LEGAL LEGAL

(Continued from page 6

(1). Darex AEA, obtained commercially in liquid form. The amount necessary for the required air-entrainment usually varies from 40 to 50 milliliters per bag of cement. The amount to be used in any given case will be determined by the Engineer, as the work progresses.

(2) Neutralized Vinsol resin, obtained commercially in powder form under the trade name of Vinsol NVX. The amount necessary for the required air-entrainment usually varies from 0.005 to 0.015 per cent by weight of the cement. A stock solution shall be prepared in the following proportions: 100 pounds of Vinsol NVX to 370 pounds of warm water. The Vinsol NVX shall be dissolved in water of 70° F. or warmer. Rapid stirring and a temperature of 125° F. will produce a speedy solution of 20 per cent neutralized Vinsol resin content. For addition at the mixer, the stock solution shall be further diluted by the addition of one pound of water for each pound of stock solution, resulting in a solution of 10 per cent neutralized Vinsol resin content, or a somewhat smaller or larger amount of water may be used, if necessary, to facilitate the addition of the solution through the dispenser. The amount used at the mixer in and given case shall be determined by the Engineer, as the work progresses.

NOTE: Vinsol resin (not pre-neutralized) obtained in powdered or flake form must be neutralized on the job, before use, by dissolving it in a solution of sodium nydroxide and water. Because of the caustic properties of the sodium hydroxide, the preparation of the solution is somewhat hazardous, and it is recommended that the Vinsol resin be obtained in the pre-neutralized form (Vinsol NVX), as described above. However, directions for neutralizing the Vinsol resin on the job will be furnished upon request.

Fine aggregate (sand), when subjected to the mortar strength test, shall have a tensile and compressive strength at the ages of seven (7) and twenty-eight (28) days of not less than 100 per cent of that developed by mortar of the same proportions and consistency made of the same cement and standard Ottawa sand.

All water used in the mixing of concrete or cement mortar shall be taken from the water supply system of the City of Highland Park.

All bituminous premoulded fibre expansion joint filler provided to be used herein shall consist of preformed material composed of a durable compound of mineral, vegetable matter, or a stable mixture of these elements uniformly impregnated with bitumen throughout the mass and shall meet the requirements given below:

The completed expansion joints shall conform to Article 105.06, Page 170 of the supplemental specifications of the Division of Highways, State of Illinois, effective October 1, 1938.

Methods of testing shall conform to the requirements of the Division of Highways, State of Illinois.

All deformed tie bars and bent dowel bars in curb at walk intersections provided to be used herein shall be of "Billet Steel" in "structural" or "intermediate grade" and shall comply with the requirements of the "Standard Specifications for Billet Steel Concrete Reinforcement Bars, A.S.T.M. Designation A-15".

All dowel bars to be used, except the bent dowel bars in curb at walk intersections, shall be rail steel and shall conform to the requirements of the "Standard Specifications for Rail Steel Concrete Reinforcement Bars, A.S.T.M. Designation A-16".

The steel wire fabric (reinforcing mesh) shall be uniform in character, fibrous, tough and ductile. Said steel fabric shall be manufactured of cold drawn wire, finished members of which shall develope a tensile strength of at least 70,000 pounds per square inch and which shall bend cold 180 degrees around a pin the diameter of which is equal to the daimeter of the wire specimen without cracking on the outside of the bent portion. The longitudinal wires of the fabric shall be spaced six (6) inches and shall be No. 2 guage. The transverse wires shall be spaced six (6) inches and shall be No. 2 guage. Said steel wire fabric shall comply with the requirements of the "Standard Specifications for Cold Drawn Steel Wire Fabric for Concrete Reinforcement", Specification M-32 of the A.S.S.H.O.

All pins, chairs or supports for the dowel bars and tie bars as provided for herein shall be of a type sufficiently rigid to insure that the bar will be supported and maintained in its place as required herein.

All metal sleeves or sockets or dowel bar caps shall be manufactured from 32 guage (M.S. Standard) sheet steel, shall be approximately five (5) inches long, shall be indented to provide a limiting stop for the dowel bar and shall provide unobstructed expansion space of not less than one (1) inch. They shall fit the dowel bar tightly, and the closed end shall be water tight.

The metal base for the expansion joint shall be of the type as shown on Sheet No. 15 hereto attached, and shall be manufactured of 24 guage hot rolled annealed steel.

