HYDROLOGY

F20/D8

TWO PLANS

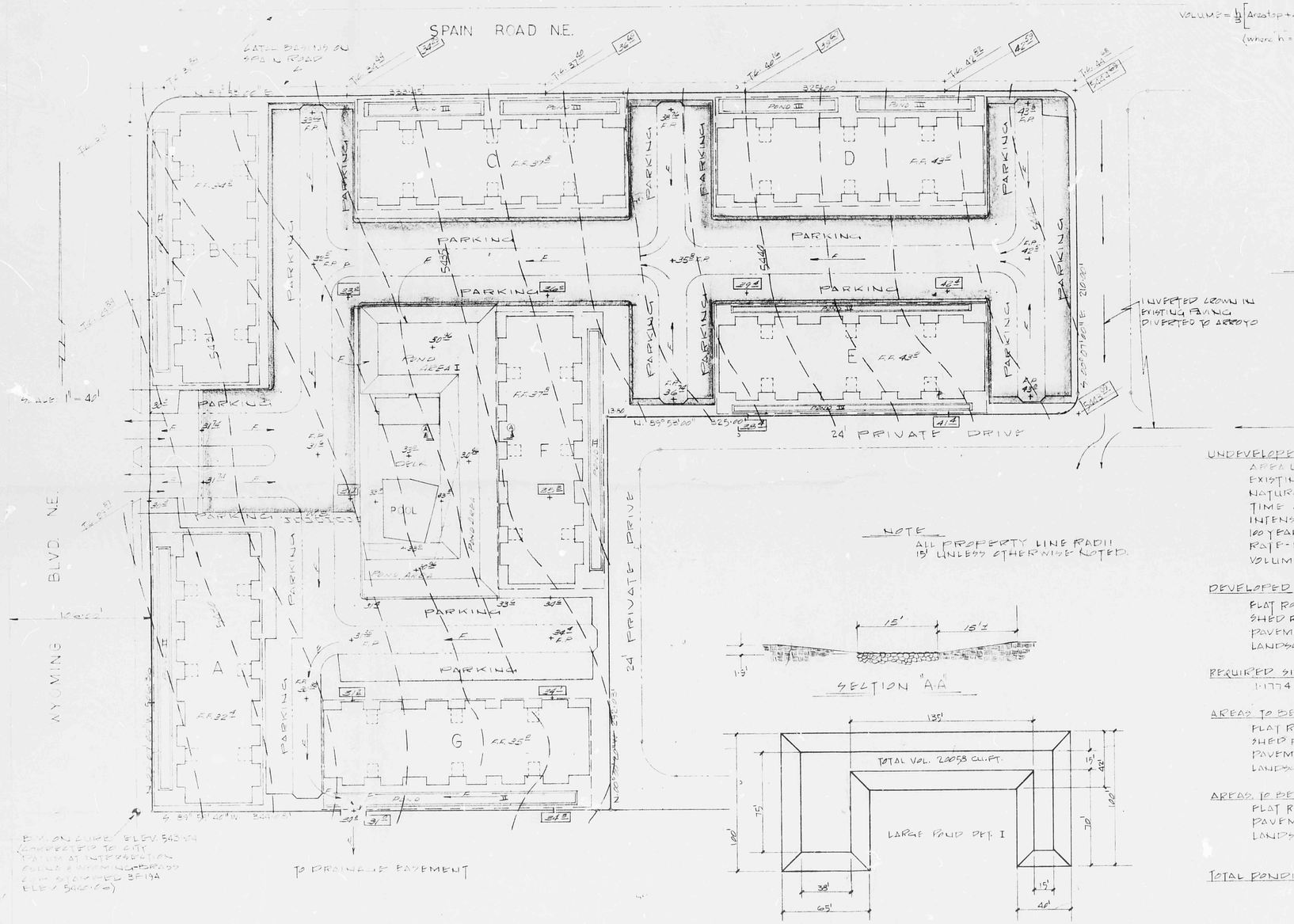
NO DOCUMENT

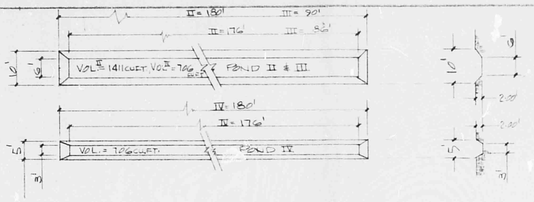
ACADEMY ESTATES ADDITION

MISSION HILLS NORTH

ALBUQUERQUE, NEW MEXICO

ENCHANTMENT ENGINEERING Inc.
1529-F EUBANK BLVD. N.E.
ALBUQUERQUE, N.M. Ph 294-8850





VOLUME = 1/3 [Area top + Area bottom + √(Area top × Area bottom)]
(where h = depth)

POND VOLUMES

POND A		14,[illegible]
POND B		14,[illegible]
POND C	2 PONDS @ 10,[illegible]	14,[illegible]
POND D	2 PONDS @ 10,[illegible]	14,[illegible]
POND E	2 PONDS @ 10,[illegible]	14,[illegible]
POND F		14,[illegible]
POND G		14,[illegible]
MAIN POND		26,[illegible]
TOTAL PONDING VOLUME		285,[illegible]

LEGEND

- 4.5 EXISTING CONTOUR
- F.F. 4.5 FINISHED PAVING ELEV.
- F.F. 4.5 FINISHED FLOOR ELEV.
- T.C. 4.5 EXISTING TOP CURB ELEV.
- PARKING & ROAD DRAIN TO CATCH BASIN
- PONDING BOUNDARIES

NOTE:
PAVEMENT INCLUDES: PAVING, PARKING, DRIVES, POOL DECK, AND WALKS.

INVERTED CROWN IN EXISTING PAVING DIVERTED TO ARROYO

NOTE
ALL PROPERTY LINE RADII 15' UNLESS OTHERWISE NOTED.

SECTION "A-A"

BENCHMARK: ELEV. 5[illegible] (CORRECTED TO CITY DATUM AT INTERSECTION COLLS & WYOMING NORTHBOUND CURB ON WEST SIDE OF WYOMING ELEV. 5[illegible])

UNDEVELOPED

AREA UNDER CONSIDERATION	6.141 Acres
