2,348.50

272.00

720.00

1,234.50

1,800.00

150.00

315.00

15.00

1,875.00

3,150.00

16,082.61

the herein proposed concrete pavement in said Broadview Avenue; at FLORA PLACE as far back as the south line extended of said Blackstone Place and connecting with the herein proposed concrete pavement in said Flora Place; at NORTHMOOR ROAD as far back as the south line extended of said Blackstone Place and connecting with the herein proposed concrete pavement in said Northmoor Road;

NORTHMOOR ROAD from the northeasterly line extended of Green Bay Road; thence easterly and northerly in said Northmoor Road to and connecting with the herein proposed concrete pavement in Blackstone Place at the south line extended of said Blackstone Place; including the street return at FLORA PLACE as far back as the northerly line extended of said Northmoor Road, and connecting with the herein proposed concrete pavement in said Flora Place;

FLORA PLACE from and connecting with the herein proposed concrete pavement in Blackstone Place at the south line extended of said Blackstone Place; thence southerly in said Flora Place to and connecting with the herein proposed concrete pavement in Northmoor Road at the northerly

line extended of said Northmoor Road; ROGER WILLIAMS AVENUE from the northeasterly line extended of Green Bay Road; thence east in said Roger Williams Avenue to the southwesterly right-of-way line of the Chicago & Northwestern Railway Company; including the street returns at BROADVIEW AVENUE to the north and to the south as far back, respectively, as the north and south line extended, of said Roger Williams Avenue, and connecting with the herein proposed concrete pavement in said Broadview Avenue; at PLEAS-ANT AVENUE to the north and to the south as far back, respectively, as the north and the south line extended of said Roger Williams Avenue, and connecting with the herein proposed concrete pavement in said Pleasant Avenue; at BURTON AVENUE as far back as the south line extended of said Roger Williams Avenue, and connecting with the herein proposed concrete pavement in said Burton Avenue;