All common brick shall be made from clay or shale, shall be properly burned and shall be suitable for use in brick masonry. Said bricks shall be tested in accordance with methods given in the "Methods for Testing Brick, Tentative Method 7-32" of the A.A.S.H.O. All said brick shall conform to the following dimensions: depth, 2¼ inches; width, 3¾ inches; length, 8 inches. Said brick shall be free from cracks, warpage, stone, pebbles or particles of lime.

All crushed stone provided to be used in this improvement shall consist of clean, tough, durable fragments free from excess of flat, elongated, soft or disintegrated pieces. All limestone screenings and limestone chips herein provided to be used shall be free from dirt or other foreign materials.

All cast iron water pipe fittings shall be Class "D" American Water Works Association Standards.

All lead for caulking the plugs in place shall be first quality soft pig lead.

All oakum for joints where the water main is plugged shall be long fibered select hemp packing.

All the improvements herein provided to be made shall be made in the best and most substantial and workmanlike manner and shall include all work of every nature to properly complete said improvement, and all surplus materials, excavated or otherwise, and rubbish of every description shall be removed from the site of the work. No improper material shall be used but all materials of every kind shall fully conform to the foregoing provisions and if not hereinbefore particularly provided for, shall be suitable for the place where and for the purpose for which used, and said improvement shall be made under the direction and to the satisfaction of the Board of Local Improvements of the City of Highland Park, Lake County, Illinois.

SECTION II. That the recommendation of the Board of Local Improvements of the City of Highland Park, Lake County, Illinois, providing for said improvement together with the estimate of cost thereof, made by the Mayor as President of the said Board of Local Improvements, both hereto attached, be and the same is hereby approved.

SECTION III. That said improvement shall be made and the whole cost thereof, including the sum of seventeen Thousand One Hundred and Thirty-nine Dollars and Thirty-seven Cents ($17,139.37) (being the amount included in the estimate of said Mayor as President of said Board of Local Improvements, hereto attached, as the cost of making and collecting the assessment herein) be paid for by special assessment to be levied upon the property benefited thereby 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 the Local Improvements", approved June 14, 1897, and all amendments thereto, and that said sum of Seventeen Thousand, One Hundred and Thirty-Nine Dollars and Thirty-seven Cents ($17,139.37) shall be applied toward the cost of making and collecting said assessment.

SECTION IV. That the aggregate amount herein ordered to be assessed against the property and also the assessment on each lot and parcel of land assessed shall be divided into Five (5) installments, the first of which installments shall include at least twenty per cent (20%) of the assessment, together with all fractional amounts; and the aggregate amount and multiples of one hundred ($100.00) dollars. Said installments shall be due and payable in the manner and at the time as provided by law, at an interest rate of six (6) percent per annum; and, for the purpose of anticipating the collection of the second and succeeding installments of said assessment for said improvement, bonds shall be issued payable out of said installments, bearing interest at the rate of six (6) per cent per annum, payable annually. Said bonds shall be issued in accordance with and shall in all repects conform with the provisions of said Act of the General Assembly of the State of Illinois, as now in force, and shall be signed by the Mayor and attested by the City Clerk, under the corporate seal of said City.

SECTION V. That the Corporation Counsel of the said City be and is hereby directed to file a petition in the County Court of Lake County, Illinois, in the name of the City of Highland Park, praying that steps may be taken to levy a special assesment for said improvement, in accordance with the provisions of this ordinance, and in manner prescribed by law.

SECTION VI. That all ordinances or parts of ordinances conflicting with this ordinance be and the same are hereby repealed.

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

_____
Mayor

ATTEST

_____
City Clerk

Filed: June 26, 1950
Passed: _____
Approved: _____

TO THE BOARD OF LOCAL IMPROVEMENTS
OF THE CITY OF HIGHLAND PARK,
LAKE COUNTY, ILLINOIS

Gentlemen:

