Housing and Redevelopment Authority of the City of Saint Paul, Minnesota: Redevelopment project files

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ESTIMATED QUANTITIES

PARK AREA (BLDG. POOL & RELATED ITEMS)

ITEM	UNIT	QUANTITY	$ UNIT COST	$ COST	$ SUB-TOTAL
1. Building:					
Excavation:					
Footings	Cu. Yd.	182	3.00	546.	
Granular Fill	Cu. Yd.	115	1.85	214.	
Footing:					
Concrete in Place	Cu. Yd.	12	23.00	276.	
Forms	Sq. Ft.	472	0.60	284.	
Foundation:					
Concrete Blocks 8"	Sq. Ft.	1070	0.85	910.	
Concrete	Cu. Yd.	20	23.00	460.	
Forms	Sq. Ft.	1069	0.70	742.	
Granular Fill	Cu. Yd.	190	2.60	494.	
Slab:					
Concrete	Cu. Yd.	40	23.00	920.	
Steel Mesh	Sq. Ft.	2510	0.07	176.	
Bituminous Felt ½"	Sq. Ft.	168	1.00	168.	
Screen Wall (Blk)	Sq. Ft.	225	1.10	248.	
Columns (Steel)	Each	14	30.00	420.	
Roof:					
Lumber (Truss, Shingle Etc.)	Sq. Ft.	3300	1.03	3399.	
Stucco (Ceiling)	Sq. Yd.	256	4.30	1101.	
Toilets & Storage Room:					
Walls:					
Brick	Each	4550	0.17	774.	
Tile (Glazed)	Sq. Ft.	344	1.00	344.	
Lightweight Block	Sq. Ft.	360	0.90	324.	
Doors	Each	3	50.00	150.	
Toilets	Each	4	100.00	400.	
Sinks	Each	2	80.00	160.	
Plumbing:					
1½" Water Line	Lin. Ft.	65	3.10	202.	
6" Sewer	Lin. Ft.	75	3.35	252.	
Building Lines				200.	
Electrical:				300.	
6" Concrete Step					
Concrete	Cu. Yds.	7	23.00	161.	
Forms	Sq. Ft.	120	0.60	72.	
					13,697.00

2.	Pool:				
	Excavation	Cu. Yds.	267	1.85	494.
	Sand & Gravel Fill	Cu. Yd.	178	2.50	445.
	Concrete	Cu. Yd.	32	23.00	736.
	Reinforcing Bars	Pounds	1550	0.15	233.
	Forms	Sq. Ft.	415	1.00	415.
	Inlet Fixtures	Each	1	150.00	150.
	Outlet Fixtures	Each	1	200.00	200.
	Plumbing:				
	Drain Tile 4"	Lin. Ft.	140	3.05	427.
	Area Drains	Each	4	15.00	60.
	Area Drains Pipe 4"	Lin. Ft.	106	3.05	324.
	Pool Drains Pipe 6"	Lin. Ft.	15	3.25	49.
	Pool Drop Inlet	Each	1	200.00	200.
	Drain Pipe 12"	Lin. Ft.	45	6.00	270.
	Water Meter and Valve Block	Each	1	150.00	150.
	Water Line 1½"	Lin. Ft.	45	3.00	135.
	Adjust Manhole	Each	1	50.00	50.
	Walk 4" Area	Sq. Ft.	3250	0.65	2113.
	Benches	Each	8	75.00	600.
	Pool Fence	Lin. Ft.	230	2.50	575.
	Bit. Felt ½"	Sq. Ft.	45	1.00	45.
					7,671.00
3.	Walks (Pool & Bldg. Area)				
	Concrete Walks 4"	Sq. Ft.	1400	0.50	700.
	Concrete Walks 6"	Sq. Ft.	2090	0.65	1359.
					2,059.00
4.	Screen Fence:				
	Footings (Excav. & Conc.)	Each	26	0.50	13.
	Transite (6')	Sheets	80	7.75	620.
	Steel (Co. & Braces)	Pounds	3720	0.18	670.
					1,303.00

ESTIMATED QUANTITIES

PARK ARE (GENERAL)

ITEM	UNIT	QUANTITY	$ UNIT COST	$ COST	$ SUB-TOTAL
1. Area Removals:					
Rubble				300.	
Trees	Each	17	130.00	2210.	
					2,510.00
2. Earth Work:					
Cut	Cu. Yd.	130	1.25	163.	
Fill	Cu. Yd.	900	1.25	1125.	
Topsoil in Place 6"	Cu. Yd.	3600	2.50	9000.	
					10,288.00
3. Landscape:					
Fertilizer	Acre	4½	82.00	369.	
Seed and Maintenance	Sq. Yd.	21,760	0.30	6528.	
					6,897.00
4. Planting:					
Trees (2"-2½") Shade	Each	30	27.00	810.	
Trees " Evergreen	Each	36	30.00	1080.	
Trees " Flowering	Each	72	10.00	720.	
Shrubs (Dec.)	Each	58	4.00	432.	
Shrubs (Evergreen)	Each	116	8.00	928.	
Hedge	Lin. Ft.	640	1.00	640.	
					4,510.00
5. Area Equipment:					
Sidewalk (Conc. 4")	Sq. Ft.	4800	0.50	2400.	
Sidewalk (Conc.6")	Sq. Ft.	9125	0.65	5932.	
Wire Fence (E.N.&S.)	Lin. Ft.	1490	2.50	3730.	
4" x 12" Conc. Walk	Sq. Ft.	1490	.65	970.	
					13,032.00
6. Sewer:					
Construct Manhole	Each	1	500.00	500.	
Construct Catch Basin	Each	3	150.00	450.	
Adjust Manhole	Each	3	50.00	150.	
Adjust Catch Basin	Each	1	50.00	50.	
V.C. Pipe 12"	Lin. Ft.	300	6.00	1800.	
					2,950.00
7. Lighting:				5000.	
					5,000.00
8. Recreation Areas:					
A. Basketball-Volleyball:					
Bituminous Surface	Sq. Yd.	450	3.00	1350.	
Backboard Post Etc.	Each	2	100.00	200.	
					1,550.00

8. B. Horseshoe:					
Bituminous Surface	Sq. Yd.	177	3.00	531.	
Benches	Each	3	75.00	225.	
Posts and Curbs	Each	8	13.00	104.	
Fence (Wire 42")	Lin. Ft.	210	2.50	525.	
					1.385.00
C. Shuffleboard:					
Slabs (Conc. & Reinf.)	Each	4	312.00	1248.	
Bituminous Surface	Sq. Yd.	285	3.00	855.	
Fence (Wire 42")	Lin. Ft.	180	2.50	450.	
Concrete Curb	Lin. Ft.	50	2.50	125.	
Benches	Each	4	75.00	300.	
					2,978.00
D. Play Areas:					
Bituminous Surface	Sq. Yd.	240	3.00	720.	
Arched Ladders	Each	1	475.00	475.	
Wherle (Mary-GoMerc.)	Each	1	500.00	500.	
Poplar Tree Cluster	Each	1	525.00	525.	
Fence (Wire 42")	Lin. Ft.	30	2.50	75.	
4" x 12" Conc. Curb	Sq. Ft.	30	.65	20.	
Ryerson Steel Curb	Lin. Ft.	200	.90	180.	
Benches	Each	1	75.00	75.	
					2,570.00
			Park Area (Bldg. Pool and Related Items		25,030.00
			Park Area (General)		53,360.00
			Construction Total		78,390.00
			Contingencies 10%		7,839.00
			Engineering and Inspection 6%		4,704.00
			Gross Construction Costs		90,933.00
			Estimated Land Value		85,000.00
			Value of Non-Cash Grant-in-aid		175,933.00

SPECIFICATIONS FOR ORNAMENTAL LIGHTING
WESTERN REDEVELOPMENT AREA PARK

SECTION I. SCOPE OF WORK TO BE DONE

The work to be done under these specifications and attached Plan consists of:

(A) Installing _____ lighting standards and associated bases, conduit, wire and controls to form a complete multiple circuit incandescent lighting system as shown on the Plan.

(B) _____

SECTION II. TIME SCHEDULE AND LIQUIDATING DAMAGES

Construction operations shall start within _____ days following award of contract, or as ordered by the Engineer.

The entire improvement shall be completed to the entire satisfaction and acceptance of the Engineer on or before _____ days after award of contract. For each and every day, or any part thereof, that the improvement remains unfinished after the time above mentioned, the Contractor shall pay the Authority the sum of _____ dollars which is hereby fixed as liquidating damages suffered and sustained by the Authority by reason of failure and delay in completing the work within the time specified _____.

SECTION III. ELECTRICAL WORKERS AND WORKMANSHIP

All electrical materials, equipment and workmanship shall meet the requirements of the National Fire Underwriters Code and the City of Saint Paul Electrical Code.

All electrical work shall be performed under the continuous supervision of a person thoroughly familiar with this type of work.

All electrical work shall be done by electricians licensed in this state, as required by Minnesota statutes.

SECTION IV. GUARANTEES

All materials, equipment and workmanship shall be guaranteed by the Contractor to be free from defects for a period of one year from date of final acceptance of the improvement. Any defects developing during this period shall be corrected to the satisfaction of the Authority and free of all expense to the Authority. It shall be the duty of the Contractor to protect his interests in this respect with equipment manufacturers' guarantees.

SECTION V. RESERVE

For the purpose of enforcing the provisions of all guarantees, the Authority shall withhold from the final estimate the sum of _____ dollars as a reserve for a period of one year. At the end of this one year period the said sum shall be released to the Contractor less any amount expended by the Authority for the maintenance and repair of the improvement. The release of the reserve shall act as final release of the Contractor from this contract.

SECTION VI. LIGHTING STANDARD ANCHORAGE

Concrete footings shall be provided for each lighting standard and located as shown on the Plan. They shall be cylindrical in shape, 24 inches in diameter by 36 inches deep.

Concrete shall be Class B with No. 67 coarse aggregate. Footing shall be poured with the top flush with grade level.

Four 3/4 inch galvanized iron anchor bolts shall be set in each footing. They shall be spaced 90 degrees apart on a 13 inch bolt circle. Bolts shall be 30 inches long, threaded 4 inches at the top end and with bolt head at bottom. They shall be carefully set with 3 inches extending above the footing concrete.

There shall also be set in the concrete two 2 inch galvanized rigid conduit 90 degree standard radius ells for entrance and exit of circuit wires. Top ends of conduits shall be together at center of the footing and shall extend not more than one inch above the conrete.

SECTION VII. DUCT LINES

Size 2 inch plastic conduit shall constitute the duct lines except for the rigid iron ells at pole bases. The conduit shall be a semi-rigid type recommended by the manufacturer for installation in earth without encasement. Conduit shall be Carlon Products Corp."Econolite", Triangle Conduit and Cable Co. "Drainage", or approved equal. 1950/100'

Ducts shall be single conduit and shall be continuous and watertight from pole base to pole base. Suitable adapters, couplings and bends shall be provided to effect continuous runs of conduit with tight joints. Plastic pipe joints shall be secured by the use of the manufacturer's solvent or cement. Threaded adapters shall be used at junctions with steel ells.

The conduit shall be installed in trenches at an average depth of 12 inches. In general the conduit shall conform to the established grade except whenever possible a slight slope shall be provided from mid-span toward the elbows at the standard footings.

Attention shall be given to grading and leveling trench bottoms so as to provide uniform support to the conduit throughout its length. Stones or other objects that may form rigid points of support and stress shall be carefully removed.

After conduit is aligned , the backfill shall be sand or similar fine fill, carefully and firmly tamped under, around and over the duct to a depth of 3 inches. The remaining depth of trench may then be backfilled with the regular run of excavated materials provided large stones are removed. This final fill shall also be firmly tamped throughout the process of backfilling.

Prior to pulling in cable the ducts shall be thoroughly cleaned of foreign matter. A close fitting swab shall be pulled through each section of conduit as many times as required to clear it of sand and dirt.

After wire is installed the conduit ends at the standards shall be tamped with oakum and sealed with ductseal to prevent the entrance of ground water.

SECTION VIII. CONTROL

The lights are to be fed from the source (s) shown on the Plan._____

A circuit breaker shall be provided as a service switch for lighting circuit power and shall be mounted above and connected ahead of the control relay. It shall be a _____ ampere, 2 pole common-trip circuit breaker in a General Purpose enclosure.

A single pole, 120 volt _____ ampere capacity relay for remote control of multiple lighting circuit shall be installed below the service switch. It shall have a mercury type load contact which is normally closed when the 120 volt operating coil is de-energized. Relay shall be complete with load fuse and lightning arrester and shall be Joslyn "Permatrol" or approved equal.

There shall also be mounted at this point a plug fuse block, complete with _____ ampere fusetron, for service in the control circuit.

SECTION IX. WIRE

The supply voltage at the power source will be 110/220. A single conductor 600 volt No._____ wire and a No. _____ bare copper neutral shall connect the power source to the service circuit breaker and thence to the relay. No. 12, 600 volt wires shall also connect the power company's control circuit to the relay via the fuse block specified in Paragraph VIII.

From the relay shall be extended to each lighting standard base compartment a No. _____ 600 volt wire and a No. _____ bare copper neutral. At each pole base provision shall be made for convenient sectionalizing of the circuits. This shall be done by providing ample lengths of conductor ends and securing them with split-bolt pressure connectors.

At each lighting standard base there shall be provided and mounted in the compartment a plug fuse block, complete with _____ ampere fuse. From the sectionalizing connections of the main cables the Contractor shall extend one No. 12 insulated and one No. 12 bare conductor to each lamp base; the insulated one via the above mentioned fuse.

All No. _____ insulated cable shall be Type RH-RW tinned copper wire with 600 volt insulation and neoprene jacket. This cable shall be designed for underground duct installation.

All No. 12 insulated wire shall be stranded 600 volt Type RH-RW with double braid insulation.

All wire shall be soft drawn or medium hard drawn.

SECTION X. STANDARDS

The lighting standards shall be furnished by the Authority. The Contractor shall pick them up at a location in the City designated by the Engineer and shall carefully erect them on the footings. Before erection the foundation bolts shall be given a thorough application of rust inhibitor, Dearborn Chemical Company "NO-OX-ID" or equal. After standards are set and plumbed a second application shall be given nuts and bolts.

SECTION XI. PAINTING

All posts shall be given one coat of light green paint after erection. Paint shall meet Minnesota Highway Department Speciation No. 3553.

7-24-59

June 1, 1959

DIVISION

UTILITIES (SEWER)

1. SCOPE OF WORK.

This Division includes generally the construction and/or adjustments to drainage, structures, installation of sewer pipe and all related excavation and backfilling to complete the work indicated on the drawings and specified within the Project Limits.

2. GENERAL.

The Contractor is required to perform all of the work and furnish all of the materials indicated within this Division and all conditions referred to thw CITY OF ST. PAUL, MINNESOTA, DEPARTMENT OF PUBLIC WORKS, SPECIFICATIONS FOR STREET AND SEWER CONSTRUCTION dated April 1, 1959 or as current on the date of the letting of this Contract. During the construction and adjustment of the existing sewer structures or mains, the existing system shall be maintained in continuous operation. All excavations shall be maintained free of standing water during the placement of the sewer structures or pipes. A suitable method shall be employed to remove the fins or surplus concrete from within all sewer pipes and the sewer system installed shall be well flushed with water at the completion of work.

3. MATERIALS.

Mortar for Joints

Mortar shall be a one-two (1:2) mix with one part Portland cement to two parts sand with no hydrated lime permitted. Mortar shall be workable and water shall not be added to a mix that is beginning to set up.

4. SEWER PIPES.

Sewer pipe shall be vitrified clay, bell and spigot, standard strength and A.S.T.M. Designation C 13-44T.

5. EXCAVATION.

Excavation for drainage structures and sewer pipes shall include the clearing and removal of obstructions and normal minimal trench cuts shall be made for the installation of pipes. At least six inches (6") of suitable earth or sand fill shall be placed below the pipes and the base shall be shaped to conform to the shape of the bearing portion of the pipe. The base of trenches shall be excavated to a width of 18" more than the outside diameter of the pipe and the pipe shall be at the center of the trench. The excavation width of the top of the pipe trenches shall not exceed the outside diameter of the pipe to be installed plus two (2) feet. All undesirable material obtained in excavating, such as rubble, broken concrete, large stones, etc, shall not be used for backfilling.

6. EXCAVATION ADJACENT TO TREES.

Special care shall be taken not to injure or damage the existing trees to be retained. Trees abutting sewer trenches, against which dirt may be piled shall be protected by a plank cover. If there is substantial root damage or removal, an

appropriate amount of the trees top or branches shall be removed, by the use of good tree pruning practice, in order to compensate for the root loss.

7. SEWER PIPE CONSTRUCTION.

Sewer pipes shall be laid true to line and grade with a regular continuous grade between drainage structures. Pipes shall be vitrified clay, bell and spigot, sewer pipe. Pipes shall be laid on a uniform bearing base in the excavated trench and if a suitable base is not obtained by the normal trenching procedure, it is the obligation of the Contractor to provide for the adequate base by the installation and compaction of suitable material. Laying of pipe shall commence at the lowest elevation of the sewer line and construction shall progress uphill or toward the higher elevation and the bell end of each sewer tile shall be placed toward the uphill end of the sewer line. Care shall be taken to prevent walking on the sewer pipes, prior to the placing of at least one foot of backfill material.

Sewer pipes shall be connected to existing or new drainage structures in a neat and workman like manner.

8. SEWER PIPE JOINTS.

Cement mortar shall be trowelled into the lower portion of the bell of the pipe previously laid. The spigot of the tile to be laid shall be fully inserted and placed on the mortar bed. The remaining space between the spigot and bell shall be trowelled full of mortar and beveled to a distance of two inches (2") away from the outer edge of the bell. Care shall be taken to prevent foreign material or dirt from entering the sewer system.

9. BACKFILLING TRENCHES AND DRAINAGE STRUCTURES.

Backfilling shall commence as soon as practicable following the installation of the pipe. Suitable material free of refuse, lumps, rocks or organic material shall be carefully placed and compacted around the pipe and for the full width of the trench to a height of one foot (1') above the top of the sewer pipe.

Backfill shall be replaced in layers not exceeding twelve inches (12") in depth and each layer shall be compacted, by the use of mechanical compactions to the satisfaction of the Authority.

Drainage structure shall be backfilled in accordance with this section except that backfilling shall be delayed until 24 hours after the construction if brick or block structures are constructed.

10. DRAINAGE STRUCTURE ADJUSTMENTS.

The Contractor shall adjust the existing drainage structures (manholes and catch basins) as indicated on the drawings. The Contractor shall provide all materials necessary to adjust these structures to the elevations indicated and shall provide for an install the necessary assemblies, covers, grates, etc.

