HYDROLOGY ○ G11/D4 ○ 6 PLANS 1 of 2

G11/D4

6 PLANS

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

August 30, 1985

Mr. John Andrews
Andrews, Asbury & Roberts, Inc.
149 Jackson, NE
Albuquerque, NM 87108

RE: CERTIFICATION FOR VILLA DEL OESTE (G11-D4) ENGINEER'S CERTIFICATION DATED 7/25/85

Dear Mr. Andrews:

Based on the information provided on your August 20, 1985 submittal, certification for the above referenced drainage plan is acceptable.

If I can be of further assistance, please feel free to call me at 766-766-7644.

Sincerely,

Bernie J. Montoya

Bernie J. Montoya C.E.
Engineering Assistant
Hydrology

BJM/cl

G11-D4

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S. (1915 - 1984)

June 6, 1985

Mr. Bernie Montoya, Engineer Assistant
City Engineering/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

SUBJECT: VILLA DEL OESTE APARTMENTS, YUCCA CIRCLE NW

Dear Mr. Montoya:

Please be advised that Mr. Ben Ruiz, owner of the Villa Del Oeste Apartments project, has contacted me as a Professional Engineer, relative to certification and verification that the construction of this project will be in compliance with the approved drainage plan.

Mr. Ben Ruiz has agreed to complete the remaining work within 30 days from the date of this letter.

Very truly yours,

John A. Andrews

JOHN A. ANDREWS, P.E.

mt-253

AGREED:

Ben Ruiz 6/6/85

BEN RUIZ, OWNER Date

Rick log in for 30day temp.

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

September 21, 1984

Mr. John Andrews
Andrews, Asbury, & Robert, Inc.
149 Jackson, N.E.
Albuquerque, New Mexico 87108

RE: DRAINAGE REPORT FOR VILLA DEL OESTE (G11-D4) RECEIVED AUGUST 21, 1984

Dear Mr. Andrews:

The aobve referenced plan, dated September 20, 1984 is approved subject to the following conditions.

1. A temporary asphalt surface will be constructed between Tucson Road and Yucca Circle Cul de Sac, and a portion of the Cul de Sac that will include curb and gutter, prior to Certificate of Occupancy sign-off by hydrology.

2. Mr. Ruiz understands that this drainage plan is an interim plan until S.A.D. 198 is constructed, and Mr. Ruiz agrees to update his plan to incorporate the future facilities within S.A.D. 198. In addition, Mr. Ruiz agrees to participate in his fair share of the S.A.D. 198 assessment.

3. We strongly recommend that Mr. Ruiz's engineer certify the approved drainage plan in light of the critical grade required to accomplish the drainage scheme.

Mr. Ruiz's signature below will indicate concurrence with the above conditions.

Sincerely yours,

Carlos A. Montoya
Civil Engineer/Hydrology

Mr. Ruiz
Owner

CAM/bm

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S. (1915 - 1984)

August 21, 1984

Mr. Fred Aguirre
City Engineering/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RECEIVED
AUG 21 1984
HYDROLOGY SECTION

SUBJECT: VILLA DEL OESTE

Dear Mr. Aguirre:

Transmitted herewith is a drainage report for subject project for your review and approval.

As we have discussed in meetings with you, it is proposed to construct ponding to retain 100 percent of the runoff from the site.

We are presently working on an agreement for the temporary ponding that lies partially on private property and partially on public property.

As you are aware, this pond will be deleted upon construction of the special assessment district.

Your early review and approval of this report will be appreciated.

Please note that considerable work was performed relative to development of this site when Brian Burnett was with the City. Previous correspondence relative to drainage and development of this site is included in the report in the Appendix.

Please call on any questions that arise.

Very truly yours,

John A. Andrews

JOHN A. ANDREWS, P.E.

mt-253

Attachments

cc: Ben Ruiz (w/attachment)

INFORMATION SHEET

PROJECT TITLE VILLA DEL OESTE TYPE OF SUBMITTAL DRAINAGE REPORT

ZONE ATLAS PAGE NO. G11Z CITY ADDRESS YUCCA CIRCLE NW

LEGAL DESCRIPTION PORTION OF TRACT 13 CORONA DEL SOL SUBDIVISION

ENGINEERING FIRM ANDREWS, ASBURY & ROBERT, INC CONTACT JOHN ANDREWS

ADDRESS 149 Jackson NE, Albuquerque PHONE 265-6631

OWNER BEN RUIZ CONTACT BEN RUIZ

ADDRESS 6625 Coors NW, Albuquerque PHONE 897-4348

ARCHITECT DEL JACK CONTACT DEL JACK

ADDRESS 400 San Felipe NW, Albuquerque PHONE 242-4591

SURVEYOR ANDREWS, ASBURY & ROBERT, INC. CONTACT GAYLE JEWELL

ADDRESS 149 Jackson NE, Albuquerque PHONE 265-6631

CONTRACTOR N/A CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

X YES
NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

SKETCH PLAT APPROVAL
PRELIMINARY PLAT APPROVAL
SITE DEVELOPMENT PLAN APPROVAL
FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
CERTIFICATE OF OCCUPANCY APPROVAL
ROUGH GRADING PERMIT APPROVAL
GRADING/PAVING PERMIT APPROVAL
OTHER (SPECIFY)

RECEIVED
AUG 21 1984
HYDROLOGY SECTION

DATE SUBMITTED: August 21, 1984

BY: John A. Andrews
JOHN A. ANDREWS, P.E.

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. G11 DATE: 6/29/84 Job #253

PLANNING DIVISION NO.

RECEIVED AUG 21 1984 HYDROLOGY SECTION

CONFERENCE RECAP

SUBJECT: VILLA DEL OESTE (TUCSON + YUCCA CIRCLE)

WHO	REPRESENTING
ATTENDANCE: JOHN ANDREWS	
FRED J. AGUIRRE	

FINDINGS:

1. DRAINAGE PLAN required per the DPM
2. SUBMITTAL OF CALCULATIONS, topography supporting the NEW FLOODPLAIN ELEVATION / AFFECTING this DEVELOPMENT
3. CITY APPROVED STREET GRADES AND ALLEY must be incorporated on the DRAINAGE PLAN
4. Retention PONDS ACCEPTABLE IN ACCORDANCE WITH SECTION 12 H OF the DRAINAGE ORDINANCE.
5. IF the DEVELOPMENT PRECEEDS the SAID (198) FINANCIAL GUARANTEE REQUIRED FOR the INFRASTRUCTURES (PUBLIC)
6. COORDINATE the REQUIRED PAVED ACCESS to the DEVELOPMENT (PER DRG. ORD. 7F) WITH the TRAFFIC ENGINEER.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Fred J. Aguirre SIGNED: John E. Andrews

TITLE: TITLE: //

DATE: 6/29/84 DATE: 6-29-84

(7) CONTROLLED DISCHARGE REQUIRED FROM this DEVELOPMENT DUE TO FLOODING DOWNSTREAM.

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S. (1915 - 1984)

August 20, 1985

Mr. Bernie J. Montoya, C.E.
Engineering Assistant/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

RECEIVED
AUG 20 1985
HYDROLOGY SECTION

SUBJECT: VILLA DEL OESTE
DRAINAGE PLAN G11-D4

Dear Mr. Montoya:

Enclosed are two (2) prints of the "As Built" drainage plan for the Villa Del Oeste project.

Please call if you have any questions.

Very truly yours,

John A. Andrews

JOHN A. ANDREWS, P.E.

mt-253

Enclosures (2)

cc: Ben Ruiz w/enclosure

DRAINAGE INFORMATION SHEET

PROJECT TITLE: VILLA DEL OESTE ZONE ATLAS/DRNG. FILE #: G11-D4

LEGAL DESCRIPTION: PORTION OF TRACT 13, CORONA DEL SOL SUBDIVISION

CITY ADDRESS: 5312 YUCCA CIRCLE NW

ENGINEERING FIRM: Andrews, Asbury & Robert Inc CONTACT: John A. Andrews, P.E.

ADDRESS: 149 Jackson NE 87108 PHONE: 265-6631

OWNER: Ben Ruiz CONTACT: Ben Ruiz

ADDRESS 6625 Coors NW 87120 PHONE: 897-4348

ARCHITECT: Del Jack CONTACT: Del Jack

ADDRESS: 400 San Felipe NW PHONE: 242-4591

SURVEYOR: Oliver Trujillo Surveyor CONTACT: Oliver Trujillo

ADDRESS: 221 Avalon Place NW 87105 PHONE: 836-0328

CONTRACTOR: Ben Ruiz Contracting CONTACT: Ben Ruiz

ADDRESS: 6625 Coors NW 87120 PHONE: 897-4348

RECEIVED AUG 20 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

____ YES DRB NO. ____

____ NO EPC NO. ____

____ COPY OF CONFERENCE RECAP SHEET PROVIDED PROJECT NO. ____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

____ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAIN. PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

X ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

X CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

OTHER ____ (SPECIFY)

DATE SUBMITTED: August 20, 1985

BY: John A. Andrews

Rev. 11/84

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE August 27, 1985 REF. NO._____

TO: Bernie Montoya, Hydrologic Engineering Technician

FROM: Bill McNamara, Assistant City Engineer-Field

SUBJECT: YUCCA CIRCLE, PROJECT NO. 2340

The drainage portion of the subject project has been satisfactorily completed.

