D19/D15A

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84 22365

REPLAT OF
TRACT X-2
(FILED: JULY 15, 1983
NOW COMPRISING
COUNTRYWOOD SUBD
ALBUQUERQUE, NEW
SCALE: 1" = 60' SEPTEMBE

TEMP CONSTR ACCESS TO MODELS

SALES MODELS LOCATION

FIRE HYDRANT

S-8

TRACT A UNIT A NORTH ALBUQUERQUE ACRES (Filed: 3-17-37)

PALOMAS AVENUE N.E.

GRID BEARING = S 89° 38' 37" E
PLAT BEARING = S 89° 39' 16" E

COUNTRYWOOD ROAD

COUNTRYWOOD DRIVE

WOODHAVEN DRIVE

TRACT B-2-A
LOMA DEL NORTE UNIT 9
(Filed: 5-13-82 C 19-144)

SCALE IN

25X

0000 0000 0524

INFORMATION SHEET

PROJECT TITLE NORTHPARK SUBDIVISION TYPE OF SUBMITTAL GRADING PLAN

ZONE ATLAS PAGE NO. D-19 CITY ADDRESS PALOMAS AVE NE

LEGAL DESCRIPTION NORTHPARK SUBDIVISION

ENGINEERING FIRM BOHANNAN HUSTON INC CONTACT DAVE WOODS

ADDRESS 4125 CARLISLE NE PHONE 881-2000

OWNER BROWN + ASSOC. CONTACT RON BROWN

ADDRESS 3800 CARLISLE BLVD NE PHONE 883-1674

ARCHITECT N/A CONTACT

ADDRESS PHONE

SURVEYOR UNKNOWN CONTACT

ADDRESS PHONE

CONTRACTOR UNKNOWN CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

___ YES
X NO
___ COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

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

RECEIVED
JAN 12 1984
HYDROLOGY SECTION

DATE SUBMITTED: 1/12/84

BY: JMM

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COMPLAINT FORM

PUBLIC WORKS DEPARTMENT
UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
768-2650

Complainant: Crow, Carroll Phone #: 828-0225

Address/Location: 8209 Country Wood NE.

Complaint: Concerned that he will drain unto the next lot

Referred to:

Investigation-Comments:

Follow-up:

Resolved by: Date:

ZONE ATLAS/DRAINAGE FILE NO.:

COMPLAINT FILE NO.:

DATE COMPLAINT RECEIVED: Country Wood

25×10

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BROWN & ASSOCIATES, INC.
REALTY SERVICES

Post Office Box 3671
Albuquerque, New Mexico 87190
Offices at: 3800 Carlisle Blvd. NE
(505) 883-1674

March 21, 1984

Mr. John Armstrong
City Engineering - Hydrology
Municipal Development Department
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103 D19-D15A

Re: Countrywood Subdivision
Back Yark Ponding

Dear Mr. Armstrong:

On the grading plan for Countrywood Subdivision the back yards on some of the lots have the requirement for ponding. The homes to be built on those lots will be designed so that the roofs drain to the front and southerly side of the homes, so that the only water that will pond in the back yards is the water that will fall in the back yard.

Very truly yours,

LAS PALOMAS JOINT VENTURE

Brown & Associates, Inc.
Venture Partner

By Ronald D. Brown
Ronald D. Brown, President

RDB:lc

RECEIVED
MAR 23 1984
HYDROLOGY SECTION

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PLANS/PLATS ON FILE

FILE DESC: D19/D15A

PLANS/PLATS 4

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D19/D15A

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D19/D15A

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RECEIVED
JUL 26 1983
ENGINEERING

CONCEPTUAL GRADING AND DRAINAGE PLAN FOR LAS PALOMAS JOINT VENTURE

JULY, 1983

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INFORMATION SHEET

PROJECT TITLE Las Palomas Joint Venture TYPE OF SUBMITTAL Conceptual

ZONE ATLAS PAGE NO. D-19 CITY ADDRESS

LEGAL DESCRIPTION Lots 3, 4, 5, 28, 29 and 30, Block 22, Tract A, Unit A, North Albuquerque Acres and Lot B-2-B and a portion of B-1 of Loma Del Norte Unit 9.

ENGINEERING FIRM Bohannan–Huston, Inc. CONTACT Dave Millikan

ADDRESS 4125 Carlisle Blvd., NE PHONE 881-2000

OWNER Brown & Associates CONTACT Ron Brown

ADDRESS 3800 Carlisle Blvd., NE PHONE 883-1674

ARCHITECT N/A CONTACT

ADDRESS PHONE

SURVEYOR N/A CONTACT

ADDRESS PHONE

CONTRACTOR N/A CONTACT

ADDRESS PHONE

DATE SUBMITTED 7/28/83

BY

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CONCEPTUAL GRADING AND DRAINAGE PLAN
FOR
LAS PALOMAS JOINT VENTURE

JULY, 1983

PREPARED FOR

BROWN & ASSOCIATES, INC.
3800 CARLISLE BOULEVARD, N.E.
ALBUQUERQUE, NEW MEXICO 87107

PREPARED BY

BOHANNAN–HUSTON, INC.
4125 CARLISLE BOULEVARD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
505/881-2000

JAMES V. DOMENICK
NEW MEXICO
No. 7643
REGISTERED PROFESSIONAL ENGINEER

James Domenick 7/28/83

JAMES V. DOMENICK, P.E.
N.M.P.E. NO. 7643

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LAS PALOMAS JOINT VENTURE

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DEVELOPED CONDITIONS	2
EROSION CONTROL	2
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Figure 1 — Vicinity Map

Figure 2 — Flood Hazard Map

Figure 3 — Soils Map

Figure 4 — Rundown Detail

PLATES

Plate 1 — Undeveloped Site

Plate 2 — Proposed Grading and Drainage Plan

APPENDICES

Appendix A — Discharge and Runoff Computations

Appendix B — Cross Sections

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INTRODUCTION

This Conceptual Grading and Drainage Plan has been prepared for a site consisting of 14.999 acres of undeveloped land. The site is located southeast of the intersection of Wyoming and Palomas Avenues in the northeast portion of Albuquerque, New Mexico. Proposed for the site is the construction of 95 single family residential units. Figure 1 is a vicinity map.

METHODOLOGY

This report has been prepared in accordance with the City of Albuquerque Development Process Manual (DPM). Rainfall intensities, peak discharges and runoff volumes were computed using the Rational Formula and guidelines established in Chapter 22 of the DPM.

EXISTING CONDITIONS

The undeveloped site slopes at an average of 3% from the northeast to the west and southwest. Soils are classified as gravelly fine sandy loam and are considered to be in Hydrologic Soil Group B. Figure 3 is a copy of the Soil Conservation Service soils map for the area.

The Domingo Baca Arroyo runs along the southern portion of the site. Its estimated 100-year peak discharge is 1940 cfs, based on information obtained from AMAFCA. Ultimately, all flows from the site drain into the arroyo, as do flows from the property to the east, which have no impact on the site. Flows occurring just north of the site are contained and routed westward on Palomas Avenue, which is paved for only the southern half of its width. Figure 2 is from the Bernalillo County Flood Insurance Study and shows what impact the 100-year storm would have on the site.

Flows occurring on-site are generated entirely within the area of the site. Runoff may be defined by three drainage basins as shown on Plate 1. Runoff volume and peak discharge computations are contained in Appendix A.

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DEVELOPED CONDITIONS

As was the case with the undeveloped site, no off-site flows will enter the site after development. Runoff from the health care facility to the east will continue to discharge to the Domingo Baca Arroyo at a point immediately east of the proposed subdivision. All proposed finished grades along Palomas Avenue are above the top of curb, therefore, no flow from the street will enter the site because the Drainage Ordinance will limit discharge from future developments upstream to the capacity of the street.

Flow in the Domingo Baca Arroyo will remain in the existing channel. The existing 150 foot drainage easement south of the site will be extended an additional 30 feet into the planned development to accommodate the channel. Further, the north bank of the arroyo will be protected with dumped riprap extending from approximately two feet below the existing channel bottom to at least the 100-year water surface elevation. Appendix B contains cross sections showing typical riprap configuration and water surface elevations.

All on-site runoff will discharge to the Domingo Baca Arroyo, except for a small amount which will flow onto Palomas Avenue at the entrance of the development. There will be no detention of stormwater. All lots will drain to the streets, which will convey the flows to the Domingo Baca Arroyo, through rundowns at the ends of the cul-de-sacs. Plate II shows the proposed developed site layout and drainage plan, including basin boundaries and flow rates. Runoff volume and peak discharge computations are contained in Appendix A. Figure 4 is a detail of a typical rundown.

EROSION CONTROL

Erosion of soil on the developed lots will be minimized by slopes of no greater than 5%. Installing riprap in the Domingo Baca Arroyo will prevent erosion of its channel until it is improved in the future. Riprap will also be placed at the ends of the cul-de-sac rundowns to prevent erosion.

SUMMARY AND RECOMMENDATIONS

The proposed Las Palomas Joint Venture Development will discharge all storm runoff to an existing arroyo adjacent to the site. No offsite flows will affect the property. We recommned the following to insure proper drainage and flood control for the development.

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- Dedicate an additional 30' drainage easement along the southern portion of the site.

- Establish bank protection (dumped riprap) along the north bank of the Domingo Baca Arroyo.

- Grade the lots and streets to convey all runoff to the Domingo Baca Arroyo in accordance with the Conceptual Grading and Drainage Plan Plate II.

If these recommendations are followed, we see no reason why drainage considerations would hinder or delay development of this project.

