HYDROLOGY E18/D8 2 PLANS

E18/D8

2 Plans

Jerry D.
File Academy Acres Unit 8

ELVIN KANTER
ATTORNEY AT LAW

ASSOCIATE
JOHN J. CARMODY, JR.

TELEPHONE 243-2844
AREA CODE 505

SUITE 1111
AMERICAN BANK OF COMMERCE COMPLEX
TWO HUNDRED LOMAS BOULEVARD, NORTHWEST
ALBUQUERQUE, NEW MEXICO 87102

April 30, 1974

RECEIVED
MAY 02 1974
CITY ENGINEERS

Donald L. Jones, Esquire
Shaffer, Butt & Jones
1024 Simms Building
Albuquerque, New Mexico 87102

RE: Elevation Changes, Block 21, Academy Acres Unit 8
Our File A572

Dear Mr. Jones:

In response to your letter of April 3, 1974, my clients, the residents of the 6600 block of Lafving, N.E. Albuquerque, New Mexico, have reviewed the engineering data enclosed with and considered the proposal made in your letter of April 3, 1974, concerning lowering the elevation of the lots located "behind" their homes to the east. While they would very much like to see those lots lowered, even by the minimum amount indicated on the drawings, and believe that such lowering would be to the mutual advantage both of the householders on Lafving Street and to the developer on Glendora, they must respectfully decline to make a contribution toward the accomplishment of it. I believe that economic conditions force this decision upon my clients; they have all experienced heavy expenses in the last year or so in moving into a new home, furnishing and landscaping.

They will, of course, execute an appropriate release of liability to your client, Mortgage Investment Company, if it does accomplish the lowering as proposed in the engineering drawings attached to your letter of April 3, 1974.

My clients' decision has been delayed by the difficulty of getting all of them together at a meeting.

That meeting finally was convened on the evening of April 29, 1974. At that time I was able to view the site again and noticed a disturbing condition on the lots owned by Presley Construction Company. While I hasten to acknowledge that Mortgage Investment Company has no control over nor responsibility for the action of the Presley Company, I feel the condition must be made apparent to your client and I am sending a copy of this letter both to Presley Company and to the City Engineer's Office.

The condition referred to is caused by the dumping of fill dirt upon the rear or western end of Lots 32 and 33, Block 21, Academy Acres Unit No. 8. This fill has raised the elevations of the rear portions of Lots 32 and 33, which abut the rear walls of my clients, Toney Cordova, Ernest Garcia and Mike Madanick. The level of the earth rises almost to the top of my clients' rear walls. The walls themselves are not constructed as retaining walls and the swale originally cut for pooling of surface water has been obliterated. It is the fear of my clients that if the elevation of the lots abutting their rear walls is left raised as indicated, that the walls will not be able to withstand the pressure of earth and water created by the change in the elevation. By copy of this letter, I am requesting the Presley Company to take immediate steps to remedy the situation which they have created by introducing fill dirt onto Lots 32 and 33. I am respectfully requesting Mortgage Investment Company to avoid creating a condition on Lots 34 through 40 which may have adverse effects upon my clients' rear walls and landscaping. Naturally my clients will hold the Presley Company and Mortgage Investment Company liable for any damage caused to their property by conditions created by Mortgage Investment and the Presley Company.

I am also mailing a copy of this letter to the City Engineer's Office with the request that it make an examination of the conditions on Lots 32 and 33 and clarify the Presley Company's intention with regard to those lots.

I would very much appreciate your inquiring of Mortgage Investment Company as to its intention with regard to raising the rear elevation of Lots 34 through 40. Could you write me when you find out?

If you have any questions or comments, please let me know.

