"	"	"	at catch-basin-manhole	No. 220	"	55.5	"	"	"
"	"	"	at catch-basin-manhole	No. 221	"	55.06	"	"	"
"	"	"	225 feet westerly of	No. 218	"	58.12	"	"	"
"	"	"	at catch-basin-manhole	No. 222	"	58.5	"	"	"
"	"	"	at catch-basin-manhole	No. 223	"	57.5	"	"	"
"	"	"	at manhole	No. 224	"	(53.95	"	"	"
					"	(54.75			
"	"	"	290 feet easterly of	No. 222	"	61.4	"	"	"
"	"	"	at manhole	No. 227	"	52.11	"	"	"
"	"	"	at manhole	No. 230	"	51.47	"	"	"
"	"	"	at manhole	No. 231	"	50.61	"	"	"
"	"	"	at catch-basin-manhole	No. 228	"	55.0	"	"	"
"	"	"	at catch-basin-manhole	No. 229	"	53.5	"	"	"
"	"	"	88 feet westerly of	No. 228	"	55.44	"	"	"
"	"	"	134 feet westerly of	No. 228	"	54.07	"	"	"
"	"	"	at catch-basin-manhole	No. 232	"	51.42	"	"	"
"	"	"	at catch-basin-manhole	No. 233	"	51.18	"	"	"
"	"	"	at catchbasin-manhole	No. 237	"	49.63	"	"	"
"	"	"	at catch-basin-manhole	No. 238	"	49.46	"	"	"
"	"	"	170 feet westerly of	No. 232	"	54.0	"	"	"
"	"	"	at manhole	No. 236	"	49.79	"	"	"
"	"	"	at manhole	No. 240	"	49.25	"	"	"
"	"	"	of culvert at Skokie Ditch			49.0	"	"	"
"	"	"	at catch-basin-manhole	No. 241	"	49.55	"	"	"
"	"	"	at catch-basin-manhole	No. 242	"	49.34	"	"	"
"	"	"	at catch-basin-manhole	No. 243	"	49.15	"	"	"
"	"	"	of outlet pipe at Skokie Ditch			49.00	"	"	"
"	"	"	at catch-basin-manhole	No. 244	"	49.96	"	"	"
"	"	"	at catch-basin-manhole	No. 245	"	50.06	"	"	"
"	"	"	at catch-basin-manhole	No. 246	"	49.91	"	"	"
"	"	"	at catch-basin-manhole	No. 247	"	50.04	"	"	"
"	"	"	162 feet easterly of	No. 245	"	50.7	"	"	"
"	"	"	at catch-basin-manhole	No. 248	"	49.8	"	"	"
"	"	"	300 feet west of	No. 248	"	51.0	"	"	"
"	"	"	at catch-basin-manhole	No. 251	"	48.6	"	"	"
"	"	"	at catch-basin-manhole	No. 252	"	48.5	"	"	"
"	"	"	at catch-basin-manhole	No. 253	"	49.8	"	"	"
"	"	"	at catch-basin-manhole	No. 254	"	49.7	"	"	"
"	"	"	at catch-basin-manhole	No. 255	"	50.1	"	"	"
"	"	"	320' easterly of	No. 253	"	51.1	"	"	"
"	"	"	at manhole	No. 250	"	48.2	"	"	"
"	"	"	of outlet pipe at Skokie Ditch			48.0	"	"	"

McCRAREN ROAD:

El.	of	flowline	at catch-basin-manhole	No. 188	is	58.0	feet	above	Datum
"	"	"	at catch-basin-manhole	No. 187	"	57.62	"	"	"
"	"	"	at catch-basin-manhole	No. 190	"	54.2	"	"	"
"	"	"	at catch-basin-manhole	No. 189	"	53.9	"	"	"
"	"	"	158 feet northerly of	No. 190	"	55.79	"	"	"
"	"	"	110 feet southerly of	No. 188	"	58.55	"	"	"
"	"	"	500 feet southerly of	No. 189	"	56.4	"	"	"

SOUTHLAND AVENUE:

El.	of	flowline	at catch-basin-manhole	No. 45	is	79.27	feet	above	Datum
"	"	"	at catch-basin-manhole	No. 46	"	79.81	"	"	"
"	"	"	302 feet westerly of	No. 45	"	83.5	"	"	"
"	"	"	299 feet westerly of	No. 46	"	84.0	"	"	"
"	"	"	at catch-basin-manhole	No. 47	"	(79.29	"	"	"
						(77.73	"	"	"
"	"	"	at catch-basin-manhole	No. 48	"	78.78	"	"	"
						78.0	"	"	"
"	"	"	285 feet westerly of	No. 47	"	81.00	"	"	"
"	"	"	287 feet westerly of	No. 48	"	80.5	"	"	"
"	"	"	at catch-basin-manhole	No. 49	"	74.4	"	"	"
"	"	"	at catch-basin-manhole	No. 50	"	74.6	"	"	"
"	"	"	283 feet westerly of	No. 49	"	78.08	"	"	"
"	"	"	283 feet westerly of	No. 50	"	78.85	"	"	"
"	"	"	407 feet westerly of	No. 19	"	73.0	"	"	"
"	"	"	308 feet westerly of	No. 17	"	72.5	"	"	"
"	"	"	320 feet westerly of	No. 9	"	67.2	"	"	"
"	"	"	130 feet westerly of	No. 52	"	63.56	"	"	"
"	"	"	at catch-basin-manhole	No. 52	"	62.0	"	"	"
"	"	"	at catch-basin-manhole	No. 51	"	61.48	"	"	"

There shall be constructed eight (8) inlet-basins at the places and in the locations hereinbefore designated.