I hereby submit an estimate of the probable cost for the improvement, by the construction of a reinforced Portland cement concrete pavement, together with combined curb and gutter, necessary drainage and otherwise improving of South Green Bay Road, from and connecting with the existing concrete pavement in North Green Bay Road at the north line extended of Central Avenue, thence south-easterly in said South Green Bay Road to and connecting with the existing concrete pavement in South Green Bay Road at a line normal to the center line of said South Green Bay Road and seventy-one hundred and sixty-nine (7169) feet from the south line of said Central Avenue extended, as measured along the center line of said South Green Bay Road, same being approximately ninety-six (96) feet north-westerly, as measured along the center line of South Green Bay Road, of the intersection of the center lines of said South Green Bay Road and Edgewood Road extended from the west; said center line of Edgewood Road being the south line of the south-east one-quarter (SE-¼) of the south-east one-quarter (SE-¼) of Section twenty-six (26), Township forty-three (43) North, Range twelve (12) east of the Third (3rd) Principal Meridian, including the street returns at all intersecting streets as far as the street lines extended of said South Green Bay Road, except, that at Central Avenue the proposed reinforced Portland cement concrete pavement shall connect to the existing concrete pavement extended from the west at the existing east end of said pavement, same being at distances variable from eleven (11) to twenty (20 feet easterly, as measured at right angles from the westerly line extended of said South Green Bay Road; and except, that also at Central Avenue the proposed reinforced Portland cement concrete pavement shall connect to the existing bituminous macadam pavement extended from the east at distances variable from ten (10) feet to twenty-four (24) feet west, as measured at right angles from the easterly line extended of said South Green Bay Road; and except, that at Oakwood Avenue the proposed reinforced Portland cement concrete pavement shall connect to the existing bituminous macadam pavement in said Oakwood Avenue at a line normal to the center line of said proposed pavement in Oakwood Avenue and distant thirty-one (31) feet north-easterly from the easterly line extended of said South Green Bay Road, as measured along the said center line of said proposed pavement in Oakwood Avenue; and except, that at Glencoe Avenue the proposed reinforced Portland cement concrete pavement shall connect to the existing concerte pavement extended from the east in said Glencoe Avenue at distances variable from two (2 feet easterly to two and one-half (2½) feet westerly, as measured at right angles from the easterly line extended of said South Green Bay Road; and except, that at Ridgewood Drive the proposed reinforced Portland cement concrete pavement shall connect to the existing bituminous macadam pavement at a line thirteen (13) feet easterly of and parallel to the easterly line of said South Green Bay Road extended.

The said reinforced Portland cement concrete pavement shall be ten (10) inches uniform thickness for the entire area of the pavement slab, and shall be thirty (30) feet in width, except at street intersections, where it shall be widened along curved lines to meet the existing pavements.

Along each side of and adjoining said proposed concrete pavement there shall be constructed a plain Portland cement concrete combined curb and gutter. The said combined curb and gutter shall extend beyond the lines of the proposed reinforced concrete pavement at the north-west corner of Bob-O-Link Road so as to meet and connect with the existing concrete curb and the bituminous macadam gutter along the northerly edge of the existing bituminous macadam pavement in said Bob-O-Link Road, distant thirty-five (35) feet westerly of the westerly line extended of South Green Bay Road, (as measured along the northerly edge of said combined curb and gutter); also, at the south-west corner of Bob-O-Link Road, so as to meet and connect with the existing concrete curb and the bituminous macadam gutter along the southerly edge of the existing bituminous macadam pavement in said Bob-O-Link Road distant forty-two (42) feet westerly of the westerly line extended of South Green Bay Road, (as measured along the southerly edge of said combined curb and gutter).

Also, at the north-east corner of Lincoln Avenue, so as to meet and connect with the existing concrete curb and the bituminous macadam gutter along the northerly edge of the existing bituminous macadam pavement in said Lincoln Avenue, distant twenty (20) feet easterly of the easterly line extended of South Green Bay Road, (as measured along the northerly edge of said combined curb and gutter).

Also, at the south-east corner of Lincoln Avenue, so as to meet and connect with the existing concrete curb and the bituminous macadam gutter along the southerly line of the existing bituminous macadam pavement in said Lincoln Avenue, distant twenty (20) feet easterly of the easterly line extended of South Green Bay Road, (as measured along the southerly edge of said combined curb and gutter).

Also, at the north-east corner of DeTamble Avenue, so as to meet and connect with the existing concrete curb and the bituminous gutter along the northerly line of the existing bituminous macadam pavement in said DeTamble Avenue, distant forty-three (43) feet easterly of the easterly line extended of South Green Bay Road (as measured along the northerly edge of said combined curb and gutter).

Also, at the south-east corner of DeTamble Avenue, so as to meet and connect with the existing concrete curb and the bituminous macadam gutter along the southerly edge of the existing bituminous macadam pavement in said DeTamble Avenue, distant twenty-seven (27) feet easterly of the easterly line extended of South Green Bay Road (as measured along the southerly edge of said combined curb and gutter).

