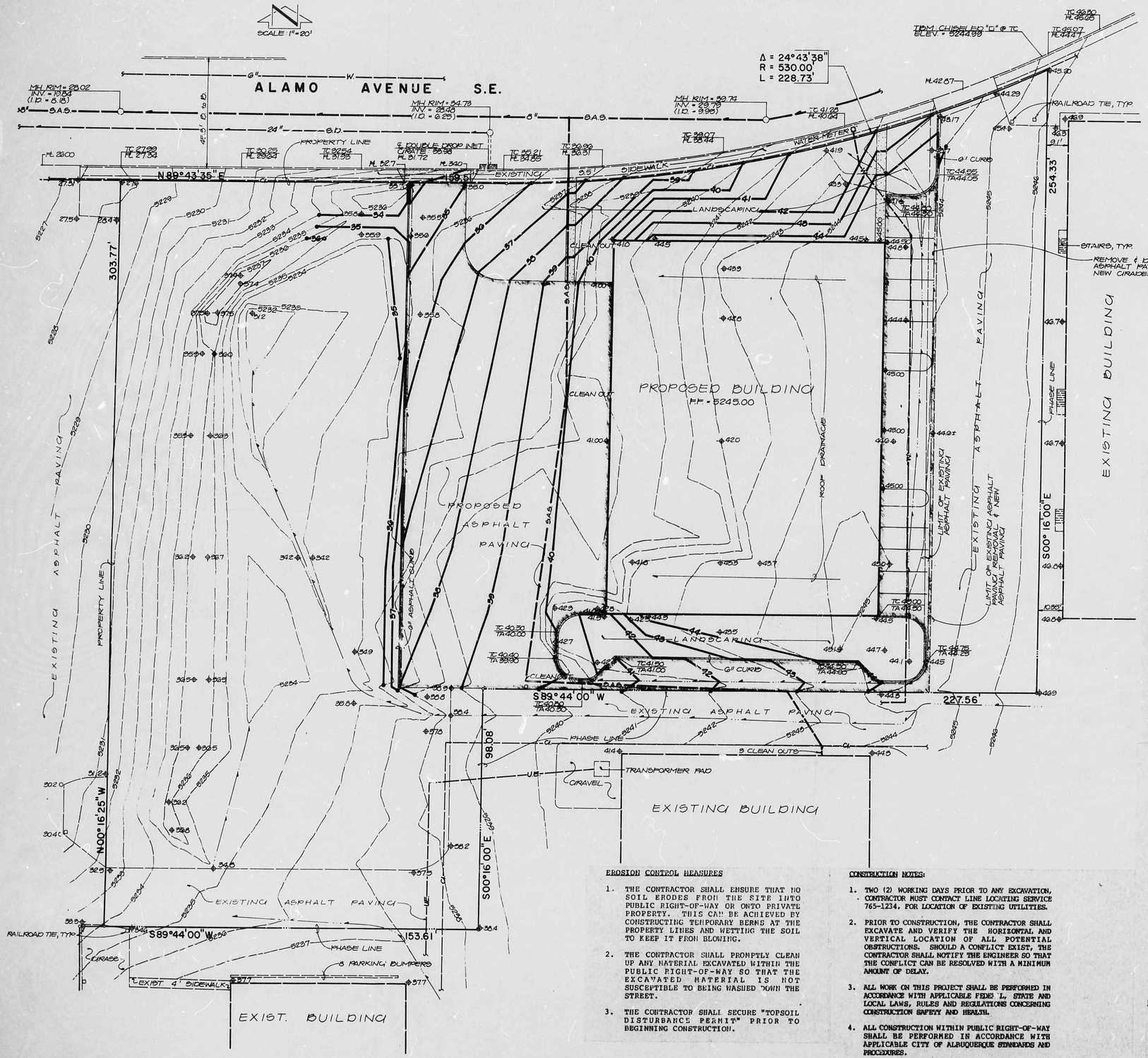
HYDROLOGY M16/D11b NEWPORT EAST BUSINESS PARK