The said basins shall be constructed of monolithic 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; the inside dimensions shall be one (1) foot eight (8) inches square by one (1) foot four (4) inches high. The walls and bottom shall be eight (8) inches thick. Each inlet basin shall be furnished with an asphaltic coated cast iron catch-basin cover, Highland Park pattern, consisting of a frame weighing two hundred seventy-five (275) pounds and a grate weighing one hundred twenty-five (125) pounds set to grade where located. All necessary excavating, backfilling, flushing, the backfill shall be done, and all surplus excavated materials removed therefrom.

There shall be constructed nineteen (19) concrete manholes at the places and in the locations hereinbefore designated. The said manholes shall be constructed of monolithic concrete or concrete blocks; the thickness of the bottom shall be eight (8) inches and said bottom shall extend to the outside face of the walls; the thickness of the walls shall be six (6) inches; if constructed of monolithic concrete, forms shall be placed on both sides of the walls; if constructed of concrete blocks, said blocks shall be laid with full joints of mortar composed by volume of one (1) part Portland cement and two (2) parts sand, mixed with sufficient water and neatly pointed on the inside. 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. 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 decrease uniformly upward to two (2) feet at the top of said concrete, so as to fit and support the cover; the minimum depth of the concrete is five and three-tenths (5.3) feet, the maximum depth is fifteen and seven-tenths (15.7) feet and the average depth is ten and nine-tenths (10.9) feet below the finished grade of the pavement. Each manhole shall be provided with three-quarters (¾) inch wrought round, galvanized iron ladder rounds set in the walls and spaced sixteen (16) inches apart. Each manhole shall be provided with an asphaltic coated cast iron manhole cover, consisting of a frame weighing three hundred ninety (390) pounds and a solid lid weighing one hundred fifty (150) pounds, set to grade where located. All necessary excavating, shoring, bracing, pumping, backfilling with earth and flushing the backfill shall be done, and all surplus excavated material removed therefrom.

There shall be constructed two (2) special manholes at the places and in the locations as hereinbefore designated. The said manholes shall be constructed of monolithic 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. The outside dimensions of the concrete shall be six (6) feet and three (3) inches by four (4) feet and nine (9) inches from the bottom of said concrete to a horizontal plane through the center of a fifty-two (52) inch concrete pipe from which plane the concrete shall taper down to a diameter of two (2) feet at the top of said concrete so as to fit and support the cover. The average depth of the concrete is eight (8) feet below the finished grade of the pavement and the walls above said horizontal plane shall be six (6) inches thick. Each manhole shall be furnished with an asphaltic coated manhole cover consisting of a frame weighing three hundred ninety (390) pounds and a lid weighing one hundred fifty (150) pounds, set to grade where located, and with three-quarter (¾) inch wrought round, galvanized iron ladder rounds spaced sixteen (16) inches apart. All necessary excavating, shoring, bracing, pumping, backfilling, and flushing the backfill shall be done, and all surplus excavated materials removed therefrom.

There shall be constructed seven (7) catch-basins at the places and in the locations as hereinbefore specified.

Said catch-basins shall be constructed of monolithic concrete or concrete blocks; the thickness of the bottom shall be eight (8) inches and said bottom shall extend to the outside face of the walls; the thickness of the walls shall be six (6) inches; if constructed of monolithic concrete, forms shall be placed on both sides; if constructed of concrete blocks said blocks shall be laid with full joints of mortar composed by volume of one (1) part Portland cement and two (2) parts sand mixed with sufficient water and neatly pointed on the inside. 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. 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 decrease uniformly upward to two (2) feet at the top of said concrete so as to fit and support the cover; the average depth of the concrete is eight and five-tenths (8.5) feet, the minimum depth is six and five-tenths (6.5) feet and the maximum depth is nine and eight-tenths (9.8) feet below the finished grade of the pavement. Each catch-basin shall be furnished with an asphaltic coated cast iron catch-basin cover, Highland Park pattern, consisting of a frame weighing two hundred seventy-five (275) pounds, and a grate weighing one hundred twenty-five (125) pounds, set to grade where located. All necessary excavating, shoring, bracing, pumping, backfilling with earth and flushing the backfill shall be done, and all surplus excavated materials removed therefrom.

There shall be constructed 206 catch-basin manholes at the places and in the locations as hereinbefore designated.

The said catch-basin manholes shall be constructed of monolithic concrete or concrete blocks; the thickness of the bottom shall be eight (8) inches and said bottom shall extend to the outside face of the walls; the thickness of the walls shall be six (6) inches; if constructed of monolithic concrete, forms shall be placed on both sides; if constructed of concrete blocks said blocks shall be laid with full joints of mortar composed by volume of one (1) part Portland cement and two (2) parts sand, mixed with sufficient water and neatly pointed on the inside. 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. 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 decrease uniformly upward to two (2) feet at the top of said concrete so as to fit and support the cover. The minimum depth of the concrete is six and five-tenths (6.5) feet, the maximum depth is fifteen and four-tenths (15.4) feet and the average depth is ten (10) feet below the finished grade of the pavement. Each catch-basin shall be furnished with an asphaltic coated cast iron catch-basin cover, Highland Park pattern, consisting of a frame weighing two hundred seventy-five (275) pounds, and a grate weighing one hundred twenty-five (125) pounds set to grade where located. All necessary excavating, shoring, bracing, pumping, backfilling with earth and flushing the backfill shall be done, and all surplus excavated materials removed therefrom.

