HYDROLOGY K23/D5 5 PLANS

K23/D5

5 Plans

J23 D4
K23 D5

CITY OF ALBUQUERQUE

File

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE April 22,1982 REF. NO.

TO: Val Valdez, Property Management

FROM: Brian Burnett, Hydrology Section

SUBJECT: RELEASE OF 40' WIDE TEMPORARY DRAINAGE EASEMENT FOR CIUDAD VISTA SUBDIVISION

A field inspection of the Ciudad Vista Subdivision has revealed that the 40-foot drainage easement crossing 9 lots is no longer needed for drainage purposes.

BGB/tsl

PROJECT Cedar Vista

DRAINAGE AREA

Land Use	% Impervious Maint
Apts. Shopping Ctr. Etc.	90-100
Residential - Dense	45-60
Residential - Normal	35-45
Residential - Lg. Lots	20-40
Parks	0-10

% Impervious	Ct Note 1	Cp Note 2
80	20	40
60	25	45
40	30	50
20 15%	35	55

1. Add 10% for @ flat basins - Soarsely sewered areas.
   Subtract 10% for @ steep basins - Fully sewered areas.
2. Subtract 10% @ flat basin - Soarsely sewered areas.
   Add 10% @ steep basins - fully sewered areas.

A - Area in Sq. Miles .39 . Acres 250

L - Length of Stream in Miles .65

Lca - Length from Study Point to Centroid in Miles .7

Ct .40 Cp .60

$tp = Ct\left[(L \cdot Lca)^{.3} / i.3\right]^{.9261}$ = .4 (1.27) = .51 30 min

$qp = \frac{Cp\ 640}{tp} = \frac{.6}{.51}(640)^{.384} = 752$ cfs/sq mi

Qp = qp A = 752 x .39 = 293 x 1.4 = 411 CFS

$Tp = 60tp + \frac{tu}{2}$ = + 2 =

Width at 75% Qp =

50% Qp =

A in Acres X 1/12 = X.0833=

Plan, Area = ( ) = ± 5%

Comments

Date 5-15-74

Comp By

Ckd By

CITY OF ALBUQUERQUE, NEW MEXICO
CITY ENGINEER'S OFFICE

MEMORANDUM - October 12, 1976
(Date)

TO:
- [ ] Robert Fosnaugh, Traffic Engineer
- [ ] William Otto, Water Engineer
- [ ] Robert Lowe, Liquid Waste Engineer
- [ ] Dwayne Sheppard, Assistant City Engineer-Field
- [x] Kleston Laws, Assistant City Engineer-Hydrology
- [ ] Monte Urban, Chief Surveyor
- [ ] Grant Snyder, Special Projects Engineer
- [ ]
- [ ]

FROM: Q. R. Kielich, Assistant City Engineer-Design

SUBJECT: CUIDAD VISTA SUBDIVISION

Attached drawings are for WATER, SANITARY SEWER, STORM SEWER, PAVING, STREET GRADES, DRAINAGE, AND _____, for subject proposed project.

Request review and comments on attached drawings. Typed comments will be submitted to Celia Tomlinson, by Oct. 26, 1976.

comments 21 Oct 76 [illegible]

QRK/tl

Attachments

American Service
CORPORATION
2901 Juan Tabo, N.E. / Telephone (505) 29[illegible]
Albuquerque, New Mexico 87112

RECEIVED
JUL 26 1978
CITY ENGINEERS

Copy!
Duane —
Bob —
Bruce —

July 25, 1978

V.M. Kimmick, City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Ciudad Vista Subdivision

Phase III:
Block 2, Lots 5-7
Block 3, Lots 19-21
Block 4, Lots 8-15
27-31
34-35
Block 5, Lots 3-5
30-32
Block 6, Lots 3-5
16-18

Dear Mr. Kimmick:

In reference to the meeting held in your office on July 19, 1978, American Service Corporation will follow the guidelines of the engineering firm of Bohannon Huston, Inc., to construct a dirt drainage channel along a section of the Lomas Upper Diversion right of way presently on property owned by Pete Daskolos.

This will release all City of Albuquerque requirements for drainage control in Phase III of Ciudad Vista Subdivision and therefore allow the above stated lots to be developed and sold for immediate single family construction.

American Service Corporation

By: Stan Strickman
Stan Strickman, Vice President

Approved this 25 day of July, 1978.

By: V.M. Kimmick
V.M. Kimmick, City Engineer

M. DENISH AND ASSOCIATES
Consultants to Developers

Herbert M. Denish

June 11, 1976

Mr. John B. Robert
Albuquerque Metropolitan Arroyo
Flood Control Authority
2600 Prospect Avenue, N.E.
Albuquerque, New Mexico 87110

Dear Mr. Robert:

On May 13, 1976, my associate, Sally McCabe, consulted with Mr. Kleston Laws, Assistant City Engineer, in regard to the Cuidad Vista Subdivision plat filed April 1, 1974. Specifically, she sought assurance that the drainage report prepared for the Cuidad Vista Subdivision was still acceptable as indicated by your signature on the plat. Mr. Laws indicated to her that although the drainage report was still acceptable, the Lomas Dam Project now under discussion by the City of Albuquerque might affect the drainage requirements for the development of this subdivision.

Our client, American Service Corporation, has requested that we obtain your written approval of the filed subdivision plat. We are, therefore, requesting such a letter from you. Attached is a copy of the plat for your information.

Thank you for your cooperation.

Sincerely,

Herb

HERBERT M. DENISH

HMD/kh
Enc.

JMR
Ex. Engr.
Asst. Engr.
Engineer
Admin. Asst.
Rel. Est. Off.
Secretary
Foreman
Return to
File #
Hold Till

RECEIVED
JUN 14 1976
AMAFCA

Post Office Box 2001 / Albuquerque, New Mexico 87103 / Telephone (505) 842-6461

June 15, 1976

Mr. Herbert M. Denish
Denish & Associates
Post Office Box 2001
Albuquerque, New Mexico 87103

Dear Mr. Denish:

I have reviewed your letter of June 11, 1976 hand delivered to my office yesterday. You inquired of the validity of the drainage report prepared for the Cuidad Vista Subdivision plat filed on April 1, 1974.

I concur with Mr. Laws that although the drainage report is acceptable; in my opinion, a better solution to the drainage problem in that area would be to construct the permanent drainage facility shown on the Foothills Drainage Plan.

The City of Albuquerque Environmental Planning Commission recommended that the 100 year design criteria be used. If this standard is adopted, the cost to permanently solve the drainage problems would not be greater than the temporary solution recommended in the drainage report.

If we may be of further assistance, please advise.

