HYDROLOGY E20/D17 TWO PLANS

E20/D17

2 PLANS

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

May 11, 1983

Mr. Thomas Roehl
8229 Cherry Hills Dr. N.E.
Albuquerque, N.M. 87111

RE: RUNOFF CONTROL IN THE CHERRY HILLS SUBDIVISION AREA

Dear Mr. Roehl:

Per our conversation of May 3, 1983, I am forwarding information regarding drainage in the area directly impacting the Cherry Hills Subdivision. Before making specific comments, let me list information included for your review:

a. Plate 1: 1"=500' topographic map indicating conditions and drainage divides prior to construction of Wimbledon West at Tanoan and Fairways North at Tanoan.

b. Plate 2: 1"=500' topographic map indicating draianage divides based on the proposed grading plans for Wimbledon West and Fairways North.

c. Plate 3: Approved grading plan for Wimbledon West.

d. Plate 4: Approved grading plan for Fairways North.

e. Plate 5: Zone atlas indicating proposed Heritage Hills Park.

f. Runoff calculations based on current drainage criteria outlined in Chapter 22-Drainage; "City of Albuquerque Development Process Manual". Pertinent charts and graphs have also been included.

Specific Comments:

1. Prior to construction of Wimbledon West and Fairways North, approximately 110 cfs was generated in Area A (60 acres) during the 100-year storm. This value was computed based on a 100-year rainfall amount of 2.5 inches. Much of this runoff "ponded" on the east side of Ventura Ave. aligned with the north boundary of Cherry Hills.

2. Construction of Fairways North insures that approximately 50% of the runoff generated in Area A will now be diverted southward to the Pino Arroyo.

3. Approximately 102 cfs will discharge through the 3-30" RCP's under Ventura Blvd. in the 100-year storm. This value represents a complete built-out of the Wimbledon and Fairways North Subdivisions.

4. Realizing that the new development will increase runoff frequency to the PNM easement, dumped gravel will be placed at the outlet of the pipe and in an effort to reduce erosion.

5. The proposed developments eliminate the potential hazard caused by watering "ponding" adjacent to Ventura Ave.

6. The 1983-85 Capital Improvement Program has identified $500,000 for treatment of the North Pino Arroyo directly north of Cherry Hills in conjunction with the development of the Heritage Hills Neighborhood Park. Although subject to voter approval this November, we are confident that this money will be available to improve this section of arroyo. The design engineer selected to prepare construction plans for this project will be directed to develop a scheme to divert runoff discharged from the 3-30" RCP's into the North Pino channel. An attempt will also be made to divert to the permanent channel runoff collected at the corner of Cherry Hills Rd. and Cherry Blossom Lane. It is hoped that work on the preliminary plans could begin in early 1984.

I hope this information serves to clarify any questions or concerns you may have. In keeping with current practice, we will monitor the sites to assess their impact on the surrounding area.

Please contact me of you have any questions.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl
5117B

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

DR

February 2, 1983

E20-D17

Mr. Allen Whitesel
AMDEC
P.O. Box 25000
Albuquerque, N.M. 87125

RE: YOUR LETTER OF JANUARY 17, 1983-GRADING PERMITS FOR WIMBLEDON WEST AND FAIRWAYS NORTH AT TANOAN

Dear Allen:

I am forwarding a response in regards to the referenced letter:

1. This office concurs with the simultaneous grading of the two subdivisions. What is the estimated time frame for construction of the subdivision infrastructures?

2. Erosion Control Plans are required for each development. I notice that the Wimbledon West plans call for utilizing the 10 foot planting strip adjacent to the street ROW. When will this work be carried [illegible] om our work in Santa Fe Village II we realized the importance [illegible] establishing mix and providing a regular watering schedule

3. Engineer certification will be required for all retaining walls within the project boundaries.

4. Per Section 9 of the Drainage Ordinance, no building permits will be issued until the drainage improvements, including retaining walls, are constructed or financial guarantees for the improvements are provided. We will be glad to work with you in formulating a phasing plan for the site improvements.

If you have any questions, please call.

Very truly yours,

Charles M. Easterling
Princ. Asst./City Engineer

CME/BGB/tal

1167

affiliated mortgage & development company amdec

a wholly owned subsidiary of Albuquerque Federal Savings and Loan Association

6400 uptown blvd., n.e.
albuquerque, new mexico

mailing address
p. o. box 25000
albuquerque, new mexico 87125

AM # 3069

January 17, 1983

RECEIVED
JAN 18 1983
CITY ENGINEER

Mr. Richard S. Heller, P.E.
City Engineer
City of Albuqueruqe
P. O. Box 1293
Albuquerque, New Mexico 87103

SUBJECT: Grading Permits for Wimbledon West and Fairways North Tanoan

Dear Dick:

Tom Mann and Jake Bordenave have recently informed me that your office would like some assurance that Wimbledon West will either be built concurrently with Fairways North or that temporary drainage facilities will be provided east of Wimbledon West to prevent storm runnoff from entering the subdivision.

AMDeC will build Fairways North and Wimbledon West subdivision concurrently. I intend to start earthwork on both subdivisions by January 19, 1983 if I have an approval from your office for subdivision rough grading.

I hope this satisfies the requirements of your staff. If further information or clarification is required, please contact me immediately at 883-3501.

Sincerely,

AFFILIATED MORTGAGE AND DEVELOPMENT COMPANY

Allan L. Whitesel

ALLAN L. WHITESEL, P.E.
Vice President, Land Development

cc: Chuck Easterling
Assistant City Engineer

RSH ____ DES ____
HRO ____ INSP ____
CME ____ HYDRO ____
JNH ____ SUR ____
SAD ____ ADM ____
____ FILE ____
RESPONSE BY ____

affiliated mortgage & development company amdeC

a wholly owned subsidiary of Albuquerque Federal Savings and Loan Association

6400 uptown blvd., n.e.
albuquerque, new mexico

mailing address
p. o. box 25000
albuquerque, new mexico 87125

AM - 2053

RECEIVED
AUG 18 1982
CITY ENGINEER

August 16, 1982

Mr. Chuck Easterling
Assistant City Engineer, Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: WIMBLEDON WEST SUBDIVISION AT TANOAN COMMUNITIES

Dear Chuck:

Pursuant to your request (via Jake Bordenave), AMDeC shall either build Wimbledon West and Fairways North subdivisions at the same time, or will provide upstream diversion east of Wimbledon West (if Fairways North is not constructed simultaneously) to protect subject subdivision from surface run off damage.

The design of such diversions shall be coordinated with your office.

Sincerely,

AFFILIATED MORTGAGE AND DEVELOPMENT COMPANY

Allan L. Whitesel

Allan L. Whitesel, P.E.
Chief Engineer

pjn

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE June 16, 1982 REF. NO._____

TO: Celia Tomlinson, Design

FROM: Brian Burnett, Hydrology

SUBJECT: Project #1453 - Wimbledon West at Tanoan

E20-D17

1. Computations should be provided for sizing the rip-rap blanket located at the end of the 36" RCP. Limits of the material should be defined more clearly. (The material should probably be placed over the entire area between the 36" RCP and the culverts). A filter blanket should also be provided along with specifications.

BB/fs

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

May 13, 1982

Mr. Jake Bordenave
Adam, Hamlyn and Anderson
4055 A Montgomery Blvd. NE
Albuquerque, N.M. 87109

RE: WIMBLEDON WEST AT TANOAN DRAINAGE REPORT

Dear Jake:

The referenced report is approved in concept. Please attach this letter to the construction drawings upon submittal for City review.

I still plan to discuss "specifics" with you and will try to transmit a letter in the near future.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

Brian Burnett
CE/Hydrology
May 1983

A. Drainage Computations for conditions prior to construction of Wimbeldon West & Fairways North

1. Storm Frequency: 100-year

2. Area of Watershed (A): 60 acres

3. Rainfall Amount: 2.5 inches (from Plate 22.2 D-1)

4. Rainfall Intensity (I): 4.6 in/hr (from Plate 22.2 D-2)

5. Runoff Coefficient (C): .4 (from Plate 22.2 C-1 for a combination of Soil Conservation Soil Types B & C)

6. 100-year runoff (in cubic feet per second)

$$Q_{100} = CIA = \underline{\underline{110 \text{ cfs}}}$$

Brian Burnett
CE/Hydrology
May 1983

B. Drainage Computations for conditions after construction of Winbeldon West & Fairways North

1. Storm frequency: 100-year
2. Area of Watershed: 30 acres
3. Rainfall Amount: 2.5 inches
4. Rainfall Intensity: 5.5 in/hr.
5. Runoff Coefficient: .62 (based on estimate that watershed is 60% impervious area)
6. 100-year runoff:

$$\underline{Q_{100} = 102 \text{ cfs}}$$

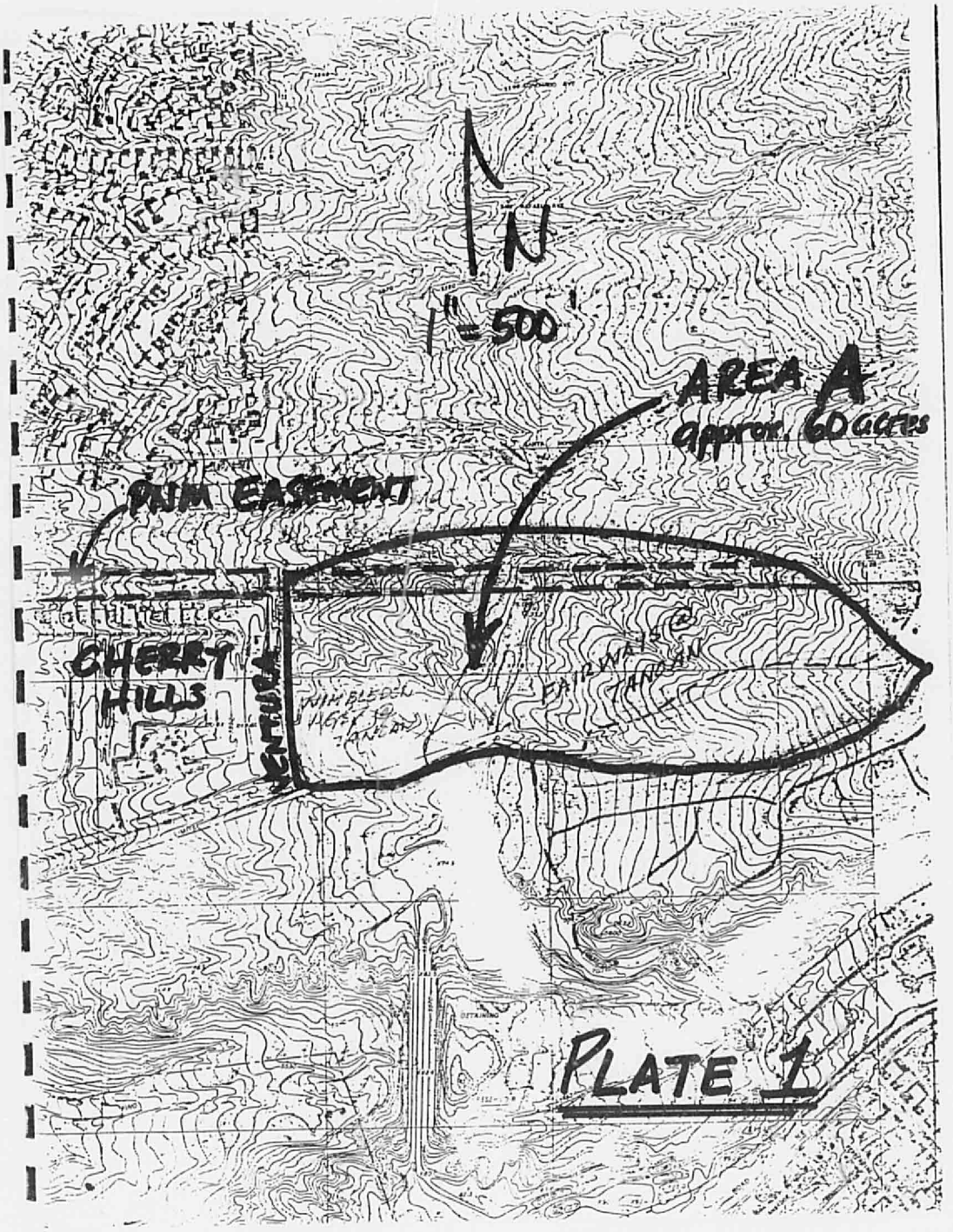
N
1" = 500'
AREA A
approx. 60 acres
PNM EASEMENT
CHERRY HILLS
KENTUCKY
KIMBLEDON
FAIRWAY @ TANDAN

PLATE 1

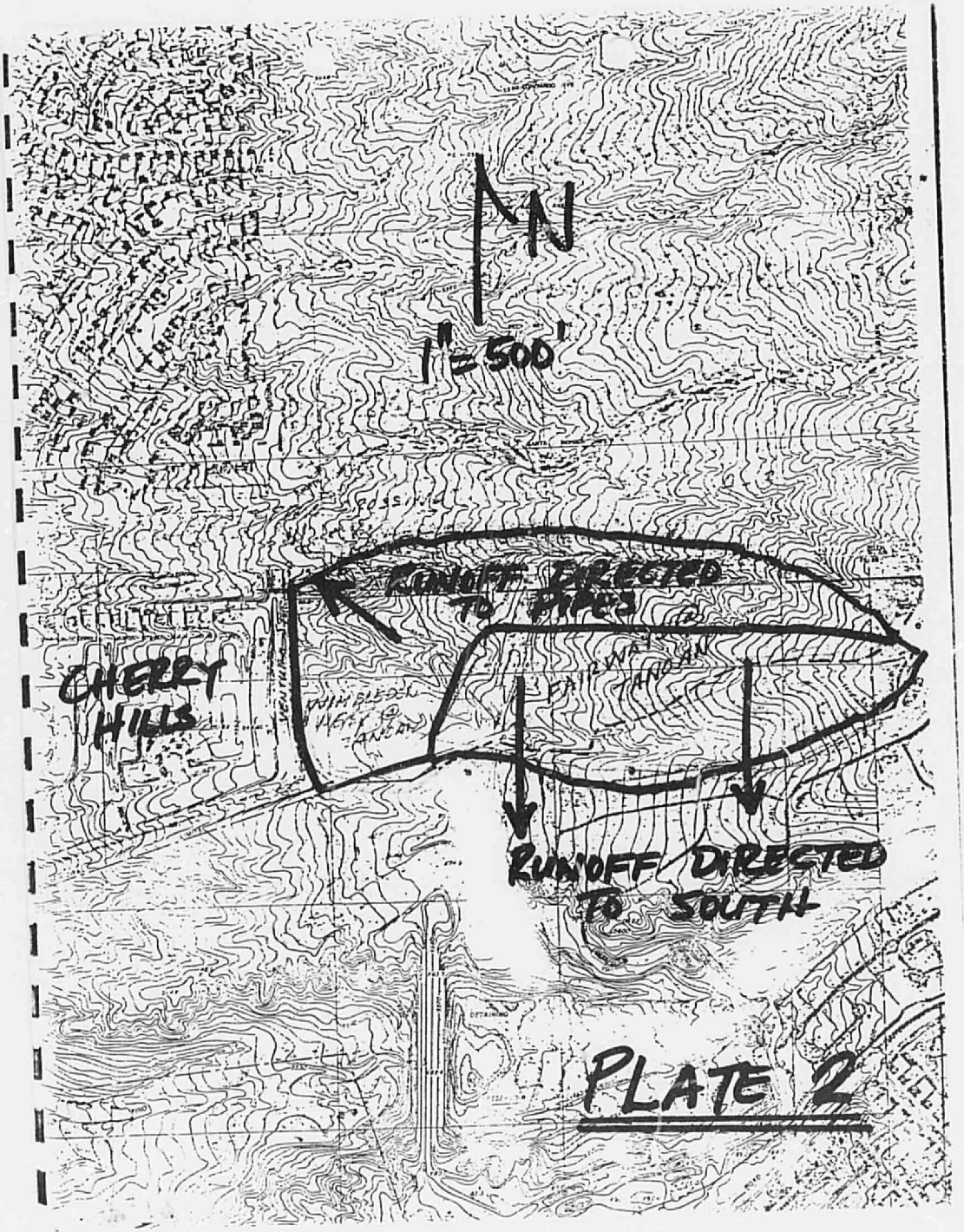
N
1" = 500'
RUNOFF DIRECTED TO PIPES
CHERRY HILLS
RUNOFF DIRECTED TO SOUTH

PLATE 2

D17/023

662

85 37110

RECEIVED
MAY 15 1985
PHO110
HYDROLOGY SECTION

AGREEMENT AND COVENANT

THIS AGREEMENT made this 8th day of May, by and between the CITY OF ALBUQUERQUE, New Mexico, a municipal corporation ("City") and AMERIWEST CORPORATION, a New Mexico corporation, ("User").

RECITAL

The User is the owner of certain real property located on the eastern side of Ventura Street, N.E., Albuquerque, New Mexico, and more particularly described as follows:

> Lots 22A through 34A, inclusive, WIMBLEDON WEST AT TANOAN, as the same are shown on the plat thereof filed in the Bernalillo County, New Mexico, real estate records on Book C-22, Page 20, July 8, 1983.

The City is the owner of that certain public right-of-way adjoining or abutting the above described Property designated as Ventura Street. The User agrees to enter upon the City's Property and to construct a retaining wall as shown on the plans designated as VENTURA STREET RETAINING WALL 11 + 50 to 20 + 29.74, a copy of which plans are attached hereto as Exhibit "A", (the "Improvement").

The construction of the Improvements is necessitated by the User's failure to construct a retaining wall between the Property and the Ventura Street right-of-way.

The City is agreeable to the encroachment of said improvement provided that the User comply with the provisions and covenants contained herein.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, it is agreed by and between the City and User that the User may construct, at its own expense, the improvement described herein.

RESPONSIBILITY

The User shall be responsible for the construction of said improvement and it shall conform to all laws and ordinances and administrative regulations applicable thereto. Said improvement shall not constitute a hazard to the health or safety of the general public and shall not interfere with the City's use of the Property. Maintenance of said improvement shall be accomplished in accordance with the City of Albuquerque Sidewalk Ordinance, (Sections 8-6-1 through 8-6-25, R.O. 1974).