EXISTING SLOPE	1.25%
NATURAL RUNOFF COEFFICIENT	0.40
TIME OF CONCENTRATION	17.25 Minutes
INTENSITY	4.41 Inches per hour
100 YEAR-6 HOUR PRECIPITATION	2.6 Inches
RATE-NATURAL RUNOFF	10.93 cfs
VOLUME-NATURAL RUNOFF	0.533 Acre-feet

DEVELOPED	AREA (Acres)	C	A×C	RATE (cfs)	VOLUME (Ac-ft)
FLAT ROOF	2.7302	0.815	1.776	9.5904	0.2448
SHED ROOF	0.231	0.92	0.213	1.1502	0.0462
PAVEMENT	2.5643	0.92	2.359	12.7386	0.5111
LANDSCAPE	1.5520	0.16	1.246	5.8641	0.2353
					1.1774

REQUIRED SITE RETENTION
1.1774 Ac-ft (Dev) − 0.533 Ac-ft (Nat) = 0.6444 Ac-ft (28076 cu-ft) REQUIRED

AREAS TO BE RETAINED	%	VOLUME
FLAT ROOF	72	0.2171
SHED ROOF	100	0.0462
PAVEMENT	22	0.1155
LANDSCAPE	89	0.2094
		0.5882 Ac-ft

AREAS TO BE DISCHARGED	%	RATE	VOLUME
FLAT ROOF	28	[illegible]	[illegible]
PAVEMENT	78	[illegible]	[illegible]
LANDSCAPE	11	[illegible]	[illegible]
			0.5292 Ac-ft

TOTAL PONDING VOLUME = 28524 cu-ft

F20/D8 (2)

SHEET 1-A

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SCALE: 1" = 40'

DRAINAGE CALCULATIONS

UNDEVELOPED

AREA UNDER CONSIDERATION	6.249 ACRES
NATURAL SLOPE	1.6%
NATURAL RUNOFF COEFFICIENT	.4
TIME OF CONCENTRATION	10 MINUTES
INTENSITY	5.4 INCHES PER HR
100 YEAR 6 HOUR PRECIPITATION	2.8 INCHES
RATE OF NATURAL RUNOFF	13.5 CFS
VOLUME OF NATURAL RUNOFF	.58324 ACFT (25406 FT³)