Sincerely,

John B. Robert
Executive Engineer

Bruce

American Service
CORPORATION
2901 Juan Tabo, N.E. / Telephone (505) 293-4200
Albuquerque, New Mexico 87112

July 27, 1978

V.M. Kimmick, City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Ciudad Vista Subdivision-Phase III

Dear Mr. Kimmick:

This letter is our formal request to you for approval by the City of Albuquerque to use the Turnkey Procedure for the development of Phase III of the Ciudad Vista Subdivision, which development shall include all utilities, streets and drainage improvements.

The engineering firm for the project will be Bohannon-Huston, Inc.

Thank you for your consideration.

Sincerely,

Stan Strickman
Vice President

SS/pt

cc: Mike Emery

Approved:

V. M. Kimmick
City Engineer 7-28-78

June 15, 1976

Mr. Herbert M. Denish
P. O. Box 2001
Albuquerque, N.M. 87103

Dear Mr. Denish:

Your letter of June 11, 1976 requested written approval of the Ciudad Vista Amended Plat. Since this plat contains all necessary approval signatures and has been recorded properly, it is a valid subdivision plat. The drainage plan which accompanied the plat for approval has been accepted and therefore must be followed. The 40' temporary drainage easement will be required until such time as the Lomas facilities, and particularly the east diversion ditch, are operational, at which time the easements will be quit claimed by the City of Albuquerque.

Sincerely,

W. M. Kimmick
City Engineer

WMK/fs

cc: E. F. Hensch
Q. R. Kielich
Kleston Laws

File Drainage Reports

DRAINAGE REPORT
for
CIUDAD VISTA SUBDIVISION

City of Albuquerque
Bernalillo County, New Mexico

Prepared For: Chateau Homes
605 1/2 San Mateo Blvd. N.E.
Albuquerque, New Mexico

Prepared By: GLEB Engineering, Inc.
4100 Silver Ave. S.E.
Albuquerque, New Mexico

February 21, 1973

Amador Gonzalez, Jr.
Amador Gonzalez, Jr.
N.M.E. No. 5157

REGISTERED ENGINEER
5157
NEW MEXICO
AMADOR GONZALEZ, JR.

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THIS MICROFICHE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

GENERAL

Ciudad Vista is a proposed subdivision situated in the Northeast quarter of the Northwest quarter, Section 23, Township 10 North, Range 4 East, N.M.P.M., and a portion of the Southeast quarter of the Southwest quarter, Section 14, Township 10 North, Range 4 East, N.M.P.M. in the City of Albuquerque.

The tract is located approximately one-fourth mile east of Tramway Blvd. N.E. and is adjacent to Lomas Blvd. N.E. on the north. The City View Estates subdivision borders the tract on the south, with the proposed Granada Hills development on the west.

The subdivision lies in the foothills of the Sandia Mountains, and is within drainage area 4a as shown on Plate 2 of "Flood Plain Information", Part II, prepared by the Corps of Engineers.

This drainage report is submitted in compliance with the Albuquerque Metropolitan Arroyo Flood Control Authority Resolution No. 2, 1972.

A personal on-site inspection was made by the engineer and no land grading, filling, or excavation has occurred since preparation of the contour map.

DEVELOPMENT

The subdivision lies downstream of the proposed flood control and retention dam outlined in the Sandia Foothills Drainage Study prepared by Bohannan Wortman Huston & Associates, Inc. At such time as this facility is constructed, the major amount of runoff presently entering the subdivision along the east boundary will be intercepted and diverted to the proposed channel adjacent to the northerly boundary of the subdivision. However, in the interim the off-site drainage from the East is proposed to be conveyed through the subdivision by a temporary drainage channel within a temporary drainage easement. This channel will be left in its natural state where possible. Where limitations due to the configuration of the

THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

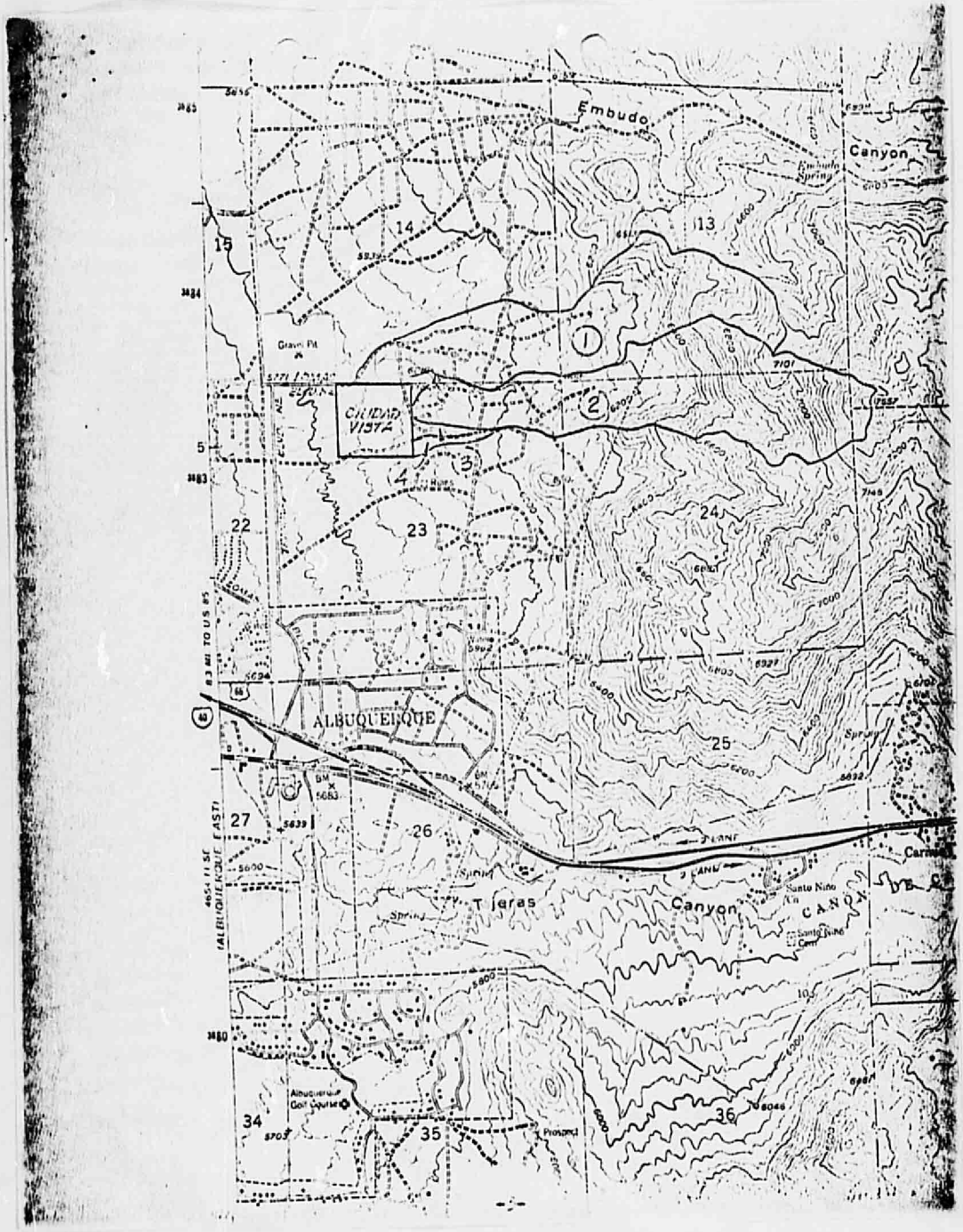
drainage easement do not allow use of the natural channel, the channel is proposed to be constructed as indicated on sheet 6 herein.

