PUBLIC WORKS/HYDROLOGY

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F22/D20

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

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

December 4, 1985

Robert Foglesong, P.E.
Andrews, Asbury, & Robert, Inc.
149 Jackson, NE
Albuquerque, New Mexico 87108

RE: DRAINAGE PLAN FOR VISTA NUEVA, PHASE II
SUBMITTED NOVEMBER 1, 1985 FOR BUILDING PERMIT APPROVAL
(F-22/D20)

Dear Robert:

The referenced submittal is approved for Building Permit provided the following items are placed on the grading plan to be included with the Building Permit construction set of drawings:

1. an erosion control plan note, as previously provided on Phase I grading plan, or in the Drainage Report.

2. label proposed drive pads to be built according to City Standard Drawing, P-11.

A permit to construct improvements within City rights-of-way (S.O. #19) is required for proposed sidewalk culvert, and must be included with Building Permit set of construction drawings.

If you have any questions, call me at 766-7644.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Design Hydrology

cc: Vista Nueva Group
2730 San Pedro Drive, NE

RAG/bsj



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

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

November 1, 1985

RECEIVED
NOV 1 1985
HYDROLOGY SECTION

Mr. Billy Goolsby
Design Hydrology Section
City of Albuquerque
123 Central N.W.
Albuquerque, NM 87102

SUBJECT: VISTA NUEVA (F22-D20)

Dear Mr. Goolsby:

Enclosed are one (1) copy each of the grading plan and drainage plan for Phase II of the subject property which have been revised per your review comments.

Also enclosed are the revised construction drawings for the site work of Phase II of Vista Nueva.

Please call if you have any questions.

Very truly yours,

Robert S. Foglesong

ROBERT S. FOGLESONG, P.E.

RSF:js:42

Enclosures

cc: Bob Wolfe w/o enclosures

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: TRACT A-1, VISTA NUEVA PHASE II ZONE ATLAS/DRAINAGE FILE #: F22-D20

LEGAL DESCRIPTION: TRACT A-1, VISTA NUEVA (filed April 9, 1985)

CITY ADDRESS: 4800 JUAN TABO BOULEVARD NE

ENGINEERING FIRM: ANDREWS, ASBURY & ROBERT, INC. CONTACT: ROBERT FOGLESONG

ADDRESS: 149 JACKSON NE PHONE: 265-6631

OWNER: VISTA NUEVA GROUP CONTACT: ROBERT WOLFE

ADDRESS: 2730 SAN PEDRO NE PHONE: 881-1436

ARCHITECT: BARKER-BOLS CONTACT: MARK HARBERTS

ADDRESS: 209 GOLD SW PHONE: 842-6789

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

ADDRESS: 149 JACKSON NE PHONE: 265-6631

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED NOV 1 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING

____ YES

X NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 85-245 (4/9/85)?

EPC NO.

PROJECT NO.

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN PHASE II

____ CONCEPTUAL GRADING & DRAIN. PLAN

X GRADING PLAN PHASE II

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

OTHER _____ (SPECIFY)

DATE SUBMITTED:

BY:

Rev. 11/84



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Responded by phone 10/17/85

1) Need to resolve and show detail of how the roof drains on the west side will be handled. Cannot allow to pond next to building or to run across R/W.

2) Need to show a depression of landscaping along R/W to contain nuisance flows on-site.

BG

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

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

September 25, 1985

RECEIVED
SEP 25 1985
HYDROLOGY SECTION

Mr. Fred Aguirre
Design Hydrology Section
City of Albuquerque
123 Central NW
Albuquerque, NM 87102

SUBJECT: VISTA NUEVA (F22-D20)

Dear Mr. Aguirre:

Enclosed is one (1) copy each of the grading plan and the drainage plan for Phase II (Tract A-1) of the Vista Nueva project, for your review and approval.

Also enclosed for your information, is a copy of the filed plat for Tract A-1 of the Vista Nueva project, together with miscellaneous construction drawings relative to the grading plan.

Please call if you have any questions.

Very truly yours,

ROBERT S. FOGLESONG, P.E. & L.S.

mt-421A

Enclosures

cc: Mark Harberts/Barker-Bols w/o enclosures

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DRAINAGE INFORMATION SHE

PROJECT TITLE: TRACT A-1 VISTA NUEVA PHASE II ZONE ATLAS/DRNG. FILE #: F22-D20

LEGAL DESCRIPTION: TRACT A-1, VISTA NUEVA (filed April 9, 1985)

CITY ADDRESS: 4800 JUAN TABO BOULEVARD NE

ENGINEERING FIRM: ANDREWS, ASBURY & ROBERT, INC CONTACT: ROBERT FOGLESONG

ADDRESS: 149 JACKSON NE PHONE: 265-6631

OWNER: VISTA NUEVA GROUP CONTACT: ROBERT WOLFE

ADDRESS 2730 SAN PEDRO NE PHONE: 881-1436

ARCHITECT: BARKER-BOLS CONTACT: MARK HARBERTS

ADDRESS: 209 GOLD SW PHONE: 842-6789

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

ADDRESS: 149 JACKSON NE PHONE: 265-6631

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED SEP 25 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

____ YES

X NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 85-245 4/9/85 delegated

EPC NO. Z-83-97 8/18/83

PROJECT NO.