11. CATCH BASINS.

New catch basins shall be constructed at all locations indicated on the drawings and the floor channel or invert, of the serving sewer tile shall be a minimum of three feet six inches (3'6") below the ring elevation of the structure. The ring elevation shall be located at finished grade.

Catch basins shall have a minimum inside diameter of 24" and may be brick of the type No. 3-A in accordance with the Catch-Basins Details Standard of the City of St. Paul, Minnesota or Concrete Block or precast Reinforced Concrete all in accordance with the appropriate portions of Section 16 of the Specifications for Street and Sewer Constructions. If Reinforced Concrete or Concrete Block catch basins are to be constructed, details of same shall be submitted to the Authority for approval.

12. MANHOLES.

New manholes shall be constructed at locations indicated on the drawings and the ring elevation shall be located at the finished grade. Manholes may be brick of type No. 1 in accordance with the Manhole Details Standard of the City of St. Paul, Minnesota or Concrete Block or precast Reinforced Concrete all in accordance with the appropriate portions of Section 16 of the Specifications for Street and Sewer Construction.

Care shall be taken to build manholes, on existing lines, in such a manner as to provide a satisfactorily junction to the existing main and to any incoming lines.

If Reinforced Concrete or Concrete Block catch basins are to be constructed, details of same shall be submitted to the Authority for approval.

13. CASTINGS FOR MANHOLES AND CATCH BASINS.

Only new ring and grate or cover castings shall be used at locations where they are indicated to be installed. At locations where adjustments are indicated, the reuse of castings will be allowed unless a type of casting in place is not the type specified for use. In such cases, new castings shall be provided by the Contractor.

All new castings shall be gray iron in accordance with Section 2.69 of the Specifications for Street and Sewer Construction.

Division

LANDSCAPE PLANTING

June 1, 1959

SCOPE OF WORK.

The planting work includes the furnishing of all materials, equipment, and labor necessary for the planting of trees and shrubs; protection, maintenance, guarantee, and replacement and all related items required to complete work indicated on the drawings and/or specified.

PLANTING.

A. MATERIALS.

1. Topsoil to be Furnished. Topsoil furnished shall be a natural, fertile, friable soil, possessing characteristics of representative, productive soils in the vicinity. It shall be obtained from naturally well-drained areas. It shall not be accessively acid or alkaline, having a PH factor between 5.5 and 8.0 and not contain toxic substances which may be harmful to plant growth. Topsoil shall be without admixture of subsoil and shall be cleaned and reasonably free from clay lumpts, peat lumps, stones, stumps, roots, or similar substances two inches or more in diameter, debris or other objects which might be a hindrance to planting operations. Topsoil shall be clay loam or loam when compared to the "Textural Soil Classification" of the U. S. Bureau of Soils, Topsoil must also be without the range of from 4% to 10% organic content.

2. Manure shall be well-rotted, unleached, stable or cattle manure, reasonably free from shavings, sawdust, or refuse, and shall not contain any harmful materials.

3. Commercial Fertilizer shall be a complete fertilizer granular and uniform in composition, dry and free flowing and suitable for application with approved equipment and contain the following percentage by weight:

10% Nitrogen
6% Phosphoric Acid
4% Potash

At least 30% of the nutrient weight of Nitrogen shall be derived from organic sources. Fertilizer shall be delivered as specified in standard size bags or other convenient containers, each fully labeled conforming to State Fertilizer Lawsand bearing the name, tradename or trademark warranty of the producer and shall be stored in weatherproof storage places and in such a manner that it will be kept dry and its effectiveness will not be impaired.

4. Manure shall be well rotted, unleached cattle manure, reasonably free of shavings, refuse and harmful materials.

5. Water used by the Contractor in this work may be derived from the City of St. Paul Water System as available. Hose and other watering equipment required for this work shall be furnished by this Contractor.

a. Grass Seed. Sahll be mixed and guaranteed by the supplier and certified by him to the Authority, to be as follows:

Common Name	Proportion By Wieght	Purity %	Germination %
Kentucky Blue Grass	25	85	75
Red Fescue	30	96	85
Kentucky 31 Fescue	25	89	85
Red Top	20	96	85

b. The weed content shall not exceed 1% by weight, of the seed mix.

c. Seed shall be delivered in sealed containers and shall be clearly labeled in accordance with all applicable U. S. Department of Agriculture rules and regulations under all Federal Seed Act in effect on the date of Invitation for Bids.

d. Seed in containers which has become wet, mouldy or otherwise damaged shall not be used.

e. Grass seed shall be fresh, clean and shall be new crop seed composed of the varieties mixed in the proportions by weight and to the purity and germination indicated herein.

6. Peat shall be in accordance with the "Textural Soil Classification" of the U.S. Bureau of Soils.

7. Plant Materials.

a. Plant List. A list of plants to be furnished is shown on the planting plan.

b. Nomenclature. The names of plants required under this Contract conform to those given in Standardized Plant Names, 1942 Edition, prepared by the American Joint Committee on Horticultural Nomenclature, names of varieties not included therein conform generally with names accepted in the nursery trade.

c. Quantities. The quantity of plant material necessary to complete all of the planting shown on the drawings shall be determined by the Contractor.

d. Quality and Size. Plants shall be nursery grown with a minimum of new growth showing and shall have a habit of growth that is normal for the specimen, and shall be sound, healthy, vigorous, and free from insect pests, plant diseases, and injuries. All plants shall equal or exceed the measurements specified in the Plant List, which are minimum acceptable sizes. They shall be measured before pruning, with branches in normal position. Any necessary pruning shall be done at the time of planting. Requirements for measurement, branching, quality, balling and burlapping of plants in the Plant List generally follow the code of standards currently recommended by the American Association of Nurseymen, Incorporated in the "Horticultural Standards" 1949 Edition. If any specifications indicated herein exceed the recommendations of the "Horticuluture Standards", these specifications shall be considered as the minimum acceptable.

e. Substitutions will be permitted only upon submission of proof that the specified plant is not obtainable locally. The Authority may then issue a change order permitting the use of the nearest equivalent obtainable size or a variety of plant having the same essential characteristics and providing for an equitable adjustment of contract price.

8. Type of Protection to Roots.

a. Balled and Burlapped Plants. Plants designated "B & B" in the Plant List shall be balled and burlapped. They shall be freshly dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Balls shall be firmly wrapped with burlap of similar material and bound with twine, cord, or wire mesh. Where necessary to prevent breaking and cracking of the ball during process of planting, the ball may be secure to a platform.

b. Bare-Root Plants. All plants may be bare-root unless otherwise indicated on the Plant List. Bare-Root plants shall be dug and the earth removed without injury to the fibrous root system necessary for full receovery of the plant. Roots shall be covered with a thick coating of mud by puddling or wrapped in wet straw, moss, or other suitable packing material immediately after they are dug, for protection until delivered. Plants shall not be in leaf at the time of planting. Deciduous bare-root material may be freshly dug or may have been wintered in cold storage.

c. Protection After Delivery. The balls of "B & B" plants which cannot be planted immediately on delivery shall be covered with moist soil or mulch, or other protective covering to prevent drying, from winds and sun. Bare-rooted plants shall be planted or heeled in immediately upon delivery. All plants shall be watered as necessary until planted.

MATERIALS, INSPECTION AND PROCEDURE.

A. SAMPLES, TESTS AND INSPECTIONS OF MATERIAL.

1. Notice of Sources. Within ten (10) days following acceptance of the bid, the Authority shall be notified of the sources of the materials required to permit the Authority to inspect and test such material.

2. Plants. The Contractor shall be responsible for all certificates of inspection of plant materials that may be required by the Federal, State or other authorities to accompany shipments of plants. Inspection of plants to be balled and burlapped will be made at the place of growth. All plants must be inspected and approved before they are planted. Inspection and approval by the Authority of plants at the place of growth or upon delivery shall be for quality, size, and variety only and shall not in any way impair the right of rejection for failure to meet other requirements during the progressof the work.

B. TIME OF PLANTING.

Planting operations shall be conducted under favorable weather conditions during the season which are normal for such work as determined by the accepted practice in the locality of the Project. At the option of the Contractor and on his full responsibility, planting operations may be

conducted under unseasonable conditions without additional compensation. The normal planting season would be April 15 to June 15 and September 15 to November 1.

C. OBSTRUCTIONS BELOW GROUND OR OVERHEAD.

1. It is not contemplated that planting shall be done where the depth of soil, underground construction, or freedome from obstructions or rock is insufficient to accommodate the roots or where pockets in rock or impervious soil will require drainage. Where such conditions are encountered in excavation of planting areas and where stone, boulders, or other obstructions cannot be broken and removed by hand methods in the course of digging the plant pits of the usual size, and where trees designated on plan are found to be under overhead wires, minor adjustments to the location of the planting will be made by the Contractor with prior approval of the Authority.

2. If changes in the location of the work or if the removal of rock or other obstructions involves substantial additional work, the Contractor shall proceed in accordance with instructions from the Authority and an equitable adjustment in the Contract priceshall be negotiated.

D. PLANTING PROCEDURE.

1. Plant material shall be hole planted unless planting beds are indicated on plan.

2. Layout. New planting shall be located approximately where shown on the plans except where obstructions below ground or overhead are encountered. The Contractor shall lay out his own work and be responsible for the location of all of the work performed by him. Necessary adjustments shall be approved by the Authority.

3. Planting Pits shall be dug and soil for planting readied before plants are delivered. Circular pits with vertical sides shall be excavated for all plants except hedges and plants specifically designated on the plans to be planted in beds. Diameter of pits for trees and "B & B" shrubs shall be at least two (2) feet greater than the diameter of the ball or spread of roots. Diameter of pits for bare-rooted shrubs shall be at least one (1) foot greater than the spread of the roots. The depth of the pits for trees and shrubs shall be great enough to accommodate the ball or roots when the plant is set to finished grade allowing for three (3) inches of compacted topsoil or prepared soil in the bottom of the pit.

4. Prepared Soil. Soil used in planting shall be topsoil, as hereinbefore specified, or prepared soil which is suitable existing soil thoroughly mixed with one (1) part of peat and one (1) part of manure to five (5) parts of existing soil. Very poor soils, gravel, hard-pan, or other soils injurious to plants shall not be considered suitable for reuse.

5. Excess Excavated Soil. Excess excavated soil shall be removed from the site.

6. Setting Plants. Unless otherwise specified, all plants shall be planted in pits, centered, and set on three (3) inches of compacted topsoil or prepared soil to such depth that the finished grade level, at the plant after settlement, will be the same as that at which the plant was grown. They shall be planted upright and faced to give the best appearance or relationship to the development. Burlap need not be pulled out from under balls. Platforms, wire and surplus binding from top and sidesof the balls shall be removed. All twine, cord, or wire surrounding the plant stems, roots or limbs shall be cut or removed after planting. Roots or bare-rotted material shall be spread in their normal position. All broken or frayed roots shall be cut off cleanly. Topsoil or prepared soil shall be placed and compacted carefully to avoid injury to roots and to fill all voids. When the hole is nearly filled, add water as necessary and allow it to soak away. Fill the hole to the finished grade, and form a shallow saucer around each plant by placing a ridge of topsoil around the edge of each pit. After the ground settles, additional soil shall be filled into the level of the finished grade.

7. Fertilizing. All plants shall receive fertilizer at the rate of 3 pounds for each tree and one pound for each shrub at the time that the plant is being placed. Care should be taken to prevent the fertilizer from being placed in direct contact with the roots of the plants.

8. Hedge Planting. Hedge plants shall be planted in trenches, excavated to a depth of at least one foot and to a width of one foot wider than the total spread of the roots or diameters of balls. Place hedge plants along center line of hedge and equidistant from each other. In multi-row planting, each shrub in separate rows shall be staggered.

E. NEW PLANTING MAINTENANCE.

Maintenance shall begin immediately after each plant is placed and shall continue in accordance with the following requirements:

1. New Planting shall be protected and maintained until the installation of planting is complete and for a period of thirty (30) days of growing weather after the last planting. Maintenance shall include watering, weeding, cultivating, mulching, removal of dead material, resetting plants to proper grades or upright position and restoration of the planting saucer, and other necessary operations.

2. Repairs or Replacement of Plants necessary during the maintenance period due to removal, loss or damage will be the obligation of the Contractor.

3. Pruning and Repair. Upon completion of the work under this Contract, all trees and shrubs shall have been pruned and any injuries repaired. The amount of pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant. All cuts shall be made flush, leaving no stubs. On all cuts over one (1) inch in diameter, and bruises or scars on the bark, the injured cambium shall be traced back to living tissue and removed; wounds shall be smoothed and shaped so as not to retain water; and the treated area shall be coated with a commercial tree paint material as approved by the Authority. The lower two-thirds (2/3) of the height of all trees shall be pruned free of branches.

4. Vandalism and Protection. Immediately prior to the completion of the maintenance period the Contractor shall place a continuous coating of thick, enduring, sticky, non-toxic substance, "Tree Tanglefoot" or an approved equal, on the stem of all deciduous trees from a point six (6) inches from the finish grade to a point six (6) feet from the finish grade or to a point not to exceed three-fourths (3/4) of the height of the tree. Such materials shall be approved by the Authority.

CARE AND GUARANTEE.

A. CLEAN UP

Any soil, manure, peat or similar materials which have been brought onto the project area shall be promptly removed. Upon completion of the planting, all excess soil, stones and debris shall be removed from the site or disposed of as directed by the Authority. All lawn and planting areas shall be prepared for inspection and acceptance.

B. INSPECTION AND ACCEPTANCE.

1. Inspection. At the conclusion of the Contract work, exclusive of maintenance and replcement, an inspection will be made by the Authority, upon written notice requesting such an inspection, submitted by the Contractor at least ten (10) days prior to the anticipated date. The purpose of this inspection will be to determine whether the Contractor has completed all the work of the Contract exclusive of maintenance and replacement and to verify whether the Contractor is subject to liquidated damages. Any plant not in healthy, growing condition at this time will be noted for the Contractor to replace without cost to the Authority.

2. Acceptance Inspection. At the conclusion of the maintenance period an inspection will be made by the Authority, upon written notice requesting inspection, submitted by the Contractor at least ten (10) days prior to the anticipation date. The purpose of the inspection shall be for the acceptance of the Contract work including maintenance, but exclusive of replacements. After inspection the Contractor shall be notified inwriting by the Authority of acceptance of all work of the lawns and planting Contract, exclusive of possible replacements of plants subject to guaranty, or if there are any deficiencies in the maintenace, the Contractor shall be notified of these, in writing by the Authority and the work shall be subject to reinspection before acceptance.

C. PLANT GUARANTY AND REPLACEMENT.

1. Guaranty. Plants shall be guaranteed for a period of one (1) year from the date of acceptance, and shall be alive and in satisfactory growth at the end of the guaranty period.

2. Replacement. At the end of the guaranty period, inspection will be made by the Authority, upon written notice requesting such inspection, submitted by the Contractor at least ten (10) days before the anticipated date. Any plant required under this Contract that is dead or not in satisfactory growth, as determined by the Authority, shall be removed from the site; these and any plants missing, due to the Contractor's negligence, shall be replaced as soon as conditions permit, but during the normal planting season. Material used in replacement must be acceptable to the Authority and in conformance with all sections of the Technical Specifications with the exception of Division 3B, 3C and 4A.

3. Materials and Operations. All replacements shall be plants of the same kind and size as specified in the Plant List. They shall be furnished and planted in accordance with these Technical Specifications; the cost shall be borne by the Contractor, except for possible replacements resulting from removal, loss or damage due to the occupancy of the Project, vandalism, or acts of neglect on the parts of others.

4. Cost of Plant Replacement. The entire cost of the plant replacement will be borne by the Contractor. In the event that the Contractor does not perform the necessary replacement, and upon due notice, the work will be performed by others and the Contractor will be charged for the work in accordance with the normal cost for such work.

GENERAL SPECIFICATIONS

Drawings No.	Date	Title

TECHNICAL SPECIFICATIONS

EXCAVATING, FILLING AND GRADING.

SITE IMPROVEMENTS (WALKS, SURFACED AREAS, FENCES, ETC.)

LANDSCAPE PLANTING

ELECTRICAL

SEWER

Division

EXCAVATING, FILLING AND GRADING

June 1, 1959

SCOPE OF WORK.

This Division includes excavating, filling, grading and related items required to complete the work indicated on the drawings and specified; within the grading limit line, except:

1. filling under concrete first floor slabs on ground, specified in Division CONCRETE:
2. excavation and backfill for utilities, specified in Division concerning UTILITIES (SEWERS, WATER AND GAS):
3. placing of topsoil and required excavation in connection with planting, specified in division LANDSCAPE PLANTING:
4. excavation and backfill in connection with electrical distribution which is specified in the division concerning ELECTRICAL DISTRIBUTION.

BENCH MARKS AND MONUMENTS.

Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed.

FINISHED GRADES.

The words "finished grades" as used herein, shall mean the grades indicated by the contours and spot elevations shown on the drawings. Should finished grades shown by spot elevations conflict with those shown by contours, the spot elevation shall govern. Where not otherwise indicated, Project Site areas shall be given uniform slopes between points for which finished grades are shown, or between such points and existing grade, except that vertical curves or roundings shall be provided at abrupt changes in slope.

SUBGRADE.

The word subgrade shall mean the grade 6" below the finished in areas of lawn and planting and shall mean the grade of the underside of the surfacing, as established by the finished grade and the surfacing details, in areas to be surfaced.

TREES.

a. Trees to Remain. Protect trees which are to remain, as so indicated on the drawings or as further directed by the Authority or Representative, by the erection of suitable temporary fences, or other suitable means - all as approved by the Authority. Remove dead or interfering branches as directed without injury to trunks. All bruises or injured cambium and all cuts having an area of 3 square inches shall be paint treated with a suitable material immediately following damage. All cuts shall be made flush with the branch or trunk from which it was removed. Perform no excavation or grading below the existing grade, within the spread of branches except as necessitated by surfacing construction and utility trenching. Light no fires under or near any tree to remain and place no materials or debris within the spread of branches. No equipment storage or other practices will be permitted that would, in any way, damage the roots or branches. THE CONTRACTOR SHALL BE HELD LIABLE FOR DAMAGE TO ANY TREES INDICATED TO BE RETAINED

b, Trees to be Removed. Remove all shrubs and all trees indicated for removal from the Project limits. Removal all stumps and roots of trees to be removed to a clear depth of not less then 2 feet below finished grade. All material resulting from the clearing and grubbing here specified shall become the property of the Contractor and shall be disposed of by him. Burn no material on the premises without special permission from the Authority or Representative and in compliance with applicable laws and regulations.

STRIPPING OF TOPSOIL.

