PUBLIC WORKS/HYDROLOGY

C18/D15

0000 0000 1858

C18/D15

25×10 32×10

0000 0000 1854

RECEIVED FEB 17 1987 SECTION

DRAINAGE COVENANT

THIS COVENANT made this 16 day of February, 1987, by and between

Raymond P. Cohen and Patricia B. Cohen, owners of Lot B-1 of the Amended Replat of Lots A-2 and B, Block 9, Tract A, Unit B, North Albuquerque Acres, City of Albuquerque, New Mexico as the same is filed in the office of the Bernalillo County Clerk on October 26, 1986 in Volume C31, Folio 186

and

John Wirth Jr. and Billie Jean Wirth owners of Lot A-1 of the Replat of Lot A, Block 9, Tract A, Unit B, North Albuquerque Acres, City of Albuquerque, New Mexico as the same is filed in the office of the Bernalillo County Clerk on April 13, 1984 in Volume C23, Folio 155; and also owners of Lot 13, Block 9, Tract A, Unit B, North Albuquerque Acres, City of Albuquerque, New Mexico as the same is filed in the office of the Bernalillo County Clerk on April 24, 1936 in Book D-130.

The Owner(s) (which term includes successors and assigns) of said Lots A-1 and 13 grant to the Owners of said Lot B-1 the right to convey storm runoff, any drainage from watering landscaping and any other ordinary domestic use across the boundary lines to the right-of-way of Alameda Place NE. (also referred to as Alameda Avenue and Modesto Avenue) to the extent shown on Isaacson & Arfman, P.A., Grading & Drainage Plan of Said lot B-1, stamped by Tom Isaacson Feb. 16, 1987. RPC This **DRAINAGE COVENANT** is binding upon the Owner(s), his heirs and assigns and will continue to run with said property until an alternate drainage plan has been approved by the City Hydrology Department and released by the Owner by recorded document.

Owners Lot B-1

Raymond P. Cohen — Patricia B. Cohen

Owners Lots A-1 and 13

John Wirth Jr. — Billie Jean Wirth

ACKNOWLEDGEMENT

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

On this 16th day of February, 1987, the foregoing instrument was acknowledged before me by Raymond P. Cohen, Patricia B. Cohen, John Wirth Jr. and Billie Jean Wirth.

My commission expires August 29, 1988 — Nancyanne Faux, Notary Public

OFFICIAL SEAL
Nancyanne Faux
NOTARY PUBLIC - STATE OF NEW MEXICO
Notary Bond Filed with Secretary of State
My Commission Expires _____

25× 32×

Isaacson & Arfman, P.A.

SUBJECT _____ JOB NO. ____

BY _____ DATE _____ SHEET NO. ____ OF ____

TABLE 1

100-YEAR PEAK DISCHARGES – EXISTING CONDITIONS

Structure Number[1]	Structure Description	Drainage Area (Acres)	Structure Capacity (CFS)	100-Year Peak Discharge (CFS)[3]	Comments
18	1-36"x284' RCP	19.9[2]	41	41.5	Local drainage
17	1-36"x284' RCP	19.9[2]	41	41.5	Local drainage
16	1-36"x289' RCP	19.9[2]	41	41.5	Local drainage
15	1-36"x283' RCP	19.9[2]	41	41.5	Local drainage
14	1-42"x294' RCP	13.8	63	28.8	Local drainage
13	5-36"x293' RCP	226	335	280	Wildflower Arroyo
12	8-36"x295' RCP	159	600	196	La Cueva Arroyo
11A	1-24"x297' RCP	14.8	28	25.3	
11	3-42"x294' RCP	3466	210	3982	New La Cueva Crossing (triple 10'x10' box)
10	1-24"x301' RCP	9[2]	22	16.4[2]	
9	1-24"x312' RCP	9[2]	17	16.4[2]	
8	12-48"x308' RCP	1982	1260	2165	El Camino Arroyo
7	1-36"x312' RCP	11	90	51.6	
6	1-24"x287' RCP	7	30	32.8	
5	12-48"x297' RCP	1030	1680	1345	North El Camino Crossing

[1] From I-25 Frontage Road Drainage Study. See Plates II and III.
[2] Where a single basin drains to more than one structure, drainage area and peak discharge for the entire basin is shown at each structure.
[3] Discharges computed by the rational formula. See I-25 Frontage Road Drainage Report for additional information.