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FIGURES

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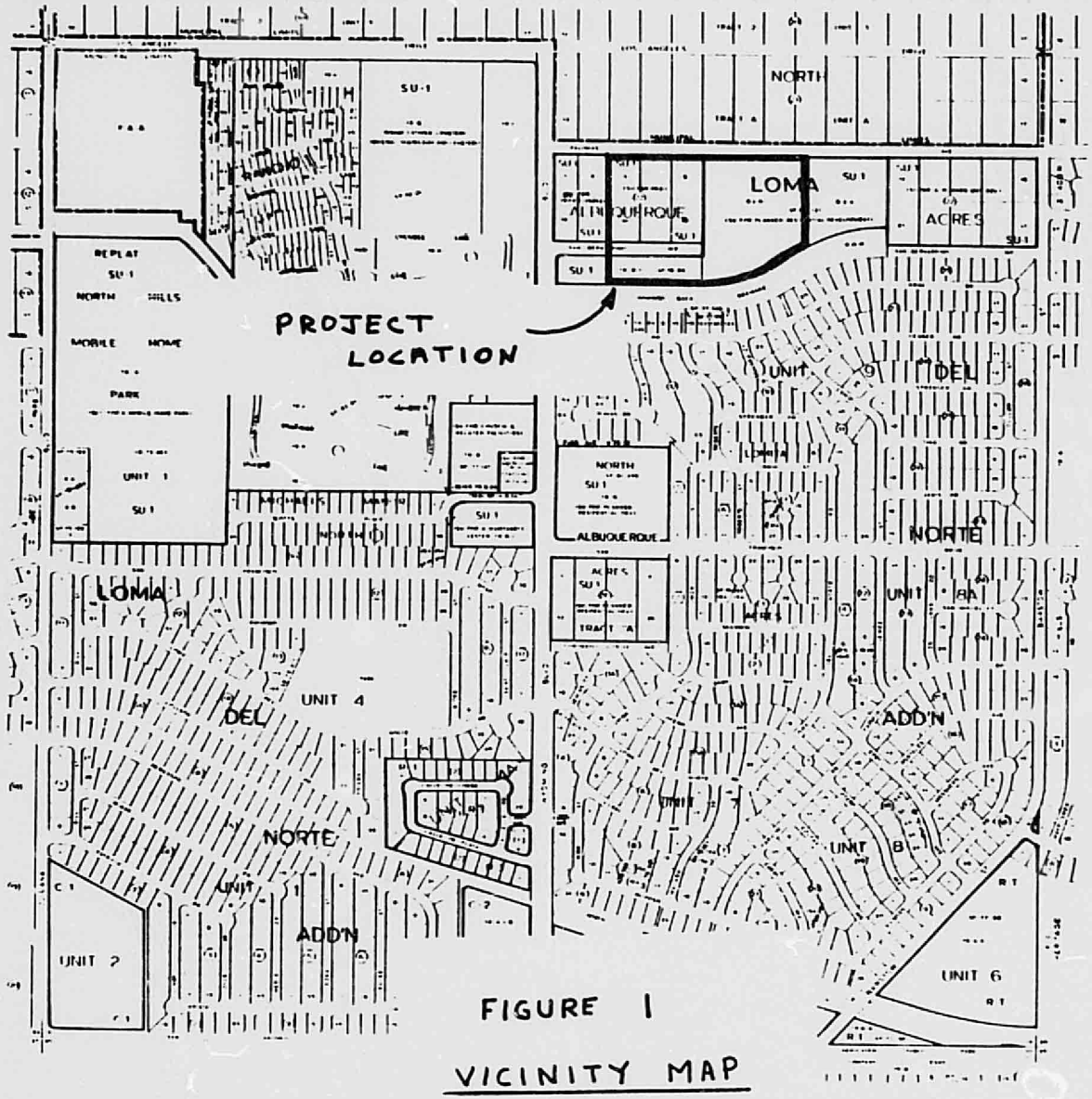

FIGURE 1

VICINITY MAP

JUNE 1982

D-19-Z

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25X

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

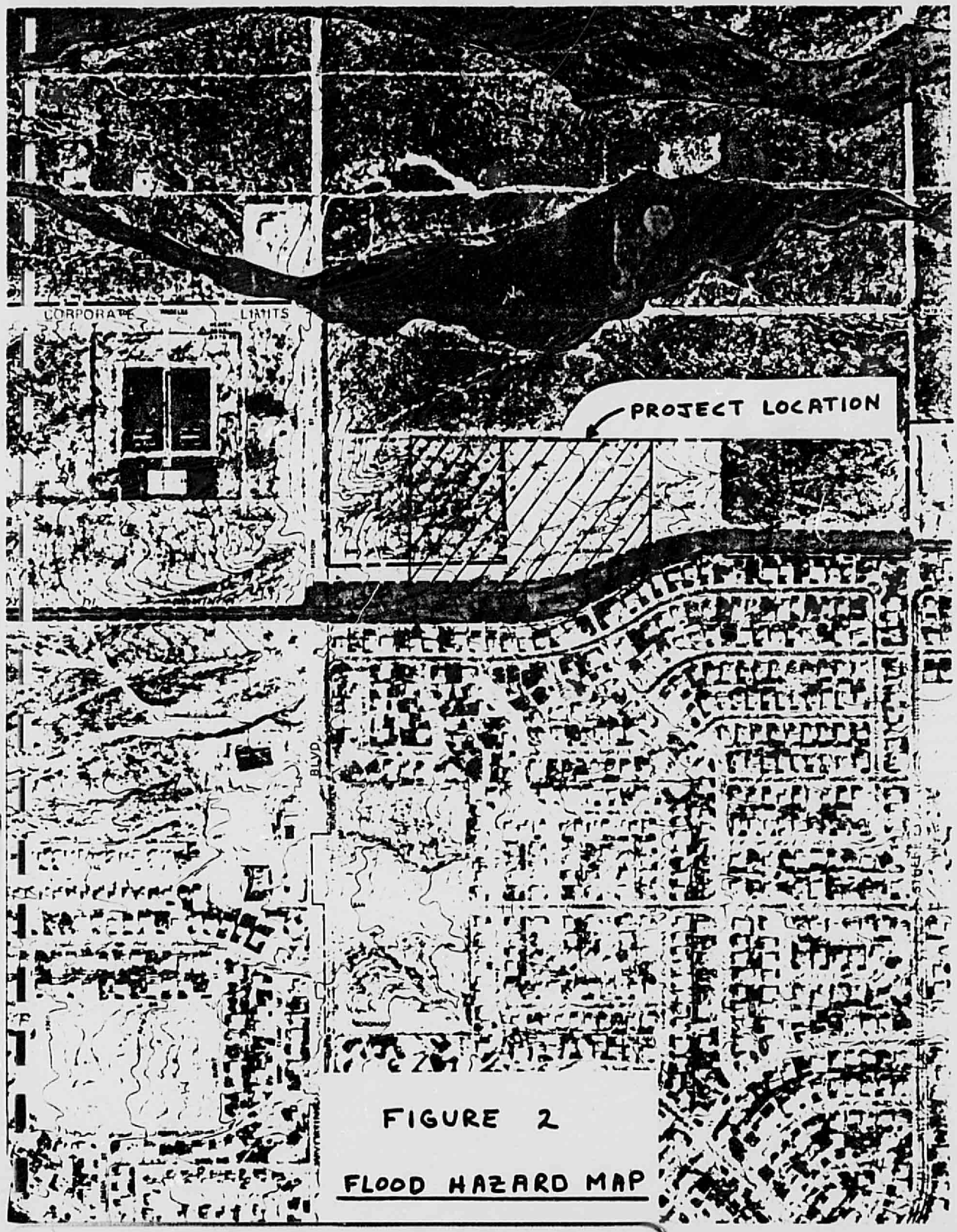

FIGURE 2

FLOOD HAZARD MAP

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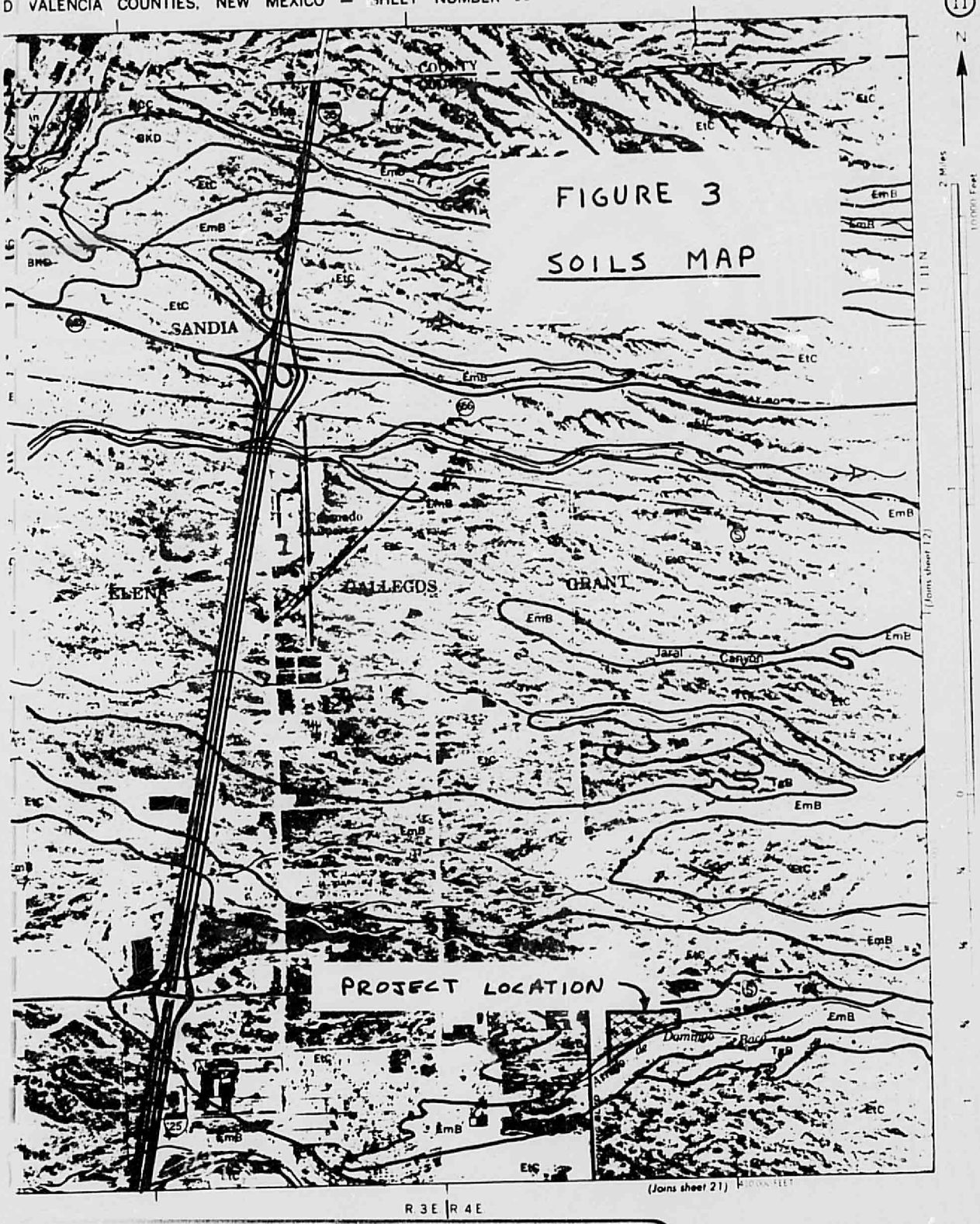
D VALENCIA COUNTIES, NEW MEXICO — SHEET NUMBER 11