No stripping and stockpiling of topsoil for reuse will be permitted as a portion of the 6 inches of topsoil to be placed in this Contract.

EXCAVATION.

a. Obstructions. Remove to a minimum depth of 2 feet below finished grade all existing walls, floors, curbs, pavements, walks and other improvements unless shown to be retained on the Project. Clean out any existing dug wells, cisterns, and other similar structures, and fill with granular material firmly compacted. Plug with concrete or masonry the open ends of abandoned sewers encountered in any excavation.

b. Should latent soil or other conditions require changes, the Contract Price shall be adjusted. See GENERAL CONDITIONS - CHANGES.

c. Shore, sheet and/or brace excavations as required to maintain them secure. Remove shoring as the backfilling progresses, but only when banks are safe against caving. Such shoring shall not constitute a condition for which any increase may be made in the Contract price except that when sheeting is left in place on written order of the Authority or Representative, the Contract Price will be adjusted.

d. Drainage. Keep excavations free from water. Do not discharge water from excavations onto privately owned property nor when harmful erosion will result. Presence of ground water in the soil shall not constitute a condition for which any increase may be made in the Contract Price.

f. Frost Protection. Make no excavations to the full depth indicated when freezing temperature may be expected, unless the footings or slabs can be poured immediately after the excavation has been completed. Protect the bottoms so excavated from frost if placing is concrete is delayed.

g. Disposal. Remove from the site, and dispose of, all debris and all excavated materials not suitable or needed for fill.

h. Unsanitary conditions encountered shall be corrected or removed entirely.

BACKFILLING, FILLING AND GRADING.

a. Grades. Do all cutting, filling, backfilling, and grading required to bring the entire Project area to finished grades as follows:

1. For surfaced areas, including walks, recreating areas and sitting areas, to the underside of the respective surfacing, as fixed by the finished grades.

2. For lawn and planted areas, to six (6) inches below finished grade. Provide roundings at top and bottom of banks and at other breaks in grade.

3. Supply and place six (6) inches of topsoil as defined in the division LANDSCAPE PLANTING, for all lawn and planted areas, which shall bring this area to finished grade. Topsoil shall be placed on the entire area within this property lines of the park other than walk areas and other such construc-

tion. The "multi-use court" and other such areas indicated as M.I.C. shall receive topsoil and shall be planted as lawns.

b. Fill under Surfaced Areas. All areas below bituminous or concrete slabs on the ground shall have a minimum of 8" pit run gravel or coarse sand free from perishable rubbish, compacted and level to receive slab, or as detailed.

If natural earth is of granular structure of same material as specified above, no additional material will be required.

Where fill is required to raise the subgrade to the elevations shown, it shall be made in horizontal layers not to exceed 8" in depth, (moistened by sprinkling to the optimum moisture content and compacted with the approved equipment until its dry density is not less than 90% of the Standard Proctor Density as determined by standard laboratory compaction tests).

Materials and method of compaction must be approved by the Authority before starting work.

The Authority shall employ the services of an approved testing laboratory and pay for these services.

c. Backfilling. Backfill excavations below subgrades with similar materials to that removed in excavation, free from rubbish or other unsuitable material.

Place backfill and compact as specified above for Fill Under Surfaced Areas.

d. Compaction Tests. Contractor shall notify the approved testing laboratory 36 hours prior to starting compaction.

The Contractor shall arrange to have a representative of the testing laboratory on the job during the period of compaction and Proctor tests shall be made for every 18" in depth of fill and at intervals not more than 50'0" in both directions of the compaction area.

e. Filling over Areas Outside of Buildings (Except Surfaces Areas)

1. Preparation of Fill Areas. Remove all debris subject to rot or corrosion. Fill holes and minor depressions and compact such filling thoroughly.

2. Fill material shall be free from debris, perishable or combustible material, sod, frozen earth, and stones larger than 6 inches in maximum dimension. Rock or broken masonry larger than 6 inches shall be well distributed in earth or other fine material, with interstices filled, and shall not be placed within two (2) feet of finished grade, or as directed by the Authority.

3. Compaction. Place fill material in uniform, approximately horizontal layers, not more than 8 inches thick measure loose, over the full area involved. Moisten each layer if and as necessary to insure good bonding and maximum compaction by rolling as below specified. Work the surface with suitable equipment to mix the fill materials and secure uniform moisture content.

Compact each layer fully and uniformly by making not less than ten (10) passes with a fifteen(15) ton roller. Compact top layer with a smooth-wheel roller weighing not less than 10 tons, continuing such rolling until there is no creeping ahead of the roller. In locations where it is impracticable to use the equipment just specified, compact the fill thoroughly by moistening and mechanical tamping.

f. Deficiency of Fill Material. Provide clean, suitable earth for requisite additional fill if a sufficient quantity of suitable material therefor is not available from the required excavation on the site.

g. Correction of Subgrade. Bring to required subgrade levels any areas where settlement, erosion or other grade changes occur, and compact.

DISPOSITION OF UTILITITES.

a. Rules and regulations governing the respective utilities shall be observed in executing all work under this heading.

b. Active utilities shown on the drawings shall be adequately protected from damage, and removed, relocated or adjusted only as indicated or specified.

c. Existing water, gas and sewer lines at demolished structures have been capped within the building lines by other prior to award of this Contract, and gas and water have been turned off at the street. It will be the obligation of this Contractor to adequately protect, cap, or otherwise care for any active utility lines discovered at the time of construction.

GENERAL.

The grading operations shall be complete and all lawn areas shall be free of rubbish, debris and other such materials prior to the installation of the six (6) inches of topsoil and prior to the seeding.

Division

SITE IMPROVEMENTS (WALKS, SURFACED AREAS, FENCES, ETC.)

June 1, 1959

SCOPE OF WORK.

a. Work Included. This Division includes surfaces areas, walks, steps, fences, tree wells, and all other surface improvements apart from building except as below stipulated.

b. Work Not Included. This Division does NOT include:

1. Grading and related work, which are covered by the Division, EXCAVATING, FILLING AND GRADING.

2. Work specified in the Division, LANDSCAPE PLANTING.

3. Utility installations, which are covered by other Divisions of these Specifications.

c. Limits of Work. The Drawings show project site boundary lines for the purpose of identification; not all contract work is necessarily confined within those lines.

d. Coordination. The work specified in this Division shall be corrdinated carefully with Landscape Planting and with overheadand underground utility work covered by other divisions.

SUBGRADE FOR SITE IMPROVEMENTS.

a. Grading. Do any necessary grading in addition to that performed in accordance with the division, EXCAVATING, FILLING AND GRADING, to bring subgrades, after final compaction, to the required grades and sections for site improvements.

b. Preparation of Subgrade. Loosen exceptionally hard spots and recompact. Remove spongy and otherwise unsuitable material and replace with stable material. Fill and tamp traces of utility trenches.

c. Compaction of Subgrade. Compact the subgrade of all surfaced areas with appropriate compacting equipment by other means to such degree as will insure against settlement of the superimposed work to 90% of Standard Proctor.

d. Checking Subgrade. Maintain all subgrades in satisfactory condition, protected against traffic and properly drained, until the surface improvement is placed. Immediately in advance of concreteing, check subgrade levels with templates riding the forms, correct irregularities, and compact thoroughly any added fill material. Correct irregularities, compacting thoroughly any fill material.

e. Utility Structures. Check for correct elevation and position all manhole covers, valve boxes, and similar structures and make, or have made, any necessary adjustments in such structures.

CONCRETE MATERIALS.

a. Portland cement shall conform to A.S.T.M. Specification C150-53, Type I or Type III

b. Aggregates for concreteshall conform to A.S.T.M. Specification C33-54T.

1. Fine aggregates shall be natural sand or, subject to the approval of the Authority, sand prepared from stone, gravel, or other inert materials having similar characteristics.

2. Coarse aggregates shall be crushed rock or gravel or, subject to the approval of the Authority, a combination of these materials. Maximum size of pieces shall be 1 1/2 inch.

c. Water shall be clear, and free from injurious amounts of oil, acids, alkalie, organic materials, or other deleterious substances.

d. Steel reinforcing bars shall be deformed bars conforming to one of the following A.S.T.M. Specifications: A 15-54T, A 16-54T, or A 160-54T. Deformation shall conform to A.S.T.M. Specification A 305-53T. Reinforcement shall be free from scale, rust, or coating which will reduce the bond to the concrete.

e. Welded steel wire fabric for concrete reinforcement shall conform to A.S.T.M. Specification A 185-54T.

f. Premolded joint filler shall be of non-extruding type meeting A.S.T.M. Specification D 544-52T except that premolded joint filler used in concrete walk construction may be of either non-extruding or resilient type.

g. Poured Joint Filler shall conform to A.A.S.H.O. Specification M-18, Type A or to Federal Specification SS-F-336a.

h. Storage of Concrete Materials.

1. Cement. Provide suitable means for storing and protecting the cement against dampness. Bags of cement which have become partially set or which contain lumpts of caked cement shall be rejected.

2. Aggregates shall be so stockpiled as to prevent segregation of component sizes and intrusion of foreign matter. Aggregates of different gradings, shall be stored separately.

PROPORTIONING AND MIXING CONCRETE.

a. Concrete for site improvements shall be a mix of proportioned fine and coarse aggregate with portland cement. Minimum cement content shall be six bags per cubic yard of concrete and maximum water content shall be six U.S. gallongs per sack of cement, including moisture in aggregates.

b. Contractor may use option as specified in the section MIXING CONCRETE.

c. Proportioning Aggregates. The ratio of fine to total aggregate shall be such as will produce a dense, homogeneous, and workable mixture, which can be placed without segregation of materials and which will attain at 28 days a minimum compressive strength of 3,000 pounds per square inch as established by laboratory test.

d. Measurement of Materials. Measure concrete materials by such weighing methods as will permit accurate control of proportions and easy check thereof at all times.

e. Mixing Concrete. Mix all concrete in an approved power batch mixer, except as otherwise specifically authorized by the Authority. Mix for a period of not less than 1-1/4 minutes after all materials are in the drum.

f. Ready-Mixed Concrete. Certificates shall be furnished from the mixing plant that concrete has a 28-day compressive strength of at least 3,000 lbs. per square inch, when tested in accordance with methods described in A.S.T.M. Standard C 39-49. No change shall be made in materials or the established mix without prior approval of the Authority. Ready mixed concrete shall be transported to the site in transit mix or agitator trucks having watertight drums loaded not in excess of rated capacities. The concrete shall be delivered and discharged within one (1) hour after

the cement is in the mixer. Concrete which, when delivered, is not plastic and workable will be rejected.

g. Ready Dry-Batched Mixes. Ready dry-batched mixes will not be permitted.

h. Retempering of concrete that has partially hardened, that is, remixing with or without additional cement, aggregate or water, will not be permitted.

PLACING CONCRETE.

a. Subgrade. Place concrete only on a moist compacted subgrade or base, free from loose material. Place no concrete on a muddy or frozen subgrade.

b. Forms. All forms shall be free from warp, tight enough to prevent leaking of mortar, and substantial enough to maintain their shape and position, without springing or settlement, when concrete is placed or vibrated. Forms shall be staked, braced and/or tied together securely. Forms shall be clean and those for surfaces to be exposed shall produce a smooth, even finish without fins or board marks.

1. Set forms for slabs on ground at finished grade; check for line and grade and correct as necessary immediately before concreting. Provide uniform bearing for such forms. Use flexible or curved forms when edge of slab is to be curved to a radius of 100 feet or less.

c. Reinforcing bars shall be accurately placed, and securely supported and fastened to prevent movement during placement of concrete. Wire fabric shall have a minimum side and end lap of 6 inches.

d. Concrete shall be depositedso as to require as little rehandling as practicable. Placing shall be continuous between transverse joints or in individual sections of the work. Spade concrete thoroughly along forms and expansion joints, and work carefully into corners and around reinforcement. Tamp and screed to a dense mass. Mix and place no concrete when the air temperature is below freezing. If the temperature may be expected to fall below 40 degress F. within 24 hours after concrete is placed, heat water and aggregates to bring the temperature of concrete mix to at least 50 degrees F.

CURING CONCRETE.

a. Covering. Except as otherwise specified, cure all concrete by the application of a transparent, impervious membrane of a type approved by the Authority. The liquid shall contain a fugitive dye and shall be of such composition as not to react with the concrete nor alter appreciably its natural color. Apply the liquid immediately after free water has disappeared from the finished surface of the concrete; apply the form of a fine mist and in such manner as to cover the surface with a uniform, flexible film, ample to seal the surface thoroughly, and without marring the concrete finish. Keep workmen, equipment, and materials off the membrane for 3 days after applying.

b. Cold Weather Protection. Whenever the air temperature may be expected to reach the freezing point, spread straw or other blanketing material to sufficient depth to keep concrete from freezing, or provide enclosure and heating device capable of maintaining concrete temperature of at least 50 degrees F. Maintain such protection for at least five (5) days. The Contractor shall be responsible for removing and replacing any concrete injured by frost action.

CONCRETE WALKS.

a. Scope. All concrete walks shall be constructed in accordance with this Specification.

b.

b. Slopes. Provide grade stakes not more than 25 feet apart for all walk construction. Check tops of forms for grade before placing concrete. Introduce short vertical curves in walks as shown on the drawings or at points where change in walk grade exceeds 2%. Provide 1.4 inch per foot crown or cross slope in the direction indicated on the drawings, or in the direction of natural drainage. Pitch walks to adjacent storm sewer inlets and make slight adjustments in slopes at walk intersections as necessary to provide proper drainage and a uniform walk surface.

c. Dimensions. Concrete walks shall be of one-course construction, 4 inches thick or 6 inches thick and of widths as shown on the drawings.

d. Finish. Tamp and screed the concrete true to grade and section, bringing sufficient mortar to the surface for finishing and given a broomed finish. Round all edges, including those along expansion joints and grooves, to a 1/4 inch radius. Where walks terminate at curbs, finish the walk 1/4 inch above the curb, providing a neat bevel.

e. Expansion Joints. Provide 1/2 inch transverse expansion joints, with premolded filler, not more than 30 feet apart; also at walk junctions and intersections, at top and bottom of steps, and where walks abut curb returns, buildings, platforms or other fixed structures, or terminate at curbs. At walk junctions and intersections, the required expansion joints shall be located at the end of each rounding or fillet. Expansion joints shall be at right angles to the slab and extend the full depth thereof. The premolded filler shall extend to within 1/4 inch of the walk surface.

f. Grooves. Between expansion joints, cut grooves 1/8 to 1/4 inches wide and at least one inch deep, as follows:

1. In walks not wider than 6 feet, transverse grooves with a spacing equal to that of the walk width.

2. In walks wider than 6 feet, transverse grooves with spacing equal to half the walk width, and a longitudinal groove on the center line of the walk.

g. Protection. Remove no forms for 24 hours after pouring concrete. Protect concrete walks from pedestrian traffic for a period of 3 days after pouring.

CHAIN LINK FENCES.

a. Provide where shown on Plans, the chain link fence hereinafter described, to be 42" high above grade, complete with gates as shown, and necessary corner braces.

1. All supports and fittings shall be hot-dipped galvanized after fabrication. Zinc coating on fabric shall be capable of withstanding six-one-minute immersions under the Preece Test for uniformity of coating, and shall weigh not less than 1.2 oz. per square foot of actual surface. If present to any considerable extent, frozen joints, uneven and poorly formed mesh, roughness, blisters, sal-ammoniac spots, bruises and flaking shall constitute grounds for rejection.

2. Ferrous materials, excepting malleable iron, shall be open hearth steel containing not less than 0.2 per cent copper ladle analysis, provided that posts may be high carbon steel. The fabric shall be chain link type, 3-1/2 feet wide as shown on the plans and woven of No. 11 wire. United States Steel Wire gauge, in 2 inch diamond mesh. Top and bottom edges shall have knuckled finish.

3. Intermediate posts shall have a rolled open section, either H.I. or U shaped, weighing not less than 1.80 lbs. per foot. End and corner posts shall have a tubular square or round section not less than 2 inches outside each weighing not less than 3.65 lbs per foot. Posts shall have approved caps and

connections for top rail.

4. The fence shall have a top rail of tubular section, not less than 1-3/8" O.D. weighing 1.68 lbs. per foot. Top rail shall be continuous through intermediate posts, or malleable iron post caps, and shall be provided with approved malleable iron or pressed steel connections to end or corner posts. Approved expansion joints shall be provided at intervals not exceeing 50 feet; otherwise length shall be coupled with approved sleeve couplings.

5. Posts shall be spaced uniformly and not farther than ten (10) feet on centers; they shall be plumb in each direction, and in perfect alignment. Spot weld fabric to posts, minimum 30'0" o.c. 4 times and welds painted.

6. Post setting shall be concrete 2'10" deep with top diameter 10 inches and bottom diameter 12 inches, and posts set 6 inches above bottom. All applicable requirements of Division "Concrete Work" shall apply to the concrete settings. The top of the setting shall extend 2 inches above adjacent finished grades, and shall be trowelled to a smooth bevelled surface. Fence posts adjacent to play area shall be set the same as above and as indicated on the drawings.

7. After the concrete posts have set, a concrete one foot (1') wide walk shall be constructed under all fences in accordance with the concrete walk specifications with the exception that expansion grooves shall be provided at intervals of every two feet.

8. After the concrete has set and the posts have become rigid., the top rail shall be placed and the fabric shall be placed flush with the top of the top rail and with bottom 2 inches above finish grade; it shall be tightly stretched to eliminate all sags and buckles, and laced to posts every 14 inches, and to top rail every 24 inches with No. 6 galvanized wire or other rust-resisting material. Ends of lacing wire shall be turned back so as to eliminate exposed ends.

9/ Provide shop drawings to Authority for approval.

CLEAN UP

All trash and surplus materials of every character resulting from the work of this Division shall be removed from the site. Any concrete, bituminous substances or other materials spilled on pavement, walks or structures shall be completely removed.

Division

EXCAVATING, FILLING AND GRADING

June 1, 1959

SCOPE OF WORK

This Division includes excavating, filling, grading and related items required to complete the work indicated on the drawings and specified; within the Project Limits, except:

1. Grading under sidewalks specified in the Division, Site Improvements.
2. Excavation and backfill for utilities, specified in Division concerning UTILITIES (SEWER) and UTILITIES (ELECTRICAL).
3. Placing of topsoil and required excavation in connecting with planting trees and shrubs as specified in Division LANDSCAPE PLANTING.
4. Excavation and backfill in connection with electrical distribution which is specified in the Division concerning UTILITIES (ELECTRICAL).

BENCH MARKS AND MONUMENTS.

Maintain carefully all bench marks, monuments and other reference points. Monuments which are to be disturbed by the Contractor shall be adjusted to grade in the locations designated by the Ramsey County Plat Commission Surveyor by the Contractor. The Ramsey County Plat Commission shall be notified at least 24 hours prior to the work at the monument to be disturbed.