Also, at the north-east corner of Ridgewood Drive, so as to meet and connect with the existing concrete curb and the bituminous macadam gutter along the northerly edge of the existing bituminous pavement in said Ridgewood Drive, distant sixty (60) feet easterly of the easterly line extended of South Green Bay Road, (as measured along the northerly edge of said combined curb and gutter).

Also, at the south-east corner of Ridgewood Drive, so as to meet and connect with the existing concrete curb and the existing bituminous macadam gutter, along the southerly edge of the existing bituminous pavement in said Ridgewood Drive, distant forty-eight (48) feet easterly of the easterly line extended of South Green Bay Road, (as measured along the southerly edge of said combined curb and gutter).

The proposed improvement shall include all clearing, excavating, preparing the sub-grade, trenching, construction of the storm sewers, connecctions to the existing manholes and catch basins, connections to proposed manholes, inlet manholes, manhole catch basins, catch basins and inlets; construction of concrete block manholes, inlet manholes, manhole-catch basins, catch basin and inlets; including back-filling trenches with earth where in the parkways; with limestone screenings under any portion of the proposed pavement or combined curb and gutter; with limestone screenings mixed with Portland cement in tunnels under existing pavements which are to remain; or under existing drains, sewers, water mains and conduits; including the plank and concrete for additional support of drains, sewers, water mains and conduits wherever necessary; all flushing and tamping; all connections to existing storm sewers; connections of the existing storm water house services to the proposed storm sewer; the construction of macadam pavement replacement, widening and adjustment at intersecting streets; the construction of concrete sidewalk approaches; the construction of straight curbs at Central Avenue; the construction of crushed stone, concrete, macadam and brick driveway replacements; the abandonment of existing catch basins; including the necessary sand or limestone screenings fill; the adjustment of existing sanitary sewer manholes, storm sewer manholes, valve vaults and catch basins; the furnishing of new manhole tops to replace light weight existing tops; the construction of concrete block valve vaults; the adjustment of existing meter pits; the extension of existing water services, including construction of new meter pits; the removal of existing hydrants and connecting main and plugging of the tees; the removal of trees; the planting of new trees to replace those removed; the grading, leveling, smoothing of parkways; the planting of grass seed on parkways, including necessary watering; covering with slough hay and otherwise caring for same; inoluding all curing, cleaning and protection of all concrete work from frost, rains, traffic sun and wind; the installation of three (3) inch by ten (10) inch oak plank headers wherever the proposed concrete pavement and combined curb and gutter connects to the existing macadam pavements; protection of all trees and existing improvements from injury by reason of said improvement; repairing improvements where damaged; removing all surplus materials, excavated or otherwise, and all rubbish created by the construction of said proposed improvement, and including all engineering services, labor, materials, tools, equipment and incidental expenses necessary to construct said proposed improvement, all in the City of Highland Park, Lake County, Illinois.

The estimated cost of said proposed improvement, including all labor, materials, engineering services and all lawful expenses attending the same is the sum of $302,795.60

itemized as follows:

Item No. 1. 9300 cubic yards of excavation for the reinforced Portland cement concrete pavement, the combined curb and gutter and the parkways, including the removal and disposal of all earth, sub-grading, furnishing and placing of all borrow which may be required, placing all fill, removal of all existing pavement (including base course and surface course), curbs, gutters, combined curb and gutter, sidewalks, and driveways, and the removal and disposal of all logs, stumps, brush, vegetation, rubbish, and other perishable or objectionable matter, and all labor, equipment, tools and incidentals necessary to complete, at $1.25 a cubic yard $11,625.00

Item No. 2. 25900 square yards of welded steel wire of the type specified, weighing approximately .78 pounds per 100 square feet, laid complete in place as shown in the plans and details, including all labor, equipment, tools and incidentals required, at $0.45 per square yard $11,655.00

