HYDROLOGY H11/D12 NO PLANS

H11/D12

NO PLANS

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 16, 1978

Neal Godwin
Godwin Engineering Corporation
3820 Academy Parkway North NE
Albuquerque, New Mexico

RE: Murphy Addition

Dear Mr. Godwin:

I have reviewed the drainage plan for the Murphy Addition and I concur with the proposed scheme. The drainage report is therefore approved.

Very truly yours,

Bruno Conegliano
Asst. City Engineer-Hydrology

BC/gm

cc; V.M. Kimmick
Jim Smith
Drainage file

DRAINAGE REPORT

FOR

MURPHY ADDITION

ALBUQUERQUE, NEW MEXICO

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
STATE OF NEW MEXICO
No. 3620
NEAL F. GODWIN

Prepared by:

GODWIN ENGINEERING CORPORATION
5/4/78 07-03

OBJECTIVE:

The general objective of the report is to determine the required treatment of drainage runoff in the Murphy Addition, a proposed development for single family residences, in accordance with the guide lines set forth by the AMAFCA Drainage Resolution of July 1972-2.

LOCATION:

Murphy Addition is a 3.27 acre tract, location on the West Mesa. It is bounded on the South by Eagles Nest Addition, on the West by Vista Grande Drive N.W., a paved and guttered street, on the North by the Palisades Addition (presently vacant) and on the East by the top bank of the Rio Grande River. (see location map Appendix A).

NATURAL DRAINAGE:

Due to the westerly sloping natural terrain, approximately 2/3 of the site drains to the West, to Vista Grande Drive. The remaining 1/3 drains to the East (see topographic map, Appendix B).

INTERNAL DRAINAGE & PROPOSED DEVELOPMENT:

In order to utilize the natural terrain of the site, the only street, a cul-de-sac, will be allowed to drain directly into Vista Grande Drive. The cul-de-sac will be paved, 32' face-to-face and will slope at a grade of approximately 1.0% towards Vista Grande Drive.

Single family residences will typically utilize 2000 square feet of roof area, 400 square feet of drive, and 180 square feet of side walk per lot. In order to comply with the AMAFCA resolution, in not increasing the quantity of runoff from natural state to developed state, some retention will be necessary. The excess water which results from drives, sidewalk and front yards will be allowed to drain into the street. It is proposed to size the ponds to retain

excess runoff from roof, rear and side lot areas. The ponds for each lot will be placed in the front yard. By doing this, all runoff from each lot will be routed thru the pond before spilling into the street. The pond bottoms will be 24 inches below finish floor elevations to insure against flooding.

COMPUTATIONS:

Runoff that will be directed toward Vista Grande Drive.

Area at C = 0.95

Sidewalks and drives = (180 + 400) 12	= 6960 s.f.
Street 300 x 32	= 9600 s.f.
Bulb of cul-de-sac (40' radius)	= 5027 s.f.
	21,587 s.f.

Area at C = 0.40

Front yard area 20 x 80 (12)	= 19,200 s.f.
	19,200 s.f.

$$\text{Composite } C = \frac{21,687(0.95) + 19,200)0.40)}{21,587 + 19,200} = 0.69$$

A = (21,587 + 19,200)/43,560 = 0.94 Ac.
Length of longest run = 370'
Average slope = 1.0%

Tc = 4.5 min (as shown in fig. III, Appendix C)

I = 189/t+25 = 189/29.5 = 6.4

Q = CIA = 0.69(6.4)0.94 = 4.15 cfs.

This runoff will flow to Vista Grande Drive thence North along Vista Grande some 1500' to a drop inlet located North of Caitlin where it is carried into the Rio Grande by means of a storm sewer.

The present runoff of the tract toward Vista Grande Drive is computer as follows:

A = 2/3 (3.27 Ac.) = 2.18 Ac. C = 0.40, I = 6.4

Q = (2.18) x (0.40) x (4.64) = 5.58 cfs.

Therefore, there is less runoff toward the street after development.

RUNOFF TO BE RETAINED/LOT:

Typical lot = 80 x 125 = 10,000 s.f.

