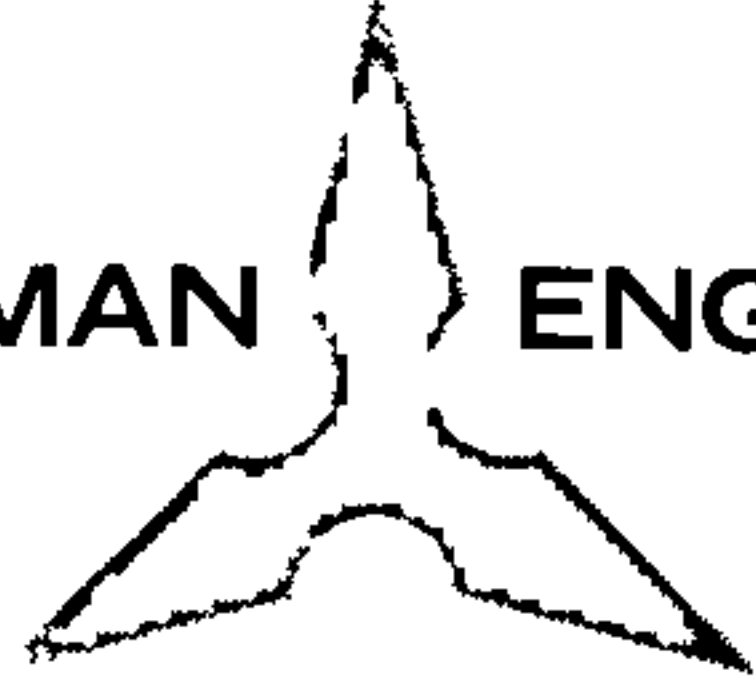




October 15, 1971

Mr. Erwin F. Hensch
Director of Public Works
City of Albuquerque
Albuquerque, New Mexico

Attention: Mr. W.T. Stevens
City Engineer

Dear Mr. Hensch:

Enclosed please find two (2) copies of the Drainage Report for Dorado Village, Unit 2, Mobile Home Park, which was prepared by us on behalf of Enerdyne Corporation.

The Drainage Report was requested by the City Engineer in order to make possible the publication of the adopted ordinance Number 129-1971.

Very truly yours,

by Wayne Maxwell

Raymond R. Gibson
Chief Engineer
Bohannan Westman Engineers

RRG:bn
cc: Enerdyne Corporation

Arnold Brown
12604 Tomlinson
298-5312

Dorado Village Addition, showing drainage in streets to the points of discharge.

Plate II shows all areas contributing to drainage in streets in Unit 2.

Plate III shows Unit 2 and contributing areas in relations to existing contours.

IX CALCULATIONS: Calculations of drainage quantities were based on the Rational Formula. The average rainfall intensity was obtained from the computed time of concentration and the Intensity-Duration-Frequency Curves for the Albuquerque Area, Chart 1- Master Plan of Drainage for City of Albuquerque, 1963. Computations and Tabulations are attached as Appendix A of this report.

X CONCLUSIONS AND RECOMMENDATIONS: Analysis of the drainage conditions affecting Unit 2 of Dorado Village Addition indicates that the provisions for drainage within the unit, as shown on Plat 1 - General Grading and Drainage Plan, are adequate to provide for safe and positive handling of storm runoff waters through the area. This analysis considered the effect of future street development within the area as being the most critical condition.

The streets surrounding Unit 2 will provide adequate drainage to handle all storm water from the contributing areas and from within the Unit itself.

LEVERTON ENGINEERING

4022-H RIO GRANDE BLVD., N.W.
ALBUQUERQUE, NEW MEXICO 87107
(505) 345-5479

October 4, 1977

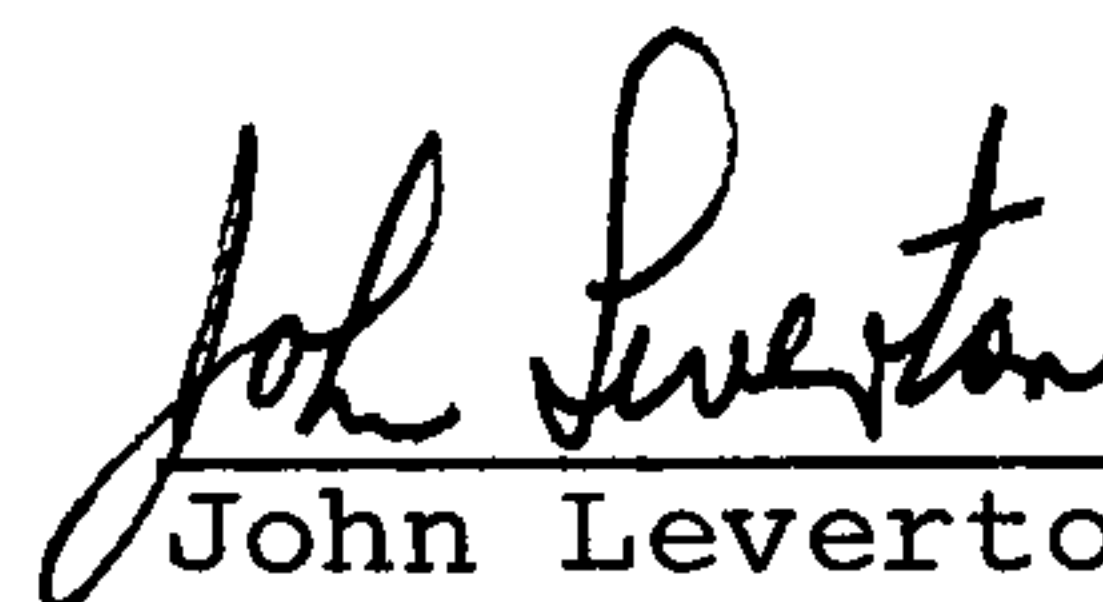
Mr. Bruno Conegliano
Ass't City Engineer--Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico

Re: Tract 4, Unit 2
Dorado Village Addition

Dear Mr. Conegliano,

Please refer to our previous report which was in letter form dated September 9, 1977 in which the increase in run-off in the subject subdivision caused by the addition of 37 units was developed.