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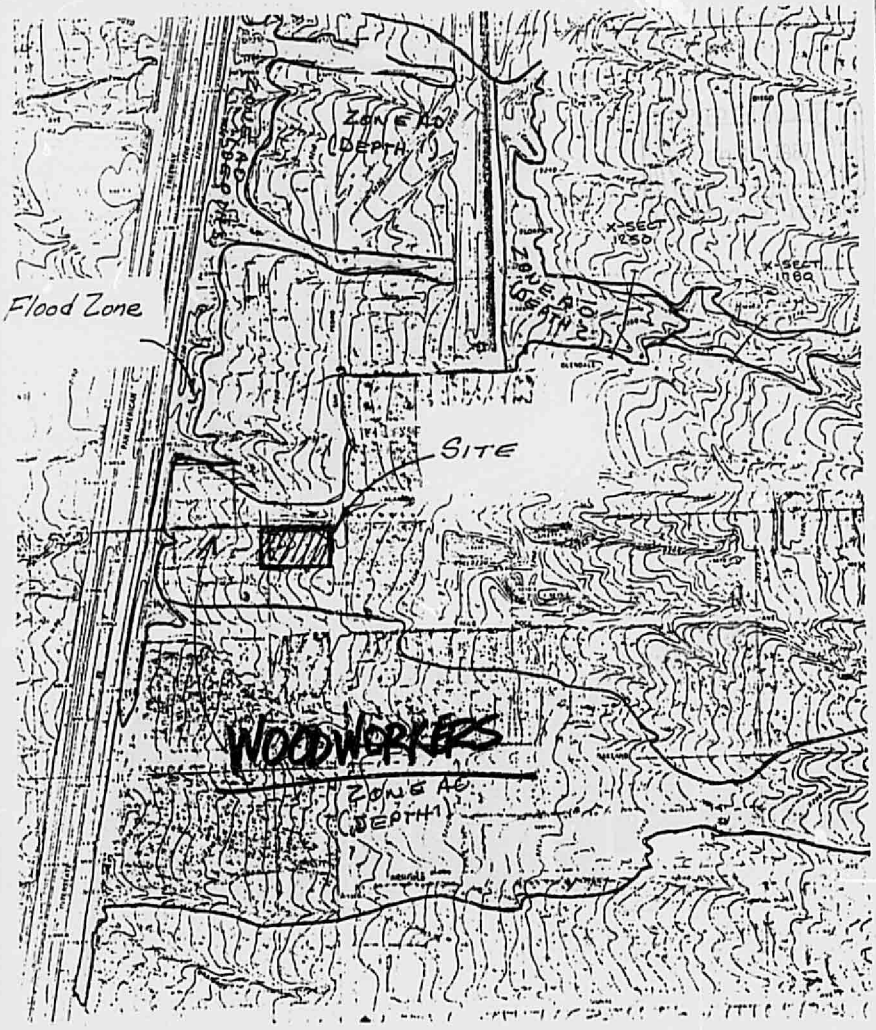
Figure 'C'

EXISTING CULVERT & DRAINAGE DISCHARGE CONDITIONS

Source: D.M.S. for La Cueva & El Camino Arroyos (B-H)

25 X
32 X

0000 0000 1861



FLOOD HAZARD MAP

1" = 500'

Source: Advence Flood Hazard Revision by Bohannan-Huston

Figure 'A'

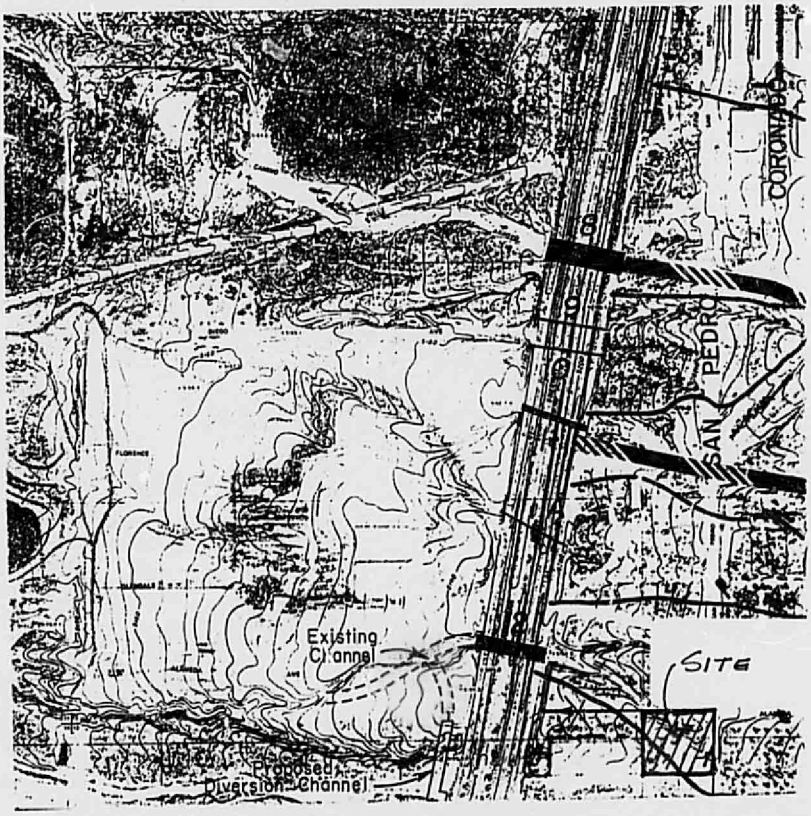
Isaacson & Arfman, P.A.

