E S T I M A T E

TO THE BOARD OF LOCAL IMPROVEMENTS,
VILLAGE OF WHEELING, ILLINOIS.

GENTLEMEN:

I herewith submit an estimate of the cost of the construction of a system of Portland cement concrete sidewalks, four (4) feet in width, on Milwaukee Avenue, in the Village of Wheeling, fully complete and in place, including excavation and backfilling, and all labor and material necessary for the making of said improvement, including engineering and inspection, and the cost of making, levying and collecting the special assessment therefor, as follows:

File in Record of
Resolutions and Ordinances

A Portland cement concrete sidewalk four (4) feet in width shall be constructed as follows:

On the southwesterly side of Milwaukee Avenue from a line parallel with and three hundred sixty-five and fifty-five hundredths (365.55) feet northwesterly of the northwesterly street line of Mors Avenue to a line parallel with and four hundred forty-seven and thirty-seven hundredths (447.37) feet northwest of the northwesterly street line of Mors Avenue and from the southeasterly street line of Center Avenue to a line parallel with and nine hundred seventy (970) feet southeasterly of the southeasterly street line of Center Avenue, and from the northwesterly street line of Center Avenue to the south street line of Dundee Road; and from a point one hundred and ten (110) feet southeasterly of the south street line of Strong Avenue to the south street line of Strong Avenue; and from the north street line of Strong Avenue to the south street line of Mayer Avenue. On the northeasterly side of Milwaukee Avenue from a line normal to centerline of Milwaukee Avenue and distant nine hundred fifty-six (956) feet North (measured along Northeasterly street line of Milwaukee Avenue) of the south limits of the Village of Wheeling to the south street line of Dundee Road (excepting therefrom that part lying between the street lines of Mors Avenue).

Said sidewalk shall be constructed so that when completed the top surface of the edge nearest the lot line, or said line extended, shall be at the elevations above Village Datum as shown on the plans attached hereto and so that the top of the sidewalk

shall have a uniformly descending grade of One (1) inch vertical to three (3) feet horizontal from the edge nearest the lot line toward the center of the street.

Said sidewalk shall be four (4) feet in width and the edge of the sidewalk nearest the lot line, when complete, shall be at a distance of one (1) foot from the lot line of the lot or lots opposite which said sidewalk is constructed.

At sidewalk intersections the grade of the top surface of the walk intersections shall be modified to such degree only as is necessary to make the top surfaces of said walk intersections correspond.

Established sidewalk grades are as shown on the plans attached hereto. Said elevations being given in feet and decimal fractions thereof above Village Datum at each of the several locations specified. From each point specified, the line of the top surface of the finished sidewalk shall follow a uniform grade to the next specified point in each direction and the grades given shall apply to both sides of a street when sidewalk is herein provided for both sides of street, unless otherwise specifically mentioned therein.

VILLAGE DATUM.

The Village Datum is fixed and established as a level plane seventy-five (75) feet below a bench mark located on top of a terra cotta sill at the entrance of the Wheeling State Bank located on the southwest corner of Milwaukee Avenue and Dundee Road in the Village of Wheeling.

Said improvement shall be constructed in a good and workmanlike manner under the superintendence of the Board of Local Improvements of the Village of Wheeling, Cook County, Illinois.

SPECIFICATIONS
FOR
PORTLAND CEMENT CONCRETE SIDEWALKS

5" Walk Without Cinders

SIDEWALKS

Said sidewalks shall be constructed as follows: A subgrade shall be prepared by excavating or filling, as the case may be, so that the top surface of the sidewalk to be constructed, at the edge nearest the property line, will be at the established grade.

Upon said subgrade a layer of Portland cement concrete of a mixture of one (1) part of Portland cement, three (3) parts of fine aggregate and five (5) parts of coarse aggregate shall be placed and tamped solid. After tamping, depth of mixtures shall be four and one-quarter ($4\frac{1}{4}$) inches in thickness.