When the aforementioned flood control facilities are constructed, it is proposed that the temporary drainage easement be quitclaimed, with the areas contained within the easement reverting to usables lots However, it will be necessary to provide for minor runoff quantities developed between the retention dam and the east boundary of the subdivision. A permanent easement will be provided between lots 5 and 6, block 2, with an improved channel section adequate to carry the flow and convey it to the street.

It is proposed that, where practical, the lots be graded to provide ponding areas on the lots with a retention volume capacity sufficient to insure that the net on-site runoff quantity after development does not exceed the on-site runoff quantity under the present undeveloped condition. The proposed typical lot drainage plan is indicated on the attached Plate 1.

Final engineering design will provide suitable measures to protect Lots 15, 16 and the 20 foot waterline easement in Block 7 from having storm water overtopping the street section.

THIS MICROFIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT



THIS MICROFIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

HYDROLOGIC CALCULATIONS

OFF-SITE DRAINAGE AREAS

$Q = CIA$ (Rational Method)

$t_c = \left(\frac{11.2L^3}{H}\right)^{0.385}$ $I = \frac{189}{t_c + 25}$ (100 Year Frequency)

$C = 0.6$

Drainage areas are shown on a copy of the U.S.G.S. Tijeras Quandrangle included herein.

Area 1

$A = 210$ Acres $L = 9000$ ft. $= 1.7$ mi.

$H = 7101 - 5845 = 1256$ ft.

$t_c = 18$ min. $I = 4.35$ $Q_{100} = 0.6(4.35)(210)$

$= 550$ c.f.s.

Area 2

$A = 250$ Acres $L = 9000$ ft. $= 1.7$ mi.

$H = 7657 - 5902 = 1755$ ft.

$t_c = 16$ min. $I = 4.61$ $Q_{100} = 0.6(4.61)(250)$

$= 690$ c.f.s.

Areas 3 and 4

$A = 6$ Acres $L = 1760$ ft $= 0.33$ mi.

$H = 6026 - 5907 = 119$ ft.

$t_c = 6.4$ min.

Use minimum $t_c = 10$ min. $I = 5.4$

$Q_{100} = 0.6(5.4)(6) = 20$ c.f.s.

550
690
20
1260

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J.T.B.
GEBB Engr., Inc.

PRELIMINARY HYDRAULIC CALCS.
INFILTRATION CHANNEL

$Q_{100} = 690$ cfs
$n = 0.035$
$S_f = 0.03$; $S_f^{1/2} = 0.1732$
$b = 20'$; $b^{8/3} = 2950$
$z = 3:1$

See Typical Section, Sht. 2

For channel slope of 6%, rock check dam spacing of 50' and height of 1.5':

$$S_f = \frac{0.06(50) - 1.5}{50}$$

$$S_f = \underline{0.03}$$

$$K' = \frac{Q\,n}{b^{8/3}\,S^{1/2}}$$

$$= \frac{690\,(0.035)}{2950\,(0.1732)}$$

$K' = 0.0475$

$\therefore D_n/b = 0.117$

$\therefore D_n = \underline{2.34'}$

$A = 20(2.34) + 3(2.34)^2$

$A = 52.3$ ☐

$$V = \frac{690}{52.3}$$

$V = \underline{13.2 \text{ ft/sec}}$

Reference:
"Handbook of Hydraulics", H.W. King, Mc Graw-Hill

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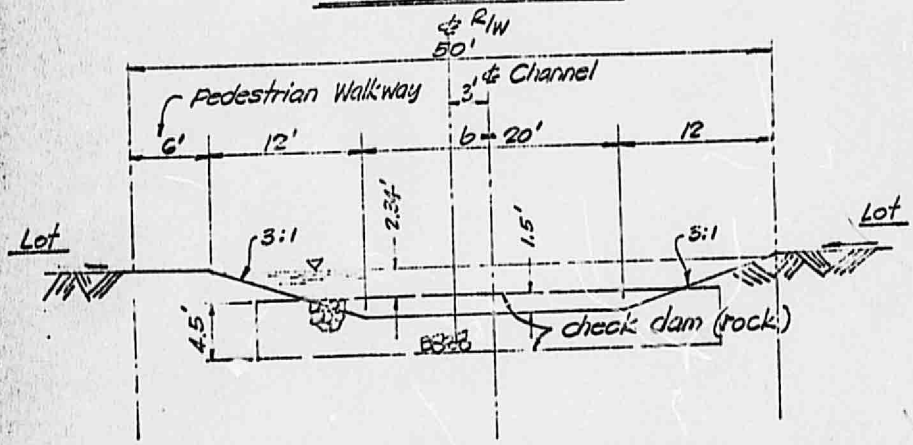
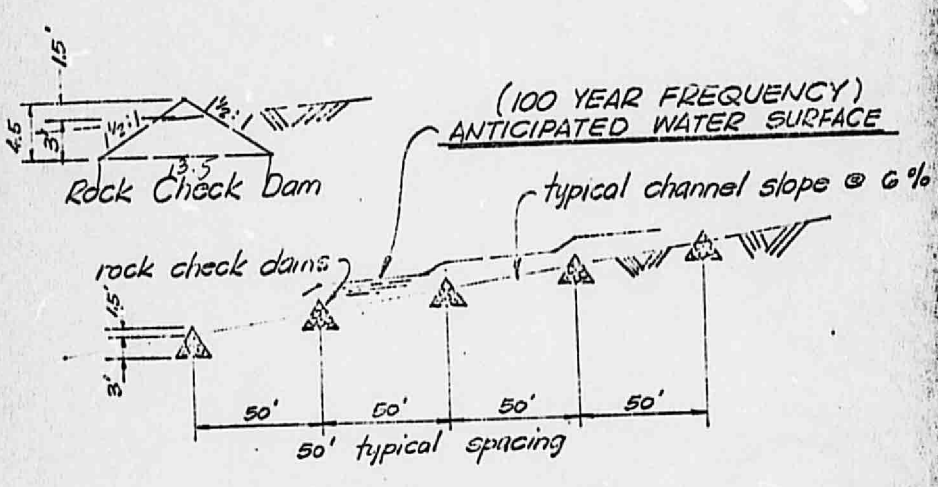
GEBB Engr., Inc.