WFM/rvg

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

April 7, 1983

Mr. John Andrews
Andrews, Asbury & Roberts, Inc.
149 Jackson N.E.
Albuquerque, N.M. 87108

RE: VILLA DEL OESTE

Dear John:

I have reviewed your calculations and request of March 30, 1983 regarding development criteria for the referenced project. Following are my comments:

1. Per Pat Stiehr's letter of March 1983, your petition to reduce the flood plain elevation from 5103.0 to 5102.0 was denied. Since Bohannan & Huston, Inc. has submitted the Flood Hazard Boundary Maps to FEMA, any further request to amend the maps must be directed through the Flood Insurance Administration. Andre Houle, City/County Flood Plain Administrator, may be contacted at 766-7644 to outline the requirements for a Letter of Map Amendment if your client wishes to protest the current information.

2. Until a Letter of Map Amendment is obtained, the Flood Hazard Ordinance Criteria will be required. Specifically, the finished floor elevation of residential and commercial developments must be at an elevation of one foot above the flood plain elevation.

3. Guidelines/Conditions for development are as follows:

   a. The survey information submitted to this office be certified with either a LS or PE stamp and signature.

   b. No compensatory ponding be provided on site.

   c. Finished floor elevations of each unit be placed at least to elevation 5104.0.

   d. The entire 100-year developed runoff volume be retained on-site.

e. All improvements be designed and constructed in accordance with the proposed plans for SAD 198.

f. The owner commit by means of a legal document (to run with the land) to upgrade all drainage improvements to meet City criteria once the infrastructure downstream of the site is constructed.

g. The owner commit by means of a legal document (to run with the land) to participate in a fair and equitable assessment for infrastructure improvements. This stipulation is made since the City is allowing development without adequate downstream facilities being in place.

h. A drainage plan be approved by this office.

Please review these comments and contact me if you have any questions.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

cc: Andre Houle, Civil Engineer/Hydrology
Pat Stiehr, Bohannan & Huston, Inc.

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

March 30, 1983

Brian Burnett
Civil Engineer/Hydrology
City Engineering
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

RECEIVED
MAR 30 1983
ENGINEERING

SUBJECT: VILLA DEL OESTE

Dear Mr. Burnett:

As a result of the meeting held at your office on March 11, 1983, and your follow-up letter dated March 14, 1983, we proceeded with additional surveys to determine detailed elevations of the flood pool area in the vicinity of subject project. From these additional surveys, we prepared a contour map to use in determining the storage volume at various elevations.

Enclosed is the elevation storage table developed from this contour map and a print of the contour map in work sheet form.

Based on the volume of the 100 year frequency storm being 6 Ac. Ft. as presented in Pat Stiehr's letter, the elevation of the flood pool will be slightly above elevation 5102.0 but lower than 5102.1.

We trust that this data will provide you with the information needed to make a decision on the drainage requirements for the development of the site. As you will note from the Existing Conditions Map provided in the original drainage report, the Villa Del Oeste site is above the elevation of the flood pool.

We look forward to your favorable response.

Very truly yours,

John A. Andrews

JOHN A. ANDREWS, P.E.

mt-253

enclosures

cc: Mr. Sam Andrade
Mr. Ben Ruiz

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

March 14, 1983

Mr. John Andrews
Andrews, Asbury & Roberts
149 Jackson N.E.
Albuquerque, N.M. 87108

RE: VILLA DEL OESTE DRAINAGE CONCERNS

Dear John:

This letter is a follow-up to our meeting this morning with Pat Stiehr. A review of the Flood Hazard Ordinance (Enactment No. 99-1981) indicates that flood plain information provided by a Professional Engineer may be used to insure that provisions of Section 7B are met (see enclosure). Therefore, in order to further evaluate the plans for the Villa Del Oeste Project, this office should be supplied with the maximum flood elevation resulting from a 100-year storm. Topographic information already obtained should be used to compute the volume available for runoff storage and then compared to the runoff volume generated by the watershed. Once the 100-year flood plain elevation is determined, design criteria for the project will be established.

Please call if you have any questions.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

cc: Pat Stiehr, Bohannan-Huston

SECTION 5. GENERAL PROVISIONS.

A. LANDS TO WHICH THIS ORDINANCE APPLIES

This ordinance shall apply to all areas of special flood hazards within the jurisdiction of the City of Albuquerque, which includes its extraterritorial planning and platting jurisdiction.

B. BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD

The areas of special hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for the City of Albuquerque," when published, with accompanying Flood Insurance Rate Maps and Flood Boundary-Floodway Maps is hereby adopted by reference and declared to be a part of this ordinance. The Flood Insurance Study will be on file in the City Engineer's Office, 400 Marquette N.W., Albuquerque, New Mexico, 87103. Before publication of "The Flood Insurance Study for the City of Albuquerque", the City Engineer will establish the areas of special flood hazard as specified in Section 6.C.2.

6.C 2. USE OF OTHER BASE FLOOD DATA

When base flood elevation data has not been provided in accordance with Section 5.B., BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the City Engineer shall obtain, review, and reasonably utilize any base flood elevation data available from a Federal, State or other source, in order to administer Sections 7.B.1 SPECIFIC STANDARDS, Residential Construction, and 7.B.2, SPECIFIC STANDARDS, Nonresidential Construction.

3. INFORMATION TO BE OBTAINED AND MAINTAINED

a. Obtain and record the actual elevation (in relation to mean sea level) of the lowest habitable floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

b. For all new substantially improved floodproofed structures:

1. verify and record the actual elevation (in relation to mean sea level); and

2. maintain the floodproofing certifications required in Section 6.A.3.

c. Maintain for public inspection all records pertaining to the provisions of this ordinance.

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N. E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD., EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

March 7, 1983

Mr. Brian Burnett
Civil Engineer/Hydrology
City Engineering
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Dear Mr. Burnett:

I have reviewed the drainage comments concerning the proposed development site, Villa Del Oeste, as part of the review procedure for the Albuquerque Flood Insurance Study (FIS).

I have several comments that need to be resolved before we would change the elevation or extent of flooding at Tucson Road and Yucca Drive.

The topographic information provided by Andrews, Asbury, and Robert, does show a north-south swale between Tucson Road and Sequoia Road and water ponded north of Tucson would flow south. The minimum ground elevation is 5101.8. This means the water would have to be higher before it would flow south.

The ridge of earth on the north side of Sequoia Road near Yucca Drive, as described in paragraph 3, would pond floodwaters to an elevation of 5102.1 as described. It is again noted that 5102.1 is the maximum ponded elevation without overflow to the south.

A statement is made in paragraph 5 that historical information indicates the flood pool elevation to be below elevation 5102. If flow conditions have not changed significantly, then we would like to include that information in our analysis.

I agree with the information in the second paragraph of page 2 that most flows west of Coors would stay on the west side and drain south. Only extreme flood events could cross Coors Road and flow into the Tucson Road area, but the FIS is based on the 100-year storm.

PRINCIPALS
JERRY R. BOHANNAN, P. E. & L.S.
LARRY W. HUSTON
DONALD T. CREMANS, P. E.
C.J. (SKIP) MEAD, P. E.
MICHIAL M. EMERY, P. E.

ASSOCIATES
ANDRES ARAGON VIAMONTE, P. E.
JACK EICHORN
ROBERT H. GREENLEE, P. E.
G. LEE TRUSSELL
ISAAC J. PINO, P. E.
RAMON LARA, P. E.
DARRELL L. WADE, P. E.
PATRICK L. STIEHR, P. E.
DAVID M. Y. MILLIKAN, P. E.

We used the following procedure as an estimate of runoff volume for the FIS.

Average 100-year, 1 hr. rainfall is 1.9" from Albuquerque criteria. Then subtract initial abstractions (0.5") and infiltration losses (0.4 in.).

Volume of runoff is similar to that presented.

$$72 \text{ ac.} \times \frac{1.0 \text{ in.}}{12 \frac{\text{in}}{\text{ft}}} = 6 \text{ Ac-Ft}$$

The 3rd paragraph on page 2 presents an area of 9.53 acres at the 5102 contour which then is converted to an average flood depth of .53 feet. That assumes there is 9.53 ac-ft of volume below the 5102 contour and the spot elevations indicate very little volume below elevation 5101.7. I estimated a volume of 3-4 ac-ft of storage below the 5102 contour which means floodwaters would spill to the south. Ponding elevation would then be greater than elevation 5102.1.

Peak flow was not given but 100 cfs is reasonable to expect from this drainage area. An estimate was made of weir flow out of the storage area downstream of the ridge of earth along Sequoia Road. At a flow rate of 100 cfs, the water surface elevation would be about 5102.9 along Sequoia Road. Additional storage above the 5102 contour would help reduce the peak runoff, but the weir rating indicates only about 30 cfs flowing out of the area along Sequoia Road at elevation 5102.5. Rounding to the nearest foot (FIS guidelines) would yield a flood elevation of 5103.

Based on this cursory review of the information and the area, I feel the flood elevation 5103 is reasonable. Based on the topographic information, the flood area could be extended to the south but much of that area would be less than ½ foot deep, and therefore, would not be considered a 100-year flood plain.