There shall be constructed 11,700 lineal feet of six (6) inch internal diameter tile pipe drains, at the places and in the locations as hereinbefore described and designated, laid at an average depth of four (4) feet below the top of the curb.

There shall be constructed 32,391 lineal feet of eight (8) inch internal diameter tile pipe drains, at the places and in the locations as hereinbefore described and designated; the minimum depth shall be four and six-tenths (4.6) feet, the maximum depth shall be eleven (11) feet, and the average depth shall be seven (7) feet below the finished grade of the pavement.

There shall be constructed 2438 linal feet of eight (8) inch internal diameter tile pipe drains, laid under proposed pavement at the places and in the locations as hereinbefore described and designated; the minimum depth shall be three (3) feet; the maximum depth shall be thirteen (13) feet, and the average depth shall be six and four-tenths (6.4) feet below the finished grade of the pavement.

There shall be constructed 4693 lineal feet of ten (10) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore described and designated; the minimum depth shall be six (6) feet, the maximum depth thirteen and five-tenths (13.5) feet, and the average depth eight and six-tenths (8.6) feet below the finished grade of the pavement.

There shall be constructed 662 lineal feet of ten (10) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore designated and described; the minimum depth shall be six (6) feet, the maximum depth twelve (12) feet and the average depth eight and six-tenths (8.6) feet below the finished grade of the pavement, laid under proposed pavement.

There shall be constructed 2940 lineal feet of twelve (12) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore described and designated; the minimum depth shall be seven (7) feet, the maximum depth thirteen and six-tenths (13.6) feet, and the average depth nine and five-tenths (9.5) feet below the finished grade of the pavement.

There shall be constructed 632 lineal feet of twelve (12) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore described and designated; the minimum depth shall be nine (9) feet, the maximum depth twelve (12) feet and the average depth ten and one-tenth (10.1) feet below the finished grade of the pavement.

There shall be constructed 3172 lineal feet of fifteen (15) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore described and designated; the minimum depth shall be five (5) feet, the maximum depth twelve and seven-tenths (12.7) feet, and the average depth eight and eight-tenths (8.8) feet below the finished grade of the pavement.

There shall be constructed 444 lineal feet of fifteen (15) inch internal diameter tile pipe drains at the places and in the locations hereinbefore described and designated; the average depth shall be seven and five-tenths (7.5) feet below the finished grade of the pavement, laid under proposed pavement.

There shall be constructed 1652 lineal feet of eighteen (18) inch inside diameter tile pipe drains at the places and in the locations hereinbefore described and designated; the minimum depth shall be six (6) feet; the maximum depth thirteen (13) feet, and the average depth nine (9) feet below the finished grade of the pavement.

There shall be constructed 187 lineal feet of eighteen (18) inch inside diameter tile pipe drains, at the places and in the locations hereinbeforedescribed and designated; the minimum depth shall be six and five-tenths (6.5) feet, the maximum depth shall be eleven and five-tenths (11.5) feet, and the average depth shall be nine (9) feet below the finished grade of the pavement, laid under proposed pavement.

There shall be constructed 1046 lineal feet of twenty (20) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore described and designated; the minimum depth shall be eight and two-tenths (8.2) feet, the maximum depth shall be ten (10) feet, and the average depth shall be nine (9) feet below the finished grade of the pavement.

There shall be constructed 78 lineal feet of twenty (20) inch internal diameter tile pipe drains at the places and in the locations hereinbefore described and designated, laid at an average depth of nine (9) feet below the finished grade.

There shall be constructed 277 lineal feet of twenty-two (22) inch internal diameter tile pipe drains, at the places and in the locations hereinbefore described and designated; the minimum depth shall be seven and two-tenths (7.2) feet, the maximum depth shall be eight and three tenths (8.3) feet, and the average depth shall be seven and eight-tenths (7.8) feet below the finished grade of the pavement.

There shall be constructed 73 lineal feet of twenty-two (22) inch internal diameter tile pipe drains at the places and in the locations hereinbefore described and designated, laid at an average depth of seven and eight-tenths (7.8) feet below the finished grade of the pavement laid under the proposed pavement.

There shall be constructed 714 lineal feet of twenty-four (24) inch internal diameter tile pipe drains at the places and in the locations hereinbefore described and designated; the minimum depth shall be seven and one-tenth (7.1) feet, the maximum depth shall be eleven and seven-tenths (11.7) feet, and the average depth shall be ten and one-tenth (10.1) feet below the finished grade of the pavement.

There shall be constructed 275 lineal feet of twenty-seven (27) inch internal diameter tile pipe drains at the places and in the locations hereinbefore described and designated, laid at an average depth of eight and two-tenths (8.2) feet below the finished grade of the pavement.

There shall be constructed 76 lineal feet of twenty-seven (27) inch internal diameter tile pipe drains at the places and in the locations hereinbefore described and designated, laid at an average depth of eight and six-tenths (8.6.) feet below the finished grade of the pavement.

The said tile pipe hereinabove provided shall be vitrified, salt-glazed hub and spigot, straight, smooth, cylindrical tile pipe equal to the best Akron sewer pipe. The said pipes shall be connected to the catch-basins, catch-basin manholes and manholes and inlet basins as herein prescribed, so as to provide the proper drainage for the said improvement. The work of laying said pipes shall include the necessary trenching, shoring, bracing, pumping, backfilling the trenches with earth, flushing and thoroughly compacting the backfill, and the removal of all surplus excavated materials. The said drains shall be laid with joints of mortar composed by volume of one (1) part Portland cement, and four (4) parts sand, mixed with sufficient water to make the proper consistency. All free ends of said pipe shall be closed with tile discs.