CIUDAD VISTA



TYPICAL SECTION



TYPICAL PROFILE

INFILTRATION CHANNEL

home planning development co.
shirley leslie pres.
richard l. buck exec. v.p.

2900 louisiana blvd. n.e.
suite 210
albuquerque, new mexico 87110
phone 505-298-5451

11-21-75
MJ

November 14, 1975

Mr. Erwin R. Hensch
Dept. of Public Works
P. O. Box 1293
Albuquerque, New Mexico 87103

Dear Sir:

Home Planning agrees to construct the Lomas Drainage Channel in accordance with City requirements for secondary drainage channels.

Sincerely,

HOME PLANNING DEVELOPMENT COMPANY, INC.

James Stephens
Project Manager

JS/mt

P.S. This construction work will be performed in a time in conjunction with the paving.

Richard L. Buck
Exec. Vice Pres.

American Service
CORPORATION

July 14, 1976

Mr. V. M. Kismick
City Engineer
400 Marquette N.W.
Albuquerque, NM 87102

Dear Mr. Kismick:

American Service Corporation has a conditional purchase agreement with Justice Mortgage Investors to purchase the subdivision known as Ciudad Vista, as shown on the attached plat. This purchase agreement must be exercised not later than July 20, 1976.

We have obtained re-affirmations from all applicable government bodies and utility companies whose signatures appear on the attached plat, and have identified most of the anticipated costs required to take the subdivision from its present status (streets and lots rough-graded, water and sewer lines and lot stubs in place) to a completed state. However, we need to have specific information from the City as to what our obligations as owners/developers of Ciudad Vista would be on a crossing structure for Turner Drive across the adjoining Lomas drainage channel (which is public right of way). It is our understanding that if this is classified as a feeder street the crossing structure would be constructed and paid for by the City. We also need to identify any improvements, if any, that we would be required to make on the adjacent portion of the Lomas channel itself.

As a matter of clarification as to our position on temporary drainage requirements within the Ciudad Vista subdivision, I am a member of the Sandia Foothills Development Committee, and am aware of the current status of the Lomas channel/dam discussions. If we are able to complete the purchase of this subdivision, we will work with the City, within a time frame dictated by economic feasibility, to divert an estimated temporary drainage facility cost of approximately $80,000 to the construction of the permanent upper Lomas diversion channel.

I apologize for the short time allowance of this request of the development obligations on the Turner crossing structure and the Lomas drainage channel that adjoins Ciudad Vista, but I am sure you can appreciate the economic implications of this request.

Very truly yours,

Ronald D. Brown

Ronald D. Brown

cc. City Attorney
Planning
Traffic
K. Laws

COPY

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

MAYOR
Harry E. Kinney

CHIEF
ADMINISTRATIVE OFFICER
Frank A. Kleinhenz

July 16, 1976

Mr. Ronald D. Brown
American Service Corporacion
2901 Juan Tabo N.E.
Albuquerque, New Mexico 87112

SUBJECT: CIUDAD VISTA SUBDIVISION

Dear Mr. Brown:

Your letter of July 14, 1976 has been reviewed with appropriate City agencies and the specific answers to your inquiries are outlined below:

1. Turner Drive Crossing. Turner Drive is classified as a collector street, therefore, under City Resolution 59-1976 the costs of providing a crossing structure shall be paid by public authority. There are no City funds available at present for this crossing.

2. Lomas Channel. The Lomas Channel is to the north of lots 21,22 and 23 and 24 of Block 2; and lots 27 through 38 of Block 3 in the subdivision. Prior to enactment of resolution 59-1976, an agreement was reached with the developers of Todd 2 for permanent improvement of this reach of channel under prior City drainage policies. The design concept of this channel has been revised by the EPC recently, which may cause the total price for the channel to change. So far as I can determine, this additional cost, if any, would become your obligation should you purchase Ciudad Vista. Some idea of these costs may possibly be obtained from Mr. Mike Emery, Bohannan,Westman,Huston and Associates.

Public Works Department

Director — Erwin F. Hensch, P. E. 766-7467
Engineering 766-7441 — V. M. Kimmick, P. E.
Street Maint. 766-7755 — G. E. Paul, P. E.
Ass't. Director — Harold R. Orr, Jr. P. E.
Liquid Waste 766-7535 — R. P. Lowe, P. E.
Water 766-7437 — W. H. Otto, P. E.

AN EQUAL OPPORTUNITY EMPLOYER

If I may be of further help, please contact me.

Sincerely,

V. M. Kimick
City Engineer

VMK/fs

cc: E. F. Hensch, Director of Public Works
Pat McDonald, Director and Deputy City Attorney-Legal Dept.
Phil Garcia, Chief Planner
Bob Fosnaugh, Traffic Engineer
Kleston Laws, Assist. City Engineer-Hydrology

City of Albuquerque

August 13, 1973

Celia

RECEIVED

AUG 14 1973

CITY ENGINEERS

Mr. Frank P. Dickson, Jr.
Branch, Dickson, Dubois & Wilson, P.A.
Attorneys and Counselors at Law
Suite 1400 National Building
505 Marquette N.W.
Albuquerque, New Mexico 87101

Re: Ciudad Vista Subdivision

Dear Mr. Dickson:

In regard to your inquiry concerning initial development of the subject subdivision, the existing water system can supply water to development not to exceed forty R-1 units.

At the time the Zone 8E, Mainline Trunk Water Facility project is constructed additional supply will be available for continued development.

It will be necessary to extend a sixteen inch waterline into the development from Jewell Avenue to receive service.

Very truly yours,

William H. Otto
Chief Water Engineer

WHO:rm

cc: J. Esquibel
R. Kielich
D. Reddy
f/Water Availability
f/Ciudad Vista Engr. Study

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

RECEIVED

AUG 14 1973

REF. NO.

CITY ENGINEERS

INTER-OFFICE CORRESPONDENCE

August 13, 1973

TO: Mr. Ron Maestas, Information & Drafting Clerk

FROM: W. H. Otto, Chief Water Engineer

SUBJECT: SERVICE LINE STUBS

The Water Division has instituted a procedure whereby developers may have the options of installing service line stubs in sizes 3/4 and 1¼, under A.H.B.A. contract or may have the Water Division install the stubs as has been the practice in the past.

The new policy (see attached memo) should be brought to the attention of anyone requesting 20 services or more in a single order. In general, the A.H.B.A. contract for services should be entered into with the City at the time the developer requests a waterline extension. If the water main exists, services can still be installed by the A.H.B.A. method. Anyone interested in utilizing the A.H.B.A. method should be referred to Mr. Ray Dawson, Contract Manager.