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN PHASE II

____ CONCEPTUAL GRADING & DRAIN. PLAN

X GRADING PLAN PHASE II

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

____ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

OTHER _____ (SPECIFY)

DATE SUBMITTED: 9/25/85

BY: Robert B. Fogleson

Rev. 11/84



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1. tony
2. Roger -- see me

Albin Zvolanek
Atty for Andrade
Phoned REL
2/14/85.

I suggested he hire PE to work out a solution. He refused and we terminated conversation

January 31, 1985

Mr. Fred Andrade
Andrade Homes
4800 Manitoba Court, NE
Albuquerque, NM 87111

RE: Encroachment on AMAFCA Easement
John Robert Dam

Dear Mr. Andrade:

Since your visit to our office on January 3, we regret that you have not yet offered a solution to your encroachment on the John Robert Dam structure.

We are forwarding herewith a survey showing the AMAFCA easement in relation to existing grades and structure locations.

We hereby formerly request that you restore the damaged dam structure within the easement within the next ten (10) days. Testing for proper soil compaction and finish grading must be coordinated with Mr. Larry Blair of this office.

Sincerely,

Roger Flegel
Real Estate Officer

ic
Encl.

Get Fred's position on signing plats
REL says Atty will try to embarrass City and AMAFCA because of plat signing off without calling attention to easement!

25 X

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

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

December 29, 1983

RECEIVED
DEC 29 1983
ENGINEERING

Mr. Billy J. Goolsby, P.E.
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

SUBJECT: VISTA NUEVA ~~F22-D20~~ F22-D20

Dear Mr. Goolsby:

Enclosed is a copy of the revised grading plan for the subject project, which has been amended to insure construction of drivepads, within the limits of this project, be in accordance with City of Albuquerque Standard Drawing No. P-11-2.

I apologize for any inconvenience I may have caused in not understanding your request previously.

Happy New Year,

Robert S. Foglesong

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

RSF/lmr

Enclosure

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

December 6, 1983

Mr. Robert Foglesong
Andrews, Asbury & Robert, Inc.
149 Jackson, NE
Albuquerque, NM 87108

REF: REVISED GRADING AND DRAINAGE REPORT FOR VISTA NUEVA (F22-D20)
RECEIVED NOVEMBER 23, 1983

Dear Mr. Foglesong:

The above referenced plan, dated November 1983, is approved.

Prior to issuance of a building permit, a copy of this approved plan, ammended to reflect a one foot differential between the property line and the flowline of the drivepads on Paseo Del Oso, will need to be incorporated in the construction plans. This ammendment was requested in my letter dated November 14, 1983.

Also, as I discussed with you on December 6, 1983 by phone, an erosion control plan is required in the construction set.

If I can be of further assistance, please contact me at 766-7644.

Yours truly,

Billy J. Goolsby

Billy J. Goolsby, PE
Civil Engineer/Hydrology

BJG:mrk

MUNICIPAL DEVELOPMENT DEPARTMENT
C. Dwayne Sheppard, P.E., City Engineer ENGINEERING DIVISION Telephone (505) 766-7467
AN EQUAL OPPORTUNITY EMPLOYER

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

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

(F22-D20)

November 23, 1983

RECEIVED
NOV 23 1983
ENGINEERING

Mr. Billy J. Goolsby, P.E.
Civil Engineer/Hydrology
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

SUBJECT: VISTA NUEVA

Dear Mr. Goolsby:

Enclosed are two (2) copies of the drainage report for the subject project. The report has been revised to incorporate your comments of November 14, 1983, as follows:

Comment 1: Reply - Will comply.

Comment 2: Reply - The developed runoff from the property has been recomputed to include the rear yards.

Comment 3: Reply - It is proposed to grade earth windrows parallel to the finished contours at intervals of approximately ten (10) feet on center over both Tract A and B after the finish grade is achieved to minimize erosion.

Comment 4: Reply - One foot contours have been added to the "Developed Conditions" map and the grading plan.

Comment 5: Reply - Will comply.

Comment 6: Reply - Will comply.

We trust that this submittal will now provide you with the information required for your approval of the drainage report. Should you have any questions or comments, please call.

Very truly yours,

Robert S. Foglesong

ROBERT S. FOGLESONG, P.E. & L.S.

mt-340

Attachments

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

November 14, 1983

Mr. John Robert
Andrews, Asbury & Robert, Inc.
149 Jackson NE
Albuquerque, NM 87107

REF: DRAINAGE REPORT FOR VISTA NUEVA (F22-D20)

Dear Mr. Robert:

I have reviewed the above referenced plan and forward the following comments:

1. The plan sheets submitted have not been signed or dated. This is a requirement per the DPM and also for our records.

2. In the DPM, Chapter 22, Hydrology, Section C. Runoff Volumes, Item 3, Page 7, it is stated that no credit will be given for individual lot ponding in computing the runoff. The computations in the report deletes portions of the area to be developed and this is not allowed; consequently, the runoff will increase somewhat. It is not objectionable to provide the ponding; however, credit toward the quantity of runoff cannot be given.

