HYDROLOGY C13/D4 1 PLAN

C 13/D4

1 PLAN

DRAINAGE INFORMATION SHEET

PROJECT TITLE: NAUTILUS FITNESS CENTER ZONE ATLAS/DRNG. FILE #: C-13 / D4

LEGAL DESCRIPTION: LOTS A-1-A AND A-1-B, THUNDERBIRD PARTNERSHIP

CITY ADDRESS: UNKNOWN

ENGINEERING FIRM: ISAACSON & ARFMAN, P.A. CONTACT: FRED C. ARFMAN

ADDRESS: 128 MONROE ST. N.E PHONE: 268-8828

OWNER: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: SCHAUK/MILLER ASSN. CONTACT: ERIC MILLER

ADDRESS: 4304 MONTGOMERY BLVD. PHONE: 884-5654

SURVEYOR: FORSTBAUER SURVEYING CONTACT: DON. FORSTBAUER

ADDRESS: 510 CHAMA PHONE: 268-0248

CONTRACTOR: NOT SELECTED AS OF 1-7-85 CONTACT: _____

ADDRESS: _____ PHONE: _____

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 84-149 2/28/84 10/18/84

EPC NO. AX-84-18

PROJ. NO. _____

RECEIVED
JAN 08 1985
HYDROLOGY SECTION

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: JAN. 7, 1985

BY: FRED C. ARFMAN, FOR ISAACSON & ARFMAN, P.A.

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. C-13 DATE: 11/5/84

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Wastside Nautilus
Lots A & A-1 9170 Coors NW

ATTENDANCE: WHO	REPRESENTING
Fred Artman	
Billy Goolsby	

FINDINGS: ① Investigation of previous plan approval is appropriate for the determination of drainage criteria due to the fact that the site is existing and is not currently under City jurisdiction. However this site is currently before EPC for annexation. If previous approval was by AMAFCA the drainage schema integrity will be upheld with regard to additions & modifications to follow same plan.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Billy J. Goolsby SIGNED: F. Artman

TITLE: CE/Hydrology TITLE: R. Engineer, AMAFCA

DATE: 11/5/84 DATE: 11/5/84

County
Letterhead

2/4/85

Mr. Fred Arfman
Isaacson & Arfman, P.A.
128 Monroe St. N.E.
Albuquerque, N.M. 87108

RE: Drainage Plan For Nautilus Fitness Center - Bernalillo County (C13-D4) Received January 8, 1985.

Dear Fred,

I have reviewed the above referenced submittal and given the situation, the proposed drainage scheme seems appropriate.

Please be advised that neither the County nor the City will make any inspections with regard to the grading and drainage of the site. Therefore, it is the responsibility of the owner and his engineer to ensure that the site is constructed according to the above referenced plan, and that adjacent properties are not subjected to flood damage caused by this development.

Should you have any questions or comments, please contact this office at 766-4025.

SUPPLEMENTAL DRAINAGE DATA

for the

RENOVATED NAUTILUS FITNESS CENTER

on

North Coors Road, Albuquerque, N.M.

January 1985

RECEIVED
JAN 08 1985
HYDROLOGY SECTION

Prepared by:

ISAACSON & ARFMAN, P.A.
128 Monroe Street N.E.
Albuquerque, N.M. 87108
(505) 268-8828

FRED C. ARFMAN
NEW MEXICO
7322
REGISTERED PROFESSIONAL ENGINEER

1-7-85

GENERAL INFORMATION

1. This site consists of 2.09 acres of developed lands consisting of an existing building, a storm water retention pond and paved parking and access. The present building is currently being used as a fitness center and the planned improvements call for the addition of sports courts along the south and locker room amenities to be expanded upon to the north. In addition, the parking areas shall be re-surfaced and slightly expanded upon.

2. **Legal:** Lots A-1-A and A-1-B of the Replat of Lot A-1 Tract A, Thunderbird Partnership, July, 1984

3. **Surveyor:** Boundary - Rudy Pacheco
N.M.P.L.S. #8668
Topographic - Ron Forstbauer Surveying Co.
N.M.P.L.S. #6126

4. **Masterplan Facility:** In accordance with the North Coors Drainage Masterplan, the concrete lined Corrales Main Canal is to be abandoned as an irrigation canal and will then be utilized as an AMAFCA facility. This facility will collect those storm waters from the West and divert them into the Rio Grande at a point somewhere to the south. This will provide

the site with adequate protection from all storm water flows to the west. This masterplan is in its final review stage and is scheduled for approval and Phase I construction plans in early 1985.