INDEMNIFICATION

The User agrees to defend, indemnity, 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 said parties during the construction of said improvement.

REMOVAL

The parties acknowledge that the improvement described herein is permanent in nature and removal of said improvement should never be necessary. However, should removal become necessary, said removal shall be accomplished in accordance with the provisions of the City of Albuquerque Sidewalk Ordinance, (Sections 8-6-1 through 8-6-25, R.O. 1974).

LIABILITY

The City shall not be liable for any damages to the User's Property or the improvement that may result during the construction of said improvement.

NOTICE

The written notice provided for herein shall be accomplished by mailing same to:

USER:

AMERIWEST CORPORATION
Post Office Box 25625
Albuquerque, New Mexico 87125

CITY:

City Engineer
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

The User may change said address by giving written notice, certified mail, return receipt requested, to the City Engineer, at the above address.

COVENANT RUNNING WITH THE PROPERTY

The obligation of the User set forth herein shall be binding upon the User, its heirs, and assigns, and the Property

of the User as described herein and will run with said Property until released by the City.

USER: AMERIWEST CORPORATION

By: Allan K. Whitesel
Title: Vice President

CITY OF ALBUQUERQUE

Attest:

City Clerk

Chief Administrative Officer

REVIEWED BY THE LEGAL DEPARTMENT

Assistant City Attorney

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this the 30th day of April, 1985, by Allan K. Whitesel, the Vice President of AMERIWEST CORPORATION, a New Mexico corporation, on behalf of said corporation.

Lisa K. Cornwell
Notary Public

My Commission Expires:
10-11-88

OFFICIAL SEAL
LISA K. CORNWELL
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State
My Commission Expires 10-11-88

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this the 8th day of May, 1985, by Frank A. Kleinhans, the Chief Administrative Officer of the CITY OF ALBUQUERQUE, a municipal corporation, on behalf of said corporation.

Dola P. Grant
Notary Public

My Commission Expires:
12/18/88

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED
1985 MAY 13 PM 3:24
M 4338 A PG. 662-665
DOLORES C. WALLER
CO. CLERK & RECORDER
DEPUTY

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANDAN EXISTING DRAINAGE	JOB NO. A-81535 DATE: 8/2/82 BY: D. A.	SHT. NO. 1 OF 1

Area = 70.60 Acs (Area contributing in a 100 year storm condition) To North Pino Arroyo) see Plate III-A

L = 2700' length of reach in ft.

diff. in elevation = 5644 − 5547 = 97'

$$s = \frac{97}{2700} = .036$$

$$t_c = .0078 \times \frac{L^{0.77}}{S^{0.385}} = .0078 \times \frac{(2700)^{.77}}{(.036)^{.385}} = 12.3 \text{ mins.}$$

I_{100} = 4.56 (for t_c = 12.3 mins.) ; C = 0.40 for existing

$$Q_{100} \text{ (existing)} = CIA = 0.40 \times 4.56 \times 70.60$$

$$= 128.8 \text{ cfs.}$$

ADAM, HAMLYN, ANDERSON
consulting engineers inc.

DRAINAGE REPORT

FOR

WIMBLETON WEST AT TANDY'S

ADAM, HAMLYN, ANDERSON
consulting engineers inc.

DRAINAGE REPORT

FOR

AIMBLEDON WEST AT TANDAN

RECEIVED

DRAINAGE REPORT

APR 23 1982

WIMBLEDON WEST AT TANOAN

ENGINEERING

Prepared For:
AMDeC
P.O. Box 25000
Albuquerque, New Mexico 87125

Prepared By:
Adam,Hamlyn,Anderson
Consulting Engineers, Inc.
4055 Montgomery Blvd. NE
Albuquerque, New Mexico 87109

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO 5110 NEW MEXICO JEAN J. BORDENAVE

Jean J. Bordenave, N.M. P.E. & L.S. #5110

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INTERNAL DRAINAGE	3
CONCLUSIONS	3

APPENDIX A	Planning Department Comments
APPENDIX B	Design Charts
APPENDIX C	Computations
PLATE I	Vicinity Map
PLATE II	Soils Map
PLATE III	Existing Topo
PLATE IV	Flood Hazard Boundary Map
PLATE V	Proposed Grading Plans and Stormwater Flows
A.	Earthwork
B.	Final Grading

DRAINAGE REPORT

FOR

WIMBLEDON WEST AT TANOAN

PURPOSE

AMDeC is currently planning development at Wimbledon West Subdivision. The purpose of this report is to present a drainage management plan to be used in the design of the proposed subdivision.

SITE LOCATION AND TOPOGRAPHY

Wimbledon West is located in the noertheast quadrant of Albuquerque, in the northwest corner of the Tanoan Master Plan Development, and bounded on the west by Ventura Avenue and on the north by San Antonio Road. (See Plate I for exact location). The site presently drains in a northwesterly direction, and after ponding approximately 6 feet deep at Ventura Avenue would flow along the north boundary of Cherry Hills Unit II, and joins the North Pino Arroyo approximately 1000 feet west of Ventura Avenue. The gradient from the SE to NW is approximately 3.5%. Soils consist of alluvial sands and silts and decomposed granite is the major soil constituent. (See Plate II). Light growth of native grasses, cacti and small brush dominates the area.

DESIGN CRITERIA

In accordance with AMAFCA and City of Albuquerque requirements, the hydrological analysis is based on the 100 year frequency rainfall. In addition, an analysis for

10 year frequency rainfall has been compiled. Enclosed in Appendix B are curves representing the 10 year and 100 year storms. Meetings with Mr. Charles Easterling, Assistant City Engineer, Hydrology, have been held, and permission has been granted to allow the 100 year storm to exit the site with neither retention nor detention. It will be the developer's responsibility, however, to construct a drainage structure under Ventura Avenue to pass the 100 year storm from the entire contributing area. In addition, the developer must construct four (4) trenches, backfilled with pit-run gravel at approximately 25 foot spacing in the downstream channel.

PROPOSED DEVELOPMENT

Wimbledon West, zoned RLT, will be developed either as single family residents or duplex units with a density of approximately 5.6 dwelling units per acre. Lots are approximately 50 feet in width and 120 feet in depth. Streets will be 28 feet wide from back to back of curb. Lots will be graded to direct all stormwater to the street. (See Plate III).

OFFSITE DRAINAGE

Upland flows will be intercepted by the proposed and previously approved, Fairways North at Tanoan, with the major portion of the flow being directed southeasterly, adjacent to Wimbledon West, to the Pino Arroyo. The remaining portion of the flow from Fairways North will be directed northeasterly to the 150 foot PNM easement, and flow along the north boundary of Wimbledon West to the proposed Drainage Structure at Ventura Avenue.

INTERNAL DRAINAGE

All internally generated flows will be directed via street to the NW corner of the subdivision, and there collected through a single or several catch basins which will flow to the proposed Ventura Avenue drainage structure. Computations enclosed indicate where mountable and standard curb types are to be used.

CONCLUSIONS

As stated in the Design Criteria portion in this report, a structure under Ventura Avenue will be constructed with this project, thereby allowing stormwaters generated on the east side on Ventura Avenue to flow to the North Pino Arroyo. Through construction of Fairways North and Wimbledon West, the 100 year storm being directed to the North Pino Arroyo will be reduced from the present condition due to the re-direction of a portion of this basin to the Pino Arroyo with decrease in flows to the North Pino at approximately 25 cfs. In addition, through construction of Wimbledon West Subdivision, ponding against the roadway embankment of Ventura Avenue will be relieved.

AUG 31 81
RECEIVED
ADAM, HAMLYN,
ANDERSON

SUBDIVISION REVIEW BOARD
AGENDA
August 27, 1981

City Council Committee Room, Third Floor
City Hall, 400 Marquette N. W.

9:00 a.m.

John Lucero, Chairman

Bob Fosnaugh
Richard Heller
Joe Quintana
George Paul

Lloyd Barlow
Paul Brasher
Albert A. Boberg
Q. R. Kielich

****

1. Call to Order

2. S-81-26 Adam, Hamlyn, Anderson, agents for AMDeC, requests approval for the Village Greens North at Tanoan Subdivision, containing approximately 16.6 acres and 97 lots, described as an unplatted parcel of land in Section 29, T11N, R4E, located at the southeast corner of the intersection of Layton Avenue and San Antonio Drive, N.E.

3. Other Matters

JL:mes
8080A

AGENDA ITEM NO. 2
Subdivision Review Board
August 27, 1981

S-81-26 Adam, Hamlyn, Anderson, agents for AMDeC, requests approval for the Village Greens North at Tanoan Subdivision, containing approximately 16.6 acres and 97 lots, described as an unplatted parcel of land in Section 29, T11N, R4E, located at the southeast corner of the intersection of Layton Avenue and San Antonio Drive, N.E.

COMMENTS FROM OTHER DEPARTMENTS 8/27/81:

Traffic	"The cul-de-sac at the northeast corner of the proposed subdivision must have a 47' pavement radius and a 17' center radius if a center island is to be used. "The Academy Road entrance/exit and its connection to this subdivision should be constructed prior to occupancy of more than 10 units in this subdivision."
City Engineer	"a. A drainage study will be submitted for approval prior to approval of plat. b. The plat does not indicate continuation of streets. c. Streets are not named or lettered or numbered for easy reference. d. Do not concur with islands at intersections and knuckles. e. There is no indication that Public Service Company approves of the ponding within their easement. It will be necessary that PNM's approval be obtained. f. All lots abutting Layton/Ventura will require installation of City Standard curb and gutter and sidewalks. Also paving of the street shall be in accordance with City Standards."
Human Services	"No adverse comment."
Transportation	"No adverse comment."
AMAFCA	"Defer to City Engineers comments."
CIP	"No adverse comment."
Environ. Health	"No adverse comments."
Police Department	"No adverse comment."
Neighborhood Coor.	"No adverse comment."
PSM	"No adverse comment, however, it is noted that a "detention pond" is proposed within a 150 foot wide PNM easement. This office has not been contacted by the developers or engineers concerning the proposed encroachment. Before approval is granted, spe- cific plans for the pond must be submitted to and reviewed by PNM."
Refuse	"No adverse comment."
Zoning Enforcement	"The majority of the proposed lots are zoned R-1. The majority do not comply with the lot width nor the lot area. For all practical purposes, the Set 1 portion should be considered per R-1 regulation and these lots don't meet R-1 regulations either. "To complicate the matter, a good majority of the lots are proposed for frontage on North/South streets or within 30 degrees of such orientation. This increases the lot width requirements for these lots. "Further, the "typical lot" as shown depicts a type of development allowed by the R-T zone Section 11.D.2. While the R-1 zone will allow a similar layout, the lot area and width must be increased. "This plan should have been rejected at the front desk."
Fire Department	"Provide required fire flow and fire hydrant distribution."
Parks and Rec.	"In accordance with Ordinance 7-1976, as amended, the developer is required to pay a development fee at building permit time, plus dedicate land or cash-in-lieu of land."
Gas Company	"The Gas Company of New Mexico approves."
Mountain Bell	"No comment."

PLANNING DIVISION COMMENTS TO THE SUBDIVISION REVIEW BOARD 8/27/81:

Requested is approval of a 16.6 acre subdivision zoned SU-1 and R-1 containing approximately 97 lots resulting in a gross density of 5.84 dwelling units per acre.

Special Use (Planned Residential Development) zoning was approved for the area north of Harper Road on 9/21/78 with a minimum lot size of 4500 square feet and setback requirements of the R-T zone subject to a Summary Plat prior to the issuance of a Certificate of Zoning. The plat was not submitted, therefore, the zoning was not changed.

Access will be by a private street south to Academy Road and additional access will be developed to the west when Layton Avenue is improved; however, access to Academy should be constructed prior to occupancy of more than 10 units. Traffic Engineering has requested a 47' pavement radius and 17' center island radius for the cul-de-sac at the northeast corner of the subdivision.

A drainage plan satisfactory to the City Engineer is required prior to plat approval.

FINDINGS:
1. Platting conforms to zoning approved in 1978.
2. Access between the subdivision and Academy must be constructed prior to occupancy of more than 20 units.
3. The northeastern cul-de-sac must be modified as per the Traffic Engineers comments.
4. A drainage plan satisfactory to the City Engineers is required prior to plat sign-off.
5. Compliance with Solar Ordinance Regulations is required.
6. Note on plat that lots backing on Layton shall not have access to Layton

RECOMMENDATION: APPROVAL OF S-81-26 IS RECOMMENDED SUBJECT TO FINDINGS 2-5.

John Lucero, Planner

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE MEETING.

cc: AMDEC, P.O. Box 25000; 87125
Adam, Hamlyn, Anderson, 4055 Montgomery Blvd., NE; 87109

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

MAYOR
David P. Rusk

September 1, 1981

SEP 1981 RECEIVED ADAM, HAMLYN, ANDERSON

AMDeC
P.O. Box 25000
Albuquerque, New Mexico 87125

Re: S-81-26

Dear Mr. Bordenave:

At the meeting of the Subdivision Review Board on August 27, 1981 the following decision was made:

FINDINGS:

1. Platting conforms to zoning approved in 1978.
2. Access between the subdivision and Academy or Layton must be constructed prior to occupancy of more than 20 units.
3. The northeastern cul-de-sac must be modified as per the Traffic Engineers comments.
4. A drainage plan satisfactory to the City Engineers is required prior to plat sign-off.
5. Compliance with Solar Ordinance Regulations is required.
6. A note is to be made on the plat that all lots backed to Layton may not have access to Layton.

BE IT RESOLVED that S-81-26 be approved, subject to the Findings.

The appeal date for this decision is September 11, 1981. Appeal may be made at the offices of the Planning Division, Room 601, City Hall, 400 Marquette, NW, Albuquerque, N.M., 87103. No permits or other such action may be taken until this date has passed.

If you have any questions concerning these decision, do not hesitate to contact me at 766-7422.

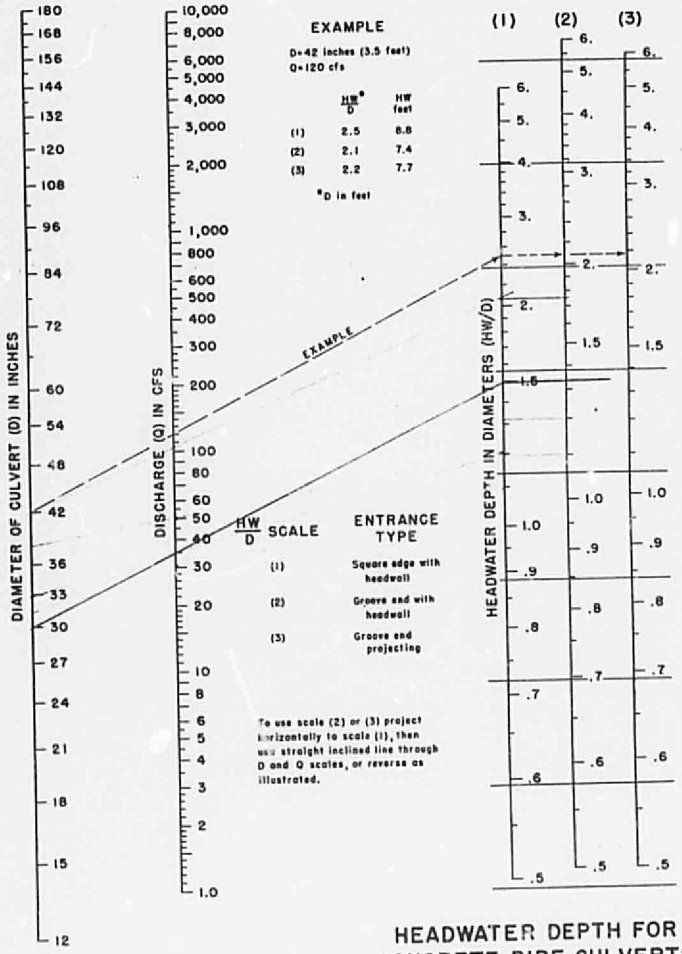
Sincerely,

John R. Lucero, Chairman

cc: Adam, Hamlyn, Anderson, Attn: Jake Bordenave, 4055 Montgomery Boulevard, NE; 87109