There shall be constructed 110 lineal feet of twenty-four (24) inch internal diameter concrete pipe in the places and at the locations as hereinbefore described and designated, laid at an average depth of three (3) feet below the finished grade of the pavement, in the ditch in Deerfield Road; the thickness of the walls shall be three (3) inches.

There shall be constructed 541 lineal feet of thirty (30) inch internal diameter concrete pipe at the places and in the locations as hereinbefore designated, laid at an average depth of eight (8) feet below the finished grade of the pavement; the thickness of the walls shall be three (3) and one-half (½) inches.

There shall be constructed 400 lineal feet of thirty-nine (39) inch concrete pipe at the places and in the locations as hereinbefore designated, laid at an average depth of ten and three-tenths (10.3) feet below the finished grade of the pavement; the thickness shall be four and one-quarter (4-¼) inches.

There shall be constructed 776 lineal feet of forty-eight (48) inch concrete pipe at the places and in the locations hereinbefore designated, laid at an average depth of eleven and two-tenths (11.2) feet below the finished grade of the pavement; fifty (50) feet shall be in tunnel under railroad tracks. The thickness shall be five (5) inches

There shall be constructed 285 lineal feet of fifty-two (52) inch concrete pipe at the places and in the locations hereinbefore designated, laid at an average depth of seven and seven-tenths (7.7) feet below the finished grade of the pavement. The thickness shall be five and one-half (5-½) inches.

The said reinforced concrete pipes hereinabove provided 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 the proper consistency, reinforced with a triangular wire mesh having an elastic limit of 55,000 pounds per square inch. Pipes which are specified to be 24.30 and 39 inches in diameter and shall have one (1) line of reinforced wire mesh placed concentric in the pipes, one (1) inch from the inside surface of said pipes. Pipes which are specified to be 48 and 52 inches in diameter shall have two (2) lines of reinforced wire mesh, placed concentric in the pipes, one (1) inch from the inside and outside surface of said pipes. Joints shall be constructed of mortar composed by volume of one (1) part Portland cement and two (2) parts sand, mixed with sufficient water to make the proper consistency.

The said work of constructing and laying the said pipes shall include all trenching, shoring, bracing, pumping, tunnelling, backfilling, flushing the backfill, and removal of all excavated materials, and the connection of said pipes to the manholes.

That there shall be constructed and laid, at the places and in the locations hereinbefore described and designated, 40 lineal feet of ten (10) inch internal diameter galvanized corrugated iron pipe for outlet drain. Weight per foot of No. Sixteen (16) gauge nine and two-tenths (9.2) pounds laid at an average depth of seven (7) feet below the surface of the ground; including connection to manhole, all trenching, shoring, bracing, pumping, backfilling, flushing the backfill, and removal of all surplus excavated materials.

There shall be constructed and laid, at the places and in the locations hereinbefore described and designated, 30 lineal feet of fifteen (15) inch internal daimeter, galvanized, corrugated iron pipe for outlet drain; weight per foot of No. 16 gauge, thirteen and one-tenth (13.1) pounds, laid at an average depth of five (5) feet below the surface of the ground, including connections to manholes, all trenching, shoring, bracing, pumping, backfill, and removal of all surplus excavated materials.

There shall be constructed 69 lineal feet of reinforced concrete pipe with internal diameter of fifty-two (52) inches in Deerfield Avenue in the location as hereinbefore designated; 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, reinforced with two (2) lines of triangular reinforcing wire mesh, having an elastic limit of 55,000 pounds per square inch, said wire mesh to be placed concentric in the pipes one (1) inch from the inside and outside surface of said pipe. Joints shall be constructed of mortar composed by volume of one (1) part Portland cement and two (2) parts sand mixed with sufficient water. The walls shall be five and one-half (5-½) inches thick. The average depth is seven and five-tenths (7.5) feet below the surface of the ground, including all trenching, shoring, bracing, pumping, backfilling, flushing the backfill and connection to concrete outlet - culvert.

There shall be constructed a reinforced concrete outlet culvert at the location hereinbefore designated. The internal dimensions shall be as follows: At the connection with the fifty-two (52) inch reinforced concrete pipe, the width shall be fifty-two (52) inches at a plane ten (10) feet east of said connection, the width shall be eight (8) feet and the height shall be three (3) feet, said dimensions shall be continued from said plane in such a manner that the top slab shall be four (4) feet on the north side and thirteen (13) feet on the south side of said slab, and the bottom slab shall be twenty-four (24) feet on the north side and thirty-three (33) feet six (6) inches on the south side of said slab. The north wall shall be three (3) feet high from above mentioned plane for a distance of seven (7) feet three (3) inches and shall from this point taper down to nothing at a distance of twenty-four (24) feet from aforesaid plane. The south wall shall be three (3) feet high from aforesaid plane for a distance of fifteen (15) feet and nine (9) inches and shall from this point taper down to nothing at a distance of thirty-three (33) feet and six (6) inches from aforesaid plane; the thickness of the top and bottom slabs and walls is ten (10) inches; said outlet culvert shall be placed on top of a footing one (1) foot six (6) inches thick, the length of said footing is thirty-two (32) feet six (6) inches on the north side and forty-two (42) feet six (6) inches on the south side. The footing at the connection of said outlet culvert and said fifty-two (52) inch concrete pipe shall be nine (9) feet eight (8) inches long and one (1) foot six (6) inches thick; the footing at the stream shall be nineteen (19) feet long and two (2) feet thick, the height of all aforesaid footing shall be two (2) feet eight (8) inches; including all labor and materials. Said outlet culvert contains twenty-nine (29) cubic yards of concrete reinforced with thirteen hundred (1300) pounds of one-half (½) inch square deformed steel bars. The footings contain sixteen (16) cubic yards of plain concrete.

