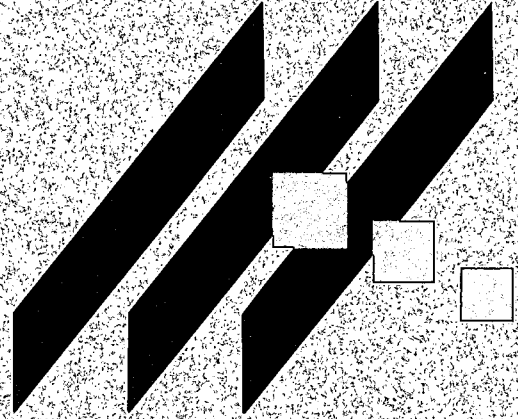


M K E C ENGINEERING CONSULTANTS, INC.



DRAINAGE REPORT

FOR

GRIFFITH ELEMENTARY SCHOOL

OCTOBER 2001

411 N. WEBB ROAD • WICHITA, KANSAS 67206 • 316-684-9600 • FAX: 316-684-5100

Drainage Report for Griffith Elementary School

Location

The site lies in the Southwest Quarter of the Northeast Quarter of Section 35, Township 27 South, Range 1 East. The site is located South of Harry Street, North of Mt. Vernon Street, East of Hillside Street, and West of Oliver Street. Bluff Avenue is adjacent to the site on the West. The address is 1802 South Bluff. The dimensions are roughly 400 feet east to west and 490 feet north to south. The total site area is approximately 4.9 acres.

Soils

According to the NRCS (SCS) Sedgwick County Soil Survey, the drainage watershed is in the Urban land-Farnum complex with 0 to 3 percent slopes (Uc). The Hydrological Soil Group (HSG) to select runoff coefficients is "B".

Current Condition

Current Development

The site is developed as an Elementary School consisting of one main building and three smaller buildings. There is a basketball court and assorted playground equipment on the site. A parking lot is located to the north of the main building.

Current Landform and Slope

The slopes in the area range from 1.0% to 4.3%. The site in relation to the watershed boundary is shown in Appendix A.

Current Runoff Characteristics

Three stormwater inlets are located near the building to collect part of the runoff. Most of the site drains into an inlet located in the southeast corner of the site.

Proposed Condition

Proposed Development

The proposed addition to this building will double the size of the existing school building. Playground equipment will not be added or removed, but some will be relocated. The basketball court will remain. The existing parking lot will be expanded toward the east.

Proposed Landform and Slope

The slopes in the area range from 1.0% to 4.3%. The proposed grading plan is found in Appendix B

Proposed Runoff Characteristics

Several drainage swales will convey water to the existing inlet on the southeast corner of the site, as shown on the Drainage and Utility Plan in Appendix C. A perforated drainage pipe will be installed under the playground and discharge into a proposed swale. A 12" RCP Culvert will be installed under the proposed sidewalk on the west side of the site.

The rational method was used to analyze the watersheds shown in the Drainage and Utility Plan, Appendix C. The spreadsheet in Appendix D displays the area, runoff coefficient (c), time of concentration (t_c), and the flow rate (Q) for each sub-watershed, for the 2, 5, 10, and 100-year events. Table 1 shows the runoff before and after the proposed development occurs.

Table 1. Watershed runoff.

	2-Year (cfs)	5-Year (cfs)	10-Year (cfs)	100-Year (cfs)
Current	5.7	11.2	14.8	27.0
Proposed	8.7	7.4	10.5	20.2