JRL/mes
8080A

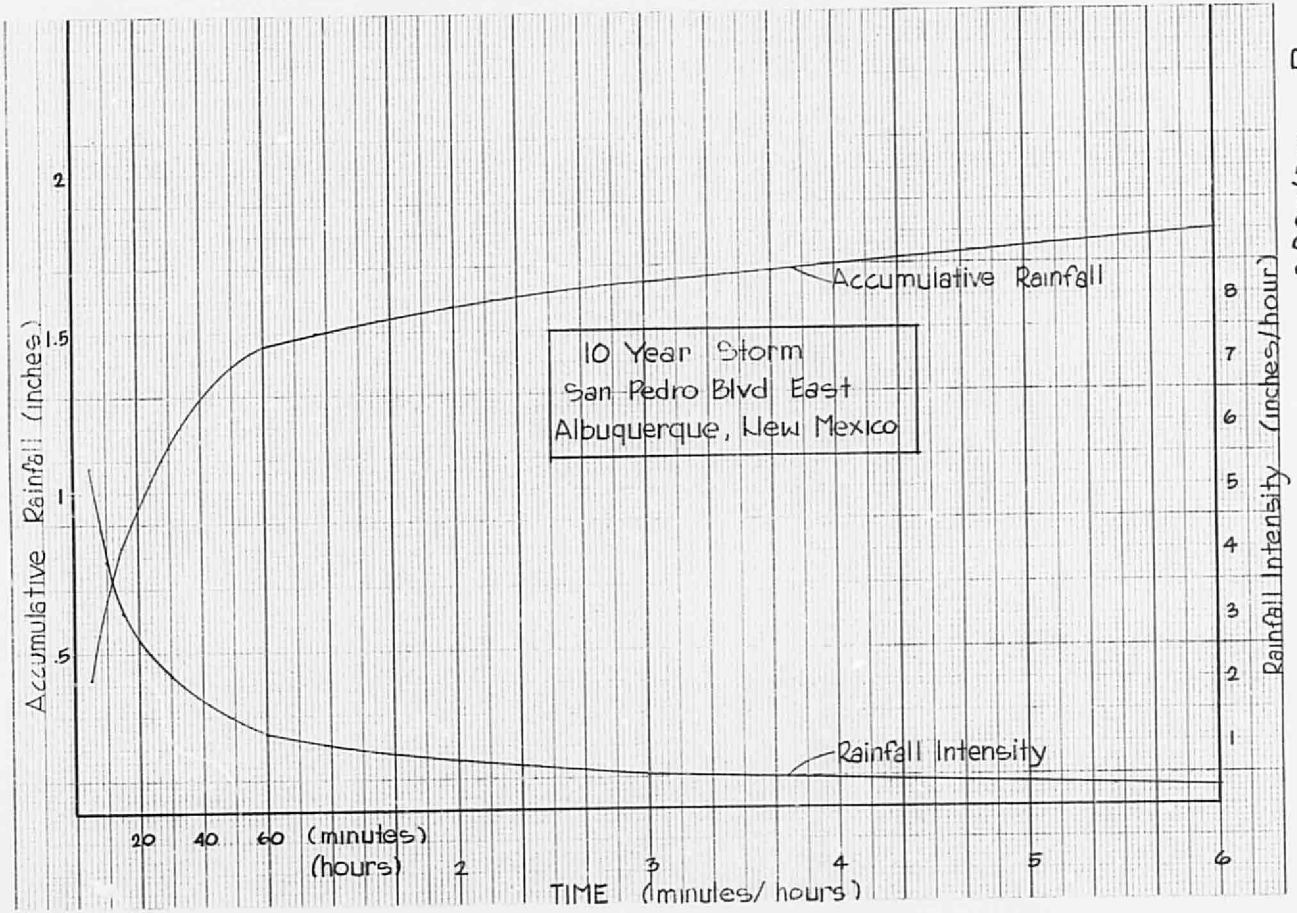
CHART 2



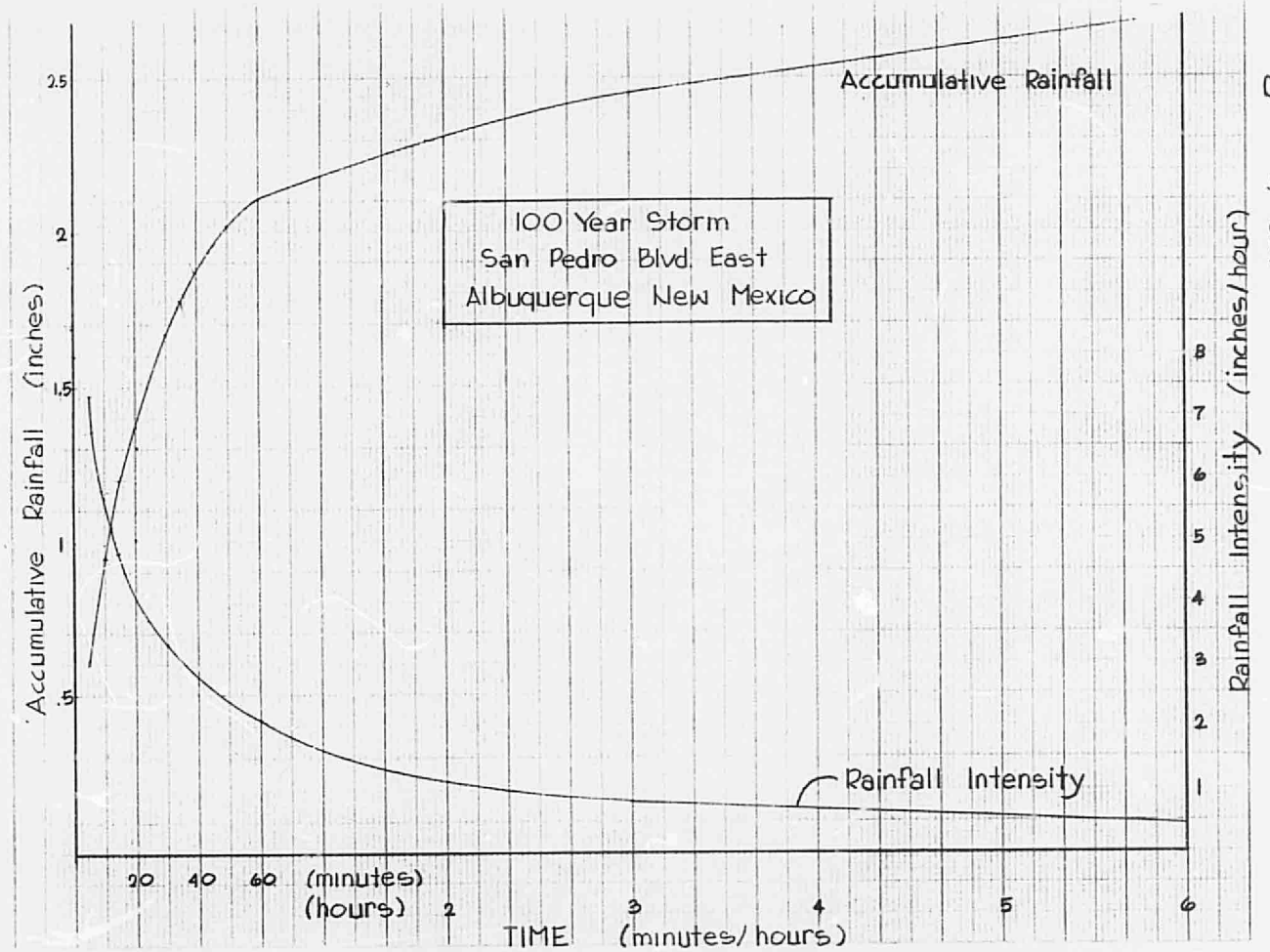
HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

APPENDIX B


10 Year Storm
San Pedro Blvd East
Albuquerque, New Mexico
Accumulative Rainfall
Rainfall Intensity
Accumulative Rainfall (inches)
Rainfall Intensity (inches/hour)
TIME (minutes/ hours)
(minutes)
(hours)
.5
1
1.5
2
1
2
3
4
5
6
7
8
20
40
60
2
3
4
5
6

APPENDIX B


Accumulative Rainfall
100 Year Storm
San Pedro Blvd. East
Albuquerque New Mexico
Rainfall Intensity
Accumulative Rainfall (inches)
Rainfall Intensity (inches/hour)
2.5
2
1.5
1
.5
8
7
6
5
4
3
2
1
20
40
60
(minutes)
(hours)
2
3
4
5
6
TIME (minutes/ hours)

APPENDIX B

Precipitation Data

Albuquerque, San Pedro Blvd East

from NOAA Atlas 2, Volume IV, New Mexico

Recur Inter	Duration	min hour	5	10	15	30	1	2	3	6	12	24
2 Year	Rainfall	inches	0.28	0.44	0.56	0.77	0.98	1.09	1.16	1.3	1.45	1.6
	Intensity	inches/hour	3.41	2.65	2.23	1.55	0.98	0.54	0.39	0.22	0.12	0.07
5 Year	Rainfall	inches	0.37	0.57	0.72	1.00	1.27	1.36	1.41	1.52	1.76	2.0
	Intensity	inches/hour	4.42	3.43	2.90	2.01	1.27	0.68	0.47	0.25	0.15	0.08
10 Year	Rainfall	inches	0.42	0.66	0.83	1.15	1.46	1.53	1.65	1.8	2.1	2.4
	Intensity	inches/hour	5.08	3.94	3.33	2.31	1.46	0.79	0.55	0.30	0.18	0.10
25 Year	Rainfall	inches	0.49	0.76	0.96	1.34	1.69	1.85	1.96	2.16	2.48	2.8
	Intensity	inches/hour	5.88	4.56	3.85	2.67	1.69	0.93	0.65	0.36	0.21	0.12
50 Year	Rainfall	inches	0.55	0.86	1.08	1.50	1.90	2.10	2.24	2.5	2.8	3.1
	Intensity	inches/hour	6.61	5.13	4.33	3.00	1.90	1.05	0.75	0.42	0.23	0.13
100 Year	Rainfall	inches	0.61	0.95	1.20	1.67	2.11	2.31	2.45	2.7	3.05	3.4
	Intensity	inches/hour	7.34	5.70	4.81	3.33	2.11	1.16	0.82	0.45	0.25	0.14

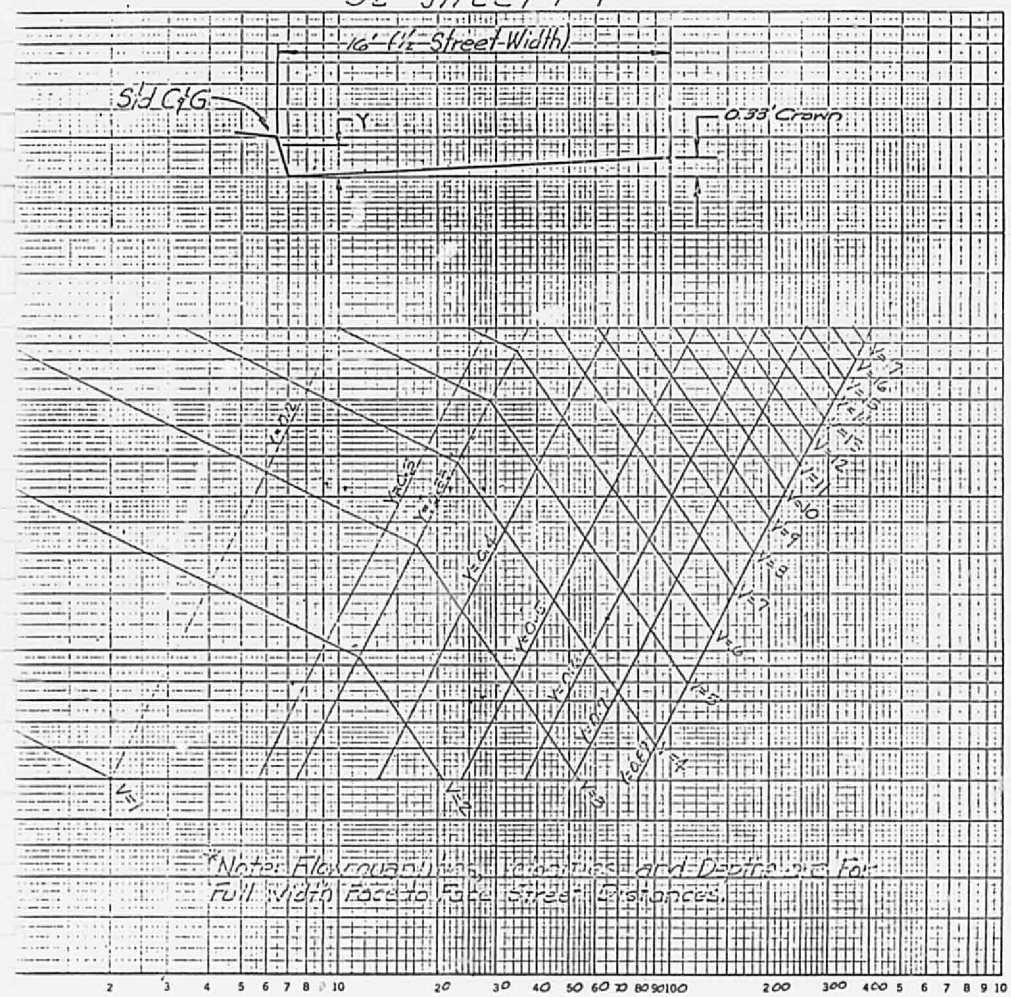
2 year 1 hour = $-0.011 + 0.942(1.3^2/1.6)$

100 year 1 hour = $0.494 + 0.755(2.7^2/3.4)$

3 hour = 0.569 (6 hour) + 0.431 (1 hour)
2 hour = 0.341 (6 hour) + 0.659 (1 hour)
30 min = 0.79 (1 hour)
15 min = 0.57 (1 hour)
10 min = 0.45 (1 hour)
5 min = 0.29 (1 hour)

APPENDIX B

32' Street F-F



Cross Slope = 0.0208 $V = \frac{1.486}{.02} r^{2/3} s^{1/2}$ $Q = VA$

APPENDIX

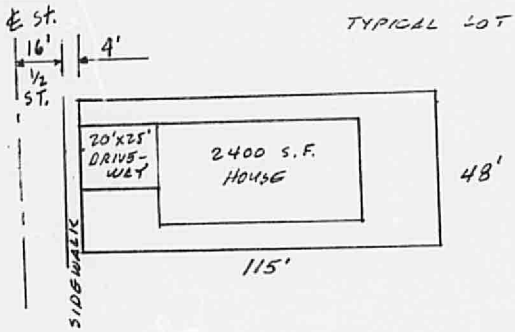
ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC 81635 DATE: 2/10/82 BY: D.A.	SHT. NO. 1 OF 6

DRAINAGE AREAS:

A-1 = 1.20 Ac.
A-2 = 2.97 "
A-3 = 1.03 "
A-4 = 1.46 "
A-5 = 1.83 Ac
A-6 = 1.59 "
A-7 = 0.93 "
A-8 = 2.75 "
A-9 = 0.09 "

TOTAL GROSS AREA = 13.85 Ac.

COMPOSITE "C" FACTOR



TYPICAL LOT

ITEM	AREA	Runoff Coeff.	Eff. Area
ROOF	2400	0.95	2280
DRIVEWAY (20 x 25)	500	1.00	500
SIDEWALK (4 x 48)	192	1.00	192
STREET (16 x 48)	768	0.95	730
YARD	2428	0.25	607
	$\Sigma_1 = 6288$		$\Sigma_2 = 4309$

$$C_{comp} = \frac{\Sigma_2}{\Sigma_1} = \frac{4309}{6288} = .685$$

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 2/10/82 BY: D.A.	SHT. NO. 2 OF 6

Peak Discharge for 10 yr & 100 yr storm

A-9:

A-9 = 0.09 Ac , L = 130' , diff. in elev. = 78.04 - 76.26 = 1.78'

t_c = 5 mins

I_{10} = 5.08 in/hr.

I_{100} = 7.34 in/hr.

C = 0.685

$t_c = \left[\frac{11.9 L^3}{H}\right]^{.385} \times 60$

where L = length of reach in miles

H = diff. in elev. in ft

Q_{10} = CIA = 0.685 x 5.08 x .09 = 0.31 cfs

Q_{100} = 0.685 x 7.34 x .09 = 0.45 cfs

t_c = 1.73 mins. - use initial t_c = 5 mins.

drains offsite

use mountable curb roll type

A-2:

A-2 = 2.97 Ac L = 700 ± , diff. in elev. = 76.24 - 57.87 = 18.37

t_c = 5 mins.

I_{10} = 5.08 in/hr.

I_{100} = 7.34 in/hr.

C = 0.685

$t_{c_{in.}} = \left[\frac{11.9\left(\frac{700}{5280}\right)^3}{18.37}\right]^{.385} \times 60 = 5$ mins.

Q_{10} = 0.685 x 5.08 x 2.97 = 10.3 cfs

Q_{100} = 0.685 x 7.34 x 2.97 = 14.9 cfs.

s = .007 , V_{10} = 2.4 fps ; y_{10} = 0.33 , V_{100} = 2.8 fps y = 0.42'

use std. curb and gutter

A-3:

A-3 = 1.03 Ac L = 565' ± , diff in elev. = 75.2 - 58.78 = 16.42'

$t_{c_{in.}}$ = 4 mins. use 5 mins. min. for initial time

I_{10} = 5.08 in/hr. I_{100} = 7.34 in/hr. C = 0.685

Q_{10} = 0.685 x 5.08 x 1.03 = 3.6 cfs

Q_{100} = 0.685 x 7.34 x 1.03 = 5.2 cfs

s = .007 V_{10} = 1.7 fps y_{10} = 0.22 V_{100} = 1.8 fps y_{100} = 0.26'

use mountable curb, roll type

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 2/10/82 BY: D.A.	SHT. NO. 3 OF 6

A-4

A-4 = 1.46 Ac L = 670'± diff. = 78 - 57.5 = 20.5'

t_c = 4.5 use 5 mins. initial time

I_{10} = 5.08 "/hr. I_{100} = 7.34"/hr. C = 0.685

Q_{10} = 0.685 x 5.08 x 1.46 = 5.1 cfs

Q_{100} = 0.685 x 7.34 x 1.46 = 7.3 cfs

s = .033, V_{10} = 3.3 fps, y_{10} = 0.19', V_{100} = 3.6 fps, y = 0.21'

use mountable curb, roll type

At Pt. 1 $Q = Q_{A-2} + Q_{A-4} + Q_{A-3}$

Q_{10} (P-1) = 10.3 + 5.1 + 3.6 = 19.0 cfs.

Q_{100} (P-1) = 14.9 + 7.3 + 5.2 = 27.4 cfs

V_{100} = 2.7 fps d = 0.42'

use std. Curb & Gutter.

A-5

A-5 = 1.83 Ac L = 780' diff = 20.1'

t_c = 5.0 use 5 mins.

I_{10} = 5.08 I_{100} = 7.34 C = 0.685

Q_{10} = 0.685 x 5.08 x 1.83 = 6.4 cfs

Q_{100} = 0.685 x 7.34 x 1.83 = 9.2 cfs.

s = .033 V_{100} = 3.2 fps y = 0.21' use Mountable

At Pt. 2 $Q = Q_{P-1} + Q_{A-5}$

$\Delta t_c = \frac{L}{V} \times \frac{1}{60}$ where L = reach from Pt. 1 to Pt. 2 = 140'±

$\Delta t_c = \frac{140}{2.3} \times \frac{1}{60}$ = 1 min. V = Vel. @ P_1 = V_{10} = 2.1

@ s = .007 V_{100} = 2.3

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANDAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 2/11/82 BY: D.A.	SHT. NO. 4 OF 6

total t_c to P-2 = 5+1 = 6 mins.

now $I_{10} = 5.0$"/hr. $I_{100} = 6.8$"/hr.

$$Q_{\substack{P-2\\10}} = 19.0 + 6.4 \times \frac{I_{P-1}}{I_{A-5}} = 19.0 + 6.4 \times \frac{5}{5.08} = 24.4 \text{ cfs}$$

$$Q_{\substack{P-2\\100}} = 27.4 + \left(9.2 \times \frac{6.8}{7.34}\right) = 35.9 \text{ cfs.}$$

$s = .0131$, $V_{100} = 3.6$ fps, $d = 0.41'$

use std. 8" Curb & Gutter

A-7

A-7 = 0.93 Ac L = 320' diff. = 76.8 − 69.1 = 7.7'

t_c = 2.8 mins. use 5 mins. initial time

$I_{10} = 5.08$ "/hr. $I_{100} = 7.34$ "/hr. C = 0.685

$Q_{10} = 0.685 \times 5.08 \times 0.93 = 3.2$ cfs

$Q_{100} = 0.685 \times 7.34 \times 0.93 = 4.7$ cfs

$s = .0201$ $V_{10} = 2.4$, $y_{10} = 0.20'$, $V_{100} = 2.6$ $y_{100} = 0.24'$

use mountable curb roll type

A-6

A-6 = 1.59 Ac L = 615' diff. = 74.4 − 55.3 = 19.1

t_c = 4.17 use 5 mins. initial time

$I_{10} = 5.08$ $I_{100} = 7.34$ C = .685

$Q_{10} = 0.685 \times 5.08 \times 1.59 = 5.5$ cfs

$Q_{100} = 0.685 \times 7.34 \times 1.59 = 8.0$ cfs

Q to P-3 = $Q_6 + Q_7$

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 2/11/82 BY: D.A.	SHT. NO. 5 OF 6

travel time of Q_{A-7} to P-3

$L = 440'$ $S = .04$ $Q_{7\,in} = 4.7$ cfs $V = 2.6$ fps

$t_c = \frac{L}{V} \times \frac{1}{60} = 2.8$ say 3.0 mins.

total $t_c = 5+3 = 8$ mins.

new $I_{10} = 4.5$ "/hr.