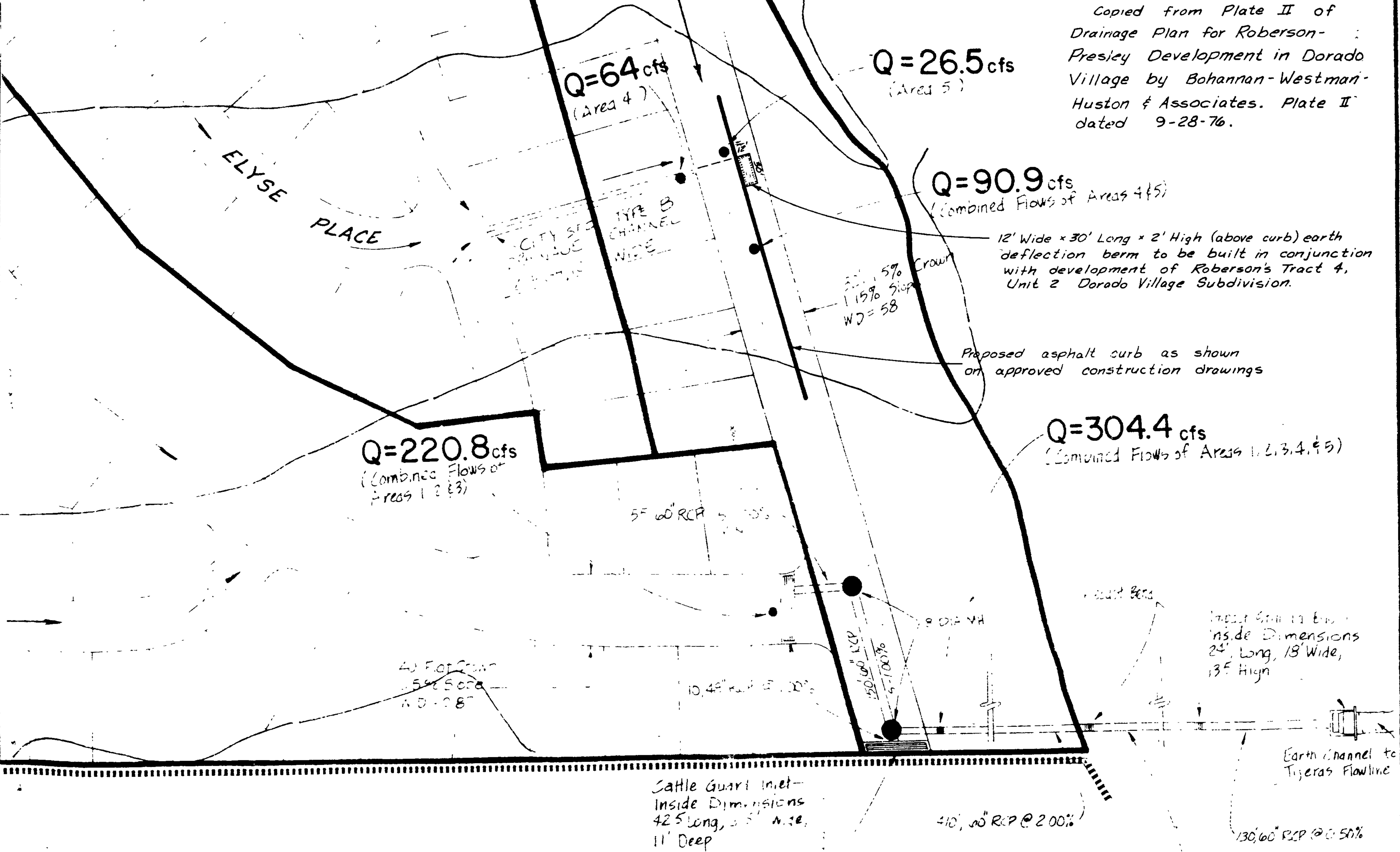
You requested that a berm be built to act as a deflector at Piru Street opposite the point at which the storm water run-off is discharged from the lotted area of the subdivision. Attached is our sketch showing the manner in which the developer, Mr. Coda Roberson, has agreed to comply with your request.



John Leverton

Attachments: 1. Report dated September 9, 1977
2. Sketch

Copied from Plate II of
Drainage Plan for Roberson-
Presley Development in Dorado
Village by Bohannon-Westman-
Huston & Associates. Plate II
dated 9-28-76.



$Q=64$ cfs
(Area 4)

$Q=26.5$ cfs
(Area 5)

$Q=90.9$ cfs
(Combined Flows of Areas 4 & 5)

12' Wide x 30' Long x 2' High (above curb) earth
deflection berm to be built in conjunction
with development of Roberson's Tract 4,
Unit 2 Dorado Village Subdivision.

Proposed asphalt curb as shown
on approved construction drawings

$Q=220.8$ cfs
(Combined Flows of
Areas 1, 2 & 3)

$Q=304.4$ cfs
(Combined Flows of Areas 1, 2, 3, 4, & 5)

5' 60" RCP @ 2.00%

40' Flat Crown
1.5% Slope
A.D. 0.8'

10' 48" RCP @ 2.00%

42" 100%
5' 100%

8' DIA. V.H.

12' DIA. BERM

Inlet Structure
Inside Dimensions
24' Long, 18' Wide,
13.5' High

Cattle Guard Inlet—
Inside Dimensions
42.5' Long, 5' Wide,
11' Deep

410' 60" RCP @ 2.00%

130' 60" RCP @ 0.50%

Earth Channel to
Tigeras Flowline

LEVERTON ENGINEERING

4022 - I RIO GRANDE BLVD., N.W.
ALBUQUERQUE, NEW MEXICO 87107
(505) 345-5479

September 9, 1977

Mr. Bruno Conegliano
Ass't. City Engineer--Hydrology Re: Tract 4, Unit 2
City of Albuquerque Dorado Village Addition
P. O. Box 1293
Albuquerque, New Mexico

Dear Mr. Conegliano,

The subject addition was changed from R-1 to RT zoning by action of the EPC on August 18, 1977.

The change of zoning was conditioned upon your acceptance of a revised drainage plan which is the substance of this letter.

The development was first planned for 106 units. The developer, Roberson Construction Co., now proposes to build 143 units under the provisions of the RT zone.

Please refer to the Bohannon-Westman-Huston & Associates drainage report on Dorado Village, Tract 4 and Four Hills Estates dated February 1976 and revised by that firm by addendum dated October 1976. These reports were approved by the City Engineer and were predicated on the 106 units mentioned above.

The increase of 37 units has the following effect with respect to drainage:

Please refer to calculation sheet 4 of the above mentioned "Addendum" for run-off from Dorado Village.

The proposed increase in number of units from 106 to 143 has the effect of increasing the coefficient of run-off from Dorado Village from 0.65 to 0.72.

The revised coefficient was calculated by assigning a "C" of 1.0 to the area added by the proposed 37 unit increase and using an area of 1850 square feet for each unit which includes roof, flat work, and driveways.

The added total area with the assigned value of C=1.0 was then combined with the calculations of the reference Addendum to arrive at a revised "Q" which is 51 cfs.

This compares with 46 cfs in the 106 lot configuration. An increase of 5 cfs.

LEVERTON ENGINEERING

The hydraulic capacities of the downstream facilities which will be required to convey this run-off are adequate.

On the basis of the foregoing we respectfully request your approval of the subdivision as revised which will be titled "Second RePlat of Tract 4, Dorado Village, Unit 2."

A copy of the incomplete Second Replat is attached for reference.



John G. Leverton
PE No. 1874
New Mexico

Attachments

DRAINAGE REPORT

for

DORADO VILLAGE

UNIT 2

Mobile Home Park

October, 1971

Sponsor:

**Enerdyne Corporation
Albuquerque, New Mexico**

**Bohannon Westman Engineers, Inc.
4205 Carlisle Blvd., N.E.
Albuquerque, New Mexico 87107**

Submitted by:



**Jerry R. Bohannon
N.M.P.E. & L.S. Number 2455**

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VI Drainage Formula	2
VII Design Maximum Storm	2
VIII Drainage Areas	2
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X Conclusions and Recommendations	3

Appendix A - Calculation Sheets

Plate I

Plate II

Plate III

DRAINAGE REPORT

UNIT 2

DORADO VILLAGE ADDITION

X

MOBILE HOME PARK

Albuquerque, New Mexico

- I. PURPOSE OF REPORT: The purpose of this report is to determine the amounts of storm water runoff affecting Unit 2 of Dorado Village Addition, and to recommend the methods of safely conveying this water around or through the future inhabited areas without endangering life or property.
- II. LOCATION: Dorado Village Addition is located within Section 27, T 10 N, R 4 E, N.M.P.M., in the easterly portion of the City of Albuquerque, Bernalillo County, New Mexico.
- III. TERRAIN: The subdivision is located on the relatively constant slope of alluvial fans of dry arroyos discharging from the foothills of the Sandia Mountains. The grade varies from 1% to 3% and slopes from east to west. The elevation varies from approximately 5597 to 5560 feet above mean sea level. The terrain draining through Unit 2, Dorado Village Addition has the same general slope and conditions as occur within the area.
- IV. SOIL: The soil is generally coarse decayed granite with very few fines.
- V. VEGETATION: The vegetation on the area and the contributing slopes is sparse grass.

VI. DRAINAGE FORMULA: The drainage formula selected for use is the Rational Formula. The formula is as follows:

$Q = C i A$, where

Q = Runoff = Peak Discharge of watershed in cubic feet per second (c.f.s.) due to the maximum storm assumed.

A = Area of Watershed, in Acres.