5. **Flood Hazard:** The site is not subject to any flood hazard areas as defined on Plate 8 of 50 of the FEMA "Flood Boundary and Floodway Map" of October 14, 1983.

6. **Offsite Conditions:** This site is completely protected from major offsite storm waters by the adjacent Corrales Main Canal located to the west. Minor offsite sheet flows enter into the site's southwest retention pond from the access way along approximately 100 feet of southerly frontage. In addition, this site must accept minor offsite sheet flows from the east berm of the built up Corrales Main Canal. This strip of land measures 18 x 720 feet. These flows shall also be considered minor.

7. **Onsite Conditions (Undeveloped):** As stated earlier, this site has existing improvement which will be expanded upon. The original site was developed in accordance with a drainage and grading plan developed by Dale Crawford and Associates as part of the original construction plans. This plan was reviewed by AMAFCA, according to Mr. Dan Sabo, but no record was found in their files. Accordingly, the existing site has the following site drainage characteristics.

Area = 2.09 Acres = 91,040 s.f.

"C" = 0.82

D = 2.2" = 0.183'

Tc = 10 minutes

I = 2.16 x 2.2 = 4.75

Q_{100}=(0.82)(4.75)(2.09)=8.14 cfs Q_{10}=(0.657)(8.14)=5.35 cfs

V_{100}=(0.82)(0.183)(91,040)=13,686 cf V_{10}=(0.657)(13,686)=8,992cf

Approximately 90% of the existing site's runoff makes its way to the existing retention ponds on the south end of the subject property. The remaining 10% is retained at various low points onsite or is allowed to discharge from the site at various locations along the easterly property line.

8. **Onsite Conditions (Developed):** In this redeveloped site, all storm waters are conveyed to the improved onsite retention ponds to the south, with the exception of a minor patio area (440 sf) at the northernmost end of the site. This small area will handle the storm waters which fall within its limits by means of a properly sized french drain located a minimum of 15 feet away from the new northerly addition.

FRENCH DRAIN:

Area = 440 sf

D = 0.183'

V = (0.95)(0.85)(440)(0.183) = 65 cu.ft.

The drain should hold the 10 year storm, first hour runoff within its limits. Therefore, a rock filled 18" RCP (2'-0" minimum length) over a rock bed 8' in diameter x 2'-0" (min.) depth will handle approximately 40 cu.ft. or the 10 year volume of runoff. Greater event storms will be allowed to have short term ponding over the patio's tiles until such time that the drain's percolation rate allows total storm water acceptance.

The remainder of the site is drained toward the retention ponds by means of overland flow or roof drain systems.

ROOF DRAINS: Drain line "A" captures those flows from three roof drains located on the north end of the building. The discharge end is at the north edge of pavement where the flows enter onto the paving surface. Drain line "B" collects those flows from the east paved rundown and conveys them to the Site's southeast retention pond via an 8" PVC drain. From the inlet end to the pond's outfall, this pipe has a slope of 0.002 ft/ft over a length of 325 feet. It also accepts flows directly from two roof drains

along the building's south face.

RETENTION PONDS: The two ponds shall be connected by means of a 12" CMP with end invert elevations of 85.5. This will allow the pond to equalize and share the storm water burdens.

The projected storm water volume that these ponds must accept is as follows:

Area = 2.24 Acres = 95,930 sf
"C" = 0.84
Tc = 10 minutes
I = 4.75
D = 2.2" = 0.183'

$Q_{100}=(0.84)(4.75)(2.24)=8.94$ cfs $Q_{10}=(0.657)(8.94)=5.87$ cfs

$Q_{50} = (0.92)(8.94) = 8.22$ cfs

$V_{100}=(0.84)(0.183)(95,930)=14,746$ cf $V_{10}=(0.657)(14,746)=9,688$cf

$V_{50} = (0.92)(14,746) = 13,566$ cu.ft.

Pond Volume Calculations

	Contour	Sq.Ft.	Vol. Per Contour	Accumulative Volume
Pond 'A'	88.5	10,733	3,459	3,459
	88	3,065	2,701	6,160
	87	2,336	2,012	8,172
	86	1,688	1,351	9,523
Pond 'B'	88.5	2,822	1,310	1,310
	88	2,417	2,019	3,329
	87	1,620	1,350	4,679
	86	1,080	810	5,489
	85	340		
			Total Pond Volume	15,012

Ponds have the capacity to retain 102% of the 100 year volume or 110% of the 50 year volume.

9. All developed storm waters shall be retained onsite. If a storm occurred with a frequency less than the 100 year, an overflow may occur. If so, water would exit the site via the paved site entrance.