Item No. 3. 25900 square yards of reinforced Portland cement concrete pavement of ten (10) inches uniform thickness. The concrete shall be composed of Portland cement, torpedo sand, gravel, and water, mixed in such proportions so as to produce a workable, plastic, concrete, having a compressive strength of not less than 3500 pounds a square inch and a modulus of rupture of not less than 650 pounds a square inch, at the age of fourteen days when tested by standard methods, including bituminous premoulded fibre expension joints three-quarters of an inch thick, spaced as shown on the attached plans, all dowel bars, tie-bars, sockets, chairs, and pins, metal parting strips, if used, metal base and oak headers, the furnishings of all testing specimens and the furnishing of all materials, except welded steel wire fabric; for all curing, all labor, equipment, tools and incidentals necessary to construct said pavement in place at $4.86 a square yard $125,874.00

Item No. 4. 14615 lineal feet of plain Portland cement concrete combined curb and gutter, concrete to equal that for concrete pavement, including necessary excavation, all forms, trimming and consolidating of the sub-grade, all concrete materials, all bituminous fibre expansion joints, dowel bars and sockets, curing, and all labor, equipment, tools, and incidental expenses necessary to construct said combined curb and gutter complete in place at $1.75 a lineal foot $25,576.25

Item No. 5. 12 manholes of an average inside depth of seven (7) feet, the walls of which shall be of precast segmental, Portland cement concrete blocks 5 inches thick, bottoms, or floors, in two courses, the bottom course six inches thick and extending to the outside face of the walls, and the top course of an average thickness of one-half the outside diameter of the pipe passing through the manhole, plus one and one-half inches and extending to the inside face of the said wall. Blocks laid with full joints of mortar composed by volume of one part Portland cement and two parts mortar sand, mixed with sufficient water to make a plastic mass. Internal diameter of each manhole three and one-half feet, except the top two (2) feet which shall be uniformly reduced to a diameter of two (2) feet at the top of the walls so as to fit the 540 pound Highland Park standard cast iron manhole top to be furnished as a part of each manhole. Each manhole furnished with cast iron steps, set in the wall, and spaced sixteen (16) inches apart center to center from eight inches below the top of said walls to the bottom, the space outside of the walls backfilled with screenings if in the paving area or within two feet of the curb, otherwise backfilled with earth, including all materials, excavation, backfilling, flushing, disposal of surplus materials, sheeting, pumping and all labor, equipment, tools and incidentals necessary to construct said manholes. The concrete for said bottoms shall be composed of Portland cement, sand, gravel and water mixed in the same proportions, in the same manner and conforming to the same tests as the concrete for the combined curb and gutter, complete in place at $160.00 each $1,920.00

Item No. 6. 1 catch basin, of an average inside depth of seven (7) feet, the walls of which shall be constructed of precast segmental Portland cement concrete blocks, five inches thick, bottom or floor shall be of concrete composed of Portland cement, sand, gravel and water mixed in the same proportions, in the same manner and conforming to the same tests as the concrete for the combined curb and gutter. Said bottom shall be six inches thick and shall extend to the outside face of the walls. Blocks shall be laid with full joints of mortar composed by volume of one part Portland cement, two parts sand, mixed with sufficient water to make a plastic mass. The internal diameter shall be three and one-half (3-½) feet from the top surface of the bottom to a plane two (2) feet from the top of the wall, from which plane said diameter shall decrease uniformly to two (2) feet of the top of said walls, so as to fit and support the 500 pound catch basin tops to be furnished as a part of said catch basins. The top surface of the bottoms shall be three (3) feet below the flow line on inside bottom of the lowest connecting storm sewer. The space outside of the walls shall be backfilled with limestone screenings, including all excavation, backfilling, flushing, all materials, disposal of all surplus materials, all sheeting, pumping, and all labor, equipment, tools, and incidental expenses necessary to construct said catch basins complete in place at $150.00 each $150.00

Item No. 7. 32 manhole catch basins, of an average inside depth of seven and one-half (7-½) feet, the walls of which shall be constructed of precast, segmental Portland cement concrete blocks, five inches thick. Bottoms or floors shall be of concrete composed of Portland cement, sand, gravel and water mixed in the same proportions, in the same manner and conforming to the same tests as the concrete for the combined curb and gutter. Said bottoms shall be six inches thick and shall extend to the outside face of the walls. Blocks shall be laid with full joints of mortar, composed by volume of one part Portlan cement, two parts mortar sand, and mixed with sufficient water to make a plastic mass. The internal diameter shall be four (4) feet from the top surface of the bottom to a plane two and one-half (2-½) feet from the top of the walls, from which plane said diameter shall decrease eccentrically to two (2) feet at the top of said walls so as to fit and support the 500 pound catch basin tops to be furnished as a part of said manhole catch basins. The top surface of the bottom shall be three feet below the flow line or inside bottom of the outlet pipe of the storm sewer connecting to said manhole catch basins. The space outside of said walls shall be backfilled with limestone screenings, including all excavation, backfilling and flushing, all materials, disposal of all surplus materials, all sheeting and pumping, and all labor, equipment, tools, and incidental expenses necessary to construct said manhole catch basins complete in place at $155.00 each $4,960.00

