L 12 - D2

1 PLAN

LEVERTON ENGINEERING

4022-H RIO GRANDE BLVD., N.W.
ALBUQUERQUE, NEW MEXICO 87107
(505) 345-5479

September 25, 1978

Mr. Bruno Conegliano
Assistant City Engineer, Hydrology
City of Albuquerque, New Mexico

Re: Drainage Report
Tapia Meadows Addition
Albuquerque, New Mexico

Dear Mr. Conegliano;

Submitted herewith for your consideration and approval are two copies of our drainage report for the captioned subdivision.

Should the report require further exposition or clarification please let me know.

John Leverton

Attachments

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

October 24, 1978

412-D2

Mr. John Leverton
Leverton Engineering
4022-H Rio Grande Blvd. N.W.
Albuquerque, N.M. 87107

Subject: Test Turnkey Project Work Authorization #T-21
TAPIA MEADOWS SUBDIVISION S.W.

Dear Mr. Leverton:

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

Sincerely,

C. D. Sheppard, P.E.

C. D. Sheppard
Acting City Engineer

CDS/fs

cc - H. R. Orr
Kent Nowlin Construction Co.
Ray Dawson
Water Resources
Dwayne Sheppard
Bob Kielich
LaMonte Urban
Bruno Conegliano
Bill Mueller
Jim Wilson - Traffic Engineering

Tapia Meadows (?)

CITY OF ALBUQUERQUE, NEW MEXICO
CITY ENGINEER'S OFFICE

MEMORANDUM - February 12, 1979

TO: Phil Garcia, Chief, Current Planning Division
FROM: Bruno Conegliano, Assistant City Engineer - Hydrology
SUBJECT: POTENTIAL DRAINAGE PROBLEM - GOFF/RIGEL SW INTERSECTION

After my meeting of January 3, 1979 with Mr. Rolland de Jong concerning the potential drainage problem at Goff/Rigel SW Intersection, I have reviewed the situation with Mr. John Leverton, Engineer for Tapia Meadows, who is expected to submit a solution to this problem in the near future. I will advise you as soon as I have received a satisfactory solution to the referenced problem.

BC/fs

cc - Dick Heller
Rich Leonard
John Leverton
Juven G. Sanchez
Jon Messier
Drainage File

Tapia Meadows

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

To fol
cc: Rodney

May 14, 1979

L12-02

Mr. John Leverton
Leverton Engineering
4022-I Rio Grande N.W.
Albuquerque, New Mexico 87107

Re: Tapia Meadows Addition

Dear John:

During the week of May 7, 1979 the subject subdivision was reviewed in the field and it was found that a drainage problem has been created by the construction of Sirus Avenue. As Sirus Avenue intersects Tapia Blvd. S.W., the drainage running northwest to Sirus Avenue is blocked by the construction of the street. This causes ponding on the western side of Tapia Blvd. and flooding when this ponding crosses Tapia Blvd.

It is requested that a solution be presented the City that will transmit the flows from south of Sirus Avenue to north of Sirus in a manner that will minimize or eliminate flooding on the westerly side of Tapia Blvd. This is a situation that probably could not be foreseen during the first phase of the project, but today is a very evident problem. Final acceptance of this subdivision will be withheld until this problem is rectified. If you have any questions, please feel free to call me.

Very truly yours,

Richard S. Heller

Richard S. Heller
City Engineer

RSH/fs

cc - Dwayne Sheppard, Assistant City Engineer-Field
Bruno Conegliano, Assistant City Engineer-Hydrology

LEVERTON ENGINEERING

4022-H RIO GRANDE BLVD., N.W.
ALBUQUERQUE, NEW MEXICO 87107
(505) 345-5479

September 18, 1979

Mr. Richard Heller
City Engineer
Albuquerque, New Mexico

Re: Tapia Meadows Addition
Turnkey Project CT-18-78

Dear Mr. Heller,

Please refer to your letter to me dated May 14, 1979, a copy of which is attached.

