



1900 Wyoming Blvd., N. E.

Albuquerque, New Mexico 87112

(505) 294-1488

**TO WHOM IT MAY CONCERN:**

It is agreed by the owner, his heirs and assigns, of Tracts C. and D of Block 130 of the Snow Heights Addition, Albuquerque, New Mexico that no grading, land filling, excavating, or other alteration will be performed except pursuant to a grading plan and site plan prepared under the direction of and signed by a registered professional engineer, architect, or surveyor showing the proposed alteration, including the finished elevations of the areas to be graded, the paved areas, and the buildings, streets, retention areas and other structures.

  
\_\_\_\_\_  
DAVID L. SMITH, Owner  
January 17, 1974

## DRAINAGE REPORT

### LOCATION

Tracts C and D of Block 130 of the SNOW HEIGHTS ADDITION to Albuquerque, New Mexico are located North of Indian School Road N.E. and East of Somerwell Street N.E.

### TOPOGRAPHY

We inspected the site and found no changes in either land grading, filling or excavation since the topographic map was prepared: See map # 10087.

### RAINFALL DATA

From the 100 year, 6 hour precipitation map prepared by the Special Studies Branch, Office of Hydrology, Weather Bureau, June, 1967: the rainfall was determined to be 2.5 inches for these lots described above.

### DRAINAGE STUDY

Since the area in question is about 1/2 of an acre, the two major effects the prepared construction will have on the City's drainage system would be: (1) To increase the time of concentration of the peak runoff from the lots and (2) To increase the runoff volume.

The time of concentration is computed to be as follows:

$$\begin{aligned} L &= 256 \text{ feet} & h &= 6 \text{ feet} \\ K &= \frac{L^3}{H} = 1672 & T_e &= 0.0078 K^{0.77} \\ T_c &= 0.0078 (1672)^{0.77} = 2.4 \text{ minutes} \end{aligned}$$

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With the proposed construction and seepage pits, the time of concentration will remain the same. Any small increase in the  $T_c$  will have a very small effect on the total drainage system on Indian School Road.

But, since 80% of the lot will be impervious, this will effect the total runoff volume. See computations below.

#### VOLUME COMPUTATION

Lot area 0.53 acres, see map #744087

Rainfall data 2.5 inches for a 6 hour storm on a 1% frequency  
Volume is computed from the Mass Rainfall - Infiltration Methods.

$$V = A[I - F] \text{ max.}$$

See Curve A attached.

The infiltrations were compiled to be 0.35 inches per hour for sandy loam under saturated conditions. Thus the peak  $[I - F]$  occurs after 2 hours and is 2.3 inches.

Thus:

$$\begin{aligned} V &= A [I - F] \\ &= 0.53 (3.0 - 0.70) \\ &= 1.22 \text{ acres inches or } 0.10 \text{ acres feet} \end{aligned}$$

Proposed changes:

Impervious Areas	roof - 11,903 SF
	Parking
	South 3,405 SF
	North <u>2,221</u>

Total impervious area = 17,529/43560 = 0.40 acres

New volume of Runoff:

$$\begin{aligned} V_1 &= A_1 [I] + A [I - F] \\ &= 0.4 [3.6] + 0.13 [2.3] \\ V_1 &= 1.74 \text{ acres - inches or } 0.14 \text{ acres - feet} \end{aligned}$$

Changes in runoff volume due to proposed construction:

$$\begin{aligned} V &= V_1 - V_0 \\ V &= 0.14 - 0.10 = 0.04 \text{ acres feet} \end{aligned}$$

Volume to be stored on property:

$$V = 1957 \text{ cubic feet}$$

See site plan for location and sizes of seepage pits.

January 15, 1974

PERCOLATION TESTS


Percolation Tests were conducted on the site to see if seepage pits would work effectively. The three test pits average 8 minutes per inch which indicates that seepage pits will work very effectively.

CONCLUSION

The seepage pits located as shown on the site plan will retain the first 1957 cubic feet of runoff.