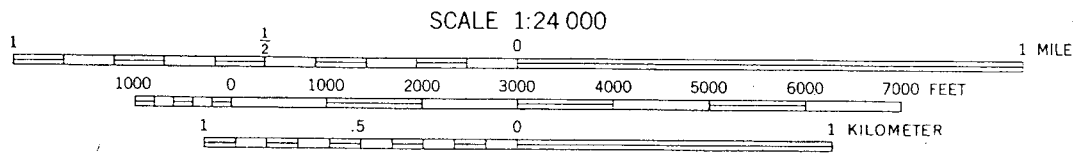
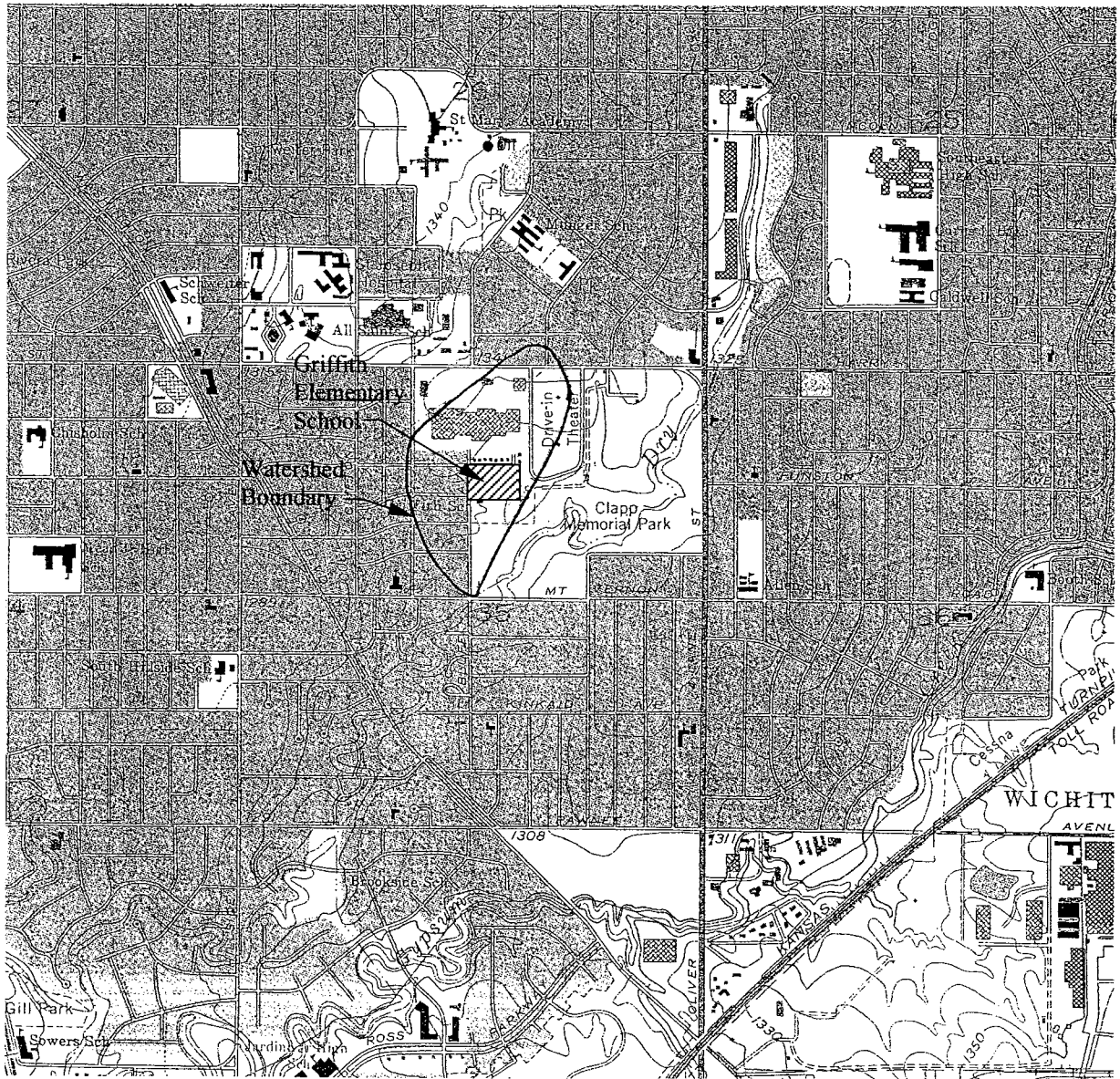
Summary

With the proposed addition to Griffith Elementary School the purpose of the site will not change. There will be more impervious area, but it does not cause significant change in the runoff from the site, as shown in Table 1. Storm water pipes and drainage swales have been designed to transport runoff to the existing storm water sewer system, as shown in Appendix C.

Appendix A

WICHITA EAST QUADRANGLE, Kansas

United States
Department of the Interior
Geological Survey



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Appendix B

Appendix C

Appendix D