I feel the storage volume eliminated by development would not cause significant increases in the flood elevations or the downstream flooding. Therefore, the on-site runoff should be accounted for but to provide additional ponding to account for the decreased storage is unnecessary.

I will be glad to discuss my comments with you and John Andrews to insure concurrence of the presentation of this flood area on the FIS.

If you have any questions or need further information, please feel free to call.

Sincerely,

Patrick L. Stiehr

Patrick L. Stiehr, P.E.
Project Manager

PLS/cs
Job No. 79-111.3

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

March 1, 1983

Mr. John Andrews
Andrews, Asbury & Roberts
149 Jackson N.E.
Albuquerque, N.M. 87108

RE: VILLA DEL OESTE PROJECT - FLOOD HAZARD BOUNDARY MAP AMENDMENT

Dear John:

In a recent conversation with Pat Stiehr, Bohannan-Huston's Project Manager for the Flood Hazard Insurance Study, he indicated that map amendments similar to your proposal can be made if Bohannan-Huston and the City concur with the request. Therefore, I have forwarded copies of your information to Mr. Stiehr for his review. Enclosed is a copy of my cover letter requesting his comments. Included in the letter are time commitments agreed to by Mr. Stiehr and myself.

I would appreciate any questions you may have be directed through this office. Please call if I can be of help.

Very truly yours,

Brian Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

Enclosures

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

February 21, 1983

RECEIVED
FEB 23 1983
ENGINEERING

Mr. Brian G. Burnett
Civil Engineer/Hydrology
City Engineering
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

SUBJECT: VILLA DEL OESTE

Dear Mr. Burnett:

We have reviewed the site of the proposed subject development relative to the Flood Hazard Boundary Map which we obtained from you recently. This Flood Hazard Boundary Map shows the flood pool on and around the development site to be at Elevation 5103.

We have made on site field surveys of the surrounding areas and find that Elevation Contour 5103 does not close in the immediate area. There is a north-south swale between Tucson Road and Sequoia Road, approximately 300 feet east of Yucca Drive that has a high elevation of 5101.8. Therefore, water ponding above this elevation of 5101.8 will flow towards the south to Sequoia Road.

There is a ridge of earth on the north side of Sequoia Road near the intersection of Yucca Drive that has been piled up when blading Sequoia Road that has an elevation of 5102.1. If the water should pond above this 5102.1 elevation, the water will flow onto Sequoia Road and to the south away from the area. Also, if the flow did occur over this ridge erosion would occur in a short time reducing the water level to below an elevation of 5102.0.

We are enclosing a print of the elevations which we have obtained by field survey in the area for your information.

It is our opinion that the maximum flood pool in the area is at Elevation 5102.1 or lower. Historically I believe, the flood pool elevation was below Elevation 5102.

I am enclosing a xerox copy of a portion of the City's 1"=500' topographic map that covers the project area. On this map I have shown the 5102 contour as we have found it to exist based on our field surveys. As you can see

from this map, the Villa Del Oeste site is outside the 5102 Elevation Contour except for a very minute area directly south of the Cul de Sac on Yucca Circle. This also coincides with our map of the site we submitted with our original drainage report.

In addition to the above, we have reviewed the drainage area contributing runoff to the flood pool discussed above. By inspection of the area, it is evident that the drainage area lying west of Coors Road will drain to the south. Therefore, the drainage area contributing runoff to this flood pool is limited to the area east of Coors which consists of 72 acres as shown on the enclosed topographic map.

The total volume of runoff is therefore,

$$(72 \text{ acres})(0.38)\left(\frac{2.2 \text{ inches}}{12 \text{ inches/ft}}\right) = 5.02 \text{ Ac. Ft.}$$

The area of the 5102 contour is 9.53 acres resulting in an average depth of flood pool below elevation 5102 of $\frac{5.02}{9.53} = 0.53$ feet.

Therefore, in addition to the area not allowing the flood pool to reach an elevation above 5102.1, it is most probable that the area as it now exists will pond the 100 year frequency storm below the 5102 Elevation Contour.

The owner of the property on which the Villa Del Oeste development is proposed realizes that the total runoff from his development site must be retained. However, based on the above information, we request that the development be approved without the necessity of providing ponding of the flood pool as shown on the City's Flood Hazard Boundary Map.

Your early response to this request will be appreciated.

Very truly yours,

JOHN A. ANDREWS, P.E.

RECEIVED

FEB 23 1983

ENGINEERING

mt-253

Enclosures

cc: Sam Andrade, Liberty Homes (w/enclosure)

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

June 2, 1992

Mr. Rob Foglesong
Andrews, Asbury & Robert
401 San Pedro NE
Albuquerque, NM 87108

RE: DRAINAGE REPORT FOR VILLA DEL OESTE

Dear Rob:

I have reviewed the referenced report and forward the following comments and questions:

a. Grades will need to be established for the existing 20' alley running along the west boundary of the property.

b. The new Flood Hazard Boundary Maps prepared by Bohannan-Huston, Inc. indicate flooding on the site (see enclosure). Because of flooding and the fact that the development will cause an increase in runoff, compensatory ponding may be required for the site (compensatory ponding refers to the additional storage volume required on a site to insure that the flood pool elevation is not raised on adjacent property).

c. Does any runoff generated west of Coors Blvd. impact the site?

d. Even though the Bohannan Master Plan calls for the runoff from Basin "B" to be diverted eastward to the river, interim measures, such as ponds, must be constructed to protect the Villa Del Oeste site. These facilities must be placed in temporary drainage easements.

e. No on-site runoff will be allowed to discharge onto Yucca Circle until the street system is improved. Therefore, on-site retention of the 100-year event is required as an interim measure.

f. The report states that "in the developed condition the off-site that presently drains through the property will be diverted around the property and will continue to drain to their original terminus." How is this diversion going to be made?

g. How does the development interface with the property immediately to the east?

If you have any questions concerning these matters, please call.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/br

cc: Del Jack, Architect

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
401 San Pedro, NE, Albuquerque, New Mexico 87108-1894
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

May 10, 1982

RECEIVED
MAY 10 1982
CITY ENGINEER

Mr. Chuck Easterling,
Assistant City Engineer-Hydrology
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

SUBJECT: DRAINAGE REPORT FOR VILLA DEL OESTE

Dear Mr. Easterling:

Transmitted herewith are two (2) copies of the drainage report for subject project for your review and comment.

For your information, review of the drainage concept for subject project site has been coordinated through Mr. Jim Fink of your office.

Your earliest attention to this report will be appreciated.

Very truly yours,

Robert S. Foglesong

Robert S. Foglesong, P.E. & L.S.
Staff Engineer

Enclosures (2)

cc: Del Paul Jack, Architect (w/enclosure)
Samual Andrade, Liberty Homes, Inc. (w/enclosure)

RECEIVED
MAY 10 1982
ENGINEERING

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

RECEIVED
MAY 10 1982
CITY ENGINEER

DRAINAGE REPORT INFORMATION SHEET

PROJECT TITLE DRAINAGE REPORT FOR VILLA DEL OESTE

ZONE ATLAS PAGE NO. G-11 -04 CITY ADDRESS 5315 Yucca Circle N.W.

LEGAL ADDRESS Portion of Lot 13, Corona del Sol (filed 7/25/61)

ENGINEERING FIRM Andrews, Asbury & Robert, Inc. CONTACT R. Foglesong

ADDRESS 401 San Pedro N.E., Suite B PHONE 265-6631

OWNER Liberty Homes, Inc. CONTACT S. Andrade

ADDRESS 4001 Ellison N.E. PHONE 345-9986

ARCHITECT ~~SURVEYOR~~ Del Paul Jack CONTACT Del Jack

ADDRESS 400 San Felipe N.W. PHONE 242-4591

DATE SUBMITTED May 10, 1982

BY Andrews, Asbury & Robert, Inc.

RECEIVED
MAY 10 1982
ENGINEERING

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

January 29, 1979

Mr. Subhas K. Shah
2829 Jefferson Street N.E.
Albuquerque, New Mexico 87110

Re: Villa Del Oeste Tract

Dear Mr. Shah:

I have reviewed the drainage report for the referenced development and I find it in compliance with the AMAFCA Resolution-72-2.

The drainage report is hereby approved.

Very truly yours,

Bruno Conegliano
Assistant City Engineer-Hydrology

BC/fs

cc - Dick Heller
Drainage File
Rich Leonard

VILLA DEL OESTE
STORM WATER STORAGE CAPACITY
OF ADJACENT FLOOD POOL

Water Surface Elev. (MSL)	Area (SQ.IN.)	Area (ACRES)	Avg.Area (ACRES)	Depth (FT.)	Volume (AC.FT.)	Accum. Volume (AC.FT.)
		AREA SOUTH OF TUCSON ROAD				
5101.4	-0-	-0-				
			0.0830	0.10	0.0083	
5101.5	2.89	0.1659				0.008
			0.4522	0.10	0.0452	
5101.6	12.87	0.7386				0.054
			1.2598	0.20	0.2520	
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*5102.1	156.09	8.9583				5.980

*Area for Elevation 5102.1 was not measured therefore the same area as for 5102.0 was used which is conservative.