That the concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and three and one-half (3-½) parts gravel.

There shall be constructed a reinforced concrete bridge (trestle type) over the east Skokie Drainage Ditch in Deerfield Avenue. The East end of the said bridge shall begin at a point 1698.5 feet West of Station 0+0, as hereinbefore designated, and the West end of the said bridge shall be at a point 1730.5 feet west of Station 0+0, as hereinbefore designated.

The overall length of said bridge, measured along the center line of Deerfield Avenue, is sixty-four (64) feet and the overall width of said bridge as measured along the East Skokie Drainage Ditch, is one hundred seven (107) feet and seven and three-eighths (7-⅜) inches. Said bridge shall consist of

(A) eighty-four (84) circular reinforced concrete piles thirty (30) feet long, fourteen (14) inches in diameter at the top and tapering to eight (8) inches at the bottom;

(B) One (1) reinforced concrete slab with integral curb, sixty-four (64) feet long, and thirty-one (31) feet wide from back to back of curb; the thickness of said slab shall be as follows: At the center line of said Deerfield Avenue nineteen (19) inches at the gutter line fifteen and one-half (15-½) inches, the integral curb shall be six (6) inches high above the gutterline as measured at the back of said curb; the width three (3) inches below the top of said curb shall be six (6) inches; the face line of said curb extended to the bottom of the concrete slab shall form an angle with said bottom line of seventy-five (75) degrees acute toward the back of said curb. The exposed edges shall be rounded after lines having the following radii: at the upper back edge the radius shall be one-half (½) inch, at the upper front edge and at the gutter line the radii shall be three (3) inches;

(C) Two (2) reinforced concrete slabs (one under the north Parkway and one under the south Parkway). Each slab shall be sixty-four (64) feet long, ten feet and eight inches (10'-8") wide, the thickness shall be fifteen and one-half (15-½) inches overall;

(D) Two reinforced concrete slabs, (one (1) under the north sidewalk and one (1) under the south sidewalk). Each slab shall be sixty-four (64) feet long and five (5) feet wide, and the thickness shall be fifteen and one-half (15-½) inch overall.

(E) Six (6) reinforced concrete girders; the width of said girders shall be twenty (20) inches; the height shall be thirty-eight (38) inches; the length of the two center girders shall be twenty-four (24) feet and the length of the remaining girders shall be twenty (20) feet seven (7) inches.

(F) Two (2) reinforced concrete sidewalks, one in the north Parkway and one in the south Parkway. The edge of said sidewalks nearest the street lines shall be twenty-two (22) inches from said street line. Each sidewalk shall be sixty-four (64) feet long, the average thickness of the concrete in the body portion shall be five (5) inches and the wearing surface one-half (½) inch thick, the width shall be five (5) feet. Sidewalks shall be reinforced with eighty (80) pounds of effective steel wire fabric to each one hundred (100) square feet. Under sidewalks shall be placed five hundred twelve (512) lineal feet of twelve (12) inch by twelve (12) inch inside dimensions, vitrified, salt-glazed tiles set in mortar composed by volume of one (1) part Portland cement and two (2) parts sand, mixed with sufficient water.

(G) Four (4) reinforced concrete pilecapping. The overall length of each capping is one hundred seven (107) feet seven and three-eighths (7-⅜) inches. The height is thirty (30) inches and the width two (2) feet.

(H) Two (2) Bedford Stone Handrails each sixty-six (66) feet six (6) inches long and three (3) feet six (6) inches high, the width at the top is twelve (12) inches and the width at the base is nine (9) inches. The concrete for the body portion of the sidewalk shall be one (1) part Portland cement, two (2) parts sand and four (4) parts gravel or crushed stone, except the exposed surface to a depth of one-half (½) inch which 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. All other concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand, and three and one-half (3-½) parts gravel or crushed stone, mixed with sufficient water, except the exposed surface of the integral curb to a depth of one-half (½) inch, which shall be composed by volume of one (1) part Portland cement, and two (2) parts sand, mixed with sufficient water.

There shall be constructed 300 square yards of reinforced concrete pavement approaches to said bridge in said Deerfield Avenue. The East end of the said east approach shall begin at Station 15+60. The West end of the said East approach shall end at Station 16+96.6, being the East end of said bridge. The West end of said West approach, being the West end of said bridge, shall begin at Station 17+62.5, and the West end of said West approach shall end at Station 18+0.

The said concrete approaches shall be constructed as follows:

Said concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand and three and one-half (3½) parts gravel or crushed stone, mixed with sufficient water; said pavement shall be reinforced with forty-two (42) pounds of 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 (⅜) inch asphaltic felt transverse expansion joints shall be constructed normal to the center line of the pavement and spaced twenty-seven (27) feet apart extending from the bottom of said pavement to one-half (½) inch above the top of said pavement and from the pavement edge to pavement edge, said joints shall be provided with three-quarter (¾) inch smooth, round steel reinforcing bars, two (2) feet long, spaced two (2) feet apart, the bar on each side of the center line of said pavement shall be spaced one (1) foot from said center line. The bars shall be embedded in the concrete four (4) inches below the top of said pavement, and extending sixteen (16) inches into the concrete on one side of the joints, and the remaining shorter portion of said bars, before imbedded in the concrete on the other side of said joints, shall be coated with cup grease, and inserted in an one (1) inch internal diameter metal 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.