3. Since Tract A is to be rough graded, what plan is proposed to prevent erosion and sediment transport due to the exposed soil until construction takes place?

4. For clarity, additional spot elevations would be helpful, especially in association with the proposed drivepads on Paseo Del Oso NE.

5. Also, additional flowpath arrows and/or spot elevations around the structures and in the backyards to better visualize where the runoff goes would be helpful for review.

6. Weepholes should be provided in the retaining wall and concrete slope pavement as per City standards K-11- 2.

MUNICIPAL DEVELOPMENT DEPARTMENT
C. Dwayne Sheppard, P.E., City Engineer ENGINEERING DIVISION Telephone (505) 766-7467
AN EQUAL OPPORTUNITY EMPLOYER

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Should you have any questions or comments concerning this review, please contact me at 766-7644.

Yours truly,

Billy J. Goolsby

Billy J. Goolsby, PE
Civil Engineer/Hydrology

FJG:mrk

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INFORMATION SHEET

PROJECT TITLE VISTA NUEVA TYPE OF SUBMITTAL DRAINAGE REPORT

ZONE ATLAS PAGE NO. F-22-020 CITY ADDRESS N/A

LEGAL DESCRIPTION Tract A, New Holiday Park Parts 7 & 8

ENGINEERING FIRM Andrews, Asbury & Robert, Inc. CONTACT John B. Robert, PE & LS

ADDRESS 149 Jackson NE, Albuquerque PHONE 265-6631

OWNER Tom Muchmore, Robert C. Wolfe & Jack Daley CONTACT Robert C. Wolfe

ADDRESS 2730 San Pedro NE, Albuquerque PHONE 881-1436

ARCHITECT N/A CONTACT

ADDRESS PHONE

SURVEYOR Andrews, Asbury & Robert, Inc. CONTACT Gayle Jewell

ADDRESS 149 Jackson NE, Albuquerque PHONE 265-6631

CONTRACTOR N/A CONTACT

ADDRESS PHONE

DATE SUBMITTED October 24, 1983

BY Andrews, Asbury & Robert, Inc.

RECEIVED
OCT 25 1983
ENGINEERING

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# APPLICATION FOR SUBDIVISION AND/OR VACATION

**INSTRUCTIONS**

PRINT OR TYPE IN BLACK INK ONLY. Use additional sheets if necessary. The completed application is to be submitted to the Planning Division by the applicant or agent. Each application must be accompanied by the filing fee (checks are preferred and made payable to the City of Albuquerque). All attachments must be submitted with the application and, after folding, shall not exceed 8 1/2 x 14 inches. Additional information may be obtained from the Planning Division (505) 766-7422.

**APPLICATION FOR:**

**SUBDIVISION**

____ Sketch Plat
✓ Preliminary Plat
____ Final Plat

**VACATION**

____ Public Right-of-Way
____ Private Way
____ Easement

**1. APPLICANT INFORMATION**

a. Applicant: Robert Wolfe, Thomas Mashmore, Jack Bailey Telephone: 881-1436
Mailing Address: 2730 San Pedro NE c/o Wolfe & Co.
Albuquerque, N M Zip Code: 87110
Applicant's Proprietary Interest in the Property: Owner's

b. Agent (if any): Andrews, Asbury & Robert Inc Telephone: 265-4642
Mailing Address: 149 Jackson NE
Albuquerque, NM Zip Code: 87108

c. Signature of applicant/agent: John B Robert Date: Oct 26, 1983

**2. LOCATION OF REQUEST**

a. Street Address (if any): Manitoba NE

b. Legal Description of the Property:
(1) Lot(s)/Tract(s): Tract "B" Vista Nueva
(2) Block: —
(3) Subdivision-Addition Name/MRGCD Map: Vista Nueva

c. Location of Property by Streets: Manitoba between Paseo del Oso and Juan Tabo NE

d. Uniform Property Code: ____

**3. PROJECT DETAILS**

a. Present Zoning: RT Proposed: RT
b. Number of Lots Existing: 0 Proposed: 24
c. Number of Dwelling Units Existing: 0 Proposed: 24
d. Total Land Area Covered by Request: Acres: 2.4018 Sq. Feet: ____

**4. (VACATION ONLY) REASON FOR REQUEST** Use Separate Sheet: Why should the vacation be granted?

**5. ATTACHMENTS AS REQUIRED IN SUBDIVISION ORDINANCE** See appropriate checklist(s)

PLANNING DIVISION INTERNAL USE ONLY

Cross-references: ____ No. Signs Issued: ____
Application and Fee Received by: [signature] Date: 10/26/83
Fee Paid: Dollars $ ____ Method of Payment: ____ CREDIT: ____