Roof area = 2000 s.f. @ C = 0.95

Ground area = 10,000 - 2000 - 400 (drive) - 180 (s.w.) - (20 x 80) (front yard) = 5820 s.f. @ C = 0.40

$$\text{Composite } C = \frac{2000(0.95) \times 5820(0.40)}{2000 + 5820} = 0.54$$

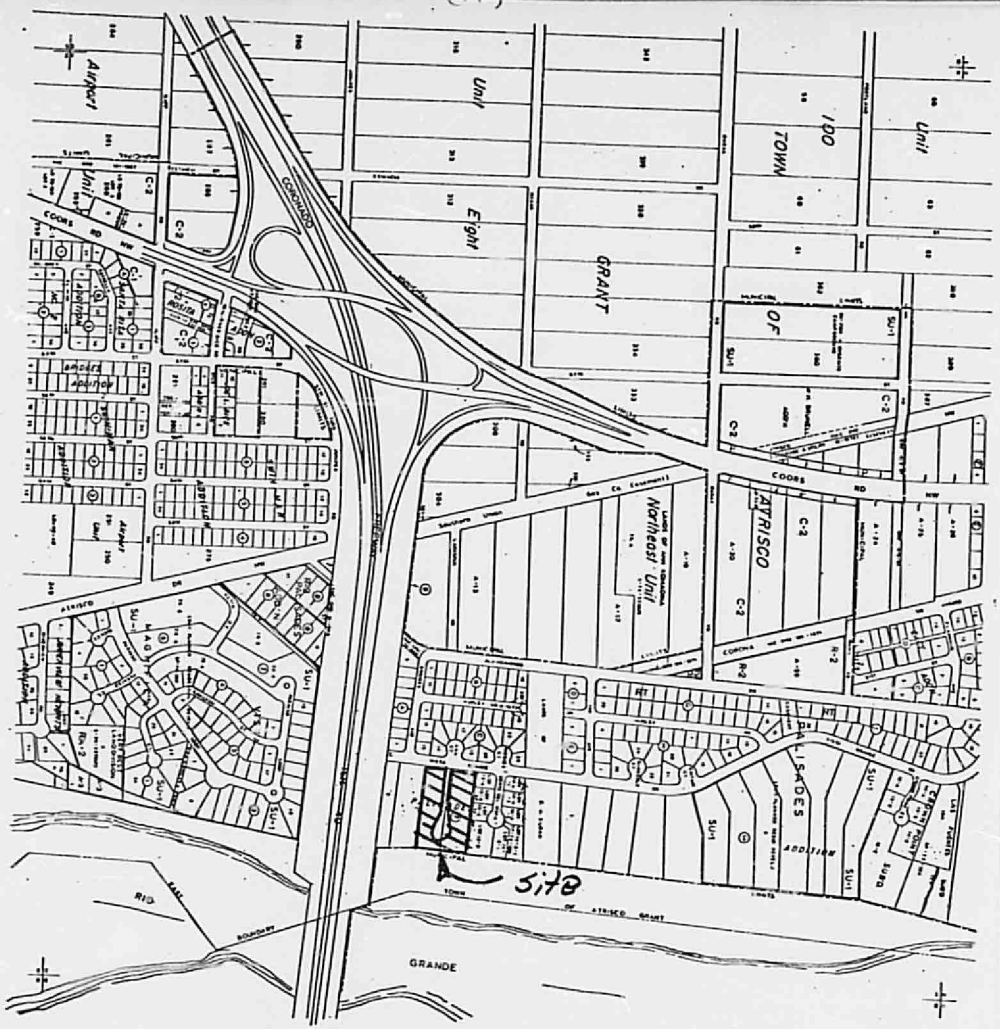
Using 2.4" as total rain fall:

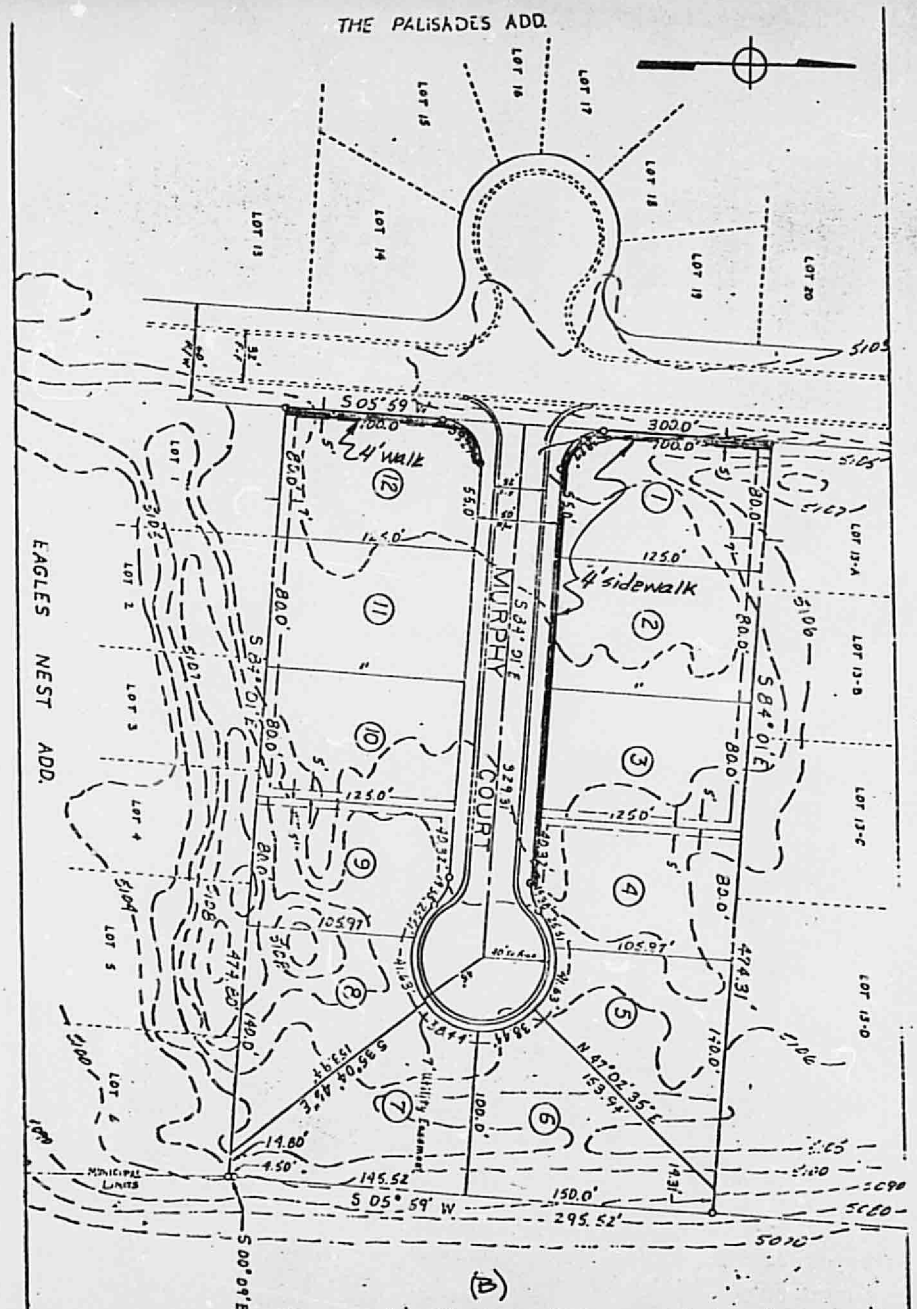
Pond volume = 0.54 x 7820 x 2.4/12 = 845 c.f./lot