Within forty-five (45) minutes after bottom course is laid and before the initial set takes place, a wearing surface three-quarters (3/4) inch in depth shall be placed upon the bottom course, said wearing surface to be composed of two (2) parts of Portland cement and three (3) parts of fine aggregate, floated and troweled to a smooth finish.

CEMENT

The cement used in the construction of the Portland cement concrete to be used in this improvement shall be of good quality of Portland cement resulting from the calcination to incipient fusion of an intimate mixture of properly proportioned argillaceous and calcareous materials and to which no additions greater than three per cent (3%) has been made subsequent to calcination. The resultant clinker shall be so ground as to produce a cement so fine that at least seventy-eight per cent (78%) of the volume will pass through a sieve having forty

ADOPTED GENERAL CONDITIONS
FOR
SPECIFICATIONS

thousand (40,000) meshes to the square inch and be so seasoned as to produce an initial set in not less than forty-five (45) minutes.

FINE AGGREGATE

Fine aggregate shall consist of clean, hard, durable, uncoated particles of sand or stone, free from all organic material. One hundred per cent (100%) shall pass a one-fourth (1/4) inch screen and ninety-five per cent (95%) shall be retained on a 100-mesh screen. Not more than twenty per cent (20%) shall pass a 50-mesh screen. It shall be well graded from coarse to fine, and shall not contain more than five per cent (5%) in weight of clay or loam, none of which shall be in lumps. When the fine aggregate is mixed with Portland cement in the proportions of one (1) part cement to two(2) parts fine aggregate by weight, according to the standard method of making briquettes, the resulting mortar at the age of 7 and 28 days shall have a tensile strength of at least equal to that developed in the same time by mortar of the same proportions and consistency, made of the same cement and standard Ottawa sand.

COARSE AGGREGATE

Coarse aggregate may be broken stone or gravel. The broken stone or gravel shall be clean, hard, durable, uncoated rock. It shall contain no vegetable or other deleterious matter and shall be free from soft, thin, elongated or laminated pieces.

One hundred per cent (100%) of the coarse aggregate shall pass a one (1) inch screen, and at least ninety-five per cent (95%) shall be retained on a one-fourth (1/4) inch screen, with all intermediate sizes retained.

Water shall be clean and free from alkali, oils or acid.

JOINT FILLER

Joint filler shall be premolded strips of asphaltic felt one-half (1/2) inch thick, as wide as the thickness of the concrete slab and at least two (2) feet long. It shall have such a consistency that it will not run in summer or chip out in winter.

FORMS.

Forms shall be of lumber two (2) inches thick, or of steel of equal strength, except on curves, where flexible strips may be used.

They shall be held rigidly in place by stakes or braces with top edges at true line and grade. Ends of adjoining forms shall be flush.

Forms shall be set so that slab will have a fall of one (1) inch vertical to three (3) feet horizontal from the edge nearest the lot line towards the edge farthest from the lot line.

DIVISION PLATES.

Where division plates are used they shall be of one-eighth (1/8) inch steel, as wide as the depth of the slab and as long as the width of the walk.

Forms and division plates shall be thoroughly cleaned and oiled each time before they are used.

SUBGRADE

That portion of the ground surface directly beneath the concrete slab shall be called the subgrade.

All soft and spongy material in the subgrade shall be removed and replaced with suitable material. Fills shall be compacted in layers not exceeding six (6) inches in thickness. Spots previously compacted by traffic shall be loosened to a depth of six (6) inches, The whole subgrade shall be thoroughly and uniformly compacted to a firm surface, having as nearly as

possible a uniform bearing power.

A template, resting upon the side forms and having the lower edge at the exact elevation of the subgrade shall be drawn along the forms before any concrete is laid. Any high places in the subgrade shall be removed so that the template will pass over without being raised off the side forms or being tipped at an angle to the sidewalk surface.

The subgrade shall be damp, but not muddy, when concrete is placed upon it.

MIXING

The ingredients of the concrete shall be thoroughly mixed until each particle of fine aggregate is coated with cement and each particle of coarse aggregate is coated with mortar.

