacquer, enamel, etc.	590.40
8. New clips and street signs	2,562.04
9. Miscellaneous tools, hardware, supplies, nails, bolts, etc.	<u>879.65</u>
Total	\$26,562.18

Of the many various plans for a house numbering system submitted, very few were considered practical or feasible

to meet the topographic and peculiar conditions of the City of Portland. Dr. Richard R. Lyman, member of the American Society of Civil Engineers, who has taken an interest in the subject of house numbering, visited our city recently and made some suggestions for betterment. He suggested that instead of naming the streets, only numbers should be placed at the intersections to indicate the number of blocks from the base lines. While Dr. Lyman spoke highly of the work that has been done in Portland of changing the house numbers and street signs, he subsequently placed his suggestion in a letter as follows:

"I am greatly in hopes that while you are making numbers and doing the work so well in Portland you will, at least on some of your outstanding thoroughfares, put up the "house numbers" of the intersections in both directions and that you will place before each number S, N, E or W, depending upon the direction in which the individual is traveling. If the traveler is going east, in front of his eyes at every intersection he ought to see an E and after it 600, 800, 900, 1200, etc., telling him how many "house numbers" he has passed already on that street. If he turns a corner and starts in another direction, in front of his eyes will be the sign or the letter in front of the number telling him the direction in which he is traveling. After the letter telling the direction will be the number telling him how far he is from the origin where these numbers start.

"As I traveled along your street or avenue, "Milwaukee", and thought of the number of times you have repeated that long word on your street signs, I could not help but think of how much labor and material would have been saved if you had put up only the numbers. And as I said to you in your own office, if at the end of the block you had the hundreds, it would only be necessary on the houses to put the units and the tens. The sign on one corner might read S 600. The sign on the block farther south would read S 700. The houses between would have placed upon them, 1, 2, 3, 24, 25, 26 -- 88, 89, 90, etc. That is, on

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the houses would be placed only the units and tens. On the street corners would be placed the undreds, as we do in our logarithmic or other tables."

Then again Dr. Lyman in a letter to Mr. J. P. Schwada, City Engineer of Milwaukee, Wisconsin, and Chairman of the Committee on Street Names and Numbers of the American Society of Civil Engineers, stated as follows:

"Mr. Laurgaard was good enough to say that in these fourteen years he has had literally thousands of people make suggestions concerning the numbering and naming of streets and houses and that I had come to him with the first thoroughly perfect system that had been presented to him. He could see that it is not necessary to name streets in order to locate houses. Houses can be located by their distances from two axis as accurately as points in a plane can be located by giving definite values to x and y when XX and YY are the two axis used in analytical geometry.

"Mr. Laurgaard has divided Portland into four quadrants. At every intersection and in both directions he has his signs beginning with two letters; for example SE for the southeast quadrant, SW for the southwest quadrant, NE for the northeast quadrant, and NW for the northwest quadrant. If he had used only half as many letters and instead of saying SE on the sign which the traveler faces as he goes south, he had put simply S, and if on the signs which the traveler faces as he is traveling east, he had put only E instead of SE, the traveler would have known at once in which direction he was traveling.

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"If Mr. Laurgaard will take off the E's on his signs on the east and west streets and will take the S's off the signs on the north and south streets, and in addition to the street name will give the "house number" of the street, he will have a perfect system, so that in Portland any traveler can find any address without a map or other help."

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"I happened recently to be in the city of Great Falls, Montana. Not a street or avenue has a name in that city. The avenues extend in one direction and the streets in the other and they are simply numbered."

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"Mr. Laurgaard of Portland convinced me that the direction should precede the number. In other words, a sign should read S 200, rather than 200S. I agree with him that on the street signs and when speaking of any address there will be less chance of error if the direction comes first."

Relative to Dr. R. R. Lyman's plan; while I believe that theoretically it is nearly perfect, for a City with rather peculiar topographic conditions such as Portland, it would be difficult to use the direction and numbers and expect to go by a direct route to a given location in the city because it would be necessary to use bridges at fixed locations and certain traffic arteries to reach some residential areas situated on the Heights.

I can apprehend several weaknesses in Dr. Lyman's plan for Portland. In the first place our new system will clearly indicate by every house number the distance from the base line. We have experienced much trouble by the destruction or removal of our street signs by youngsters who are mischief bent, in such cases on Dr. Lyman's plan the house numbers would also be lost.

Dr. Lyman's plan is impractical and can not be used on residential subdivisions where the streets are on hillsides and meander in all directions, as on plate No. 9 or on the

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curved streets shown on plate No. 1.

Mail addressed to the City and express should be quickly dispatched, therefore the District prefixes would indicate at once the quadrant and distance from base lines - the house numbers on every house would clearly indicate the distance from the base lines.

I have been convinced of the superiority of using prefixes immediately following the house number and before the street name rather than suffixes because the experience of the Post Office Department and those using large mailing lists in this city is that suffixes are dropped or left off in many instances.

For the City of Portland with a long historical background with many streets named after prominent pioneers, it is almost impossible to change many street names. It has been difficult even to change those streets that have been numbered as avenues in a north and south direction to conform to the numbered avenues for that reason. I am thoroughly convinced that the avenues in one direction should be numbered and the house numbers increase in regular sequence and correspond for the even hundreds to the numbered avenues. For the other direction I am not in favor of numbered streets because the words streets and avenues are used more or less indiscriminately so when all of the streets have a number much confusion and irritation is encountered as a rule in the

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delivery of mail. We had this experience in the old S.E. District recently changed. If the streets in one direction are numbered avenues, then in my judgment, the streets in the other direction at right angles should be named on the alphabetical system. In other words, from the base lines, streets beginning with A, B, C, D, etc. should be selected. In the event that the number of streets in any one direction greatly exceeds the number of letters in the alphabet, then the number of A streets, or B Streets or C Streets could be increased to provide sufficient numbers for the total desired, or some system using modified letters.

I can comprehend that in the event a city is platted from scratch along true lines of City Planning that a theoretically perfect house numbering and street naming system could be adopted and installed, but for cities nearly one hundred years old with a historical background, and streets named for prominent pioneers, it is almost an impossible proposition in my judgment.

The Ordinance No. 61325 establishing this uniform system of numbering buildings, Exhibit No. 1, provides that the old numbers must remain in position for a period of six months, after which the old number shall be removed. There has been some confusion and some complaints relative to the delivery of mail in the city during the past year while the new house numbering program has been in progress. The citizens as a rule, however, have been very patient and have

co-operated to an unusual extent. The same can also be said of the Post Office Department, public utilities, large banks, department stores, public officers and others who have occasion to use large mailing lists. We wish to express our gratitude and appreciation to all who have made it possible to install this new house numbering and street sign system.

We particularly at this time also wish to express our appreciation to all of the daily newspapers in the City of Portland for their hearty co-operation and their interest, to the special committee on house numbering who labored long and faithfully and who worked for the compliance with the ordinance as far as practicable. We particularly desire to express our appreciation to Postmaster J. M. Jones, the Journal of Commerce, which printed the house number and street changes free of charge, Mr. J. P. Schwada, City Engineer of Milwaukee, Wisconsin, to whom we are indebted for many suggestions that simplified the work and reduced the cost.

The work of installing the new house numbers, changing and installing the new street names has been^{done}/in the Department of Public Works under charge of Commissioner A. L. Barbur; the engineering and administrative work was under the supervision of O. Laurgaard, City Engineer, who was assisted by L. G. Apperson, Chief of the Bureau of Construction, and R. G. Regan, Assistant Engineer, in charge of the Division of House Numbers and Street Names, who directed the field and office work.

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