FINISHED GRADES.

The words "Finished grades" as used herein, shall mean the grades indicated by the contours and spot elevations shown on the drawings. Should finished grades shown by spot elevations conflict with those shown by contours, the spot elevation shall govern. Where not otherwise indicated, Project Site areas shall be given uniform slopes between points for which finished grades are shown, or between such points and existing grade, except that vertical curves or roundings shall be provided at abrupt changes in slope.

SUBGRADE.

The word "subgrade" shall mean all grades below 6 inches below the finished grade in areas of lawn and planting and shall mean all grades below the underside of the surfacing sidewalk concrete.

TREES.

a. Trees to Remain. Protect trees which are to remain, as so indicated on the drawings or as further directed by the Authority or Representative, by the erection of suitable temporary fences, or other suitable means - all as approved by the Authority. Remove dead or interfering branches as directed without injury to trunks. All bruises or injured cambium and all cuts having an area of 3 square inches shall be paint treated with a suitable material immediately following damage. All cuts shall be made flush with the branch or trunk from which it was removed. Perform no excavation or grading below the existing grade, within the spread of branches except as necessitated by surfacing construction and utility trenching. Light no fires under or near any tree to remain and place no materials or debris within the spread of branches. No equipment storage or other practices will be permitted what would, in any way, damage the roots or branches.

b. Trees to be Removed. Remove all shrubs and all trees indicated on plan for removal from the Project Limits. Remove all stumps and roots of trees to be removed to a clear depth of not less than 2 feet below finished grade. All material resulting from the clearing and grubbing here specified shall become the property of the Contractor and shall be disposed of by him. Burn no material on the premises without special permission from the Authority or Representative and in compliance with applicable laws and regulations.

STRIPPING OF TOPSOIL.

No stripping and stockpiling of topsoil for reuse shall be permitted as a portion of the 6 inches of topsoil to be placed in this Contract.

EXCAVATION.

a. Obstructions. Remove to a minimum depth of 2 feet below finished grade all existing walls, floors, curbs, pavements, walks and other improvements unless shown to be retained on the Project. Clean out any existing dug wells, cisterns, and other similar structures, and fill with granular material firmly compacted. Plug with concrete or masonry the open ends of abandoned sewers encountered in any excavation.

b. Should latent soil or other conditions require changes, the Contract Price shall be adjusted. See GENERAL CONDITIONS - CHANGES.

c. Shore, Sheet and/or brace excavations as required to maintain them securely. Remove shoring as the backfilling progresses, but only when banks are safe against caving. Such shoring shall not constitute a condition for which any increase may be made in the contract price except that when sheeting is left in place on written order of the Authority or Representative, the contract price will be adjusted.

d. Drainage. Keep excavations free from water. Do not discharge water from excavations onto privately owned property nor when harmful erosion will result. Presence of ground water in the soil shall not constitute a condition for which any increase may be made in the contract price.

e. Frost Protection. Make no excavations to the full depth indicated when freezing temperature may be expected, unless the footings or slabs can be poured immediately after the excavation has been completed. Protect the bottoms so excavated from frost if placing of concrete is delayed.

F. Disposal. Remove from the site, and dispose of, all debris and all excavated materials not suitable or needed for fill.

g. Unsanitary conditions encountered shall be corrected or removed entirely.

BACKFILLING, FILLING AND GRADING.

a. Grades. Do all cutting, filling, backfilling, and grading required to bring the entire Project Area to finished grades as follows:

1. For sidewalks to the underside of the sidewalk, as fixed by the finished grades.

take the proper precautions.

GENERAL.

The grading operations shall be complete and all lawn areas shall be free of rubbish, debrish and other such materials prior to the installation of the six (6) inches of topsoil and prior to the seeding.

2. For lawn and planted areas, to six (6) inches of topsoil as defined in the Division LANDSCAPE PLANTING, for all lawn and planted areas, which shall bring this area to finished grade. Topsoil shall be placed on the entire area within the property lines of the park other than walk areas and other such construction.

b. Backfilling. Backfill excavations below subgrades with similar materials to that removed in excavation, free from rubbish or other unsuitable materials.

Place backfill and compact as specified below in e-3.

c. Fill Areas.

1. Preparation of Fill Areas. Remove all debris subject to rot or corrosion. Fill holes and minor depressions and compact such fill thoroughly.

2. Fill material shall be free from debris, perishable or combustible material, sod, frozen earth, and stones larger than 6 inches in maximum dimension. Rock or broken masonry smaller than 6 inches shall be well distributed in earth or other fine material, with interstices filled, and shall not be placed within two (2) feet of finished grades, or as directed by the Authority.

3. Compaction. Place fill material in uniform, approximately horizontal layers, not more than 8 inches thick measure loose, over the full area involved. Moisten each layer if and as necessary to insure good bonding and maximum compaction by rolling as below specified. Work the surface with suitable equipment to mix the fill materials and secure uniform moisture content.

   Compact each layer fully and uniformly by making not less than ten (10) passes with a fifteen (15) ton roller. Compact top layer with a smooth-wheel roller weighing not less than 10 tons, continuing such rolling until there is no creeping ahead of the roller. In locations where it is impracticable to use the equipment just specified, compact the fill thoroughly by moistening and mechanical tamping.

d. Deficiency of Fill Material. Provide clean, suitable earth for requisite additional fill if a sufficient quantity of suitable material is not available from the required excavation on the site.

e. Correction of Subgrade. Bring to required subgrade levels any areas where settlement, erosion or other grade changes occur, and compact.

DISPOSITION OF UTILITIES.

a. Rules and regulations governing the respective utilities shall be observed in executing all work under this heading.

b. Active utilities shown on the drawings shall be adequately protected from damage and removed, relocated or adjusted only as indicated or specified.

c. Existing water, gas and sewer lines at demolished structures have been capped within the building lines by others prior to award of this Contract, and gas and water have been turned off at the street. It shall be the obligation of this Contractor to adequately protect, cap or otherwise care for any active utility lines discovered at the time of construction. The Contractor shall be responsible for notifying the respective utility companies of his work in this area so that they may

Division

SITE IMPROVEMENTS (WALKS, SURFACED AREAS, FENCES, ETC.) June 1, 1959

SCOPE OF WORK.

a. Work Included. This Division includes sidewalks, fences, tree wells and all other surface improvements except as below stipulated.

b. Work not Included. This Division does NOT include:

1. Grading and related work, which are covered by the Division, EXCAVATING, FILLING AND GRADING.

2. Work specified in the Division, LANDSCAPE PLANTING.

3. Utility installations, which are covered by other Divisions of these Specifications.

c. Limits of Work. The Drawings show project site boundary lines for the purpose of identification; not all contract work is necessarily confined within those lines.

d. Coordination. The work specified in this Division shall be coordinated carefully with Landscape Planting and with overhead and underground utility work covered by other Divisions.

SUBGRADE FOR SITE IMPROVEMENTS.

a. Grading. Do any necessary grading in addition to that performed in accordance with the Division, EXCAVATING, FILLING AND GRADING, to bring subgrades, after final compaction, to the required grades and sections for site improvements.

b. Preparation of Subgrade. Loosen exceptionally hard spots and recompact. Remove spongy and otherwise unsuitable material and replace with stable material. Fill and tamp traces of utility trenches.

c. Compaction of Subgrade. Compact the subgrade of all surfaces areas with appropriate compacting equipment or by other means.

d. Checking Subgrade. Maintain all subgrades in satisfactory condition, protected against traffic and properly drained, until the surface improvement is placed. Immediately in advance of concreting, check subgrade levels with templates riding the forms, correct irregularities, and compact thoroughly any added fill material.

e. Utility Structures. Check for correct elevation and position all manhole covers, valve boxes and similar structures and make, or have made, any necessary adjustments in such structures.

CONCRETE MATERIALS.

a. Portland cement shall conform to A.S.T.M. Specification C150-53, Type I or Type III.

b. Aggregates for concrete shall conform to A.S.T.M. Specification C33-54T.

1. Fine aggregates shall be natural sand or, subject to the approval of the Authority, sand prepared from stone, gravel or other insert materials having similar characteristics.

2. Coarse aggregates shall be crushed rock or gravel or, subject to the approval of the Authority, a combination of these materials. Maximum size of pieces shall be 1-1/2 inch.

c. Water shall be clear, and free from injurious amounts of oil, acids, alkalis, organic materials, or other deleterious substances.

d. Premolded joint filler shall be of non-extruding or resilient type meeting A.S.T.M. Specification D 544-52T.

e. Poured joint filler shall conform to A.A.S.H.O. Specification M-18, Type A or to Federal Specification SS-F-336a.

f. Storage of Concrete Materials.

1. Cement. Provide suitable means for storing and protecting the cement against dampness. Bags of cement which have become partially set or which contain lumps of caked cement shall be rejected.

2. Aggregates shall be stockpiled as to prevent segregation of component sizes and intrusion of foreign matter. Aggregates of different gradings, shall be stored separately.

PROPORTIONING AND MIXING CONCRETE.

a. Job mixed concrete shall be composed of one part cement, 1-1/2 parts fine aggregate and not more than 3 parts coarse aggregate. Mixing water shall not exceed 6 gallons per sack of cement, including free water in the aggregates.

b. Proportioning Aggregates. The ratio of fine to total aggregate shall be such as will produce a dense, homogeneous, and workable mixture, which can be placed without segregation of materials and which will attain at 28 days a minimum compressive strength of 3000 pounds per square inch as established by laboratory test.

c. Measurement of Materials. Measure concrete materials by such weighing methods as will permit accurate control of proportions and easy check thereof at all times.

d. Mixing Concrete. Mix all concrete in an approved power batch mixer, except as otherwise specifically authorized by the Authority. Mix for a period of not less than 1 minute after all materials are in the drum for a 1 cubic yard or less mixer adding 15 seconds to each 1/2 cubic yard additional capacity of mixer.

e. Ready-Mixed Concrete. Certificates shall be furnished from the mixing plant that concrete has a 28-day compressive strength of at least 3000 lbs. per square inch, when tested in accordance with methods described in A.S.T.M. Standard C39-56T. No change shall be made in materials or the established mix without prior approval of the Authority. Ready-mixed concrete shall be transported to the site in transit mix or agitator trucks having water-tight drums loaded not in excess of rated capacities. The concrete shall be delivered and discharged within one (1) hour after the cement is in the mixer. Concrete which, when delivered, is not plastic and workable will be rejected.

f. Ready Dry-Batched Mixes. Ready dry-batched mixes will not be permitted.

g. Retempering of concrete that has partially hardened, that is, remixing with or without additional cement, aggregate or water, will not be permitted.

PLACING CONCRETE

a. Subgrade. Place concrete only on a moist compacted subgrade or base, free from loose material, Place no concrete on a muddy or frozen subgrade. Subgrade material not either sand or graded shall be excavated to a minimum of 2 inches and be replaced with a sand base at least 2 inches thick after compaction.

b. Forms. All forms shall be free from warp, tight enough to prevent leaking of mortar, and substantial enough to maintain their shape and position, without springing or settlement, when concrete is placed or vibrated. Forms shall be staked, braced and/or tied together securely. Forms shall be clean and those for surfaces to be exposed shall produce a smooth, even finish without fins or board marks.

1. Set forms for sidewalks on ground at finished grade; check for line and grade and correct as necessary immediately before concreting. Provide uniform bearing for such forms. Use flexible or curved forms when edge of slab is to be curved to a radius of 100 feet or less.

d. Concrete shall be deposited so as to require as little rehandling as practicable. Placing shall be continuous between transverse joints or in individual sections of the work. Spade concrete thoroughly along forms and expansion joints, and work carefully into corners. Tamp and Screed to a dense mass. Mix and place no concrete when the air temperature is below freezing. If the temperature may be expected to fall below 40 degrees F. within 24 hours after concrete is placed, heat water and aggregates to bring the temperature of concrete mix to at least 50 degrees F.

CURING CONCRETE.

a. Covering. Except as otherwise specified, cure all concrete by the application of a transparent, impervious membrane of a type approved by the Authority. The liquid shall contain a fugitive dye and shall be of such composition as not to react with the concrete nor alter appreciably its natural color. Apply the liquid immediately after free water has disappeared from the finished surface of the concrete; apply in the form of a fine mist and in such manner as to cover the surface with a uniform, flexible film, ample to seal the surface thoroughly and without marring the concrete finish. Keep workmen, equipment, and materials off the membrane for 3 days after applying.

b. Cold Weather Protection. Whenever the air temperature may be expected to reach the freezing point, spread straw or other blanketing material to sufficient depth to keep concrete from freezing, or provide enclosure andheating device capable of maintaining concrete temperature of at least 50 degrees F. Maintain such protection for at least five (5) days. The Contractor shall be responsible for removing and replacing any concrete injured by frost action.

CONCRETE WALKS.

a. Scope. All concrete walks shall be constructed in accordance with this Specification.

b. Slopes. Provide grade stakes not more than 25 feet apart for all walk construction. Check tops of forms for grade before placing concrete. Introduce short vertical curves in walks as shown on the drawings or at points where change in walk grade exceeds 2%. Provide 1/4 inch per foot crown or cross slope in the direction indicated on the drawings, or in the direction of natural drainage. Pitch walks to adjacent catch basin inlets and make slight adjustments in slopes at walk intersections as necessary to provide proper drainage and a uniform walk surface.

c. Dimensions. Concrete walks shall be of one-course construction, 4 inches thick or 6 inches thick and of widths as shown on the drawings.

d. Finish. Tamp and screed the concrete true to grade and section, bringing sufficient mortar to the surface for finishing and given a broomed finish. Round all edges, including those along expansion joints and grooves, to a 1/4 inch radius.

e. Expansion Joints. Provide 1/2 inch transverse expansion joints, with premolded filler, not more than 30 feet apart; also at walk junctions and intersections and at other fixed structures. At walk junctions and intersections, the required expansion joints shall be located at the end of each rounding or fillet. Expansion joints shall be at right angles to the slab and extend the full depth thereof. The premolded filler shall extend the full depth thereof. The premolder filler shall extend to within 1/4 inch of the walk surface.

f. Grooves. Between expansion joints, cut grooves 1/8 to 1/4 inches wide and at least one inch deep, as follows:

1. In walks not wider than 6 feet, transverse grooves with a spacing equal to that of the walk width.

2. In walks wider than 6 feet, transverse grooves with spacing equal to half the walk width, and a longitudinal groove on the center line of the walk.

g. Protection. Remove no forms for 24 hours after pouring concrete. Protect concrete walks from pedestrian traffic for a period of 3 days after pouring.

CHAIN LINK FENCES.

a. Provide where shown on Plans, the chain link fence hereinafter described, to be 42" high above grade, complete with supports and fittings and necessary corner braces.

1. All supports and fittings shall be hot-dipped galvanized after fabrication. Zinc coating on fabric shall be capable of withstanding six-one-minute immersions under the Preece Test for uniformity of coating, and shall weigh not less than 1.2 oz. per square foot of actual surface. If present to any considerable extent, frozen joints, uneven and poorly formed mesh, roughness, blisters, sal-ammoniac spots, bruises and flaking shall constitute grounds for rejection.

2. Ferrous materials, excepting malleable iron, shall be open hearth steel containing not less than 0.2 per cent copper ladle analysis, provided that posts may be high carbon steel. The fabric shall be chain link type, 3 feet wide as shown on the plans and woven of No. 11 wire. United States Steel Wire gauge, in 2 inch diamond mesh. Top and bottom edges shall have knuckled finish.

3. Intermediate posts shall have a rolled open section, either H.I. or U shaped, weighing not less than 1.80 lbs. per foot. End and corner posts shall have a tubu-

lar square or round section not less than 2 inches outside each weighing not less than 3.65 lbs per foot. Posts shall have approved caps and connections for top rail.

4. The fence shall have a top rail of tubular section, not less than 1-3/8" O.D. weighing 1.68 lbs. per foot. Top rail shall be continuous through intermediate posts, or malleable iron post caps, and shall be provided with approved malleable iron or pressed steel connections to end or corner posts. Approved expansion joints shall be provided at intervals not exceeding 50 feet; otherwise length shall be coupled with approved sleeve couplings.

5. Posts shall be spaced uniformly and not farther than ten (10) feet on centers; they shall be plumb in each direction, and in perfect alighment. Spot weld fabric to posts, minimum 30'0" O.C. 4 times and welds painted.

6. Post setting shall be concrete 2'10" deep with a diameter of 12 inches and set posts 6 inches above bottom. All applicable requirements of concrete in this Division shall apply to the concrete settings. The top of thesetting shall extend 2 inches above adjacent finished grades, and shall be trowelled to a smooth bevelled surface.

7. After the concrete has set and the posts have become rigid, the top rail shall be placed and the fabric shall be placed flush with the top of the top rail and with bottom 6 inches above finish grade; it shall be tightly stretched to eliminate all sags and buckles, and laced to posts every 14 inches, and to top rail every 24 inches with No. 6 galvanized wire or other rust-resisting material. Ends of lacing wire shall be turned back so as to eliminate exposed ends.

8. Provide shop drawings to Authority for approval.

METAL AREA WALLS.

Furnish and install where shown and required at trees, metal area walls made of 16 gauge copper bearing steel, galvanized after fabrication, ribbed or corrugated for stiffness. Attach flange faces with galvanized bolts of 2 area walls to each other to form a circular tree well. The area wall shall be installed after necessary grading and shall not extend above the outside finished grade elevation.

CLEAN UP

All trash and surplus materials of every character resulting from the work of this Division shall be removed from the site. Any concrete or other materials spilled on pavement, walks or structures shall be completely removed.

Division

LANDSCAPE PLANTING

June 1, 1959

SCOPE OF WORK.

The planting work includes the furnishing of all materials, equipment, and labor necessary for the seeding of grass and the planting of trees and shrubs; protection, maintenance, guarantee, and replacement and all related items required to complete work indicated on the drawings and/or specified.

PLANTING.

a. Materials.

1. Topsoil to be Furnished. Topsoil furnished shall be a natural, fertile friable soil, possessing characteristics of representative, productive soils in the vicinity. It shall be obtained from naturally well-drained areas. It shall not be accessively acid or alkaline, having a PH factor between 5.5 and 8.0 and not contain toxic substances which may be harmful to plant growth. Topsoil shall be without admixture of subsoil and shall be cleaned and reasonably free from clay lumps, peat lumps, stones, stumps, roots, or similar substances 2" or more in diameter, debris or other objects which might be a hindrance to planting operations. Topsoil shall be clay loam or loam when compared to the "Textural Soil Classification" of the U.S. Bureau of Soils. Topsoil must also be without the range of from 4% to 10% organic content.