The A.H.B.A. method provides for a developer to enter into a contract with the City, thereby allowing the developer to construct the service line stubs by contracting with a utility contractor to do the work.

WHO:rm
Enc.

cc: J. Apodaca, w/enc.
R. Dawson, w/enc.
J. Genualdi, w/enc.
E. F. Hensch, w/enc.
R. Kielich, w/enc.
V. Kimmick, w/enc.
M. Mendoza, w/enc.
D. Reddy, w/enc.
M. Simms, w/enc.
f/Methods & Procedures (3)

Bill

AUG 10 1973

WATER DIVISION

POLICY FOR WATER SERVICE
August 6, 1973

At a meeting in Mr. Kimmick's office on August 6, 1973, attended by Mr. Kimmick, Mr. Otto and Mr. Dawson, held for the purpose of establishing a Policy permitting Contractors and Developers to construct water service connections under A.H.B.A. Contracts. Previously the Water Division had been installing the service lines; however, Mr. Otto stated his workers were running behind and Mr. Hensch had authorized this change.

Mr. Otto stated there were approximately six A.H.B.A. contracts underway, but not yet completed, that the Developer and Contractor would be authorized to do the service connections, the Contracts are:

DEVELOPER	CONTRACTOR	PROJECT NO.	EST. NO.
A.M.D. & C.	Co-Con	73-27	W-22-73-(25)
A.M.D. & C.	Co-Con	73-28	W-21-73-(24)
Associated Invest. Co.	Kent Nowlin	73-32	72-155-WE
Dale Bellamah Land Co.	Kent Nowlin	73-40	W-5-73-(44)
Associated Invest. Co.	Kent Nowlin	73-9	72-127-WE
Dale Bellamah Land Co.	Co-Con	73-30	W-32-73-(20)

In all instances the City Water Department will install the meters.

Mr. Otto stated Developers can opt to have the Contractor install the services without meters.

A 6% engineering charge will be paid the City for all construction including the water services. The six A.H.B.A. contracts currently in force will require: Amendments to bonds, and the contract between the Contractor and Developer, as well as additions to the narrative describing the work to be accomplished; to point out the major changes.

The Developer will furnish the City four letter-sized copies of a plat with the house numbers entered on the plat together with the size of the meter where service connections are planned and/or installed. The total of house numbers will agree with the number of services contracted.

V. M. Kimmick, City Engineer

Ray L. Dawson, Contract Manager

William H. Otto, Water Engineer

APPROVED:

E.F. Hensch, Dir. Public Works

PRELIMINARY DRAINAGE REPORT
CIUDAD VISTA SUBDIVISION
CITY OF ALBUQUERQUE

Prepared For: Mr. Don Draper
605 1/2 San Mateo Blvd. N.E.
Albuquerque, N.M.

Prepared By: GEBB Engineering, Inc.
Aug. 4, 1972
265-8436

Amador Gonzalez, Jr.
R.C.E. No. 5167

PRELIMINARY DRAINAGE REPORT
CIUDAD VISTA

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Infiltration Channel Typical Section and Profile	7
Preliminary Hydrology Study	8

PRELIMINARY DRAINAGE REPORT
CIUDAD VISTA

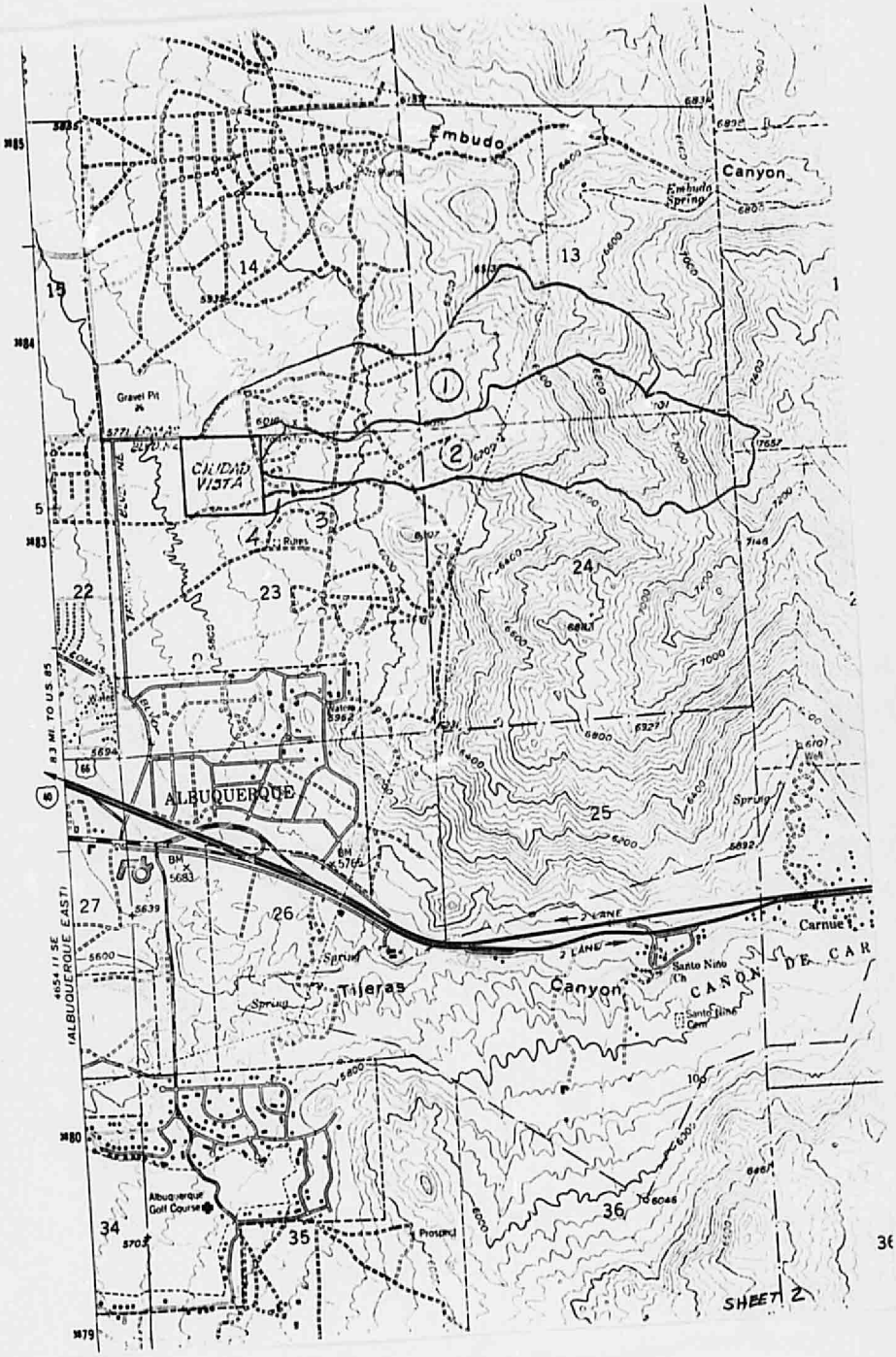
GENERAL:

Ciudad Vista is a proposed subdivision situated in the northeast quarter of the northwest quarter, Section 23, Township 10 North, Range 4 East, N.M.P.M. in the City of Albuquerque. The tract is located approximately one-fourth mile east of Tramway Blvd. N.E. and is adjacent to Lomas Blvd. N.E. The City View Estates subdivision borders the tract on the south. The subdivision lies in the foothills of the Sandia Mountains and is within drainage area 4a as shown on Plate 2 of "Flood Plain Information", Part II, prepared by the Corps of Engineers.