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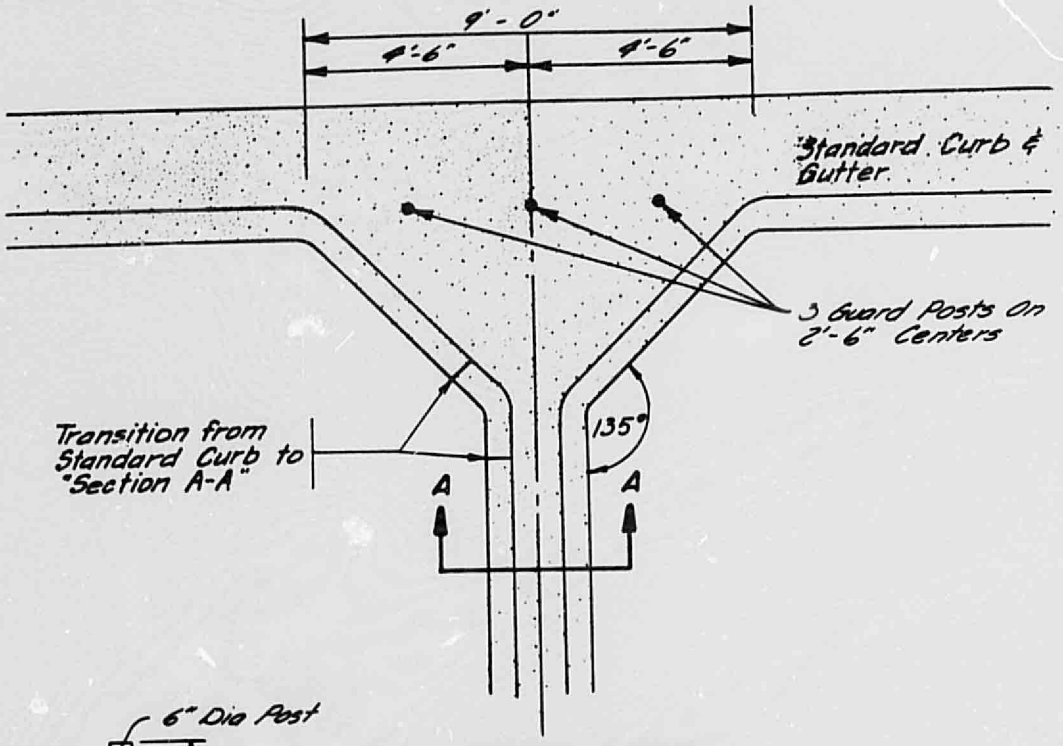
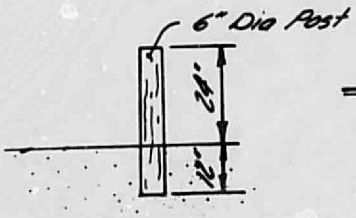
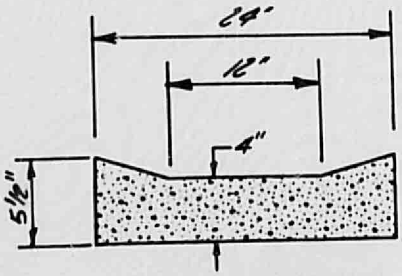


CURB OPENING RUNDOWN

SCALE: 1"=3'



POST DETAIL



SECTION A-A

SCALE 1"=1'-0"

FIGURE 4

RUNDOWN DETAIL

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APPENDIX A

DISCHARGE AND RUNOFF COMPUTATIONS

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UNDEVELOPED PEAK FLOW CALCULATIONS

BASIN A (5.097 ac)

$S = \frac{5437.1 - 5406.0}{1005} = .0309$

$\therefore V = 1.05$ ft/s (plate 22.2 B-1 of DPM)

$T_c = \frac{L}{V} = \frac{1005}{1.05(60)} = 16.0$ min

$\therefore I/6 = 1.70$ in/hr (plate 22.2 D-2 of DPM)

note - 6-hr rainfall volume, 100-yr frequency is 2.4 in (plate 22.2 D-1 of DPM

so $I_{10} = 1.70\,(2.4)(.657) = \underline{2.68 \text{ in/hr}}$ (.657 = reduction factor)

$I_{100} = 1.70\,(2.4) = \underline{4.08 \text{ in/hr}}$

note - soils TgB and EmB are of SCS Group "B"

$Q_{p_{10}} = C \cdot I_{10} A = (.34)(2.68)(5.097) = \underline{4.64 \text{ cfs}}$

(C: plate 22.2 C-1 of DPM assuming 0% impervious in undeveloped condition)

$Q_{p_{100}} = (.34)(4.08)(5.097) = \underline{7.07 \text{ cfs}}$

$V_{10} = (.34)(2.4 \times .657)(5.097)/12 = \underline{.228 \text{ ac-ft}}$

$V_{100} = (.34)(2.4)(5.097)/12 = \underline{.347 \text{ ac-ft}}$

PROJECT NAME Las Palomas SHEET 1 OF 2
PROJECT NO. BY KJ DATE 7/19/
SUBJECT Peak Flow Calc. (Under.) CH'D DATE

25×10

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BASIN B (7.772 ac)

$s = \frac{5434.0 - 5406.8}{1050} = .0259$

$\therefore V = .97$ ft/s $\qquad T_c = \frac{1050}{.97(60)} = 18.0$ min

$\therefore I/6 = 1.60$ in/hr

note - 6-hr rainfall volume, 100-yr frequency is 2.4-in

so $I_{10} = 1.60(2.4)(.657) = \underline{2.52 \text{ in/hr}}$

$I_{100} = 1.60(2.4) = \underline{3.84 \text{ in/hr}}$

and $Q_{P_{10}} = (.34)(2.52)(7.772) = \underline{6.66 \text{ cfs}}$

$Q_{P_{100}} = (.34)(3.84)(7.772) = \underline{10.15 \text{ cfs}}$

$V_{10} = (.34)(2.4 \times .657)(7.772)/12$

$V_{10} = \underline{.347 \text{ ac-ft}}$

$V_{100} = (.34)(2.4)(7.772)/12$

$V_{100} = \underline{.528 \text{ ac-ft}}$

BASIN C (2.119 ac)

$s = \frac{5425.0 - 5404.1}{465} = .0449 \qquad \therefore V = 1.15$ ft/s

$T_c = \frac{46.5}{1.15(60)} = 6.7$ min (assume 10.0 min)

so $I_{10} = 2.11(2.4)(.657) = \underline{3.33 \text{ in/hr}}$

$I_{100} = 2.11(2.4) = \underline{5.06 \text{ in/hr}}$

and $Q_{P_{10}} = (.34)(3.33)(2.119) = \underline{2.40 \text{ cfs}}$

$Q_{P_{100}} = (.34)(5.06)(2.119) = \underline{3.65 \text{ cfs}}$

$V_{10} = (.34)(2.4 \times .657)(2.119)/12 = \underline{.095 \text{ ac-ft}}$

$V_{100} = (.34)(2.24)(2.119)/12 = \underline{.135 \text{ ac-ft}}$

PROJECT NAME Las Palomas SHEET 2 OF 2
PROJECT NO. BY KJ DATE 7/19/83
P. L. Flow Calc. (Undev.) CH'D DATE

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DEVELOPED PEAK FLOW CALCULATIONS

assume 70% impervious (C = .69)

BASIN A

A = 5.910 ac

$S = \frac{30.5 - 13.1}{1270} = .0137$

$V = 3.15$ ft/s $\therefore T_c = \frac{1270}{3.15(60)} = \cancel{6.72}$ 10.0 min