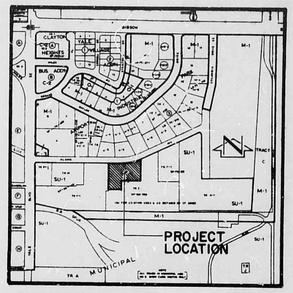
M16/D11b

Newport East
Business Park
2 Plans



LEGEND

- 5240 — EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING SWALE
- PROPERTY LINE
- 40 — PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED SWALE
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- S.A.S. — SANITARY SEWER
- W — WATER LINE
- U.E. — UNDERGROUND ELECTRIC
- G — GAS LINE
- S.D. — STORM DRAIN



VICINITY MAP M·16

SCALE: 1" = 800'

PROJECT BENCHMARK

ACS BENCHMARK 11-L16. A SQUARE, "D.I." CHISELED IN TOP OF CONCRETE CURB @ THE SBW RETURN LOCATED @ THE INTERSECTION OF VAIL AVE SE & GIRARD BLVD. SE
ELEVATION = 5270.72 FEET (MSLD)

TBM

A SQUARE, "□" CHISELED ON TOP OF CONCRETE CURB SET RADIALLY @ NORTHEAST PROPERTY CORNER, AS SHOWN.
ELEVATION = 5244.99 FEET (MSLD)

LEGAL DESCRIPTION

PORTION OF TRACT Z, AIRPORT PARK

DRAINAGE PLAN

The following items concerning the Multi-Flex 7 Warehouse Building Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the south side of Alamo Avenue S.E. between Yale Boulevard S.E. and Columbia Drive S.E. At present, this site is undeveloped. The site does, however, lie within an already developed industrial park complex. For the most part, this site is an infill site.

An updated comprehensive drainage plan has been prepared and approved for the subject industrial park. This updated plan, dated February 14, 1985, deals exclusively with the proposed Multi-Flex 7 construction. In particular, the updated plan identifies a free discharge of runoff from this site to Alamo Avenue S.E. In addition, the overall comprehensive plan has identified that this site does not lie within a designed Flood Hazard Zone and that the site is not affected by offsite flows.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) continuity between existing and proposed elevations, 3) the limit and character of the existing improvements, and 4) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of a warehouse building, asphalt paving and landscaping. The grades shown on this plan reflect the free discharge of runoff to Alamo Avenue S.E. The runoff generated by the paved portions of the site will exit the site via the two drivepads shown along the south side of Alamo Avenue S.E. The easterly drivepad is existing construction and the westerly drivepad is proposed construction. This pattern of runoff is consistent with the approved updated comprehensive plan for the industrial park.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by these calculations, the proposed improvements will result in a relatively minor increase in peak runoff from the area affected by development. As previously determined in the comprehensive plan, the street, Alamo Avenue S.E. has the capacity to accept and convey these flows.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 41:
BKD - Bluepoint-Kokan Association
Hydrologic Soil Group A

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6\,(6.84)\,T_c^{-0.51} = 4.86$ in/hr
$P_6 = 2.3$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.3$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 56{,}640$ sf = 1.3 Ac
$A_{imp} = 14{,}090$ sf; % impervious = 25%
"C" = 0.28 (DPM Plate 22.2C-1)
$Q_{100} = CiA = (0.28)(4.86)(1.3) = 1.8$ cfs
$V_{100} = CP_6A = (0.28)(2.3/12)(56{,}640) = 3{,}040$ cf

Developed Condition

$A_{total} = 56{,}640$ sf = 1.3 Ac
$A_{imp} = 46{,}500$ sf; % impervious = 82%
"C" = 0.66 (DPM Plate 22.2C-1)
$Q_{100} = CiA = (0.66)(4.86)(1.3) = 4.2$ cfs
$V_{100} = CP_6A = (0.66)(2.3/12)(56{,}640) = 7{,}165$ cf

Comparison

$\Delta Q_{100} = 4.2 - 1.8 = 2.4$ cfs (increase)
$\Delta V_{100} = 7{,}165 - 3{,}040 = 4{,}125$ cf (increase)

APPROVED FOR DRAINAGE
Apr 24, 1985
DATE
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

