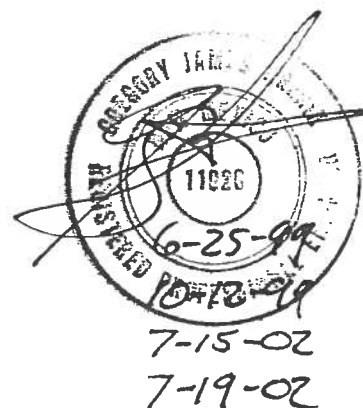


DRAINAGE CALCULATIONS
FOR
COTTONWOOD PROFESSIONAL CENTER
REVISED FOR PHASE II





D. Mark Goodwin & Associates, P.A.
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PROJECT Cottonwood Pk. Center
SUBJECT DRAINAGE CALCS
BY GSK DATE 6-24-99
CHECKED _____ DATE _____
SHEET 1 OF _____

- THIS SITE WAS PART OF THE MASTER PLAN OF TRACT C-2, > BAR PREPARED BY BOHANNAN HUSTON FEB, 1989 DRAINAGE FILE B14-D3. APPENDIX "A"
- SITE CONSISTS OF 2.1256 ACRES WHICH WILL BE SPLIT INTO TWO PHASES.
- AN OFFSITE AREA OF 0.9400 ACRES FROM BASIN C OF THE BOHANNAN REPORT DRAINS INTO BASIN D.
- AN AREA OF 0.0693 AC OF BASIN D CURRENTLY DRAINS TO THE WEST AND WILL ALWAYS DRAIN OFFSITE.
- PER THE BOHANNAN REPORT THE POND IN BASIN D HAS AN ALLOWABLE DISCHARGE THROUGH THE EXISTING 6" PVC OUTFALL OF 1.5 CFS
- SITE DOES NOT LIE IN A 100YR FLOOD ZONE. SEE FIRM MAP 35001C0109 D.
- TOTAL SITE PHASE I & II (NEW BASIN D)
 $A = 1.0099 + 1.1157 = 2.1256 \text{ AC}$
- AREA OF BASIN D THAT DRAINS WEST AND OFFSITE.
 $A_{\text{OFF}} = 0.0693 \text{ AC} \quad 100\% \text{ B}$
- AREA OF BASIN C THAT DRAINS INTO BASIN D
 $A_{\text{pep}} = 0.9400 \text{ AC} \quad 24.29\% \text{ B} \quad 75.71\% \text{ D}$
- AREA OF BASIN D THAT DRAINS INTO BASIN C
 $A_c = 0.1421 \text{ AC} \quad 36.84\% \text{ B} \quad 63.16\% \text{ D}$
- ACTUAL AREA OF BASIN D
 $A_D = 2.1256 - 0.0693 - 0.1421$
 $= 1.9142 \text{ AC}$
 $15.9\% \text{ B} \quad 84.1\% \text{ D}$
- $P_1 = 1.95 \text{ in}$
 $P_6 = 2.20 \text{ in}$
 $P_{24} = 2.65 \text{ in}$



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PROJECT Cottonwood Pk. Center
SUBJECT DRAINAGE CALCS
BY GJK DATE 6-24-99
CHECKED _____ DATE _____
SHEET 2 OF _____

REVISED 10-12-99

FROM AHYMO OUTPUT SHEETS 4-15

$$Q_{OFF} = 0.15 \text{ CFS}$$

$$Q_{PEP} = 2.26 \text{ CFS}$$

$$Q_C = 0.53 \text{ CFS}$$

$$Q_D = 7.97 \text{ CFS}$$

FROM THE BOHANNAN REPORT

10 CFS FROM BASIN C DRAINS INTO THE DOUBLE D INLET
AND 5.6 CFS DRAINS INTO THE BASIN D POND.

- WE WILL BE ALLOWED TO DISCHARGE FROM BASIN D
TO BASIN C AN ADDITIONAL

$$Q = 10.0 - 0.53 = 9.47 \text{ CFS}$$

- WE WILL DRAIN THE ROOF OF PHASE I TO BASIN C.

$$A_{PI} = 0.2112 \text{ AC } 100\% \text{ D}$$

- THIS WILL REDUCE BASIN D

$$\begin{aligned} A_{RD} &= 1.9142 - 0.2112 \\ &= 1.7030 \text{ AC} \\ &17.87\% \text{ B } 82.13\% \text{ D} \end{aligned}$$

FROM AHYMO OUTPUT SHEETS 16-21

$$Q_{PI} = 0.97 \text{ CFS}$$

$$Q_{RD} = 7.01 \text{ CFS}$$

- SIZE POND FOR $6\frac{1}{2}$ " ORIFICE ON 8" PVC

ELEV	OUTFLOW	VOLUME
4.0	0.0	0.0
5.0	0.95	0.062
6.0	1.46	0.134
7.0	1.83	0.214

POND TO HAVE
1' OF FREEBOARD

FROM AHYMO OUTPUT SHEETS 22-24

PEAK DISCHARGE = 1.51 CFS $\approx$ 1.5 CFS OK
MAX WATER SURFACE = 6.15