SUMMARY
VOLUMES NORTH & SOUTH OF TUCSON ROAD

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5101.6	0.054	2.244	2.298
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5102.1	1.080	5.980	7.060

RECEIVED
MAR 30 1983
ENGINEERING

DRAINAGE REPORT
FOR
VILLA DEL GESU
August, 1984

DRAINAGE REPORT

FOR

VILLA DEL OESTE

RECEIVED
AUG 21 1984
HYDROLOGY SECTION

August, 1984

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
No. 3080
JOHN A. ANDREWS

Andrews, Asbury & Robert, Inc.
Consulting Engineers
149 Jackson NE
Albuquerque, New Mexico

INDEX

		Page
I	Introduction	1
II	Existing Conditions	2
III	Developed Conditions	5
	Map No. 1 - Location Map	
	Map No. 2 - Soils Map	
	Map No. 3 - F.E.M.A. Floodway Map	
	Map No. 4 - Off Site Conditions	
IV	Drainage Analysis	8
	Computation Sheets	1 thru 8
	Appendix (previous correspondence)	
	Map No. 5 - Existing Conditions	
	Map No. 6 - On Site Developed Conditions	
	Map No. 7 - Contour Map	
	Grading Plan	Sheet 1 of 2
	Sections & Details	Sheet 2 of 2
	Alley Plan & Profile	Sheet 1 of 1
	S.A.D. 198 Drainage Study - Storm Sewer Plan	

I

INTRODUCTION

Ben Ruiz, owner and developer, proposes to improve a 1.435 acre tract of land located within the northwest quadrant of Albuquerque, New Mexico, and being situate in the Northeast Quarter (NE1/4) of Section 2, Township 10 North, Range 2 East, N.M.P.M. (see enclosed Location Map No. 1 - Zone Atlas Map G-11).

The proposed development for this tract is consistent with the present R-2 zoning.

It is the intent of this report to provide a method of handling storm runoff from the site under the proposed developed conditions.

II

EXISTING CONDITIONS

A. General

The subject property is presently undeveloped with an average slope from west to east of approximately 0.5 percent.

The property is bounded on the east by Yucca Circle NW, an unimproved street. Two existing apartment buildings bound the property on the south. To the west, the property is bounded by an unpaved 20 foot alley, which is presently being utilized for access and parking for existing office buildings located to the west of the alley. The area to the north of the property is presently undeveloped. As currently platted, the subject property is bounded on the north by one-half (1/2) of a proposed 20 foot alley.

An investigation of the soil groups in the area, by use of the Soil Conservation Service Soil Map (see enclosed Map No. 2) indicates that the soils in this area are of the Madurez-Wink Association (MWA) which is classified as hydrologic soil group B.

B. Off Site

A review of the proposed site and surrounding area indicates that the subject property is located within a drainage basin consisting of approximately 72 acres and is designated on Map No. 4 (enclosed). This drainage basin is a closed basin and has no current natural outlet. Storm water generated by the basin collects in a depression located east of the property.

Delineation of the site on the FEMA Floodway Map indicates that the proposed development lies within the adjacent depression and flood boundary, and with a high water line at elevation 5103. (See enclosed Map No. 3.)

A detailed topographic field survey was performed of the area in the vicinity of the proposed development site. From this survey, a contour map of the area was prepared and is included with this report as Map No. 7. Based on this contour map, it has been determined that the flood boundary of a 100 year storm lies below elevation 5102.1. (See tabulation in Appendix.)

C. On Site

The existing drainage patterns for the on site

undeveloped conditions are presented on Map No. 5.

The site discharges as sheet flow across the east property line and continues to the existing ponding area east of the site.

As evident from Map No. 5 enclosed, the subject site lies above elevation 5102.1, therefore, is not encumbered by the flooded area.

III

DEVELOPED CONDITIONS

A. Off Site - Future Improvements

The subject property is presently within the limits of Special Assessment District 198 which consist of street improvements to Yucca Circle NW, Yucca Drive NW, Tucson Road NW, and Sequoia Road NW. Improvements to these streets will consist of water and sanitary sewer services, curb and gutter, and pavement together with a major storm drainage system.

The area under consideration for the storm drainage system to be included as a portion of Special Assessment District 198 (S.A.D. 198) is approximately bounded on the south by Redlands Road NW, on the west by Ladera Road NW, on the north by the north boundary of the Town of Atrisco Grant, and on the east by Alamogordo Drive NW.

The storm drainage concept for S.A.D. 198 consists of construction of a storm drainage system that will provide drainage of the closed basin. (See Special Assessment

District 198 Drainage Study - Storm Sewer Plan included herewith.)

The proposed drainage concept for S.A.D. 198 will allow for total developed discharge from the undeveloped properties within the limits of the storm sewer system and storm water detention on land lying within the assessment area will not be required.

The area lying to the north of the Town of Atrisco Grant boundary is not included in S.A.D. 198, but is a portion of a much larger planned development for the University of Albuquerque Urban Center. A conceptual drainage plan of the development, prepared by Bohannan-Huston, Inc. (a copy of which is available in the City's record files for review), is to intercept storm flows lying north of the Town of Atrisco Grant boundary and discharge the flow into the Rio Grande by storm sewer.

B. <u>On Site</u>

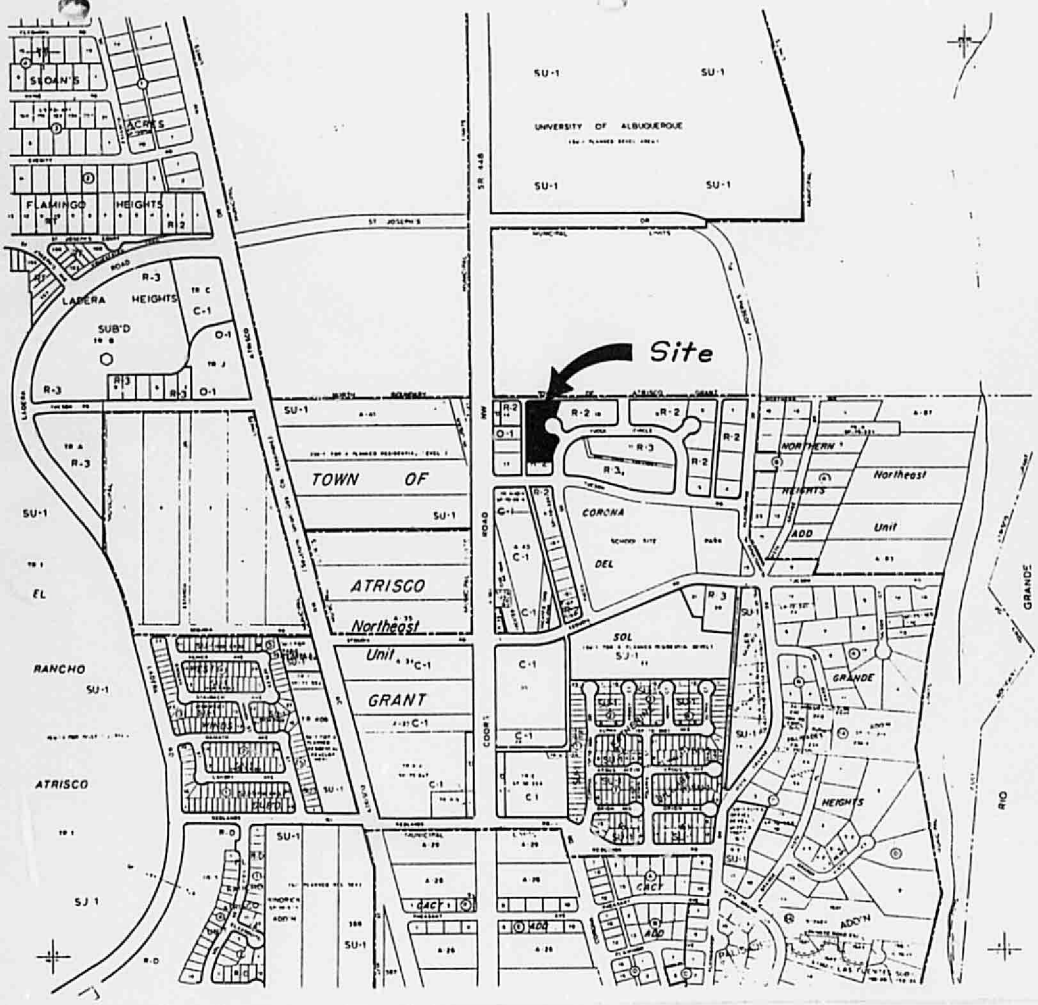
Drainage patterns and drainage area designations for the on site developed conditions are shown on Map No. 6 enclosed.

Consideration was given to the future projected improvements for this area in arriving at the drainage plan for Villa del Oeste, and is consistent with the proposed overall drainage scheme together with the present drainage patterns. Street grades shown on adjacent Yucca Circle conform to the finish grades proposed for this street.

Included as a portion of the storm drainage system to be installed under S.A.D. 198 is the construction of a storm drain line in Yucca Circle. Upon completion of this storm drain line, the ponding area located adjacent to Yucca Circle can be deleted. Project site will be drained directly to the street or an inlet can be provided at the southeast corner of the parking lot and this inlet connected to the storm drain to be installed in Yucca Circle.

C. Off Site

In the developed state, off site area will continue to drain to their original terminus, i.e., the existing ponding area east of the subject site.