$I/6 = 2.11$ in/hr

$I_{10} = 2.11(2.4)(.657) = \underline{3.33 \text{ in/hr}}$

$I_{100} = 2.11(2.4) = \underline{5.06 \text{ in/hr}}$

$Q_{P10} = C I_{10} A = (.69)(3.32)(5.910) = \underline{13.58 \text{ cfs}}$

$Q_{P100} = C I_{100} A = (.69)(5.06)(5.910) = \underline{20.63 \text{ cfs}}$

$V_{10} = (.69)(2.4 \times .657)(5.910)/12 = \underline{.536 \text{ ac-ft}}$

$V_{100} = (.69)(2.4)(5.910)/12 = \underline{.816 \text{ ac-ft}}$

BASIN B

A = 3.002 ac

$S = \frac{22.5 - 13.5}{720} = .0123$ V = 3.0 ft/s $\therefore T_c = \frac{720}{3.0(60)} = \cancel{4.0 \text{ min}}$ 10.0 min

$I/6 = 2.11$ in/hr

$I_{10} = 2.11(2.4)(.657) = \underline{3.33 \text{ in/hr}}$ $I_{100} = 2.11(2.4) = \underline{5.06 \text{ in/hr}}$

$Q_{P10} = (.69)(3.33)(3.002) = \underline{6.90 \text{ cfs}}$

$Q_{P100} = (.69)(5.06)(3.002) = \underline{10.48 \text{ cfs}}$

$V_{10} = (.69)(2.4 \times .657)(3.002)/12 = \underline{.272 \text{ ac-ft}}$

$V_{100} = (.69)(2.4)(3.002)/12 = \underline{.414 \text{ ac-ft}}$

PROJECT NAME Las Palomas SHEET 1 OF 2
PROJECT NO. BY JG DATE 7/27/93
SUBJECT Peak Flow Calcs. (Dev.) CH'D DATE

25 ×

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BASIN C A= 2.904 ac

$s = \frac{29.5 - 19.7}{725} = .0135$ V= 2.11 ft/s ∴ $T_c = \frac{725}{3.11 \times 60} = 3.88$ min → 10.0 min

$I/6 = 2.11$ in/hr $I_{10} = 3.33$ in/hr $I_{100} = 5.06$ in/hr

$Q_{P10} = (.69)(3.33)(2.904) = 6.67$ cfs

$Q_{P100} = (.69)(5.06)(2.904) = 10.14$ cfs

$V_{10} = (.69)(2.4 \times .657)(2.904)/12 = .263$ ac-ft

$V_{100} = (.69)(2.4)(2.904)/12 = .401$ ac-ft

BASIN D A= 2.188 ac

$s = \frac{30.7 - 27.8}{430} = .0067$ V= 2.18 ft/s ∴ $T_c = \frac{430}{2.18 \times 60} = 3.29$ min → 10.0 min

$I/6 = 2.11$ in/hr $I_{10} = 3.33$ in/hr

$I_{100} = 5.06$ in/hr

$Q_{P10} = (.69)(3.33)(2.188) = 5.72$ cfs

$Q_{P100} = (.69)(5.06)(2.188) = 8.69$ cfs

$V_{10} = (.69)(2.4 \times .657)(2.188)/12 = .225$ ac-ft

$V_{100} = (.69)(2.4)(2.188)/12 = .343$ ac-ft

PROJECT NAME Las Palomas SHEET 2 OF 2
PROJECT NO. BY KJ DATE 7/27/5
SUBJECT Peak Flow Calcs. (Dev.) CH'D DATE

25 ×

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Depth OF Flow In street At Section X-X
(refer to plate 2)

Area of Basin B contributing = 55,950 ft^2 or 1.28 ac

Soil group "B", assume 75% impervious

C = .71 (plate 22.2 C-1 of DPM)

let s = .025 ∴ V = 4.25 (22.2 E-2)

$T_c = \frac{L}{V \times 60} = \frac{720}{4.25 \times 60} =$ ~~2.82 min~~ → use 10.00 min

∴ I/C = 2.11 , I_{100} = 2.11 × 2.4 = 5.06 in/hr

so Q_{100} = (.71)(5.06)(1.28) = 4.60 cfs

represents 1/2 of street flow for use in plate 22.3 D-1

and D = .32 ft (22.3 D-1)

which shows that with a 4" crown, flows will be seperated by the centerline of the street

PROJECT NAME Las Palomas SHEET 1 OF 1
PROJECT NO BY KJ DATE 7/25/8
SUBJECT Developed Drainage (Undev.) CH'D DATE

25×

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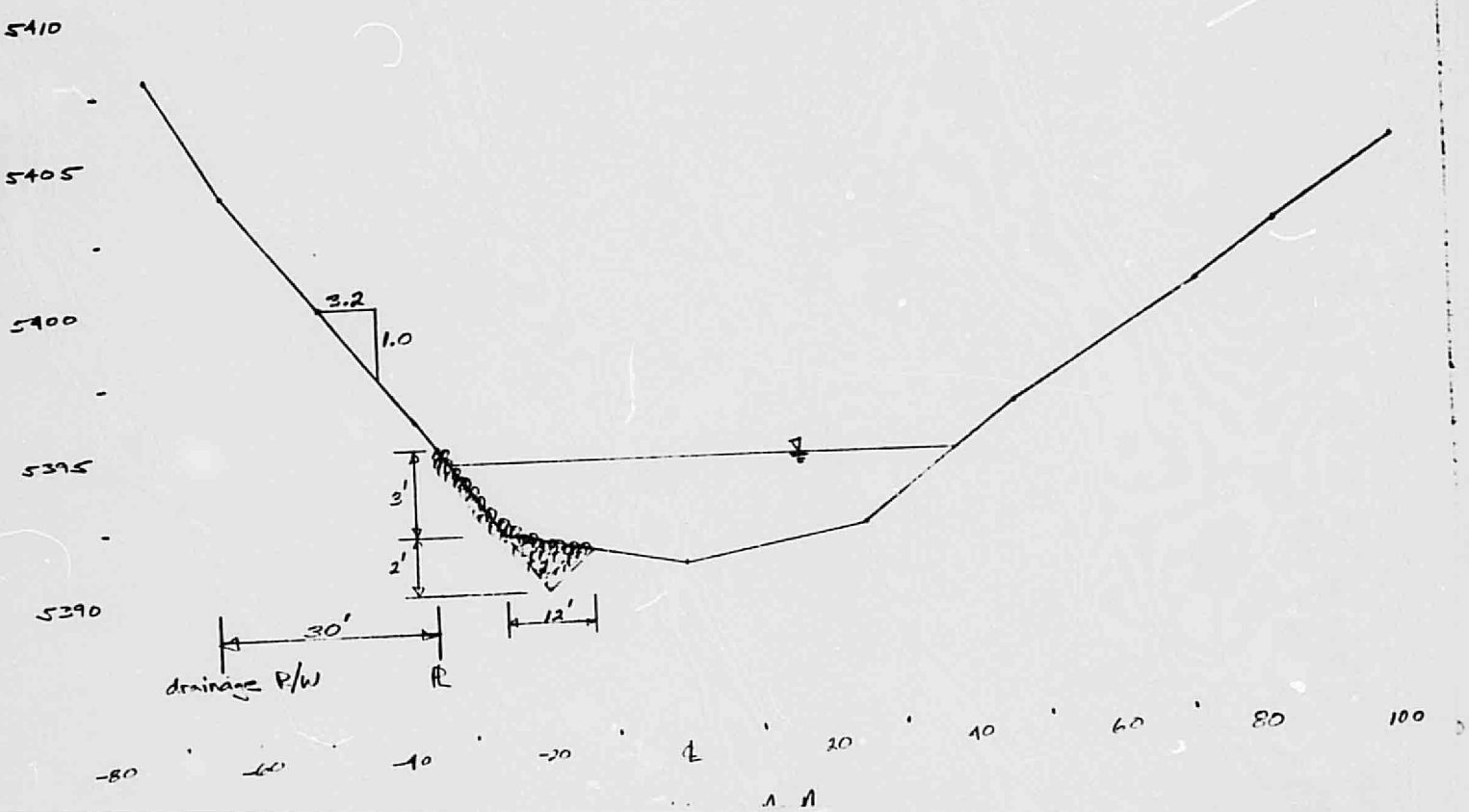
APPENDIX B

CROSS SECTIONS

(SEE PLATE II FOR LOCATIONS)