There shall be constructed one (1) longitudinal V-shaped joint along the center line of said pavement — approach on both sides of the bridge and one additional V-shaped longitudinal joint fifteen (15) feet six (6) inches north of and parallel with said center line of said pavement in the east approach by the installation of a sixteen (16) gauge metal (iron) plate, seven and one-half (7-½) inches wide after being pressed into shape, said V-shaped joints shall be staked securely in place and shall be provided with five-eighths (⅝) inch round, deformed steel reinforcing bars four (4) feet in length and spaced five (5) feet apart, and placed four and one-quarter (4-¼) inches below the top of said pavement; said bars shall extend two (2) feet into the concrete on each side of said joints. Joints between said concrete pavement and the combined curb and gutter shall be provided with three-quarter (¾) inch round deformed steel reinforcing bars, each two (2) feet long and spaced five (5) feet apart, said bars shall be imbedded in the concrete four (4) inches below the top of the pavement and shall extend one (1) foot into the pavement and one (1) foot into the combined curbs and gutter; said joints shall, before the combined curb and gutter is constructed, be painted with asphaltic cement. In addition to the above mentioned reinforcing the one hundred thirty-five (135) square yards nearest the bridge to the west and the one hundred twenty-five (125) square yards nearest said bridge to the east shall be reinforced with twenty-three hundred sixty (2360) pounds of one-half (½) inch square, demormed steel bars, placed two (2) inches above the bottom of the pavement, including all curing by using two (2) pounds of calcium chloride spread evenly over each square yard of pavement, and protecting and cleaning said pavement.

There shall be constructed 304 lineal feet of combined curb and gutter along and adjoining the edges of the pavement upon the approaches at said bridge.

The concrete shall be composed by volume of one (1) part Portland cement, two (2) parts sand and three and one-half (3-½) parts gravel or crushed stone, except that the exposed surface to a depth of one-half (½) 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; the height of said combined curb and gutter, as measured at the back of said curb shall be fourteen (14) inches; the width of said combined curb and gutter, as measured at the bottom, shall be eighteen (18) inches; the height of the curb above the gutter line shall be six (6) inches, the width of said curb three (3) inches below the top shall be six (6) inches, the face line of said curb extended to the bottom line of said combined curb and gutter, shall form an angle with said bottom line of seventy-five (75) degrees, acute toward the back of the curb. The exposed edges shall be rounded after lines having the following radii: at the upper back edge the radius shall be one-half (½) inch, at the upper front edge and at the gutter line the radii shall be three (3) inches. There shall be constructed continuous with the transverse expansion joints in the pavement three-eighths (⅜) inch asphaltic felt expansion joints in the gutter extending from the edge nearest said pavement to the face of curb and from the bottom of said combined curb and gutter to one-half (½) inch above the top of said gutter, and a three-eighth (⅜) inch open joint extending from the top of the curb to the bottom of said combined curb and gutter and through the entire width of said curb.

There shall be constructed 220 square yards of stone or broken concrete rip-rap, average thickness nine (9) inches, placed under the said bridge as hereinbefore described. The said rip-rap shall extend from the northerly to the southerly edges of said approach and on both slopes of said Skokie Ditch.

There shall be constructed 1330 square yards of bituminous binder macadam pavement for pavement connections in Ridge Road, Deerfield Road and McCraren Road. Said pavement shall be eleven and one-half (11-½) inches thick bonded with four (4) gallons of Tarvia, or its equal, per square yard of pavement and top dressed with one-half (½) inch layer of one-quarter (¼) inch gravel, including all excavation and removal of all surplus excavated materials, and including the necessary header-boards.

That 278 trees shall be cut down, the stumps and roots grubbed out to a depth of one (1) foot below the surface of the subgrade and holes filled with sand, said sand to be flushed and tamped, and said trees, stumps and roots removed from the site of the said improvement.

There shall be constructed 9350 square feet of concrete sidewalk approaches connecting the existing public sidewalks with the said herein concrete paving improvement. The said sidewalk shall be built on a layer of cinders of sand six (6) inches thick, the width of said approaches shall be five (5) feet except at the existing sidewalks where they shall be widened so as to meet said sidewalks at right angles, the body portion of said 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 (½) inch shall be of mortar composed by volume of one (1) part Portland cement and two (2) parts sand; both mortar and concrete shall be mixed with sufficient water. All necessary excavating, and grading shall be done, and all surplus excavated materials shall be removed therefrom.

That 39,316 square yards of parkways adjoining the aforesaid described improvement shall be handraked and smoothed.

That 171 existing valve vault and manhole covers shall be adjusted to new grade by building up or cutting down the present masonry so as to confrom to the grade herein established.

