

Drainage Report
Fountain Square Addition
MKEC Project 98130
February 8, 1999

Location

The site is bounded on the southwest by Highway K-96, and on the east by Webb Road in the southeast quarter of Section 32, T26S, R2E. Adjacent lands include Comotara Industrial Park Fifth Addition and Mediterranean Plaza to the north, Casad Industrial Park to the west, and HPTCW Properties Trust to the south. Wichita Airport Authority/Jabara Airport lies east of the parcel across Webb Road.

The approximate dimensions of the parcel are 1,660 ft north-south, and 1,790 ft east-west. Highway K-96 removes part of the southwest quarter of the rectangle thus formed. The total area shown on the preliminary plat is 45.09 acres.

Existing Site Conditions

Soils

According to the NRCS (SCS) Sedgwick County Soil Survey, the site consists of approximately 2/3 Rosehill soils (Rd; silty clay, 1 to 3 percent slopes) and 1/3 Goessel soils (Gb; silty clay, 1 to 2 percent slopes). These soils are in gently sloping, moderately well drained to well drained areas on uplands, upland divides, and uneven side slopes. Both are classified as Hydrologic Soil Group (HSG) "D".

Current Development

The parcel is currently undeveloped. Adjacent parcels developed to date include HPTCW Properties Trust (Candlewood), Gorges Volvo, and Comotara Industrial Park Fifth Addition Lot 24 (W. K. Capital Enterprises). New construction is under way on Comotara Industrial Park Fifth Addition Lot 21 north of the site and on Casad Industrial Park (part of Mediterranean Plaza Addition) northwest of the site.

Landform and Slope

The site is near an upland divide. The USGS map of the area shows the beginnings of a channel. The general watershed slope is 1 to 3 percent.

Drainage Conditions

No portion of the site is included in a regulatory floodplain (FIRM Panel 15, City of Wichita, May 15, 1986). The nearest regulatory floodplain is a "Zone A" in the upper portion of Middle Branch Gypsum Creek. The deined A Zone ends near the intersection of Webb and 29th St, approximately 800 ft south of the site.

The drainage area on or affecting the site totals 57.4 acres. Slightly over 8 acres of the Comotara Industrial Park Fifth Addition south of 34th St. drains toward the site.

With the exception of the extreme southeast corner, runoff from the site is controlled. Watershed "A" discharges west toward existing detention at Casad Industrial Park. The remaining area flows to an existing 1.96 acre detention area along Highway K-96.

Proposed Site Runoff Characteristics

The proposed development is primarily commercial use, within the limitations of Limited Industrial zoning. Current runoff patterns will be essentially unchanged under proposed conditions. Runoff basin boundaries used in the analysis, overland flow directions, and preliminary storm sewer locations are shown on the Drainage and Utility Concept drawing. Following this report is a spreadsheet summarizing the Rational Formula analysis results for developed conditions.

