HYDROLOGY G22/D13 2 PLANS

G22/D13

2 PLANS

GATHMAN · MATOTAN ARCHITECTS · PLANNERS INC.

RECEIVED
OCT 25 1978
CITY ENGINEERS

October 20, 1978

Bruno Conegliano
City Engineering Department
400 Marquette NW
Albuquerque, New Mexico

SUBJECT: Tinnin Shopping Center

Dear Mr. Conegliano:

On October 4, 1978, an appointment was confirmed by you to meet with respect to subject project. I came to your office at the scheduled time, but, unfortunately you were detained, so I left word with the front desk secretary to reschedule the meeting. No such effort was made.

I would like to reschedule a meeting to discuss your conditional approval of the drainage plan for Tinnin Center.

Sincerely,

Pat Affholter

Pat Affholter

LAP/jcp

230 TRUMAN N.E., ALBUQUERQUE, NEW MEXICO 87108 TELEPHONE (505) 265-8329

dean and hunt associates ltd
architects planners
telephone
505 255 4864
4665 indian
school rd. n.e.
suite G
albuquerque
new mexico
87110

hal m. dean
eugene l. hunt
a.i.a.

May 28, 1976

RECEIVED
JUN 02 1976
CITY ENGINEERS

Mr. Don Peterson
Zoning Administrator
Planning Department
City of Albuquerque
400 Marquette Avenue N. W.
Albuquerque, New Mexico 87102

RE: Tinnin Center--3600 Juan Tabo N. E.

Dear Mr. Peterson:

This letter is to inform you that we will no longer be architects or planners of record for the referenced project.

Any correspondence which might occur with regard to deviation from the approved masterplan should be directed to Mr. R. P. Tinnin; P. O. Box 3532; Albuquerque, New Mexico.

Sincerely,

Hal M. Dean

HMD/ph

cc: Mr. Kleston Laws
Engineering Department

dean and hunt associates ltd
architectsplannersc
plannersarchitectsp
architectsplannersa
architectsplannersarchi
architectsplannersarchitectsplannersarchitects
architectsplannersarchitectsplannersarchitectsplannersarchitects
architectsplannersarchitectsplannersarchitectsplannersarchitects
architectsplannersarchitectsplannersarchitectsplannersarchitects
architectsplannersarchitectsplannersarchitectsplannersarchitects
telephone
505 255 4864
4665 indian
school rd. n.e.
suite a
albuquerque
new mexico
87110

hal m. dean
eugene i. hunt
a.i.a.

February 6, 1976

RECEIVED
FEB 12 1976
CITY ENGINEERS

Mr. Kleston Laws
Engineering Department
City of Albuquerque
400 Marquette Avenue NW
Albuquerque, NM 87102

Subject: Drainage Study
Tinnin Center
3100 Juan Tabo NE

Dear Kleston:

We are submitting for your review and attachment to the drainage report, a definitive statement outlining the intent of our drainage report.

We approached the problem, recognizing the existing runoff, and attempted to keep that quantity of runoff from increasing due to our proposed total development. The design storm would cause runoff of approximately 85,000 cubic feet under existing conditions. Under the drainage improvements proposed in total development plan, the design storm would produce 66,000 cubic feet of runoff, a reduction of 22 percent below the quantity of runoff leaving the site under existing conditions.

From the report, it is seen that a total of 25,068 cubic feet of water will have to be stored on site. We are providing a total available storage capacity on site of 32,632 cubic feet, approximately 30 percent more than is required to be stored.

We feel that this approach to the drainage problem more than satisfies the requirements of AMAFCA Drainage Resolution 1972-2.

We will submit grading plans and details for review by your office at each stage of development. These plans will account for total ponding area indicated on the Drainage Study, however, the configuration may vary slightly to accommodate the exact building and packing layouts.

We hope the above information meets with your approval.