TREASURER VALIDATION

MAP NO. F-22-Z
HEARING DATE: Nov 9 1983

Distribution: Secretary-Orig./Case File
Applicant/Agent
Treasurer

CASE NUMBER: DRB-83-646
S-SCS-SC-V
S-83-415

Rev. 3/83

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# DRAINAGE REPORT

for

VISTA NUEVA

RECEIVED
NOV 23 1983
ENGINEERING

Revised
November, 1983

REGISTERED PROFESSIONAL ENGINEER
STATE OF
NEW MEXICO
JOHN A. ANDREWS

Prepared by
Andrews, Asbury & Robert, Inc.
Consulting Engineers
149 Jackson NE
Albuquerque, New Mexico 87108

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DRAINAGE REPORT
for
VISTA NUEVA

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| | Map No. 2 - Soils Map | |
| | Map No. 3 - Offsite Drainage Taken From Albuquerque Master Drainage Study | |
| V | Drainage Analysis | 6 |
| | Computations | Sheet 1 thru 9 |
| | Map No. 4 - Existing Conditions | |
| | Map No. 5 - Developed Conditions | |
| | Grading Plan | Sheet 1 of 1 |
| | Proposed Plat | Sheet 1 of 2<br>Sheet 2 of 2 |

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# I. GENERAL

It is proposed to improve a 3.68 acre parcel of land designated as "Vista Nueva." The parcel is located within the northeast quadrant of Albuquerque, New Mexico, and being situate within the Southwest Quarter (SW 1/4) of Section 34, Township 11 North, Range 4 East, N.M.P.M. (see enclosed Location Map, Map No. 1, Zone Atlas Map F-22).

The current zoning for this parcel is O-1 and R-T. It is proposed to develop the westerly 130 feet, designated as Tract A (see enclosed Proposed Plat Sheet 2 of 2 ) as a neighborhood office complex with related facilities (i.e. parking). The easterly 324 feet, designated as Tract B will be developed as single family townhouse units.

It is the intent of this report to provide an acceptable method of developing the subject property without appreciably affecting the present storm drainage patterns.

Guidelines for the analysis are based on the current City of Albuquerque Drainage Ordinance.



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## II. EXISTING CONDITIONS

The subject property is presently undeveloped with an extremely steep slope from east to west of approximately seven percent (7%). The parcel is bounded on the east by Paseo del Oso NE, on the south by Manitoba Street NE, and on the west by Juan Tabo Boulevard NE; all of which are improved roadways with pavement and curb and gutter. The parcel is bounded on the north by the Juan Tabo Detention Dam, an existing drainage facility.

Delineation of the site on Soil Conservation Service soils maps indicates that the soil groups in the area are gravelly fine sandy loam and gravelly sandy loam, and are of the Embudo-Tijeras (EtC) complex which belongs to hydrologic soil group B. (See enclosed Soils Map, Map No. 2.)

In accordance with the Albuquerque Master Drainage Study, no offsite drainage areas impact the subject property.

Presently the subject property drains to the northwest onto Juan Tabo Boulevard, (see enclosed Map No. 4, Existing Conditions) then north in Juan Tabo Boulevard until it is



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intercepted by an existing storm drain which discharges into the outlet structure for the Juan Tabo Detention Dam.



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Revised November, 1983

## III. DEVELOPED CONDITIONS

The proposed development consists of 24 townhomes together with a small neighborhood office complex located adjacent to Juan Tabo Boulevard NE. (See enclosed Map No. 5, Developed Conditions.) At this time, the location and size of the office buildings on Tract A have not been determined; therefore, during the initial construction project, this area will be graded only. However, the drainage analysis assumes that this area will be 80 percent impervious when developed.

The remainder of the parcel will be developed with duplex type townhomes. It is proposed to provide rear yard retentention because of grading restrictions; however, this area will be considered to contribute to the total drainage area. The roofs of the townhomes will be designed to discharge storm water to the front.

The drainage analysis, which follows, indicates that Manitoba Street NE and Juan Tabo Boulevard NE both have sufficient downstream capacity to provide free discharge of storm water runoff generated from the proposed development.



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Revised November, 1983

## IV. EROSION CONTROL

During construction it will be the contractors responsibility to minimize erosion. After acceptance of the new construction by the City of Albuquerque, the owner will be held responsible for the erosion control until the project is completely developed including landscaping.

In order to minimize erosion after acceptance by the City of Albuquerque, and before development occurs, it is proposed to grade earth windrows parallel to the finished contours at intervals of approximately ten (10) feet on center over both Tract A and B after the finish grade is achieved.