C = Coefficient of Runoff, generally assumed as 0.5 for developed areas in this region.

i = Intensity of Rainfall in inches per hour, based on concentration time (Concentration time = time required for rain falling at the most remote point in the area to reach the discharge point under consideration).

VII. DESIGN MAXIMUM STORM: The design storm of 100-YEAR EXPECTANCY was used. It was compared with the 100 year design storm obtained from Technical Paper No. 40 (Rainfall Frequency Atlas of the United States) and found to comply with and exceed the later requirements.

VIII. DRAINAGE AREAS: The contributing drainage areas were determined by visual inspection of the site, from topography surveys of the area, from U.S.G.S. Quadrangle Maps, and from Drainage Report for Block "K", Dorado Village Addition. For the purpose of this report, all land within the Unit 2 is assumed to be developed with paved streets.

Plate 1 is a general grading and drainage plan for Unit 2,

Dorado Village Addition, showing drainage in streets to the points of discharge.

Plate II shows all areas contributing to drainage in streets in Unit 2.

Plate III shows Unit 2 and contributing areas in relations to existing contours.

IX CALCULATIONS: Calculations of drainage quantities were based on the Rational Formula. The average rainfall intensity was obtained from the computed time of concentration and the Intensity-Duration-Frequency Curves for the Albuquerque Area, Chart 1- Master Plan of Drainage for City of Albuquerque, 1963. Computations and Tabulations are attached as Appendix A of this report.

X CONCLUSIONS AND RECOMMENDATIONS: Analysis of the drainage conditions affecting Unit 2 of Dorado Village Addition indicates that the provisions for drainage within the unit, as shown on Plat 1 - General Grading and Drainage Plan, are adequate to provide for safe and positive handling of storm runoff waters through the area. This analysis considered the effect of future street development within the area as being the most critical condition.

The streets surrounding Unit 2 will provide adequate drainage to handle all storm water from the contributing areas and from within the Unit itself.

It is hereby recommended that the drainage within Dorado Village Unit 2 be as follows and shown on Plate 1:

- a) The storm waters collected at the intersection of Dorado Place and Piru Boulevard be discharged into the Tijeras Arroyo, and the street grade be kept at the minimum of 0.3% to reduce the cut at the intersection of Piru and Dorado Place.
- b) Singing Arrow Avenue West from Dorado Place be constructed to drain West into Four Hill Mobile Home Park street.
- c) The runoff on Western Skies Drive (vacated) be split with one portion draining North into Singing Arrow Avenue and second - South to Piru where it should be discharged into the Tijeras Arroyo.
- d) The area West of Western Skies Drive be constructed so that the storm waters are diverted into the drainage Easements at the West Borders of Unit 2.

CALCULATIONS

PART I

Drainage Areas draining into Unit 2 of Dorado Village and Part of internal drainage.

1. From Area "A" (see Drainage Report for Block "K" Dorado Village Add., August, 1971) see Plat II & III

$$Q = 105.3 \text{ cfs} \quad t_c = 19.4 \text{ min}$$

$$\text{Area} = 54.0 \text{ min}$$

2. From Area "B" (see Plat II & III) and from Area 6b (see Plate I) including street.

(F_c) Concentration Point

Contributing Area "B" = 17.8 Ac.

Assumed streets paved

Street Flow time $t_s = 3.9 \text{ min}$

Sheet drainage over poor grass

Overland Flow time $t_o = 18.0 \text{ min}$

Concentration time $t_c = 18.0 + 3.9 = 21.9 \text{ min}$

Contributing Area 6 = 12.4 Ac.

Street Flow time $t_o = 6.2 \text{ min}$

Total Concentration Time $t_c = 21.9 + 6.2 = 28.1 \text{ min}$

"i" = 3.52 in/hr. (from "Master Plan of Drainage" City of Albuquerque, 1963, Chart I - 100 year Rainfall)

$$\text{Area } 17.8 + 12.4 = 30.2 \text{ Ac.}$$

Max. Flow @ point (F_c)

$$Q = 30.2 \times 3.52 \times 0.5 = \underline{53.2 \text{ cfs}}$$

PART II Areas draining from Unit 2 of Dorado Village to point of discharge - Peak Flow

1. (A) Concentration Point

a) Contributing Area - "A"

Area = 54.0 Ac $t_c = 19.4$ min.

b) Contributing Area "C" = 8.6 Ac.

Assumed Streets paved. Street Flow Time:

$t_s = 5.5$ min (See tabulation of Channel Flow Time)

c) Total Peak Flow @ point (A)

Total Area $54.0 + 8.6 = 62.6$ Ac

Total Concentration Time $t_c = t_c + t_s = 24.9$ min

"i" = 3.72 in./hr.

Max. Flow @ (A) = $Q = 3.72 \times 0.5 \times 62.6 = 116.4$

→ 116.4 cfs

2. (B) Concentration Point

a) Contributing Area (1) = 15.4 Ac.

Street Flow: $t_s = 7.7$ min.

Overland Flow: 10.0 min

Total Concentration Time 17.7 min

"i" = 4.32 in./hr.

Max. Flow @ (B) $Q = 4.32 \times 0.5 \times 15.4 = 33.3$ cfs. →

3. (C) Concentration Point

a) Contributing Area (2) = 6 Ac.

Street Flow $t_s = 4.7$ min

Overland Flow $t_o = 10.2$ min

Total Concentration Time 14.9 min $"i" = 4.61$ in/hr.

Max. Flow @ (C) $Q = 4.61 \times 6 \times 0.5 = \underline{13.8}$ cfs. ←

4. (D) Concentration Point

a) Contributing Area (3) = 8.2 Ac

Street Flow $t_s = 3.3$ min

Overland Flow $t_o = 11.2$ "

Total Concentration Time 14.5 min $"i" = 4.68$ in/hr.

Max. Flow @ (D) $Q = 4.68 \times 8.2 \times 0.5 = \underline{19.2}$ cfs ←

5. (E) Concentration Point

a) Contributing Area (4) = 6.4 Ac

Street Flow $t_s = 3.8$ min

Overland Flow $t_o = 12.0$ "

Total Concentration Time = 15.8 min $"i" = 4.5$ in/hr.

Max. Flow @ (E) $Q = 4.5 \times 6.4 \times 0.5 = \underline{14.4}$ cfs. ←

6. (F) Concentration Point

a) Contributing Area (5) = 6.1 Ac

Street Flow $t_s = 3.7$ min

Overland Flow $t_o = 10.2$ "

Total Concentration Time = 13.9 min $"i" = 4.71$ in/hr.

Flow @ F_a $Q = 4.71 \times 6.1 \times 0.5 = 14.4 \text{ cfs.}$

b) Max. Flow @ F

Contributing Areas ⑤, ⑥ , "B" $= 6.1 + 12.4 + 17.8 = 36.3 \text{ Ac.}$

Total Concentration time $t_c = 21.9 + \frac{t}{F_a} = 6.2 + \frac{t}{F_a} = 3.7 = 31.8 \text{ min.}$

"i" $= 3.3 \text{ in/hr.}$

Max Flow @ F $Q = 0.5 \times 3.3 \times 36.3 = 59.9 \text{ cfs.}$

7. F_b Concentration Point

a) Contributing Area $\text{⑥} = 12.4 \text{ Ac.}$

Street flow time $= 6.2 \text{ min}$

Overland flow time $= 12.1 \text{ min}$

Total concentration time $= 18.3 \text{ min}$ "i" $= 4.28 \text{ in/hr.}$

Max Flow @ F_b $Q = 4.28 \times 12.4 \times 0.5 = 26.5 \text{ cfs.}$

PART III

Checking carrying capacity of streets and ditches for Peak Flow. - Critical points.