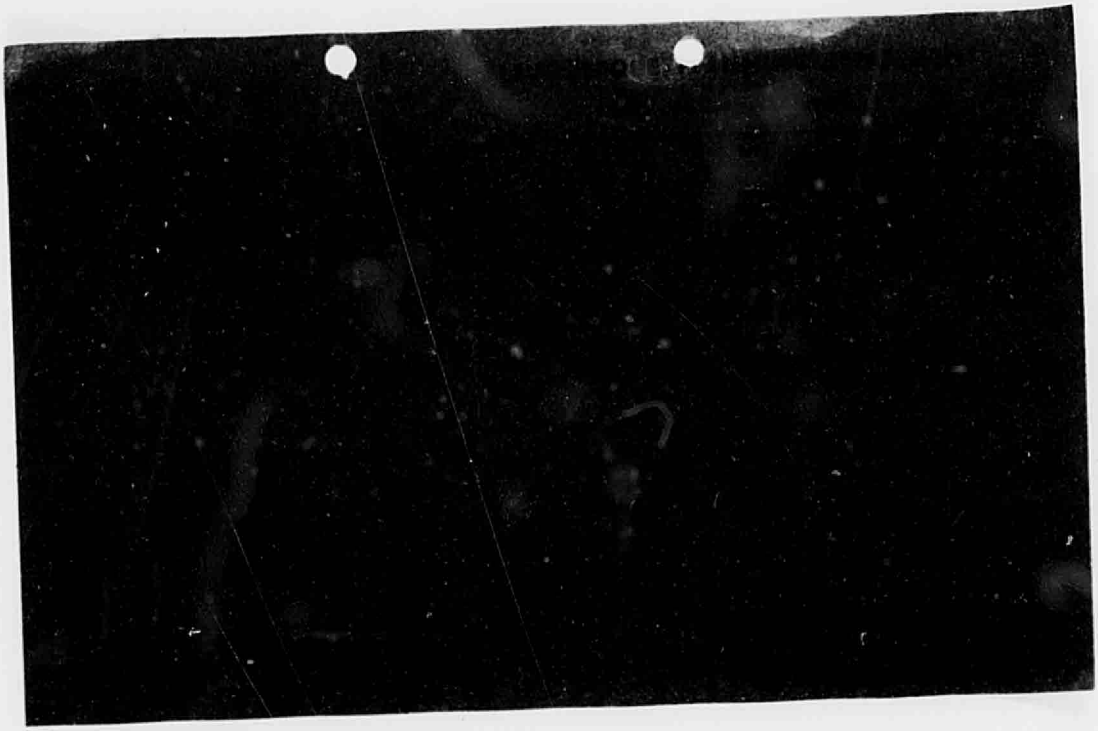
Thank you.

Sincerely,

John C. Bland

JCB:bas

cc: Mr. Don Peterson, Planning Department



dean and hunt associates ltd
architects planners
telephone
505 255 4864
4665 indian
school rd. n.e.
suite G
albuquerque
new mexico
87110

hal m. dean
eugene l. hunt
a.i.a.

January 7, 1976

Mr. Kleston Laws
Engineering Department
City of Albuquerque
400 Marquette Avenue NW
Albuquerque, NM 87102

Subject: Drainage Study
Tinnin Center
3100 Juan Tabo NE

Dear Kleston:

We are pleased to submit for your review and approval the drainage report, as prepared by John Cunico, for the above project.

If there are any questions, please don't hesitate to call us.

Thank you.

Sincerely,

John C. Bland

John C. Bland

JCB:bas

Enclosures

TINNIN SHOPPING CENTER
ALBUQUERQUE, NEW MEXICO

SURFACE DRAINAGE PLAN

infiltration rates.

SUBMITTED BY:

John J. Cunico
Registered Professional Engineer
New Mexico License Number 4042
766-2607 work.

CERTIFICATION

I, John J. Cunico, a duly Registered Professional Engineer, licensed under the laws of the State of New Mexico, do hereby certify that the drainage analysis and design as reported herein were made by me, or under my direct supervision, and are true and correct to the best of my belief and knowledge.