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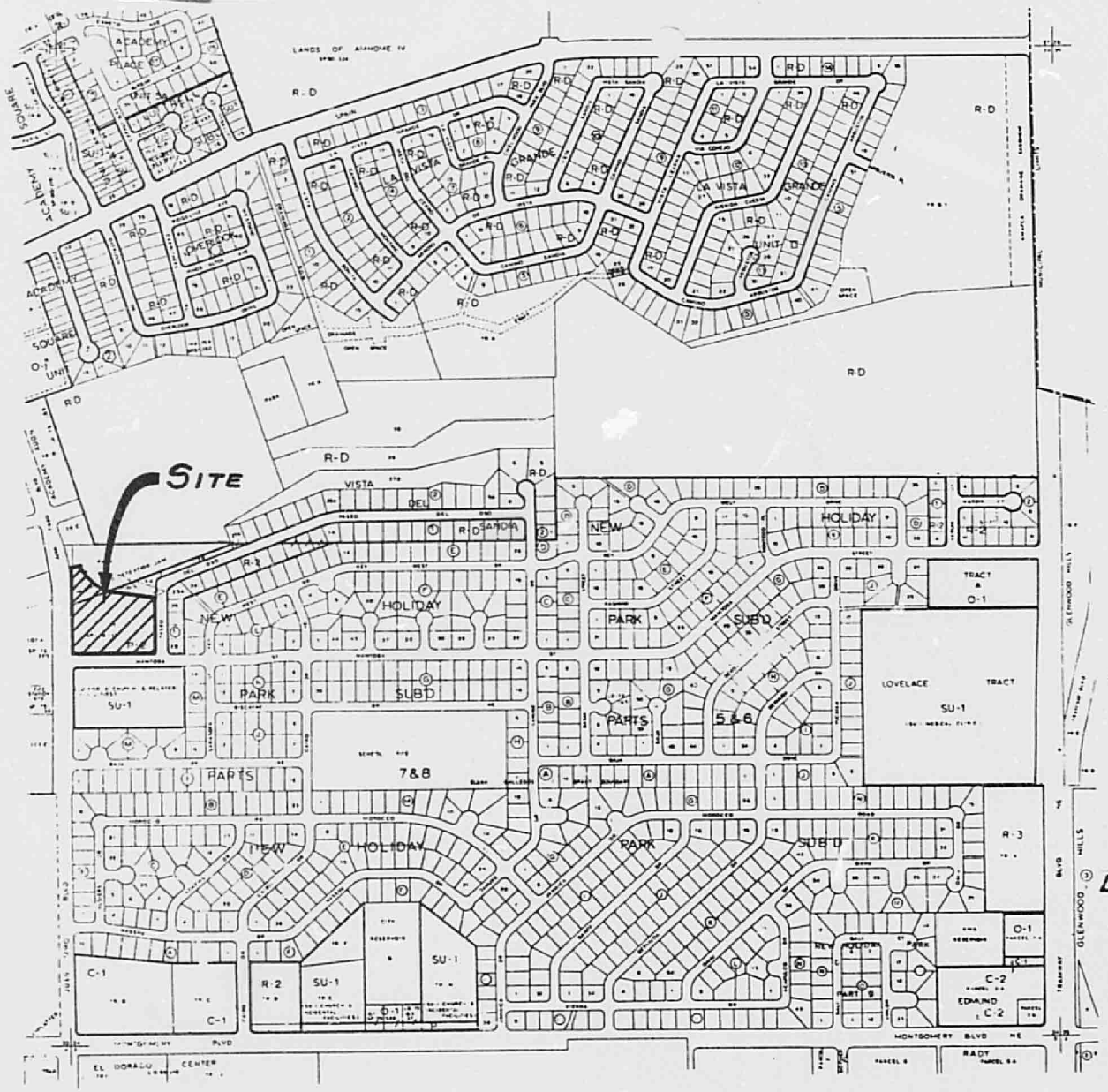