You and I inspected the subject subdivision on the morning of May 22, 1979 to view the effect of a moderate rainfall which occurred on May 20th.

We observed an extensive pond of water at the intersection of Tapia Blvd. at Goff Road. The pond appeared to be several inches deep and covered both traveling lanes in Tapia Blvd. and extended along Goff Road almost to the Rigel Street intersection.

Our observations lead to the conclusion that the pond existed before construction of the subdivision.

We also concluded that the condition could possibly be aggravated by the blockage of the side swale along Goff Road by Rigel Street as constructed. Accordingly, you suggested that a valley gutter be constructed across Rigel Street with the flow line at the grade of the Goff Road side swale.

Accordingly, an 8' wide valley gutter with invert at the elevation of the side swale in Goff Road was constructed during June 1979.

John Leverton

cc: Dwayne Sheppard Asst. City Engineer, Field
Bruno Conegliano Asst. City Engineer, Hydrology
R. L. Roberson, Roberson Construction Co.

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

May 14, 1979

Mr. John Leverton
Leverton Engineering
4022-I Rio Grande N.W.
Albuquerque, New Mexico 87107

Re: Tapia Meadows Addition

Dear John:

During the week of May 7, 1979 the subject subdivision was reviewed in the field and it was found that a drainage problem has been created by the construction of Sirus Avenue. As Sirus Avenue intersects Tapia Blvd. S.W., the drainage running northwest to Sirus Avenue is blocked by the construction of the street. This causes ponding on the western side of Tapia Blvd. and flooding when this ponding crosses Tapia Blvd.

It is requested that a solution be presented the City that will transmit the flows from south of Sirus Avenue to north of Sirus in a manner that will minimize or eliminate flooding on the westerly side of Tapia Blvd. This is a situation that probably could not be foreseen during the first phase of the project, but today is a very evident problem. Final acceptance of this subdivision will be withheld until this problem is rectified. If you have any questions, please feel free to call me.

Very truly yours,

Richard S. Heller

Richard S. Heller
City Engineer

RSH/fs

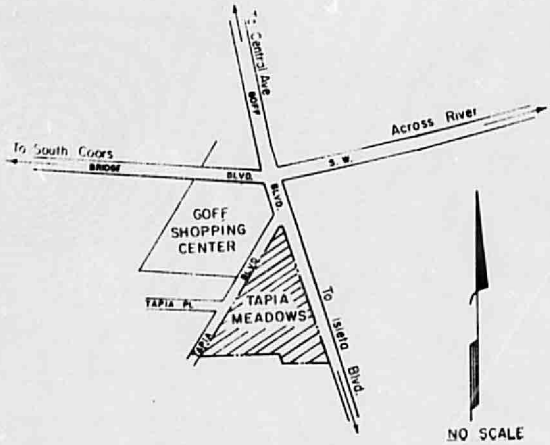
cc - Dwayne Sheppard, Assistant City Engineer-Field
Bruno Conegliano, Assistant City Engineer-Hydrology

DRAINAGE REPORT

# TAPIA MEADOWS ADDITION

ALBUQUERQUE, NEW MEXICO

TURNKEY PROJECT CT-18-78




VICINITY MAP

ZONING ATLAS L—12

DEVELOPER: CODA ROBERSON CONSTRUCTION CO.

PREPARED BY LEVERTON ENGINEERING - SEPTEMBER 1978

# DRAINAGE REPORT

## TAPIA MEADOWS ADDITION
## ALBUQUERQUE, NEW MEXICO

Zoning Atlas Map Coordinates L-12
Turnkey Project No. CT-18-78

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| Perimeter Wall Sections | Plate 3 |
| Street Sections | Plate 4 |
| Subdivision Grading Drawing | Sheet 5 of 6 of Construction Drawings |


The construction drawings, which have been submitted to the office of The City Engineer for approval, are made a part of this report by reference.