2. Manure shall be well-rotted, unleached, stable or cattle manure, reasonably free from shavings, sawdust, or refuse, and shall not contain any harmful materials.

3. Commercial Fertilizer shall be a complete fertilizer granular and uniform in composition, dry and free flowing and suitable for application with approved equipment and contain the following percentage by weight:

10% Nitrogen
6% Phosphoric Acid
4% Potash

At least 30% of the nutrient weight of Nitrogen shall be derived from organic sources. Fertilizer shall be delivered as specified in standard size bags or other convenient containers, each fully labeled conforming to State Fertilizer Laws and bearing the name, tradename or trademark warranty of the producer and shall be stored in weatherproof storage places and in such a manner that it will be kept dry and its effectiveness will not be impaired.

4. Water used by the Contractor in this work may be derived from the City of St. Paul Water System as available. Hose and other watering equipment required for this work shall be furnished by this Contractor.

a. Grass Seed. Shall be mixed and guaranteed by the supplier and certified by him to the Authority, to be as follows:

Common Name	Proprotion by Weight	Purity %	Germination %
Kentucky Blue Grass	25	85	75
Red Fescue	30	96	85
Kentucky 31 Fescue	25	89	85
Red Top	20	96	85

b. The weed content shall not exceed 1% by weight, of the seed mix.

c. Seed shall be delivered in sealed containers and shall be clearly labeled in accordance with all applicable U.S. Department of Agriculture rules and regulations under all Federal Seed Act in effect on the date of the Invitation to Bid.

d. Seed in containers which has become wet, moldy or otherwise damaged shall not be used.

e. Grass seed shall be fresh, clean and shall be new crop seed composed of the varieties mixed in the proportions by weight and to the purity and germination indicated herein.

5. Peat shall be in accordance with the "Textural Soil Classification" of the U.S. Bureau of Soils.

6. Plant Materials.

a. Plant List A list of plants to be furnished is shown on the Plant Material List.

b. Nomenclature. The names of plants required under this Contract conform to those given in Standarized Plant Names, 1942 Edition, prepared by the American Joint Committee on Horticultural Nomenclature, names of varieties not included therein conform generally with names accepted in the nursery trade.

c. Quantities. The quantity of plant material necessary to complete all of the planting shown on the drawings shall be determined by the Contractor.

d. Quality and Size. Plants shall be nursery grown with a minimum of new growth showing and shall have a habit of growth that is normal for the specimen, shall be sound, healthym vigorous, and free from insect pests, plant diseases, and injuries. All plants shall equal or exceed the measurements specified in the Plant List, which are minimum acceptable sizes. They shall be measured before pruning, with branches in normal position. Any necessary pruning shall be done at the time of planting. Requirements for measurement, branching, quality, balling and burlapping of plants in the Plant List generally follow the code of standards currently recommended by the American Association of Nurseymen, Incorporated, in the "Horticultural Standards" 1949 Edition. If any specifications indicated herein exceed the recommendations of the "Horticulture Standards", these specifications shall be considered as the minimum acceptable.

e. Substitutions. Will be permitted only upon submission of proof that the specified plant is not obtainable locally. The Authority may then issue

7. Type of Protection to Roots.

a. Balled and Burlapped Plants. Plants designated "B & B" in the Plant List shall be balled and burlapped. They shall be freshly dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Balls shall be firmly wrapped with burlap or similar material and bound with twine, cord or wire mesh. Where necessary to prevent breaking and cracking of the ball during process of planting, the ball may be secured to a platform.

b. Bare-Root Plants. All plants may be bare-root unless otherwise indicated on the Plant List. Bare-root plants shall be dug and the earth removed without injury to the fibrous root system necessary for full recovery of the plant. Roots shall be covered with a thick coating of mud by puddling or wrapped in wet straw, moss, or other suitable packing material immediately after they are dug, for protection until delivered. Plants shall not be in leaf at the time of planting. Deciduous bare-root material may be freshly dug or may have been wintered in cold storage.

c. Protection After Delivery. The balls of "B & B" plants which cannot be planted immediately on delivery shall be covered with moist soil or mulch, or other protective covering to prevent drying from winds and sun. Bare-rooted plants shall be planted or healed in immediately upon delivery. All plants shall be watered as necessary until planted.

8. Plant Material List.

Designation	Scientific Name	Common Name	Minimum Size
S. Map	Aler Platanoides Schwedler	Schwedler Maple	2"
Hard Map.	Acer Saccharum	Hard Maple	2"
Catalpa	Catalpa Specidsa	Northern Catalpa	2"
Ash	Fraxinus Lanceolata	Green Ash	2"
Bechtel Crab	Malus Bechtel	Bechtel Crab	1½"
Dolgo Crab	Malus Dolgo	Dolgo Crab	1½"
Bolleana Pop.	Populus Alba Bolleana	Bolleana Poplar	8'
Mt. Ash	Sorbus Avcuparia	European Mountain Ash	1½"
Elm	Ulmus Americana	American Elm	2"
Col. Spr.	Picea Pungens	Colorado Spruce	4'
Pfitz, Jun.	Juniperous Chinensis Pfitzeriana	Pfitzer Juniper	18"

Golden Moc.	Philadelphus Coronarius Golden	Golden Molkorange	2'
Pur. Sand Cherry	Prunus Cistena	Purple Leaf Sand Cherry	3'
Alpine Cur.	Ribes Alpinum	Alpine Currant Hedge	2'

MATERIALS, INSPECTION AND PROCEDURE.

a. Samples, Tests and Inspections of Material.

1. Notice of Sources. Within ten (10) days following acceptance of the bid, the Authority shall be notified of the sources of the materials required, to permit the Authority to inspect and test such material.

2. Plants. The Contractor shall be responsible for all certificates of inspection of plant materials that may be required by the Federal, State or other authorities to accompany shipments of plants. Inspection of plants to be balled and burlapped will be made at the place of growth. All plants must be inspected and approved before they are planted. Inspection and approval by the Authority of plants at the place of growth or upon delivery shall be for quality, size, and variety only and shall not in any way impair the right of rejection for failure to meet other requirements during the progress of the work.

b. Time of Planting.

Planting operations shall be conducted under favorable weather conditions during the season which are normal for such work as determined by the accepted practice in the locality of the Project. At the option of the Contractor and on his full responsibility, planting operations may be conducted under unseasonable conditions without additional compensation. The normal planting season would be April 15 to June 15 and September 15 to November 1.

c. Obstructions Below Ground or Overhead.

1. It is not contemplated that planting shall be done where the depth of soil, underground construction or freedom from obstructions or rock is insufficient to accommodate the roots or where pockets in rock or impervious soil will require drainage. Where such conditions are encountered in excavation of planting areas and where stone, boulders, or other obstructions cannot be broken and removed by hand methods in the course of digging the plant pits of the usual size, and where trees designated on plan are found to be under overhead size, minor adjustments to the location of the planting will be made by the Contractor with prior approval of the Authority.

2. If changes in the location of the work or if the removal of rock or other obstructions involves substantial additional work, the Contractor shall proceed in accordance with instructions from the Authority and an equitable adjustment in the Contract prices shall be negotiated.

d. Soil Preparation and Fertilizer Application.

On all lawn area use commercial fertilizer specified and apply at the rate of 25 lbs. per 1000 square feet and work into the top two inches of soil at least two days before sowing the grass seed. The entire area shall then be raked to a smooth even surface and shall be in conformity with the previously established grades.

e. Seeding Procedure.

1. General. Immediately before any seed is to be sown, the ground shall be scarified as necessary and shall be raked until the surface is smooth, friable, and of uniformly fine texture. A method of sowing satisfactory to the Authority's Representative shall be employed, making use of approved methods. When drills are used, provision shall be made by markers or other means to assure that successive seeded strips will overlap. When delay in operations carry the work beyond the most favorable planting season for the species designated, or when conditions are such by reason of draught, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be stopped and shall be resumed only when conditions are favorable again or when approved alternate or corrective measures and procedures have been put into effect. If inspection during seeding operations or after there is a show of green, indicates that areas have been skipped, the Authority Representative will require the sowing of additional seed on these areas.

2. Lawn Seeding.

a. The mixture of grass seed as specified shall be sown on lawn areas at the rate of 4 pounds to 1000 square feet of lawn area. Equal quantities of this s eed mixture shall be sown in two directions at right angles to each other to produce even distribution of seed over the entire area. The seed will be covered to an average depth of 1/8" by means of lawns rakes.

b. Broadcasting method as approved shall not be done during windy weather.

c. Immediately after seeding, the entire area shall be compacted by means of a smooth roller weighing 60 to 90 pounds per lineal foot of roller.

3. Seeding Maintenance. Maintenance shall begin immediately after each portion of lawn is planted and shall continue in accordance with the following requirements:

a. Seeded Lawns shall be protected and maintained by watering, mowing and replanting as necessary for at least sixty (60) days, and as much longer as is necessary to establish a uniform stand of the specified grasses and until acceptance. Scattered bare spots, none of which is longer than one (1) square foot, will be allowed up to a maximum of 3 per cent of any lawn area.

f. Planting Procedure.

1. Plant material shall be hole planted unless planting beds are indicated on plan.

2. Layout. New planting shall be located approximately where shown on the plans except where obstructions below ground or overhead are encountered. The Contractor shall lay out his own work and be responsible for the location of all of the work performed by him. Necessary adjustments shall be approved by the Authority.

3. Planting Pits shall be dug and soil for planting readied before plants are delivered. Circular pits with vertical sides shall be excavated for all plants except hedges and plants specifically designated on the plans to be planted in beds. Diameter of pits for trees and "B & B" shrubs shall be at least two (2) feet greater than the diameter of the ball or spread of roots. Diameter of pits for bare-rooted shrubs shall be at least one (1) foot greater than the spread of the roots. The depth of the pits for trees and shrubs shall be great enough to accommodate the ball or roots when the plant is set to finished grade allowing forthree (3) inches of compacted topsoil or prepared soil in the bottom of the pit.

4. Prepared Soil, Soil used in planting shall be topsoil, as hereinbefore specified or prepared soil which is suitable existing soil thoroughly mixed with one (1) part of peat and one (1) part of manure to five (5) parts of existing soil. Very poor soils, gravel, hard-pan, or other soils injurious to plants shall not be considered suitable for reuse.

5. Excess Excavated Soil. Excess excavated soil shall be removed from the site.

6. Setting Plants. Unless otherwise specified, all plants shall be planted in pits, centered, and set on three (3) inches of compacted topsoil or prepared soil to such depth that the finished grade level, at theplant after settlement, will be the same as that at which the plant was grown. They shall be planted upright and faced to give the best appearance or relationship to the project. Burlap need not be pulled out from under balls. Platforms, wire and surplus binding from top and sides of the balls shall be removed. All twine, cord, or wire surrounding the plant stems, roots or limbs shall be cut or removed after planting. Roots of bare-rooted material shall be spread in their normal position. All broken or frayed roots shall be cut off cleanly. Topsoil or prepared soil shall be placed and compacted carefully to avoid injury to roots and to fill all voids. When the hole is nearly filled, add water as necessary and allow it to soak away. Fill the hole to the finished grade and form a shallow saucer around each plant by placing a ridge of topsoil around the edge of each pit. After the ground settles, additional soil shall be filled in to the level of the finished grade.

7. Fertilizing. All plants shall receive fertilizer at the rate of 3 pounds for each tree and one pound for each shrub at the time that the plant is being placed. Care should be taken to prevent the fertilizer from being placed in direct contact with the roots of the plants.

8. Hedge Planting. Hedge plants shall be planted in trenches, excavated to a depth of at least one foot and to a width of one foot wider than the total spread of the roots or diameters of balls. Place hedge plants along center line of hedge and equidistant from each other. In multi-row planting, each shrub in separate rows shall be staggered.

g. New Planting Maintenance.

Maintenance shall begin immediately after each plant is placed and shall continue in accordance with the following requirements:

1. New Planting shall be protected and maintained until the installation of planting is complete and for a period of thirty (30) days of growing weather after the last planting or until a satisfactory acceptance inspection. Maintenance shall include watering, weeding, cultivating, mulching, removal of dead material, resetting plants to proper grades or upright position and restoration of the planting saucer, and other necessary operations.

2. Repairs or Replacement of Plants necessary during the maintenance period due to removal, loss or damage shall be the obligation of the Contractor.

3. Pruning and Repair. Upon completion of the work under this Contract, all trees and shrubs shall have been pruned and any injuries repaired. The amount of pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant. All cuts shall be made flush, leaving no stubs. On all cuts over one (1) inch in diameter, and bruises or scars on the bark, the injured cambium shall be traced back to living tissue and removed; wounds shall be smoothed and shaped so as not to retain water; and the treated area shall be coated with a commercial tree paint material as approved by the Authority. The lower two-thirds (2/3) of the height of all trees shall be pruned free of branches.

4. Vandalism and Protection. Immediately prior to the completion of the maintenance period the Contractor shall place a continuous coating of thick, enduring, sticky, non-toxic substance, "Tree Tanglefoot" or an approved equal, on the stem of all deciduous trees from a point six (6) inches from the finish grade to a point six (6) feet from the finish grade or to a point not to exceed three-fourths (3/4) of the height of the tree.

CARE AND GUARANTEE.

a. Clean Up.

Any excess soil, manure, peat or similar materials which have been brought onto the project area shall be promptly removed. Upon completion of the planting, all excess soil, stones and debris shall be removed from the site or disposed of as directed by the Authority. All lawn and planting areas shall be prepared for inspection and acceptance.

b. Inspection and Acceptance.

1. Inspection. At the conclusion of the Contract work, exclusive of maintenance and replacement, an inspection will be made by the Authority, upon written notice requesting such an inspection, submitted by the Contractor at least ten (10) days prior to the anticipated date. The purpose of this inspection will be to determine whether the Contractor has completed all the work of the Contract exclusive of maintenance and replacement and to verify whether the Contractor is subject to liquidated damages. Any plant not in healthy, growing condition at this time will be noted for the Contractor to replace without cost to the Authority.

2. Acceptance Inspection. At the conclusion of the maintenance period an inspection will be made by the Authority, upon written notice requesting inspection, submitted by the Contractor at least ten (10) days prior to the anticipated date. The purpose of the inspection shall be for the acceptance of the Contract work including maintenance, but exclusive of replacements. After inspection the Contractor shall be notified in writing by the Authority of acceptance of all work of the lawns and planting Contract, exclusive of possible replacements of plants subject to guaranty, or if there are any deficiencies in the maintenance, the Contractor shall be notified of these, in writing by the Authority and the work shall be subject to reinspection before acceptance.

c. Plant Guaranty and Replacement.

1. Guaranty. Plants shall be guaranteed for a period of one (1) year from the date of acceptance, and shall be alive and in satisfactory growth at the end of the guaranty period.

2. Replacement. At the end of the guaranty period, inspection will be made by the Authority, upon written notice requesting such inspection, submitted by the Contractor at least ten (10) days before the anticipated date. Any plant required under this Contract that is dead or not in satisfactory growth, as determined by the Authority, shall be removed from the site; these and any plants missing, due to the Contractor's negligence, shall be replaced as soon as conditions permit, but during the normal planting season. Material used in replacement must be acceptable to the Authority and in conformance with all applicable sections of this Division with the exception of "Plant Guaranty and Replacement" Section C1 and C2.

3. Materials and Operations. All replacements shall be plants of the same kind and size as specified in the Plant List. They shall be furnished and planted in accordance with these Technical Specifications; the cost shall be borne by the Contractor, except for possible replacements resulting from removal, loss or damage due to the occupancy of the adjoining property, vandalism, or acts of neglect on the part of others.

4. Cost of Plant Replacement. The entire cost of the plant replacement will be borne by the Contractor. In the event that the Contractor does not perform the necessary replacement, and upon due notice, the work will be performed by others and the Contractor will be charged for the work in accordance with the normal cost for such work.

Division

UTILITIES (SEWER)

1. SCOPE OF WORK.

This Division includes generally the construction and/or adjustments to drainage, structures, installation of sewer pipe and all related excavation and backfilling to complete the work indicated on the drawings and as specified within the Project limits.

2. GENERAL.

The Contractor is required to perform all of the work and furnish all of the materials indicated within this Division and comply with all specifications referred to in the CITY OF SAINT PAUL, MINNESOTA, DEPARTMENT OF PUBLIC WORKS, SPECIFICATIONS FOR STREET AND SEWER CONSTRUCTION dated April 1, 1959 or as current on the date of the letting of this Contract. During the construction and adjustment of the existing sewer structures or mains, the existing system shall be maintained in continuous operation. All excavations shall be maintained free of standing water during the placement of the sewer structures or pipes. A suitable method shall be employed to remove the fins or surpluse concrete from within all sewer pipes and the sewer system installed shall be well flushed with water at the completion of work and during construction.

3. MATERIALS.

Mortar for Joints

Mortar shall be a one-two (1:2) mix with one part Portland cement to two parts sand with no hydrated lime permitted. Morter shall be workable and water shall not be added to a mix that is beginning to set up.

4. SEWER PIPES

Sewer pipe shall be vitrified clay, bell and spigot, standard strength and A.S.T.M. Designation C 13-57T.

5. EXCAVATION

Excavation for drainage structures and sewer pipes shall include the clearing and removal of obstructions and normal minimal trench cuts shall be made for the installation of pipes. Excavate trenches of sufficient width for proper installation of the work. Keep the trench free from water until pipe joint material has hardened. The presence of ground water in the soil, the necessity of sheeting a bracing or the removal of unsuitable material for pipe support shall not constitute a condition for which any increase may be made in the Contract Price. Grade trenches evenly to insure uniform bearing for the full length of all pipes. Cut holes as necessary for joints and joint markings. Excavate all rock, cemented gravel, old masonry or other hard material to at least four inches below the pipe at all points. Refill such space and all other cuts below grade with sand or fine gravel firmly compacted. All undesirable material obtained in excavating, such as rubble, broken concrete, large stones, etc., shall not be used for backfilling.

6. EXCAVATION ADJACENT TO TREES.

Special care shall be taken not to injure or damage the existing trees to be retained. Trees abutting sewer trenches, against which dirt may be piled shall be protected by a plank cover. If there is substantial root damage or removal, an appropriate amount of the trees top or branches shall be removed, by the use of good tree pruning practice, in order to compensate for the root loss and sustain the tree in a healthy growing condition.

7. SEWER PIPE CONSTRUCTION.

Sewer pipes shall be laid true to line and grade with a regular continuous grade between drainage structures. Pipes shall be vitrified clay, bell and spigot, sewer pipe. Pipes shall be laid on a uniform bearing base in the excavated trench and if a suitable base is not obtained by the normal trenching procedure, it is the obligation of the Contractor to provide for the adequate base by the installation and compaction of suitable material. Laying of pipe shall commence at the lowest elevation of the sewer line and construction shall progress uphill or toward the higher elevation and the bell end of each sewer tile shall be placed toward the uphill end of the sewer line. Care shall be taken to prevent walking on the sewer pipes, prior to the placing of at least one foot of backfill material.