$I_{100} = 6.0$ "/hr. $C = 0.685$

$Q_{10\,to\,P-3} = 5.5 + (3.2 \times \frac{4.5}{7.34}) = 8.3$ cfs

$Q_{100\,to\,P-3} = 8.00 - (3.2 \times \frac{6.0}{7.34}) = 11.30$ cfs

A-8

Area - 2.75 Ac $L = 840'$

$t_c = 5.8$ say 6 mins.

$I_{10} = 5.00$

$I_{100} = 6.8$

$Q_{10} = 2.75 \times 0.685 \times 5.00 = 9.4$ cfs

$Q_{100} = 2.75 \times 0.685 \times 6.7 = 12.6$ cfs.

A-1

$A = 1.20$ Ac $L = 450'$ Diff. $= 593 - 589 = 5.4'$

$t_c = 5$ mins. $C = 0.685$

$I_{10} = 5.08$

$I_{100} = 7.34$

$Q_{10} = 5.08 \times 1.20 \times 0.685 = 4.20$ cfs

$Q_{100} = 7.34 \times 1.20 \times 0.685 = 6.00$ cfs

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST TANDAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 3/11/82 BY: D.A.	SHT. NO. 6 OF 6

Q_{Total} from Forrest Hills Rd = 35.9 + Q_p

Q_{10} = 24.4 + 4.00 × $\frac{5.0}{5.08}$ = 28.5 cfs

Q_{100} = 35.9 + 6.0 × $\frac{6.8}{7.34}$ = 41.4 cfs

[illegible]

Q_{10} = 9.4 + 8.3 + $\left(\frac{14.5}{5.0}\right)$ = 16.9 cfs

Q_{100} = 12.6 + 11.3 × $\left(\frac{6}{6.8}\right)$ = 22.7

Q_{TOTAL} = $Q_{Interior\ Wimbledon\ West}$ + $Q_{Flushing\ Meadow\ Rd}$

Q_{10} = 28.5 + 16.9 = 45.4 cfs.

Q_{100} = 41.4 + 22.7 = 64.1 cfs.

See Arapahoe Std. Dwg. A-8-1 for grate

g = 32.2

H = 0.67'

$Q = 64.1 = 0.6\ A\sqrt{2gH}$

$64.1 = 0.6A(6.5687)$

$A = 16.26$

Grate Area = 16.26/(0.6)(0.5) = 54.2 ⌀ Use 4 - Dbl - D or equiv.

opening ratio clogging 4(6.5)(2.125) = 55.25 ⌀

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANORA UPLAND DRAINAGE	JOB NO. AC81535 DATE: 2/15/82 BY: D.A.	SHT. NO. 1 OF

PIPE CROSSING VENTURA

FROM A REVISED DRAINAGE REPORT RE: "FAIRWAYS NORTH AT TANORA" IN THE DEVELOPMENT STAGE, THE PEAK DISCHARGE (100 YEAR STORM) EXITING THE SITE AND FLOWING TOWARD THIS PROPOSED PIPE IS 16.4 CFS (NORTH OF THE IN PROPOSED SUBDIVISION AND THE SOUTH EASTERLY PORTION OF THIS DRAINAGE STUDY. (SEE PLATE IV)

AT AREA -3

$L = 2200'$

Diff. in elev. $= 5644 - 5548 = 96'$

$t_c = \left[\frac{11.9L^3}{H}\right]^{.385} \times 60$ where L = length of reach in miles, H = diff. in elev.

$t_c = 10$ mins.

$I_{100} = 5.7$ "/hr. $C_{100} = 0.40$ (Exist.) Area = 11.0 Acres

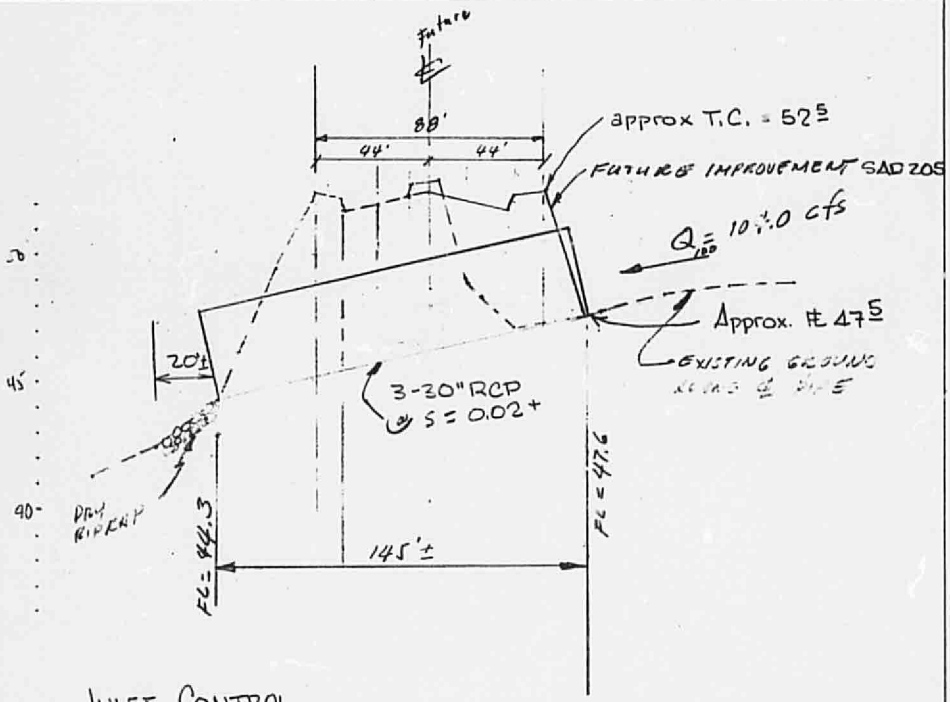
$Q_{100} = CIA = 0.40 \times 5.72 \times 11.0 = 25.0$ CFS.

THE TOTAL Q_{100} GOING TO THIS PROPOSED PIPE =

1. FAIRWAYS NORTH @ TANORA = 16.4 CFS
2. WIMBLEDON WEST @ TANORA = 62.6 CFS
3. AREA - 3 = 25.0 CFS

TOTAL $Q_{100} = 104.0$ CFS

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN UPLAND DRAINAGE	JOB NO. AC 81535 DATE: 2/15/82 BY: D.A.	SHT. NO. 2 OF 2



INLET CONTROL

Use 30"ϕ RCP

@ Q = 105 cfs, HW/D = 1.32 ∴ W.S. @ 3.3 + 47⁵ = 50⁸

Construct 4 trenches across channel approx. 15" wide and 3 ft deep. Backfill with Pit Run. Space at 25' c.c. from outlet westerly

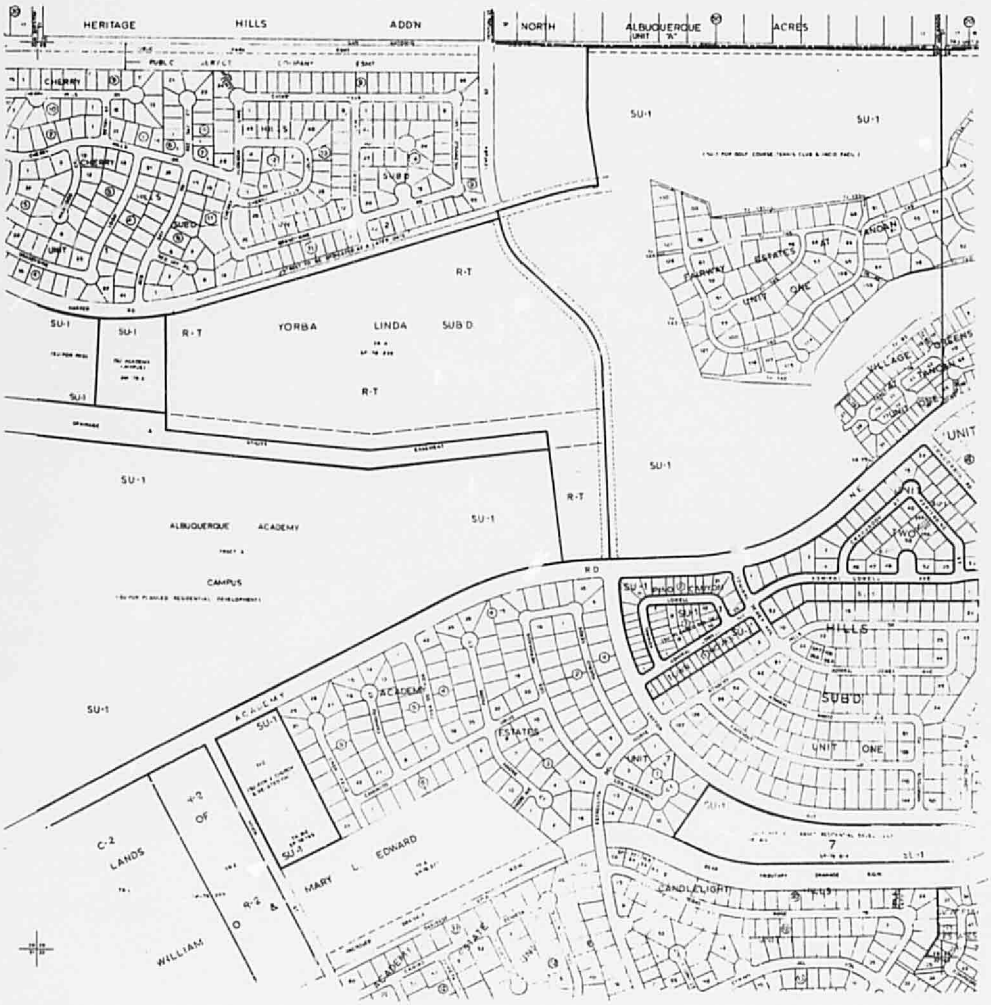

HERITAGE HILLS ADDN
NORTH ALBUQUERQUE ACRES
UNIT "A"
SU-1
R-T
YORBA LINDA SUB'D
ALBUQUERQUE ACADEMY
CAMPUS
ACADEMY
ESTATES
UNIT ONE
HILLS
SUB'D
CANDLELIGHT
C-2 LANDS
W½ OF
MARY L. EDWARD
WILLIAM
VILLAGE OF LOS RANCHOS

PLATE I

E-20-Z

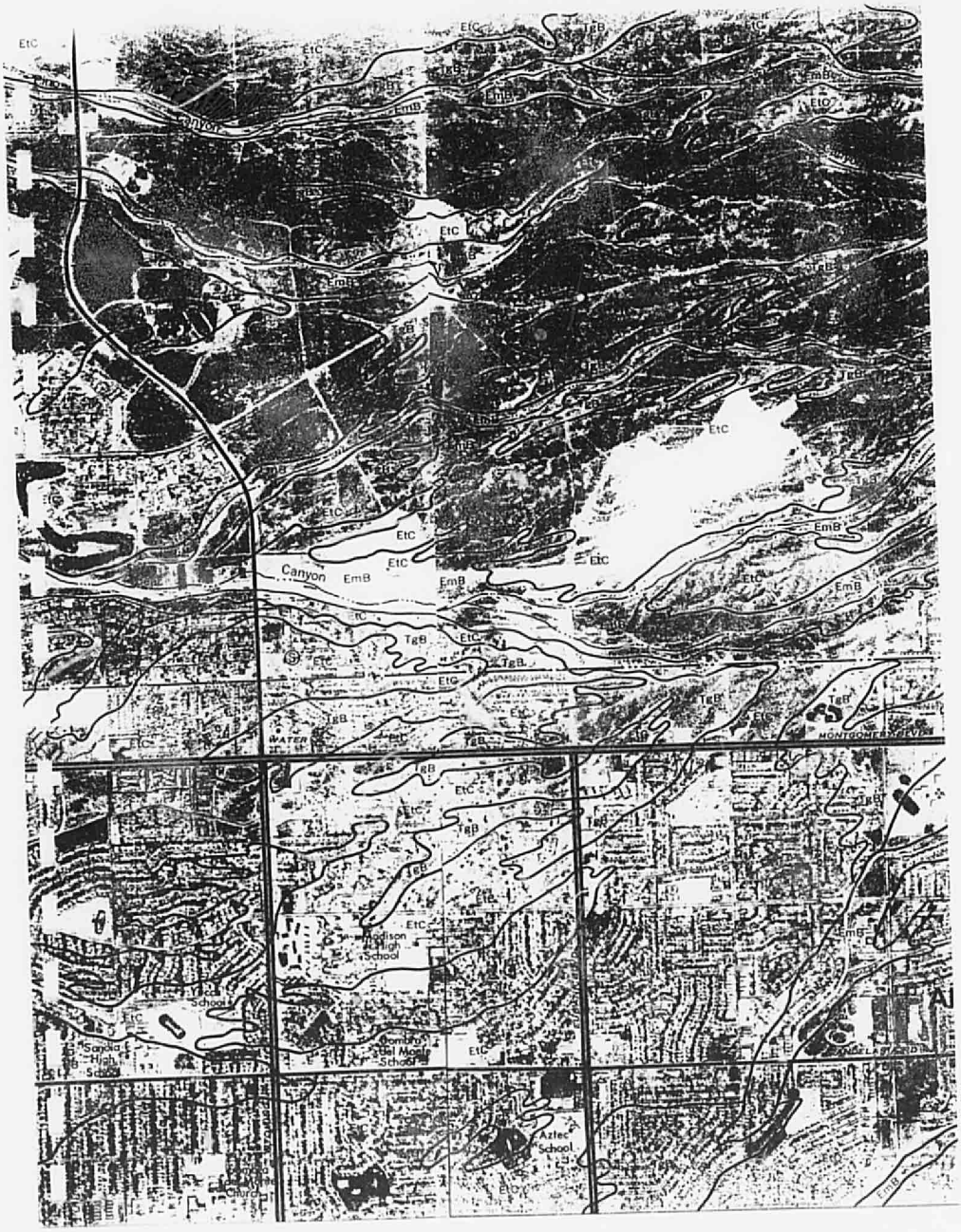
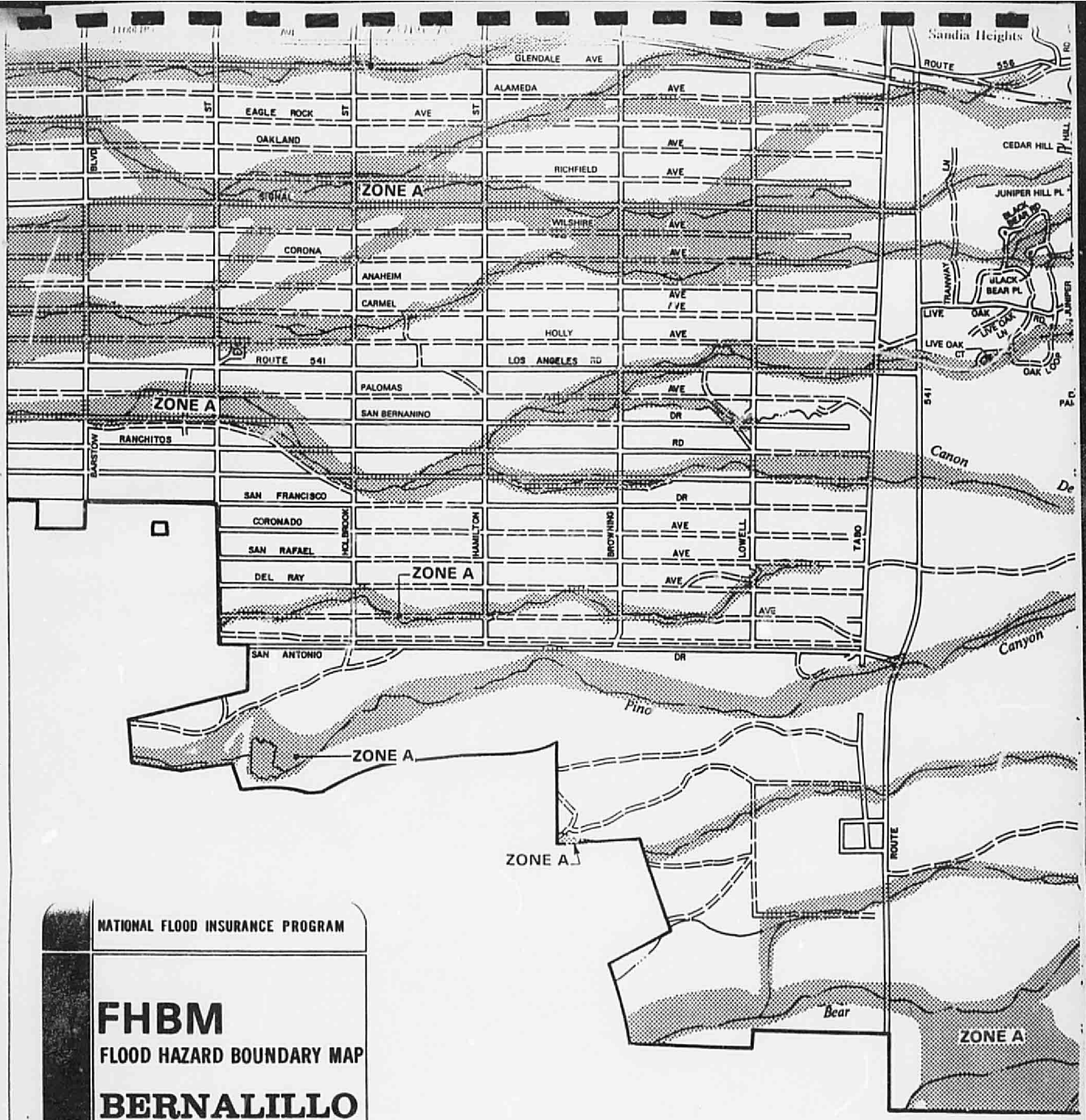

EtC
EmB
TgB
Canyon
WATER
MONTGOMERY REVERS
Madison High School
Sandia High School
Bombay Del Moral School
Aztec School

PLATE II

PLATE III



NATIONAL FLOOD INSURANCE PROGRAM

FHBM

FLOOD HAZARD BOUNDARY MAP

BERNALILLO COUNTY, NEW MEXICO

UNINCORPORATED AREA

PAGE 4 OF 15

(SEE MAP INDEX FOR PAGES NOT PRINTED)

City of Albuquerque

(AREA NOT INCLUDED)

COMMUNITY-PANEL NUMBER
350001 0004 B

MAP REVISED:
JULY 10, 1979

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

PLATE IV

HYDROLOGY E20/D17 TWO PLANS

E20/D17

2 PLANS

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

May 11, 1983

Mr. Thomas Roehl
8229 Cherry Hills Dr. N.E.
Albuquerque, N.M. 87111

RE: RUNOFF CONTROL IN THE CHERRY HILLS SUBDIVISION AREA

Dear Mr. Roehl:

Per our conversation of May 3, 1983, I am forwarding information regarding drainage in the areas directly impacting the Cherry Hills Subdivision. Before making specific comments, let me list information included for your review:

a. Plate 1: 1"=500' topographic map indicating conditions and drainage divides prior to construction of Wimbledon West at Tanoan and Fairways North at Tanoan.

b. Plate 2: 1"=500' topographic map indicating draianage divides based on the proposed grading plans for Wimbledon West and Fairways North.

c. Plate 3: Approved grading plan for Wimbledon West.

d. Plate 4: Approved grading plan for Fairways North.

e. Plate 5: Zone atlas indicating proposed Heritage Hills Park.

f. Runoff calculations based on current drainage criteria outlined in Chapter 22-Drainage; "City of Albuquerque Development Process Manual". Pertinent charts and graphs have also been included.