RECEIVED
MAR 18 1985
HYDROLOGY SECTION

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

CONSTRUCTION NOTES:

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

Craddock Development Company

GEORGE SANDERS AIA ARCHITECT 2309 RENARD PLACE S.E. SUITE 400 ALBUQUERQUE NEW MEXICO 87106 (505)842-9136

SHEET NO OF

M16/D11B

PROJECT BENCHMARK:

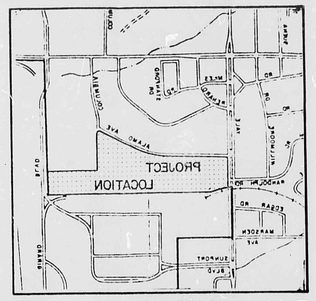
A STANDARD BRASS CAP STAMPED "AIRPORT AMAPCA 1985" AND SET IN TOP OF 8-INCH SQUARE CONCRETE POST. IT IS 5.6 FEET WEST OF A WOODEN WITNESS POST ON THE SOUTH SIDE OF VIEWPOINT ROAD S.E. WEST OF YALE BOULEVARD S.E.

ELEVATION = 5,102.81 FEET.

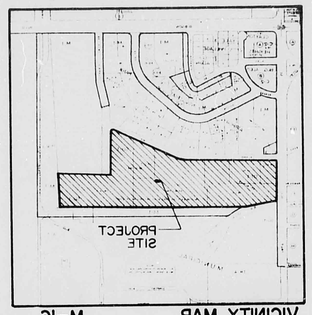
CONTOUR INTERVAL = 2'

LEGAL DESCRIPTION:

TRACTS X,Y,Z,A-1,C-1 & M
AIRPORT PARK



FLOOD HAZARD MAP No.8
SCALE 1" = 1000'



VICINITY MAP M-16
SCALE 1"=800'

SCALE 1"=100'

DRAINAGE PLAN UPDATE

The purpose of this Drainage Plan Update is to revise the Comprehensive Drainage Plan for Newport East Business Park to account for the construction of Multi-Flex 7, a new commercial building. As shown by the plan which appears hereon, the proposed building, paving and landscaping will occupy a previously undeveloped portion of the overall site. The approximate area consumed by this proposed construction is 1.3 acres. As shown by the calculations below, this construction will result in an increase of approximately 2.4 cfs in runoff to Alamo Avenue S.E. As determined by the previously approved Comprehensive Drainage Plan, Alamo Avenue S.E. does have capacity to handle the flows from the fully developed site as shown hereon. This conclusion was drawn based upon the "Albuquerque International Airport Drainage and Traffic Circulation Study" prepared by this office for the City of Albuquerque Aviation Department. Because of this, the runoff generated by this proposed construction will be discharged via a new driveway cut to Alamo Avenue S.E. It was previously requested by the Assistant City Engineer/Hydrology that this development include a private storm drain which would connect to the existing public storm drain within Alamo Avenue S.E. This does not appear to be economically practical for the 100-year flow of 4.2 cfs anticipated for this project. Because of this, the runoff will be directed to the street where it will flow in a westerly direction and be removed from the street by the existing catch basins along Alamo Avenue S.E. As mentioned above, it has been previously determined that Alamo Avenue S.E. has the capacity to accept and convey these flows.

CALCULATIONS FOR MULTI-FLEX 7

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 41:
EMD - Blueprint-Rokan Association
Hydrologic Soil Group A

Rational Method

Discharge: $Q = CiA$
where C varies
$i = P_6(6.84)T_c^{-0.21} = 4.86$ in/hr
$P_6 = 2.3$ in (DPM Plate 22.2 D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$
where C varies
$P_6 = 2.3$ in (DPM Plate 22.2 D-1)
A = area, ac