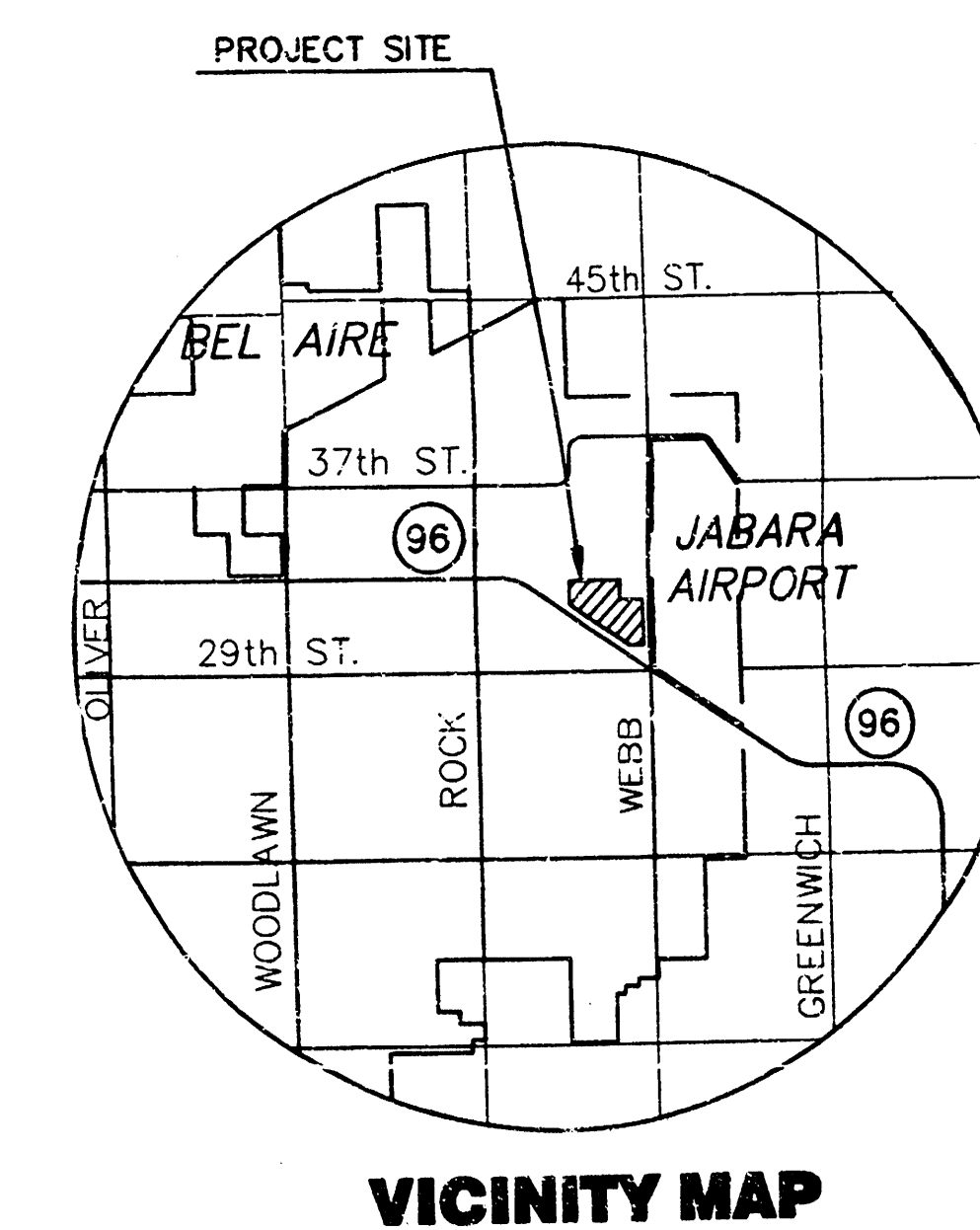
Preliminary analysis indicates that total storage of approximately 12.7 acre-feet is required to maintain acceptable discharge flow rates. The 1.96 acre detention basin area, located near the center of the parcel's boundary with K-96, will be modified if required to provide the detention needs for most of the site. A small area in the southeast corner will continue to flow uncontrolled toward the south.

Proposed Minimum Pad Elevation

The minimum freeboard above the anticipated maximum 100-year water surface elevation in the detention basin will be two feet. The minimum building pad for this site will be 226.6 ft, City of Wichita Datum (1413.95 USGS). This minimum will be modified if necessary to reflect the final 100-year elevation in the detention basin.

FOUNTAIN SQAKE
02/04/99

DRAINAGE AREA	AREA (ACRES)	ACCU. AREA	C _s	C ₁₀₀	T _c (MIN)		I _s (IN/HR)	I ₁₀₀ (IN/HR)	Q _s (CFS)	Q ₁₀₀ (CFS)	RCP	%	INLET
					5	100							
Area "A"	11.92		0.85	0.92	15	15	4.56	7.37	46.7	80.8	36" RCP	@ 0.6%	Area Inlet
Area "B"	7.74		0.76	0.84	22.3	17.1	3.79	6.98	22.3	45.4	30" RCP	@ 0.3%	Area Inlet
Area "C"	22.24		0.86	0.92	17.2	15	4.29	7.37	82.1	150.8	--	--	4 Double/Double Drop Inlets
Area "D"		29.98	0.83	0.90	22.3	17.1	3.79	6.98	94.3	188.3	54" RCP	@ 0.23%	--
"B" and "C"			0.83	0.90	22.3	17.1	3.79	6.98	94.3	188.3	54" RCP	@ 0.23%	Double Drop Inlet
Area "D"	3.14		0.87	0.91	15	15	4.56	7.37	12.5	21.1	24" RCP	@ 0.3%	--
Area "E"	5.20		0.87	0.91	15	15	4.56	7.37	20.6	34.9	30" RCP	@ 0.3%	2 Double Drop Inlets
"B", "C", "D" & "E"		38.32	0.84	0.90	22.3	17.1	3.79	6.98	122.0	240.7	72" RCP	@ 0.1%	--
Lake	1.96		1.00	1.00	15	15	4.56	7.37	8.9	14.4	--	--	--
"B", "C", "D", "E" & Lake		40.28	0.85	0.91	22.3	17.1	3.79	6.98	129.8	255.9	72" RCP	@ 0.1%	--
Area "F"	5.20		0.87	0.91	15	15	4.56	7.37	20.6	34.9	30" RCP	@ 0.25%	2 Double Drop Inlets
Plus Lake Outlet Structure													



DRAINAGE & UTILITY CONCEPT

FOUNTAIN SQUARE ADDITION

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