

P.C. INDUSTRIAL PARK ADDITION

DRAINAGE CONCEPT PLAN

September 10, 1984

I. GENERAL

The P.C. Industrial Park Addition plat is generally located in an area south of 47th St. So. and west of Broadway. The plat is a proposed 31 acre industrial park development. The concept presented here includes a temporary drainage plan which could be altered by future storm sewer design plans for large portions of south Wichita which are now being considered by the City of Wichita.

Presently the area in this plat is undeveloped and drains south and north. The majority of the plat which drains south is now meandering into a temporary detention drainage ditch pond extending from the south of Water Street. The pond receives runoff from the Water St. storm sewer and also from the Fireball Addition. The pond presently has no relief other than vertical percolation at this time.

The north portion of the plat will drain to the Water Street pavement and north in the improved street to 47th St. as indicated and the way the conditions exist today.

II. PLAT DRAINAGE PROPOSAL

The concept to drain the plat is to discharge the majority of the plat area (22.4 acres) to the south end of the plat to be contained in an enlarged drainage pond area.

The existing pond adjacent to this plat will be enlarged at the south end of the plat by a total of 60' of which 15' will be considered as a maintenance access way. The enlarged area of the pond will provide the necessary containment volume for the runoff from the 3.4" storm with average antecedent moisture conditions for the 5 year storm only at this time. Future proposals for drainage in this area indicate that the Midland Valley ditch will be extended to relieve this area of drainage runoff in the near future.

III. SOIL CONDITIONS

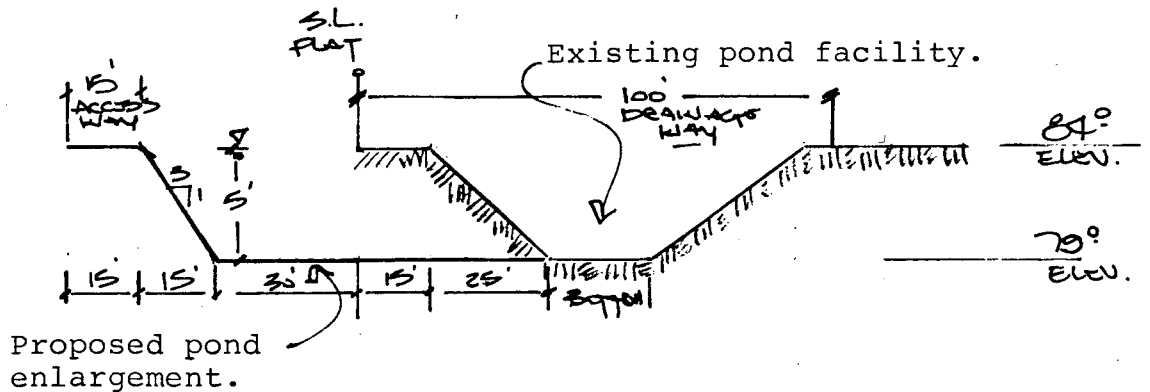
The soils in this area are Canadian and Carwile types. Soil groups fall in the Group C for both types. Runoff number for this area in an industrial park usage is 91. The soils for the pond area are generally considered to be fine sandy loams but somewhat slowly drained. Ponding will naturally occur at some wet times of the

fall and spring times of the year. Generally the water tables occur at a very shallow level in these areas also.

#### IV. DRAINAGE AND POND SIZE ENLARGEMENT

Drainage are from the Industrial Park = 22.4 Acres-  
At a 91 R<sub>n</sub> Runoff from the 3.4" 5 year storm = 2.45 inches.

Volume required = 22.4 Ac. (2.45 inches/12) = 4.57 Ac-Ft.  
= 199,069 CF



The proposed end area of the proposed enlargement area = 325 SF approximately.

Total volume required = 4.57 Ac-Ft.  
Length required 4.57 Ac-Ft( 43560)/325 SF = 612.5 LF ditch

The total length of the ditch available amounts to 620 as proposed on the drainage plan. Total volume created by this plan would amount to 620 LF(325 SF) = 4.6 AC-Ft.

A thorough soil testing report was compiled and submitted by the Engineering Testing Company for this area on May 31, 1978 which addresses the percolation and permeability of the soils in the area of the existing pond and the proposed enlargement.

1. Store 5 yr storm instead of 100 yr storm
2. 3:1 side slope instead of 4:1
3. No freeboard
4. VHS's study show ~ 250' Retention