Sewer pipes shall be properly connected to existing or new drainage structures in a neat and workmanlike manner.

8. SEWER PIPE JOINTS.

Cement mortar shall be trowelled into the lower portion of the bell of the pipe previously laid. The spigot of the tile to be laid shall be fully inserted and placed on the mortar bed. The remaining space between the spigot and bell shall be trowelled full of mortar and beveled to a distance of two inches (2") away from the outer edge of the bell. Care shall be taken to prevent foreign material or dirt from entering the sewer system.

9. BACKFILLING TRENCHES AND DRAINAGE STRUCTURES.

Backfilling shall commence as soon as practicable following the installation of the pipe. Suitable material free of refuse, lumps, rocks or organic material shall be carefully placed and compacted around the pipe and for the full width of the trench to a height one foot (1') above the top of the sewer pipe.

Backfill shall be replaced in layers not exceeding twelve inches (12") in depth and each layer shall be compacted, by the use of mechanical compactions to the satisfaction of the Authority.

Drainage structure shall be backfilled in accordance with this section except that backfilling shall be delayed until 24 hours after the construction if a brick structure is constructioned.

10. DRAINAGE STRUCTURE ADJUSTMENTS.

The Contractor shall adjust the existing drainage structures (manholes and catch basins) as indicated on the drawings. The Contractor shall provide all materials necessary to adjust these structures to the elevations indicated and shall provide for and install the necessary assemblies, covers, grates, etc.

11. RECONSTRUCT CATCH BASIN.

The Contractor shall revise the catch basin indicated on the plan from the existing type to the ring casting and metal grate casting type. Remove only that part of the existing catch basin which will not permit construction of the grating type catch basin and those portions which are unsound. Construction of the removed portions and to the new elevation indicated shall be in accordance with Section 12 "Catch Basins" of this Division.

12. CATCH BASINS.

New catch basins shall be constructed at all locations indicated on the drawings and the flow channel or invert, of the serving sewer tile shall be a minimum of three feet six inches (3'6") below the ring elevation of the structure. The ring elevation shall be located at finished grade.

Catch basins shall have a minimum inside diameter of 24" and may be brick of the type No. 3-A in accordance with the Catch Basins*Details Standard of the City of St. Paul, Minnesota or Concrete Block or precast Reinforced Concrete all in accordance with the appropriate portions of Section 16 of the Specifications for Street and Sewer Constructions. If Reinforced Concrete or Concrete Block catch basins are to be constructed, details of same shall be submitted to the Authority for approval.

13. MANHOLES.

New manholes shall be constructed at locations indicated on the drawings and the ring elevation shall be located at the finished grade. Manholes may be brick of type No. 1 in accordance with the Manhole Details Standard of the City of St. Paul, Minnesota or Concrete Block or precast Reinforced Concrete all in accordance with the appropriate portions of Section 16 of the Specifications for Street and Sewer Construction.

Care shall be taken to build manholes, on existing lines, in such a manner as to provide a satisfactorily junction to the existing main and to any incoming lines.

If Reinforced Concrete or Concrete Block manholes are to be constructed, details of same shall be submitted to the Authority for approval.

14. CASTINGS FOR MANHOLES AND CATCH BASINS.

Only new ring and grate or cover castings shall be used at locations where they are indicated to be installed. At locations where adjustments are indicated, the reuse of castings will be allowed unless a type of casting in place is not the type specified for use. In such cases, new castings shall be provided by the Contractor.

All new castings shall be gray iron in accordance with Section 2.69 of the Specifications for Street and Sewer Construction.

GENERAL SPECIFICATIONS

Drawings No.	Date	Title

TECHNICAL SPECIFICATIONS

EXCAVATING, FILLING AND GRADING.

SITE IMPROVEMENTS (WALKS, SURFACED AREAS, FENCES, ETC.)

LANDSCAPE PLANTING

ELECTRICAL

SEWER

Division

EXCAVATING, FILLING AND GRADING

June 1, 1959

SCOPE OF WORK.

This Division includes excavating, filling, grading and related items required to complete the work indicated on the drawings and specified; within the grading limit line, except:

1. filling under concrete first floor slabs on ground, specified in Division CONCRETE:
2. excavation and backfill for utilities, specified in Division concerning UTILITIES (SEWERS, WATER AND GAS):
3. placing of topsoil and required excavation in connection with planting, specified in division LANDSCAPE PLANTING:
4. excavation and backfill in connection with electrical distribution which is specified in the division concerning ELECTRICAL DISTRIBUTION.

BENCH MARKS AND MONUMENTS.

Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed.

FINISHED GRADES.

The words "finished grades" as used herein, shall mean the grades indicated by the contours and spot elevations shown on the drawings. Should finished grades shown by spot elevations conflict with those shown by contours, the spot elevation shall govern. Where not otherwise indicated, Project Site areas shall be given uniform slopes between points for which finished grades are shown, or between such points and existing grade, except that vertical curves or roundings shall be provided at abrupt changes in slope.

SUBGRADE.

The word subgrade shall mean the grade 6" below the finished in areas of lawn and planting and shall mean the grade of the underside of the surfacing, as established by the finished grade and the surfacing details, in areas to be surfaced.

TREES.

a. Trees to Remain. Protect trees which are to remain, as so indicated on the drawings or as further directed by the Authority or Representative, by the erection of suitable temporary fences, or other suitable means - all as approved by the Authority. Remove dead or interfering branches as directed without injury to trunks. All bruises or injured cambium and all cuts having an area of 3 square inches shall be paint treated with a suitable material immediately following damage. All cuts shall be made flush with the branch or trunk from which it was removed. Perform no excavation or grading below the existing grade, within the spread of branches except as necessitated by surfacing construction and utility trenching. Light no fires under or near any tree to remain and place no materials or debris within the spread of branches. No equipment storage or other practices will be permitted that would, in any way, damage the roots or branches.

b. Trees to be Removed. Remove all shrubs and all trees indicated for removal from the Project limits. Removal all stumps and roots of trees to be removed to a clear depth of not less than 2 feet below finished grade. All material resulting from the clearing and grubbing here specified shall become the property of the Contractor and shall be disposed of by him. Burn no material on the premises without special permission from the Authority or Representative and in compliance with applicable laws and regulations.

STRIPPING OF TOPSOIL.

No stripping and stockpiling of topsoil for reuse will be permitted as a portion of the 6 inches of topsoil to be placed in this Contract.

EXCAVATION.

a. Obstructions. Remove to a minimum depth of 2 feet below finished grade all existing walls, floors, curbs, pavements, walks and other improvements unless shown to be retained on the Project. Clean out any existing dug wells, cisterns, and other similar structures, and fill with granular material firmly compacted. Plug with concrete or masonry the open ends of abandoned sewers encountered in any excavation.

b. Should latent soil or other conditions require changes, the Contract Price shall be adjusted. See GENERAL CONDITIONS - CHANGES.

c. Shore, sheet and/or brace excavations as required to maintain them secure. Remove shoring as the backfilling progresses, but only when banks are safe against caving. Such shoring shall not constitute a condition for which any increase may be made in the Contract price except that when sheeting is left in place on written order of the Authority or Representative, the Contract Price will be adjusted.

d. Drainage. Keep excavations free from water. Do not discharge water from excavations onto privately owned property nor when harmful erosion will result. Presence of ground water in the soil shall not constitute a condition for which any increase may be made in the Contract Price.

f. Frost Protection. Make no excavations to the full depth indicated when freezing temperature may be expected, unless the footings or slabs can be poured immediately after the excavation has been completed. Protect the bottoms so excavated from frost if placing is concrete is delayed.

g. Disposal. Remove from the site, and dispose of, all debris and all excavated materials not suitable or needed for fill.

h. Unsanitary conditions encountered shall be corrected or removed entirely.

BACKFILLING, FILLING AND GRADING.

a. Grades. Do all cutting, filling, backfilling, and grading required to bring the entire Project area to finished grades as follows:

1. For surfaced areas, including walks, recreating areas and sitting areas, to the underside of the respective surfacing, as fixed by the finished grades.

2. For lawn and planted areas, to six (6) inches below finished grade. Provide roundings at top and bottom of banks and at other breaks in grade.

3. Supply and place six (6) inches of topsoil as definied in the division LANDSCAPE PLANTING, for all lawn and planted areas, which shall bring this area to finished grade. Topsoil shall be placed on the entire area within this property lines of the park other than walk areas and other such construc-

tion. The "multi-use court" and other such areas indicated as N.I.C. shall receive topsoil and shall be planted as lawns.

b. Fill under Surfaced Areas. All areas below bituminous or concrete slabs on the ground shall have a minimum of 8" pit run gravel or coarse sand free from perishable rubbish, compacted and level to receive slab, or as detailed.

If natural earth is of granular structure of same material as specified above, no additional material will be required.

Where fill is required to raise the subgrade to the elevations shown, it shall be made in horizontal layers not to exceed 8" in depth, (moistened by sprinkling to the optimum moisture content and compacted with the approved equipment until its dry density is not less than 90% of the Standard Proctor Density as determined by standard laboratory compaction tests).

Materials and method of compaction must be approved by the Authority before starting work.

The Authority shall employ the services of an approved testing laboratory and pay for these services.

c. Backfilling. Backfill excavations below subgrades with similar materials to that removed in excavation, free from rubbish or other unsuitable material.

Place backfill and compact as specified above for Fill Under Surfaced Areas.

d. Compaction Tests. Contractor shall notify the approved testing laboratory 36 hours prior to starting compaction.

The Contractor shall arrange to have a representative of the testing laboratory on the job during the period of compaction and Proctor tests shall be made for every 18" in depth of fill and at intervals not more than 50'0" in both directions of the compaction area.

e. Filling over Areas Outside of Buildings (Except Surfaces Areas)

1. Preparation of Fill Areas. Remove all debris subject to rot or corrosion. Fill holes and minor depressions and compact such filling thoroughly.

2. Fill materialshall be free from debris, perishable or combustible material, sod, frozen earth, and stones larger than 6 inches in maximum dimension. Rock or broken masonry larger than 6 inches shall be well distributed in earth or other fine material, with interstices filled, and shall not be placed within two (2) feet of finished grade, or as directed by the Authority.

3. Compaction. Place fill material in uniform, approximately horizontal layers, not more than 8 inches thick measure loose, over the full area involved. Moisten each layer if and as necessary to insure good bonding and maximum compaction by rolling as below specified. Work the surface with suitable equipment to mix the fill materials and secure uniform moisture content.

Compact each layer fully and uniformly by making not less than ten (10) passes with a fifteen(15) ton roller. Compact top layer with a smooth-wheel roller weighing not less then 10 tons, continuing such rolling until there is no creeping ahead of the roller. In locations where it is impracticable to use the equipment just specified, compact the fill thoroughly by moistening and mechanical tamping.

f. Deficiency of Fill Material. Provide clean, suitable earth for requisite additional fill if a sufficient quantity of suitable material therefor is not available from the required excavation on the site.

g. Correction of Subgrade. Bring to required subgrade levels any areas where settlement, erosion or other grade changes occur, and compact.

DISPOSITION OF UTILITITES.

a. Rule and regulations governing the respective utilities shall be observed in executing all work under this heading.

b. Active utilities shown on the drawings shall be adequately protected from damage, and removed, relocated or adjusted only as indicated or specified.

c. Existing water, gas and sewer lines at demolished structures have been capped within the building lines by other prior to award of this Contract, and gas and water have been turned off at the street. It will be the obligation of this Contractor to adequately protect, cap, or otherwise care for any active utility lines discovered at the time of construction.

GENERAL.

The grading operations shall be complete and all lawn areas shall be free of rubbish, debris and other such materials prior to the installation of the six (6) inches of topsoil and prior to the seeding.

Division

SITE IMPROVEMENTS (WALKS, SURFACED AREAS, FENCES, ETC.)

June 1, 1959

SCOPE OF WORK.

a. Work Included. This Division includes surfaces areas, walks, steps, fences, tree wells, and all other surface improvements apart from building except as below stipulated.

b. Work Not Included. This Division does NOT include:

1. Grading and related work, which are covered by the Division, EXCAVATING, FILLING AND GRADING.

2. Work specified in the Division, LANDSCAPE PLANTING.

3. Utility installations, which are covered by other Divisions of these Specifications.

c. Limits of Work. The Drawings show project site boundary lines for the purpose of identification; not all contract work is necessarily confined within those lines.

d. Coordination. The work specified in this Division shall be corrdinated carefully with Landscape Planting and with overheadand underground utility work covered by other Divisions.

SUBGRADE FOR SITE IMPROVEMENTS.

a. Grading. Do any necessary grading in addition to that performed in accordance with the division, EXCAVATING, FILLING AND GRADING, to bring subgrades, after final compaction, to the required grades and sections for site improvements.

b. Preparation of Subgrade. Loosen exceptionally hard spots and recompact. Remove spongy and otherwise unsuitable material and replace with stable material. Fill and tamp traces of utility trenches.

c. Compaction of Subgrade. Compact the subgrade of all surfaced areas with appropriate compacting equipment by other means to such degree as will insure against settlement of the superimposed work to 90% of Standard Proctore

d. Checking Subgrade. Maintain all subgrades in satisfactory condition, protected against traffic and properly drained, until the surface improvement is placed. Immediately in advance of concreteing, check subgrade levels with templates riding the forms, correct irregularities, and compact thoroughly any added fill material. Correct irregularities, compacting thoroughly any fill material.

e. Utility Structures. Check for correct elevation and position all manhole covers, valve boxes, and similar structures and make, or have made, any necessary adjustments in such structures.

CONCRETE MATERIALS.

a. Portland cement shall conform to A.S.T.M. Specification C150-53, Type I or Type III

b. Aggregates for concreteshall conform to A.S.T.M. Specification C33-54T.

1. Fine aggregates shall be natural sand or, subject to the approval of the Authority, sand prepared from stone, gravel, or other inert materials having similar characteristics.

2. Coarse aggregates shall be crushed rock or gravel or, subject to the approval of the Authority, a combination of these materials. Maximum size of pieces shall be 1 1/2 inch.

c. Water shall be clear, and free from injurious amounts of oil, acids, alkalie, organic materials, or other deleterious substances.

d. Steel reinforcing bars shall be deformed bars conforming to one of the following A.S.T.M. Specifications: A 15-54T, A 16-54T, or A 160-54T. Deformation shall conform to A.S.T.M. Specification A 305-53T. Reinforcement shall be free from scale, rust, or coating which will reduce the bond to the concrete.

e. Welded steel wire fabric for concrete reinforcement shall conform to A.S.T.M. Specification A 185-54T.

f. Premolded joint filler shall be of non-extruding type meeting A.S.T.M. Specification D 544-52T except that premolded joint filler used in concrete walk construction may be of either non-extruding or resilient type.

g. Poured Joint Filler shall conform to A.A.S.H.O. Specification M-18, Type A or to Federal Specification SS-F-336a.

h. Storage of Concrete Materials.

1. Cement. Provide suitable means for storing and protecting the cement against dampness. Bags of cement which have become partially set or which contain lumpts of caked cement shall be rejected.

2. Aggregates shall be so stockpiled as to prevent segregation of component sizes and intrusion of foreign matter. Aggregates of different gradings, shall be stored separately.

PROPORTIONING AND MIXING CONCRETE.

a. Concrete for site improvements shall be a mix of proportioned fine and coarse aggregate with portland cement. Minimum cement content shall be six bags per cubic yard of concrete and maximum water content shall be six U.S. gallongs per sack of cement, including moisture in aggregates.

b. Contractor may use option as specified in the section MIXING CONCRETE.

c. Proportioning Aggregates. The ratio of fine to total aggregate shall be such as will produce a dense, homogeneous, and workable mixture, which can be placed without segregation of materials and which will attain at 28 days a minimum compressive strength of 3,000 pounds per square inch as established by laboratory test.

d. Measurement of Materials. Measure concrete materials by such weighing methods as will permit accurate control of proportions and easy check thereof at all times.

e. Mixing Concrete. Mix all concrete in an approved power batch mixer, except as otherwise specifically authorized by the Authority. Mix for a period of not less than 1-1/4 minutes after all materials are in the drum.

f. Ready-Mixed Concrete. Certificates shall be furnished from the mixing plant that concrete has a 28-day compressive strength of at least 3,000 lbs. per square inch, when tested in accordance with methods described in A.S.T.M. Standard C 39-49. No change shall be made in materials or the established mix without prior approval of the Authority. Ready mixed concrete shall be transported to the site in transit mix or agitator trucks having watertight drums loaded not in excess of rated capacities. The concrete shall be delivered and discharged within one (1) hour after

the cement is in the mixer. Concrete which, when delivered, is not plastic and workable will be rejected.

g. Ready Dry-Batched Mixes. Ready dry-batched mixes will not be permitted.

h. Retempering of concrete that has partially hardened, that is, remixing with or without additional cement, aggregate or water, will not be permitted.

PLACING CONCRETE.

a. Subgrade. Place concrete only on a moist compacted subgrade or base, free from loose material. Place no concrete on a muddy or frozen subgrade.

b. Forms. All forms shall be free from warp, tight enough to prevent leaking of mortar, and substantial enough to maintain their shape and position, without springing or settlement, when concrete is placed or vibrated. Forms shall be staked, braced and/or tied together securely. Forms shall be clean and those for surfaces to be exposed shall produce a smooth, even finish without fins or board marks.

1. Set forms for slabs on ground at finished grade; check for line and grade and correct as necessary immediately before concreting. Provide uniform bearing for such forms. Use flexible or curved forms when edge of slab is to be curved to a radius of 100 feet or less.

c. Reinforcing bars shall be accurately placed, and securely supported and fastened to prevent movement during placement of concrete. Wire fabric shall have a minimum side and end lap of 6 inches.

d. Concrete shall be depositedso as to require as little rehandling as practicable. Placing shall be continuous between transverse joints or in individual sections of the work. Spade concrete thoroughly along forms and expansion joints, and work carefully into corners and around reinforcement. Tamp and screed to a dense mass. Mix and place no concrete when the air temperature is below freezing. If the temperature may be expected to fall below 40 degress F. within 24 hours after concrete is placed, heat water and aggregates to bring the temperature of concrete mix to at least 50 degrees F.