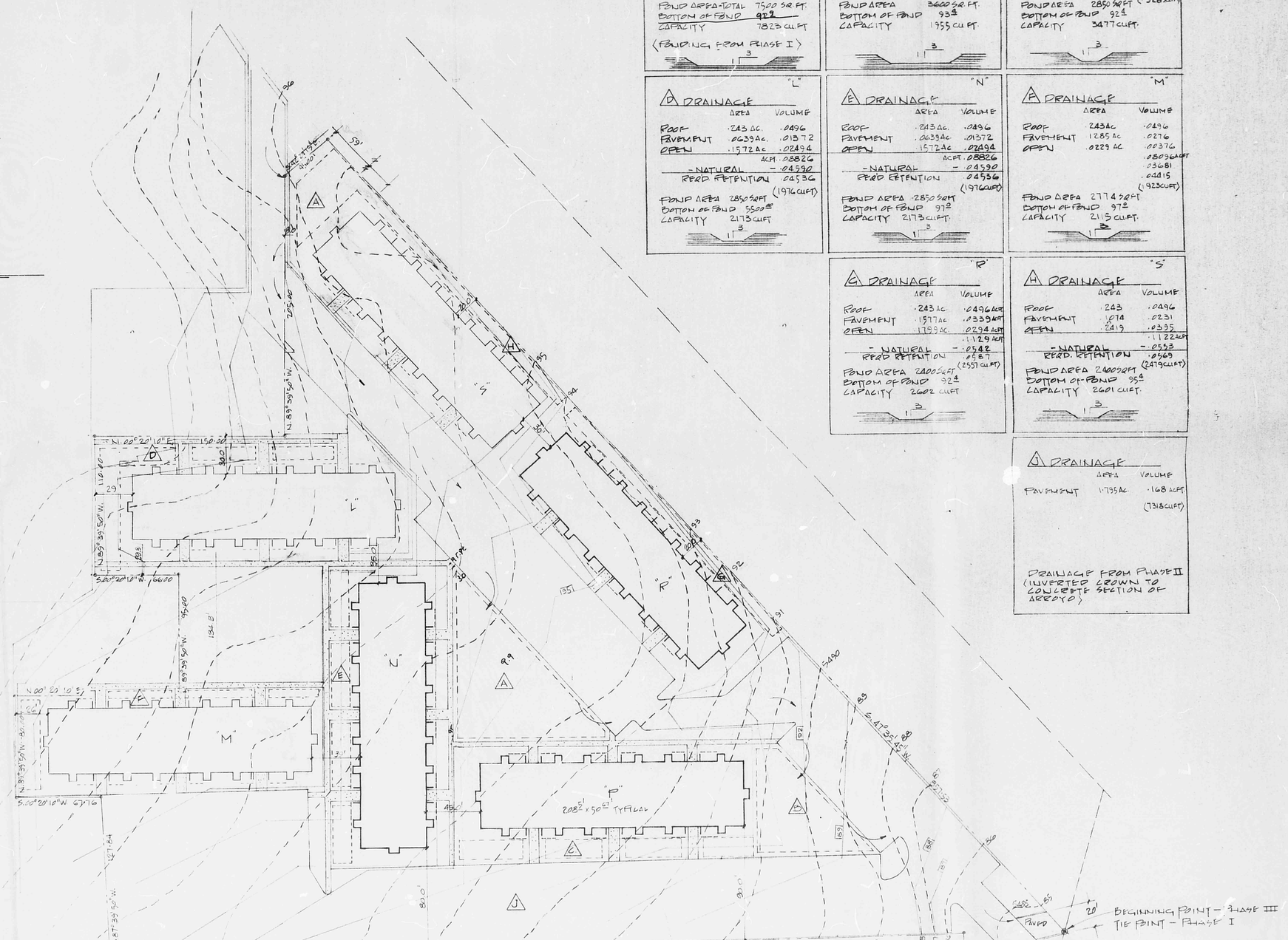
DEVELOPED

	AREA	L	A x L	Q (CFS)	VOL (ACFT)
ROOF	1.458	.875	1.276	6.889	.2977
PAVEMENT	3.064	.92	2.819	15.223	.6578
OPEN	.670	.70	.470	2.533	.1304