By clearing, grubbing, excavating, filling, trenching, filling the trenches with earth, except under the proposed pavement, where the trenches shall be filled with sand, grading, preparing the subgrade, raking the parkways, adjusting existing manhole and valve vault covers, constructing concrete sidewalk approaches, constructing tile pipe drain from ditches in Green Bay Road, constructing bituminous macadam pavement connections in Green Bay Road at Roger Williams Avenue, Highland Place, Washington Place, Blackstone Place, and Northmoor Road, constructing concrete curbs, constructing concrete headwalls for outlet drain, and concrete culvert with openings for said outlet drains and culverts, located as follows: One (1) concrete headwall in the Easement in Lot 35, Block 1, Ravinia Highlands, two (2) feet westerly of the easterly line of said Lot 35; one (1) concrete headwall in the ravine in Lot 44, Block 1, First Addition to Ravinia Highlands, five (5) feet northeasterly of the southwesterly line extended of Lot 52, Block 1, First Addition to Ravinia Highlands, and one hundred fifty-three (153) feet northwesterly of the north line of Roger Williams Avenue, as measured along the southwesterly line of aforesaid Lot 52; one (1) headwall in the ravine south of Bellevue Place, fifty-four (54) feet southerly of the southerly line of said Bellevue Place, and twenty (20) feet westerly of the northeasterly line extended of said Bellevue Place; one (1) headwall in the southerly parkway of Ravinia Road, two (2) feet westerly of the westerly right-of-way line of the Chicago & Northwestern Railway Company; constructing outlet tile pipe drains, constructing concrete culverts, constructing catchbasins and catchbasin manholes, manhole, and drop inlets, filling of one (1) existing catchbasin in Ravinia Road, removal of concrete curb in said Ravinia Road, paving with reinforced concrete roadways, the center line of which shall be the center line of the streets to be improved; the width of said roadways, measured from back to back of curb shall be as follows: in BURTON AVENUE, PLEASANT AVENUE, BROADVIEW AVENUE, ALVIN PLACE, CRAWFORD PLACE, BELLEVUE PLACE, HIGHLAND PLACE, WASHINGTON PLACE, BLACKSTONE PLACE, FLORA PLACE, and NORTHMOOR ROAD, the width shall be twenty-one (21) feet; in Roger Williams Avenue the width shall be forty (40) feet, except at street corners and the Y turnaround in Pleasant Avenue, where the roadways shall be widened along curved lines having a radius of twenty-five (25) feet, except at the intersection of Burton Avenue and Ravinia Road, where the radius to the east shall be fifteen (15) feet, and the radius to the west shall be fifty (50) feet; at the Y turn-around in Pleasant Avenue, where the radius to the east shall be one hundred (100) feet, and the radius to the west shall be fifteen (15) feet; at the northwest and the southeast corners of Broadview Avenue and Roger Williams Avenue, at the northwest and the southeast corners of Pleasant Avenue and Roger Williams Avenue, and at the southeast corner of Burton Avenue and Roger Williams Avenue, where radii shall be twenty (20) feet; at the northeast and the southwest corners of Broadview Avenue and Roger Williams Avenue, at the northeast and the southwest corners of Pleasant Avenue and Roger Williams Avenue, and at the southwest corner of Burton Avenue and Roger Williams Avenue, where the radii shall be thirty (30) feet; at the southeast corner of Green Bay Road and Roger Williams Avenue, the radius shall be fifteen (15) feet; at the northeast corner of Blackstone Place and Green Bay Road, at the northeast corner of Blackstone Place and Pleasant Avenue, where the radii shall be forty (40) feet; at the northeast corner of Broadview Avenue and Blackstone Place, at the southwest corner of Blackstone Place and Flora Place, where the radii shall be fifty (50) feet; at the northeast corner of Northmoor Road and Flora Place, where the radius shall be thirty (30) feet; at the southeast and the northwest corners of alley north of Roger Williams Avenue and Pleasant Avenue, the southeast corner of alley north of Roger Williams Avenue and Broadview Avenue, the southeast corner of alley south of Roger Williams Avenue and Broadview Avenue, the southeast and the northwest corners of alley south of Roger Williams Avenue and Pleasant Avenue, the southeast and the northwest corners of alley south of Roger Williams Avenue and Burton Avenue, where the radii shall be fifteen (15) feet; constructing tile pipe drains, laid in the parkways at an average distance of two (2) feet from the back of the curb, except where said drains join the catchbasin or catchbasin-manholes, where said drains shall be laid along curved lines convex to the property lines, and said curved lines shall begin ten (10) feet from said catchbasin or catchbasin-manhole; constructing concrete culvert outlet in Ravinia Road and in Easement in Lot 35, Block 1, Ravinia Highlands, connection of proposed tile pipe drain to existing catchbasin-manhole in Broadview Avenue, removal of surplus excavated materials; curing, protecting, cleaning said proposed concrete pavement. restoration of existing sidewalks where damaged; engineering services, and all other labor, materials and expenses necessary to construct said proposed improvement in a workmanlike manner, all in the City of Highland

Park, Lake County, State of Illinois. The estimated cost of said proposed improvement, including all labor, materials, and all lawful expenses attending the same, is the sum of \$301,-

000.00, itemized as follows: ESTIMATE OF COST

23,100 cubic yards of excavation for concrete pavement, including clearing, grubbing out of brush and trees four (4) inches in diameter or less, grading, preparing the subgrade to receive the concrete pavement, the roots of trees and brush shall be removed to a depth of one (1) foot below the surface of the subgrade, and the holes filled with sand, well tamped, and removal of all surplus excavated materials from the site of the improvement, all excavation measured in the cut, complete at \$1.25 per cubic \$ 28,875.00

8,970 cubic yards of excavation for parkways, including clearing, grubbing of brush and trees, four (4) inches in diameter or less, raking said parkways, and removal of all