Existing Condition

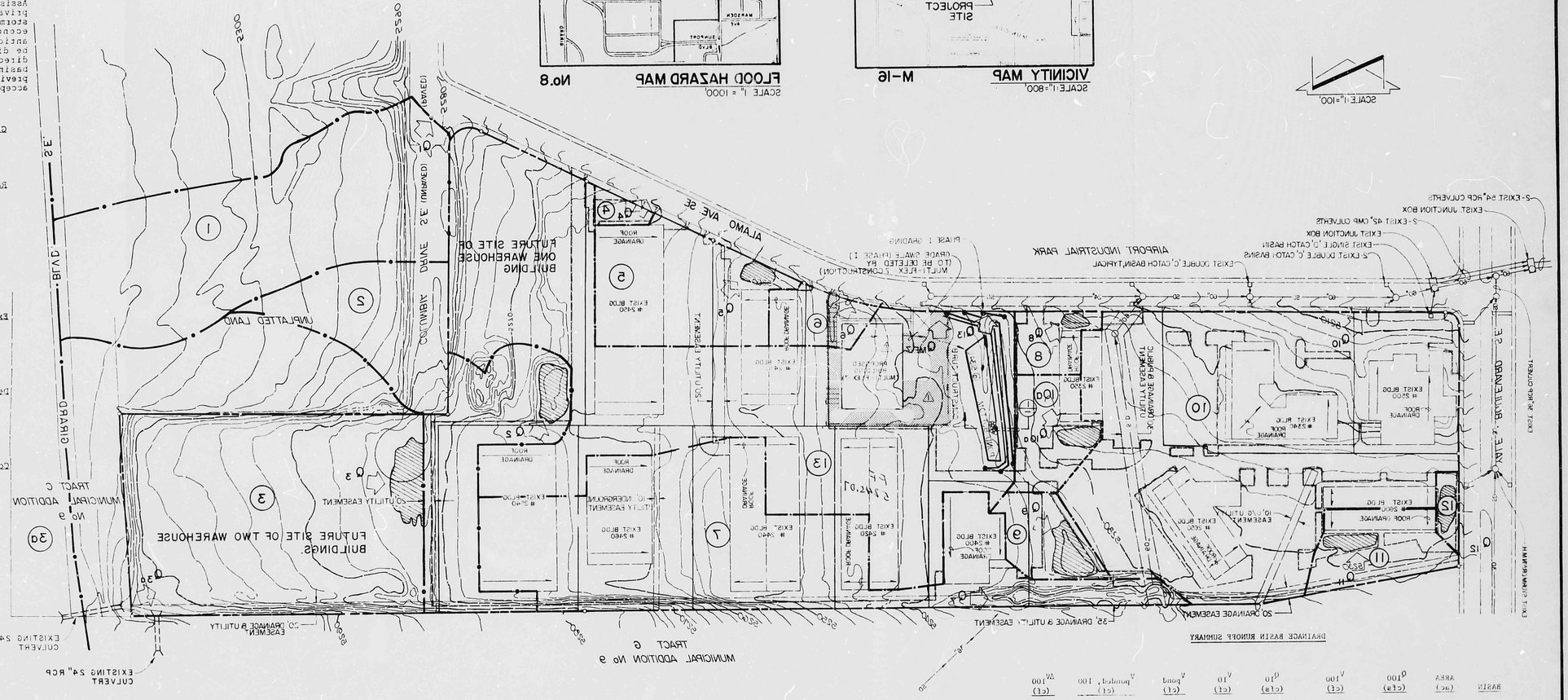
$A_{total} = 56,640$ sf $= 1.3$ Ac
$A_{imp} = 14,090$ sf; % impervious = 25%
$C = 0.28$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = (0.28)(4.86)(1.3) = 1.8$ cfs
$V_{100} = CP_6A = (0.28)(2.3)(1/12)(56,640) = 3,040$ cf

Developed Condition

$A_{total} = 56,640$ sf $= 1.3$ Ac
$A_{imp} = 46,500$ sf; % impervious = 82%
$C = 0.66$ (DPM Plate 22.2 C-1)
$Q_{100} = CiA = (0.66)(4.86)(1.3) = 4.2$ cfs
$V_{100} = CP_6A = (0.66)(2.3)(1/12)(56,640) = 7,165$ cf