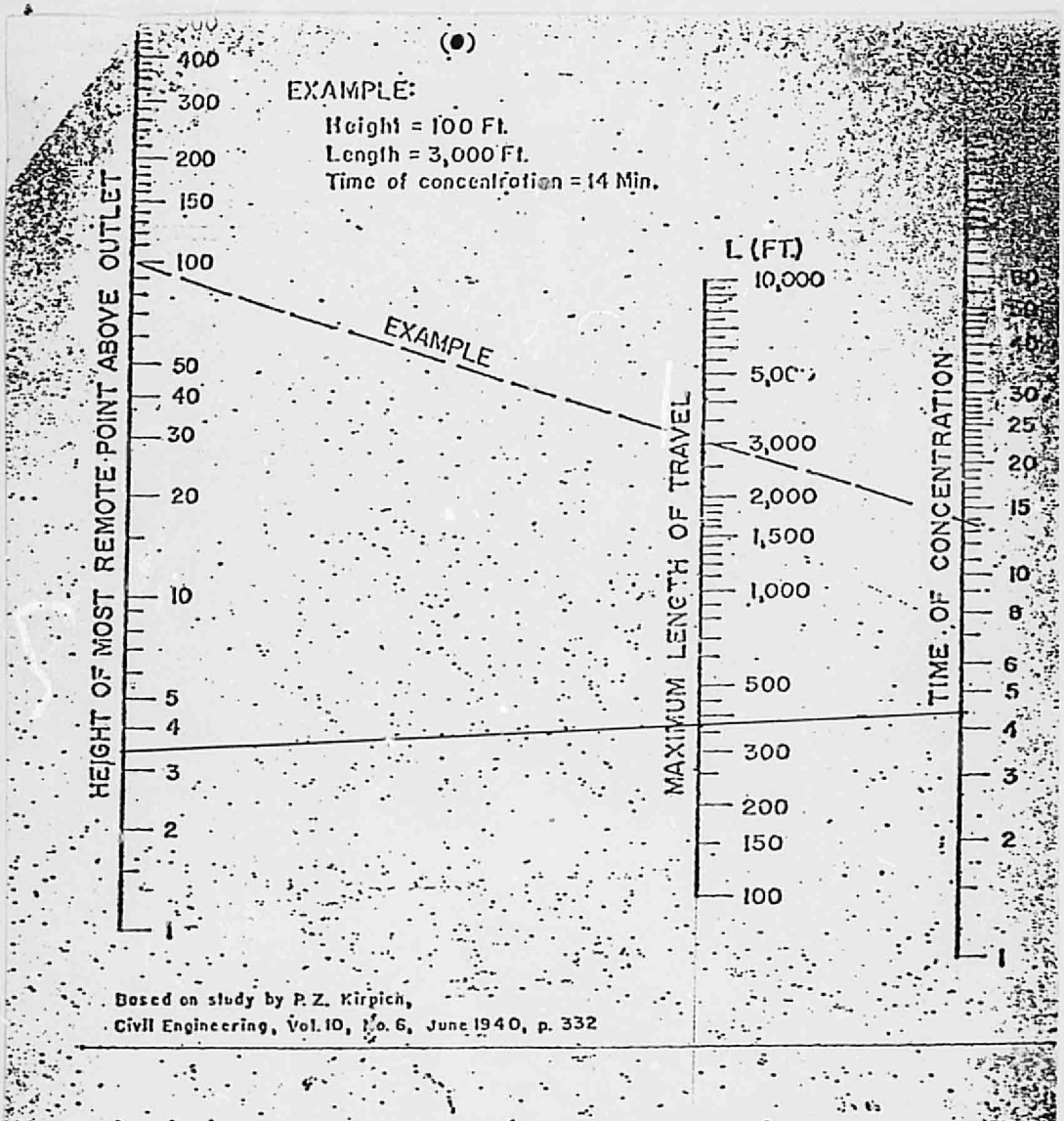
Using 1.5' depth, a pond measuring 15' x 30' x 1.5' with side slopes of 2:1 will be constructed in the front yard pond. If the pond reaches maximum capacity, it will then spill into the street (see Appendix D for typical lot pond).

CONCLUSION:

The development of Murphy Addition should incorporate the foregoing drainage plan to protect the tract itself and to comply with AMAFCA resolution July 1972-2.