1. Dorado Place South of Singing Arrow - Peak Flow @ $A = 116.4 \text{ cfs}$

32' street No Crown Flowing at top of curb (8")

Slope 0.3 %

Area $= 21.44 \text{ ft}^2$ Velocity (Manning's formula) $n = 0.015$

$r = 0.64$

$V = 4.02 \text{ ft/sec}$

Carrying Capacity $Q = 21.44 \times 4.02 = 86.19 \text{ cfs.}$ No
The Flow will not be contained within curbs.

Assume 32' street - No Crown - flowing @ Depth $= 0.92'$ (0.25' over curb)

Area $= 30.64 \text{ ft}^2$ $V = 4.31 \text{ ft/sec}$

$n = 0.71$

$Q = 30.64 \times 4.31 = 132.06 \text{ cfs.}$ O.K.

2. Western Skies Dr. (Vacated)

Check for Max. Flow of 33.3 cfs @ point (B)

30' Street 3" Inverted Crown 2" Curb.

Slope 0.3% (assumed)

$$\text{Area} = 8.76 \text{ ft}^2 \quad V = 2.34 \text{ ft/sec}$$

$$r = 0.289$$

$$Q = 2.34 \times 8.76 = 20.50 \text{ cfs. No}$$

Assume 40' Street 4" Inverted Crown 2" curb.

Slope 0.3%

$$\text{Area} = 13.4 \text{ ft}^2$$

$$V = 2.58 \text{ ft/sec}$$

$$r = 0.332$$

$$Q = 2.58 \times 13.4 = \underline{\underline{34.6 \text{ cfs. O.K}}}$$

3. Singing Arrow from Dorado Pl. West to point of concentration (F) Peak Flow = 59.9 cfs.

32' Street with standard crown & Curb & Gutter

has a carrying capacity of 92 cfs. @ 1.5%

min slope on this street to be 1.0%.

With carrying capacity of 75 cfs.

4. Earth Ditch in drainage Easement @ the West Side of property

Check for Max Flow of 19.2 cfs.

Assume Cross-Section. 2' Bottom 2:1 Side slopes

$$n = 0.03$$

$$1' \text{ Depth}$$

$$A = 4 \text{ ft}^2$$

$$V = 2.54 \text{ ft/sec}$$

$$s = 0.5\%$$

$$r = 0.62 \text{ ft}$$

$$Q = 4 \times 2.54 = 10.2 \text{ cfs. No}$$

Assume Cross-Section 2' Bottom 2:1 Side slope

$$n = 0.03; s = 0.5\%$$

$$1.4' \text{ Depth}$$

$$A = 6.72 \text{ ft}^2$$

$$Q = 6.72 \times 3.04 = \underline{\underline{20.4 \text{ cfs.}}}$$

$$V = 3.04 \text{ ft/sec}$$

$$r = 0.81 \text{ ft}$$

O.K.

Tob Dorado Village, Unit 2
Mobile Home Park

Date Oct. 7, 1971

Drainage Areas

Area No.	Planimeter Reading in cm ²	Scale-Conversion Factor	Area in Acres	Remarks
C	242.9	0.03558	8.6	scale 1"=100'
1	433.5	" "	15.4	
2	168.4	" "	6.0	
3	231.0	" "	8.2	
4	178.6	" "	6.4	
5	172.5	" "	6.1	
6	349.0	" "	12.4	
B.	500.5	" "	17.8	

UNIT No. 2

Dorado Village - Mobile Home Park

Date Oct. 7, 1971

By A. W. H.

No.	Channel Length Ft.	Slope S	S ^{1/2}	Street Width Ft.	Area A Ft.	Hydr. Radius r	r ^{2/3}	Velocity V Ft./Sec	Flow Time Min.
C	1100	0.003	0.055	32	20.0	0.602	0.713	3.33	5.5
1	1520	0.008	0.089	30	8.76	0.289	0.437	3.30	7.7
2	1090	0.011	0.105	30	8.76	0.289	0.437	3.90	4.7
	850	0.017	0.130	30	8.76	0.289	0.437	4.82	2.9
3	95	0.005	0.071	Earth Ditch	4.00	0.62	0.727	4.38	0.4
	910	0.015	0.122	30	8.76	0.289	0.437	4.53	3.4
4	95	0.005	0.071	Earth Ditch	4.00	0.62	0.727	4.38	0.4
	820	0.015	0.122	30	8.76	0.289	0.437	4.53	3.0
5	160	0.004	0.063	Earth Ditch	4.00	0.62	0.727	3.89	0.7
6	1370	0.01	0.10	30	8.76	0.289	0.437	3.71	6.2
3	1730	0.015	0.122	32	20.0	0.602	0.713	7.39	3.9

Earth Ditch: Side slopes 2:1	Area 4 ft ²
------------------------------	------------------------

Bottom 2'	Depth 1'	$r = 0.62 \text{ ft.}$
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$n = 0.0175$ - paved streets

$n = 0.03$ - Earth Ditch

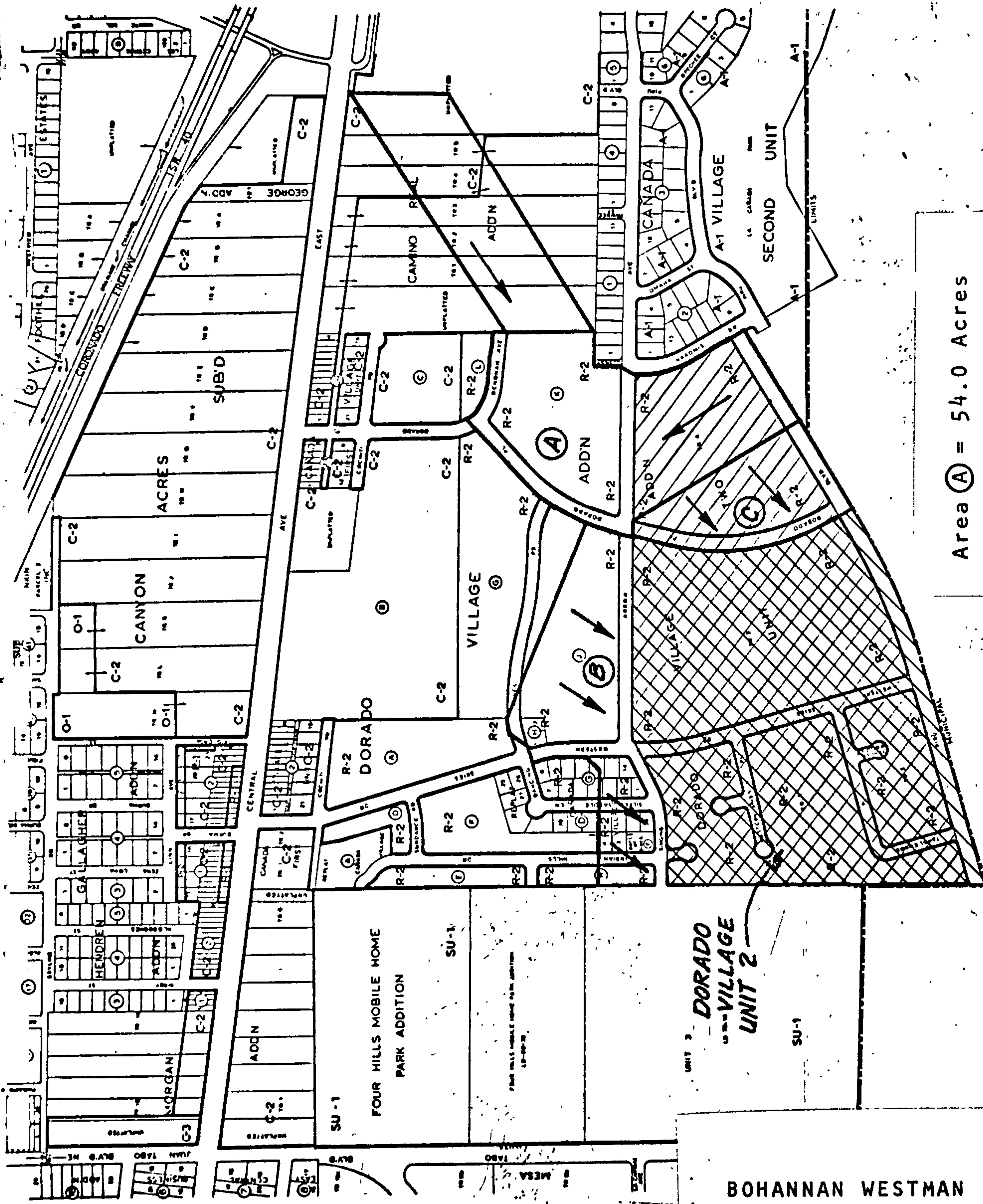
32' street	No crown	Depth of flow = 0.625 (within curbs,
------------	----------	--------------------------------------