This preliminary drainage report is submitted in compliance with the Albuquerque Metropolitan Arroyo Flood Control Authority Resolution No. 2, 1972.

It is intended to use conventional storm drainage facilities for the on-site storm water. Special design considerations are contemplated to convey off-site runoff through the tract as indicated by the preliminary hydraulic calculations for the infiltration channel included as a part of this report.

A personal on-site inspection was made by the engineer and no land grading, filling, or excavation has occurred since preparation of the contour map.


Embudo
Canyon
Embudo Spring
13
14
15
Gravel Pit
CIUDAD VISTA
1
2
3
4
5
22
23
24
25
26
27
34
35
36
ALBUQUERQUE
Tijeras
Canyon
Carnue
Santo Nino Ch
Santo Nino Cem
Spring
Albuquerque Golf Course
Prospect
83 MI TO US 85
(ALBUQUERQUE EAST)
4654 II SE
SHEET 2

HYDROLOGIC CALCULATIONS

OFF-SITE DRAINAGE AREAS

$Q = CIA$ (Rational Method)

$t_c = \left(\frac{11.2L^3}{H}\right)^{0.385}$ $I = \frac{189}{t_c + 25}$ (100 Year Frequency)

$C = 0.6$

Drainage areas are shown on a copy of the U.S.G.S. Tijeras Quandrangle included herein.

Area 1

$A = 210$ Acres $L = 9000$ ft. $= 1.7$ mi.

$H = 7101 - 5845 = 1256$ ft.

$t_c = 18$ min. $I = 4.35$ $Q_{100} = 0.6(4.35)(210)$

$= 550$ c.f.s.

Area 2

$A = 250$ Acres $L = 9000$ ft. $= 1.7$ mi.

$H = 7657 - 5902 = 1755$ ft.

$t_c = 16$ min. $I = 4.61$ $Q_{100} = 0.6(4.61)(250)$

$= 690$ c.f.s.

Areas 3 and 4

$A = 6$ Acres $L = 1760$ ft $= 0.33$ mi.

$H = 6026 - 5907 = 119$ ft.

$t_c = 6.4$ min.

Use minimum $t_c = 10$ min. $I = 5.4$

$Q_{100} = 0.6(5.4)(6) = 20$ c.f.s.

HYDROLOGIC CALCULATIONS

ON-SITE DRAINAGE AREAS

All drainage areas have a time of concentration of less than 10 minutes used as a minimum.

$\therefore I = 5.4 \qquad Q_{100} = 0.6(5.4)(\text{Area})$

$= 3.24 \cdot (\text{Area})$, c.f.s.

On-Site Drainage Areas shown as [1] on the "Preliminary Hydrology Study" map

Area No.	Area, Ac.	Q_{100}, c.f.s.	Remarks
1	2.3	7.5	Catch Basin
2	5.5	17.8	Catch Basin
3	3.1	10.0	Catch Basin
4	6.6	21.4	Catch Basin @ Low Point
5	0.5	1.6	" " " " "
6	0.8	2.6	" " " " "
7	4.3	14.0	Drain to Nat. Ground or Fut. St.
8	1.4	4.5	Catch Basin
9	2.3	7.5	" "
10	1.1	3.6	Drain to Nat. Ground or Fut. St.
11	0.5	1.6	Catch Basin @ Low Point
12	1.3	4.2	" " " " "
13	1.2	3.9	" " " " "
14	0.1	0.3	" " " " "
15	0.9	2.9	" " " " "
16	1.3	4.2	" " " " "
17	0.7	2.3	" " " " "
18	1.0	3.2	Drain to Nat. Ground
19	2.6	8.4	" " " "

Calculations for infiltration channel crossings:

Point (A)

Area = 261 Ac. L = 9650' H = 1787'

t_c = 17.4 min. I = 4.42 Q_{100} = 690 c.f.s.

Point (B)

Area = 263 Ac. L = 10,150' H = 1817'

t_c = 18.2 min. I = 4.37 Q_{100} = 690 c.f.s.

Point (C)

Area = 270 Ac. L = 10,410' H = 1829'

t_c = 18.5 min. I = 4.34 Q_{100} = 700 c.f.s.

8-4-72
J.T.B.
GEBB Engr., Inc.

PRELIMINARY HYDRAULIC CALCS.
INFILTRATION CHANNEL

$Q_{100} = 690$ cfs
$n = 0.035$
$S_f = 0.03$; $S_f^{1/2} = 0.1732$
$b = 20'$; $b^{8/3} = 2950$
$z = 3:1$

See Typical Section, Sht. 2

For channel slope of 6%, rock check dam spacing of 50' and height of 1.5':