Airport
Unit
Eighth
GRANT
OF
TOWN
Unit
COORS
RD
C-2
C-3
C-2
C-2
C-2


THE PALISADES ADD.
EAGLES NEST ADD.
MURPHY COURT
LOT 13
LOT 14
LOT 15
LOT 16
LOT 17
LOT 18
LOT 19
LOT 20
LOT 1
LOT 2
LOT 3
LOT 4
LOT 5
LOT 6
LOT 13-A
LOT 13-B
LOT 13-C
LOT 13-D
4' walk
4' sidewalk
S 05° 59' W
300.0'
100.0'
125.0'
80.0'
105.97'
474.80'
474.31'
140.0'
100.0'
150.0'
145.52'
295.52'
14.80'
4.50'
S 00° 09' E 4.50'
N 47° 02' 35" E
153.94'
143.1'
MUNICIPAL LIMITS
7' Utility Easement
40' Cul-de-sac
(B)
Topographic Map and Proposed development



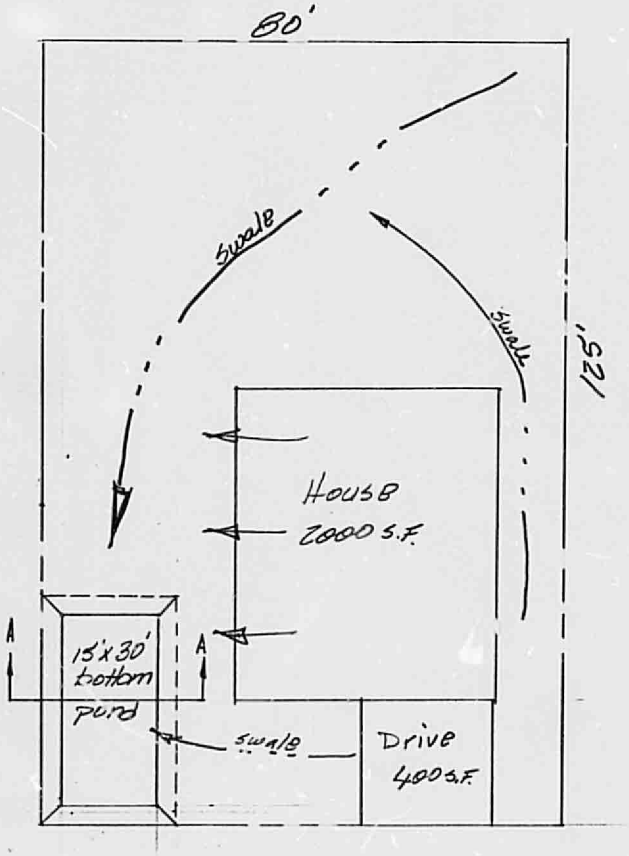
Based on study by P. Z. Kirpich,
Civil Engineering, Vol. 10, No. 6, June 1940, p. 332

TIME OF CONCENTRATION OF SMALL DRAINAGE BASINS

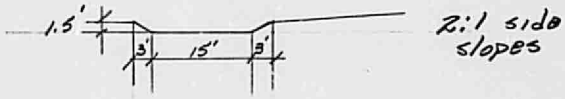
Reprinted from "Design of Roadside Drainage Channels - Hydraulic Engineering Circular No. 6", April 1962, U. S. Dept.

FIGURE III (c)

Typical lot Pond (D)



Section A-A :



Pond Volume:

$$= (15' \times 30' \times 1.5') + \left[(36' \times 2) + (15' \times 2)\right]\left(\frac{1.5' \times 3'}{2}\right)$$

$$= 675 + 230 = \underline{905 \text{ cu. ft.}}$$, Vol. required = 895 cu. ft.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
David Rusk

May 24, 1978

Godwin Engineering Corp.
3820 Academy Parkway North NE
Albuquerque, New Mexico 87109

RECEIVED
MAY 30 ...
CITY ENGINEERS

Dear Mr. Godwin:

H11-D12

RE: Murphy Subdivision
S-78-24

At their meeting of May 23, 1978, the Administrative Review Board approved in concept the proposed plat of Murphy Subdivision with the understanding that a soils analysis will be provided to the City Engineer for his review and approval along with the required drainage study. Final approval of the subject plat will be granted only after the Administrative Review Board has been furnished the City Engineer's opinion regarding the advisability of using fill and the type of fill being proposed.