Specific Comments:

1. Prior to construction of Wimbledon West and Fairways North, approximately 110 cfs was generated in Area A (60 acres) during the 100-year storm. This value was computed based on a 100-year rainfall amount of 2.5 inches. Much of this runoff "ponded" on the east side of Ventura Ave. aligned with the north boundary of Cherry Hills.

2. Construction of Fairways North insures that approximately 50% of the runoff generated in Area A will now be diverted southward to the Pino Arroyo.

3. Approximately 102 cfs will discharge through the 3-30" RCP's under Ventura Blvd. in the 100-year storm. This value represents a complete built-out of the Wimbledon and Fairways North Subdivisions.

4. Realizing that the new development will increase runoff frequency to the PNM easement, dumped gravel will be placed at the outlet of the pipe and in an effort to reduce erosion.

5. The proposed developments eliminate the potential hazard caused by watering "ponding" adjacent to Ventura Ave.

6. The 1983-85 Capital Improvement Program has identified $500,000 for treatment of the North Pino Arroyo directly north of Cherry Hills in conjunction with the development of the Heritage Hills Neighborhood Park. Although subject to voter approval this November, we are confident that this money will be available to improve this section of arroyo. The design engineer selected to prepare construction plans for this project will be directed to develop a scheme to divert runoff discharged from the 3-30" RCP's into the North Pino channel. An attempt will also be made to divert to the permanent channel runoff collected at the corner of Cherry Hills Rd. and Cherry Blossom Lane. It is hoped that work on the preliminary plans could begin in early 1984.

I hope this information serves to clarify any questions or concerns you may have. In keeping with current practice, we will monitor the sites to assess their impact on the surrounding area.

Please contact me of you have any questions.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl
5117B

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

DR

February 2, 1983

E20-D17

Mr. Allen Whitesel
AMDEC
P.O. Box 25000
Albuquerque, N.M. 87125

RE: YOUR LETTER OF JANUARY 17, 1983-GRADING PERMITS FOR WIMBLEDON WEST AND FAIRWAYS NORTH AT TANDAN

Dear Allen:

I am forwarding a response in regards to the referenced letter:

1. This office concurs with the simultaneous grading of the two subdivisions. What is the estimated time frame for construction of the subdivision infrastructures?

2. Erosion Control Plans are required for each development. I notice that the Wimbledon West plans call for utilizing the 10 foot planting strip adjacent to the street ROW. When will this work be carried [illegible] om our work in Santa Fe Village II we realized the importance [illegible] establishing mix and providing a regular watering schedule.

3. Engineer certification will be required for all retaining walls within the project boundaries.

4. Per Section 9 of the Drainage Ordinance, no building permits will be issued until the drainage improvements, including retaining walls, are constructed or financial guarantees for the improvements are provided. We will be glad to work with you in formulating a phasing plan for the site improvements.

If you have any questions, please call.

Very truly yours,

Charles M. Easterling
Princ. Asst./City Engineer

CME/BGB/tsl

1167

affiliated mortgage & development company amdec

a wholly owned subsidiary of Albuquerque Federal Savings and Loan Association

6400 uptown blvd., n.e.
albuquerque, new mexico

mailing address
p. o. box 25000
albuquerque, new mexico 87125

AM # 3069

January 17, 1983

RECEIVED
JAN 18 1983
CITY ENGINEER

Mr. Richard S. Heller, P.E.
City Engineer
City of Albuqueruqe
P. O. Box 1293
Albuquerque, New Mexico 87103

SUBJECT: Grading Permits for Wimbledon West and Fairways North Tanoan

Dear Dick:

Tom Mann and Jake Bordenave have recently informed me that your office would like some assurance that Wimbledon West will either be built concurrently with Fairways North or that temporary drainage facilities will be provided east of Wimbledon West to prevent storm runnoff from entering the subdivision.

AMDeC will build Fairways North and Wimbledon West subdivision concurrently. I intend to start earthwork on both subdivisions by January 19, 1983 if I have an approval from your office for subdivision rough grading.

I hope this satisfies the requirements of your staff. If further information or clarification is required, please contact me immediately at 883-3501.

Sincerely,

AFFILIATED MORTGAGE AND DEVELOPMENT COMPANY

Allan L. Whitesel

ALLAN L. WHITESEL, P.E.
Vice President, Land Development

cc: Chuck Easterling
Assistant City Engineer

RSH ____ DES ____
HRO ____ INSP ____
CME ____ HYDRO ____
JNH ____ SUR ____
SAD ____ ADM ____
____ FILE ____
RESPONSE BY ____

affiliated mortgage & development company amdec

a wholly owned subsidiary of Albuquerque Federal Savings and Loan Association

6400 uptown blvd., n.e.
albuquerque, new mexico

mailing address
p. o. box 25000
albuquerque, new mexico 87125

AM - 2053

RECEIVED
AUG 18 1982
CITY ENGINEER

August 16, 1982

Mr. Chuck Easterling
Assistant City Engineer, Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: WIMBLEDON WEST SUBDIVISION AT TANOAN COMMUNITIES

Dear Chuck:

Pursuant to your request (via Jake Bordenave), AMDeC shall either build Wimbledon West and Fairways North subdivisions at the same time, or will provide upstream diversion east of Wimbledon West (if Fairways North is not constructed simultaneously) to protect subject subdivision from surface run off damage.

The design of such diversions shall be coordinated with your office.

Sincerely,

AFFILIATED MORTGAGE AND DEVELOPMENT COMPANY

Allan L. Whitesel

Allan L. Whitesel, P.E.
Chief Engineer

pjn

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE June 16, 1982 REF. NO._____

TO: Celia Tomlinson, Design

FROM: Brian Burnett, Hydrology

SUBJECT: Project #1453 - Wimbledon West at Tanoan

E20-D17

1. Computations should be provided for sizing the rip-rap blanket located at the end of the 36" RCP. Limits of the material should be defined more clearly. (The material should probably be placed over the entire area between the 36" RCP and the culverts). A filter blanket should also be provided along with specifications.

BB/fs

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

May 13, 1982

Mr. Jake Bordenave
Adam, Hamlyn and Anderson
4055 A Montgomery Blvd. NE
Albuquerque, N.M. 87109

RE: WIMBLEDON WEST AT TANOAN DRAINAGE REPORT

Dear Jake:

The referenced report is approved in concept. Please attach this letter to the construction drawings upon submittal for City review.

I still plan to discuss "specifics" with you and will try to transmit a letter in the near future.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

Brian Burnett
CE/Hydrology
May 1983

A. Drainage Computations for conditions prior to construction of Wimbeldon West & Fairways North

1. Storm Frequency: 100-year

2. Area of Watershed (A): 60 acres

3. Rainfall Amount: 2.5 inches (from Plate 22.2 D-1)

4. Rainfall Intensity (I): 4.6 in/hr (from Plate 22.2 D-2)

5. Runoff Coefficient (C): .4 (from Plate 22.2 C-1 for a combination of Soil Conservation Soil Types B & C)

6. 100-year runoff (in cubic feet per second)

$$Q_{100} = CIA = \underline{\underline{110 \text{ cfs}}}$$

Brian Burnett
CE/Hydrology
May 1983

B. Drainage Computations for conditions after construction of Wimbeldon West & Fairways North

1. Storm frequency: 100-year
2. Area of Watershed: 30 acres
3. Rainfall Amount: 2.5 inches
4. Rainfall Intensity: 5.5 in/hr.
5. Runoff Coefficient: .62 (based on estimate that watershed is 60% impervious area)
6. 100-year runoff:

$$\underline{\underline{Q_{100} = 102 \text{ cfs}}}$$

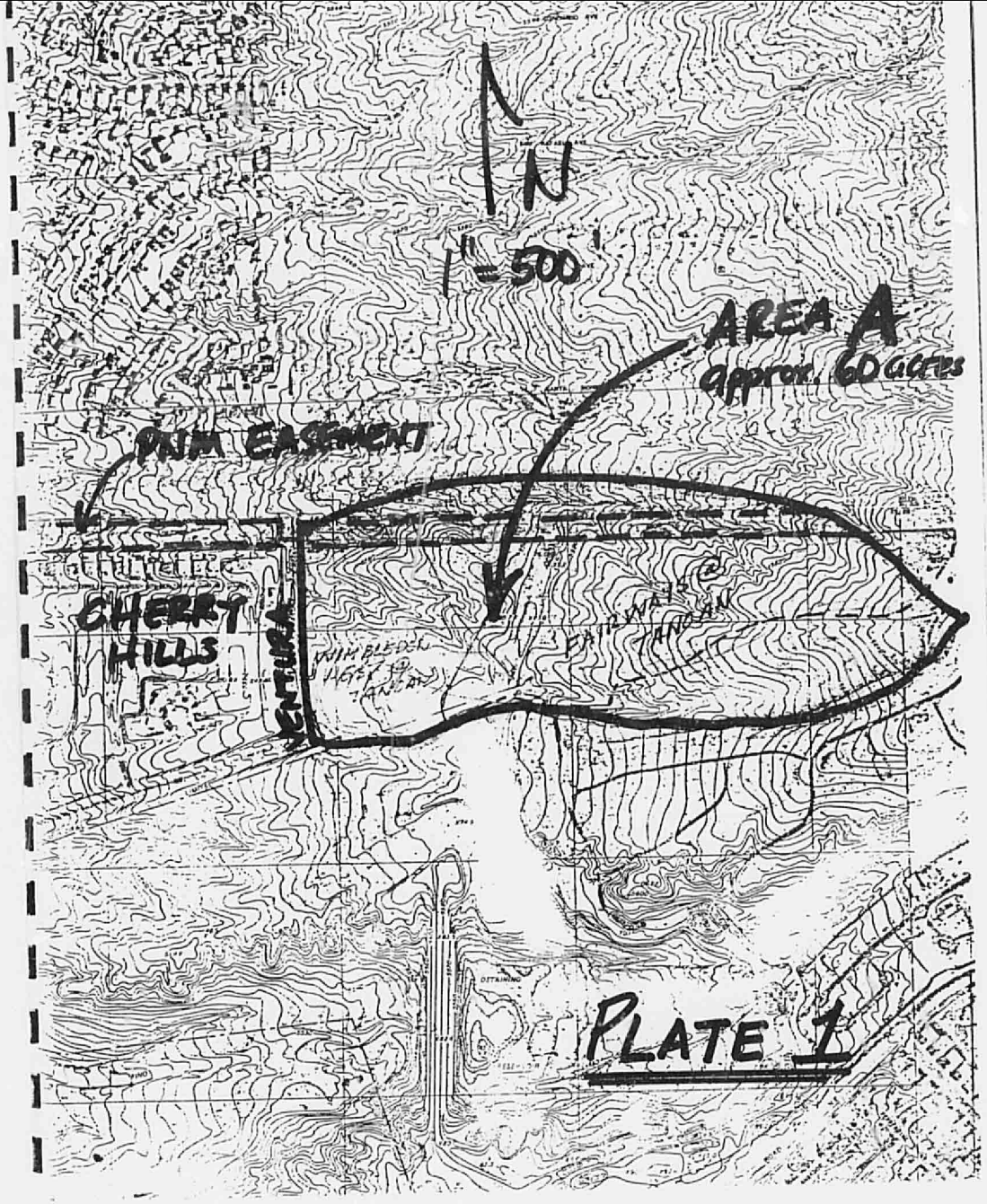

N
1" = 500'
AREA A
approx. 60 acres
PNM EASEMENT
CHERRY HILLS
FAIRWAY @ TANDAN

PLATE 1

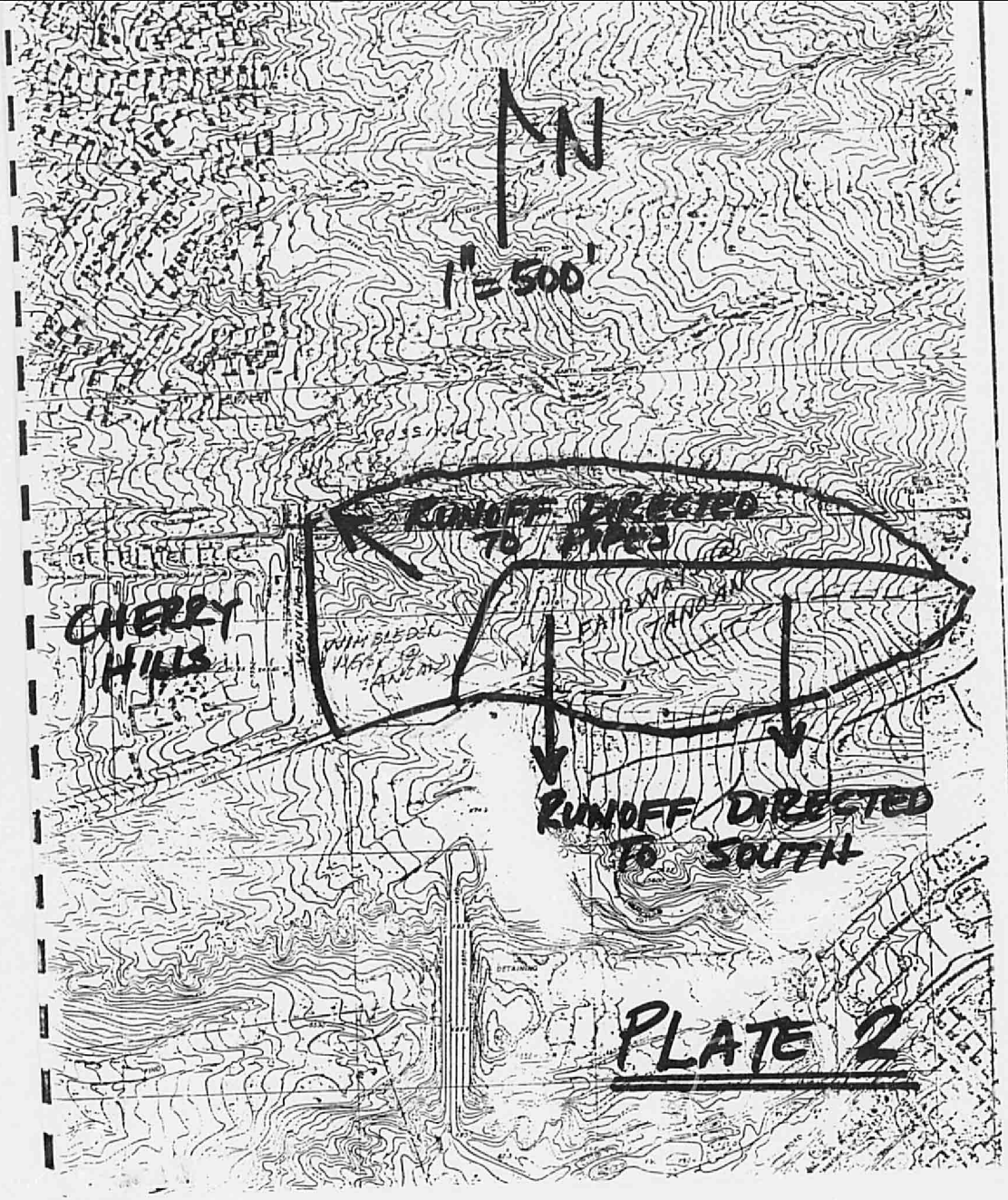

N
1" = 500'
RUNOFF DIRECTED TO PIPES
CHERRY HILLS
FAIRWAY
RUNOFF DIRECTED TO SOUTH

PLATE 2

820/017

85 37110

RECEIVED
MAY 15 1985
PHOTO
HYDROLOGY SECTION

AGREEMENT AND COVENANT

THIS AGREEMENT made this 8th day of May, by and between the CITY OF ALBUQUERQUE, New Mexico, a municipal corporation ("City") and AMERIWEST CORPORATION, a New Mexico corporation, ("User").