30' Street	3" inverted crown	Depth of flow @ curbs = 0.167
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Overland Flow Time

Area No	Longest Over- land Dist. in ft.	Average Slope %	Flow Time in Min. (p. 18-01 "Design" Seelye)
C	500	1.8	18.1
1	100	1.7	10.0
2	90	1.4	10.2
3	150	2.0	11.2
4	180	2.0	12.0
5	90	1.4	10.2
6	150	1.4	12.1
B	500	2.0	18.0

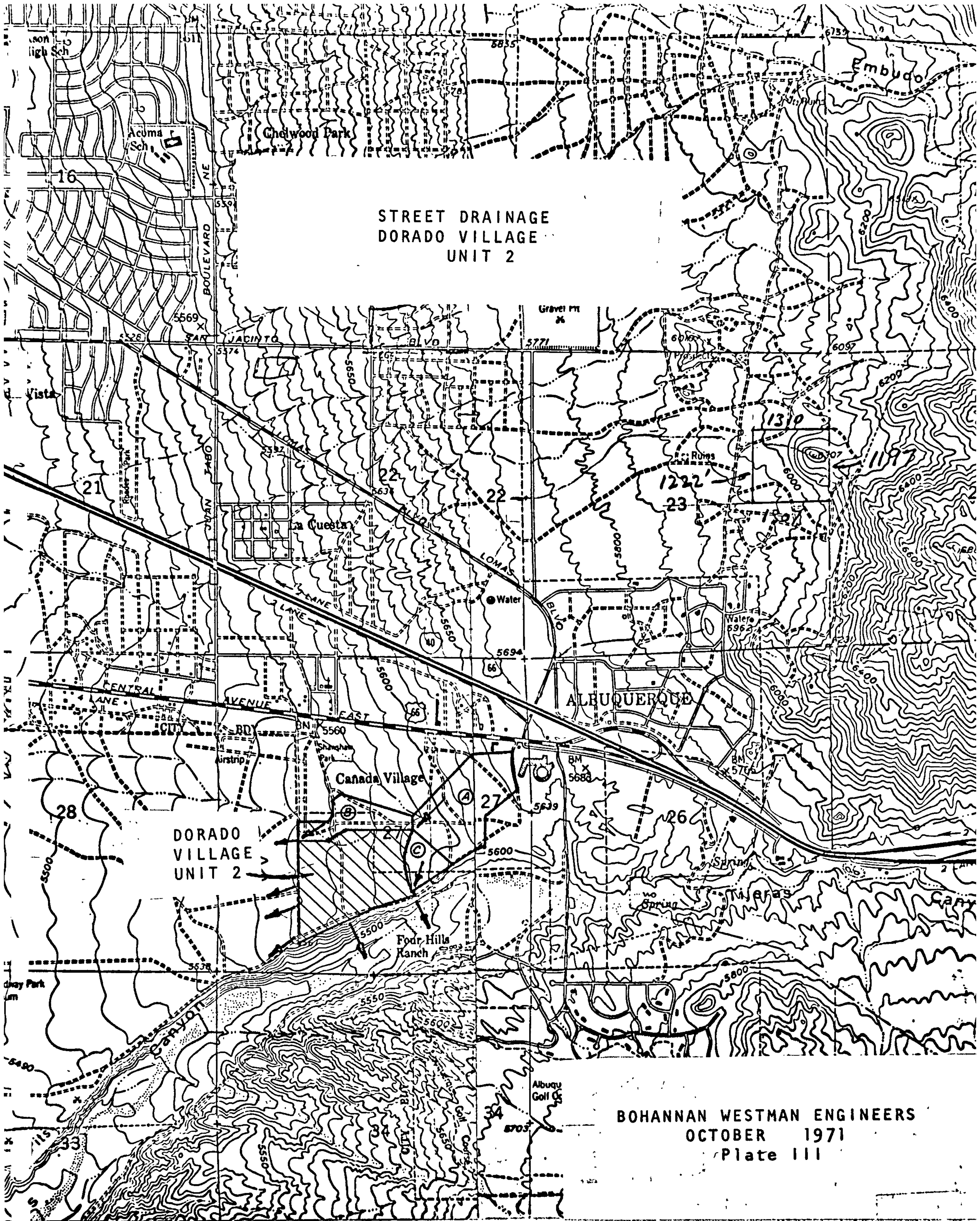
CONTRIBUTING AREAS DRAINING THROUGH
UNIT 2
DORADO VILLAGE



Area A = 54.0 Acres
Area B = 17.8 Acres
Area C = 8.6 Acres

DORADO
VILLAGE
UNIT 2

BOHANNAN WESTMAN ENGINEERS
OCTOBER 1971
Plate II



STREET DRAINAGE
DORADO VILLAGE
UNIT 2

DORADO
VILLAGE
UNIT 2

BOHANNAN WESTMAN ENGINEERS
OCTOBER 1971
Plate III

3. (C) Concentration Point

a) Contributing Area $\text{②} = 6 \text{ Ac.}$ Street Flow $t_s = 4.7 \text{ min}$ Overland Flow $t_o = 10.2 \text{ min}$ Total Concentration Time 14.9 min $"i" = 4.61 \text{ in/hr.}$ Max. Flow @ (C) $Q = 4.61 \times 6 \times 0.5 = \underline{13.8 \text{ cfs.}}$ ←

4. (D) Concentration Point

a) Contributing Area $\text{③} = 8.2 \text{ Ac}$ Street Flow $t_s = 3.3 \text{ min}$ Overland Flow $t_o = 11.2 \text{ " "}$ Total Concentration Time 14.5 min $"i" = 4.68 \text{ in/hr.}$ Max. Flow @ (D) $Q = 4.68 \times 8.2 \times 0.5 = \underline{19.2 \text{ cfs.}}$ ←

5. (E) Concentration Point

a) Contributing Area $\text{④} = 6.4 \text{ Ac}$ Street Flow $t_s = 3.8 \text{ min}$ Overland Flow $t_o = 12.0 \text{ " "}$ Total Concentration Time: 15.8 min $"i" = 4.5 \text{ in/hr.}$ Max. Flow @ (E) $Q = 4.5 \times 6.4 \times 0.5 = \underline{14.4 \text{ cfs.}}$ ←

6. (F) Concentration Point

a) Contributing Area $\text{⑤} = 6.1 \text{ Ac.}$ Street Flow $t_s = 3.7 \text{ min}$ Overland Flow $t_o = 10.2 \text{ " "}$ Total Concentration Time = 13.9 min $"i" = 4.7 \text{ in/hr.}$

3. (C) Concentration Point

a) Contributing Area ② = 6 Ac.

