

*Approved
R.A. Martin*

MIDTOWN PARK

DRAINAGE REPORT

*REVISED: APRIL 1971
JCC*

City CHECK SET

LOVEJOY & WILLIAMS, INC.
Engineers and Environmental Planners
COLORADO SPRINGS, COLORADO

LOVEJOY & WILLIAMS, INC.
ENGINEERS AND ENVIRONMENTAL PLANNERS



18 WEST COLORADO AVENUE
COLORADO SPRINGS, COLO. 80902
(303) 633-1773

MIDTOWN PARK

DRAINAGE REPORT

REVISED - MARCH 1979
CCC

DRAINAGE REPORT (REVISED)

MIDTOWN PARK

Owner: Interstate 25 Investment Company

Prepared For: Department of Public Works
City of Colorado Springs
City Hall
Colorado Springs, Colorado

Prepared By: Lovejoy & Williams, Inc.
18 West Colorado Avenue
Colorado Springs, Colorado 80902



Issue Date: March 29, 1974

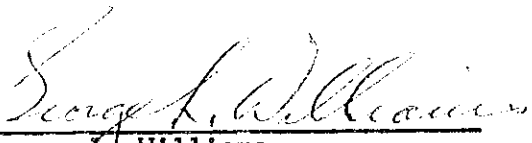
LOVEJOY & WILLIAMS, INC.
ENGINEERS AND ENVIRONMENTAL PLANNERS

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March 29, 1974

CERTIFICATION: I, George L. Williams, a registered engineer in the State of Colorado, hereby certify that the attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. I further certify that said drainage report is in accordance with all City of Colorado Springs Ordinances and specifications and criteria.



George L. Williams
Colo. P.E. No. 2078

"The developer has read and will comply with all of the requirements specified in this drainage report as approved by the City Engineer."

INTERSTATE 25 INVESTMENT COMPANY

By _____

Title _____

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LOVEJOY & WILLIAMS, INC.
ENGINEERS AND ENVIRONMENTAL PLANNERS



18 WEST COLORADO AVENUE
COLORADO SPRINGS, COLO. 80902
(303) 633-1773

March 29, 1974

Department of Public Works
City of Colorado Springs
City Hall
Colorado Springs, Colorado

Gentlemen:

Transmitted herewith is our revised Drainage Report for Midtown Park, which takes into account the possibility that the Frontage Road may be extended south from Midtown Drive.

Respectfully submitted,

LOVEJOY & WILLIAMS, INC.

By *George L. Williams*
President

GENERAL CONSIDERATIONS

The area under study in this report lies in the southwest quarter of Colorado Springs and is bounded on the north by Abbott Lane and Humane Society property, the south by Utility Department property and Bear Creek Channel, the east by I-25 Frontage Road and on the west by 8th Street. Refer to the attached 2000 scale location map. The subdivision contains 17.95 acres of land, more or less while the drainage area contains 19.86 acres of land, more or less.

The area slopes to the east at a moderate grade and has poor vegetation. The western portion of the subdivision, south of Midtown Drive and along 8th Street, has been recently graded for about 200 feet east from 8th Street and has no vegetation at all.

METHOD OF DETERMINING RUNOFF QUANTITIES

The area was divided into seven basins and the Rational Formula used to compute runoff. A 50 year storm frequency of 2 inches per hour for a one hour duration, which is standard for this area, was used. Because of the small areas in the basins and the consequent relatively short concentration time, this method produces very conservative results with a built-in safety factor.

STORM SEWER NECESSITY DETERMINATIONS

In general it is assumed that asphalt paved streets, crowned in the center to roughly the same elevation as the concrete curbs on either side will act as channels for the storm runoff; with concrete cross gutters at street intersections or low points as required, to carry minor flows from light rain or snow melt. Street capacities at various grades have been taken from the allowable street flow capacity table prepared by the Colorado Springs City Engineer's Office.