RECITAL

The User is the owner of certain real property located on the eastern side of Ventura Street, N.E., Albuquerque, New Mexico, and more particularly described as follows:

> Lots 22A through 34A, inclusive, WIMBLEDON WEST AT TANOAN, as the same are shown on the plat thereof filed in the Bernalillo County, New Mexico, real estate records on Book C-22, Page 20, July 8, 1983.

The City is the owner of that certain public right-of-way adjoining or abutting the above described Property designated as Ventura Street. The User agrees to enter upon the City's Property and to construct a retaining wall as shown on the plans designated as VENTURA STREET RETAINING WALL 11 + 50 to 20 + 29.74, a copy of which plans are attached hereto as Exhibit "A", (the "Improvement").

The construction of the Improvements is necessitated by the User's failure to construct a retaining wall between the Property and the Ventura Street right-of-way.

The City is agreeable to the encroachment of said improvement provided that the User comply with the provisions and covenants contained herein.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, it is agreed by and between the City and User that the User may construct, at its own expense, the improvement described herein.

RESPONSIBILITY

The User shall be responsible for the construction of said improvement and it shall conform to all laws and ordinances and administrative regulations applicable thereto. Said improvement shall not constitute a hazard to the health or safety of the general public and shall not interfere with the City's use of the Property. Maintenance of said improvement shall be accomplished in accordance with the City of Albuquerque Sidewalk Ordinance, (Sections 8-6-1 through 8-6-25, R.O. 1974).

INDEMNIFICATION

The User agrees to defend, indemnity, 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 said parties during the construction of said improvement.

REMOVAL

The parties acknowledge that the improvement described herein is permanent in nature and removal of said improvement should never be necessary. However, should removal become necessary, said removal shall be accomplished in accordance with the provisions of the City of Albuquerque Sidewalk Ordinance, (Sections 8-6-1 through 8-6-25, R.O. 1974).

LIABILITY

The City shall not be liable for any damages to the User's Property or the improvement that may result during the construction of said improvement.

NOTICE

The written notice provided for herein shall be accomplished by mailing same to:

USER:

AMERIWEST CORPORATION
Post Office Box 25625
Albuquerque, New Mexico 87125

CITY:

City Engineer
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

The User may change said address by giving written notice, certified mail, return receipt requested, to the City Engineer, at the above address.

COVENANT RUNNING WITH THE PROPERTY

The obligation of the User set forth herein shall be binding upon the User, its heirs, and assigns, and the Property

of the User as described herein and will run with said Property until released by the City.

USER: AMERIWEST CORPORATION

By: Allan L. Whitesel
Title: Vice President

CITY OF ALBUQUERQUE

Attest:

City Clerk

Chief Administrative Officer

REVIEWED BY THE LEGAL DEPARTMENT

Assistant City Attorney

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this the 30th day of April, 1985, by Allan L. Whitesel, the Vice President of AMERIWEST CORPORATION, a New Mexico corporation, on behalf of said corporation.

Lisa K. Cornwell
Notary Public

My Commission Expires:
10-11-88

OFFICIAL SEAL
LISA K. CORNWELL
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State
My Commission Expires 10-11-88

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this the 8th day of May, 1985, by Frank A. Kleinhen, the Chief Administrative Officer of the CITY OF ALBUQUERQUE, a municipal corporation, on behalf of said corporation.

Dale P. Grant
Notary Public

My Commission Expires:
12/18/85

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

1985 MAY 13 PM 3:24

Book 228 A PG 662-665
DOLORES C. WALLER
CO. CLERK & RECORDER
DEPUTY

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANDAN EXISTING DRAINAGE	JOB NO. A-81525 DATE: 8/2/82 BY: D.A.	SHT. NO. 1 OF 1

Area = 70.60 Acs (Area contributing in a 100 year storm condition To North Pine Arroyo) see Plate III-A

L = 2700' length of reach in ft.

diff. in elevation = 5644 − 5547 = 97'

$$s = \frac{97}{2700} = .036$$

$$t_c = .0078 \times \frac{L^{0.77}}{S^{0.385}} = .0078 \times \frac{(2700)^{.77}}{(.036)^{.385}} = 12.3 \text{ mins.}$$

$I_{100} = 4.56$ (for $t_c = 12.3$ mins.) ; $C = 0.40$ for existing

$$Q_{100}\ (\text{existing}) = CIA = 0.40 \times 4.56 \times 70.60$$

$$= 128.8 \text{ cfs.}$$

ADAM, HAMLYN, ANDERSON
consulting engineers inc.

DRAINAGE REPORT

FOR

WIMBLEDON WEST AT [illegible]

RECEIVED

DRAINAGE REPORT

APR 23 1982

WIMBLEDON WEST AT TANOAN

ENGINEERING

Prepared For:
AMDeC
P.O. Box 25000
Albuquerque, New Mexico 87125

Prepared By:
Adam,Hamlyn,Anderson
Consulting Engineers, Inc.
4055 Montgomery Blvd. NE
Albuquerque, New Mexico 87109

Jean J. Bordenave, N.M. P.E. & L.S. #5110

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO 5110 NEW MEXICO JEAN J. BORDENAVE

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PURPOSE	1
SITE LOCATION AND TOPOGRAPHY	1
DESIGN CRITERIA	1
PROPOSED DEVELOPMENT	2
OFFSITE DRAINAGE	2
INTERNAL DRAINAGE	3
CONCLUSIONS	3

APPENDIX A	Planning Department Comments
APPENDIX B	Design Charts
APPENDIX C	Computations
PLATE I	Vicinity Map
PLATE II	Soils Map
PLATE III	Existing Topo
PLATE IV	Flood Hazard Boundary Map
PLATE V	Proposed Grading Plans and Stormwater Flows
A.	Earthwork
B.	Final Grading

DRAINAGE REPORT

FOR

WIMBLEDON WEST AT TANOAN

PURPOSE

AMDeC is currently planning development at Wimbledon West Subdivision. The purpose of this report is to present a drainage management plan to be used in the design of the proposed subdivision.

SITE LOCATION AND TOPOGRAPHY

Wimbledon West is located in the noertheast quadrant of Albuquerque, in the northwest corner of the Tanoan Master Plan Development, and bounded on the west by Ventura Avenue and on the north by San Antonio Road. (See Plate I for exact location). The site presently drains in a northwesterly direction, and after ponding approximately 6 feet deep at Ventura Avenue would flow along the north boundary of Cherry Hills Unit II, and joins the North Pino Arroyo approximately 1000 feet west of Ventura Avenue. The gradient from the SE to NW is approximately 3.5%. Soils consist of alluvial sands and silts and decomposed granite is the major soil constituent. (See Plate II). Light growth of native grasses, cacti and small brush dominates the area.

DESIGN CRITERIA

In accordance with AMAFCA and City of Albuquerque requirements, the hydrological analysis is based on the 100 year frequency rainfall. In addition, an analysis for

10 year frequency rainfall has been compiled. Enclosed in Appendix B are curves representing the 10 year and 100 year storms. Meetings with Mr. Charles Easterling, Assistant City Engineer, Hydrology, have been held, and permission has been granted to allow the 100 year storm to exit the site with neither retention nor detention. It will be the developer's responsibility, however, to construct a drainage structure under Ventura Avenue to pass the 100 year storm from the entire contributing area. In addition, the developer must construct four (4) trenches, backfilled with pit-run gravel at approximately 25 foot spacing in the downstream channel.

PROPOSED DEVELOPMENT

Wimbledon West, zoned RLT, will be developed either as single family residents or duplex units with a density of approximately 5.6 dwelling units per acre. Lots are approximately 50 feet in width and 120 feet in depth. Streets will be 28 feet wide from back to back of curb. Lots will be graded to direct all stormwater to the street. (See Plate III).

OFFSITE DRAINAGE

Upland flows will be intercepted by the proposed and previously approved, Fairways North at Tanoan, with the major portion of the flow being directed southeasterly, adjacent to Wimbledon West, to the Pino Arroyo. The remaining portion of the flow from Fairways North will be directed northeasterly to the 150 foot PNM easement, and flow along the north boundary of Wimbledon West to the proposed Drainage Structure at Ventura Avenue.

INTERNAL DRAINAGE

All internally generated flows will be directed via street to the NW corner of the subdivision, and there collected through a single or several catch basins which will flow to the proposed Ventura Avenue drainage structure. Computations enclosed indicate where mountable and standard curb types are to be used.

CONCLUSIONS

As stated in the Design Criteria portion in this report, a structure under Ventura Avenue will be constructed with this project, thereby allowing stormwaters generated on the east side on Ventura Avenue to flow to the North Pino Arroyo. Through construction of Fairways North and Wimbledon West, the 100 year storm being directed to the North Pino Arroyo will be reduced from the present condition due to the re-direction of a portion of this basin to the Pino Arroyo with decrease in flows to the North Pino at approximately 25 cfs. In addition, through construction of Wimbledon West Subdivision, ponding against the roadway embankment of Ventura Avenue will be relieved.

AUG 31 81
RECEIVED
ADAM, HAMLYN,
ANDERSON

SUBDIVISION REVIEW BOARD
AGENDA
August 27, 1981

City Council Committee Room, Third Floor
City Hall, 400 Marquette N. W.

9:00 a.m.

John Lucero, Chairman

Bob Fosnaugh
Richard Heller
Joe Quintana
George Paul

Lloyd Barlow
Paul Brasher
Albert A. Boberg
O. R. Kielich

****

1. Call to Order

2. S-81-26 Adam, Hamlyn, Anderson, agents for AMDeC, requests approval for the Village Greens North at Tanoan Subdivision, containing approximately 16.6 acres and 97 lots, described as an unplatted parcel of land in Section 29, T11N, R4E, located at the southeast corner of the intersection of Layton Avenue and San Antonio Drive, N.E.

3. Other Matters

JL:mes
8080A

AGENDA ITEM NO. 2
Subdivision Review Board
August 27, 1981

S-81-26 Adam, Hamlyn, Anderson, agents for AMDeC, requests approval for the Village Greens North at Tanoan Subdivision, containing approximately 16.6 acres and 97 lots, described as an unplatted parcel of land in Section 29, T11N, R4E, located at the southeast corner of the intersection of Layton Avenue and San Antonio Drive, N.E.

COMMENTS FROM OTHER DEPARTMENTS 8/27/81:

Traffic	"The cul-de-sac at the northeast corner of the proposed subdivision must have a 47' pavement radius and a 17' center radius if a center island is to be used. "The Academy Road entrance/exit and its connection to this subdivision should be constructed prior to occupancy of more than 10 units in this subdivision."
City Engineer	"a. A drainage study will be submitted for approval prior to approval of plat. b. The plat does not indicate continuation of streets. c. Streets are not named or lettered or numbered for easy reference. d. Do not concur with islands at intersections and knuckles. e. There is no indication that Public Service Company approves of the ponding within their easement. It will be necessary that PNM's approval be obtained. f. All lots abutting Layton/Ventura will require installation of City Standard curb and gutter and sidewalks. Also paving of the street shall be in accordance with City Standards."
Human Services	"No adverse comment."
Transportation	"No adverse comment."
AMAFCA	"Defer to City Engineers comments."
CIP	"No adverse comment."
Environ. Health	"No adverse comments."
Police Department	"No adverse comment."
Neighborhood Coor.	"No adverse comment."
PSM	"No adverse comment, however, it is noted that a "detention pond" is proposed within a 150 foot wide PNM easement. This office has not been contacted by the developers or engineers concerning the proposed encroachment. Before approval is granted, spe- cific plans for the pond must be submitted to and reviewed by PNM."
Refuse	"No adverse comment."
Zoning Enforcement	"The majority of the proposed lots are zoned R-1. The majority do not comply with the lot width nor the lot area. For all practical purposes, the Set 1 portion should be considered per R-1 regulation and these lots don't meet R-1 regulations either. "To complicate the matter, a good majority of the lots are proposed for frontage on North/South streets or within 30 degrees of such orientation. This increases the lot width requirements for these lots. "Further, the "typical lot" as shown depicts a type of development allowed by the R-T zone Section 11.D.2. While the R-1 zone will allow a similar layout, the lot area and width must be increased. "This plan should have been rejected at the front desk."
Fire Department	"Provide required fire flow and fire hydrant distribution."
Parks and Rec.	"In accordance with Ordinance 7-1976, as amended, the developer is required to pay a development fee at building permit time, plus dedicate land or cash-in-lieu of land."
Gas Company	"The Gas Company of New Mexico approves."
Mountain Bell	"No comment."

PLANNING DIVISION COMMENTS TO THE SUBDIVISION REVIEW BOARD 8/27/81:
Requested is approval of a 16.6 acre subdivision zoned SU-1 and R-1 containing approximately 97 lots result a gross density of 5.84 dwelling units per acre.

Special Use (Planned Residential Development) zoning was approved for the area north of Harper Road on 9/21/78 with a minimum lot size of 4500 square feet and setback requirements of the R-T zone subject to a Summary Plat prior to the issuance of a Certificate of Zoning. The plat was not submitted, therefore, the zoning was not changed.

Access will be by a private street south to Academy Road and additional access will be developed to the west when Layton Avenue is improved; however, access to Academy should be constructed prior to occupancy of more than 10 units. Traffic Engineering has requested a 47' pavement radius and 17' center island radius for the cul-de-sac at the northeast corner of the subdivision.

A drainage plan satisfactory to the City Engineer is required prior to plat approval.

FINDINGS:
1. Platting conforms to zoning approved in 1978.
2. Access between the subdivision and Academy must be constructed prior to occupancy of more than 20 units.
3. The northeastern cul-de-sac must be modified as per the Traffic Engineers comments.
4. A drainage plan satisfactory to the City Engineers is required prior to plat sign-off.
5. Compliance with Solar Ordinance Regulations is required.
6. Note on plat that lots backing on Layton shall not have access to Layton

RECOMMENDATION: APPROVAL OF S-81-26 IS RECOMMENDED SUBJECT TO FINDINGS 2-5.

John Lucero, Planner

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE MEETING.

cc: AMDEC, P.O. Box 25000; 87125
Adam, Hamlyn, Anderson, 4055 Montgomery Blvd., NE; 87109

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

MAYOR
David P. Rusk

September 1, 1981

SEP 1981
RECEIVED
ADAM, HAMLYN, ANDERSON

AMDeC
P.O. Box 25000
Albuquerque, New Mexico 87125

Re: S-81-26

Dear Mr. Bordenave:

At the meeting of the Subdivision Review Board on August 27, 1981 the following decision was made:

FINDINGS:

1. Platting conforms to zoning approved in 1978.
2. Access between the subdivision and Academy or Layton must be constructed prior to occupancy of more than 20 units.
3. The northeastern cul-de-sac must be modified as per the Traffic Engineers comments.
4. A drainage plan satisfactory to the City Engineers is required prior to plat sign-off.
5. Compliance with Solar Ordinance Regulations is required.
6. A note is to be made on the plat that all lots backed to Layton may not have access to Layton.

BE IT RESOLVED that S-81-26 be approved, subject to the Findings.

The appeal date for this decision is September 11, 1981. Appeal may be made at the offices of the Planning Division, Room 601, City Hall, 400 Marquette, NW, Albuquerque, N.M., 87103. No permits or other such action may be taken until this date has passed.

If you have any questions concerning these decision, do not hesitate to contact me at 766-7422.

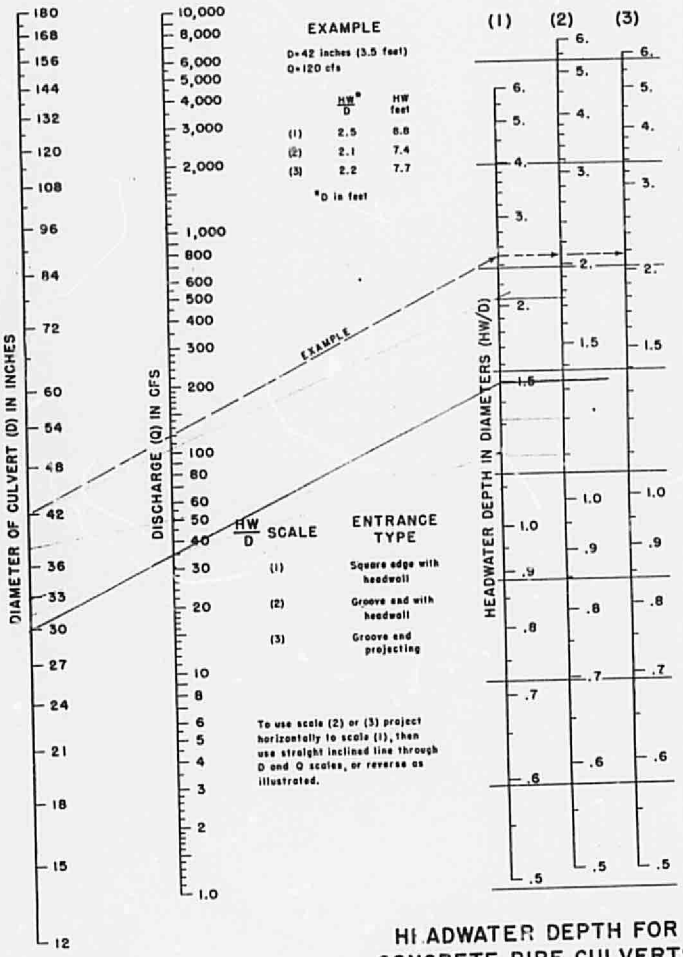
Sincerely,

John R. Lucero, Chairman

cc: Adam, Hamlyn, Anderson, Attn: Jake Bordenave, 4055 Montgomery Boulevard, NE; 87109