TOTAL REQ'D RETENTION

1.1732 ACFT DEV
- 0.5832 ACFT NAT
.5899 ACFT (25699 FT³)

NOTE:
ABOVE FIGURES INCLUDE RUNOFF VOLUMES FROM PHASE I & II AND FACTORED IN ON PONDS.



A DRAINAGE (2 PONDS)

	AREA	VOLUME
PAVEMENT	1.2511 AC.	.2686
- NATURAL		-.1168
REQ'D RETENTION		.1518 ACFT (6612 CUFT)

POND AREA-TOTAL 7500 SQ. FT.
BOTTOM OF POND 92
CAPACITY 7823 CU. FT.
(POND. INC. FROM PHASE I)

B DRAINAGE

	AREA	VOLUME
PAVEMENT	.2892 AC.	.0684
- NATURAL		-.0270
REQ'D RETENTION		.0414 ACFT (1803 CUFT)

POND AREA 3600 SQ. FT.
BOTTOM OF POND 93
CAPACITY 1955 CU. FT.

C DRAINAGE "P"

	AREA	VOLUME
ROOF	.243 AC.	.0496
PAVEMENT	.3475 AC.	.0746
OPEN	.0918 AC.	.0150
		.1392 ACFT
- NATURAL		-.0637
REQ'D. RETENTION		.0755 (3289 CUFT)

POND AREA 2850 SQ. FT.
BOTTOM OF POND 92
CAPACITY 3477 CU. FT.

D DRAINAGE "L"

	AREA	VOLUME
ROOF	.243 AC.	.0496
PAVEMENT	.0639 AC.	.01372
OPEN	.1572 AC.	.02494
	ACFT	.08826
- NATURAL		-.04590
REQ'D RETENTION		.04536 (1976 CUFT)

POND AREA 2850 SQ. FT.
BOTTOM OF POND 95.5
CAPACITY 2173 CU. FT.

E DRAINAGE "N"

	AREA	VOLUME
ROOF	.243 AC.	.0496
PAVEMENT	.0639 AC.	.01372
OPEN	.1572 AC.	.02494
	ACFT	.08826
- NATURAL		-.04590
REQ'D RETENTION		.04536 (1976 CUFT)

POND AREA 2850 SQ. FT.
BOTTOM OF POND 97
CAPACITY 2173 CU. FT.

F DRAINAGE "M"

	AREA	VOLUME
ROOF	.243 AC.	.0496
PAVEMENT	.1285 AC.	.0276
OPEN	.0229 AC.	.00376
		.08096 ACFT
		.03681
		.04415 (1923 CUFT)

POND AREA 2774 SQ. FT.
BOTTOM OF POND 97
CAPACITY 2115 CU. FT.

G DRAINAGE "R"

	AREA	VOLUME
ROOF	.243 AC.	.0496 ACFT
PAVEMENT	.1977 AC.	.0339 ACFT
OPEN	.1799 AC.	.0294 ACFT
		.1129 ACFT
- NATURAL		-.0542
REQ'D RETENTION		.0587 (2559 CUFT)

POND AREA 2800 SQ. FT.
BOTTOM OF POND 92
CAPACITY 2602 CU. FT.

H DRAINAGE "S"

	AREA	VOLUME
ROOF	.243	.0496
PAVEMENT	.174	.0231
OPEN	.2419	.0335
		.1122 ACFT
- NATURAL		-.0553
REQ'D. RETENTION		.0569 (2479 CUFT)

POND AREA 2400 SQ. FT.
BOTTOM OF POND 95
CAPACITY 2601 CU. FT.

J DRAINAGE

	AREA	VOLUME
PAVEMENT	1.735 AC.	.168 ACFT (7318 CUFT)

DRAINAGE FROM PHASE II (INVERTED CROWN TO CONCRETE SECTION OF ARROYO)