HYDROLOGY L18/D7 ONE PLAN

L18-07

1 PLAN

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DRAINAGE REPORT INFORMATION SHEET

PROJECT TITLE 4-Plex @ 509 Madeira S.E.

ZONE ATLAS PAGE NO. L-18 CITY ADDRESS 509 Madeira S.E.

LEGAL ADDRESS Lot 5, Block 7 Baron Burg Heights Addition

ENGINEERING FIRM Artesimas Ltd CONTACT Greg Zwoyer

ADDRESS 7340 Guadalupe Tr. N.W. PHONE 898-7447

OWNER Greg E Zwoyer CONTACT Greg Zwoyer

ADDRESS 7340 Guadalupe Tr. N.W. PHONE 898-7447

ARCHITECT/SURVEYOR n/a CONTACT

ADDRESS PHONE

DATE SUBMITTED Nov 13, 1981

BY Greg E. Zwoyer

RECEIVED

NOV 16 1981

ENGINEERING

MUNICIPAL DEVELOPMENT DEPARTMENT

Richard S. Heller, P.E., City Engineer ENGINEERING DIVISION Telephone (505) 766-7467

Artesanos
Design/Construction Professionals

7340 Guadalupe Trail NW
Albuquerque, New Mexico
Phone: 898-7447
Lic #17656 GB-98 GA-98 GF-98

November 16, 1981

DRAINAGE REPORT

4-Plex
509 Madeira S.E.
Lot 5, Block 7, Baron Burg Heights Addition
Zone Atlas Page No. L-18

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Dear Sirs:

I do hereby certify, that upon approval of the drainage concepts and criteria contained in the following drainage report, prepared by or under the direction of myself; I will provide inspection and consultation to the grading contractor, in order to assure that such concepts and criteria are complied with, and made a permanent part of, the development located at 509 Madeira, S.E..

GREG E. ZWOYER NEW MEXICO 6958 REGISTERED PROFESSIONAL ENGINEER

Greg E. Zwoyer, P.E.
November 16, 1981

The lot at 509 Madeira S.E., hereafter called the lot, is zoned R-3, as are the properties located to the east, south, and west. The properties to the north is zoned C-1, although it contains rental housing at this point in time. This sector of town is set aside for multifamily residences by the "Albuquerque/Bernalillo County Comprehensive Plan" and this generally what it is being used for.

The lot is located on map 31 of the "SCS, Bernalillo County Soil Survey Maps. The typical soil on the lot is classified as Madurez-Wink association, as identified by the soil conservation service, and is described as a fine sandy loam, with a permeability of 0.6-2.0 in./hr..

The terrain in this sector contains slopes of less than 1%. All properties adjacent to and including the lot in question, drain from back to front and contribute no offsite flow to other private properties. However, it seems to be standard practice in this sector, to discharge onsite flow into the curb and gutter system

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in the public right of way, with no ill effects observed. Because the development, proposed for the lot at 509 Madeira S.E., utilizes extensive landscaped open space(30% of total lot), far in excess of minimum requirements, that will be used for temporary detention and ultimately 99% complete infiltration, transpiration, and, or evaporation for the disposal of developed rainfall on the site, and because no offsite flows come through this development, a complete engineered delineation and quantifications of off-site contributing watersheds is considered unnecessary and of no beneficial or enlightening use, in this instance of an established neighborhood with established rates of flow, etc., and will not be submitted at this time.

The topography of the lot at present is such that it drains from back to front, with a fall line that approximates parallel to the longitudinal property lines. The overall slope of the lot is less than 1%, and because of the relatively high permeability of the soil formation, developed flows of storm water runoff are nearly non-existant. The proposed development intends to take advantage of the flat topography, high permeability, and large landscaped areas, to effectively control storm water in the following way:

The proposed grading plan will keep the lot at a basic sope of 1% from rear to front, but will cut the open space up into small stepped depressed zones, which will be used to detain all gravitational storm water, as well as developed flows from the impervious roof and parking lot surfaces.

Here again, because of the less than 1% grade and the maximum reach of less than or equal to 20. ft. holds flows and velocities virtually to zero and of no practical or engineering value and therefore they will not be presented in this report. In lieu of of these calculations, it is hoped that sound engineering logic will suffice in this case.