Street Flow $t_s = 4.7$ minOverland Flow $t_o = 10.2$ minTotal Concentration Time 14.9 min $"i" = 4.61$ in/hr.Max. Flow @ (C) $Q = 4.61 \times 6 \times 0.5 = \underline{13.8}$ cfs. ←

4. (D) Concentration Point

a) Contributing Area ③ = 8.2 Ac

Street Flow $t_s = 3.3$ minOverland Flow $t_o = 11.2$ "Total Concentration Time 14.5 min $"i" = 4.68$ in/hr.Max. Flow @ (D) $Q = 4.68 \times 8.2 \times 0.5 = \underline{19.2}$ cfs ←

5. (E) Concentration Point

a) Contributing Area ④ = 6.4 Ac

Street Flow $t_s = 3.8$ minOverland Flow $t_o = 12.0$ "Total Concentration Time = 15.8 min $"i" = 4.5$ in/hr.Max. Flow @ (E) $Q = 4.5 \times 6.4 \times 0.5 = \underline{14.4}$ cfs. ←

6. (F) Concentration Point

a) Contributing Area ⑤ = 6.1 Ac.

Street Flow $t_s = 3.7$ minOverland Flow $t_o = 10.2$ "Total Concentration Time = 13.9 min $"i" = 4.71$ in/hr.

CITY OF ALBUQUERQUE
April 6, 1965
STATE OF NEW MEXICO

W. T. Stevens - City Engineer

Drainage Study - Dorado Village, Unit 2

Plat submitted for study does not indicate the direction of drainage flow for the various streets and runoff of the area adjacent to the streets. Natural topographic observation indicates that:

1. Nakomis Drive will flow north on an approximate grade of 1%
2. Dorado Place will drain north on an approximate grade of .36%
3. Western Skies Drive will flow north on an approximate grade of .31%
4. Western Skies Place will flow west on an approximate grade of 1.7% but no provision is made for drainage easement on the western deadend. A 10' drainage easement should be provided.
5. The street on the north boundary of tract 2 will drain west at an approximate grade of 2.0%, and the street to the west of the tract will drain north on an approximate grade of .75% but no drainage outlet is provided at the meeting of the two streets. Special grading will be required to drain onto Piru.
6. To sewer service Tr 1 and 2 20' easement is necessary along west boundary for sewer. Sewer lines with a grading north to Central is possible and can tie into proposed sewer on Minnehaha.
7. For Tr. 5 only lots facing Piru can be sewer serviced with line on Piru. Lands to the south will require a lift station for sewer facilities.
8. All collector streets require a 64 foot right-of-way.
9. No easement is provided for the proposed Loop Expressway on Tr. 5.

Total drainage runoff for tract 4 will approximate 38 cfs, tract 3 will be about 40 cfs, and tracts 1 and 2 will be about 40 cfs. Design layout should indicate how and where this runoff will be handled.

Respectfully submitted,

Tom B. Thomas
Chief Construction Inspector

TBT:sb

CITY OF ALBUQUERQUE
April 6 1965
STATE OF NEW MEXICO

W. T. Stevens - City Engineer

Drainage Study - Dorado Village, Unit 2

Plat submitted for study does not indicate the direction of drainage flow for the various streets and runoff of the area adjacent to the streets. Natural topographic observation indicates that:

1. Nakomis Drive will flow north on an approximate grade of 1%.
2. Dorado Place will drain north on an approximate grade of .36%.
3. Western Skies Drive will flow north on an approximate grade of .31%.
4. Western Skies Place will flow west on an approximate grade of 1.7% but no provision is made for drainage easement on the western deadend. A 10' drainage easement should be provided.
5. The street on the north boundary of tract 2 will drain west at an approximate grade of 2.0%, and the street to the west of the tract will drain north on an approximate grade of .75% but no drainage outlet is provided at the meeting of the two streets. Special grading will be required to drain onto Piru.
6. To sewer service Tr 1 and 2 a 20' easement is necessary along west boundary for sewer. Sewer lines with a grading north to Central is possible and can tie into proposed sewer on Minnehaha.
7. For Tr. 5 only lots facing Piru can be sewer serviced with line on Piru. Lands to the south will require a lift station for sewer facilities.
8. All collector streets require a 64 foot right-of-way.
9. No easement is provided for the proposed Loop Expressway on Tr. 5.

Total drainage runoff for tract 4 will approximate 38 cfs, tract 3 will be about 40 cfs, and tracts 1 and 2 will be about 40 cfs. Design layout should indicate how and where this runoff will be handled.

Respectfully submitted,

Tom B. Thomas
Chief Construction Inspector

TBT:sb

LEVERTON ENGINEERING

4022-H RIO GRANDE BLVD., N.W.
ALBUQUERQUE, NEW MEXICO 87107
(505) 345-5479

October 4, 1977

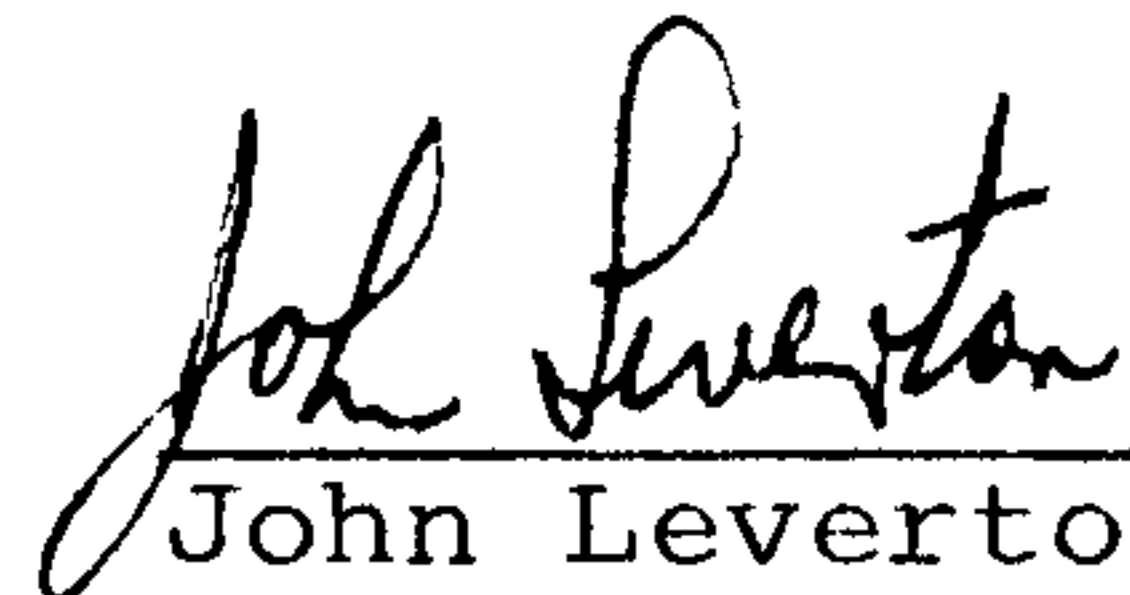
Mr. Bruno Conegliano
Ass't City Engineer--Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico

Re: Tract 4, Unit 2
Dorado Village Addition

Dear Mr. Conegliano,

Please refer to our previous report which was in letter form dated September 9, 1977 in which the increase in run-off in the subject subdivision caused by the addition of 37 units was developed.

You requested that a berm be built to act as a deflector at Piru Street opposite the point at which the storm water run-off is discharged from the lotted area of the subdivision. Attached is our sketch showing the manner in which the developer, Mr. Coda Roberson, has agreed to comply with your request.


John Leverton

Attachments: 1. Report dated September 9, 1977
2. Sketch

Revised: Oct. 5, 1977

Lengthened berm to extend upstream (NE along Piru St.) a Distance of +15' beyond the drainage channel emptying into Piru St.

Copied from Plate II of
Drainage Plan for Roberson-
Presley Development in Dorado
Village by Bohannon-Westman-
Huston & Associates. Plate II
dated 9-28-76.

$Q = 26.5 \text{ cfs}$
(Area 5)

$Q = 90.9 \text{ cfs}$
(Combined Flows of Areas 4 & 5)

$Q = 304.4 \text{ cfs}$
(Combined Flows of Areas 1, 2, 3, 4, & 5)

$Q = 220.8 \text{ cfs}$
(Combined Flows of Areas 1, 2, & 3)

$Q = 64 \text{ cfs}$
(Area 4)

ELYSE PLACE

CITY ST. DRAINAGE
TYPE B
CHANNEL
WIDE
2' HIGH, 10'

12' Wide x 45" Long x 2' High (above curb) earth
deflection berm to be built in conjunction
with development of Roberson's Tract 4,
Unit 2 Dorado Village Subdivision.