25×

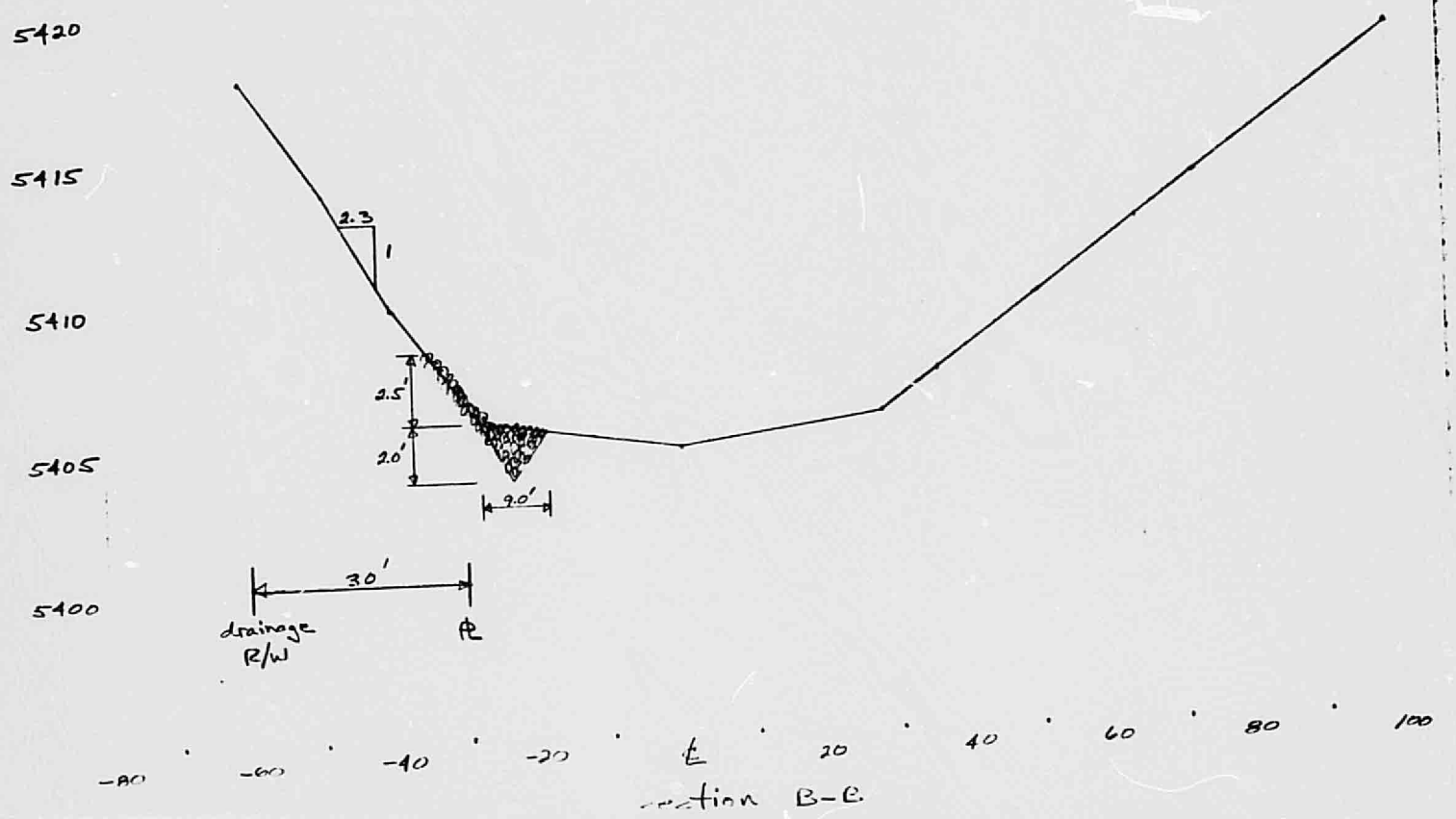
Q_{100} = 1940 cfs
S = .0260
n = .030
z = 3.2 + 5.6/2 = 4.4 (average)
B = 50
d_f = 2.46' (Rip Rap 3' UP)



PROJECT NAME Las Palomas
PROJECT NO
SUBJECT Rip Rap Design
SHEET
BY
CHD
DATE 7/19/82
DATE

25X

Q = 1940 cfs
S = .0350
n = .030
z = 2.3 + 6.5/2 = 4.4 (average)
S = [illegible]'
D = 2.13' (Rip Rap 2.5' Up)

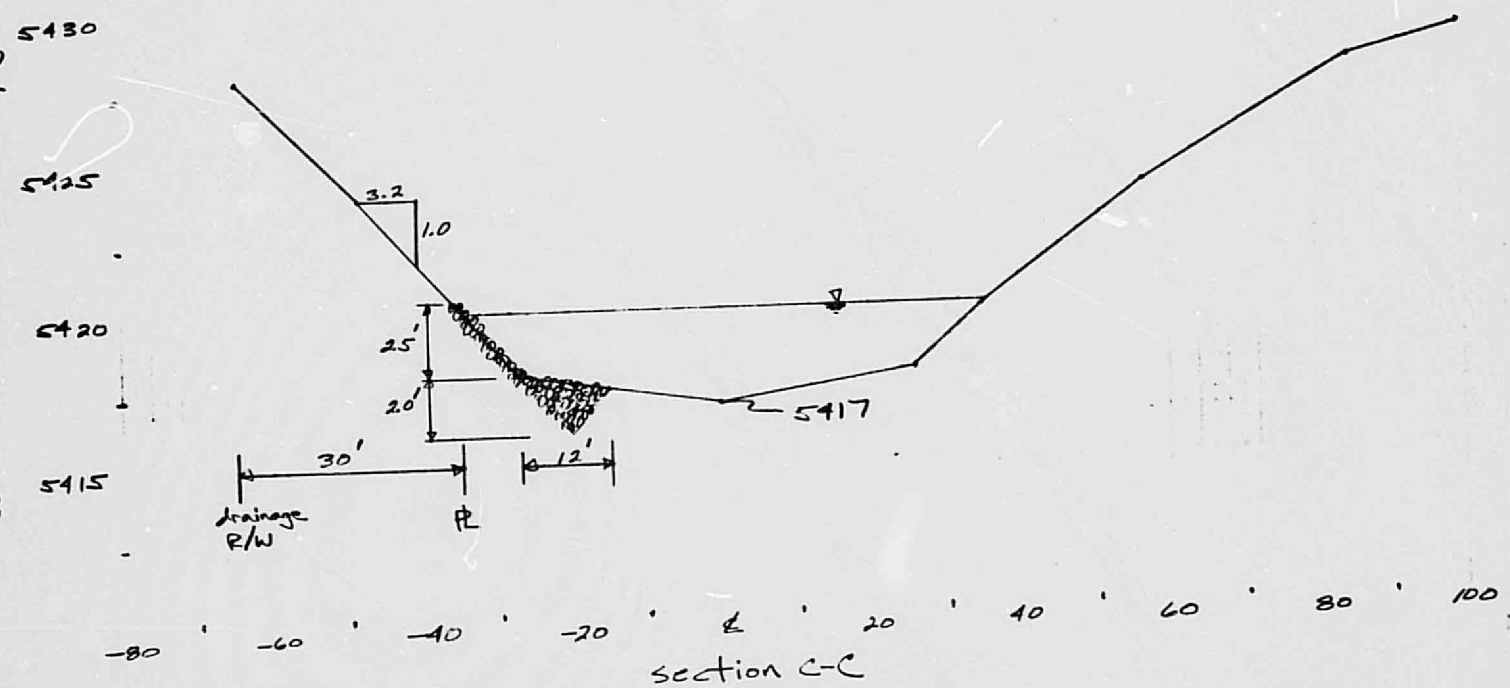


PROJECT NAME Las Palomas SHEET ___ OF ___
PROJECT NO. ___ BY [illegible] DATE 7/19/82
Rip Rap Design CH'D ___ DATE ___

25 X

PROJECT NAME Las Palomas SHEET ___ OF ___
PROJECT NO. ___ BY ___ DATE 7/19/83
SUBJECT Rip Rap Design CH'D ___ DATE ___

Q_{100} = 1940 cfs
S = .0350
n = .030
z = 3.2 + 5.0/2 = 4.5 (average)
B = 53'
D_N = 2.19' (Rip Rap 2.5' Up)



section C-C

25 X

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BROWN & ASSOCIATES, INC.
REALTY SERVICES

Post Office Box 3671
Albuquerque, New Mexico 87190
Offices at: 3800 Carlisle Blvd. NE
(505) 883-1674

November 3, 1983

Mr. Stephen P. Fox, General Partner
DSA-1 Associates, a California
Limited Partnership
Suite 103
20395 Pacifica Drive
Cupertino, California 95014

Re: Tracts X-1 and X-2 of the Summary Plat of Tracts X-1 and X-2, formerly Lots 1 through 5, etc

Dear Steve:

The purpose of this letter is to formalize an agreement between Las Palomas Joint Venture, the owner of Tract X-2, as above described, and DSA-1 Associates, the contract purchasers of Tract X-1, as above described, which will permit the owners of Tract X-2 to temporarily enter upon the easterly 25 feet of Tract X-1 to do grading work which even out the slope along the common boundary of the two tracts. The proposed grading work is described in detail in the grading plan attached hereto as Exhibit "A".

Las Palomas Joint Venture shall comply with the following requirements in grading on the easterly 25 feet of Tract X-1:

1. All grading work will follow the City of Albuquerque's required procedures for such grading, including initial removal of vegetation and foreign debris, moisturizing and compacting the soil to a minimum of 90%. ALL WORK SHALL BE AT SOLE EXPENSE OF LAS PALOMAS JOINT VENTURE.

2. DSA-1 Associates will be provided with all applicable compaction tests.

3. Las Palomas Joint Venture and its contractors shall hold DSA-1 Associates harmless for any liability as a result of its entry onto Tract X-1.

Very truly yours,

Las Palomas Joint Venture

By: Brown & Associates, Inc
Venture Partner

Ronald D. Brown, President

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Agreed to in accordance with the above:

12-28-83. Stephen P. Fox

Stephen P. Fox, General Partner
DSA-1 Associates

PER GRADING PLAN ENTITLED "PRELIMINARY NORTH PARK OFF-SITE GRADING" DATED 10/83, PROJECT NUMBER 31763. RWB 1/6/84

Nov 3, 1983
Off-Site Grading Plan
RWB

25×10

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Proposed Draft Letter to Developer from Dave Woods @ Bohannan. Copy to follow

RON BROWN
BROWN + ASSOCIATES

RE: COUNTRYWOOD DRAINAGE RESTRICTIONS (D19 - D15A)

DEAR RON

THE CONCEPTUAL DRAINAGE REPORT FOR COUNTRYWOOD SUBDIVISION WAS APPROVED WITHOUT REFERENCE TO ANY BACK YARD PONDING. AS A RESULT OF ~~THE~~ THE MORE RECENT MODIFICATIONS TO THE GRADING PLAN WHICH INCLUDES BACK YARD PONDING IT HAS BECOME NECESSARY TO CONFIRM THE DIRECTION OF ROOF DRAINAGE FOR THE DWELLING UNITS.

