C. DETENTION BASIN VOLUME DETERMINATION

1. Interruptible Outlet

Detention basins shall have the capacity to hold the total runoff from either a 10-year frequency, 24-hour storm with the highest design water surface elevation not higher than 6 incnes below the lowest tributary gutter elevation or a 50-year frequency, 24-hour storm with the highest design water surface elevation not exceeding the lowest tributary top of curb, whichever condition governs.

The volume of detention basins with interruptible outlet facilities shall be determined with no allowance for percolation or outlet facilities using the following basin equation:

$$Vol. = \frac{VAR}{12} \qquad\qquad (E-2)$$

where:

Vol. = the volume in acre feet.

V = the volume coefficient; this coefficient is the fraction of the total precipitation which is converted into runoff (see Tables A-1 and A-2).

A = the contributing area in acres (see Section II-B.2).

R = the total rainfall in inches for the storm period
(= 2.74 inches for the 50-year, 24-hour storm)
(= 2.06 inches for the 10-year, 24-hour storm).

2. Non-Interruptible Outlet

The volume of detention basins with non-interruptible outlet facilities shall be determined by the use of an inflow-outflow diagram using a 50-year continuous storm with outflow limited to a peak rate as determined for a 2-year storm occurring on existing level of development. The inflow curve can be developed using the following equation to determine inflow volume at different points in time.

$$Vol. = \frac{VAIT}{12} \qquad\qquad (E-3)$$

where:

Vol. = the inflow volume in acre feet.

V = the volume coefficient (see Equation E-2).

A = the contributing area in acres.

ENGINEERING DEPARTMENT			CITY OF MERCED, CALIF.
STORM DRAIN DESIGN			**SD-15**
DRAWN: K.E.	APPROVED BY:	DATE	
ENG.	*Allan M Stroud*	8-5-91	
REVISED	CITY ENGINEER		SHEET OF

DIETERICH-POST 88576