Proposed asphalt curb as shown
on approved construction drawings

32' 15% Crown
1.15% Slope
W.D. = 58

55' 60" RCP 5.100%

40" Flat Crown
0.59% Slope
N.D. = 0.87

10' 48" RCP @ 1.00%

150' 60" RCP
5.100%

8" DIA MH

Freight Bend

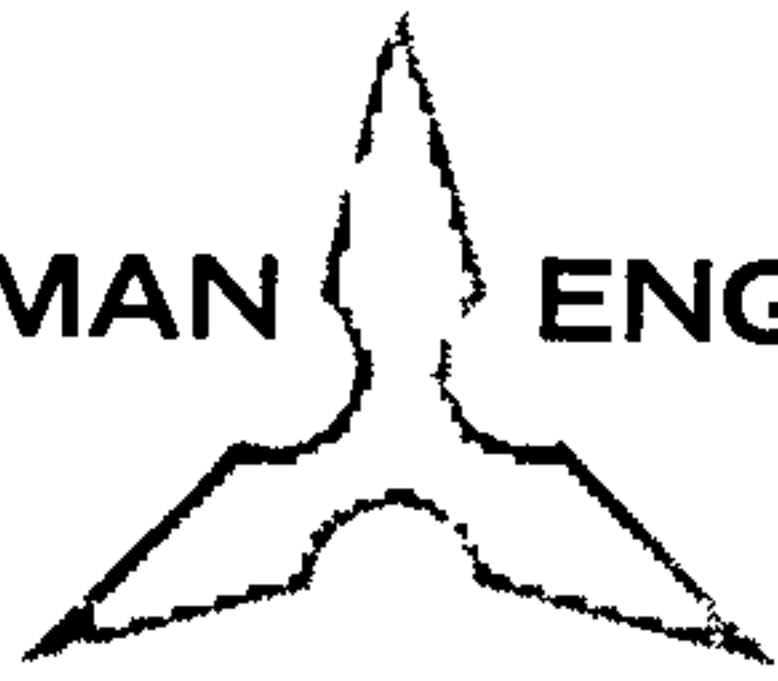
Impact Stilling Basin
Inside Dimensions
24' Long, 18' Wide,
13.5' High

Earth Channel to
Tijeras Flowline

410' 60" RCP @ 2.00%

130' 60" RCP @ 0.50%

Cattle Guard Inlet—
Inside Dimensions
42.5' Long, 3' 5" Wide,
11' Deep



October 21, 1971

Mr. Erwin F. Hensch
Director of Public Works
City of Albuquerque
Albuquerque, New Mexico

Attention: Mr. W.T. Stevens
City Engineer

Dear Mr. Hensch:

Enclosed please find two (2) copies of the
Drainage Report for Dorado Village, Unit 2, Mobile
Home Park with the revisions made as requested
by the City Engineer.

Very truly yours,

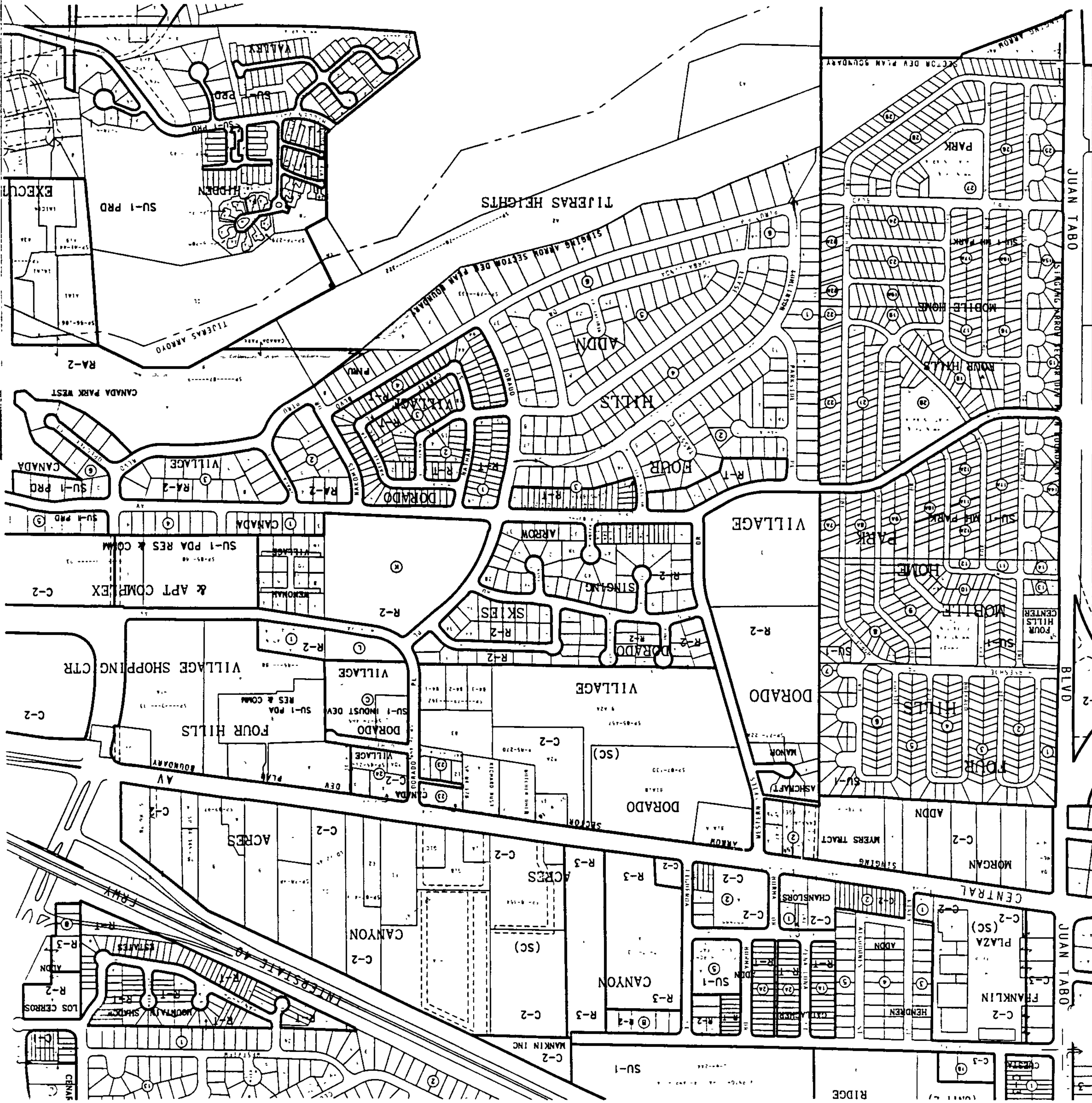
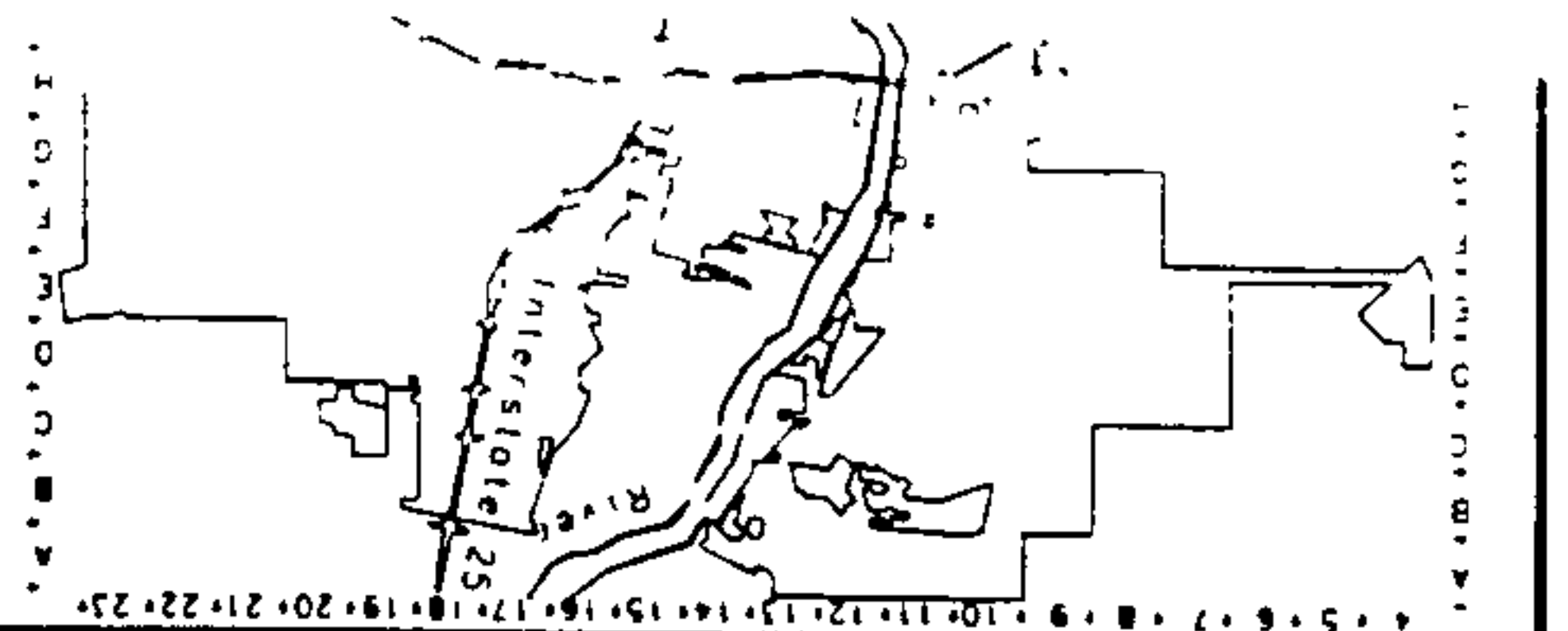
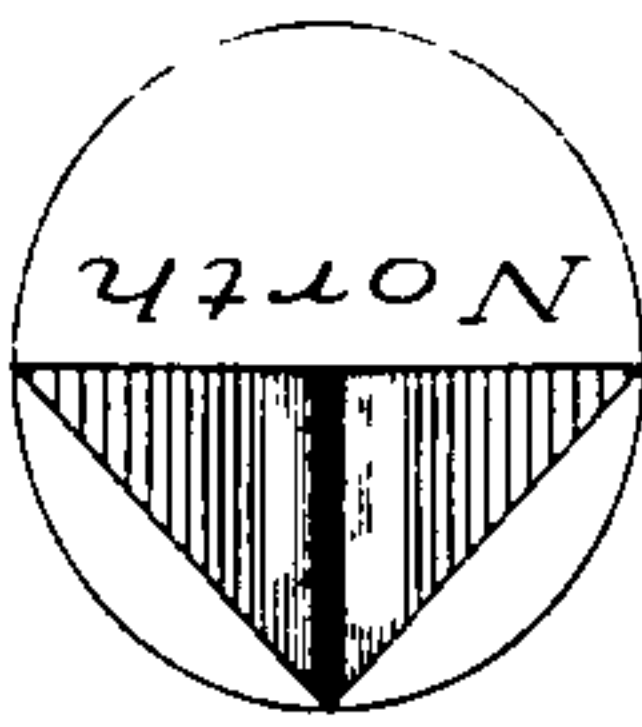
A handwritten signature in cursive script, appearing to read "Raymond R. Gibson".