Item No. 8. 23 inlets of an inside depth of two (2) feet, the walls of which shall be constructed of precast, segmental Portland cement concrete blocks, five (5) inches thick. Bottoms or floors shall be of concrete composed of Portland cement, sand, gravel and water mixed in the same proportions, in the same manner and conforming to the same tests as the concrete for the combined curb and gutter. Said bottoms shall be six inches thick, and shall extend to the outside face of the walls. Blocks shall be laid with full joints of mortar, composed by volume of one part Portland cement and two parts mortar sand, mixed with sufficient water to make a plastic mass. The internal diameter shall be two feet from the top surface of the bottom to the top of the walls, and shall support the 500 pound catch basin tops to be furnished as a part of said inlets. The top surface of the bottoms shall be flush or level with the flow line or inside bottom of the storm sewer connecting to said inlets. The space outside of the walls shall be backfilled with limestone screnings, including all excavation, backfilling and flushing, all materials, disposal of all surplus materials, all sheeting and pumping, and all labor, equipment, tools, and incidental expenses necessary to construct said inlets complete in place at $78.00 each 1,794.00

Item No. 9. 3 Inlet manholes of an average inside depth of seven and one-half (7-½) feet, the walls of which shall be constructed of precast segmental Portland cement concrete blocks, five (5) inches thick. Bottoms or floors shall be of concrete composed of Portland cement, sand, gravel and water mixed in the same proportions, in the same manner and conforming to the same tests as the concrete for the combined curb and gutter. Said bottoms shall be the same as for the manholes under Item No. 5. Blocks shall be laid with full joints of mortar composed by volume of one part Portland cement, two parts sand, mixed with sufficient water to make a plastic mix. The internal diameter shall be four (4) feet from the top surface of the bottom to a plane two and one-half (2-½) feet from the top of said walls from which plane the diameter shall decrease eccentrically to two (2) feet at the top of said walls so as to fit and support the 540 pound manhole tops to be furnished as a part of said inlet manholes. Each inlet manhole furnished with cast iron steps, set in the wall, and spaced sixteen (16) inches apart center to center from eight (8) inches below the top of said walls to the bottom, the space outside of the walls backfilled with screenings if in the paving area or within two (2) feet of the back of the curb, otherwise backfilled with earth, including all materials, excavation, backfilling, flushing, disposal of surplus materials, sheeting, pumping, and all labor, equipment, tools and incidentals necessary to construct said inlet manholes, complete, at 160.00 each $480.00

Item No. 10. 36 inlet manholes, in all respects the same as for Item No. 9, except that the average inside depth shall be six (6) feet and a 500 pound catch basin top shall be furnished, complete, at $155.00 each $5,580.00

Item No. 11. 2 Manhole catch basins, in all respects the same as for item No. 7, except that the inside average depth shall be seven (7) feet and a 540 pound manhole top shall be furnished, complete, at $160.00 each $320.00

All of the following three items shall be constructed of concrete sewer pipe, bell and spigot type. The size of the pipes as given blow refers to the internal diameter. Joints for the pipes shall be made of cement mortar composed by volume of one part Portland cement and two parts mortar sand mixed with sufficient water to make a plastic mass. The unit price per lineal foot for each size of storm sewer shall include all trenching, all necessary tunnelling, all foundation work, all backfilling with earth, and limestone screenings, and limestone screenings mixed with cement, all tamping, flushing, sheeting and shoring, pumping, protection of existing improvements and utilities, removal of all surplus materials, all labor, materials, equipment, tools, and incidental expense necessary to construct said storm sewer complete in place.