$$S_f = \frac{0.06(50) - 1.5}{50}$$

$$S_f = \underline{0.03}$$

$$K' = \frac{Q\,n}{b^{8/3}\,S^{1/2}}$$

$$= \frac{690\,(0.035)}{2950\,(0.1732)}$$

$K' = 0.0475$

$\therefore D_n/b = 0.117$

$\therefore D_n = \underline{2.34'}$

Reference:
"Handbook of Hydraulics", H.W. King, McGraw-Hill

$A = 20(2.34) + 3(2.34)^2$

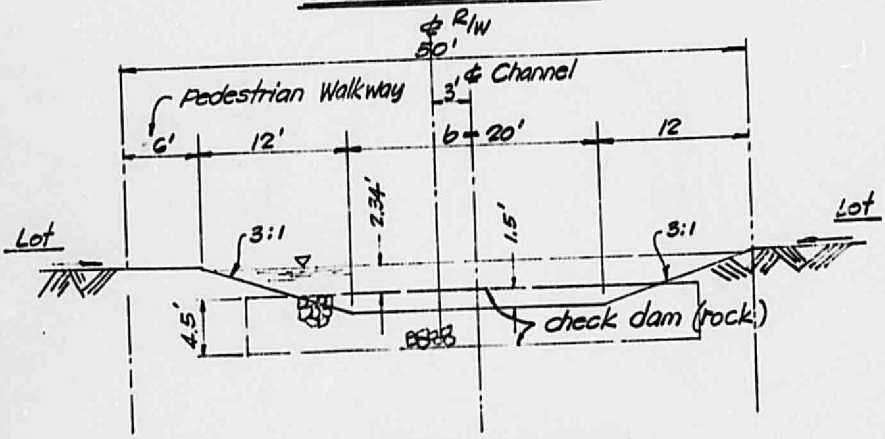
$A = 52.3\ \phi$

$$V = \frac{690}{52.3}$$

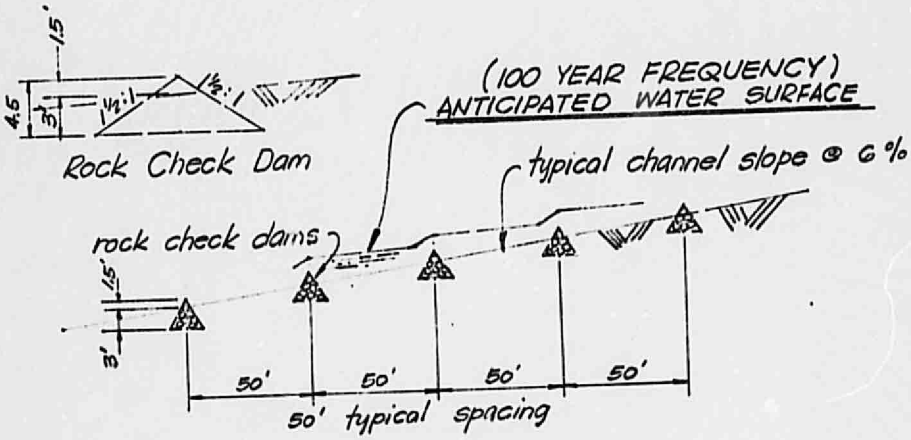
$V = \underline{13.2\ ft/sec}$

8-4-72
J.T.B
GEBB Engr., Inc.

CIUDAD VISTA



TYPICAL SECTION



TYPICAL PROFILE

INFILTRATION CHANNEL

Sheet 7

DRAINAGE REPORT
for
CIUDAD VISTA SUBDIVISION

City of Albuquerque
Bernalillo County, New Mexico

Prepared For: Chateau Homes
605 1/2 San Mateo Blvd. N.E.
Albuquerque, New Mexico

Prepared By: GERR Engineering, Inc.
4100 Silver Ave. S.E.
Albuquerque, New Mexico

February 21, 1973

Brake Ground
12/20/73
to be updated 4 times

Amador Gonzalez Jr.
Amador Gonzalez, Jr.
N.C.E. No. 5157

REGISTERED ENGINEER
5157
NEW MEXICO
AMADOR GONZALEZ, JR.

27 Feb 1973

Approved
Subject to Sizing Culverts and drain Section on East also note stating minimum Ponding of 600 ft³ per lot.

J. B. Blust

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General	1
Development	1
Off-site Drainage Areas	3
Hydrologic Calculations: Off-site Drainage Areas	4
Preliminary Hydraulic Calculations Infiltration Channel	5
Plate 1 Drainage Plan	6

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GENERAL

Ciudad Vista is a proposed subdivision situated in the Northeast quarter of the Northwest quarter, Section 23, Township 10 North, Range 4 East, N.M.P.M., and a portion of the Southeast quarter of the Southwest quarter, Section 14, Township 10 North, Range 4 East, N.M.P.M. in the City of Albuquerque.

The tract is located approximately one-fourth mile east of Tramway Blvd. N.E. and is adjacent to Lomas Blvd. N.E. on the north. The City View Estates subdivision borders the tract on the south, with the proposed Granada Hills development on the west.

The subdivision lies in the foothills of the Sandia Mountains, and is within drainage area 4a as shown on Plate 2 of "Flood Plain Information", Part II, prepared by the Corps of Engineers.

This drainage report is submitted in compliance with the Albuquerque Metropolitan Arroyo Flood Control Authority Resolution No. 2, 1972.

A personal on-site inspection was made by the engineer and no land grading, filling, or excavation has occurred since preparation of the contour map.

DEVELOPMENT

The subdivision lies downstream of the proposed flood control and retention dam outlined in the Sandia Foothills Drainage Study prepared by Hannaman Wortman Huston & Associates, Inc. At such time as this facility is constructed, the major amount of runoff presently entering the subdivision along the east boundary will be intercepted and diverted to the proposed channel adjacent to the northerly boundary of the subdivision. However, in the interim the off-site drainage from the east is proposed to be conveyed through the subdivision by a temporary drainage channel within a temporary drainage easement. This channel will be left in its natural state where possible. Where limitations due to the configuration of the

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drainage easement do not allow use of the natural channel, the channel is proposed to be constructed [illegible] to the [illegible] basin.

When the aforementioned flood control facilities are constructed, it is proposed that the temporary drainage easement be quitclaimed, with the areas contained within the easement reverting to usable lots. However, it will be necessary to provide for minor runoff quantities developed between the retention dam and the east boundary of the subdivision. A permanent easement will be provided between lots 5 and 6, block 2, with an improved channel section adequate to carry the flow and convey it to the street.

It is proposed that, where practical, the lots be graded to provide ponding areas on the lots with a retention volume capacity sufficient to insure that the net on-site runoff quantity after development does not exceed the on-site runoff quantity under the present undeveloped condition. The proposed typical lot drainage plan is indicated on the attached Plate 1.

Final engineering design will provide suitable measures to protect Lots 15, 16 and the 20 foot waterline easement in Block 3 from having storm water overtopping the street section.