surplus excavated materials, measured in the cut, complete at \$1.25 per cubic yard ... 44,500 square yards of Portland cement concrete pavement eight (8) inches thick (the square yard measured between roadway edges). Said concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and three and one-half (31/2) parts gravel or crushed stone, mixed with sufficient water to make a quaking mass. Said pavement shall be reinforced with forty (40) pounds effective steel wire fabric to each one hundred (100) square feet of pavement, placed two (2) inches below the top of the pavement. Three-eighths (%) inch asphaltic felt transverse expansion joints shall be constructed normal to the center line of the pavement, and spaced thirty (30) feet apart, extending from bottom of the pavement to one-half (1/2) inch above the top of said pavement, and from pavement edge to pavement edge; said expansion joints shall be provided with three-quarter (%) inch smooth, round steel bars, two (2) feet long, spaced two (2) feet apart, imbedded in the concrete four (4) inches below the top of said concrete, and extending sixteen (16) inches into the concrete on one side of the joint, and the remaining shorter portion of said steel bars, before imbedded in the concrete on the other side of the joint, shall be coated with cup grease, and inserted in a one (1) inch inside diameter pasteboard or tin pipe ten (10) inches long, one end of which shall be closed in such a manner as to keep the concrete out and provide an open space at least one (1) inch in length in which the bar may slide. A longitudinal trapezoidal joint shall be constructed along the center line of the pavement in Roger Williams Avenue, and from end to end of said pavement; the face of the concrete pavement on one side of the joint shall be painted with bituminous cement before the concrete on the other side is laid; said longitudinal joint shall be provided with five-eighths (%) inch round, deformed steel bars, four (4) feet in length, spaced five (5) feet apart and four (4) inches below the top of the pavement, and extend two (2) feet into the concrete on each side of the joint. A longitudinal Vshaped joint shall be constructed along the center line of and from end to end of the pavement in Burton Avenue, Pleasant Avenue, Broadview Avenue, Alvin Place, Crawford Place, Bellevue Place, Washington Place, Highland Place, Blackstone Place, Flora Place, and Northmoor road, by the installation of a sixteen (16) gauge

metal (iron) plate seven and one-half (71/2) inches wide after being pressed into shape; said V-shaped joint shall be provided with five-eighths (%) inch round deformed steel bars, four (4) feet in length, spaced five (5) feet apart, and four and one-quarter (4%) inches below the top of the parement; said bars shall extend two (2) feet into the concrete on each side of the joint; includ curing by the use of two (2) pounds of calcium chloride per square yard of pavement, protecting the pavement, and cleaning said pavement after completion, and including filling cracks along the longitudinal joints and along the line where the concrete pavement joins the curb, with bituminous cement; laid complete at \$2.50 111,250.00 per square sard

lineal feet of concrete curb. The width of the curb from the top of the pavement to the bottom of said curb shall be nine (9) sinches, the width of said curb three (3) inches below the top of said curb shall be six (6) inches. The upper back edge shall be rounded along a line having a radius of one-half (1/2) inch. The upper front edge and the edge joining the pavement shall be rounded along a line having a radius of three (3) inches. The concrete for the body position of said curb shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and three and one-half (31/2) parts gravel or crushed stond. The mortar for the exposed surface of said curb to a depth of one-half (1/2) inch, shall be composed by volume of one (1) part Portland cement and two (2) parts sand. Both mortar and concrete shall be mixed with sufficient water to make a quaking mass. Three-eighth (%) inch open joints shall be constructed through the entire width of said curb, and extending from top to bottom of said curb, spaced thirty (30) feet apart, and continuous with the transverse expansion joints in the pavement, including the excavation for the cure below the bottom of the pavement; constructed complete at \$1.00 per lineal foot

3 new concrete catchbasins; the concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and four (4) parts gravel or crushed stone, mixed with sufficient water to make a quaking mass; the isside diameter shall be four (4) feet from the top of the bottom to a plane three (3) feet below the top of the cancrete, from which plane the diameter shall be uniformly decreased upwards to two (2) feet at the top of the concrete in such manner as to fit and support the cover. The bottom and sidewalls shall be eight (8) inches mick, and the overall height of the concrete shall be - seven (7) feet. Each catchbasin shall be furnished with a Highland Park pattern catchbasin cover consisting of a frame and a grate. The weight of the grate shall be one hundred twenty-five (125) pounds; the weight of the frame shall be two hundred seventy-five (275) pounds. Including all excavating, backfilling around the catchbasins with sand, and removal of all surplus excavated materials; constructed complete, and covers set to grade at \$95 each 125 new concrete catchbasin manholes; the concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and four (4) parts gravel or crushed stone, mixed with sufficient water to make a quaking mass. The inside diameter shall be four (4) feet from the top of the bottom to a plane three (3) feet below the top of the concrete, from which plane the diameter shall be uniformly decreased upwards to two (2) feet at the top of the concrete in such a manner as to fit and support the cover. The bottom and sidewalls shall be eight (8% inches thick, and the average depth of the concrete shall be nine (9) feet below the pavement grade; each catchbasin manhole shall be furnished with a Highland Park sattern catchbasin cover, consisting of a frame weighing two hundred seventy-five (275) pounds, and a grate weighing one hundred twenty-five (125) pounds; including all excavating, backfilling around the catchbas-