The grass planted temporary detention areas will have an aggregate area of 2000 s.f., and an average depth of 2 in., for a total volume of 333 c.f.. They will be graded in such a way as to provide positive drainage away from structual walls and foundations. Using 0.1 ft. for a storm intensity and a roof area of 2150 s.f. yields a runoff of 215 c.f. from the roof surface through the gutter and canale system, into the landscaped detention areas. From "ASCE Manual of Engineering Practice No. 28", a grass cover will have an

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ENGINEERING

Drainage Report Cont
509 Madeira, S.E.

average permeability of 2.75 in/hr, after a 1 hour duration storm, and from the "SCS, Bernalillo County Survey", the underlying soil has a permeability of 2 in/hr.. Using the lessor 2 in/hr. rate, it can be seen that the depressed detention zones will handle the direct gravitational storm water first, at a rate of 2.75 in/hr, without having to use any of the available temporary detention storage. The delayed runoff from the roof zone will be directly absorbed as it enters the landscaped area, until the equilibrium rate of 2.75 in/hr is reached (which is highly unlikely), then the available storage of 333 c.f. will be brought into play to retain the remaining runoff (max. 215 C.F.), which would be infiltrated at a rate of 2 in/hr, in effect draining the detention areas in less than 1 hour.

The parking lot is 2200 s.f.. Using an intensity of .1 ft/hr yeilds 220 c.f. of developed storm water runoff. This will be routed into a landscaped, gravel filled detention area, with a capacity of 200 c.f. and a percolation rate on the botton of 2 in/hr. min.. The landscaped area will be 20 ft. by 10 ft. x 2 ft. of gravel fill, with trees and some evergreen shrubs planted in the soil below the gravel. The parking lot will be graded to a slight depression in the center, the longitudinal axis or flow line running from the southwest corner of the lot to the planter in the northeast corner. The gradient of the lot is less than 1%, once again rendering flow rate calculation virtually useless, but logically assuring a slow steady rate flow of storm water to more than adequate disposal systems, and virtually assuring the city of Albuquerque no additional storm water runoff burden as a result of the proposed development at 509 Madeira, S.E.

Respectively submitted,

Greg E. Zwoyer, P.E.

GEZ/dz

GREG E. ZWOYER
NEW MEXICO
6956
REGISTERED PROFESSIONAL ENGINEER

custom homes/engineered structures/solar/adobe/brick & stone work/custom woodwork/concrete/explosive excavation

Flow Volume Calculations

$C_{undeveloped} = .4$
$C_{Developed} = .95$
$I = 5.4$ in/hr

$Q = CIA$

$A_{undeveloped} = 50 \times 135 = 6750$ sf ÷ 43,560 sf/acre = .155 acres

$Q_{undeveloped} = .4 \times 5.4 \times .155 = .33$ cfs

$Q_{Developed}$ (roof) $= .95 \times 5.4 \times 2130$ sf ÷ 43,560 sf/acre = .25 cfs

$Q_{Developed}$ (parking lot) $= .95 \times 5.4 \times 2250$ ÷ 43,560 = .26 cfs

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

L18 - D7

November 30, 1981

Mr. Greg Zwoyer
7340 Guadalupe Trail N.W.
Albuquerque, N.M. 87131

RE: 4-PLEX AT 509 MADEIRA SE DRAINAGE REPORT

Dear Mr. Zwoyer:

A review of the referenced drainage report has resulted in the comments listed below. The numbers indicated refer to the Drainage Report (DR) and Construction Plan (CP) Checklists.

✓ 1. DR # 2 - Was there any planning action findings relating to the site?

2. DR # 4 - Delineation of site on pertinent Flood Hazard Boundary Map. C18

3. DR # 6 - The plan indicates a landscaped detention area next to the structure. A soils investigation prepared by a registered soils engineer is required for proposals of this type.

4. DR # 13 - Please supply calculations showing on-site undeveloped and developed flow volumes and rates (I obtain 400 cu. ft. generated from the roof area).

5. DR # 15 - This office requests that discharge from the lot drain through the drivepad. The plan indicates that runoff will fill the landscaped pond and then flow over the sidewalk.

6. Please supply the following information:

   a. DR # 18 & CP # 3 - Location Map.

   b. DR # 20C & CP # 8 - Contours and spot elevations extending a minimum of 15' beyond the property line.

   c. DR # 21F & CP # 14 - Additional spot elevations in landscaped and pond areas.

d. DR # 21H & CP # 11 - Existing top of curb and flow line elevations with Mean Sea Leval Designations.

e. DR # 21M - Detail of swale along southern edge of the building.