John J. Cunico
Registered Professional Engineer
New Mexico License Number 4042

GENERAL

The Tinnin Center is a 14.4 acre tract situated at the Northeast corner of the intersection of Juan Tabo Boulevard N. E. and Candelaria Road N. E., Albuquerque, Bernalillo County, New Mexico. A master plan was originally developed for the site in 1968. This master plan was for commercial development of the site as a neighborhood shopping center. The site has been partially developed and the owners have decided to alter the original master plan to better suit the need of the neighborhood and to enhance the general setting and esthetics of the Center. In a "Notification of Decision", dated January 21, 1975, the City of Albuquerque Planning Commission approved the proposed revised development plan for the Tinnin Shopping Center subject to the following conditions:

1) Submission of a drainage plan satisfactory to the City Engineer and AMAFCA;
2) Submission of a revised development plan to include:

    a) a detailed landscaping plan satisfactory to the Planning Department; and
    b) access points along Juan Tabo Boulevard and the private drive circulation satisfactory to the Traffic Engineer.

This report is in response to condition number one and decisions reached in a meeting with the owner (Bob Tinnin), the architect (Hal Dean), the City Planning Department (Phil Garcia), and AMAFCA (John Roberts), which stated that the drainage study would be approached by a contributive analysis of the area under planning, with emphasis on potential contributions along the North and East boundaries of the Center.

METHODOLOGY

A field reconnaissance was made to determine the existing state of development on and adjacent to the Tinnin Center. Data obtained from the reconnaissance in conjunction with available aerial photos, topographic maps, "Part IV, Flood Plain Information, Albuquerque Arroyos", prepared by the U. S. Army Corps of Engineers in 1974, and site maps for the shopping center, was the basic information used in the drainage analysis for the site.

The above data indicates that contributing drainage from areas outside the boundaries of the Center is not a problem in the present state of development on the site and surrounding area. It can be assumed that prior to the residential development to the East and North of the Center that run-off originating outside the boundaries of the center did have the potential to cause flooding on the Center property. Glenwood Hills Arroyo which flows parallel to the North boundary of the Center about 700 feet from the boundary, would have, under severe run-off conditions, spread out and encroached on the Center property. Likewise, run-off from the area East of the property and North to Glenwood Hills Arroyo watershed boundary, would have been a threat to the Center. However, the residential development cited above has precluded this water from entering the Center. The areas to the East of the shopping center which will be intercepted by Tahiti Street is limited, by the street patterns and residential development, to about six acres from Versailles Street, 1.83 acres from Tahiti Place, 3.58 acres from Atlantic City Avenue, 4.78 acres from Riviera Road and Riviera Place, and 10.93 acres from Palm Springs Avenue and Montreal Street, or a total area of about 26.3 acres. Even under extreme run-off conditions, the flow from these areas will be contained by Tahiti Street and under no flow condition could the water enter the Center from the East. Tahiti Street would also intercept portions of the water from Golden Gate Avenue during extreme flow conditions. Again this water would not exceed Tahiti Street or the residental yards or block walls between the Tinnin Center and the houses on the West Side of Tahiti Street. All water intercepted by Tahiti Street is conveyed to Candelaria Road and not encroached on the Tinnin Center property unless the total flow carried by Candelaria Road exceeded the capacity of the road and overflowed the sidewalks and adjacent Center property.

The North boundary of the Tinnin Center property adjoins other commercial property which in turn is adjoined by residential property on the south side of Golden Gate Avenue. The 100-year overbank flow from Glenwood Hills Arroyo would reach the front yards of these houses and remain removed the Tinnin Center by 250 feet. Glenwood Hills Arroyo waters which exceed the capacity of the drainage structure under Juan Tabo Boulevard will flow South along Juan Tabo and only encroach on the sidewalks adjacent to Juan Tabo Boulevard.