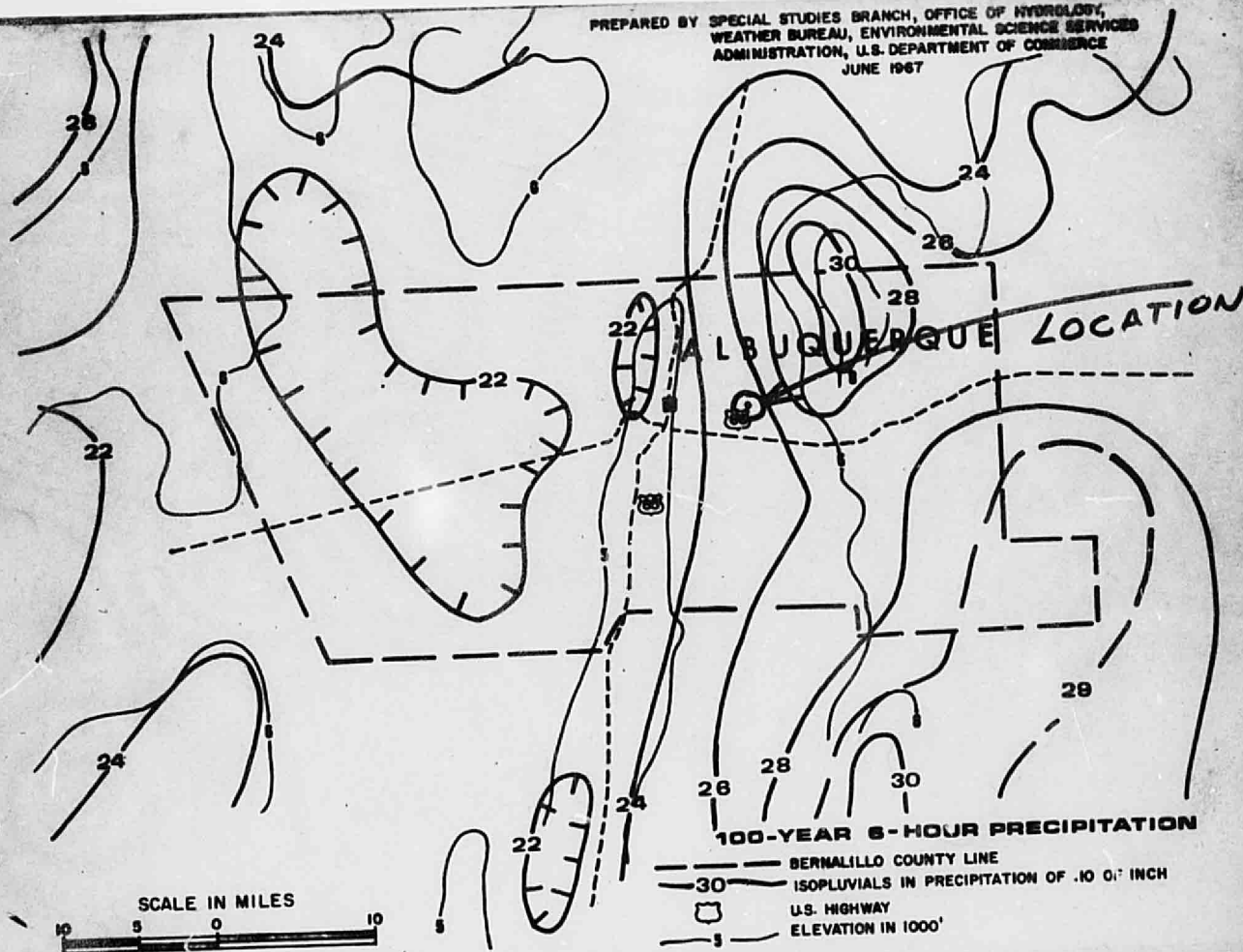
The time of concentration will not be greatly effected by the alterations. Therefore, with these proposed alterations and improvements to the lots, the City drainage system will experience no increase in the rate of flow, velocity and quantity of runoff discharged nor will there be any major change in the points of discharge to Indian School Road.

Submitted by:

  
John C. Drissel  
PE & LS #4660  
Consulting Engineer



PREPARED BY SPECIAL STUDIES BRANCH, OFFICE OF HYDROLOGY,  
WEATHER BUREAU, ENVIRONMENTAL SCIENCE SERVICES  
ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE  
JUNE 1967



## MASS RAINFALL - INFILTRATION CURVE