~~f. DR # 23 - A completed Drainage Covenant.~~

If I can answer any questions concerning the above, please call.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

10-12-82

Mr. Greg Zwoyer
7340 Guadalupe Tr. NW
Need Zip.

Re: ~~Certificate of Occupancy~~ Drainage Requirements
for 509 Madeira, SE.

Dear Greg,

I am ~~writing~~ forwarding comments in regards to the drainage requirements for 509 Madeira, SE.:

1. In a conversation with Malcolm di Vesty, Assistant City Attorney, he indicated that for cases in which damage can occur to

Fred, FYI
Bn

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE November 8, 1982 REF. NO._____

TO: Malcolm deVesty, Assistant City Attorney

FROM: Brian G. Burnett, Civil Engineer/Hydrology BGB

L-18-07

SUBJECT: HOLD HARMLESS FOR GREG ZWOYER PROPERTY

Enclosed is a marked-up copy of a hold harmless agreement for a small development at 509 Madeira S.E. I will briefly outline the "course of events" for this project which have lead to the necessity of obtaining the hold harmless.

1. December 7, 1981 - A drainage plan was prepared by Mr. Greg Zwoyer, a Professional Engineer, and submitted to this office for review and approval (see enclosure).

2. December 14, 1981 - A temporary building permit was issued in order that work could begin. The drainage plan had not been formally approved prior to the permits released (i.e., some minor details about the plans had not been resolved). A conditional statement was placed on the building plans at the time the temporary permit was released: "An approved drainage plan should be obtained by the owner within a 30-day period."

3. December 14, 1981 - October 10, 1982 No revised plan was received by this office. We tried several times to contact the applicant personally, but were unsuccessful.

4. October 10, 1982 - The applicant called our inspector, Mr. Bernie Montoya, to perform a survey of the project so that a certificate of occupancy could be issued. At this time the applicant was notified that the provisions of the conditional approval had never been met and they must be satisfied prior to release of the certificate of occupancy.

5. October 13, 1982 - The property was surveyed by this office. Because of modifications to the original plan (which was never approved) formulating an "acceptable" drainage plan is now almost impossible. I should point out several violations of drainage policy which were in affect at the time of the permit release:

a. Detention or ponding areas are too close to the housing structure and existing garden walls.

b. Ponding areas do not have a positive discharge (i.e. they will not drain properly).

Because the conditions of the first release were never satisfied and that an unacceptable drainage scheme has now been created by the contractor, we are requesting that the owner (Mr. Greg Zwoyer) sign a hold-harmless that will run with the property.

Please advise on the wording and format of the document. I will forward proof of ownership upon receipt at this office. Since the property is for sale it is important that the agreement be filed prior to any closing.

Thank you for your help. I will assist you in any way I can.

BB/tsl

Enclosures

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

January 12, 1983

Mr. Greg Zwoyer
7340 Guadalupe Tr. N.W.
Albuquerque, N.M. 87107

RE: DRAINAGE CONCERNS FOR 509 MADEIRA S.E.

Dear Mr. Zwoyer:

I am forwarding comments in regards to drainage for the apartment complex at 509 Madeira S.E.

1. It is my understanding that a temporary Certificate of Occupanay was issued several months ago with the condition that a hold harmless agreement would be executed between you and the City. Since the certificate was issued, I have had several conversations with Malcolm deVesty, Assistant City Attorney, concerning this matter. He indicated that storm runoff damage to third parties can not be covered in a hold harmless agreement. This is the type of situation that now exists on your property. We are concerned about the proximity of the roof downspouts to the structure and the adjacent block wall. Since the runoff has no means at this time of reaching the gravel ponds or parking area, damage could result to the facilities. Granted, this may not occur in the next several years, but the long term affects to the structure maybe substantial.

Since a hold-harmless agreement does not appear to be a viable solution, we now must pursue investigating alternatives which can be "built in the field". Based on existing conditions, we need to insure that:

1. The runoff on the east side of the unit is directed away from the garden wall and

2. The ponds function a designed in order that no damage occurs to the apartment foundation.

I have asked Brian Burnett of my staff to meet with you in the field to investigate alternatives and formulate a plan to solve the situation. Please contact Brian as soon as possible so that he can make plans to meet with you.