Leverton Engineering Inc.

September 1978

Drainage Report
Tapia Meadows Addition
Turnkey Project CT-18-78

PURPOSE:

To devise and design a grading and drainage management control plan to retain the runoff from a 2.2" event rainfall within the confines of the subdivision in conformance with current City of Albuquerque Policy pertaining to the valley area.

And, to prevent the flow of storm water runoff from areas lying outside the boundary from entering the subdivision.

SUMMARY:

The construction drawings previously presented to your office for approval indicate the drainage management plan in detail which was designed to accomplish the following objectives:

1. To provide retention areas within the subdivision of sufficient volume to contain the runoff from a 2.2" rain.
2. To isolate the subdivision from storm water flow both to and from the adjoining areas.
   The salient features of this design are briefly presented as follows:
   a. A perimeter wall along the entire boundary is designed with the top elevation set at an elevation sufficiently above the surrounding areas to serve as a drainage barrier.
   b. The streets are designed using the "Estate" section which provides for retention of a 2.2" rain within the street section. The longitudinal grade is flat in order to fully utilize the drainage characteristics inherent in this section. Water blocks at each of the two connecting and existing paved streets, Goff and Tapia Boulevards, are employed to continue the isolation furnished by the perimeter wall.
   c. Each lot is designed to retain the water generated by a 2.2" rain falling on the lot. Finish floor elevations are set at 8" above the design high water level of the retention areas.

CONCLUSIONS:

City of Albuquerque requirements for drainage management and prudent adherence to current engineering standards are complied with or exceeded in the design of Tapia Meadows Addition.

DRAINAGE MANAGEMENT:

Due to the absence of drainage facilities in this area and to the limited capacity of the City or County to provide relief it is necessary to retain the runoff of storm water within the subdivision.

The quantity of retention or storage required to contain the runoff from a 100 year frequency storm is calculated as follows: Volume = 1.0 X 2.2" X Area/12 in which the factor, runoff/ applied rainfall, is assigned the value of 1; 2.2 represents the event and design rainfall quantity expressed in inches; Area is the total area receiving the rainfall in square feet; and the number 12 is introduced to express the volume developed in cubic feet.

The subdivision will be isolated from the surrounding areas by means of the "Subdivision Perimeter Wall". Please refer to the grading plan for location and to Plate 3 for sections. The perimeter wall was designed as a gravity wall for the case in which it is 3 courses in height; and as a retaining wall for greater heights.

The top of the wall was set at the design elevation of 4940.90 as a minimum height to accomplish the objective of isolation of the subdivision from the effect of runoff from a 100 year rainfall. The wall is stepped upward to a maximum elevation of 4942.24 as required by surface conditions at the perimeter.

The longitudinal grade of the streets was designed at zero throughout the greater part of the subdivision to gain the greater advantage of the "Estate Type Street" section employed. The grade is interupted at the two connections to existing paved streets by easy riding water blocks with summit elevations designed to preclude the entrance or exit of storm water runoff from the subdivision.

Please refer again to the Grading Plan and to Plate 4, "Street Sections."

Section B-B indicates the street section used in the case in which there is a public sidewalk on both sides of the street. The back of the sidewalk at the property line is set at the same grade as the street centerline elevation. The street is designed with a symmetrical about the centerline crown of 5". For a one foot longitudinal strip of street there is 50 square feet of surface area. The volume of retention required to accomodate this is 1.0 X 2.2 X 50/12 which amounts to 9.2 cubic feet. This quantity is furnished by the sectional properties outlined above as follows:
Volume = 2 X(0.42 X ½ X 1 X 25) = 10.5 cubic feet.

Section A-A shows the case in which there is sidewalk on one side of the street only. In this situation it was determined that the drainage of the half of the street not having sidewalk could be made more effective by draining the surface to a retention area which is defined by the curb and the area sloping from the properties toward the street. This has proven effective in other areas of the valley which we have observed during the years and has the advantage of ½ of the street section being maintained essentially free of retained runoff.