Basin 1 runoff will flow south in 8th Street and enter Bear Creek Channel through a curb cut constructed by the 1973 improvement district. Basin 4 will be regraded with runoff flowing to Midtown Drive. The runoff will join Basin 5 runoff and be collected at Point of Interest 5 via an 8' catch basin. Basins 2, 3 and 6 will be collected at Point of Interest 6 via a 10' catch basin and will be carried via a 36" R.C.P. and lined swale to the existing box culvert under I-25. The said lined swale will be designed for easy crossing by utility vehicles that may use the utility easement.

Drainage structures required in Bear Creek will be 165' \pm of concrete ditch lining or heavy riprap in drainage easement at Point of Interest 8. Also, 2-8' R.C.P.'s with headwalls will be required under Frontage Road at Point of Interest 9 in the event that said Frontage Road is extended south from Midtown Drive. Basin 7 runoff located in Frontage Road will exit road at 8' curb cut and join 36" R.C.P. flow into previously mentioned lined swale to existing box culvert under I-25.

RUNOFF TABULATION

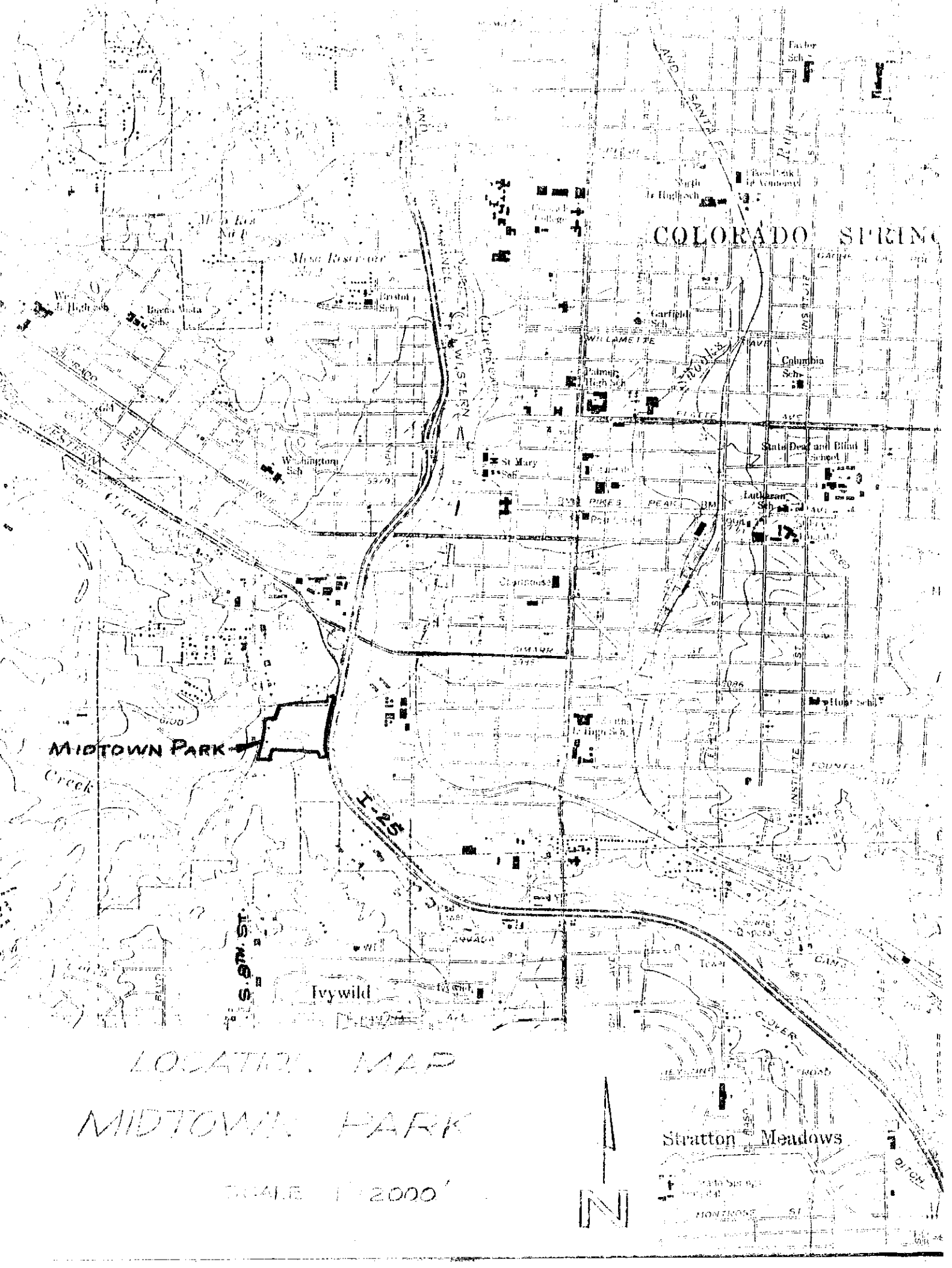
<u>Point Of Interest</u>	<u>Acreage</u>	<u>Runoff (CFS)</u>	<u>Remarks</u>
1	1.63	4.82	Overland flow to 8th Street via gutter flow to City curb cut with total runoff flowing to Bear Creek.
2	0.92	4.06	Street runoff from Abbott Lane via gutter flow to Frontage Road.
3	10.31	31.70	Overland flow in Basin 3 to Frontage Road with runoff exiting along entire east boundary of Basin 3.
4	4.50	14.32	Overland flow in Basin 4 to Midtown Drive with runoff exiting along entire north boundary of Basin 4.
5	5.00	16.66	Runoff from Point of Interest 4 plus gutter flow from Basin 5 with total runoff being collected in an 8-foot catch basin at Point of Interest 5.
6	16.93	55.69	Runoff from Point of Interest 2 plus gutter flow from Basin 6 with total runoff including pipe flow from Point of Interest 5 being collected in 10-foot catch basin at Point of Interest 6 with total collected runoff exiting 10-foot catch basin via a 36" R.C.P.
7	18.23	57.06	Total collected runoff from Point of Interest 6 entering crossable paved swale via 36" R.C.P. and flowing via lined swale to existing box culvert under I-25 plus additional gutter & ditch flow from Basin 7.
8	--	2783	100-year storm flow at Point of Interest 8 taken from the Bear Creek Drainage Basin Study by R. Keith Hook & Associates, Inc. submitted to the City Engineering Department July 14, 1972. Concrete ditch lining to be placed in this area in accordance with Detail B on Drawing Lovejoy & Williams Inc. #2718.
9	--	2783	100-year storm flow at Point of Interest 9 taken from the Bear Creek Drainage Basin Study by R. Keith Hook & Associates, Inc. submitted to the City Engineering Dept. July 14, 1972. 2-8' R.C.Pipes with 2 headwalls to be placed under Frontage Road at Point of Interest 9 in the event that said Frontage Rd. is extended south of Midtown Dr.