A review of the above information shows that contributary flooding is not now, nor will it be in the future, a problem to the Tinnin Center. Therefore, a drainage plan for the Center will be designed to contain the increases in natural flows caused by the development of the Center. In as much as the Center is partially developed, the approach used will reflect the total effect of the Center on the natural run-off characteristic of the area. The Center properties contain 626,700 square feet, of which 402,700 square feet is presently developed. 64,000 square feet is prepared for immediate development and 160,000 square feet is proposed for future development. The run-off controls proposed in this study will contain onsite the increase run-off caused by the total center lands.

0.24
224,000 FIA
14.38

The National Weather Service Technical Paper number Forty was used to estimate the 100-year frequency rainfall intensity and duration. The maximum 100-year, one-hour rainfall of 1.81 inches is considered critical for area. The loss rates selected for the area under natural conditions area is 0.50 inches initial loss and hourly infiltration rate of 0.70 inch per hour. For fully developed condition, The Center is considered to produce 100% run-off. This results in 1.33 inches of run-off under natural conditions, and 1.81 inches of run-off for improved or developed conditions, for an increase of 0.48 inches. This increase means that 25,068 cubic feet of water will have to be stored on site.

Since the Tinnin Center is partially developed, the alternatives available to contain the flows on site are limited. The most practical method appears to be to combine ponding areas with landscaping areas. The grading of the existing development dictates that ponding areas be provided along the Western boundary of the Center. The new development drainage facilities can be incorporated into more conventional landscaping which would be compatible with the architecture of the new buildings. Planters or landscaping areas are shown on Plate One and detailed on Exhibit One and Two, will provide ample storage to contain the required storage on site. The system as designed will provide temporary ponding areas with a maximum depth of two feet and the estimated duration of ponding should not exceed 48 hours under maximum conditions. These ponding areas will not create a health or safety hazard. The temporary ponding areas will support shrubs, bushes and trees. To maximize the infiltration capability of the ponding areas, large gravel should be used for ground cover, but grass would not detract from the infiltration capabilities.

A review of the above information shows that contributary flooding is not now, nor will it be in the future, a problem to the Tinnin Center. Therefore, a drainage plan for the Center will be designed to contain the increases in natural flows caused by the development of the Center. In as much as the Center is partially developed, the approach used will reflect the total effect of the Center on the natural run-off characteristic of the area. The Center properties contain 626,700 square feet, of which 402,700 square feet is presently developed. 64,000 square feet is prepared for immediate development and 160,000 square feet is proposed for future development. The run-off controls proposed in this study will contain onsite the increase run-off caused by the total center lands.

0.24
224,000 5/4
14.38

The National Weather Service Technical Paper number Forty was used to estimate the 100-year frequency rainfall intensity and duration. The maximum 100-year, one-hour rainfall of 1.81 inches is considered critical for area. The loss rates selected for the area under natural conditions area is 0.50 inches initial loss and hourly infiltration rate of 0.70 inch per hour. For fully developed condition, The Center is considered to produce 100% run-off. This results in 1.33 inches of run-off under natural conditions, and 1.81 inches of run-off for improved or developed conditions, for an increase of 0.48 inches. This increase means that 25,068 cubic feet of water will have to be stored on site.

Since the Tinnin Center is partially developed, the alternatives available to contain the flows on site are limited. The most practical method appears to be to combine ponding areas with landscaping areas. The grading of the existing development dictates that ponding areas be provided along the Western boundary of the Center. The new development drainage facilities can be incorporated into more conventional landscaping which would be compatible with the architecture of the new buildings. Planters or landscaping areas are shown on Plate One and detailed on Exhibit One and Two, will provide ample storage to contain the required storage on site. The system as designed will provide temporary ponding areas with a maximum depth of two feet and the estimated duration of ponding should not exceed 48 hours under maximum conditions. These ponding areas will not create a health or safety hazard. The temporary ponding areas will support shrubs, bushes and trees. To maximize the infiltration capability of the ponding areas, large gravel should be used for ground cover, but grass would not detract from the infiltration capabilities.