Very truly yours,

Charles M. Easterling
Princ. Asst./City Engineer

CME/BGB/tsl

cc: Fred Aguirre, Civil Engineer/Hydrology
Bernie Montoya, Hydrology Section

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

February 9, 1983

L18-D7

Mr. Greg Zwoyer
7340 Guadalupe Tr. N.W.
Albuquerque, N.M. 87107

RE: DRAINAGE CONCERNS FOR 509 MADEIRA SE

Dear Greg:

On January 12, 1983 a letter from Charles M. Easterling was transmitted in regards to drainage for 509 Madeira S.E. (see enclosure). This office is attempting to resolve this issue in an expeditious manner. Therefore, I would appreciate you contacting me at the earliest possible date to discuss the items contained in the January 12, 1983 letter.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

cc: Fred Aguirre, Hydrology Section
Bernie Montoya, Hydrology Section

S2 44416

50

INDEMNIFICATION AGREEMENT AND COVENANT

The City of Albuquerque (City), and ~~Nick A. Sanchez and Terrie Blab. Sanchez, his wife~~ Mr. Greg Zwoyer (Owner~~s~~, which term includes successors and assigns) agree:

RECITAL

Owners are the owners of the following described real property:

509 Madeira, SE (Legal description forthcoming)

~~Lot Numbered Eight-A (8-A) of the replat of a portion of Lot Eight (8) of Rebecca Gentry's Subdivision of the Easterly portion of Block A, Gentry Addition to the City of Albuquerque, New Mexico, as the same is shown and designated on the replat thereof, filed in the office of the County Clerk of Bernalillo County, New Mexico, on August 18, 1977.~~

The Owners have presented a drainage plan to the City which was conditionally approved on ~~September 9~~ December 14, 1981 (see Exhibit "A" attached hereto). The construction of the building's finished floor elevation does not conform to the ~~approved~~ conditionally approved plan (Exhibit "A" attached hereto).

The City requires Owners to enter into this Agreement as a condition for the release of a Certificate of Occupancy.

UNDERSTANDING OF EXPOSURE

Owners agree and understand that the building as sited does not provide protection for the Owners' property and is subject to flood and water run off damage resulting from noncompliance with the conditionally approved plan (Exhibit "A" attached hereto).

INDEMNIFICATION AND HOLD HARMLESS

The Owners agree to defend, indemnify and hold harmless the City, its officials, agents and employees from and against any and all claims, actions, suits or proceedings of any kind brought against the parties for or on account of any matter arising from the failure of the Owner to comply with the conditionally approved plan (Exhibit "A" attached hereto).

COVENANT RUNNING WITH THE PROPERTY

The obligations of the Owners set forth herein shall be binding upon the Owners, their heirs, successors and assigns and the property described herein and will run with said property until released by the City.

ISSUANCE OF CERTIFICATE OF OCCUPANCY

Upon execution of this Agreement, the City will not withhold issuance of a Certificate of Occupancy for reasons related to noncompliance to the referenced Ordi- nance for the building project on this property.

REVIEWED & APPROVED BY THE LEGAL DEPARTMENT

Assistant City Attorney

Charles M. Easterling
Principal Asst. Engineer- Hydrology
7-19-82

Frank A. Kleinhenz
Chief Administrative Officer
for City of Albuquerque

OWNERS

Nick A. Sanchez

Terrie Rieb-Sanchez

Mr. Greg Zwoyer

ATTEST:

CITY CLERK

Keep the same

ACKNOWLEDGEMENTS

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me by NICK A. SANCHEZ and TERRIE RIEB-SANCHEZ, his wife, on this 3rd day of August, 1982.

_____
Notary Public

My Commission Expires:

_____

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me by JAY R. GENTRY, on this _____ day of _____, 1982.

_____
Notary Public

My Commission Expires:

_____

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this 18th day of August, 1982, by FRANK A. KLEINHENZ, Chief Administrative Officer of the City of Albuquerque, a Municipal Corporation, on behalf of said corporation.

Sela L. Grant
Notary Public

My Commission Expires:

12/18/84

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

'82 AUG 26 AM 11:13

BK 954 PG 50-52

COUNTY CLERK AND RECORDER