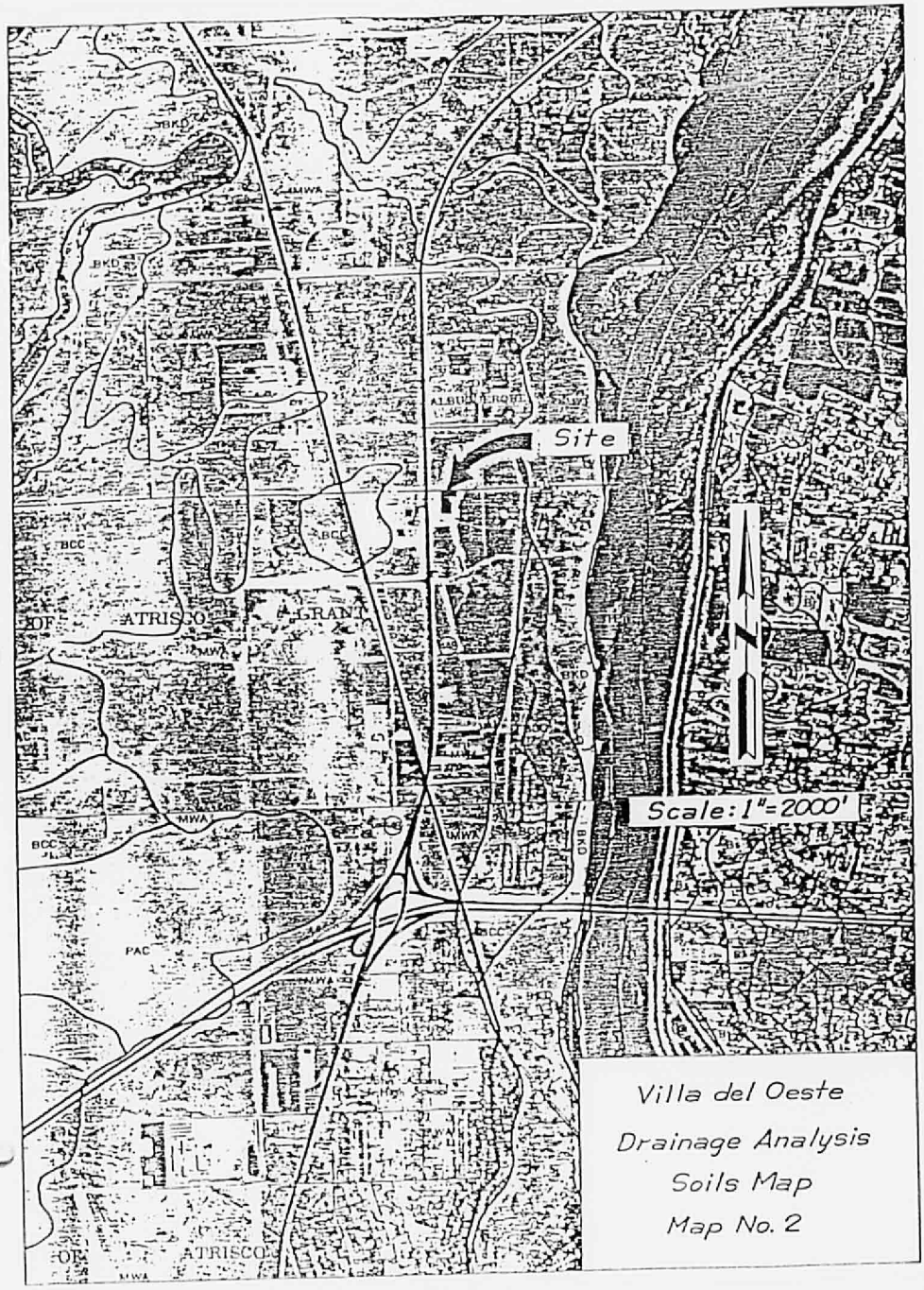


Villa del Oeste
Drainage Analysis

Location Map

Map No. 1

G-11-Z

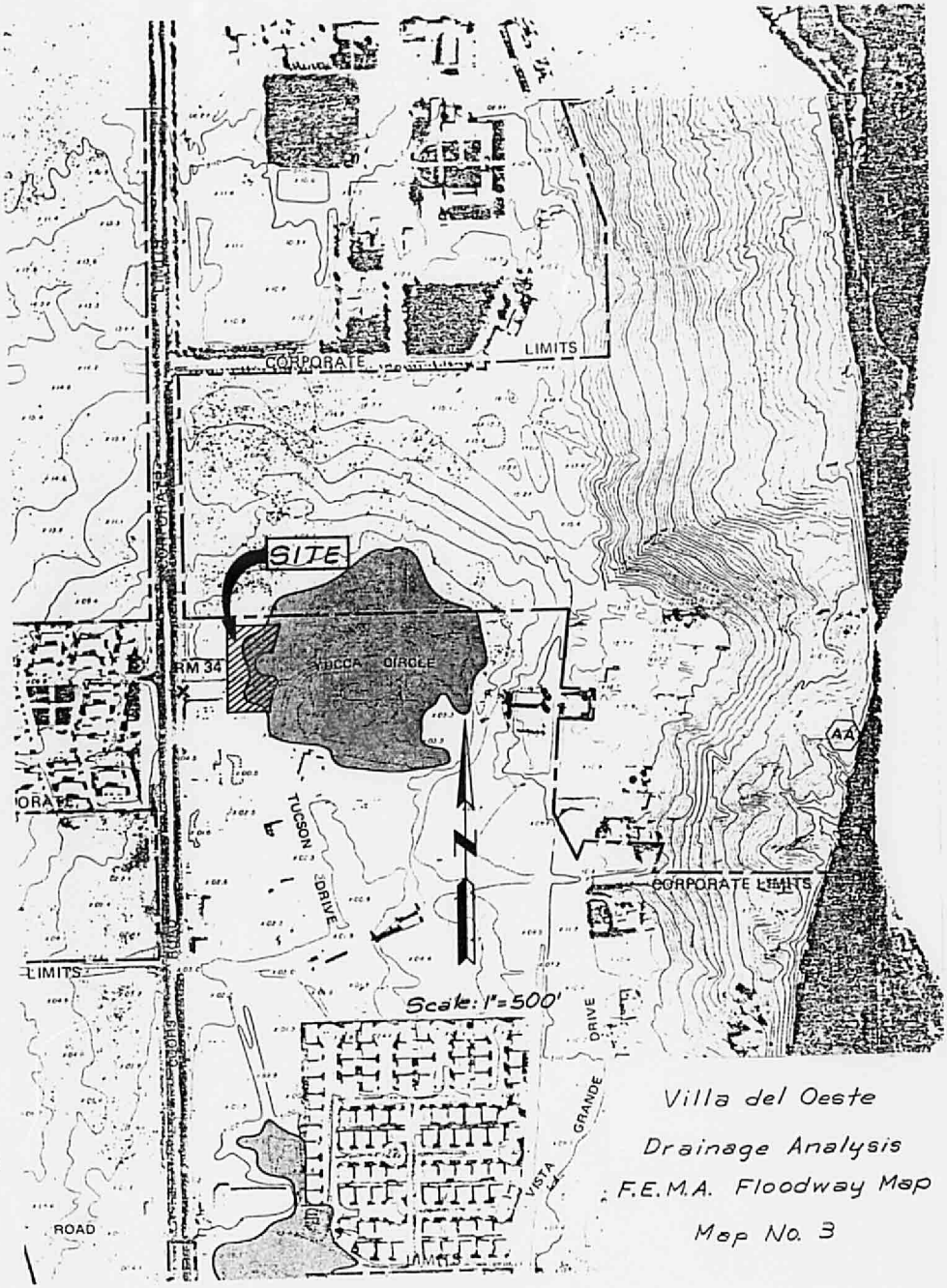


Villa del Oeste

Drainage Analysis

Soils Map

Map No. 2

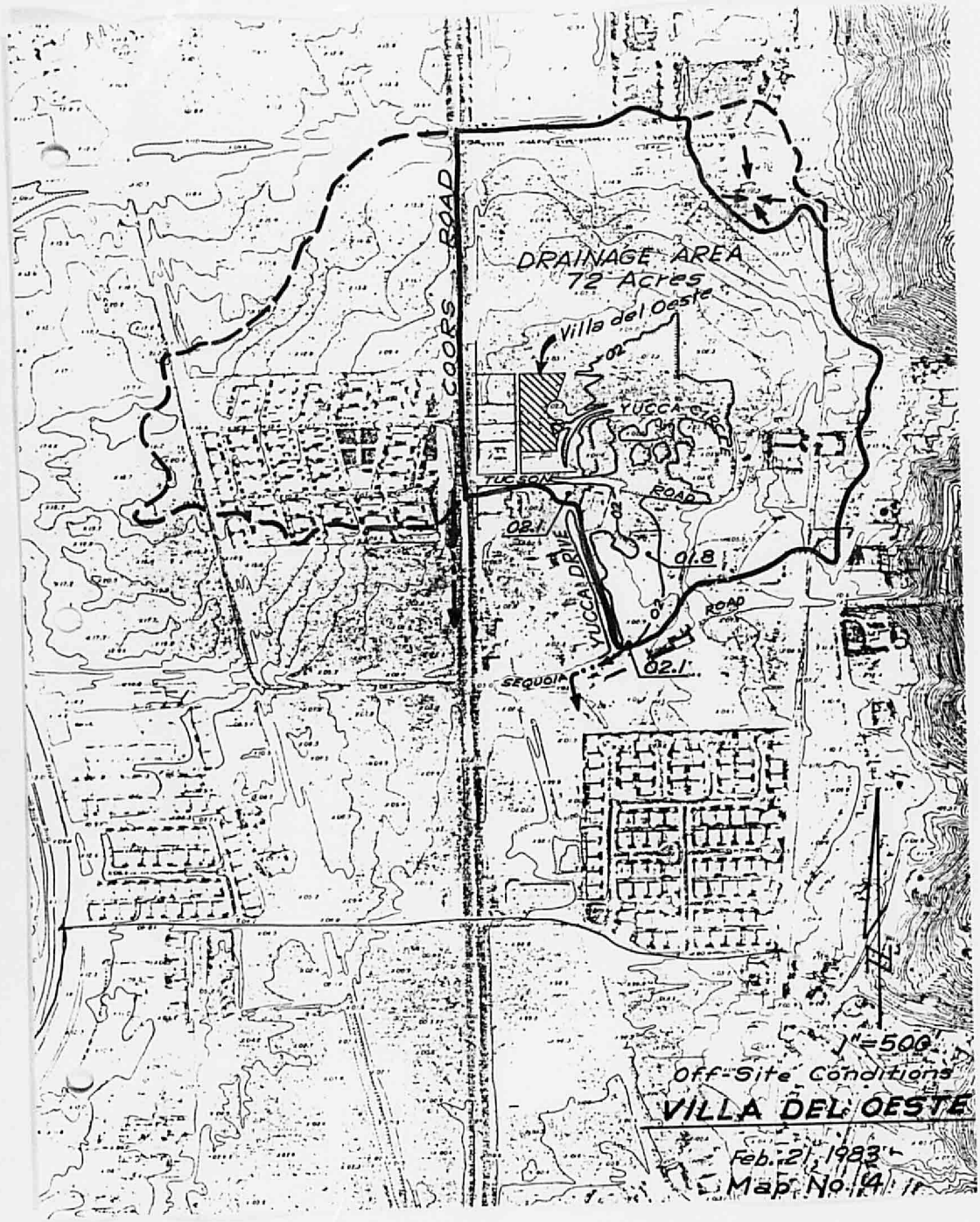


Villa del Oeste

Drainage Analysis

F.E.M.A. Floodway Map

Map No. 3


DRAINAGE AREA
72 Acres
Villa del Oeste
COORS ROAD
YUCCA CIRCLE
TUCSON ROAD
02.1
01.8
YUCCA DRIVE
ROAD
02.1
SEQUOIA
1"=500'
Off-Site Conditions
VILLA DEL OESTE
Feb. 2, 1983
Map No. 4

IV

DRAINAGE ANALYSIS

Following is the Drainage Analysis (computations) for the subject property, for both the Existing Conditions and Developed Conditions.

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Developed Conditions

(See Developed Conditions Map, Map No 6 for Drainage Area locations)

In the developed state, it is required to retain all storm water runoff generated from the development of the site together with the storm water generated from improvements off site that are necessary to provide access to the development. This will be accomplished by retention ponds that will be constructed on and off the site (See Map No 6 for location of Ponds)

TABLE 1 - DEVELOPED CONDITIONS, PEAK RATES & VOLUMES

DRAINAGE AREA DESIGNATION	TOTAL AREA (AC.)	% IMPERVIOUS	C	Q_{100} (1) (CFS)	V_{100} (FT3)	REMARKS
1	0.4852	34.3	0.50	1.13	1937.4	DRAINS TO REAR YARDS
2	0.0858	58.4	0.62	0.26	439.7	
3	0.0604	60.3	0.63	0.18	303.9	
4	0.8006	77.0	0.74	2.75	4731.3	
5	0.2446	43.0	0.54	0.61	1054.8	OFFSITE

(1) $Q = CIA$, where $I = 6.84(6\text{ hr rainfall}) \times t_c^{-.51}$
assume $t_c < 10$ mins, 6 hr rainfall = 2.2 in
then $I = 4.65$ in/hr.

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Project: VILLA CALLESTE
DRAINAGE ANALYSIS
Sheet 2 of 8
Job No. 253
By: [illegible]
Chk'd: [illegible]
Date: 8/17/84

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Project: Villa del Oeste Sheet 3 of 3
Drainage Analysis Job No. 253
By [illegible] Chk'd [illegible] Date 8/17/84

Pond Volumes

See Developed Conditions Map, Map No ( )
for Pond designations and locations.
See Sections & Details, Sheet 2 of 2
for Typical Pond Sections

Pond 1

Pond 1 will retain the storm water runoff generated from Drainage Area 1

Length of pond = 759.95 ft
Width of pond = 2.5'

∴ Surface Area of Pond = 2.5 × 759.95 = 1899.87

Required Storage Volume = 1937.4 (See Table 1 sh 2)

Depth of Pond = $\frac{\text{Required Storage}}{\text{Surface Area}}$

$= \frac{1937.4}{1899.87} = \underline{1.019 ft}$

USE 1 FT
OK

used 6"

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Pond Volumes (cont.)

Pond 2

Pond 2 will retain the storm water runoff generated from Drainage Area 2

Top of Pond @ elev. 04.0
Bottom of pond @ elev 03.30
depth = 0.70 feet

Area of Pond Bottom = 419.5 SF
Area of Pond Top = 1400 SF

$$\text{Volume} = \frac{419.5+1400}{2} \times (.7-.33)$$

$$+ \; 1400 \times .33 = \underline{798.60 \text{ FT}^3}$$

Required Volume = 439.7 FT³ (See Table 1 Sh. 2)

Determine Surface Elev of Ponded water

$$439.7 - 336.6 = 103.09 \text{ FT}^3$$

$$\frac{103.09 \text{ FT}^3}{1400 \text{ FT}^2} = 0.0734 \text{ FT}$$

∴ Elev of Ponded Water = 03.30 + .37 + .0734
= 03.74 ok

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Pond Volumes (cont.)

Pond 3