in manholes with sand, and removal of all surplus excavated materials, constructed complete at \$120.00 each 15,000.00 new concrete manholes; the concrete shall be composed by volume of the (1) part Portland cement, two (2) parts sand, and sur (4) parts gravel or crushed stone, mixed with sufficient water to make a quaking mass. The inside diameter shall be three (3) feet from the top of the bottomato a plane three (3) feet below the top of the concrete from which plane the diameter shall be uniformly decreased to two (2) feet at the top of the concrete in such a manner as to fit and support the cover. The botton and sidewalls shall be eight (8) inches thick, and the average depth of concrete is six (6) feet below the pavement grade or surface of the ground. Each manhole skall be furnished with a manhole cover consisting of frame weighing three hundred ninety (390) pounds, and a lid weighing one hundred fifty (150) pounds; including all excavating, backfilling around the manholes, with sand, and removal of all surplus excavat-

ed materials, constructed complete, and cover set to grade, at \$90.00 each concrete drop inlets constructed integral with the herein proposed concrete culverts. Two (2) inlets to be constructed over and integral with culvert in Ravinia Road and two (inlets to be constructed over and integral with culvest across Burton Avenue at Lot 35, Block 1, Ravinia Highlands. Inside diameter at top of culvert shall be three (3) feet; from top of culvert to top of the concrete of the inlets the diameter shall be uniformly decreased to two (2) feet at the top of the concrete in such a manner as to fit and support the cover. The sidewalls wall be eight (8) inches thick, and the average depth of the concrete is two and one-half (21/2) feet. The concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and four (4) parts gravel or crushed stone, mixed with sufficient water to make a quaking mass. Each drop inlet shall be furnished with a cover consisting of a frame weighing two hundred seventy-five (275) pounds, and a grate weighing one hundred twenty-five (125) pounds; including sil excavating, backfilling with sand, and removal of surplus excavated material, constructed complete, and cover set to grade, at \$50.00 each

TILE PIPE DRAINS

The following drains shall be vitrified salt-glazed, hub and spigot tile pipe drains, inside diameter as indicated by the size stated below, including connections to catchbasins, carchbasin-manholes, manholes, and drop inlets, all trenching, backfilling the trenches with sand from the bottom of the trenches to the surface of the subgrade; joints of mortar composed by volume of one (1) part Portland cement and two (2) parts sand, mixed with sufficient water to make a quaking mass, removal of all surplus excavated material; the depth of the drain refers to the flow line of said drains; all drains fifteen (15) inches and over shall be double strength. 1,085 lineal feet of eight (8) inch tile pipe drain, laid at an av-

erage depth of six and one-half (61/2) feet below the pavement trade, laid complete at \$1.90 per lineal foot 518 lineal feet of ten (10) inch tile pipe drains, laid at an average depth of six and one-half (61/2) feet below the payement grade, laid complete at \$2.10 per lineal foot lineal feet of twelve (12) inch tile pipe drains, laid at an average depth of six and one-half (61/2) feet below the pavement grade, laid complete at \$2.20 per lineal

411.40

130.00

3,581.05

25,386.20

lineal feeth of fifteen (15) inch tile pipe drains, laid at an average depth of six and one-half (61/2) feet below the pavement grade, laid complete at \$2.40 per lineal 50 lineal feet of eighteen (18) inch tile pipe drains, laid at an average depth of six and one-half (61/2) feet below the pavement grade, laid complete at \$2.60 per lineal

42 lineal feet of twenty-four (24) inch tile pipe drains, laid at an average depth of six (6) feet below the pavement grace, laid complete at \$3.00 per lineal foot

The following drains shall be vitrified, salt-glazed, hub and spigot tile pipe drains, inside diameter as indicated by the size stated below, including connections to catchbasins, calchbasin-manholes, manholes and drop inlets, and outled culverts or outlet drains, laid with OPEN joints; including all trenching, backfilling the trenches with EALTH, flushing the backfill, and removal of all surplus eccavated materials; the depth of the drains refers to the flow line of said drains. All drains fifteen (1) inches and over shall be double strength.