BACK YARD PONDING WILL BE ACCEPTABLE TO THE CITY HYDROLOGIST PROVIDED THE DWELLING UNITS DO NOT ALLOW ROOF RUNOFF TO ENTER THE BACK YARDS. PLEASE NOTIFY YOUR BUILDER OF THIS REQUIREMENT AND SIGN IN THE SPACE PROVIDED TO INDICATE YOUR INTENT TO COMPLY WITH THIS CITY REGULATION. IF YOU HAVE ANY QUESTIONS PLEASE CALL DAVE WOODS OR ME

RECEIVED MAR 2 1 1984 HYDROLOGY SECTION

BB RECEIVED MAR 1 1984 HYDROLOGY SECTION

31763

CC JOHN ARMSTRONG

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FILE COPY

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

September 21, 1983

Mr. Michial M. Emery, P.E.
Bohannan-Huston, Inc.
4125 Carlisle NE
Albuquerque, NM 87107

REF: CONCEPTUAL GRADING AND DRAINAGE PLAN FOR LAS PALOMAS JOINT VENTURE (D19-D15A)

Dear Mr. Emery:

Based on your letter of September 12, 1983, the above mentioned plan is hereby approved.

If you have any questions, please feel free to call me at 766-7644.

Sincerely,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

AN EQUAL OPPORTUNITY EMPLOYER

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Rundown Hydraulics

COUNTRYWOOD SUBDIVISION

MODIFIED DRAINAGE CRITERIA

WEIR EQUATION C = 3.2

RUNDOWN CAPACITY

RUNDOWN A

CURB OPENING 18'

CURB HEIGHT .67'

DEPTH OF FLOW .51 .67'

Q = 21 CFS 31.58 CFS

Q_{REQ} = 20.63

FLOW @ CHANNEL TRANSITION + GRADE BREAK MANNINGS EQ

PRIOR TO GRADE BREAK

S = .1300

n = .017

W = 4'

d = .5' .36'

Q = 34 CFS 21 CFS

TOTAL ENERGY HEAD 3.3'

3.3 SIN 30 = 1.7'

TOTAL DEPTH REQUIRED .36 + 1.7 = 2.06'

DEPTH PROVIDED 2.2'

VELOCITY = 14.4 FPS

AFTER GRADE BREAK

S = .33

Q = 21 CFS d = .27' V = 19.37 FPS

$d_{PROVIDED}$ = .67'

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RUNDOWN B

REQUIRED CAPACITY 10.48 CFS

CURB OPENING 10'

CURB HEIGHT .67 d = .48

Q = 17.54 CFS 10.5 CFS

FLOW @ CHANNEL TRANSITION + GRADE BREAK

S = .1300

n = .017

w = 2'

d = .5' .39' V = 13.52 FPS

Q = 15.25 CFS 10.5 CFS

VELOCITY HEAD 2.9'

2.9 SIN 30 = 1.46'

TOTAL DEPTH REQUIRED 1.46 + .39 = 1.85'

DEPTH PROVIDED 1.6'

AFTER TRANSITION

S = .33

Q = 10.5 CFS

d = .28' V = 18.4 FPS

d PROVIDED .5'

25×10

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32' STREET 46' ROW MONTABLE CURB
2% SLOPE ON SIDEWALKS

ROAD

MANNINGS N=.0170 SLOPE =.0054

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	2.00	0.30	1.99
0.04	0.04	0.08	0.04	4.00	0.47	3.99
0.06	0.06	0.18	0.11	5.99	0.62	5.98
0.08	0.08	0.32	0.24	7.99	0.75	7.97
0.10	0.10	0.50	0.43	9.99	0.87	9.97
0.12	0.12	0.72	0.71	11.99	0.98	11.96
0.14	0.14	0.98	1.06	13.98	1.09	13.95
0.16	0.16	1.28	1.52	15.98	1.19	15.95
0.18	0.18	1.61	2.08	17.98	1.29	17.94
0.20	0.20	1.99	2.75	19.98	1.38	19.93
0.22	0.22	2.41	3.55	21.97	1.47	21.93
0.24	0.24	2.87	4.46	23.97	1.56	23.92
0.26	0.26	3.37	5.55	25.97	1.65	25.91
0.28	0.28	3.91	6.76	27.97	1.73	27.91
0.30	0.30	4.49	8.12	29.96	1.81	29.90
0.32	0.32	5.10	9.65	31.96	1.89	31.89
0.34	0.34	5.75	11.50	33.07	2.00	33.00
0.36	0.36	6.43	13.32	35.07	2.07	35.00
0.38	0.38	7.15	15.32	37.07	2.14	37.00
0.40	0.40	7.91	17.51	39.07	2.21	39.00
0.42	0.42	8.71	19.89	41.07	2.28	41.00
0.44	0.44	9.55	22.46	43.07	2.35	43.00
0.46	0.46	10.43	25.24	45.07	2.42	45.00
0.47	0.47	10.88	26.71	46.07	2.45	46.00

Street Hydraulics

RECEIVED
MAR 21 1984
HYDROLOGY SECTION

25×10

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ROAD

MANNINGS N=.0170 SLOPE =.0100

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	2.00	0.41	1.99
0.04	0.04	0.08	0.05	4.00	0.64	3.99
0.06	0.06	0.18	0.15	5.99	0.84	5.98
0.08	0.08	0.32	0.33	7.99	1.02	7.97
0.10	0.10	0.50	0.59	9.99	1.18	9.97
0.12	0.12	0.72	0.96	11.99	1.34	11.96
0.14	0.14	0.98	1.45	13.98	1.48	13.95
0.16	0.16	1.28	2.07	15.98	1.62	15.95
0.18	0.18	1.61	2.83	17.98	1.75	17.94
0.20	0.20	1.99	3.75	19.98	1.88	19.93
0.22	0.22	2.41	4.83	21.97	2.00	21.93
0.24	0.24	2.87	6.10	23.97	2.12	23.92
0.26	0.26	3.37	7.55	25.97	2.24	25.91
0.28	0.28	3.91	9.20	27.97	2.35	27.91
0.30	0.30	4.49	11.05	29.96	2.46	29.90
0.32	0.32	5.10	13.13	31.96	2.57	31.89
0.34	0.34	5.75	15.65	33.07	2.72	33.00
0.36	0.36	6.43	18.13	35.07	2.82	35.00
0.38	0.38	7.15	20.85	37.07	2.92	37.00
0.40	0.40	7.91	23.83	39.07	3.01	39.00
0.42	0.42	8.71	27.06	41.07	3.11	41.00
0.44	0.44	9.55	30.57	43.07	3.20	43.00
0.46	0.46	10.43	34.35	45.07	3.29	45.00
0.47	0.47	10.88	36.35	46.07	3.34	46.00

25×10

ROAD

MANNINGS N=.0170 SLOPE =.0150

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	2.00	0.50	1.99
0.04	0.04	0.08	0.06	4.00	0.79	3.99
0.06	0.06	0.18	0.19	5.99	1.03	5.98
0.08	0.08	0.32	0.40	7.99	1.25	7.97
0.10	0.10	0.50	0.72	9.99	1.45	9.97
0.12	0.12	0.72	1.18	11.99	1.64	11.96
0.14	0.14	0.98	1.77	13.98	1.82	13.95
0.16	0.16	1.28	2.53	15.98	1.98	15.95
0.18	0.18	1.61	3.47	17.98	2.15	17.94
0.20	0.20	1.99	4.59	19.98	2.30	19.93
0.22	0.22	2.41	5.92	21.97	2.45	21.93
0.24	0.24	2.87	7.47	23.97	2.60	23.92
0.26	0.26	3.37	9.24	25.97	2.74	25.91
0.28	0.28	3.91	11.26	27.97	2.88	27.91
0.30	0.30	4.49	13.54	29.96	3.02	29.90
0.32	0.32	5.10	16.08	31.96	3.15	31.89
0.34	0.34	5.75	19.16	33.07	3.33	33.00
0.36	0.36	6.43	22.20	35.07	3.45	35.00
0.38	0.38	7.15	25.54	37.07	3.57	37.00
0.40	0.40	7.91	29.18	39.07	3.69	39.00
0.42	0.42	8.71	33.14	41.07	3.81	41.00
0.44	0.44	9.55	37.44	43.07	3.92	43.00
0.46	0.46	10.43	42.07	45.07	4.03	45.00
0.47	0.47	10.88	44.52	46.07	4.09	46.00

25×

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ROAD

MANNINGS N=.0170 SLOPE =.0200

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	2.00	0.57	1.99
0.04	0.04	0.08	0.07	4.00	0.91	3.99
0.06	0.06	0.18	0.21	5.99	1.19	5.98
0.08	0.08	0.32	0.46	7.99	1.44	7.97
0.10	0.10	0.50	0.83	9.99	1.68	9.97
0.12	0.12	0.72	1.36	11.99	1.89	11.96
0.14	0.14	0.98	2.05	13.98	2.10	13.95
0.16	0.16	1.28	2.92	15.98	2.29	15.95
0.18	0.18	1.61	4.00	17.98	2.48	17.94
0.20	0.20	1.99	5.30	19.98	2.66	19.93
0.22	0.22	2.41	6.84	21.97	2.83	21.93
0.24	0.24	2.87	8.62	23.97	3.00	23.92
0.26	0.26	3.37	10.67	25.97	3.17	25.91
0.28	0.28	3.91	13.00	27.97	3.33	27.91
0.30	0.30	4.49	15.63	29.96	3.49	29.90
0.32	0.32	5.10	18.57	31.96	3.64	31.89
0.34	0.34	5.75	22.13	33.07	3.85	33.00
0.36	0.36	6.43	25.64	35.07	3.99	35.00
0.38	0.38	7.15	29.49	37.07	4.13	37.00
0.40	0.40	7.91	33.70	39.07	4.26	39.00
0.42	0.42	8.71	38.27	41.07	4.40	41.00
0.44	0.44	9.55	43.23	43.07	4.53	43.00
0.46	0.46	10.43	48.58	45.07	4.66	45.00
0.47	0.47	10.88	51.41	46.07	4.72	46.00