A mechanical mixer shall be used which shall be of a batch type. Each batch shall be mixed at least one (1) minute, from the time all the materials, including water, are in the drum until the beginning of the discharge.

The consistency of the mixed concrete shall be such that no separation of the ingredients takes place and some tamping is necessary to bring the mortar to the surface.

JOINTING

The walk shall be divided into separate rectangular slabs. No plain concrete slab shall be longer than six (6) feet or lessthan four (4) feet on any one side.

Where division plates have been used they shall be removed after the concrete has hardened sufficiently to avoid breaking the edges or corners of the slabs.

Where division plates have not been used, the partially set concrete shall be cut through at right angles to the surface of the sidewalk to form said rectangular slabs above described.

The surface edges of each slab shall be rounded to a radius of about one-fourth (1/4) inch. Markings shall be exactly at cuts between slabs.

EXPANSION JOINTS.

Expansion joints shall extend from the surface to the subgrade, be truly at right angles to the sidewalk surface, and be made by putting the specified joint filler in place before placing the concrete. They shall be placed as follows:

At or near all places where the sidewalk line intersects a curb line or other sidewalk, a one-half (1/2) inch expansion joint shall be made at right angles to the centerline of the walk.

When the sidewalk fills the space between the curb and the building line, a one-half (1/2) inch expansion joint shall be placed between the curb and sidewalk, and between the sidewalk and the building.

A one-half (1/2) inch expansion joint shall also be placed across the walk at approximately fifty (50)foot intervals.

CURING

As soon as the concrete has set sufficiently it shall be sprinkled and kept moist until covered. As soon as it can be done without damage to the sidewalk surface, the concrete shall be covered with two (2) inches of earth or sand, which shall be kpet wet seven (7) days. The walk shall then be cleaned and opened to traffic.

The entire improvement shall be constructed in a workmanlike manner under the superintendence of an subject to the inspection of the Board of Local Improvements.

An estimate of the cost of the above described improvement is as follows, including the cost of all labor and material, complete in place, the cost of all excavating and backfilling, the cost of engineering services and the cost of making, levying and collecting the assessment therefor as provided by law, to-wit:

4,880	lineal feet of grading, including clearing, and grubbing, excavation and filling, removal of surplus excavated material, and preparing the subgrade to receive the sidewalk @ $0.18 per lineal foot	$	878.40
4,880	lineal feet of Portland cement concrete sidewalk four (4) feet in width, total thickness five (5) inches, foundation course four and one-quarter inches thick, composed by volume of one (1) part of Portland cement, three (3) parts of fine aggregate, and five (5) parts of coarse aggregate, and a wearing surface of three-quarters (3/4) of an inch thick, composed by volume of two (2) parts of Portland cement, and three (3) parts of fine aggregate, complete in place, including curing and removal of protective material that may be left after construction, and all labor and materials @ $1.10 per lineal foot	$	5,368.00
450	Lineal feet of asphaltic felt expansion joint, one-half (1/2) inch thick and five (5) inches wide, complete in place @ $0.22 per lineal foot	$	99.00
	ENGINEERING AND INSPECTION	$	354.60
	TOTAL LABOR AND MATERIALS	$	6,700.00
	Cost of making, levying and collecting the assessment, and all lawful expenses attending the same, as provided by law, not to exceed six per cent (6%)	$	400.00
	TOTAL ESTIMATED COST OF SAID PROPOSED IMPROVEMENT	$	7,100.00

Julius Heinken
President, Board of Local Improvements,
Village of Wheeling, Cook County, Illinois

AND I HEREBY CERTIFY THAT, in my opinion, the above estimate does not exceed the probable cost of the above proposed improvement, and all lawful expenses attending the same, as provided by law.

Julius Heinken
President, Board of Local Improvements,
Village of Wheeling, Cook County, Illinois.

DATED, WHEELING, ILLINOIS.
October 17th A. D. 1930.