4,213 lineal feet of six (6) inch tile pipe drains, laid at an average (apth of four and one-half (4%) feet below the paverent grade, laid complete at 85c per lineal foot 18,133 lineal feet of eight (8) inch tile pipe drains, laid at an average dipth of five and one-half (5%) feet below the pavement trade, laid complete at \$1.40 per lineal foot 3,593 lineal feet of ten (10) inch tile pipe drains, laid at an average depth of five and one-half (5½) feet below the pavement grade, laid complete at \$1.65 per lineal foot 2,461 lineal feet of twelve (12) inch tile pipe drains, laid at 4,429.80 low the pavement grade, laid compete at \$1.85 per lin-3,457.65 lineal feet of eighteen (18) inch tile pipe drains, laid at an average depth of six (6) feet below the pavement grade, laid complete at \$2.15 per lineal foot 3,674.35 lineal feet of twenty (20) inch tile pipe drains, laid at an average depth of five (5) feet below the pavement grade, laid complete at \$2.75 per lineal foot

OUTLET DRAINS

80 lineal feet of twenty-two (22) inch inside diameter vitrified, salt-glazed, hub and spigot, double strength tile pipe drains, laid at an average depth of six and one-half (6%) feet below the surface of the ground where located; laid with OPEN joints, including all trenching, backfilling the trenches with EARTH, flushing the backfill, and removal of all surplus excavated materials; the depth of the drains refers to the flow line of said drains; laid complete at \$3.40 per lineal foot : lineal feet of thirty (30) inch inside diameter vitrified, salt-glazed, hub and spigot, double strength tile pipe drains, laid at an average depth of seven (7) feet below the surface of the ground where located, laid with OPEN joints, including all trenching, backfilling the trenches, flushing the backfill, and removal of all surplus excavated materials; the depth of the drains refers to the flow line of said drains; laid complete at \$4.00 per lineal foot

HEADWALLS

The following headwalls for outlet drains and outlet culverts shall be constructed of concrete; the body portion of said headwalls shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and four (4) parts gravel or crushed stone; the exposed surface after backfilling to a depth of one; (1) inch, shall be composed by volume of one (1) part Portland cement and two (2) parts sand; both mortar and concrete shall be mixed with sufficient water to make a quaking mass; the bottom of the wall shall be three (3) feet below the flow line of the outlet drains or culverts; including all excavating, backfilling, and removal of all surplus excavated materials. Dimensions as stated below.

concrete headwall located in Ravine south of Bellevue Place, with opening for a twenty-two (22) inch tile pipe, ten (10) feet long, six (6) feet high, top one (1) foot and three (3) inches, bottom three (3) feet, containing four and thirty-two hundredths (4.32) cubic yards, constructed complete at \$15.00 per cubic yard concrete headwall located in Lot 35, Block 1, Ravinia Highlands, at the westerly right-of-way line of the Chicago & Northwestern Ry. Co., with opening for a two (2) foot by three (3) foot inside dimension culvert, nine (9) feet long, eight (8) feet high, top one foot three inches (1'-3"), bottom three feet six inches (8'-6"), containing five and eighty-one hundredths (5.81) cubic yards,

constructed integral with the culvert, complete at \$15.00

per cubic yard concrete headwall located in ravine north of Roger Williams Avenue, with opening for a thirty (30) inch tile pipe, ten (10) feet long, seven (7) feet high, top one foot three inches (1'-3"), bottom three feet six inches (3'-6"), containing five and sixteen hundredths (5.16) cubic yards, constructed complete at \$15.00 per cubic

1 concrete headwall located in south parkway of Ravinia Road, at the westerly right-of-way line of the Chicago & Northwestern Ry. Co., with opening for a two (2) foot by three (3) foot inside dimension concrete culvert, nine (9) feet long, eight (8) feet high, top one foot three inches (1'-3"), bottom three feet six inches (3'-6"), containing five and eight-tenths (5.8) cubic wards, constructed integral with the culvert, at \$15.00 per cubic yard....