25×

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ROAD

MANNINGS N=.0170 SLOPE =.0250

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	2.00	0.64	1.99
0.04	0.04	0.08	0.08	4.00	1.02	3.99
0.06	0.06	0.18	0.24	5.99	1.33	5.98
0.08	0.08	0.32	0.51	7.99	1.61	7.97
0.10	0.10	0.50	0.93	9.99	1.87	9.97
0.12	0.12	0.72	1.52	11.99	2.12	11.96
0.14	0.14	0.98	2.29	13.98	2.34	13.95
0.16	0.16	1.28	3.27	15.98	2.56	15.95
0.18	0.18	1.61	4.48	17.98	2.77	17.94
0.20	0.20	1.99	5.93	19.98	2.97	19.93
0.22	0.22	2.41	7.64	21.97	3.17	21.93
0.24	0.24	2.87	9.64	23.97	3.36	23.92
0.26	0.26	3.37	11.93	25.97	3.54	25.91
0.28	0.28	3.91	14.54	27.97	3.72	27.91
0.30	0.30	4.49	17.48	29.96	3.90	29.90
0.32	0.32	5.10	20.76	31.96	4.07	31.89
0.34	0.34	5.75	24.74	33.07	4.30	33.00
0.36	0.36	6.43	28.66	35.07	4.46	35.00
0.38	0.38	7.15	32.97	37.07	4.61	37.00
0.40	0.40	7.91	37.67	39.07	4.76	39.00
0.42	0.42	8.71	42.79	41.07	4.91	41.00
0.44	0.44	9.55	48.33	43.07	5.06	43.00
0.46	0.46	10.43	54.31	45.07	5.21	45.00
0.47	0.47	10.88	57.47	46.07	5.28	46.00

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ROAD

MANNINGS N=.0170 SLOPE =.0300

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.01	2.00	0.70	1.99
0.04	0.04	0.08	0.09	4.00	1.11	3.99
0.06	0.06	0.18	0.26	5.99	1.46	5.98
0.08	0.08	0.32	0.56	7.99	1.77	7.97
0.10	0.10	0.50	1.02	9.99	2.05	9.97
0.12	0.12	0.72	1.66	11.99	2.32	11.96
0.14	0.14	0.98	2.51	13.98	2.57	13.95
0.16	0.16	1.28	3.58	15.98	2.81	15.95
0.18	0.18	1.61	4.90	17.98	3.04	17.94
0.20	0.20	1.99	6.49	19.98	3.26	19.93
0.22	0.22	2.41	8.37	21.97	3.47	21.93
0.24	0.24	2.87	10.56	23.97	3.68	23.92
0.26	0.26	3.37	13.07	25.97	3.88	25.91
0.28	0.28	3.91	15.93	27.97	4.08	27.91
0.30	0.30	4.49	19.14	29.96	4.27	29.90
0.32	0.32	5.10	22.74	31.96	4.46	31.89
0.34	0.34	5.75	27.10	33.07	4.72	33.00
0.36	0.36	6.43	31.40	35.07	4.89	35.00
0.38	0.38	7.15	36.12	37.07	5.05	37.00
0.40	0.40	7.91	41.27	39.07	5.22	39.00
0.42	0.42	8.71	46.87	41.07	5.38	41.00
0.44	0.44	9.55	52.94	43.07	5.55	43.00
0.46	0.46	10.43	59.50	45.07	5.71	45.00
0.47	0.47	10.88	62.96	46.07	5.79	46.00

25×10

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ROAD

MANNINGS N=.0170 SLOPE =.0350

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.02	2.00	0.76	1.99
0.04	0.04	0.08	0.10	4.00	1.20	3.99
0.06	0.06	0.18	0.28	5.99	1.58	5.98
0.08	0.08	0.32	0.61	7.99	1.91	7.97
0.10	0.10	0.50	1.10	9.99	2.22	9.97
0.12	0.12	0.72	1.80	11.99	2.50	11.96
0.14	0.14	0.98	2.71	13.98	2.77	13.95
0.16	0.16	1.28	3.87	15.98	3.03	15.95
0.18	0.18	1.61	5.30	17.98	3.28	17.94
0.20	0.20	1.99	7.01	19.98	3.52	19.93
0.22	0.22	2.41	9.04	21.97	3.75	21.93
0.24	0.24	2.87	11.40	23.97	3.97	23.92
0.26	0.26	3.37	14.12	25.97	4.19	25.91
0.28	0.28	3.91	17.20	27.97	4.40	27.91
0.30	0.30	4.49	20.68	29.96	4.61	29.90
0.32	0.32	5.10	24.56	31.96	4.81	31.89
0.34	0.34	5.75	29.27	33.07	5.09	33.00
0.36	0.36	6.43	33.91	35.07	5.28	35.00
0.38	0.38	7.15	39.01	37.07	5.46	37.00
0.40	0.40	7.91	44.58	39.07	5.64	39.00
0.42	0.42	8.71	50.63	41.07	5.81	41.00
0.44	0.44	9.55	57.19	43.07	5.99	43.00
0.46	0.46	10.43	64.26	45.07	6.16	45.00
0.47	0.47	10.88	68.00	46.07	6.25	46.00

25×10

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ROAD

MANNINGS N=.0170 SLOPE =.0400

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.60	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.02	2.00	0.81	1.99
0.04	0.04	0.08	0.10	4.00	1.29	3.99
0.06	0.06	0.18	0.30	5.99	1.69	5.98
0.08	0.08	0.32	0.65	7.99	2.04	7.97
0.10	0.10	0.50	1.18	9.99	2.37	9.97
0.12	0.12	0.72	1.92	11.99	2.68	11.96
0.14	0.14	0.98	2.90	13.98	2.97	13.95
0.16	0.16	1.28	4.14	15.98	3.24	15.95
0.18	0.18	1.61	5.66	17.98	3.51	17.94
0.20	0.20	1.99	7.50	19.98	3.76	19.93
0.22	0.22	2.41	9.67	21.97	4.01	21.93
0.24	0.24	2.87	12.19	23.97	4.25	23.92
0.26	0.26	3.37	15.09	25.97	4.48	25.91
0.28	0.28	3.91	18.39	27.97	4.71	27.91
0.30	0.30	4.49	22.10	29.96	4.93	29.90
0.32	0.32	5.10	26.26	31.96	5.15	31.89
0.34	0.34	5.75	31.29	33.07	5.44	33.00
0.36	0.36	6.43	36.26	35.07	5.64	35.00
0.38	0.38	7.15	41.70	37.07	5.83	37.00
0.40	0.40	7.91	47.65	39.07	6.03	39.00
0.42	0.42	8.71	54.13	41.07	6.22	41.00
0.44	0.44	9.55	61.14	43.07	6.40	43.00
0.46	0.46	10.43	68.70	45.07	6.59	45.00
0.47	0.47	10.88	72.70	46.07	6.68	46.00

25×10

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ROAD

MANNINGS N=.0170 SLOPE =.0450

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.02	2.00	0.86	1.99
0.04	0.04	0.08	0.11	4.00	1.36	3.99
0.06	0.06	0.18	0.32	5.99	1.79	5.98
0.08	0.08	0.32	0.69	7.99	2.17	7.97
0.10	0.10	0.50	1.25	9.99	2.51	9.97
0.12	0.12	0.72	2.04	11.99	2.84	11.96
0.14	0.14	0.98	3.07	13.98	3.15	13.95
0.16	0.16	1.28	4.39	15.98	3.44	15.95
0.18	0.18	1.61	6.00	17.98	3.72	17.94
0.20	0.20	1.99	7.95	19.98	3.99	19.93
0.22	0.22	2.41	10.25	21.97	4.25	21.93
0.24	0.24	2.87	12.93	23.97	4.50	23.92
0.26	0.26	3.37	16.01	25.97	4.75	25.91
0.28	0.28	3.91	19.51	27.97	4.99	27.91
0.30	0.30	4.49	23.45	29.96	5.23	29.90
0.32	0.32	5.10	27.85	31.96	5.46	31.89
0.34	0.34	5.75	33.19	33.07	5.77	33.00
0.36	0.36	6.43	38.46	35.07	5.98	35.00
0.38	0.38	7.15	44.23	37.07	6.19	37.00
0.40	0.40	7.91	50.54	39.07	6.39	39.00
0.42	0.42	8.71	57.41	41.07	6.59	41.00
0.44	0.44	9.55	64.84	43.07	6.79	43.00
0.46	0.46	10.43	72.87	45.07	6.99	45.00
0.47	0.47	10.88	77.11	46.07	7.09	46.00

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ROAD

MANNINGS N=.0170 SLOPE =.0500

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.47	4	23.00	0.32	7	46.00	0.47
2	7.00	0.33	5	37.25	0.00			
3	8.75	0.00	6	39.00	0.33			