Top of Pond Elev = 03.40
Bottom of Pond Elev = 02.70
depth = 0.70 ft

Area of Pond Bottom = 324 ft²
Area of Pond Top = 576 ft²

Total Available Volume

$$= \frac{324+576}{2} \times (.7-.33)$$

$$+ 576 \times .33 = 356.6 \text{ ft}^3$$

Required Volume = 303.9 ft³ (See table 1)

Determine Surface Elev. of Pond Water

$$303.9 - \frac{324+576}{2} \times (.7-.33) = 137.4 \text{ ft}^3$$

$$\frac{137.4 \text{ ft}^3}{576} = 0.238 \text{ ft}$$

Elev of Ponded Water = 02.70 + .37 + .24
= 03.31

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Pond Volumes (cont.)

Ponds 4, 5 & 6

Drainage Area 4 will drain to pond 4 & 5, when these ponds are full the remainder of storm runoff will be directed to Pond 6. The storm runoff generated from the offsite drainage area 5 5 will also be directed to Pond 6

Pond 4

Top of Pond Elev = 02.80
Bottom of Pond Elev = 02.10
depth = 0.70 ft
Bottom of Pond Area = 260 ft²
Top of Pond Area = 336 ft²
Volume of Pond = $\frac{260+336}{2} \times .5$
$+ 336 \times .2 = \underline{\underline{216.2}}$ ft³

Elev of Ponded Storm water = 02.1 + .7
= 02.8

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Pond Volumes (cont.)

Pond 5

Top of Pond @ ELEV = 02.50
Bottom of Pond @ ELEV = 01.80
Depth = 0.70 FT

Bottom of Pond Area = 404 FT²
Top of Pond Area = 636 FT²

Volume of Pond = $\frac{404+636}{2} \times .5$
$+ 636 \times .2$
$= \underline{\underline{387.2}}$ FT³

THEN, from Table 1
Volume of runoff from Drainage Area 4
= 4731.3 FT³

Volume retained by Ponds 4 & 5
= 216.2 + 387.2 = 603.4 FT³

Volume of Runoff from Drainage Area 4
that will flow to Pond 6
= 4731.3 - 603.4 = 4127.9 FT³

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
149 Jackson, N.E., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Project Villa del Oeste Sheet 8 of 8
Drainage Analysis Job No. 253
By [illegible] Chk'd [illegible] Date 8/17/84

Pond Volumes (cont.)

Pond 6

Pond 6 will retain the remainder of the storm runoff generated from Drainage Area 4 together with the offsite runoff generated from Drainage Area 5

Required Volume = 4127.9 + 1054.8
= 5182.7 ft³

Top of Pond @ elev = 02.20

Bottom of Pond area = 2020 ft²
Top of Pond area = 3236 ft²
Avg = 2628 ft²

depth = $\frac{5182.7}{2628}$ = 1.97 ft

Bottom of Pond @ elev = 02.20 - 1.97
= 00.23

APPENDIX

(Previous Correspondence)

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

April 7, 1983

RECEIVED
ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
DATE APR 8 1983
JOB 253
COMMENTS
FILE

Mr. John Andrews
Andrews, Asbury & Roberts, Inc.
149 Jackson N.E.
Albuquerque, N.M. 87108

RE: VILLA DEL OESTE

Dear John:

I have reviewed your calculations and request of March 30, 1983 regarding development criteria for the referenced project. Following are my comments:

1. Per Pat Stiehr's letter of March 1983, your petition to reduce the flood plain elevation from 5103.0 to 5102.0 was denied. Since Bohannan & Huston, Inc. has submitted the Flood Hazard Boundary Maps to FEMA, any further request to amend the maps must be directed through the Flood Insurance Administration. Andre Houle, City/County Flood Plain Administrator, may be contacted at 766-7644 to outline the requirements for a Letter of Map Amendment if your client wishes to protest the current information.