CULVERTS

The following culverts shall be constructed of concrete composed by volume of one (1) part Portland cement, two (2) parts sand, and four (4) parts gravel or crushed stone, mixed with sufficient water to make a quaking Dimensions as stated below.

concrete culvert two hundred forty-five (245) feet long, inside dimensions two (2) feet high and three (3) feet wide, sidewalls and top slab eight (8) inches thick, bottom six (6) inches thick, located in south parkway of Ravinia Road; the westerly end of said culvert to be closed with a six (6) inch concrete slab, except for an opening for a twelve (12) inch tile pipe, containing eighty-two and three-tenths (82.3) cubic yards, constructed complete at \$15.00 per cubic yard

1 concrete culvert one hundred eighty (180) feet long, inside dimensions two (2) feet high and three (3) feet wide, sidewalls and top slab eight (8) inches, bottom six (6) inches, located in Lot 35, Block 1, Ravinia Highlands, and across Burton Avenue; the westerly end of said culvert to be closed with a six (6) inch concrete slab containing sixty and six-tenths (60.6) chbic yards; constructed complete at \$15.00 per cubic yard

600 square yards of bituminous binder madadam pavement for pavement connections in Green Bay Road at Roger. Williams Avenue, Highland Place, Washington Place, Blackstone Place, and Northmoor Roads said pavement shall be twelve (12) inches thick, bonded with four (4) gallons of Tarvia, or its equal, per square yard, top dressed with one-half (1/2) inch layer of one-quarter (1/4) inch gravel, laid complete at \$3.00 per square yard 30 valve vault covers to be adjusted to grade where located, using materials similar to that used in original construc-

tion, at \$5.00 each 63 manhole covers to be adjusted to grade where located, using materials similar to that used in erginal constructtion, at \$5.00 each 90 lineal feet of existing curb in Ravinial Road, to be removed, at 10c per lineal foot connection to existing catchbasin maghole, at Broad-

view Avenue and Crawford Place, consisting of breaking a hole in the wall of said catchbasin manhole, at proper grade, and inserting a twelve (12) inch tile pipe connection, at \$5.00 existing catchbasin to be filled with sand, cover to be removed, and existing macadam pavement repaired, at 750 cubic yards of sand for filling of trenches under proposed

concrete pavement, delivered where it shall be used, at

\$2.50 per cubic yard 105 trees over four (4) inches to be cut down, roots grubbed out to a depth of one (1) foot below the top of the subgrade, and holes filled with sand, and removal of trees and stumps from the site of the improvement, at \$10.00 each 10,500 square feet of new concrete sidewalk approaches, laid on a layer of cinders six (6) inches thick. The width of the sidewalk approaches shall be five (5) feet, except

at the existing sidewalks in Ravinia Terrace, where they shall be widened so as to meet the existing walks at right angles. The body portion of the approaches shall be four (4) inches thick, and the concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and five (5) parts gravel or crushed stone; the exposed surface to a depth of one-half (1/2) inch shall be composed by volume of two (2) parts Portland cement and three (3) parts sand. Both mortar and concrete shall be mixed with sufficient water to make a quaking mass; including all excavation, grading, and removal of all surplus excavated materials, constructed complete at 30c per square foot

Engineering services

\$283,962.26 All lawful expenses attending the proceedings for making said proposed improvement, including the court costs and the making, levying, and collection of the assessment for said proposed improvement, not in excess of

six per centum (6%) of the cost of said improvement 17,037.74 TOTAL ESTIMATED COST OF SAID PROPOSED IMPROVEMENT

Respectfully submitter

SAMUEL M. HASTINGS, Mayor of the City of Highland Park, and President of the Board of Local Improvements of the City of Highland Park.