There shall be constructed a concrete headwall at each end of the herein described and designated twenty-four (24) inch concrete culvert provided to be located in the existing northerly ditch in Deerfield Road at Richfield Avenue. Each wall shall be five and one-half (5-½) feet high, five (5) feet long; the width of the top shall be one and one-quarter (1-¼) feet. The width at the bottom shall be two and one-half (2-½) feet; the bottom shall be two (2) feet below the flowline of said concrete pipe. Each headwall shall be provided with an opening for said twenty-four (24) inch pipe; the concrete shall be composed by volume of one (1) part Portland cement and two (2) parts sand and four (4) parts gravel or crushed stone except that the exposed surfaces after back filling is done shall be of mortar composed by volume of one (1) part Portland cement and two (2) parts sand; both mortar and concrete shall be mixed with sufficient water; including all excavating, providing an opening in each headwall for said twenty-four (24) inch concrete pipe, connection with said concrete pipe, all backfilling, flushing and compacting said backfill, and removal of all surplus excavated materials, including existing tile pipe culvert; each headway to contain one and seven-tenths (1.7) cubic yards of concrete; total for the two (2) walls three and four-tenths (3.4) cubic yards.

That all of the foregoing described improvements shall include backfilling all trenches and the tunnels with earth, flushing and thoroughly compacting said backfill, raking and smoothing all parkways, adjusting all existing sanitary sewer manhole covers, adjusting all existing valve vault covers, constructing concrete sidewalk-approaches, constructing macadam pavement-approaches in Ridge Road and McCraren Road and Deerfield Road for connection of existing pavement with the herein described pavement, constructing a reinforced concrete bridge (trestle type) over the east Skokie Drainage Ditch, in Deerfield Avenue, with reinforced handrails and with reinforced concrete pavement-approaches, constructing concrete headwalls; removal of trees and stumps and all rubbish from the site of the improvement, constructing rip-rap under said bridge, removal of all surplus excavated materials, all curing, protecting, cleaning of said concrete pavement and said concrete combined curb and gutter, restoration of existing concrete sidewalks, sanitary sewers and water mains where damaged, all engineering services and all other labor, materials and expenses necessary to construct said local improvement in a workmanlike manner, all in the City of Highland Park, Lake County, Illinois.

All surplus excavated materials shall be removed from the site of the improvement.

The concrete materials for said pavement herein provided to be constructed shall be mixed in a batch-mixer. Said mixer shall be equipped with an accurate automatic water measuring device, and also with an automatic timing device; the mixing shall continue in the drum of said mixer for not less than one and one-half (1-½) minute.

After the concrete has been deposited it shall be leveled off, tamped and brought to the established grade by means of a strike-board or lute, until all voids are removed and the concrete is thoroughly compacted.

Immediately after the final tamping the concrete shall be rolled with a hand roller having a smooth even surface approximately six (6) feet in length, not less than eight (8) inches nor more than twelve (12) inches in diameter, and weighing not more than one hundred (100) pounds.

As an alternative to rolling, the concrete may be floated. For floating, a longitudinal wooden float may be used. Said float shall be constructed of three (3) inch by twelve (12) inch plank six (6) feet long. The edges shall be rounded off to a three (3) inch radius. The finishing side shall be planed so as to have a smooth surface or shall be finished with sheet metal.

After the rolling or floating has been completed, the surface shall be scraped free of all latent material; it shall then be belted, and just before the concrete obtains its initial set, it shall be given a final belting to produce a uniform surface of gritty texture.

As an alternative to hand-tamping, floating, rolling and belting, a finishing machine may be used, of a design approved by the engineer.

All sand herein provided to be used shall be clean, coarse, sharp sand. Said sand when died shall pass a screen having four (4) meshes per lineal inch, and not more than twenty-five per cent (25%) of said sand shall pass a sieve having fifty (50) meshes per lineal inch. Said sand shall contain no vegetable nor other deleterious matter, nor more than two per cent (2%) by weight of clay or loam.

All gravel or crushed stone herein provided to be used shall be clean, durable, tough gravel or crushed limestone, free from vegetable or other deleterious matter. The size of the gravel or crushed stone to be used in the construction of the proposed pavement shall be such as to pass a two and one-half (2½) inch round opening, and shall range from that size down to a size that will pass a one-half (½) inch ring. Not more than five per cent (5%) shall be small enough to pass a screen having four (4) meshes per lineal inch. The size of the gravel or crushed stone to be used in the construction of culverts, headwalls, sidewalk approaches, and body of the curbs shall be such as to pass a one (1) inch ring, and shall range from that size down to a size that will pass a one-half (½) inch ring. Not more than five per cent (5%) shall pass a screen having four (4) meshes per lineal inch. Said gravel or crushed stone shall be shipped to the job in cars or trucks loaded in such manner that the top of the gravel or crushed stone will present a fair sample of what the entire car or truck contains.

All cement provided for under this resolution shall be first-class American Portland cement, and shall be so ground that ninety-two per cent (92%) will pass through a standard number 100 sieve having ten thousand (10,000) meshes per square inch. Briquettes made from mortar composed by volume of one (1) part of said Portland cement and three (3) parts of clean torpedo sand, exposed to air for one (1) day and immersed in water for six (6) days, shall develop an ultimate tensile strenght of two hundred (200) pounds per square inch.

All water used in the mixing of concrete or mortar shall be clean and free from iron, acid, alkali, or vegetable matter and suitable for the purpose for which it is used.

All calcium chloride herein provided shall be of Solway Process Company produce, or a product of equal quality. It shall contain from seventy-three (73) to seventy-five (75) per cent pure anhydrous calcium chloride, and shall be free from magnesium chloride. It shall be packed in moisture-proof bags, or in air-tight drums, and shall be in a flake or granulated form. When tested by means of laboratory screens, it shall meet the following requirements:

Passing through a ⅜ inch screen — 100%

Passing through a 20-mesh sieve — not more than 10%

That wherever ditto marks (") are used herein, they represent and stand for the word or words under which they appear, and shall be read the same as if the said word or words were written where the said ditto marks appear.