2. Until a Letter of Map Amendment is obtained, the Flood Hazard Ordinance Criteria will be required. Specifically, the finished floor elevation of residential and commercial developments must be at an elevation of one foot above the flood plain elevation.

3. Guidelines/Conditions for development are as follows:

   a. The survey information submitted to this office be certified with either a LS or PE stamp and signature.

   b. No compensatory ponding be provided on site.

   c. Finished floor elevations of each unit be placed at least to elevation 5104.0.

   d. The entire 100-year developed runoff volume be retained on-site.

e. All improvements be designed and constructed in accordance with the proposed plans for SAD 198.

f. The owner commit by means of a legal document (to run with the land) to upgrade all drainage improvements to meet City criteria once the infrastructure downstream of the site is constructed.

g. The owner commit by means of a legal document (to run with the land) to participate in a fair and equitable assessment for infrastructure improvements. This stipulation is made since the City is allowing development without adequate downstream facilities being in place.

h. A drainage plan be approved by this office.

Please review these comments and contact me if you have any questions.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

cc: Andre Houle, Civil Engineer/Hydrology
Pat Stiehr, Bohannan & Huston, Inc.

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

March 30, 1983

Brian Burnett
Civil Engineer/Hydrology
City Engineering
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

SUBJECT: VILLA DEL OESTE

Dear Mr. Burnett:

As a result of the meeting held at your office on March 11, 1983, and your follow-up letter dated March 14, 1983, we proceeded with additional surveys to determine detailed elevations of the flood pool area in the vicinity of subject project. From these additional surveys, we prepared a contour map to use in determining the storage volume at various elevations.

Enclosed is the elevation storage table developed from this contour map and a print of the contour map in work sheet form.

Based on the volume of the 100 year frequency storm being 6 Ac. Ft. as presented in Pat Stiehr's letter, the elevation of the flood pool will be slightly above elevation 5102.0 but lower than 5102.1.

We trust that this data will provide you with the information needed to make a decision on the drainage requirements for the development of the site. As you will note from the Existing Conditions Map provided in the original drainage report, the Villa Del Oeste site is above the elevation of the flood pool.

We look forward to your favorable response.

Very truly yours,

JOHN A. ANDREWS, P.E.

mt-253

enclosures

cc: Mr. Sam Andrade
Mr. Ben Ruiz

VILLA DEL OESTE
STORM WATER STORAGE CAPACITY
OF ADJACENT FLOOD POOL

Water Surface Elev. (MSL)	Area (SQ.IN.)	Area (ACRES)	Avg.Area (ACRES)	Depth (FT.)	Volume (AC.FT.)	Accum. Volume (AC.FT.)
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			8.9583	0.10	0.8958	
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5102.1	1.080	5.980	7.060

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

March 14, 1933

Mr. John Andrews
Andrews, Asbury & Roberts
149 Jackson N.E.
Albuquerque, N.M. 87108

RE: VILLA DEL OESTE DRAINAGE CONCERNS

Dear John:

This letter is a follow-up to our meeting this morning with Pat Stiehr. A review of the Flood Hazard Ordinance (Enactment No. 99-1981) indicates that flood plain information provided by a Professional Engineer may be used to insure that provisions of Section 7B are met (see enclosure). Therefore, in order to further evaluate the plans for the Villa Del Oeste Project, this office should be supplied with the maximum flood elevation resulting from a 100-year storm. Topographic information already obtained should be used to compute the volume available for runoff storage and then compared to the run-off volume generated by the watershed. Once the 100-year flood plain elevation is determined, design criteria for the project will be established.

Please call if you have any questions.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

cc: Pat Stiehr, Bohannan-Huston

RECEIVED
ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
DATE MAR 14 1983
JOB 253
COMMENTS
ANDREWS
ASBURY
ROBERT
FILE

SECTION 5. GENERAL PROVISIONS.

A. LANDS TO WHICH THIS ORDINANCE APPLIES

This ordinance shall apply to all areas of special flood hazards within the jurisdiction of the City of Albuquerque, which includes its extraterritorial planning and platting jurisdiction.

B. BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD

The areas of special hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled "The Flood Insurance Study for the City of Albuquerque," when published, with accompanying Flood Insurance Rate Maps and Flood Boundary-Floodway Maps is hereby adopted by reference and declared to be a part of this ordinance. The Flood Insurance Study will be on file in the City Engineer's Office, 400 Marquette N.W., Albuquerque, New Mexico, 87103. Before publication of "The Flood Insurance Study for the City of Albuquerque", the City Engineer will establish the areas of special flood hazard as specified in Section 6.C.2.

6.C. 2. USE OF OTHER BASE FLOOD DATA

When base flood elevation data has not been provided in accordance with Section 5.B., BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD, the City Engineer shall obtain, review, and reasonably utilize any base flood elevation data available from a Federal, State or other source, in order to administer Sections 7.B.1 SPECIFIC STANDARDS, Residential Construction, and 7.B.2, SPECIFIC STANDARDS, Nonresidential Construction.

3. INFORMATION TO BE OBTAINED AND MAINTAINED

a. Obtain and record the actual elevation (in relation to mean sea level) of the lowest habitable floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

b. For all new substantially improved floodproofed structures:

1. verify and record the actual elevation (in relation to mean sea level); and

2. maintain the floodproofing certifications required in Section 6.A.3.

c. Maintain for public inspection all records pertaining to the provisions of this ordinance.

Rec'd -
3-14-83
JA

March 7, 1983

Mr. Brian Burnett
Civil Engineer/Hydrology
City Engineering
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Dear Mr. Burnett:

I have reviewed the drainage comments concerning the proposed development site, Villa Del Oeste, as part of the review procedure for the Albuquerque Flood Insurance Study (FIS).

I have several comments that need to be resolved before we would change the elevation or extent of flooding at Tucson Road and Yucca Drive.

The topographic information provided by Andrews, Asbury, and Robert, does show a north-south swale between Tucson Road and Sequoia Road and water ponded north of Tucson would flow south. The minimum ground elevation is 5101.8. This means the water would have to be higher before it would flow south.

The ridge of earth on the north side of Sequoia Road near Yucca Drive, as described in paragraph 3, would pond floodwaters to an elevation of 5102.1 as described. It is again noted that 5102.1 is the maximum ponded elevation without overflow to the south.

A statement is made in paragraph 5 that historical information indicates the flood pool elevation to be below elevation 5102. If flow conditions have not changed significantly, then we would like to include that information in our analysis.

I agree with the information in the second paragraph of page 2 that most flows west of Coors would stay on the west side and drain south. Only extreme flood events could cross Coors Road and flow into the Tucson Road area, but the FIS is based on the 100-year storm.

We used the following procedure as an estimate of runoff volume for the FIS.

Average 100-year, 1 hr. rainfall is 1.9" from Albuquerque criteria. Then subtract initial abstractions (0.5") and infiltration losses (0.4 in.).

Volume of runoff is similar to that presented.

$$72 \text{ ac.} \times \frac{1.0 \text{ in.}}{12 \frac{\text{in}}{\text{ft}}} = 6 \text{ Ac-Ft}$$

The 3rd paragraph on page 2 presents an area of 9.53 acres at the 5102 contour which then is converted to an average flood depth of .53 feet. That assumes there is 9.53 ac-ft of volume below the 5102 contour and the spot elevations indicate very little volume below elevation 5101.7. I estimated a volume of 3-4 ac-ft of storage below the 5102 contour which means floodwaters would spill to the south. Ponding elevation would then be greater than elevation 5102.1.

Peak flow was not given but 100 cfs is reasonable to expect from this drainage area. An estimate was made of weir flow out of the storage area downstream of the ridge of earth along Sequoia Road. At a flow rate of 100 cfs, the water surface elevation would be about 5102.9 along Sequoia Road. Additional storage above the 5102 contour would help reduce the peak runoff, but the weir rating indicates only about 30 cfs flowing out of the area along Sequoia Road at elevation 5102.5. Rounding to the nearest foot (FIS guidelines) would yield a flood elevation of 5103.

Based on this cursory review of the information and the area, I feel the flood elevation 5103 is reasonable. Based on the topographic information, the flood area could be extended to the south but much of that area would be less than ½ foot deep, and therefore, would not be considered a 100-year flood plain.

I feel the storage volume eliminated by development would not cause significant increases in the flood elevations or the downstream flooding. Therefore, the on-site runoff should be accounted for but to provide additional ponding to account for the decreased storage is unnecessary.

I will be glad to discuss my comments with you and John Andrews to insure concurrence of the presentation of this flood area on the FIS.

If you have any questions or need further information, please feel free to call.