CONCLUSION

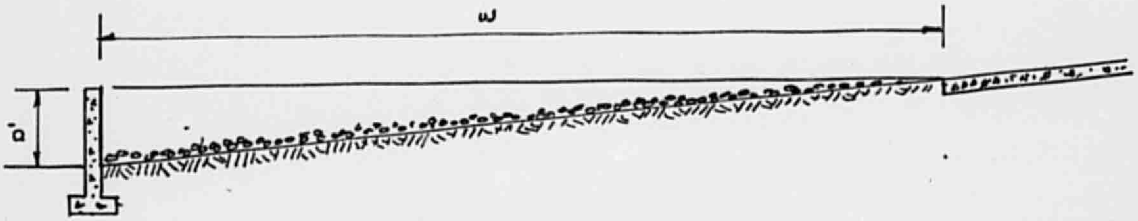
The system shown on Plate One is simple and economical if taken in conjunction with joint use for landscaping. The system will improve the esthetics of the shopping center as well as provide the necessary water retention capability. Because of this, I recommend this system or one equally as efficient be adopted for the Tinnin Shopping Center.

PONDING AREA SUMMARY

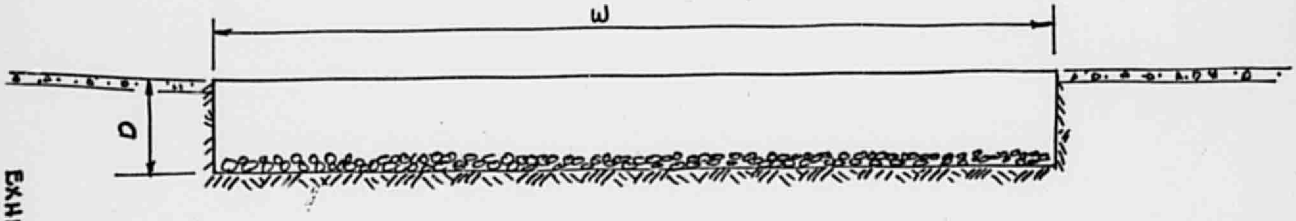
PONDING AREA	REQUIRED STORAGE CU. FT.	AVAIL. STORAGE CU. FT.	POND LENGTH FT.	POND WIDTH FT.	POND DEPTH FT.	POND TYPE
A	3060	5200	260	20	2	A
B-1	2140	3600	185	20	2	A
B-2	1938	2000	40	25	2	B
C	2810	3410	170	20	2	A
D-1	1760	1600	40	40	1	B
D-2		800	40	20	1	B
E-1	3520	1430	77	37	1	A
E-2		830	165	10	1	A
E-3		1940	155	25	1	A
F	2050	2700	180	20	0.75	B
G	2120	2300	115	20	1	B
H	2370	2500	250	20	0.5	B
TOTAL	21,768	28,300				

NOTE: TOTAL VOLUME REQUIRED TO BE STORED ON SITE = 25,070 CU FT.

EXHIBIT 1



POND TYPE A



POND TYPE B

EXHIBIT 2

PONDING AREA DESIGNATIONS

Drainage Report Designation	Map Designation Number	Available Storage Cubic Feet	Pond Depth Feet
A 76,475 SQ FT.	1	5600	1.0
B-1 53,550	2	4400	1.0
	3	1400	1.0
B-2	4	1237	1.0
	5	3410	1.0
C 70,200	6	2185	1.0
D-1 43,875	7	1500	1.0
D-2	8	800	1.0
H 59,200	9	2800	0.5
G 50,400	10	2300	1.0
E-2 88,000	11	2770	1.0
E-3			
E-1	12	1430	1.0
F 51,200	13	2700	0.75
492,900			
11.32 ac.			
Storage Available		32,632 21%	

1.75 inches over undeveloped area
62% of rain.