Item No. 12. 710 lineal feet of twenty-four (24) inch internal diameter storm sewer laid at an average depth of six and one-half (6-½) feet complete in place at $6.00 a lineal foot $4,260.00

Item No. 13. 887 lineal feet of twenty-one (21) inch internal diameter storm sewer laid at an average depth of eight (8) feet, complete in place at $5.50 a lineal foot $4,878.50

Item No. 14. 1714 lineal feet of eighteen (18) inch internal diameter storm sewer laid at an average depth of eight and one-half (8-½) feet, complete in place, at $5.00 per lineal foot $8,570.00

All of the following three items shall be constructed of corrugated iron pipe, bituminous coated and paved invert. The size of the pipes as given below refers to the internal diameter. All pipe shall be in lengths sufficient to extend between the points to be connected by said sewer without intermediate joints. The unit price per lineal foot for each size of storm sewer shall include all trenching, all necessary tunnelling, all backfilling with earth, and limestone screenings, and limestone screenings mixed with cement, all tamping, flushing, sheeting and shoring, pumping, protection of existing improvements and utilities, removal of all surplus materials, all labor, materials, equipment, and incidental expense necessary to construct said storm sewer complete in place.

Item No. 15. 52 lineal feet of twelve (12) inch internal diameter storm sewer laid at an average depth of five and one-half (5-½) feet, complete in place, at $3.00 per lineal foot $156.00

Item No. 16. 26 lineal feet of ten (10) inch internal diameter storm sewer laid at an average depth of eight and one-half (8-½) feet, complete in place, at $3.00 per lineal foot $78.00

Item No. 17. 170 lineal feet of eight (8) inch internal diameter storm sewer laid at an average depth of five (5) feet, complete in place, at $2.75 per lineal foot $467.50

All of the following four items shall be constructed of concrete sewer pipe or vitrified clay sewer pipe, all of bell and spigot type. Whichever material is chosen by the contractor shall be used throughout the improvement covered by said following four items, and the two kinds of pipe shall not be used interchangeably. The size of the pipes as given below refers to the internal diameter. Joints for the pipe shall be made of cement mortar composed by volume of one part Portland cement, two parts of mortar sand, mixed with sufficient water to make a plastic mass. The price bid for each size of storm sewer shall include all trenching, all necessary tunnelling, all foundation work, all backfilling with earth, all limestone screenings, and limestone screenings mixed with cement. All tamping, flushing, sheeting and shoring, pumping, protection of existing utilities and improvements, removal of all surplus materials, all labor, materials, equipment, tools and incidental expense necessary to construct said storm sewer complete in place.

Item No. 18. 1705 lineal feet of fifteen (15 inch internal diameter storm sewer laid at an average depth of six and one-half (6-½) feet complete in place at $3.50 a lineal foot $5,967.50

Item No. 19. 2667 lineal feet of twelve (12) inch internal diameter storm sewer laid at an average depth of six and one-half (6-½) feet complete in place at $3.15 a lineal foot $8,401.05

Item No. 20. 6533 lineal feet of ten (10) inch internal diameter storm sewer laid at an average depth of six and one-half (6-½) feet complete in place at $3.00 a lineal foot $19,599.00

Item No. 21. 2808 lineal feet of eight (8) inch internal diameter storm sewer laid at an average depth of five and one-half (5-½) feet complete in place at $2.50 a lineal foot $7,020.00

All of the following ten items consisting of connections of the proposed storm sewers to existing catch basins and existing storm manholes, shall be done by cutting out a portion of the wall of said catch basins or manholes, large enoughg to insert the size pipe as shown in the following ten items respectively, said pipe shall be securely cemented in place with cement mortar composed by volume of one (1) part Portland cement and two (2) parts mortar sand, mixed with sufficient water to make a plastic mass, including any necessary extra excavation, plugging of abandoned outlets in catch basins, backfilling with earth or limeston screenings, all tamping, flushing, all materials, equipment, tools and incidental expenses to complete said connections.

Item No. 22. 1 fifteen (15) inch vitrified clay sewer pipe or concrete sewer pipe connection to existing catch basin at Kimball Road, complete in place at $10.00 ..... $10.00

Item No. 23. 1 twelve (12) inch vitrifed clay sewer pipe or concrete sewer pipe connection to existing manhole at Central Avenue, complete in place, at $8.00 ..... $8.00

Item No. 24. 2 ten (10) inch vitrified clay sewer pipe or concrete sewer pipe connection to existing catch basin, one in Laurel Avenue and one in Ridgewood Drive, complete in place, at $7.00 each $14.00

Item No. 25. 1 eight (8) inch vitrified clay sewer pipe or concrete sewer pipe connection to existing catch basin