Sincerely,

Patrick L. Stiehr, P.E.
Project Manager

PLS/cs
Job No. 79-111.3

HYDROLOGY G11/D4 6 PLANS 2 of 2

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

March 1, 1983

Mr. John Andrews
Andrews, Asbury & Roberts
149 Jackson N.E.
Albuquerque, N.M. 87108

RE: VILLA DEL OESTE PROJECT - FLOOD HAZARD BOUNDARY MAP AMENDMENT

Dear John:

In a recent conversation with Pat Stiehr, Bohannan-Huston's Project Manager for the Flood Hazard Insurance Study, he indicated that map amendments similar to your proposal can be made if Bohannan-Huston and the City concur with the request. Therefore, I have forwarded copies of your information to Mr. Stiehr for his review. Enclosed is a copy of my cover letter requesting his comments. Included in the letter are time commitments agreed to by Mr. Stiehr and myself.

I would appreciate any questions you may have be directed through this office. Please call if I can be of help.

Very truly yours,

Brian Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

Enclosures

RECEIVED
ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
DATE MAR 3 1983
JOB 253
COMMENTS
FILE

MUNICIPAL DEVELOPMENT DEPARTMENT

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

AN EQUAL OPPORTUNITY EMPLOYER

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

March 1, 1983

Mr. Pat Stiehr
Bohannan-Huston, Inc.
4125 Carlisle Blvd. N.E.
Albuquerque, N.M. 87107

RE: VILLA DEL OESTE PROJECT - FLOOD HAZARD BOUNDARY MAP AMENDMENT

Dear Pat:

Enclosed is information prepared by the firm of Andrews, Asbury, and Roberts regarding the potential for flooding in the vicinity of Yucca Circle and Coors Blvd. As you can see, the computations represent an amendment to the Flood Hazard Boundary Maps.

Per our conversation of March 1, 1983, it is my understanding the review procedures still allow this type of amendment to be made if Bohannan-Huston and the City concur with the request. If this is the case, please review the material by March 9, 1983. I will be in touch to set up a meeting late next week to discuss the results.

Thank you for your time and help. If you have any questions, please call.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

Enclosures

RECEIVED
ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
DATE MAR 3 1983
NO. 253
COMMENTS
ANDREWS
ASBURY
ROBERT
FILE

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
149 Jackson, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

February 21, 1983

Mr. Brian G. Burnett
Civil Engineer/Hydrology
City Engineering
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

SUBJECT: VILLA DEL OESTE

Dear Mr. Burnett:

We have reviewed the site of the proposed subject development relative to the Flood Hazard Boundary Map which we obtained from you recently. This Flood Hazard Boundary Map shows the flood pool on and around the development site to be at Elevation 5103.

We have made on site field surveys of the surrounding areas and find that Elevation Contour 5103 does not close in the immediate area. There is a north-south swale between Tucson Road and Sequoia Road, approximately 300 feet east of Yucca Drive that has a high elevation of 5101.8. Therefore, water ponding above this elevation of 5101.8 will flow towards the south to Sequoia Road.

There is a ridge of earth on the north side of Sequoia Road near the intersection of Yucca Drive that has been piled up when blading Sequoia Road that has an elevation of 5102.1. If the water should pond above this 5102.1 elevation, the water will flow onto Sequoia Road and to the south away from the area. Also, if the flow did occur over this ridge erosion would occur in a short time reducing the water level to below an elevation of 5102.0.

We are enclosing a print of the elevations which we have obtained by field survey in the area for your information.

It is our opinion that the maximum flood pool in the area is at Elevation 5102.1 or lower. Historically I believe, the flood pool elevation was below Elevation 5102.

I am enclosing a xerox copy of a portion of the City's 1"=500' topographic map that covers the project area. On this map I have shown the 5102 contour as we have found it to exist based on our field surveys. As you can see

from this map, the Villa Del Oeste site is outside the 5102 Elevation Contour except for a very minute area directly south of the Cul de Sac on Yucca Circle. This also coincides with our map of the site we submitted with our original drainage report.

In addition to the above, we have reviewed the drainage area contributing runoff to the flood pool discussed above. By inspection of the area, it is evident that the drainage area lying west of Coors Road will drain to the south. Therefore, the drainage area contributing runoff to this flood pool is limited to the area east of Coors which consists of 72 acres as shown on the enclosed topographic map.

The total volume of runoff is therefore,

$$(72 \text{ acres})(0.38)\left(\frac{2.2 \text{ inches}}{12 \text{ inches/ft}}\right) = 5.02 \text{ Ac. Ft.}$$

The area of the 5102 contour is 9.53 acres resulting in an average depth of flood pool below elevation 5102 of $\frac{5.02}{9.53} = 0.53$ feet.

Therefore, in addition to the area not allowing the flood pool to reach an elevation above 5102.1, it is most probable that the area as it now exists will pond the 100 year frequency storm below the 5102 Elevation Contour.

The owner of the property on which the Villa Del Oeste development is proposed realizes that the total runoff from his development site must be retained. However, based on the above information, we request that the development be approved without the necessity of providing ponding of the flood pool as shown on the City's Flood Hazard Boundary Map.

Your early response to this request will be appreciated.

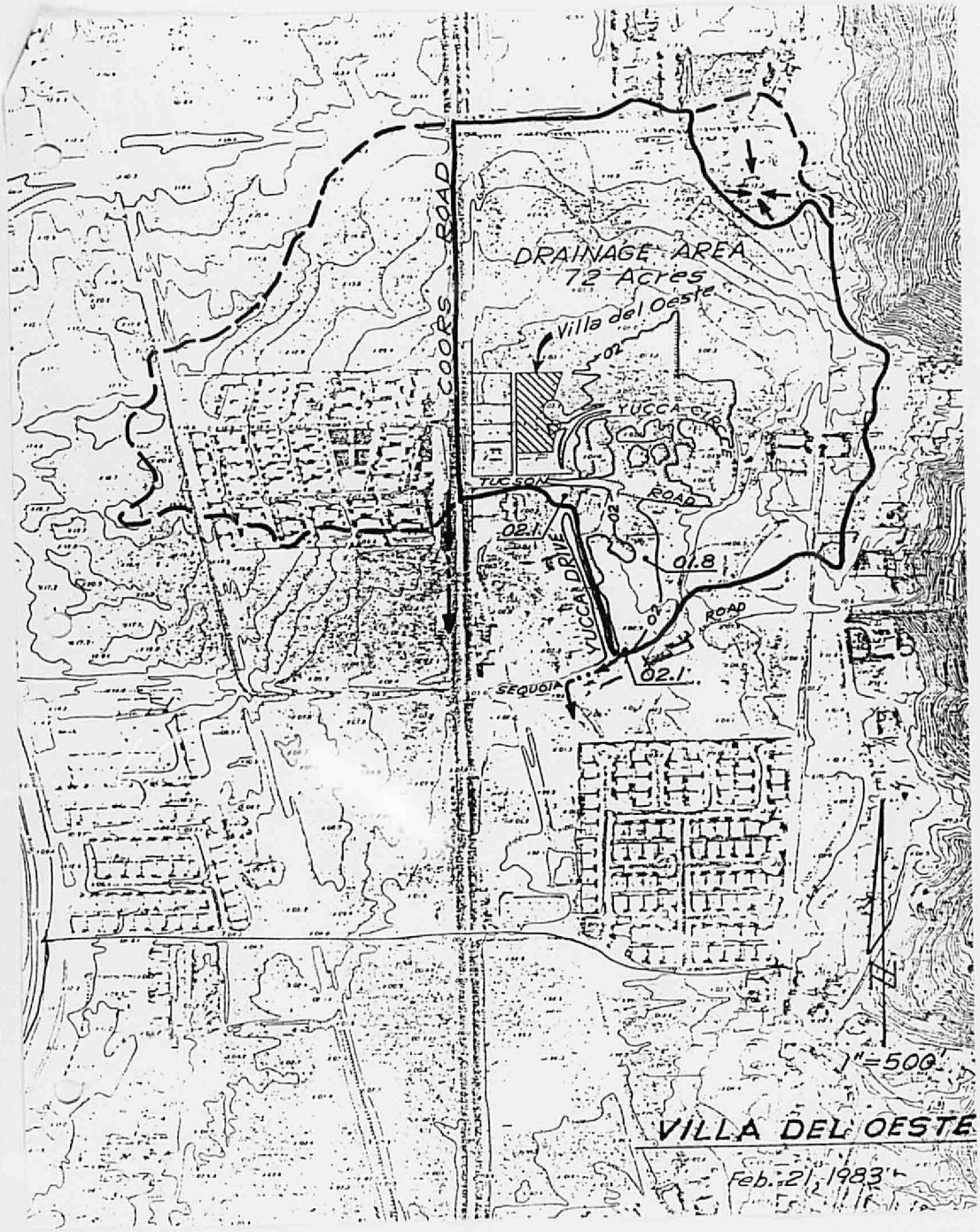
Very truly yours,

JOHN A. ANDREWS, P.E.

mt-253

Enclosures

cc: Sam Andrade, Liberty Homes (w/enclosure)


DRAINAGE AREA
72 Acres
Villa del Oeste
COORS ROAD
YUCCA CIR
TUCSON
ROAD
02.1
01.8
YUCCA DRIVE
ROAD
02.1
SEQUOIA
1"=500'
VILLA DEL OESTE
Feb. 21, 1983