JRL/mes
8030A

CHART 2

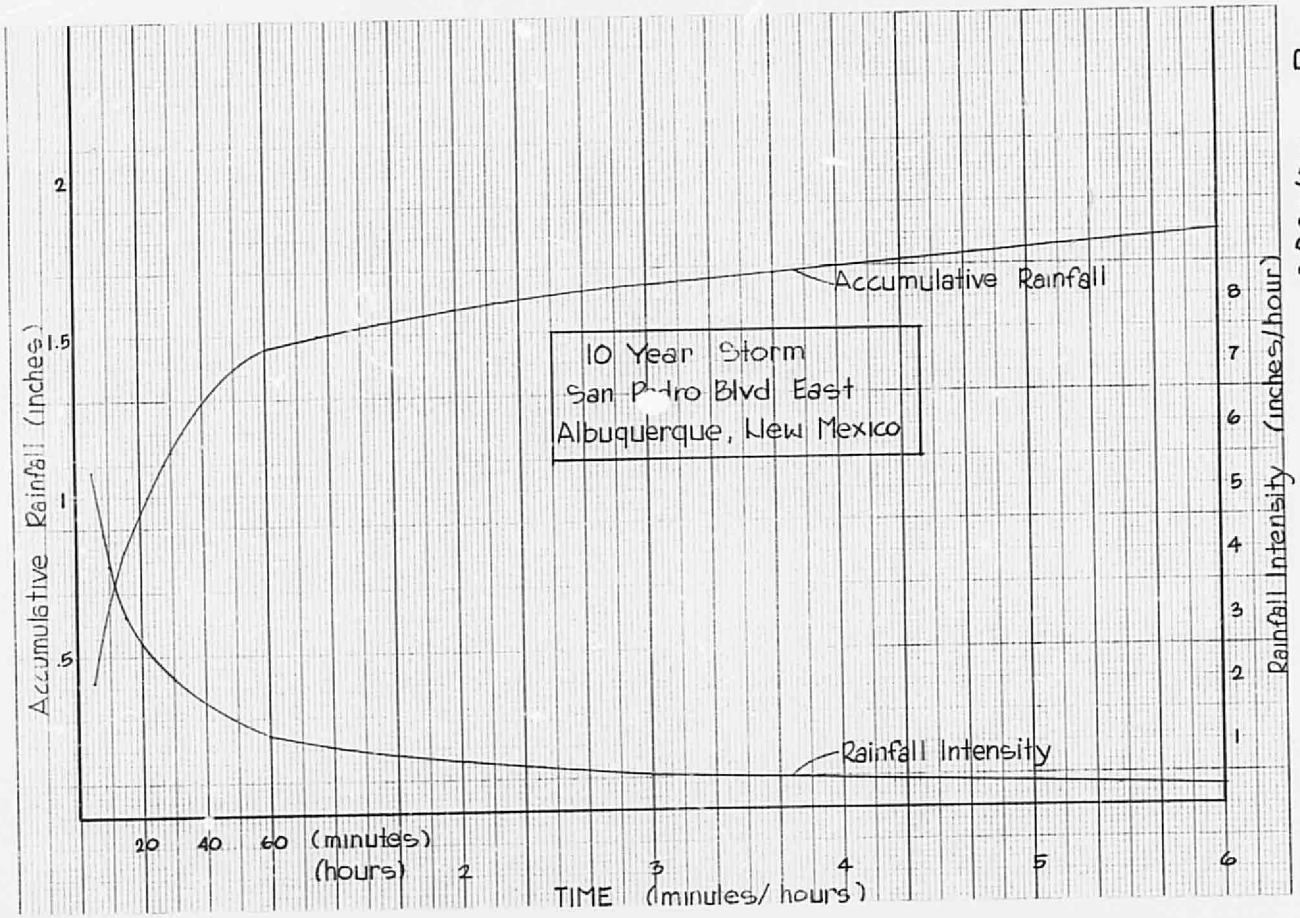


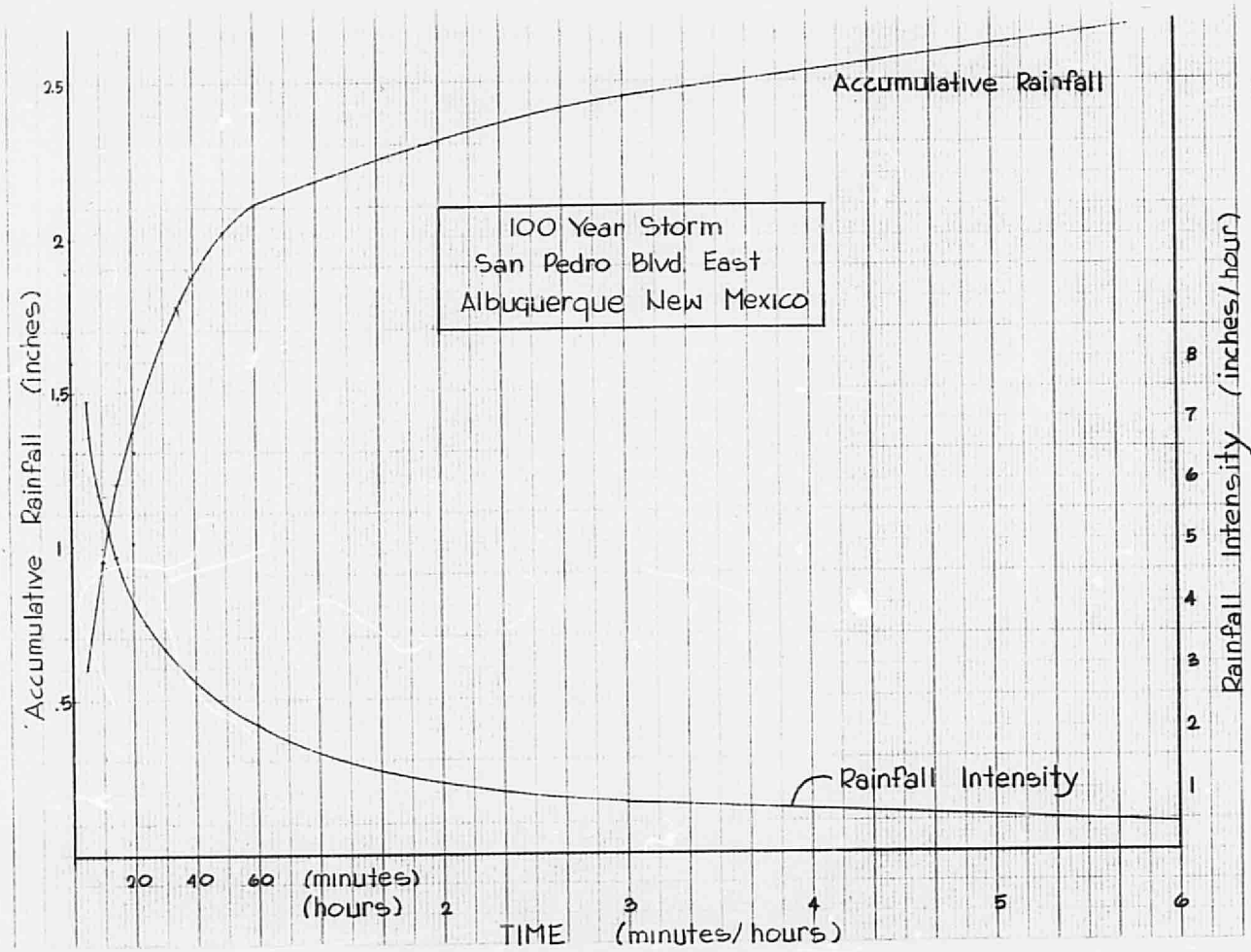
HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

APPENDIX B

APPENDIX B


10 Year Storm
San Pedro Blvd East
Albuquerque, New Mexico
Accumulative Rainfall
Rainfall Intensity
Accumulative Rainfall (inches)
Rainfall Intensity (inches/hour)
TIME (minutes/ hours)
20 40 60 (minutes)
(hours) 2 3 4 5 6
.5 1 1.5 2
1 2 3 4 5 6 7 8


Accumulative Rainfall
100 Year Storm
San Pedro Blvd. East
Albuquerque New Mexico
Rainfall Intensity
Accumulative Rainfall (inches)
Rainfall Intensity (inches/hour)
2.5
2
1.5
1
.5
8
7
6
5
4
3
2
1
20 40 60 (minutes)
(hours) 2 3 4 5 6
TIME (minutes/hours)

APPENDIX B

PRECIPITATION DATA

ALBUQUERQUE, SAN PEDRO BLVD EAST

from NOAA Atlas 2, Volume IV, New Mexico

Recur Inter	Duration	min / hour	5	10	15	30	1	2	3	6	12	24
2 Year	Rainfall	inches	0.28	0.44	0.56	0.77	0.98	1.09	1.16	1.3	1.45	1.6
	Intensity	inches/hour	3.41	2.65	2.23	1.55	0.98	0.54	0.39	0.22	0.12	0.07
5 Year	Rainfall	inches	0.37	0.57	0.72	1.00	1.27	1.36	1.41	1.52	1.76	2.0
	Intensity	inches/hour	4.42	3.43	2.90	2.01	1.27	0.68	0.47	0.25	0.15	0.08
10 Year	Rainfall	inches	0.42	0.66	0.83	1.15	1.46	1.53	1.65	1.3	2.1	2.4
	Intensity	inches/hour	5.08	3.94	3.33	2.31	1.46	0.79	0.55	0.30	0.18	0.10
25 Year	Rainfall	inches	0.49	0.76	0.96	1.34	1.69	1.85	1.96	2.16	2.48	2.8
	Intensity	inches/hour	5.88	4.56	3.85	2.67	1.69	0.93	0.65	0.36	0.21	0.12
50 Year	Rainfall	inches	0.55	0.86	1.08	1.50	1.90	2.10	2.04	2.5	2.8	3.1
	Intensity	inches/hour	6.61	5.13	4.33	3.00	1.90	1.05	0.75	0.42	0.23	0.13
100 Year	Rainfall	inches	0.61	0.95	1.20	1.67	2.11	2.31	2.45	2.7	3.05	3.4
	Intensity	inches/hour	7.34	5.70	4.81	3.33	2.11	1.16	0.82	0.45	0.25	0.14

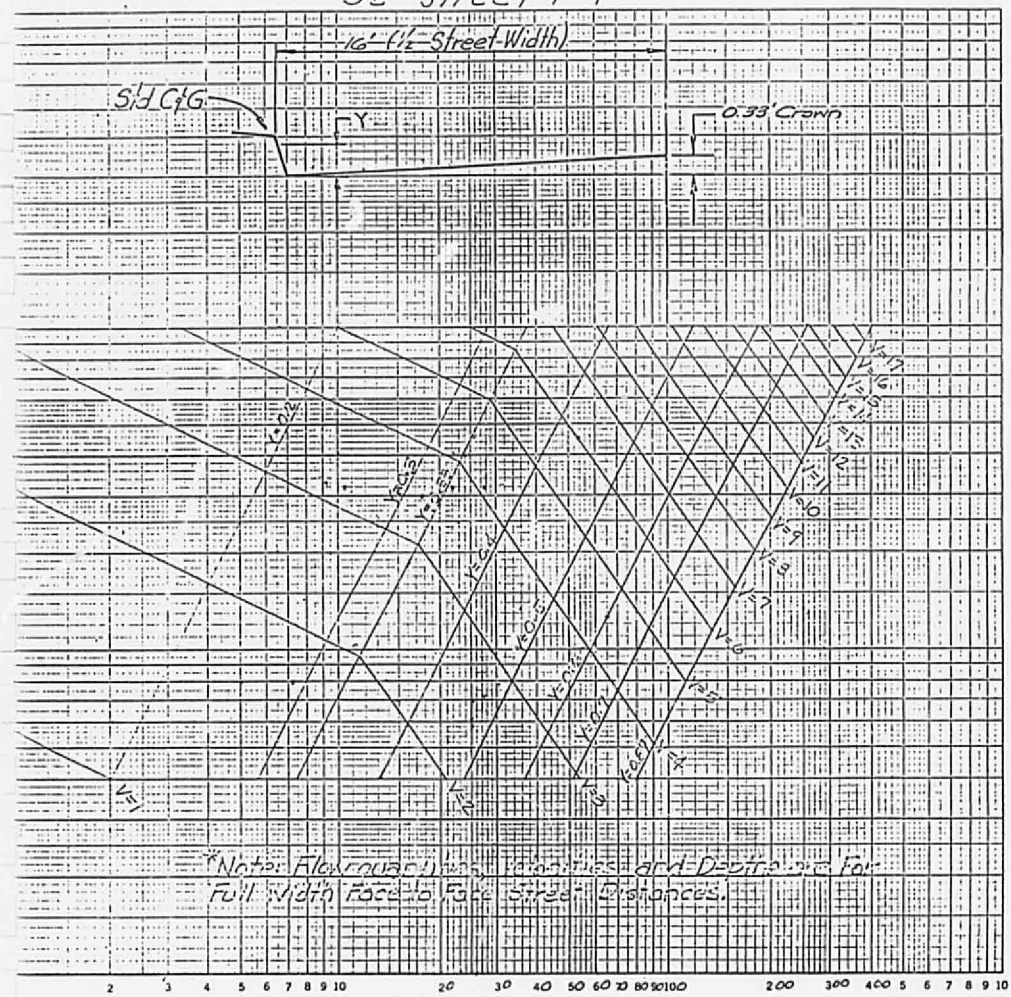
2 year 1 hour = $-0.011 + 0.942(1.3^3/1.6)$

100 year 1 hour = $0.494 + 0.755(2.7^3/3.4)$

3 hour = 0.569 (6 hour) + 0.431 (1 hour)
2 hour = 0.341 (6 hour) + 0.659 (1 hour)
30 min = 0.79 (1 hour)
15 min = 0.57 (1 hour)
10 min = 0.45 (1 hour)
5 min = 0.29 (1 hour)

APPENDIX B

32' Street F-F


16' (1/2 Street Width)
S.H. C&G
Y
0.33' Crown
V=2.9
V=3.0
V=3.5
V=4.0
V=4.5
V=5.0
V=5.5
V=6.0
V=6.5
V=7.0
V=7.5
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V=22.0
V=22.5

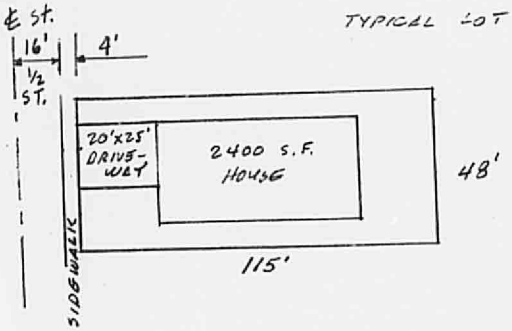
ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC 81535 DATE: 2/10/82 BY: D.A.	SHT. NO. 1 OF 6

DRAINAGE AREAS:

A-1 = 1.20 Ac.
A-2 = 2.97 "
A-3 = 1.03 "
A-4 = 1.46 "
A-5 = 1.83 Ac
A-6 = 1.59 "
A-7 = 0.93 "
A-8 = 2.75 "
A-9 = 0.09 "

TOTAL GROSS AREA = 13.85 Ac.

WHROSITE "C" FACTOR



TYPICAL LOT

ITEM	AREA	Runoff Coeff.	Eff. Area
ROOF	2400	0.95	2280
DRIVEWAY (20 x 25)	500	1.00	500
SIDEWALK (4 x 48)	192	1.00	192
STREET (16 x 48)	768	0.95	730
YARD	2428	0.25	607
	$\Sigma_1 = 6288$		$\Sigma_2 = 4309$

$$C_{comp} = \frac{\Sigma_2}{\Sigma_1} = \frac{4309}{6288} = .685$$

ADAM, HAYLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 2/10/82 BY: D.A.	SHT. NO. 2 OF 6

Peak Discharge for 10 yr & 100 yr storm

A-9:

A-9 = 0.09 Ac , L = 130', diff. in elev. = 78.04 - 76.26 = 1.78'

$t_c = 5$ mins

$I_{10} = 5.08$ in/hr.

$I_{100} = 7.34$ in./hr.

$C = 0.685$

$t_c = \left[\frac{11.9 L^3}{H}\right]^{.385} \times 60$

where L = length of reach in miles

H = diff. in elev. in ft

$Q_{10} = CIA = 0.685 \times 5.08 \times .09 = 0.31$ cfs

$Q_{100} = 0.685 \times 7.34 \times .09 = 0.45$ cfs

$t_c = 1.73$ mins. - use initial $t_c = 5$ mins.

drains offsite

use mountable curb roll type

A-2:

A-2 = 2.97 Ac L = 700 ±, diff. in elev. = 76.24 - 57.87 = 18.37

$t_c = 5$ mins.

$I_{10} = 5.08$ in/hr.

$I_{100} = 7.34$ in/hr.

$C = 0.685$

$t_{c_{in.}} = \left[\frac{11.9\left(\frac{700}{5280}\right)^3}{18.37}\right]^{.385} \times 60 = 5$ mins.

$Q_{10} = 0.685 \times 5.08 \times 2.97 = 10.3$ cfs

$Q_{100} = 0.685 \times 7.34 \times 2.97 = 14.9$ cfs.

s = .007 , $V_{10} = 2.4$ fps ; $u_{10} = 0.33$, $V_{100} = 2.8$ fps y = 0.42'

use std. curb and gutter

A-3:

A-3 = 1.03 Ac L = 565' ±, diff in elev. = 75.2 - 58.78 = 16.42'

$t_{c_{in.}} = 4$ mins. use 5 mins. min. for initial time

$I_{10} = 5.08$ in/hr. $I_{100} = 7.34$ in/hr. $C = 0.685$

$Q_{10} = 0.685 \times 5.08 \times 1.03 = 3.6$ cfs

$Q_{100} = 0.685 \times 7.34 \times 1.03 = 5.2$ cfs

s = .007 $V_{10} = 1.7$ fps $y_{10} = 0.22$ $V_{100} = 1.8$ fps $y_{100} = 0.26'$

use mountable curb. roll type

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN INTERNAL DRAINAGE	JOB NO. AC81535 DATE: 7/10/82 BY: D.A.	SHT. NO. 3 OF 6

A-4

A-4 = 1.46 Ac L = 670'± diff. = 78 - 57.5 = 20.5'

t_c = 4.5 use 5 mins. initial time

I_{10} = 5.08 "/hr. I_{100} = 7.34"/hr. C = 0.685

Q_{10} = 0.685 x 5.08 x 1.46 = 5.1 cfs

Q_{100} = 0.685 x 7.34 x 1.46 = 7.3 cfs

s = .033, V_{10} = 3.3 fps, y_{10} = 0.19', V_{100} = 3.6 fps, y = 0.21'

use mountable curb, roll type

At Pt. 1 $Q = Q_{P-2} + Q_{A-4} + Q_{A-3}$

Q_{10} (P-1) = 10.3 + 5.1 + 3.6 = 19.0 cfs.