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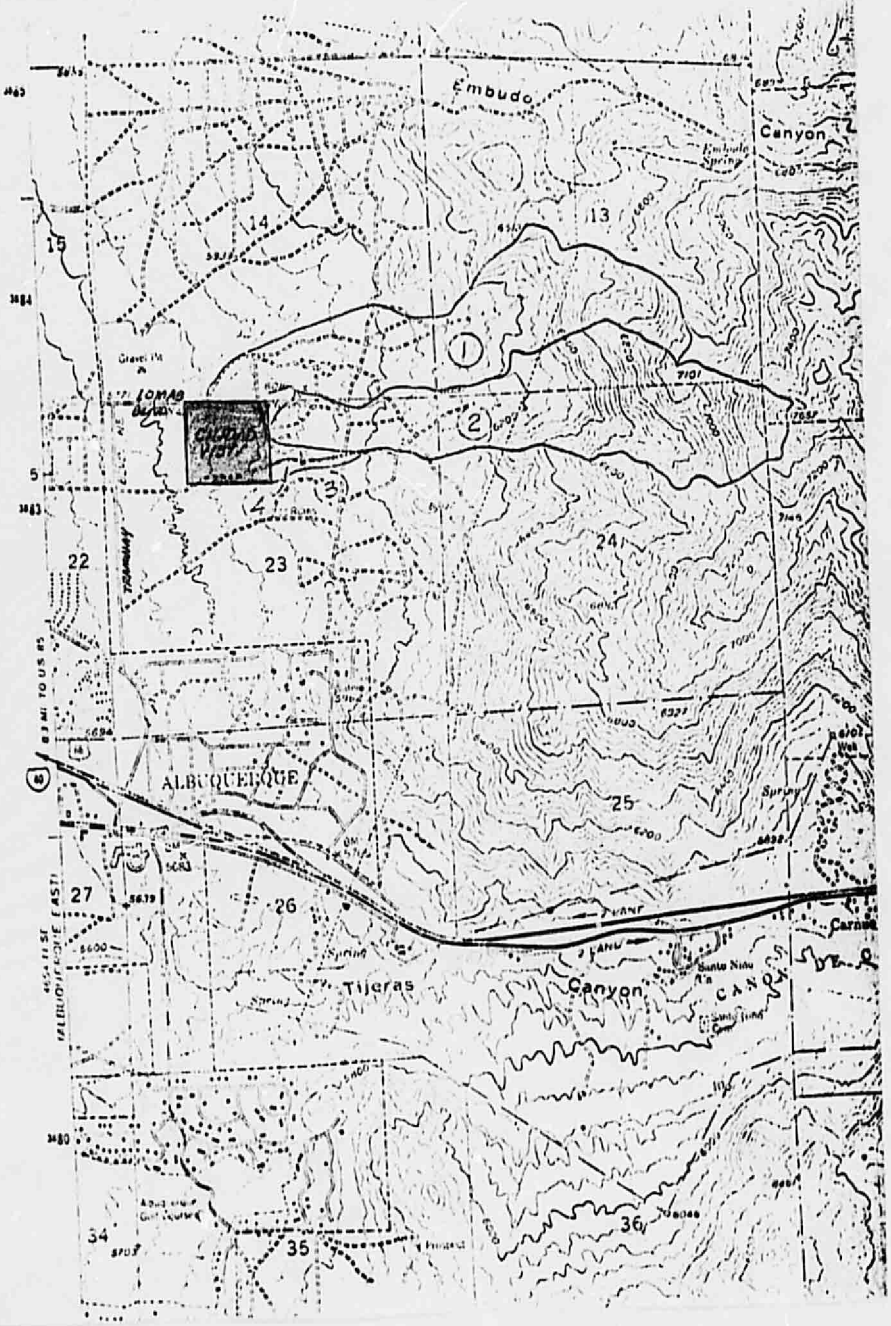

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HYDROLOGIC CALCULATIONS

OFF-SITE DRAINAGE AREAS

$Q = CIA$ (Rational Method)

$t_c = \left(\frac{11.2L^3}{H}\right)^{0.385}$ $I = \frac{189}{t_c + 25}$ (100 Year Frequency)

$C = 0.6$

Drainage areas are shown on a copy of the U.S.G.S. Tijeras Quandrangle included herein.

Area 1

$A = 210$ Acres $L = 9000$ ft. $= 1.7$ mi.

$H = 7101 - 5845 = 1256$ ft.

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GEBB Engr., Inc.

PRELIMINARY HYDRAULIC CALCS.
INFILTRATION CHANNEL

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$n = 0.035$
$S_f = 0.03$; $S_f^{1/2} = 0.1732$
$b = 20'$; $b^{8/3} = 2950$
$z = 3:1$

See Typical Section, Slit. 2

For channel slope of 6%, rock check dam spacing of 50' and height of 1.5':

$$S_f = \frac{0.06(50) - 1.5}{50}$$

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$$K' = \frac{Q\,n}{b^{8/3}\,S^{1/2}}$$

$$= \frac{690\,(0.035)}{2950\,(0.1732)}$$

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Reference:
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$$A = 52.3\ \phi$$

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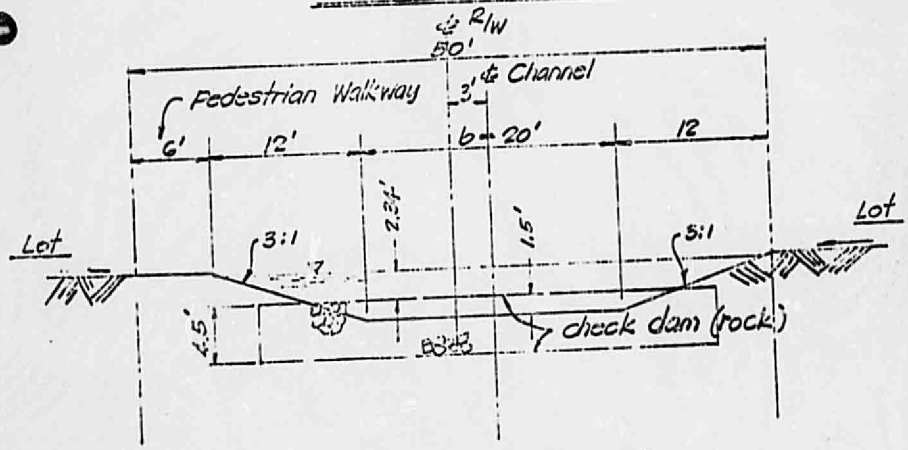
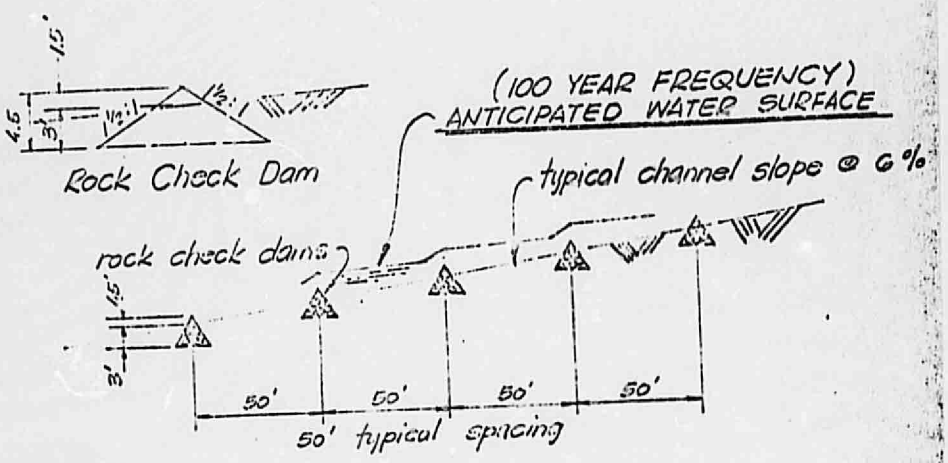
CIUDAD VISTA



TYPICAL SECTION



TYPICAL PROFILE

INFILTRATION CHANNEL

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