CURING CONCRETE.

a. Covering. Except as otherwise specified, cure all concrete by the application of a transparent, impervious membrane of a type approved by the Authority. The liquid shall contain a fugitive dye and shall be of such composition as not to react with the concrete nor alter appreciably its natural color. Apply the liquid immediately after free water has disappeared from the finished surface of the concrete; apply the form of a fine mist and in such manner as to cover the surface with a uniform, flexible film, ample to seal the surface thoroughly, and without marring the concrete finish. Keep workmen, equipment, and materials off the membrane for 3 days after applying.

b. Cold Weather Protection. Whenever the air temperature may be expected to reach the freezing point, spread straw or other blanketing material to sufficient depth to keep concrete from freezing, or provide enclosure and heating device capable of maintaining concrete temperature of at least 50 degrees F. Maintain such protection for at least five (5) days. The Contractor shall be responsible for removing and replacing any concrete injured by frost action.

CONCRETE WALKS.

a. Scope. All concrete walks shall be constructed in accordance with this Specification.

b.

b. Slopes. Provide grade stakes not more than 25 feet apart for all walk construction. Check tops of forms for grade before placing concrete. Introduce short vertical curves in walks as shown on the drawings or at points where change in walk grade exceeds 2%. Provide 1.4 inch per foot crown or cross slope in the direction indicated on the drawings, or in the direction of natural drainage. Pitch walks to adjacent storm sewer inlets and make slight adjustments in slopes at walk intersections as necessary to provide proper drainage and a uniform walk surface.

c. Dimensions. Concrete walks shall be of one-course construction, 4 inches thick or 6 inches thick and of widths as shown on the drawings.

d. Finish. Tamp and screed the concrete true to grade and section, bringing sufficient mortar to the surface for finishing and given a broomed finish. Round all edges, including those along expansion joints and grooves, to a 1/4 inch radius. Where walks terminate at curbs, finish the walk 1/4 inch above the curb, providing a neat bevel.

e. Expansion Joints. Provide 4/2 inch transverse expansion joints, with premolded filler, not more than 30 feet apart; also at walk junctions and intersections, at top and bottom of steps, and where walks abut curb returns, buildings, platforms or other fixed structures, or terminate at curbs. At walk junctions and intersections, the required expansion joints shall be located at the end of each rounding or fillet. Expansion joints shall be at right angles to the slab and extend the full depth thereof. The premolded filler shall extend to within 1/4 inch of the walk surface.

f. Grooves. Between expansion joints, cut grooves 1/8 to 1/4 inches wide and at least one inch deep, as follows:

1. In walks not wider than 6 feet, transverse grooves with a spacing equal to that of the walk width.

2. In walks wider than 6 feet, transverse grooves with spacing equal to half the walk width, and a longitudinal groove on the center line of the walk.

g. Protection. Remove no forms for 24 hours after pouring concrete. Protect concrete walks from pedestrian traffic for a period of 3 days after pouring.

CHAIN LINK FENCES.

a. Provide where shown on Plans, the chain link fence hereinafter described, to be 42" high above grade, complete with gates as shown, and necessary corner braces.

1. All supports and fittings shall be hot-dipped galvanized after fabrication. Zinc coating on fabric shall be capable of withstanding six-one-minute immersions under the Preece Test for uniformity of coating, and shall weigh not less than 1.2 oz. per square foot of actual surface. If present to any considerable extent, frozen joints, uneven and poorly formed mesh, roughness, blisters, sal-ammoniac spots, bruises and flaking shall constitute grounds for rejection.

2. Ferrous materials, excepting malleable iron, shall be open hearth steel containing not less than 0.2 per cent copper ladle analysis, provided that posts may be high carbon steel. The fabric shall be chain link type, 3-1/2 feet wide as shown on the plans and woven of No. 11 wire. United States Steel Wire gauge, in 2 inch diamond mesh. Top and bottom edges shall have knuckled finish.

3. Intermediate posts shall have a rolled open section, either H.I. or U shaped, weighing not less than 1.80 lbs. per foot. End and corner posts shall have a tubular square or round section not less than 2 inches outside each weighing not less than 3.65 lbs per foot. Posts shall have approved caps and

connections for top rail.

4. The fence shall have a top rail of tubular section, not less than 1-3/8" O.D. weighing 1.68 lbs. per foot. Top rail shall be continuous through intermediate posts, or malleable iron post caps, and shall be provided with approved malleable iron or pressed steel connections to end or corner posts. Approved expansion joints shall be provided at intervals not exceeing 50 feet; otherwise length shall be coupled with approved sleeve couplings.

5. Posts shall be spaced uniformly and not farther than ten (10) feet on centers; they shall be plumb in each direction, and in perfect alignment. Spot weld fabric to posts, minimum 30'0" o.c. 4 times and welds painted.

6. Post setting shall be concrete 2'10" deep with top diameter 10 inches and bottom diameter 12 inches, and posts set 6 inches above bottom. All applicable requirements of Division "Concrete Work" shall apply to the concrete settings. The top of the setting shall extend 2 inches above adjacent finished grades, and shall be trowelled to a smooth bevelled surface. Fence posts adjacent to play area shall be set the same as above and as indicated on the drawings.

7. After the concrete posts have set, a concrete one foot (1') wide walk shall be constructed under all fences in accordance with the concrete walk specifications with the exception that expansion grooves shall be provided at intervals of every two feet.

8. After the concrete has set and the posts have become rigid., the top rail shall be placed and the fabric shall be placed flush with the top of the top rail and with bottom 2 inches above finish grade; it shall be tightly stretched to eliminate all sags and buckles, and laced to posts every 14 inches, and toptop rail efery 24 inches with No. 6 galvani ed wire or other rust-resisting material. Ends of lacing wire shall be turned back so as to eliminate exposed ends.

9/ Provide shop drawings to Authority for approval.

CLEAN UP

All trash and surplus materials of every character resulting from the work of this Division shall be removed from the site. Any concrete, bituminous substances or other materials spilled on pavement, walks or structures shall be completely removed.

7-17-58

draft Oct 29, 57

HOUSING AND REDEVELOPMENT AUTHORITY
OF THE CITY OF SAINT PAUL, MINNESOTA

WESTERN REDEVELOPMENT AREA

PRELIMINARY DEVELOPMENT PLAN

FOR

WESTERN PARK

In accordance with the revised Redevelopment Plan for the Western Redevelopment Area U.R. Minn. 1-2, a park is planned to be constructed on parcel 7. The Housing and Redevelopment Authority is obligated to furnish the land and construct the necessary facilities to develop a park. The costs incurred will be borne by the Authority and the park will be dedicated to the City of Saint Paul. All costs incurred in the development are claimed as a non-cash grant-in-aid for the Western Redevelopment Area.

Location:

Western Park, a 4.62 acre parcel of land which is approximately 232 feet wide and 863 feet long, extending in an east-west direction from Marion Street to the projected line of Farrington Street in Saint Paul. It is legally described as Lot 2, Block 4, of the Western Area Addition to the City of Saint Paul, Minnesota.

General Development Determinations:

The location, and character of development is patterned to retain the existing landscape amenities of the community, complement the new housing development and assist in satisfying the park and recreational needs of the community, and primarily the community within the limits of the Western Redevelopment Area.

Parcel No. 10, which lies immediately west of the park, is intended for use as a public grade school site. The park development is intended to complement, not supplant, the recreational development usually associated with the construction of a grade school. Active-play equipment areas, including swings, slides, merry-go-rounds, etc. and the large organized-play areas, such as necessary for football and softball, will not be included. The school parcel will be planned to be of ample size to accomodate such recreational uses. Facilities to be installed in the park are planned to satisfy generally the passive recreation needs of all age groups in the immediate surrounding neighborhood. Housing development will be constructed immediately north and south of the park by the National Redevelopment Corporation of Cleveland. The preliminary plans for those housing areas indicate the construction of tot recreation facilities immediately adjacent to the dwelling units. Similar facilities will not be duplicated in the park.

Walks are planned to serve the major pedestrian circulation demands. Connections are planned to the prominent points of access to the north and south. East-west walks are intended to serve thru-pedestrian traffic from the school and residential development on the west to the planned commercial district and Capitol Approach on the east without traversing directly through the newly planned residential development.

Facilities:

The following outline indicates the site and building construction planned with some indication of the purpose, character and qualify standards. The attached Preliminary Plans indicate the general arrangement of site facilities, building structures and planting.

A. Site.

1. Surface Removals: All streets, walks and curbing will be removed prior to this construction.
2. Grading Filling: Low areas including old building excavations and streets will be filled and compacted as necessary to provide adequate surface drainage. No major grading will be done. Filling will be to a subgrade elevation 6" below finish grade.
3. Sewer Revisions: All existing manholes will be adjusted as necessary to the proposed grading. Existing drop inlets will be abandoned in an accepted manner or adjusted and/or reconstructed to serve the surface drainage. New storm sewers will be constructed as necessary to prevent surface runoff to the adjacent residential parcels.
4. Water Revisions: Cut-offs to the existing water services will be made prior to this construction. Fire hydrants will be adjusted as necessary to adapt to the proposed grading. No water service will be provided with the exception of that necessary to accommodate the planned wading pool.

5. Lawns: Topsoil will be added to a depth of 6" above the existing grade. The major portion of the area will be seeded. Sodding will be placed in areas where an immediate lawn is necessary.

6. Surfaced Recreation Areas: Two bituminous surfaced areas will be constructed. The one large multi-purpose court will serve such uses as badminton, volley ball, etc. Shuffle board courts will also be bituminous surfaced.

7. Major circulation walks will be 6' wide and will be constructed of concrete.

8. Wading Pool: One wading pool will be located immediately west of the shelter building. A complete chlorination and filteration system will be utilized. Adjacent to the pool a concrete terrace will be installed. Immediately surrounding the surface a 30" chain link fence will be placed. A solid 6' high screen will be constructed on the north side of the pool area to provide a buffer between the concentrated play area and the adjacent proposed housing.

9. Tot Lot Equipment: A few pieces of tot lot equipment will be installed in the area west of the shelter structure. Equipment will be solidly anchored to footings and the style will be simple climbing structures and sculptured concrete recreational pieces. Beach sand will be used for surface surrounding the tot equipment.

10. Fencing: The installation of fences will be limited to only that which may be necessary to assure an adequately safe recreation condition. Places such as the wading pool, multi-purpose court, and the horse-shoe area will be provided with fences. The north and south limits of the park will be bounded by a hedge and/or a fence.

11. Lighting: Interior lighting will be placed on 15' to 20' ornamental standards adjacent to the main walks to provide a well lighted condition. No flood lighting will be provided.

12. Benches will be provided and located throughout the park. They will be attached to suitable footings.

13. Planting: Although the parcel, in its existing condition, is well wooded, evergreen and deciduous trees and shrubs will be added to provide the necessary screens, pedestrian controls and sound inhibitor. Plant materials will be placed only to the extent necessary to provide a park-like character to the parcel.

B. Structures.

1. One shelter-structure will be provided. A small enclosed area will be provided on the north end of the building which will be utilized for maintenance equipment, storage and the filtration system for the pool. The remainder of the shelter building will be open with only a roof for sun and rain protection and a screen wall extending in a north-south direction. Such a wall will provide the necessary window protection. The wall will be placed near

the center of the building extending in a north-south direction to provide the necessary wind protection. Benches will be provided within the shelter.

H-692A
(2-55)

HOUSING AND HOME FINANCE AGENCY
URBAN RENEWAL ADMINISTRATION

REQUISITION AND VOUCHER FOR CAPITAL GRANT PROGRESS PAYMENT

FOR USE OF HHFA D

D.O. Voucher No. _____

HHFA Voucher No. 304-57

LOCAL PUBLIC AGENCY
HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF SAINT PAUL, MINNESOTA

ADDRESS
1745 City Hall and Court House
St. Paul, Minnesota

PROJECT LOCALITY
St. Paul, Minnesota

PROJECT NAME
Western

PROJECT NO.
UR Minn. 1-2

CAPITAL GRANT REQUISITION NO.
2

CONTRACT NO.
UR Minn. LG-2

A Capital Grant progress payment under the contract cited above is requested in the amount of $24,720, which amount is in accordance with the applicable Justification of Requisition for Capital Grant Progress Payment submitted herewith.

IT IS HEREBY CERTIFIED THAT (a) salary and wage payment provisions of said contract have been complied with, (b) all required insurance and bonding coverages have been obtained and are in force, and (c) the information contained herein and submitted herewith is true and correct.

HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF SAINT PAUL, MINNESOTA
(Local Public Agency)

October 19, 1956
(Date)

Signed by Benson C. Brainard

Title Secretary

ALL SPACES BELOW FOR USE OF HOUSING AND HOME FINANCE AGENCY

I CERTIFY that this requisition and the documents required to substantiate it have been examined and have been found to be legally satisfactory. I FURTHER CERTIFY that, in my opinion, all conditions of a legal nature precedent to a Capital Grant Progress Payment under the aforesaid contract in the amount approved below have been waived or fully complied with.

_____
(Date)

Sign Original Only

_____
Regional Counsel

I hereby determine that all conditions of the aforesaid contract precedent to a Capital Grant Progress Payment thereunder in the amount of $_____ have been waived or fully complied with, and I hereby approve a payment in said amount.

_____
(Date)

Sign Original Only

HOUSING AND HOME FINANCE ADMINISTRATOR

By _____
Regional Administrator, Region _____

MEMORANDUM

ACCOUNTING CLASSIFICATION

D.O. SYMBOL	DESCRIPTION	AMOUNT
	86X4034 Urban Renewal Fund, Office of Administrator, Housing and Home Finance Agency	$

Paid by Check dated _____, 19____, on the Treasurer of the United States for $_____, in favor of _____.

Form Approved
Budget Bureau No. 63-R877

H-693
(2-55)

HOUSING AND HOME FINANCE AGENCY
URBAN RENEWAL ADMINISTRATION

JUSTIFICATION OF REQUISITION FOR CAPITAL GRANT PROGRESS PAYMENT

LOCALITY: St. Paul, Minnesota
CONTRACT NO.: UR Minn. L6-2
PROJECT NO.: UR Minn. 1-2
THIS STATEMENT RELATES TO CAPITAL GRANT REQUISITION NO.: 2
DATA HEREIN IS COMPUTED AS OF: June 30, 19 56

See Instructions on Reverse Side of This Form.

PART A. COMPUTATION OF PAYMENT REQUESTED

LINE NO.	DESCRIPTION		AMOUNT
A 1	Total disbursements by Local Public Agency to date for items chargeable to Item 1 of Gross Project Cost		$ 3,064,683
2	Latest accepted estimate of Item 1 of Gross Project Cost		4,202,860
3	Latest accepted estimate of total Project Capital Grant		2,300,363
4	Percentage of estimated total of Item 1 of Gross Project Cost disbursed to date *(line 1 divided by line 2)*	72.9%	
5	Aggregate capital grant progress payments permissible *(line 3 times line 4 times .75)*		$ 1,257,724
6	*(Less)* Previous capital grant progress payments		983,004
7	*(Equals)* PROGRESS PAYMENT REQUESTED HEREWITH *(line 5 minus 6)*		$ 274,720

PART B. PROGRESS IN ACQUISITION OF REAL ESTATE INCLUDED IN ITEM 1 OF GROSS PROJECT COST

LINE NO.	DESCRIPTION	ESTIMATED COST (a)	ACTUAL COST TOTAL (b)	ACTUAL COST PAID (c)
B 1	Latest accepted estimate of total real estate purchases	$ 3,179,550	$ 2,477,511	$ 2,477,511
2	Title acquired and payment made in full	2,725,262	98,100	92,090
3	Title acquired and payment made in part	107,910	45,371	45,371
4	Title acquired but no payment other than deposit has been made	49,908	2,620,982	2,614,972
5	Total real estate acquired to date *(sum of lines 2, 3 & 4)*	2,883,080		
6	Percentage acquired, based on estimated cost *(line 5, col. a divided by line 1, col. a)*	90.7 %		
7	Title to be acquired *(line 1 minus line 5)* [1]	$ 296,470		

PART C. PROGRESS IN PROVISION OF LOCAL GRANTS-IN-AID

LINE NO.	DESCRIPTION	LATEST ACCEPTED ESTIMATE (a)	AMOUNT PROVIDED TO DATE (b)
C 1	Cash grants-in-aid	$ 341,640	$ 145,000
2	Cash value of donated land	-0-	-0-
		LATEST ACCEPTED ESTIMATE OF TOTAL	PERCENT COMPLETED
3	Demolition and removal work	$ -0-	-0-
4	Site improvements	144,260	-0-
5	Supporting facilities	1,346,911	See Statement

It is hereby certified that all terms of the contract and all requirements thereunder have been complied with.
(If there are any exceptions check here [ ] and attach a statement describing the exceptions fully.)

HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF SAINT PAUL, MINNESOTA
(Name of Local Public Agency)

(Date)

By Benson C. Brainard

Title

If there are any circumstances preventing the completion of planned land acquisition, attach a statement describing such circumstances fully.

DETAILED INSTRUCTIONS FOR COMPLETING FORM H-693

In the upper right-hand corner of the form enter the name of the locality in which the project is located, the number of the pertinent Loan and Grant (or Capital Grant) contract, the project number, and the requisition number. The requisition number to be entered here is the same as that given to the capital grant requisition which this statement supports. All entries should relate to, or extend through, the same cutoff date. Enter this cutoff date in the space marked "Data herein is computed as of_____, 19___."

PART A. COMPUTATION OF PAYMENT REQUESTED

Line A 1. Enter total cash disbursements made by the Local Public Agency, through date shown at top of form, for items chargeable to Item 1 of Gross Project Cost.

Line A 2. Enter the latest accepted estimate of Item 1 of Gross Project Cost for the entire project as shown on Form H-628, *Summary of Project Expenditures Budget.*

Line A 3. Enter whichever is the lesser of the following: (a) the amount of the Project Capital Grant specifically stated as a dollar amount in Part I of the Title I contract for financial assistance pertaining to the project, or (b) the amount of the Project Capital Grant as shown in the latest accepted Form H-625, *Estimate of Gross and Net Project Costs and Financing Plan.*

Line A 4. Self-explanatory.

Line A 5. Multiply the percentage on line 4 by the amount shown on line 3. The resulting amount represents the cumulative amount of capital grant payments which would be permissible with respect to the project if no retention were made by the Government for final payment. Multiply this amount by .75 to derive the aggregate payments permissible, after retention by the Government of 25%. Enter this amount.

Line A 6. Enter the sum of advance payments previously made on account of the capital grant for this project.

Line A 7. Self-explanatory.

PART B. PROGRESS IN ACQUISITION OF REAL ESTATE INCLUDED IN ITEM 1 OF GROSS PROJECT COST

Obtain the estimated cost figure to be entered in line B 1, column (a) from the latest approved Form H-628, *Summary of Project Expenditures Budget.* The same cost estimate as was assigned to a parcel of land in computing the total shown on line B 1, column (a) should be used for such parcel in computing each other entry in column (a) in which that parcel is included. Remaining entries in this part are considered self-explanatory.