Q_{100} (P-1) = 14.9 + 7.3 + 5.2 = 27.4 cfs

V_{100} = 2.7 fps d = 0.42'

use std. Curb & Gutter.

A-5

A-5 = 1.83 Ac L = 780' diff = 20.1'

t_c = 5.0 use 5 mins.

I_{10} = 5.08 I_{100} = 7.34 C = 0.685

Q_{10} = 0.685 x 5.08 x 1.83 = 6.4 cfs

Q_{100} = 0.685 x 7.34 x 1.83 = 9.2 cfs.

s = .033 V_{100} = 3.2 fps y = 0.21' use Mountable

At Pt. 2 $Q = Q_{P-1} + Q_{A-5}$

$\Delta t_c = \frac{L}{V} \times \frac{1}{60}$ where L = reach from Pt. 1 to Pt. 2 = 140'±

$\Delta t_c = \frac{140}{2.3} \times \frac{1}{60}$ = 1 min. V = Vel. @ P_1 = V_{10} = 2.1

@ s = .007 V_{100} = 2.3

total t_c to P-2 = 5+1 = 6 mins.

now $I_{10} = 5.0$"/hr. $I_{100} = 6.8$"/hr.

$$Q_{\substack{P-2\\10}} = 19.0 + 6.4 \times \frac{I_{P-1}}{I_{A-5}} = 19.0 + 6.4 \times \frac{5}{5.08} = 24.4 \text{ cfs}$$

$$Q_{\substack{P-2\\100}} = 27.4 + \left(9.2 \times \frac{6.8}{7.34}\right) = 35.9 \text{ cfs.}$$

$s = .0131$, $V_{100} = 3.6$ fps, $d = 0.41'$

use std. 8" Curb & Gutter

A-7

A-7 = 0.93 Ac L = 320' diff. = 76.8 − 69.1 = 7.7'

t_c = 2.8 mins. use 5 mins. initial time

$I_{10} = 5.08$ "/hr. $I_{100} = 7.34$ "/hr. C = 0.685

$Q_{10} = 0.685 \times 5.08 \times 0.93 = 3.2$ cfs

$Q_{100} = 0.685 \times 7.34 \times 0.93 = 4.7$ cfs

$s = .0201$ $V_{10} = 2.4$, $y_{10} = 0.20'$, $V_{100} = 2.6$ $y_{100} = 0.24'$

use mountable curb roll type

A-6

A-6 = 1.59 Ac L = 615' diff. = 74.4 − 55.3 = 19.1

t_c = 4.17 use 5 mins. initial time

$I_{10} = 5.08$ $I_{100} = 7.34$ C = .685

$Q_{10} = 0.685 \times 5.08 \times 1.59 = 5.5$ cfs

$Q_{100} = 0.685 \times 7.34 \times 1.59 = 8.0$ cfs

Q to P-3 = $Q_6 + Q_7$

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travel time of Q_{A-7} to P-3

$L = 440'$ $S = .04$ $Q_{7_{in}} = 4.7$ cfs $V = 2.6$ fps

$t_c = \frac{L}{V} \times \frac{1}{60} = 2.8$ say 3.0 mins.

total $t_c = 5+3 = 8$ mins.

new $I_{10} = 4.5$ "/hr.

$I_{100} = 6.0$ "/hr. $C = 0.685$

Q_{10} to P-3 $= 5.5 + \left(3.2 \times \frac{4.5}{7.34}\right) = 7.3$ cfs

Q_{100} to P-3 $= 6.00 - \left(3.2 \times \frac{6.0}{7.34}\right) = 11.30$ cfs

A-8

Area -- 2.75 Ac $L = 840'$

$t_c = 5.8$ say 6 mins.

$I_{10} = 5.00$

$I_{100} = 6.8$

$Q_{10} = 2.75 \times 0.685 \times 5.00 = 9.4$ cfs

$Q_{100} = 2.75 \times 0.685 \times 6.7 = 12.6$ cfs.

A-1

$A = 1.20$ Ac $L = 450'$ Diff. $= 59.3 - 53.9 = 5.4'$

$t_c = 5$ mins. $C = 0.685$

$I_{10} = 5.08$

$I_{100} = 7.34$

$Q_{10} = 5.08 \times 1.20 \times 0.685 = 4.20$ cfs

$Q_{100} = 7.34 \times 1.20 \times 0.685 = 6.00$ cfs

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANDAN INTERNAL DRAINAGE	JOB NO. ACB1535 DATE: 2/11/82 BY: D.A.	SHT. NO. 6 OF 6

Q_{Total} from Forrest Hills Rd = 35.9 + $Q_{[illegible]}$

$Q_{10} = 24.4 + [illegible] \times \frac{5.0}{5.08} = 28.5$ cfs

$Q_{100} = 35.9 + [illegible] \times \frac{6.8}{7.34} = 41.4$ cfs.

[illegible]

$Q_{10} = 9.4 + 8.3 + \left(\frac{4.5}{5.0}\right) = 16.9$ cfs.

$Q_{100} = 12.6 + 11.3 \times \left(\frac{6}{6.8}\right) = 22.7$

$Q_{TOTAL} = Q_{[illegible]} + Q_{FLUSHING\ [illegible]}$

$Q_{10} = 28.5 + 16.9 = 45.4$ cfs.

$Q_{100} = 41.4 + 22.7 = 64.1$ cfs.

See Micropaper [illegible] Eng. [illegible] for [illegible]

$g = 32.2$
$H = 0.67'$

$Q = 64.1 = 0.6\ A\ \sqrt{2gH}$

$64.1 = 0.6A\ (6.5687)$

$A = 16.26$

Grate Area = 16.26/(0.6)(0.5) = 54.2 ☐ Use 4 - Dbl - D or equiv.
opening ratio clogging

4(6.5)(2.125) = 55.25 ☐

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANORA UPLAND DRAINAGE	JOB NO. AC81135 DATE: 2/15/82 BY: D.A.	SHT. NO. 1 OF

PIPE CROSSING VENTURA

FROM A REVISED DRAINAGE REPORT RE "FAIRWAYS NORTH AT TANORA" IN THE DEVELOPMENT STAGE, THE PEAK DISCHARGE (100 YEAR STORM) EXITING THE SITE AND FLOWING TOWARD THIS PROPOSED PIPE IS 16.4 CFS (NORTH OF THE IN PROPOSED SUBDIVISION AND THE SOUTH EASTERLY PORTION OF THIS DRAINAGE STUDY. (SEE PLATE IV)

AT AREA -3

$L = 2200'$

Diff. in elev. $= 5644 - 5548 = 96'$

$t_c = \left[\frac{11.9L^3}{H}\right]^{.385} \times 60$ where L = length of reach in miles, H = diff. in elev.

$t_c = 10$ mins.

$I_{100} = 5.7$ "/hr. $C_{100} = 0.40$ (Exist.) Area = 11.0 Acres

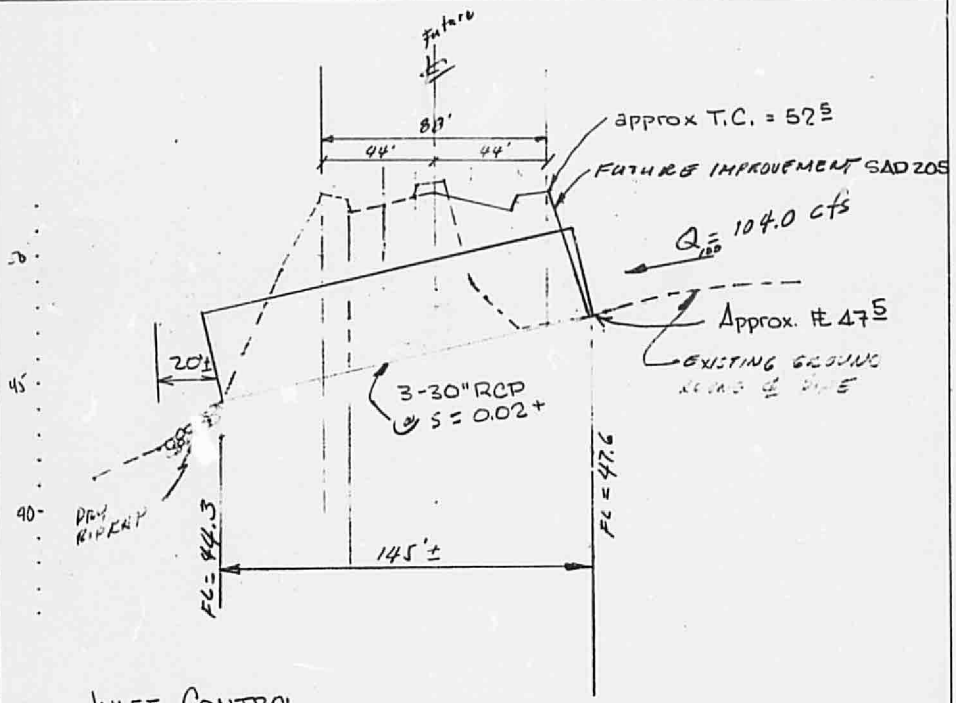
$Q_{100} = CIA = 0.40 \times 5.7 \times 11.0 = 25.0$ CFS.

THE TOTAL Q_{100} GOING TO THIS PROPOSED PIPE =

(1) FAIRWAYS NORTH @ TANORA = 16.4 CFS
(2) WIMBLEDON WEST @ TANORA = 62.6 CFS
(3) AREA - 3 = 25.0 CFS

TOTAL $Q_{100} = 104.0$ CFS

ADAM, HAMLYN, ANDERSON CONSULTING ENGINEERS, INC.	WIMBLEDON WEST @ TANOAN UPLAND DRAINAGE	JOB NO. AC 81535 DATE: 2/15/82 BY: D.A.	SHT. NO. 2 OF 2



INLET CONTROL

Use 30"ϕ RCP

@ Q = 105 cfs, HW/D = 1.32 ∴ W.S. @ 3.3 + 47⁵ = 50⁸

Construct 4 trenches across channel approx. 15" wide and 3 ft deep. Backfill with Pit Run. Space at 25' c.c. from outlet westerly

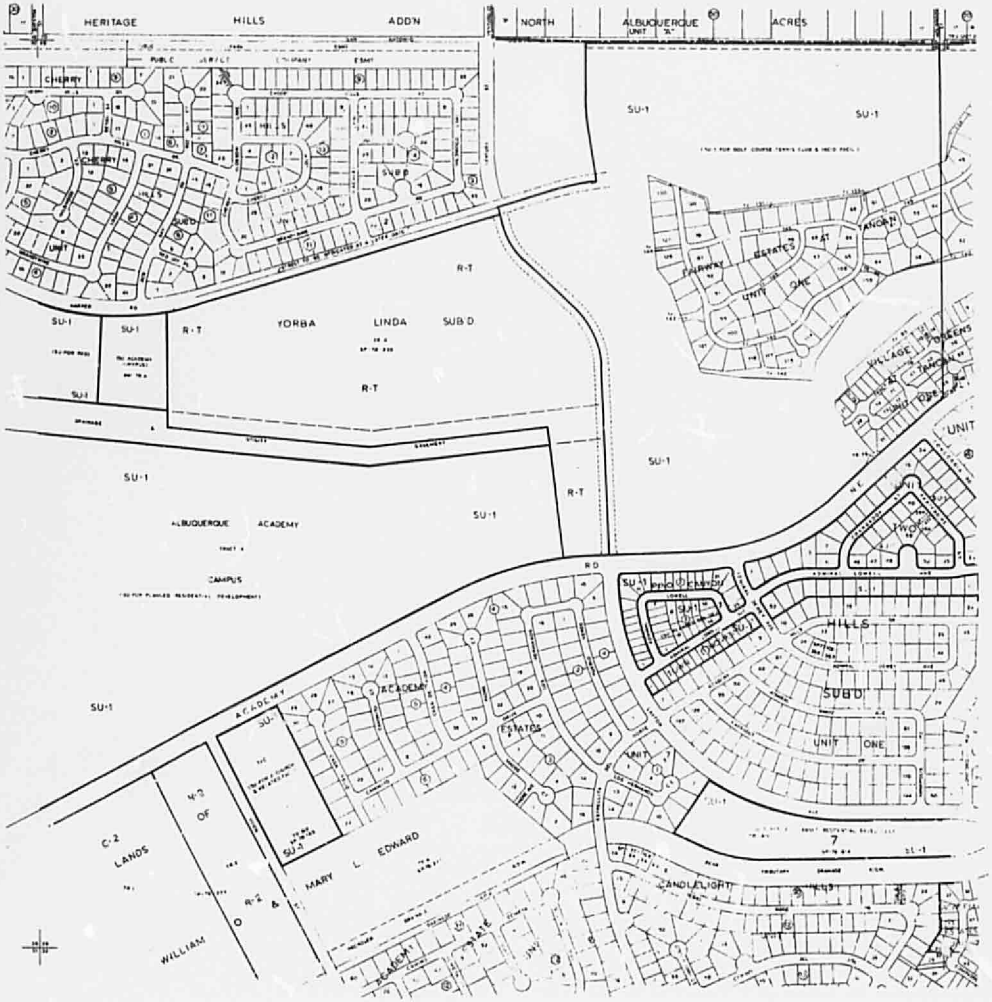

HERITAGE HILLS ADDN
NORTH ALBUQUERQUE ACRES
UNIT "B"
PUBLIC SERVICE COMPANY EASEMENT
CHERRY
SUBD
UNIT
SU-1
R-T
YORBA LINDA SUBD
ALBUQUERQUE ACADEMY
CAMPUS
FAIRWAY ESTATES
UNIT ONE
ANDREW
VILLAGE OF QUEENS
ACADEMY
ESTATES
HILLS
SUBD
UNIT ONE
CANDLELIGHT
MARY L EDWARD
WILLIAM
C-2 LANDS
N 3 OF
R-2

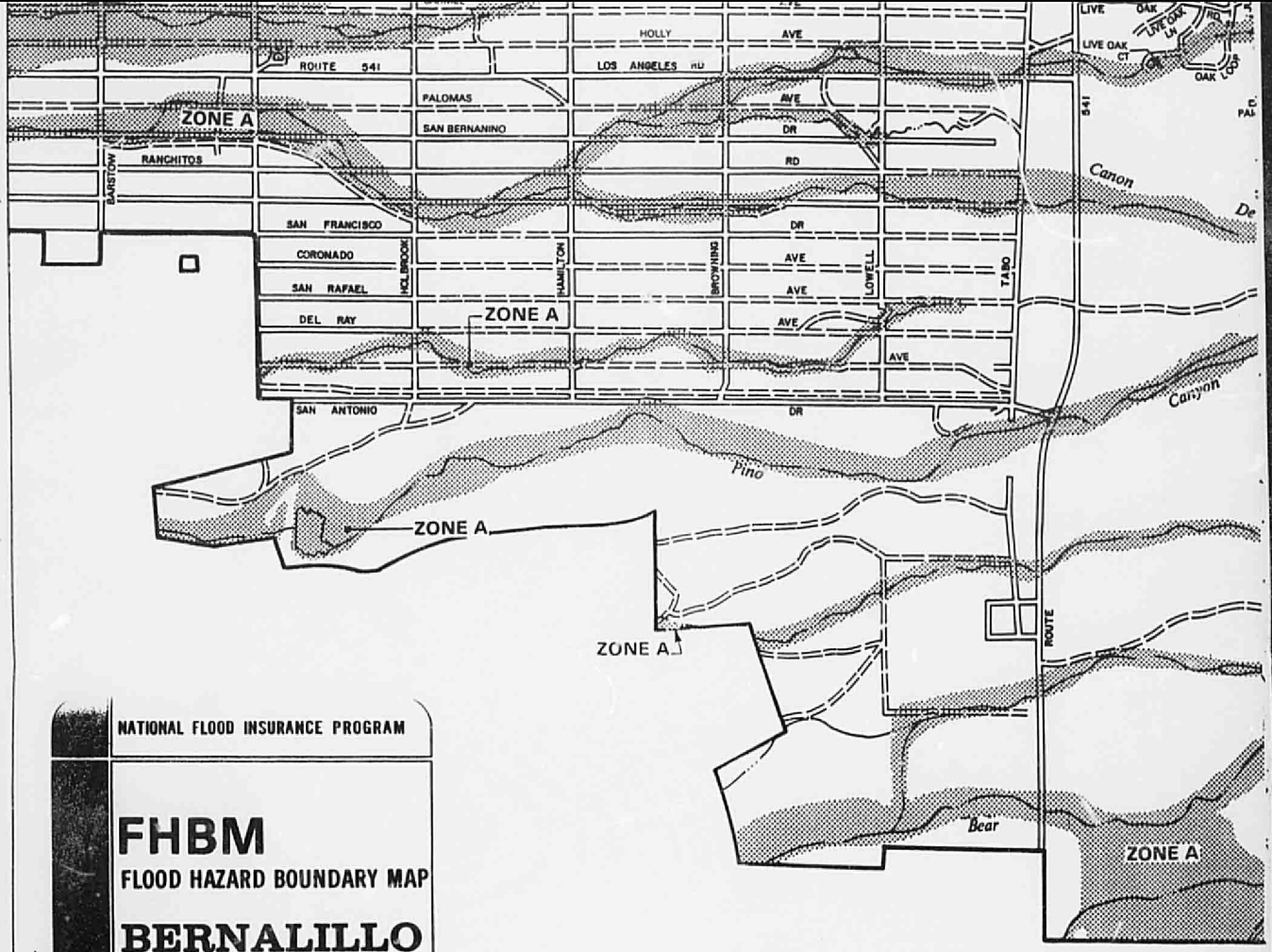
PLATE I

E-20-Z

Canyon
EmB
EtC
TgB
WATER
MONTGOMERY
Madison High School
Aztec School

PLATE II

PLATE III



NATIONAL FLOOD INSURANCE PROGRAM

FHBM

FLOOD HAZARD BOUNDARY MAP

BERNALILLO COUNTY, NEW MEXICO

UNINCORPORATED AREA

PAGE 4 OF 15

(SEE MAP INDEX FOR PAGES NOT PRINTED)

City of Albuquerque
(AREA NOT INCLUDED)

COMMUNITY-PANEL NUMBER
350001 0004 B

MAP REVISED:
JULY 10, 1979

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

PLATE IV