The Board's approval is also subject to the following conditions:

1) Lots 5 thru 8 must be widened to comply with Zoning Code requirements.
2) Compliance with the Park Dedication Ordinance is required prior to issuance of building permits.
3) Water service is subject to line extensions at the developer's expense and the buildout schedule submitted by the applicant.
4) The street name "Murphy Ct." must be changed to "Ana Ct.".
5) A drainage plan satisfactory to the City Engineer and AMAFCA is required prior to final plat approval.

If you have any questions concerning this action, please do not hesitate to contact this office.

Sincerely,

Phil Garcia
Principal Planner

jd

cc: Ray B. Pacioni & Tony Murphy, 3616 N. 54th Pl., Phoenix, Ariz.; 85018

PLANNING DEPARTMENT
CITY OF ALBUQUERQUE

ADMINISTRATIVE REVIEW BOARD
May 23, 1978
S-78-24

S-78-24 Godwin Engineering Corp., agent for Ray B. Pacioni & Tony Murphy, requests approval of the proposed Murphy Subdivision, zoned R-1, and located on the east side of Vista Grande Drive, N.W., between ISR-40 and Corte del Vista, containing approximately 3.27 acres.

PL Map No.: H-11 Material: Report, Plat

COMMENTS FROM OTHER DEPARTMENTS:

Traffic Engineer:	"No comments."
Dept. of Transportation	" "
COG:	" "
Liquid Waste Engineer:	" "
City Engineer:	"Do not recommend discharge run-off to the east into the Rio Grande. Require drainage study prior to approval of plat."
AMAFCA:	"A drainage plan in accordance with AMAFCA 1972-2 will be required. Slope protection will be necessary on east side of development if any rundown is anticipated for runoff."
Environmental Health:	"Before any grading starts it is necessary that the developer or his contractor acquire a top soil disturbance permit."
Fire Dept.:	"No comment."
Parks & Recreation:	"Under Ordinance 7-1976, the developer is required to pay $936.00 (12 lots x $78.00)."
APS:	"No comment."
Mountain Bell:	" "
Gas Co. of NM:	"Approve."
Public Service Co. of NM:	no reply received
Water Engineer:	" " "

PLANNING DEPARTMENT COMMENTS TO THE ADMINISTRATIVE REVIEW BOARD, 5-23-78:

Approval of a 12 lot, R-1-zoned subdivision is requested for a 3.27 acre tract, with a gross density of 3.67 DU/A. Lots 1-4 and 9-12 are in excess of the area and width requirements of the Zoning Code; however, Lots 5-8 are too narrow at the 20 foot front yard setback line--60 feet is required and 55 feet is provided.

A drainage plan satisfactory to the City Engineer and AMAFCA is required prior to plat approval. Compliance with the Park Dedication Ordinance is required prior to issuance of building permits.

Water availability to the site is limited, and must be coordinated through the Water Resources Department. Service is subject to line extension at the developer's expense and subject to the buildout schedule submitted by the applicant.

The name Murphy Ct. should be changed to Ana Ct. to conform to the cul-de-sac to the west.

FINDINGS:
1. Lots 5 thru 8 must be widened to comply with Zoning Code requirements.
2. A drainage plan satisfactory to the City Engineer and AMAFCA is required prior to plat approval.
3. Compliance with the Park Dedication Ordinance is required prior to issuance of building permits.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 17, 1978

H11-D12

Mr. Neal F. Godwin
Godwin Engineering Corporation
3820 Academy Parkway, North
Albuquerque, N.M. 87109

Subject: TEST TURNKEY PROJECT WORK AUTHORIZATION #T-25
MURPHY ADDITION

Dear Mr. Godwin:

Under the provisions of the Test Turnkey Project procedures, this letter is the Work Authorization to begin field work on the project.

Sincerely,

Richard S. Heller

Richard S. Heller
City Engineer

RSH/fs

cc - H. R. Orr
Don Coe Construction Company
Ray Dawson
Water Resources
Dwayne Sheppard
Bob Kielich
LaMonte Urban
Bruno Conegliano
Bill Mueller
Jim Wilson, Traffic Engineering