All tile pipe herein prescribed, with internal diameters of less than fifteen (15) inches shall be what is known as standard pipe, and all pipe with internal diameters of fifteen (15) inches or more, shall be double strength pipe, all equal to the best Akron pipe.

The datum herein referred to shall be a horizontal plane distant in a vertical line one hundred eighteen and seventy-eight hundredths (118.78) feet below the top of an iron wedge set in the wall, and resting upon the top of the water table, in the City Hall, at the southeast corner of said City Hall, which is the established datum in said City of Highland Park.

The elevations herein provided for the flow line of tile pipe drains and outlet tile pipe drains, and other elevations given in this resolution, are in feet and decimal parts of a foot above the established datum of said City of Highland Park.

The finished grade is the elevation above datum of that portion of the improvement to which reference is specifically made.

The word "roadway" shall mean that portion of the street where the concrete pavement and the concrete curb is to be constructed, and shall extend from back to back of curb.

The word "sub-grade" shall mean the finished surface of the roadway on which the pavement and curb is to be constructed.

Wherever the word "pavement" is mentioned, it shall mean that the pavement herein provided to be constructed, between the combined curb and gutters.

Wherever the word "gutter" is mentioned, it shall mean that portion of the combined curb and gutter herein provided, between the curb and the pavement.

Wherever the words "tile pipe drains" are used, it shall mean the storm water drains or storm sewers herein provided to be constructed.

That the foregoing improvement shall be complete in all respects, and that all materials used in its construction shall be of the best of its kind, and that all work shall be done in a first-class and workmanlike manner under the direction of and to the satisfaction of the Board of Local Improvements of the City of Highland Park, Lake County, Illinois.

SECTION 2. That the said improvement shall be made and the total cost thereof, being the sum of Six Hundred and Sixteen Thousand Thirty-seven and 73/100 ($616,037.73) Dollars including the sum of Thirty-six Thousand Nine Hundred Sixty-two & 27/100 ($36,962.27) Dollars being the amount included in the estimate of cost as made by the Mayor of said city, hereto attached, as the cost of making, levying and collecting the assessment therefor, be paid for by special assessment to be levied upon the property specially benefited to the amount that the same may be legally assessed therefore in accordance with the provisions of an act of the General Assembly of the State of Illinois, entitled: "An Act Concerning Local Improvements," approved June 14, 1897, and all acts amendatory thereof or supplemental thereto, and that the said sum of $36,962.27 shall be applied toward paying the lawful costs and expenses attending the proceedings for making said improvements and the cost of making and collecting the assessment therefor, as provided in and by said Act of the General Assembly of the State of Illinois.

SECTION 3. That the aggregate amount herein ordered to be assessed against property and each individual assessment, also the assessment, if any, against the municipality on account of property owned by the municipality and for public benefits, if any, shall be divided into ten (10) installments in the manner provided by law, which parts shall be equal in amounts and each a multiple of one hundred, except that any fractional amount after division as aforesaid shall be apportioned to the first installment. Each installment shall bear interest at the rate of six (6) per cent per annum according to law.

SECTION 4. That for the purpose of anticipating the collection of the second and succeeding installments of said assessment for said improvement provided for in this ordinance, bonds shall be issued by the said City of Highland Park, payable out of said installments, bearing interest at the rate of six (6) per cent per annum, payable annually as provided by law and signed by the Mayor of said City of Highland Park and attested by its clerk under the corporate seal of said city. Said bonds shall be issued in the sum of One Hundred Dollars ($100.00) each, or some multiple thereof, and shall in all respects be issued in accordance with and shall in all things conform to the provisions of an Act of the General Assembly of the State of Illinois, entitled: "An Act Concerning Local Improvements", approved June 14, 1897, and all acts amendatory thereof or supplemental thereto.

SECTION 5. That the recommendation to the Council by the Board of Local Improvements of the City of Highland Park, Lake County, Illinois, recommending the making of said improvement and the passage of said ordinance together with the estimate of the cost of the said improvement made by the Mayor of said city, both of which are hereto attached, be and the same are hereby approved and by reference made a part hereof.

SECTION 6. That the Mayor of the said City of Highland Park be and he is hereby directed to file a petition in the name of the said City of Highland Park in the County Court of Lake County, praying that steps may be taken to levy a special assessment for the purpose of defraying the cost of said improvement as far as it may be lawfully done, and to ascertain what property will be benefited by said improvement and the amount of such benefits, in accordance with the provisions of this ordinance and the statutes of the State of Illinois in such case made and provided.

SECTION 7. All ordinances or parts of ordinances conflicting with this ordinance be and the same are hereby repealed.

SECTION 8. That this ordinance shall be in force from and after its passage.

MAYOR
OF THE CITY OF HIGHLAND PARK, LAKE COUNTY, ILLINOIS

Filed June 25th, 1928
Passed
Approved
Attest:

Clerk of the City of Highland Park, Lake County, Illinois.
(Seal)

ESTIMATE OF COST

To the Council of the City of Highland Park, Lake County, Illinois:

I, BENJAMIN F. LEWIS, Mayor of the City of Highland Park, Lake County, Illinois, and we, WINDES and MARSH, Engineers specially employed by the City of Highland Park, do each severally submit an estimate of the cost of making a local improvement as follows, to-wit:

Constructing a reinforced concrete pavement with combined curb and gutter and the necessary drainage in the following streets:

In ARBOR AVENUE from and connecting with the hereinafter described concrete