PART C. PROGRESS IN PROVISION OF LOCAL GRANTS-IN-AID

Line C 1. Enter in column (a) the latest accepted estimate of total cash grants-in-aid to be provided for the project as shown in the latest accepted Form H-625. Enter in column (b) the total amount of funds which had been paid into the project as local grants-in-aid through the date shown at top of the form.

Line C 2. Self-explanatory.

Line C 3. Enter in column (a) the latest accepted estimate of the total net cost of demolition and removal work which will have been provided as non-cash local grants-in-aid by the time the project is completed. Enter in column (b) the percentage of the demolition and removal work which had been completed through the date shown at top of the form. (If the work consists of several jobs each constituting a separate grant-in-aid, and it is therefore not feasible to express progress by a single percentage, a reference may be made here to separate percentages of completion or other progress information presented in the accompanying statement on *Progress in Provision of Local Grants-in-Aid.*)

Lines C 4 and C 5. Enter for site improvements and for supporting facilities the latest accepted estimate of all improvements and all facilities and the overall percentage of completion of each.

HHFA-HLBB, Washington, D. C.

June 30, 1956

HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF SAINT PAUL, MINNESOTA

PROGRESS IN PROVISION OF LOCAL GRANTS-IN-AID -- UR MINN. 1-1 and UR MINN. 1-2

1. Cash Grants-in-Aid:

To date, $95,000 cash local grant has been provided for Project UR Minn. 1-1 and $145,000 for Project UR Minn. 1-2. The latest accepted estimate includes the following estimated amounts of local cash grants-in-aid:

	UR Minn. 1-1	UR Minn. 1-2
Cash local grants	$160,000.00	$240,000.00
Deficiency Cash Grant	200,825.00	101,640.00
	$360,825.00	$341,640.00

In addition to the amounts already provided as cash grants, the Authority has loaned $150,000 to the UR Minn. 1-1 Project Expenditures Account and $234,000 to the UR Minn. 1-2 Project Expenditures Account. Current indications are that total project expenditures for both projects will be less than the latest approved estimate. Such additional cash local grants as may be necessary will be made after land acquisition has been completed and when a clearer picture of the precise needs for grants is possible.

2. Cash Value of Donated Land:

(None)

3. Demolition and Removal Work:

(None as Non-Cash Grants-in-Aid)

4. Site Improvements:

There are no site improvements included as non-cash grants-in-aid for UR Minn. 1-1. Current plans indicate that work on the service road in the area of Rondo Avenue will be commenced in the fall of 1956.

5. Supporting Facilities:

The latest accepted estimate includes the following supporting facilities as non-cash grants-in-aid.

mistake

UR Minn. 1-1		UR Minn. 1-2	
Park	$ 62,133	Park	$ 69,613
School	273,042	School	395,193
Capitol Approach	307,563	Capitol Approach	882,105
Total	$ 642,738	Total	$1,346,911

this is value of non cash grant
land
cost is still est $75,000

The schools will not be provided until the latter stages of project development, when anticipated demand from project residents is more imminent. At present, the date of commencement of construction cannot be estimated.

The parks which are to be provided by the Authority will be developed in UR Minn. 1-2 in 1957 and in UR Minn. 1-1 in 1958 according to present schedules.

The development of the Capitol Approach, anticipated during project planning is virtually complete. Through June 30, 1956 the City of St. Paul has spent $3,109,996.45 for land acquisition and improvements. A total expenditure of $4,750,000 has been authorized representing a considerable expansion over original plans. Of the total expended to date (June 30, 1956) $2,709,745.85 has been spent since August 18, 1950, the prior approval date.

Through June 30, 1956 the State Veterans Service Building Commission has expended $4,162,806.09 on land acquisition and improvements including $1,319,289.15 on the Veterans Service Building. The Commission has spent $1,325,403.94 excluding expenditures for the building since the prior approval date.

The State has also started construction on the $6,000,000 State Highway Department Building and land acquisition for the $5,000,000 State Office Building, both to be located in the Capitol Approach area.

Housing and Redevelopment Authority

OF

THE CITY OF ST. PAUL,

MINNESOTA

OPINION AND CERTIFICATE OF COUNSEL
CONCERNING CAPITAL GRANT REQUISITION

1. I, the undersigned Attorney for HOUSING AND REDEVELOPMENT AUTHORITY OF THE CITY OF SAINT PAUL, MINNESOTA (herein called the "Local Public Agency"), have examined the record of all of its proceedings relative to Capital Grant Requisition No. 2 in the amount of $274,720 in connection with Project No. UR Minnesota 1-2, under Contract No. UR Minn. LG-2.

2. IT IS MY OPINION that said proceedings have been taken and said Requisition has been executed on behalf of the Local Public Agency by the proper officials, in form, manner and otherwise as authorized by law.

3. I HEREBY CERTIFY that

(a) No litigation of any nature is now pending or threatened (either in State or Federal courts) restraining or enjoining the Local Public Agency from undertaking and carrying out said Project, or in any manner questioning or affecting the validity of said Project, proceedings or Requisition, except a pending action in the District Court for Ramsey County, Minnesota entitled Housing and Redevelopment Authority of the City of Saint Paul, Minnesota vs. Allan E. Greenman, et al, involving among other things the constitutionality of the slum clearance provisions of the Minnesota Housing Act.

WITNESS my hand this 19th day of October, 1956.

Harold L. Ratchick

Attorney for Local Public Agency
Address: 1745 City Hall and Court House
St. Paul 2, Minnesota

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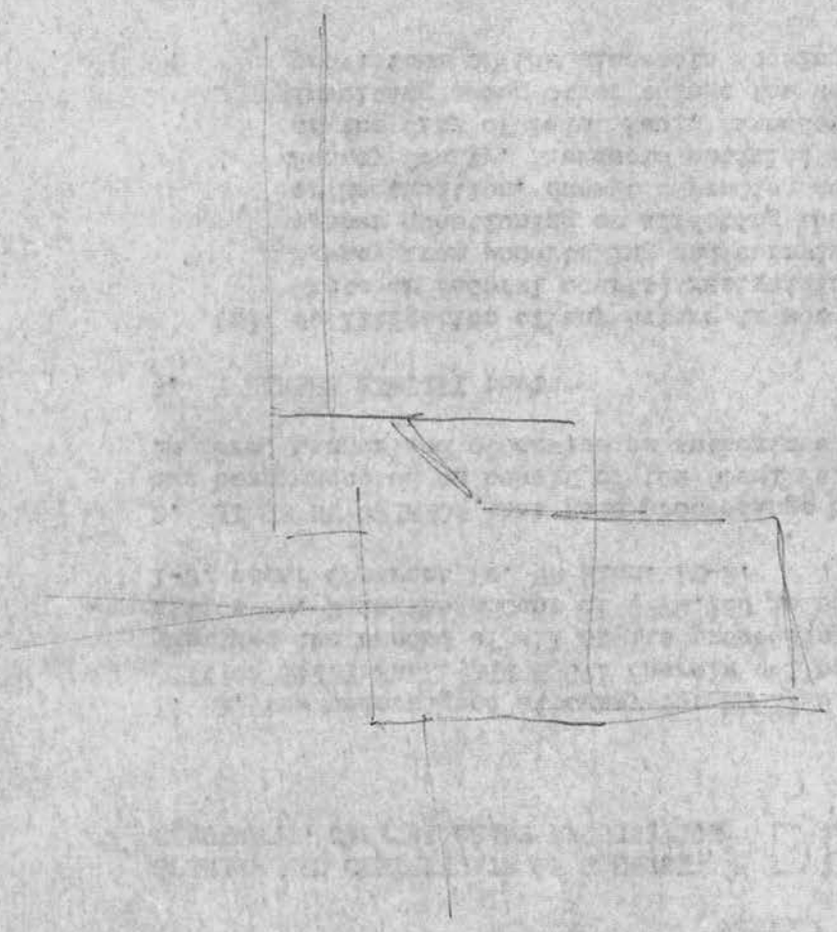
1956 OCT 22 AM 8 46

HOUSING & HOME FINANCE
AGENCY OA REGION IV



SPECIAL CONDITIONS

A. CONTRACTOR'S EMPLOYEES.

All work shall be performed by employees of the Contractor, or an approved Subcontractor, who are skilled craftsmen. Said employees shall be only those who are able to w ork in harmony with the employees of the Authority.

B. CONTRACTORS REVIEW OF LOCATION OF WORK.

It shall be the responsibility of the Contractor to promptly visit the project site and to be aware of the factors which may concern the work to be done.

C. INTERFERENCE OF CONTRACTOR'S OPERATIONS.

If other work is in progress which will interfere with this Contractor's operations, meetings shall be held with the Authority, and others concerned, in order to schedule the work. The Authority shall be in charge of determining such schedule and shall permit delay days if justified.

D. PROTECTIVE MEASURES.

Adequate protective measures shall be taken by the Contractor to prevent interruption of utilities on the project. All work, by the Contractor shall be protected from vandalism and any damage resulting from vandalism, up to the time of the Acceptance Inspection for each phase of work, shall be repaired by the Contractor at no additional cost to the Authority.

E. COMMUNICATIONS.

a. All notices, demands, requests, instructions, approvals, proposals and claims must be in writing.

b. Any notice to or demand upon the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Contract (or at such other office as he may from time to time designate in writing to the Authority), or deposited in the United States mail in a sealed, postage-prepaid envelope, or if delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office.

c. All papers required to be delivered to the Authority shall, unless otherwise specified in writing to the Contractor, be delivered to the Office of the Housing and Redevelopment Authority of the City of St. Paul, Minnesota, at 1745 City Hall and Court House, St. Paul 2, Minnesota, and any notice to or demand upon the Authority shall be sufficiently given if so delivered, or deposited in the United States mail in a sealed postage-prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said Office of the HOusing and Redevelopment Authority of the City of St. Paul at such address, or to such other representatives of the Authority or to such other address as the Authority may subsequently specify, in writing to the Contractor for such purpose.

d. Any such notice shall be deemed to have been given as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post, or in case of telegrams, at the time of actual receipt, as the case may be.

F. DRAWINGS AND SPECIFICATIONS.

The Authority shall furnish the Contractor, without charge, five (5) copies of the Drawings and Specifications. Additional copies requested by the Contractor will be furnished without cost.

G. LIQUIDATED DAMAGES.

As actual damages for any delay in completion are impossible of determination, the Contractor and his Sureties shall be liable for and shall pay to the Authority the sums hereinafter stipulated as fixed, agreed and liquidated damages for each calendar day of delay until the work is completed and accepted.

1. $10.00 per calendar day for all uncompleted or unaccepted work.

H. LOCATION OF WORK.

Work shall be performed within the Western Park or further defined as Lot 2, Block 4 of the Western Area Addition, Saint Paul, Minnesota. Construction outside of the above parcel of land as shown on the Drawings or as specified or as necessitated to adequately adapt the construction to the environs will also be the obligation of the Contractor.

I. MINIMUM RATES OF PAY.

The rates of pay for all of the classes of workers employed in connection with this Contract shall be as indicated in the General Conditions.

J. PLAN NOTATIONS.

Areas noted on plan as N.I.C. are indicated to show the Contractor the location of future surfaced areas. These areas are the obligation of this Contractor to be constructed as lawn areas in accordance with all of the Divisions of this Contract.

Housing and Redevelopment Authority
of the City of St. Paul, Minnesota

AMENDMENT TO THE REDEVELOPMENT PLAN

Allocation of Grant-in-Aid for Parks - - - Projects UR Minn. 1-1 and 1-2

Our original application included an allocation of grant-in-aid for parks to the amount of one-half of the cost of the land and development. At that time Mr. Howard and the DSCUR staff recommended that the grant-in-aid for the park development in Project UR Minn. 1-1 be increased to 100%. It is our opinion that there is no material difference between the park development in the two projects and that no reasonable substantiation for the increase to 100% can be made for the western project. Both parks are located entirely within the redevelopment project and serve primarily the residents of the redevelopment areas. We propose that the grant-in-aid for both projects be determined on the basis of probable use of these park areas by project residents and by residents outside the project but within the immediate neighborhood area of the park. On this basis it is proposed that the grant-in-aid be set for each project as determined in the statement below:

Project UR Minn. 1-1

This park would serve primarily residents of the redevelopment area but would also serve residents within the neighborhood in which the project is located. This neighborhood is considered to include those residents within the main traffic arteries of Jackson Street on the west, Pennsylvania Avenue on the north and the proposed highway bordering the project area on the east and south. The grant-in-aid is determined according to the ratio of the number of families to be housed in the redevelopment area to the number of families residing within the neighborhood but outside the redevelopment area.

Total families in redevelopment area	560
Total families outside redevelopment area	280
Total families	840
Percentage of total families in the redevelopment area	66-2/3
Percentage of total families outside the redevelopment area	33-1/3

On this basis 2/3 of the park costs are considered as local grants-in-aid.

Cost of park land	$ 32,844
Cost of park development	38,292
Total park costs	71,136
Value of grant-in-aid	47,424

Project UR Minn. 1-2

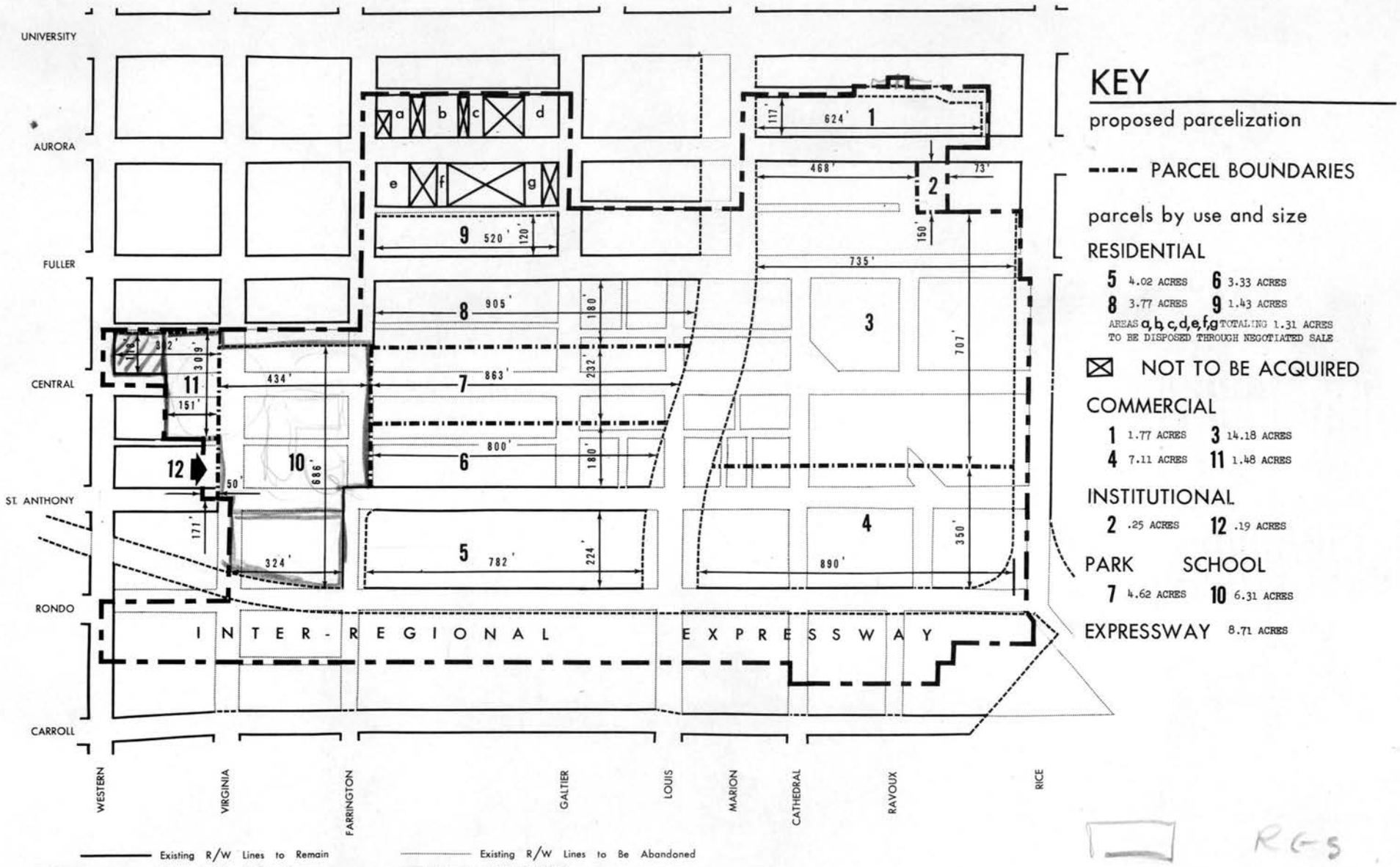
The neighborhood within which this park will be located is bounded by the major thoroughfares, Rondo Parkway on the south, Western Avenue on the west, University Avenue on the north and Rice Street on the east.

Total families in redevelopment area	706
Total families outside redevelopment area	250
Total families	956
Percentage of total families in the redevelopment area	74
Percentage of total families outside the redevelopment area	26

Cost of park land	$ 43,558
Cost of park development	51,832
Total park costs	95,390
Value of grant-in-aid (74% of $95,390)	70,589

This method of determining the grant-in-aid seems to be the only reasonable method that can be used. We therefore propose that DSCUR approve the allocation of local grant-in-aid for park development as follows:

Project UR Minn. 1-1	$ 47,424
Project UR Minn. 1-2	70,589
TOTAL	118,013



KEY

proposed parcelization

PARCEL BOUNDARIES

parcels by use and size

RESIDENTIAL

5 4.02 ACRES 6 3.33 ACRES
8 3.77 ACRES 9 1.43 ACRES
AREAS a, b, c, d, e, f, g TOTALING 1.31 ACRES
TO BE DISPOSED THROUGH NEGOTIATED SALE

NOT TO BE ACQUIRED

COMMERCIAL

1 1.77 ACRES 3 14.18 ACRES
4 7.11 ACRES 11 1.48 ACRES

INSTITUTIONAL

2 .25 ACRES 12 .19 ACRES

PARK SCHOOL

7 4.62 ACRES 10 6.31 ACRES

EXPRESSWAY 8.71 ACRES

RGS

PARCELIZATION MAP

EXHIBIT 2

WESTERN REDEVELOPMENT AREA, UR MINNESOTA 1-2

FEBRUARY 1957

HOUSING AND REDEVELOPMENT AUTHORITY
1745 CITY HALL AND COURT HOUSE, SAINT PAUL 2, MINN.

NORTH 0 50 100 200 300 400 500 600 feet