The Grading Plan and Plates 1 and 2 indicate the method of provinding for storm water retention on the lots.

Each lot is designed to retain the storm water generated by rainfall on the lot.

The side lot retention swales are designed with a bottom elevation of 0.5' above the bottoms of the front and rear year swales so that they will not be employed for storage until the principal retention areas are filled to a depth of 0.5'.

A number of the lots of the subdivision have effective retention volumes greater then required for the lot. Since the bottoms of all the lots are designed to the same elevation for the principal retention swale then there will be no interflow or lot to lot movement of storm water as a consequence of the event design storm.

The finish floor grade of each building is set at 1.7' above the bottom of the front and rear retention swales. The finish floor grade is then 8" above the design retention elevation.

Homes that may be constructed at the design elevation will not be subjected to flooding by a 2.2" rainfall.

## Legend and Typical Lot Grading Plan

1" = 20'

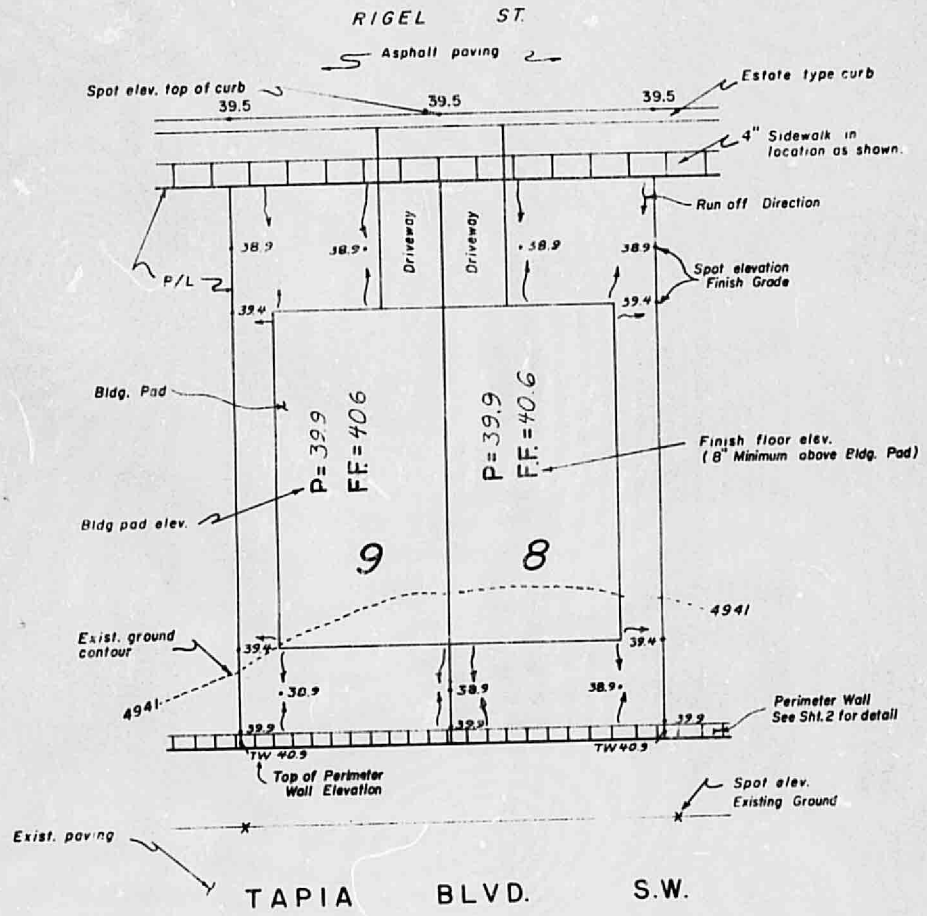


**PLATE 1**

**TYPICAL LOT GRADING PLAN**

**DRAINAGE REPORT – TAPIA MEADOWS ADDITION**