Very sincerely yours,

Elvin Kanter

EK/cm

cc: Messrs. Cordova, Painter, Madanick, Garcia, Bacon, Thompson, Nuttall and Smith
Presley Company of New Mexico - Certified Mail - Return Receipt Requested
City Engineer's Office, City of Albuquerque

CAMPBELL-HICKS and ASSOCIATES, Inc.
Soils Testing Laboratory
Consulting Civil Engineers
232 Muriel Street, N.E. • Phone (505) 296-7139 • Albuquerque, New Mexico 87123

DRAINAGE STUDY RELATIVE TO THE DEVELOPMENT OF ACADEMY ACRES, UNIT 8 ALBUQUERQUE, NEW MEXICO

MARCH 1972

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DRAINAGE STUDY RELATIVE TO THE DEVELOPMENT OF
ACADEMY ACRES, UNIT 8

I. GENERAL

The purpose of this report is to present findings pertinent to estimating and handling of runoff for use in the master planned development of Academy Acres, Unit 8, and to describe a proposed method for providing adequate storm drainage in the area.

II. LOCATION

Academy Acres, Unit 8, is bounded on the west by Unit 3 and proposed Unit 7 of Academy Acres; on the south by Unit 1 of Academy Acres and proposed Unit 2 of Meadowood Manor; on the east by proposed Unit 9 of Academy Acres; and on the north by master planned and unplatted subdivisions. It is situated mainly in the southeast one-quarter (SE 1/4) of the northeast one-quarter (NE 1/4) of Section 25, Township 11 North, Range 3 East, N.M.P.M.

III. EXISTING DRAINAGE CONDITIONS

A. General

This area is generally located between Burlison Drive, N.E., and unplatted land on the north and Louisiana Blvd., N.E., and proposed Unit 7 of Academy Acres to the east and west. It is crossed by small arroyos in a general east-west direction.

B. Drainage Areas

Academy Acres, Unit 8, lies between Burlison Drive, N.E., and unplatted land to the north. It is west of Louisiana Blvd., N.E. and northwest of proposed Meadowood Manor, Unit 2, as shown on Exhibit "A", a portion of a scale photograph by Koogle and Pouls Engineering, Inc., and Exhibit "C", a plat by Ralph K. Hicks and Associates, Inc. Through field investigation, it is considered that the photograph is satisfactory for the purpose of determining the original division lines.

C. Drainage Areas and Channels

Presently one drainage area contributes 184 c.f.s. from the east down Burlison Drive, N.E., and is turned into the drainage easement at Harper Drive, N.E. The drainage easement parallels Burlison Drive, N.E., and is more

than adequate. The other major contributor is 105 c.f.s. which is a combination of four separate areas (labeled B, C, D & E on Exhibit "B") which contribute on the first street north of Burlison Drive, N.E. and is carried down the street and is turned into the afore mentioned drainage easement. A third minor area (labeled A on Exhibit "B") contributes 57 c.f.s. from the north and can easily be handled down Avenida La Costa, N.E. The runoff within the development itself can be carried by planning streets in such a manner (i.e. set property lines high enough and adjust grades on streets within the development) as to carry the water across the development.

IV. PROPOSED DRAINAGE PLANS

A. General

In order to provide an adequate system of storm drainage for this proposed development, it was necessary to:

(1) Determine the drainage areas which can and will contribute storm runoff during a 100 year design storm.

(2) Determine the amount of runoff which could be expected after the entire area is developed.

(3) Prepare a table of street carrying capacities for use in sizing streets and overflow sections (section above high curb to property line).

(4) Determine the points where the storm runoff will concentrate.

(5) Determine the ability of each of the drainage channels, streets plus overflow sections, and structures to handle the runoff that may concentrate on them.

(6) Determine and recommend the means by which the expected runoff can be carried by the master planned area.

(7) Design additional channels and structures to simulate and distribute the expected runoff in a manner similar to the existing terrain at the outlet end.

B. Drainage Areas

A study of the photography, Exhibit "A", to determine the areas which could conceivably contribute runoff to the proposed development was made, for which a copy

of computations is contained in Exhibit "D" of this report. Finally, the Master Plan of Drainage, Exhibit "B", was prepared showing the entire area with directions of flow as well as runoff quantities.

C. Runoff Quantities

The quantities of storm runoff to be expected from each drainage area were determined using the Rational Formula, Q=CIA, where: Q=quantity of storm runoff in cubic feet per second; C=coefficient of runoff dependent upon the type of surface drained; I=intensity of rainfall in inches per hour for a duration equal to the total accumulation time in minutes; and A=area of contributing watershed in acres.

The area (A) of each separate contributing area was determined by outlining the watershed on a scale photograph or the contour map and measuring the area (by planimeter) in acres.