# VISTA NUEVA

## Drainage Analysis

JUNE 1982

## Location Map

F-22-Z

Map No. 1

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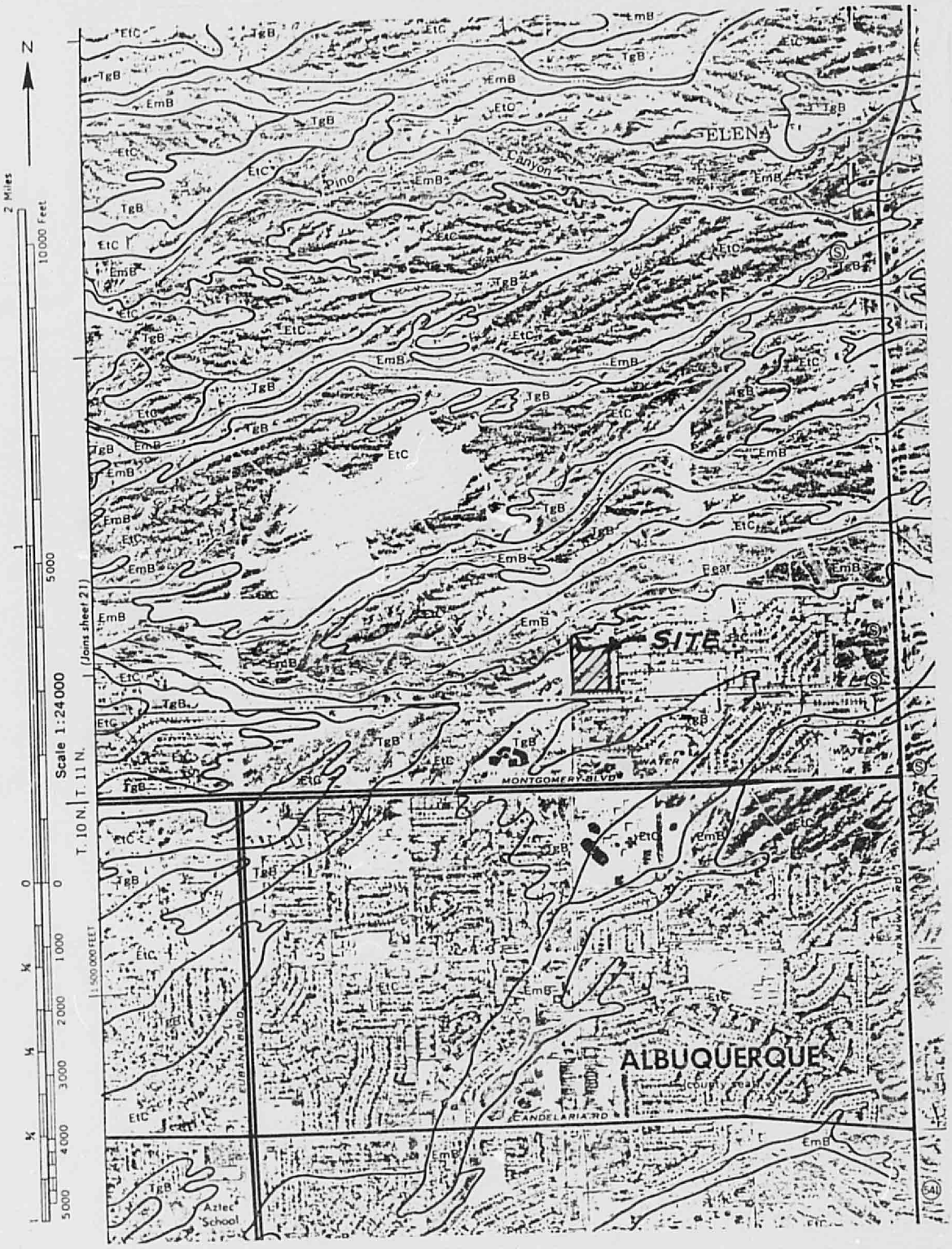
THIS MICROIMAGE IS THE BEST POSSIBLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT




VISTA NUEVA

Drainage Analysis - Soils Map

Map No. 2

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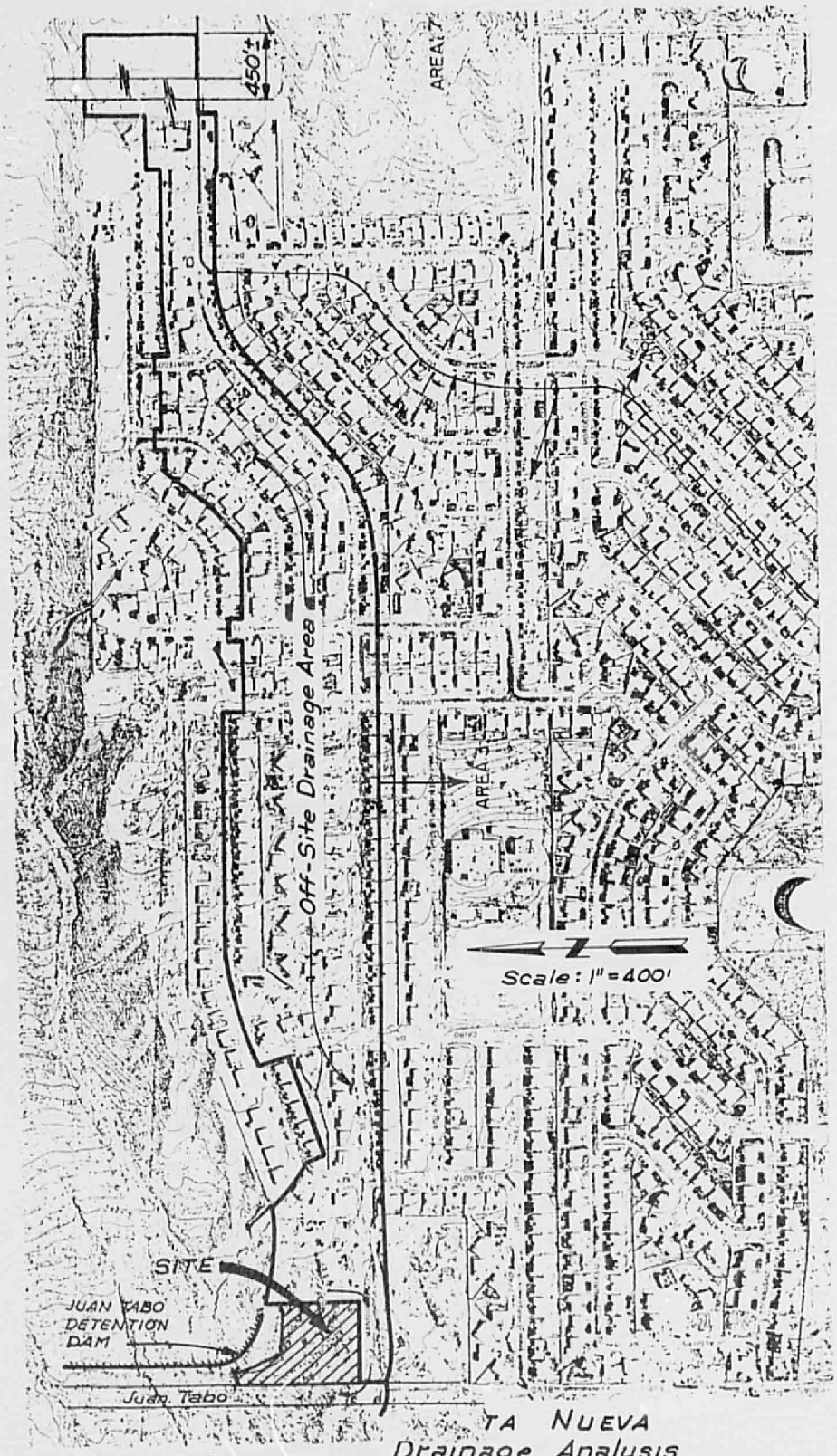
THIS PAGE IS BEST QUALITY PRACTICABLE
REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT




TA NUEVA
Drainage Analysis
Taken From Albuquerque Master Drainage Study
MAP № 3

25×10 32×10

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## V. DRAINAGE ANALYSIS

Following is the Drainage Analysis (computations) for the subject project under both the existing and developed conditions



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



# DRAINAGE ANALYSIS

## CRITERIA

City of Albuquerque Drainage Ordiance
Development Process Manual, Vol. 2, Sect. 22

## DESIGN PARAMETERS

Peak runoff - Rational Formula, $Q = cIA$
Runoff coefficients from Plate 22.2 C-1, D.P.M.
SCS soil group 'B'

$$I_{100} = (2.55)\,6.84 \times t_c^{-.51}$$

$$I_{10} = 0.657\, I_{100}$$

$$t_c = 0.0078 \frac{L^{.77}}{S^{.385}}$$

25×10

0000 0000 2228

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



## EXISTING CONDITIONS - ONSITE

REFER TO MAP Nº 4, EXISTING CONDITIONS

TOTAL AREA = 3.68 AC.

AVERAGE SLOPE = 6.7%

LENGTH = 460 FT

$$T_c = .0078 \times \frac{460^{.77}}{0.067^{.385}} = 2.48 \text{ mins}$$

$$V_{AVG} = \frac{460}{2.48 \times 60} = 3.09 \text{ ft/sec ok.}$$

$T_c < 10$ USE 10 mins

$$I_{100} = 2.55 \times 6.84 \times 10^{-.51} = 5.39 \text{ in/hr.}$$

$$I_{10} = .657 \times 5.39 = 3.54 \text{ in/hr.}$$

$C = 0.34$

$$Q_{100} = 0.34 \times 5.39 \times 3.68 = 6.74 \text{ cfs}$$

$$Q_{10} = .34 \times 3.54 \times 3.68 = 4.43 \text{ cfs}$$

25×10

0000 0000 2224

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



## EXISTING CONDITIONS - OFFSITE

PRESENTLY MANITOBA STREET NE, which bounds the subject property on the south, carries storm water runoff generated from the existing development to the EAST. See Map No 3 for location of drainage boundary.

AREA = 49.1 ac.

$\Delta H$ = 206 ft

L = 5500 ft

$$T_c = .0078 \frac{5500^{.77}}{0.0375^{.385}} = 20.95 \text{ mins}$$

$$V = \frac{5500}{20.95 \times 60} = 4.37 \text{ ft/sec}$$

$3 < 4.37 < 6$ ok

$I_{100} = 2.55 \times 6.84 \times 20.95^{-.51} = 3.7$ in/hr.

$I_{10} = 0.657 \times 3.7 = 2.43$ in/hr.

ASSUME DRAINAGE AREA IS 30% impervious

$\therefore C = 0.52$

$Q_{100} = .52 \times 3.7 \times 49.1 = 94.5$ cfs

$Q_{10} = .52 \times 2.43 \times 49.1 = 62.0$ cfs.

25 x 10

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EXISTING CONDITIONS - OFFSITE (CONT.)

DETERMINE DEPTH OF FLOW IN MANITOBA STREET

SLOPE = 3.75%

WIDTH = 40' ℄

FROM PLATE 22.3 D-2, DPM.

$Q_{100} = 94.5$ CFS $\Rightarrow \frac{Q_{100}}{2} = 47.25$ CFS

$\therefore d_{100} = 0.59$ @ ℄

$V_{100} = 7.2$ FT/SEC

$Q_{10} = 62.0$ CFS $\Rightarrow \frac{Q_{10}}{2} = 31.0$ CFS

$\therefore d_{10} = .52$ ft @ ℄

$V_{10} = 6.3$ FT/SEC

AN EXISTING "CATTLE GUARD" TYPE CATCH BASIN INTERCEPTS THE STORM RUNOFF ON MANITOBA, EAST of JUAN TABO.