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
0.02	0.02	0.02	0.02	2.00	0.91	1.99
0.04	0.04	0.08	0.11	4.00	1.44	3.99
0.06	0.06	0.18	0.34	5.99	1.88	5.98
0.08	0.08	0.32	0.73	7.99	2.28	7.97
0.10	0.10	0.50	1.32	9.99	2.65	9.97
0.12	0.12	0.72	2.15	11.99	2.99	11.96
0.14	0.14	0.98	3.24	13.98	3.32	13.95
0.16	0.16	1.28	4.62	15.98	3.62	15.95
0.18	0.18	1.61	6.33	17.98	3.92	17.94
0.20	0.20	1.99	8.38	19.98	4.21	19.93
0.22	0.22	2.41	10.81	21.97	4.48	21.93
0.24	0.24	2.87	13.63	23.97	4.75	23.92
0.26	0.26	3.37	16.87	25.97	5.01	25.91
0.28	0.28	3.91	20.56	27.97	5.26	27.91
0.30	0.30	4.49	24.71	29.96	5.51	29.90
0.32	0.32	5.10	29.36	31.96	5.75	31.89
0.34	0.34	5.75	34.99	33.07	6.09	33.00
0.36	0.36	6.43	40.54	35.07	6.31	35.00
0.38	0.38	7.15	46.63	37.07	6.52	37.00
0.40	0.40	7.91	53.28	39.07	6.74	39.00
0.42	0.42	8.71	60.51	41.07	6.95	41.00
0.44	0.44	9.55	68.35	43.07	7.16	43.00
0.46	0.46	10.43	76.81	45.07	7.37	45.00
0.47	0.47	10.88	81.28	46.07	7.47	46.00

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

June 20, 1983

Mr. Ronald Brown
Brown & Associates, Inc.
P.O. Box 3671
Albuquerque, N.M. 87190

RE: YOUR LETTER OF JUNE 10, 1983

Dear Ron:

I have researched the specific questions in your letter of June 10, 1983 and forward the following comments:

Question 1: No permanent channelization or lining will be required if the development does not encroach into the 150 ft. drainage right-of-way. Likewise, as per Section 9D of the Drainage Ordinance, reclamation of any part of the easement requires permanent treatment at developer expense. If there is no encroachment of the right-of-way, some type of erosion protection along the north arroyo bank may be required.

2. Direct discharge of developed runoff is allowed. Mitigation of low frequency storms and nuisance runoff to the channel system is encouraged and may require minimal on-site detention. Downstream erosion protection will be required at the development's drainage outfall.

I trust that my responses are adequate for your planning effort. Please call if you need further information.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

cc: Richard Leonard, AMAFCA

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ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

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

September 12, 1983

Mr. John Armstrong
Municipal Development Department
Hydrology
City of Albuquerque
123 Central Ave., N.W.
Albuquerque, NM 87103

Re: Las Palomas Preliminary Grading & Drainage Plan (D19--D15A)

Dear John:

According to your phone conversation with Dave Woods September 12, 1983, you had concerns about the capacity of the Domingo Baca Arroyo culvert crossing at I-25. This letter is intended to address that concern in relation to your letter dated August 25, 1983.

Review of the "Interstate 25 Frontage Roads Drainage Structure Analysis Revised October, 1982" shows that the peak 100-year flow in the Domingo Baca Arroyo at the I-25 crossing is 2,150 cfs and the capacity of the existing crossing structure is 7,020 cfs. It does not appear that any increase in runoff from the Las Palomas Subdivision, due to development, will have any significant impact on the residual capacity of th I-25 crossing structure.

As noted in your letter the rundowns and bank protection in the Domingo Baca Arroyo will be approved by the proper authorities. Also, the financial guarantees for the drainage improvements will be provided before the subdivision plat is filed.

Please consider this information in the preparation of your drainage plan approval letter. If you have any questions, please call Dave Woods or me.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc: Mr. Fred Aguirre

DWW/blm
Job No. 3 176 0

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

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

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

August 25, 1983

Mr. Michial M. Emery, PE
Bohannan-Huston, Inc.
4125 Carlisle NE
Albuquerque, NM 87107

REF: CONCEPTUAL GRADING AND DRAINAGE PLAN FOR LAS PALOMAS JOINT VENTURE (D19-D15A)

Dear Mr. Emery:

These are my comments on the above mentioned plan:

1. Free discharge can only be permitted if you can demonstrate that it will not adversly affect any downstream flooding.

2. Entrance points and bank protection to the Domingo Baca Arroyo will need to be approved by the proper authorities.

3. Financial guarantees for drainage, utilities and street improvements will be required.

If you have any questions, please feel free to contact this office.

Sincerely,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

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ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

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

July 29, 1983

Mr. Fred Aguirre
Civil Engineer/Hydrology
City Engineer's Office
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Conceptual Grading and Drainage Plan for Las Palomas Joint Venture (D-19-Z)

Dear Fred:

Enclosed for your review are two (2) copies of the Conceptual Grading and Drainage Plan for the proposed Las Palomas Patio Homes project. This project has been submitted to the EPC for site plan approval at their September 15, 1983 meeting. as you know, the proposed channel treatment for the Domingo Baca Arroyo has been discussed with AMAFCA and received approval in concept.

I will appreciate your review of this plan prior to the EPC hearing, and will be glad to answer any questions you may have. Please feel free to call.

Sincerely,

Michial M. Emery, P.E.
Vice President

Enclosures

cc: Mr. Ron Brown w/encl.
Mr. Rich Leonard w/encl.
Mr. Gene Mares

RECEIVED
JUL 29 1983
ENGINEERING

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

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RAMON LARA, P. E.
DARRELL L. WADE, P. E.
PATRICK L. STIEHR, P. E.
DAVID M. Y. MILLIKAN, P. E.

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Trail

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 20, 1995

CERTIFICATE OF COMPLETION AND ACCEPTANCE

John Mechenbier
Construction Company
P.O. Box 90938
Albuquerque, NM 87199

RE: COUNTY WOOD SUBDIVISION, PROJECT NO. 4768.90 (MAP NO. D-19)

Dear Sir:

This is to certify that the City of Albuquerque accepts Project No. 4768.80 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- Relocated existing fire hydrant in front of 7941 Woodridge Dr., N.E., 7.5' south of its existing location. This was done to provide additional driveway access to the new house construction on this site.

The contractor's correction period began on February 25, 1994, and was effective for a period of one (1) year.

Sincerely,

Rick Roybal, P.E.
City Engineer,
Engineering Group
Public Works Department

Sincerely,

Russell B. Givler, P.E.
Chief Construction Engineer,
Engineering Group
Public Works Department

MAR 24

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

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cc: Mechenbier Construction Company
McDowell Engineering
Fred Aguirre, Engineering Group, PWD
Thersa Lucero, Engineering Group, PWD
Terri Martin, Engineering Group, PWD
Stuart Reeder, Water/Wastewater Group, PWD
Josie Gutierrez, New Meter Sales, Finance Group, PWD
Richard Zamora, Engineering Group, PWD
f/Project No. 4768.80
f/Readers
f/Warranty:Contract

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FILE W/ REPORT

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

D-19 D15A

June 25, 1984

Mr. Ronald D. Brown
Brown & Associates, Inc.
P. O. Box 3671
Albuquerque, NM 87190

RE: Request of June 14, 1984 Regarding City Project #2055 - Countrywood Subdivision

Dear Ron:

While I appreciate your advising us of your intended construction activities on the model home sites in the project, Countrywood Subdivision, it appears that since you are not requesting any City services until final acceptance of the systems by the City, no specific authorization will be required for your model home construction other than the normal building permit.

By copy of this letter and your letter of June 14, 1984, I am informing the Chief Building Official, Charles Volz, Street Maintenance Engineer, George Paul, Water Resources Department, Walter Nickerson and Sam Cummins, and the Design Hydrologist Engineer, Fred Aguirre, of your intended construction process. Since it appears that the only use you will make of City facilities is your construction access on Palomas, I remind you that the existing street(s) must be protected during such access. You will, of course, be held responsible if any damage occurs.

I trust this answers your needs.

Very truly yours,

C. D. Sheppard, P.E.

C. Dwayne Sheppard, P.E.
City Engineer

CDS/dw

cc/enc: Charles Volz, Chief Building Official
George Paul, Street Maintenance Engineer
Walter Nickerson, Chief Engineer, Water Resources
Sam Cummins, Chief, Water Systems Div., Water Resources
Fred Aguirre, Design Hydrologist, MDD/ENG
File

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3413

BROWN & ASSOCIATES, INC.
REALTY SERVICES

Post Office Box 3671
Albuquerque, New Mexico 87190
Offices at: 3800 Carlisle Blvd. NE
(505) 883-1674

June 14, 1984

RECEIVED
JUN 15 1984
CITY ENGINEER

Mr. C. Dwayne Sheppard
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Construction of Model Home Complex
Countrywood Subdivision
City Project #2055
Las Palomas Joint Venture - Owner/Developer

Dear Dwayne:

Several months ago I mentioned to you that we were desirous of building a model home sales complex on the referenced subdivision in advance of the completion of subdivision improvements subject to the following conditions:

1. That no homebuilder construction vehicles or other activities will be permitted on the streets within the subdivision which are under construction until there is a partial City acceptance of the subdivision (base course paving, valves and manholes adjusted and water lines activated). All construction vehicles will utilize only Palomas Avenue. The model homes will be built on Lots 90, 91, 92 and 93, all of which back onto Palomas Avenue.

2. No water from within the subdivision will be required. There is a live fire hydrant at the northeast corner of the subdivision on Palomas Avenue that can be used for emergency fire protection.

3. There will be no occupancy of any of the units until there is City acceptance of the water system within Countrywood Subdivision.

4. Las Palomas Joint Venture, the owner-developer of the subdivision, and Inman Homes, Inc., the builder, will hold the City of Albuquerque harmless of any liability for commencement of construction activities prior to the acceptance of the subdivision improvements by the City.

I have enclosed a copy of the subdivision plat showing the proposed model complex location, the method of access for construction vehicles and the location of the live fire hydrant at the northeast corner of the subdivision.

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I would like to meet with you after you have had a chance to review this letter, as I would like guidance from you as to the proper procedure for us to follow in obtaining this special exemption.

Very truly yours,

LAS PALOMAS JOINT VENTURE

Brown & Associates, Inc.
Venture Partner

Ronald D. Brown

RDB:lc

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