The intensity of rainfall (I) was determined by assuming a 100 year frequency rainfall and then utilizing Intensity Duration Frequency Curves (Chart I) for the Albuquerque Area, "Master Plan of Drainage - City of Albuquerque, New Mexico and Environs", 1963, prepared by Gordon Herkenhoff and Associates, Consulting Engineers, together with expected accumulation of runoff from each of the areas. The total accumulation times are determined by a combination of Yarnell's Method and probable future streets and drainage channel alignments and grades, as shown, assuming overland flows to cross either poor grass, asphalt or bare soil surfaces, depending upon the probable type of development in each area and estimating the probable type of grading to be done in each area; assuming future streets to be asphalt paved with concrete curbs and crowned with either full crown (8"), 3/4 crown (6"), or 1/2 crown (4"). These times of flow were calculated by use of tables on pages 5.00, 5.04 and 5.05 of Design by E.E. Seelye.

The coefficient of runoff (C) was determined by assuming the maximum possible development in the areas under consideration. A coefficient of 0.65 is used for areas where dense residential development was most probable. A coefficient of 0.70 should be used for commercial areas or where a large amount of the exposed surface is impermeable.

The quantities of runoff are shown along with the areas after development on Exhibit "C", the Plan of Drainage for this subdivision.

D. Drainage Channels and Facilities

All existing structure capacities, as well as any proposed future structures, were verified from computer output sheets which form a part of Exhibit "E" and are based on Manning's Equation, Q=AV, where $V=\frac{1.486}{n} R^{2/3} S^{1/2}$ when A=cross-sectional area of the channel or structure; R=hydraulic radius of channel or area divided by wetted perimeter; S=slope of channel or facility in feet per foot; and "n" values of 0.015 for concrete and asphalt surfaces, 0.013 for concrete pipes, 0.0225 for dirt lined channels or a composite "n" value based on proportional wetted surfaces with different values.

V. CONCLUSIONS AND RECOMMENDATIONS

On the basis of this study and its calculations, it is concluded that the development of this area can be accomplished satisfactorily provided adequate storm drainage is done.

Recommendations and conclusions include the following:

A. Minimum street grades, crown heights and property lines above high curb are given in Exhibit "F".

B. An increase in expected runoff into Unit 3 of Academy Acres of only three c.f.s. on Avenida La Costa presents no particular problem.

C. A decrease from 347 c.f.s. to 311 c.f.s. at the junction of Harper Drive, N.E., and Burlison Drive, N.E., as shown in Basil Smith Engineering's drainage study indicates continuing an easement along the north side of Burlison Drive east of this point is not required.

D. A special designed rundown from a 38 foot wide curb opening to a 10 foot bottom lined trapezoidal section with baffles is recommended in the 40 foot easement south of Harper Drive, N.E.

E. The decrease in runoff at Harper and Burlison Drives, N.E., is offset by an increase of about 34 c.f.s. from Meadowood Manor, Unit 2. This slight increase over the original master plan of drainage by Basil Smith Engineering will not require a redesign of the channel downstream.

If all of the above conclusions and recommendations are honored, this plan of drainage should provide the necessary requirements to make this a very satisfactory development.

Respectfully submitted,

Donald P. Campbell

Donald P. Campbell
P.E. & L.S. No. 3633

ADDENDUM

DRAINAGE STUDY RELATIVE TO THE DEVELOPMENT OF

ACADEMY ACRES, UNIT 8

V. CONCLUSIONS AND RECOMMENDATIONS

F. If development north and east of this subdivision has not preceeded its construction, a protective berm or wall is recommended.

Addition certification
submitted by

Donald L. Campbell
P.E. & L.S. No. 3633

April 1972

2009

THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT

EXHIBIT D

SUMMARY OF RUNOFF COMPUTATIONS

Sheet No.	Area Number	Area (in acres)	Expected Runoff (in c.f.s.) Individual	Total
1	1	11	32	89
2	2	12	31	
3	3	20	51	82
4	4	7	22	127
5	5	2	6	441
6	A	22	57	
7	B	14	35	
8	C	10	29	
9	D	9	26	
10	E	6	15