25×10

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EXISTING CONDITIONS - OFFSITE (CONT.)

DETERMINE depth of flow in JUAN TABO, NORTH OF MANITOBA ST.

ASSUME FLOW is all in EAST HALF OF JUAN TABO BLVD.

∴ SLOPE = 3.75%
STREET WIDTH = 66 FT

∴ from PLATE 22.3 D.4

$Q_{100}$ = 56.5 cfs
$d_{100}$ = .65 FT
$V_{100}$ = 7.3 FT/SEC

$Q_{10}$ = 30 CFS
$d_{10}$ = .52 FT
$V_{10}$ = 6.3 FT/SEC.

25×10

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EXISTING CONDITION - OFFSITE (CONT.)

THE RESIDUE RUNOFF THAT IS IN MANITOBA FLOWS NORTH IN JUAN TABO AND IS INTERCEPTED BY A STORM DRAIN LOCATED IN JUAN TABO JUST SOUTH OF SPAIN RD.

ASSUME THAT THE FLOW INTERCEPTED BY THE "CATTLE GUARD" INLET IS EQUIVALENT TO TWO DOUBLE 'B' INLETS

∴ FROM PLATE 22.3 D-7

for $d_{100}$ = .59 ft

$Q_{100}$ in grate = 19 cfs/inlet

$Q_{100}$ in JUAN TABO = 94.5 - 38

= 56.5 cfs

for $d_{10}$ = .52 ft

$Q_{10}$ in grate = 16 cfs/inlet

$Q_{10}$ in JUAN TABO = 62 - 32

= 30 cfs.

25×10

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Project VISTA NUEVA — Sheet 7 of 9
DRAINAGE ANALYSIS — Job No. 340
By [illegible] Chk'd [illegible] — Date 10/20/83

## DEVELOPED CONDITIONS - ONSITE

Refer to Map No. 5, Developed Conditions for location of Drainage Areas.

Assume $t_c$ < 10 mins ⇒ $I_{10} = (2.55)(1.24 \times 10^{-.51})$
$= 5.39$ in/hr
$I_{10} = 3.54$ in/hr.

| Drainage Area | Area (Ac.) | % Impervi./C | $Q_{10}$ (cfs) | $Q_{100}$ (cfs) |
|---|---|---|---|---|
| A1 | 0.67 | 72/.7 | 1.66 | 2.53 |
| A2 | 1.73 | 72/.7 | 4.29 | 6.53 |
| A | 2.40 | 72/.7 | 5.95 | 9.06 |
| B | 1.27 | 80/.78 | 3.51 | 5.34 |

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Project: VISTA NUEVA — Sheet 8 of 9
DRAINAGE ANALYSIS — Job No. 340
By: ~~BT~~ — Chk'd: JA — Date: 10/24/83

## DEVELOPED CONDITION - OFFSITE

In the developed state Drainage Area A will contribute to the storm runoff in MANITOBA ST.

∴ Similar to the existing offsite conditions, determine depth of flow in MANITOBA ST.

$A = 49.1 + 2.4 = 51.5$ ac

$t_c = 20.95$ mins ⇒ $I_{100} = 3.7$ in/hr

$C = .52$ $\quad I_{10} = 2.43$ in/hr.

$Q_{100} = .52 \times 3.7 \times 51.5 = 99.1$ cfs

$Q_{10} = .657\, Q_{100} = 65.1$ cfs

∴ from PLATE 22.3 D-2, DPMC.

$d_{100} = 0.60$ ft for $\frac{Q_{100}}{2} = 49.5$ cfs

$V_{100} = 7.2$ ft/sec

$d_{10} = 0.54$ ft for $\frac{Q_{10}}{2} = 32.6$ cfs

$V_{10} = 6.3$ ft/sec

25×10

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DEVELOPED CONDITIONS - OFFSITE (CONT.)

DETERMINE DEPTH OF FLOW IN JUAN TABO.

$A = 51.5 + 1.27 = 52.8$ AC.

$Q_{100} = .52 \times 3.7 \times 52.8 = 101.6$ CFS

$Q_{10} = .657\, Q_{100} = 66.7$ CFS

ASSUME THAT EXISTING "CATTLE GUARD" CATCH BASIN WILL INTERCEPT THE SAME FLOW AS BEFORE THEN.

$Q_{100} = 101.6 - 38 = 63.6$ CFS

$Q_{10} = 66.7 - 32 = 34.7$ CFS

FROM PLATE 22.3 D-4

$Q_{100} = 63.6$ CFS $\therefore d_{100} = 0.67$ FT
$V_{100} = 7.5$ FT/SEC

$Q_{10} = 34.7$ CFS $\therefore d_{10} = 0.53$ FT
$V_{10} = 6.3$ FT/SEC

$\therefore$ DOWNSTREAM FACILITIES HAVE ADEQUATE CAPACITY.

25 x 10

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PLANS/PLATS ON FILE

FILE DESC: F22/D20

# PLANS/PLATS 7

25×10

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25x10