ESTIMATE OF COST
 REQUIRED DRAINAGE STRUCTURES
 MIDTOWN PARK

70' of 24" RCP @ \$19.00/ft.	\$1,330.00
50' of 36" RCP @ \$20.50/ft.	1,025.00
1-8' Catch Basin @ \$1,060.00 ea.	1,060.00
1-10' Catch Basin @ \$1,250.00 ea.	1,250.00
280' of lined swale @ \$6.00/ft.	1,680.00
165' of concrete d ditch lining @ \$40.00/ft.	6,600.00
96' of 8' Class III RCP with 2 headwalls - L.S.	17,000.00
133 cu. yds. riprap @ \$10.00/cu. yd.	<u>1,330.00</u>
Sub-Total	\$31,275.00
Plus 10% Engineering	<u>3,127.50</u>
Total Drainage Facilities	<u>\$33,402.50</u>

Drainage Fee, \$881.00/acre for 17.95 acres \$15,813.95

The estimated cost of the Drainage Facilities is more than the Drainage Fee; therefore, the Interstate 25 Investment Co. will submit a letter of credit for \$33,402.50



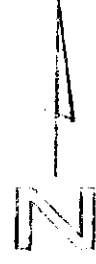
COLORADO SPRING

MIDTOWN PARK

LOCATION MAP

MIDTOWN PARK

SCALE 1" = 2000'



Stratton Meadows