Comparison

$Q_{100} = 4.2 - 1.8 = 2.4$ cfs (increase)
$V_{100} = 7,165 - 3,040 = 4,125$ cf (increase)



DRAINAGE BASIN RUNOFF SUMMARY

BASIN	AREA (ac)	Q_{100} (cfs)	V_{100} (cf)	Q_{10} (cfs)	V_{10} (cf)	V_{pond} (cf)	$V_{ponded,\ 100}$ (cf)	ΔV_{100} (cf)
1	4.10	2.0	4,800	0.4	1,100	0	0	4,800
2	3.00	2.5	5,900	0.8	2,000	7,000	5,900	0
3	9.30	6.0	14,300	1.7	4,200	6,500	6,500	7,800
(3a)	(2.00)	(2.5)	(5,900)	(1.0)	(2,500)	-	-	-
4	0.10	0.1	100	0.0	100	0	0	100
5	1.60	3.4	8,100	1.9	4,600	1,500	1,500	6,600
6	0.55	0.7	1,700	0.3	800	0	0	1,700
7	4.70	9.9	23,600	5.3	12,700	0	0	23,600
8	0.60	0.7	1,700	0.3	900	670	670	1,030
9	0.50	0.7	1,700	0.3	800	7,000	1,700	0
10	7.50	17.3	40,300	9.6	22,500	3,003	2,300	38,200
(10a)	(0.55)	(1.0)	(2,300)	(0.5)	(1,100)	(3,000)	(2,300)	(0)
11	0.70	1.0	2,300	0.4	1,000	2,200	2,200	100
12	0.10	0.0	100	0.0	0	2,000	100	0
13	7.20	9.6	22,600	4.2	9,900	0	0	22,600
			Σ = 122,600				Σ = 20,870	

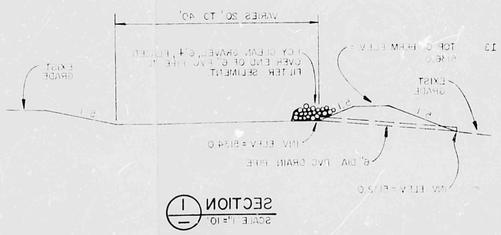
RECOMMENDED POND CONSTRUCTION

Basin	Recommendation
1	NONE
2	NONE
3	NONE
4	NONE
5	NONE
6	DIVERT FLOW TO BASIN 13
7	NONE
8	NONE
9	NONE
10	NONE
11	NONE
12	NONE
13	Construct pond w/volume = 16,000 cf

FUTURE BASIN

FUTURE BASIN = BASIN 2 + BASIN 3 + BASIN 13

$Q_{FUTURE\ BASIN,\ 100} = 33.8$ cfs
$Q_{FUTURE\ BASIN,\ 10} = 16.8$ cfs
$V_{FUTURE\ BASIN,\ 100} = 81,400$ cf
$V_{FUTURE\ BASIN,\ 10} = 40,400$ cf



SECTION 1
SCALE 1"=10'

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- EXISTING POND
- DRAINAGE BASIN I.D. (EXISTING)
- DRAINAGE BASIN BOUNDARY
- DRAINAGE BASIN RUNOFF
- EXISTING ASPHALT PAVING
- PROPOSED ASPHALT PAVING

RECEIVED FEB 15 1985 HYDROLOGY SECTION

FIGURE 2

UPDATED COMPREHENSIVE DRAINAGE PLAN FOR NEWPORT EAST BUSINESS PARK

M 16 / D 11 B

PREPARED FOR:
CRADDOCK DEVELOPMENT COMPANY
2801 YALE BLVD. SE
ALBUQUERQUE, NEW MEXICO 87106

JOB NO 1103
DATE 1/82

DESIGNED BY JM
DRAWN BY JM
APPROVED TM

NO	DATE	BY	REVISIONS
1	2/85	JOM	UPDATED FOR MULTI-FLEX-7.

DON ANDERSON & ASSOCIATES, INC.
ENGINEERS
811 DALLAS N.E. · ALBUQUERQUE, NEW MEXICO · 87110

FILE NO
SHEET 1 OF 1