HYDROLOGY K18/D7 1 PLAN

K18/D7

1 Plan

TOWN HOUSE DEVELOPMENT
TIJERAS PLACE ADDITION
BLK 2 LOT 1 THRU 9
ORTIZ DRIVE NE



JOSEPH B. BURWINKLE JR.
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UMBRAGE CONSTRUCTION CO

DRAINAGE REPORT
RATIONAL METHOD

$Q = CIA$

Q = QUANITITY OF RUN-OFF IN CUBIC FEET / SECOND

C = COEFFICIENT OF RUN-OFF EXPRESSED IN A RATIO OF RAIN FALL TO RUN-OFF

I = RAIN FALL INTENSITY EXPRESSED IN INCHES PER HOUR (100 YR DESIGN) = 2.6"

A = DRAINAGE AREA CONSIDERED IN ACRES

LOTS 1 & 9 $38' \times 100' = 3800$ SQ FT = 0.087 ACRES

| | |
|---|---|
| TOWN HOUSE | 1420 SQ FT |
| GARAGE | 400 |
| DRIVE WAY & WALKS | 450 |
| | 2270 SQ FT = 0.052 ACRES |

PONDING & LANDSCAPING AREA = 0.035 ACRES

ASSUME "C" OF LAND = 0.35

$0.35 \times \frac{0.035}{0.087} = 0.14$

ASSUME "C" OF BLDG & DRIVEWAY ETC = 0.95

$0.95 \times \frac{0.052}{0.087} = 0.56$

AVERAGE "C" THEN IS = 0.14
+ 0.56
0.70

$Q = CIA$

$= 0.70 \times \frac{2.6''}{12''} \times 0.087 \times 43{,}560 = 576$ cu ft

If "C" for undeveloped land 0.35 the increase quanity from improvements $= \frac{0.70 - 0.35}{0.70} \times 576$ cu ft $= \underline{288 \text{ cu ft}}$

<u>Required ponding area of 288 cu. ft.</u>

Actural ponding area

| | | | |
|---|---|---|---|
| Side yard | 650 sq ft | × .5' = | 325 cu ft |
| Patio | 570 sq ft | × .5' = | 285 cu ft. |
| | | | 610 cu ft. |

Lots 2 thru 8 $32' \times 100' = 3200$ sq ft. $= 0.073$ acres

| | |
|---|---|
| Town House | 1500 sq f |
| Garage | 400 |
| Driveway & walks | 450 |
| | 2350 sq ft. = 0.054 acres |

0.019 acres

Assume 'C' of land = 0.35

$0.35 \times \frac{0.019}{0.073} = \underline{0.09}$

Assum "C" of bldg & driveway etc = 0.95

$0.95 \times \frac{0.054}{0.073} = \underline{0.70}$

Average "C" then is

0.09
0.70
0.79

$Q = C I A$

$= 0.79 \times \frac{2.6''}{12''} \times 0.673 \times 43{,}560 = 547.7$ cu ft

IF "C" FOR UNDEVELOPED LAND = 0.35. THE INCREASE QUANITY FROM IMPROVEMENTS =

$\frac{0.79 - 0.35}{0.79} \times 547.7$ cu ft $= 305.0$ cu ft.

REQUIRED PONDING AREA of 305 cu ft

ACTURAL PONDING AREA

| | | | |
|---|---|---|---|
| SIDE YARD | 180 x .5' | = 90 | cu. ft |
| PATIO | 480 x .5' | = 240 | cu. ft. |
| | | 330 | cu ft |

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REQUIRED PONDING AREA of 288 cu. ft.

ACTURAL PONDING AREA

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| | | 0.019 ACRES |

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