K20/D4

1 Plan

HOOD FOUR-PLEXES
WAGGOMAN-DENNISON ADD'N
LOTS 15A, 16A & 17A, BLK 4A

DRAINAGE PLAN

Size of Lot = 60' x 125
Area = 7500 S.F.

Area of Building = 3920 S.F. ±

Area of Sidewalks = 204 S.F. ±

Area of Parking Lot = 1800 S.F. ±

Area of undeveloped land = 1576 S.F. ±

Percentages:

(3920 x 100) ÷ 7500 = 52.27%
(204 x 100) ÷ 7500 = 2.72%
(1800 x 100) ÷ 7500 = 24.00%
(1576 x 100) ÷ 7500 = 21.01%
Total = 100.00%

Type of Surface	%	Standard Runoff Coef.	Weighted Runoff Coef.
Roof	52.27	0.825	0.43
Paving	2.72	0.875	0.02
Sidewalk	24.00	0.875	0.21
Undeveloped	21.01	0.250	0.05
Total	100.00	- -	0.71

Runoff Computation = Rational
Formula: [redacted]

Q = Cfs
A = Contributing area in Ac.
I = Intensity in inches per hour based on concentration time
R = Runoff coefficient

Use 25 year storm and duration = 40 minutes

$$I = \frac{123}{t + 27} = \frac{123}{40 + 27} = \frac{123}{67} = 1.84$$

∴ I = 1.84 inches per hour

∴ Q = AIR

$$= \left(\frac{7500}{43560}\right) (1.84)\ (0.71) = .22 \text{ CFS}$$

Volume in 40 minutes

$V = 0.22 \frac{CF}{Sec} \times 40 \text{ min.} \times \frac{60 \text{ sec.}}{\text{min.}}$

$V = 0.22 \times 40 \times 60 = 528 \text{ C.F.}$

Ponding required

40 ft. x 10 ft. x 1.5ft. = 600 C.F.

600 C.F. > 528

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6hr.