Raymond R. Gibson
Chief Engineer
Bohannan Westman Engineers

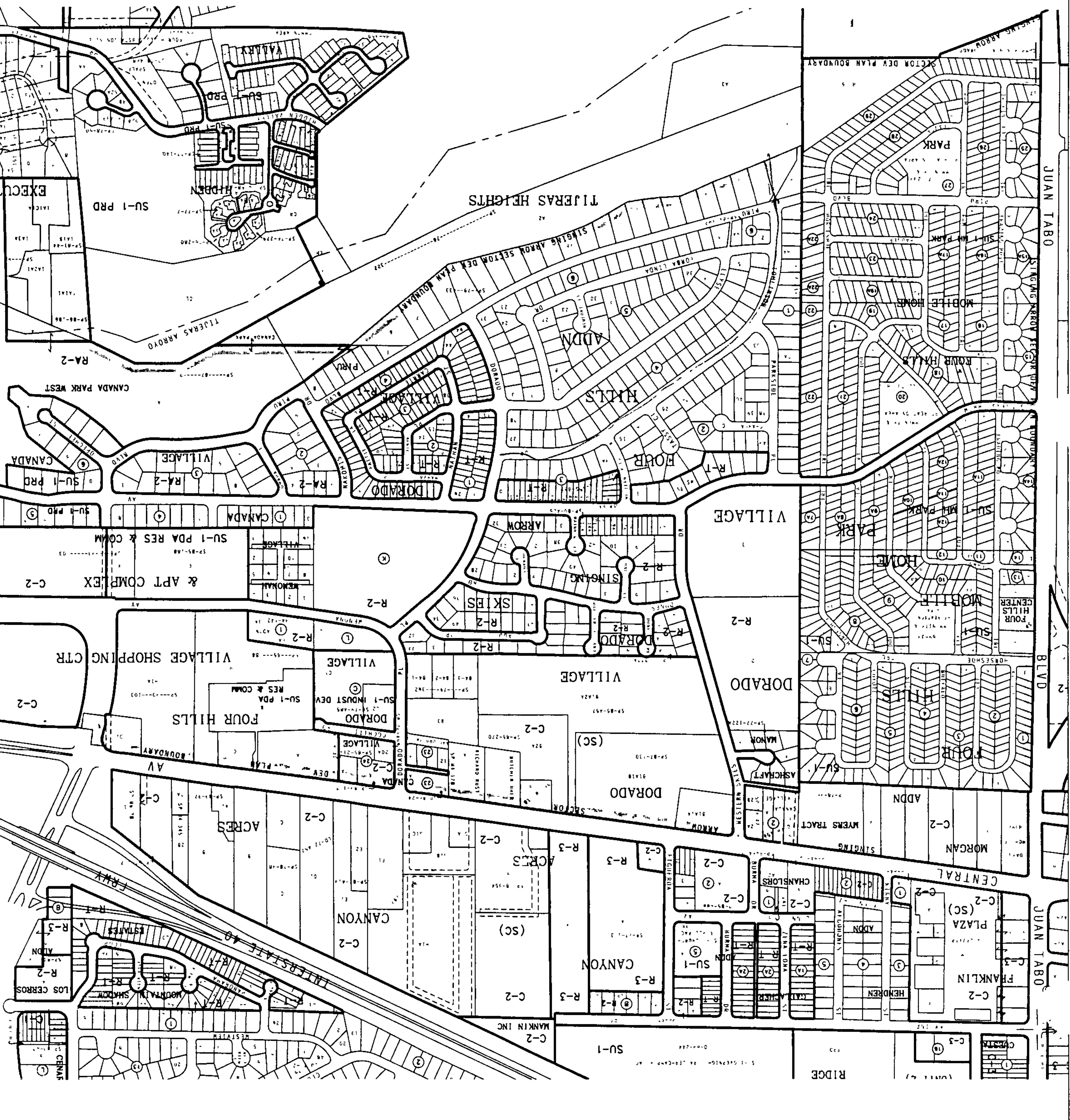
RRG:bn
cc: Enerdyne Corporation

LEGAL DESCRIPTION

RAE
TION



20-001-77



20-001-77