SUBJECT _____ JOB NO. _____

BY _____ DATE _____ SHEET NO. ____ OF ____

25 × 10 32 × 10

0000 0000 .1862



CULVERT LOCATIONS

FEB 17 1987
HYDROLOGY SECTION

Source: D.M.S. for La Cueva & El Camino Arroyos (B-H)

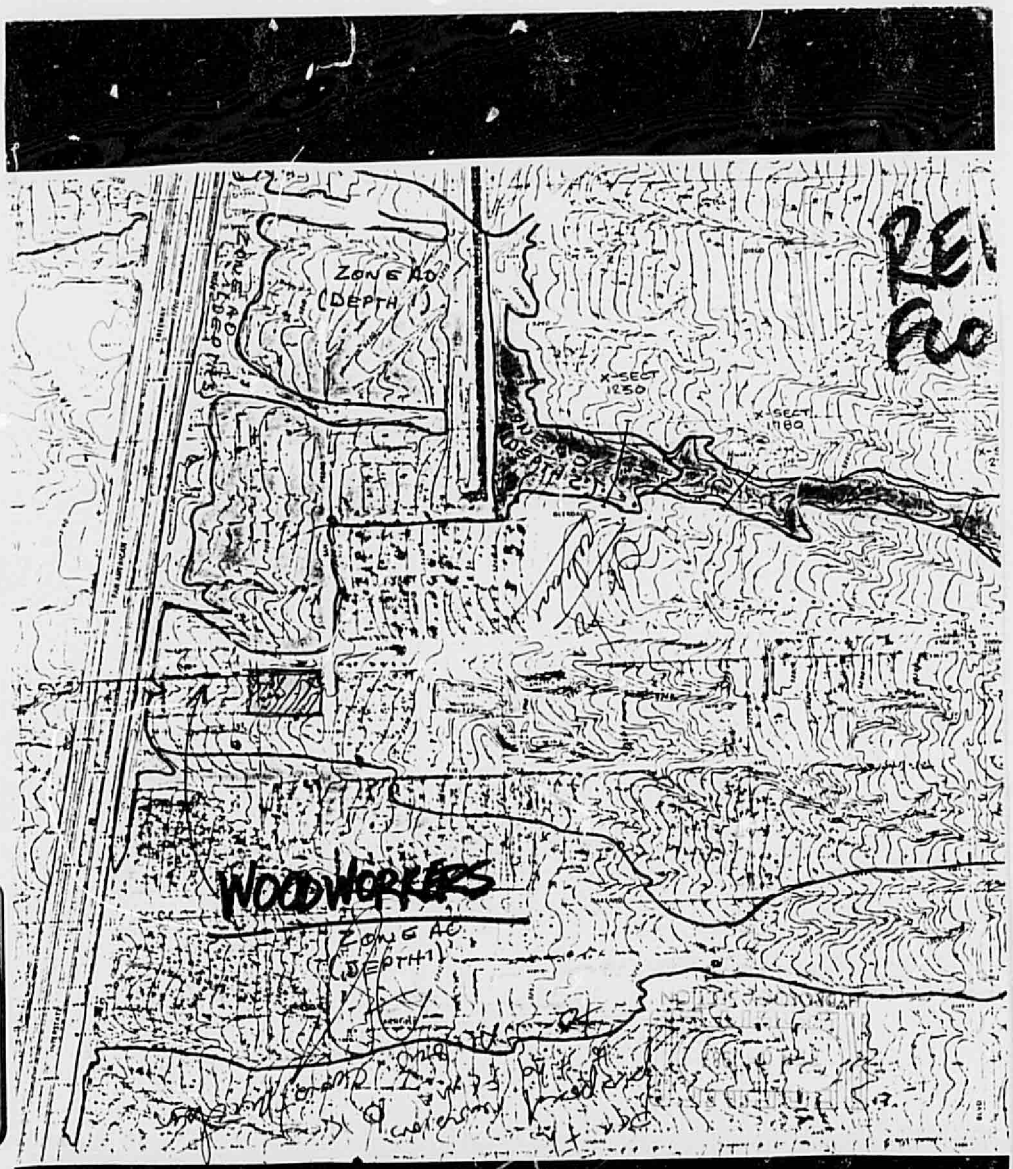
Figure B

Isaacson & Arfman, P.A.

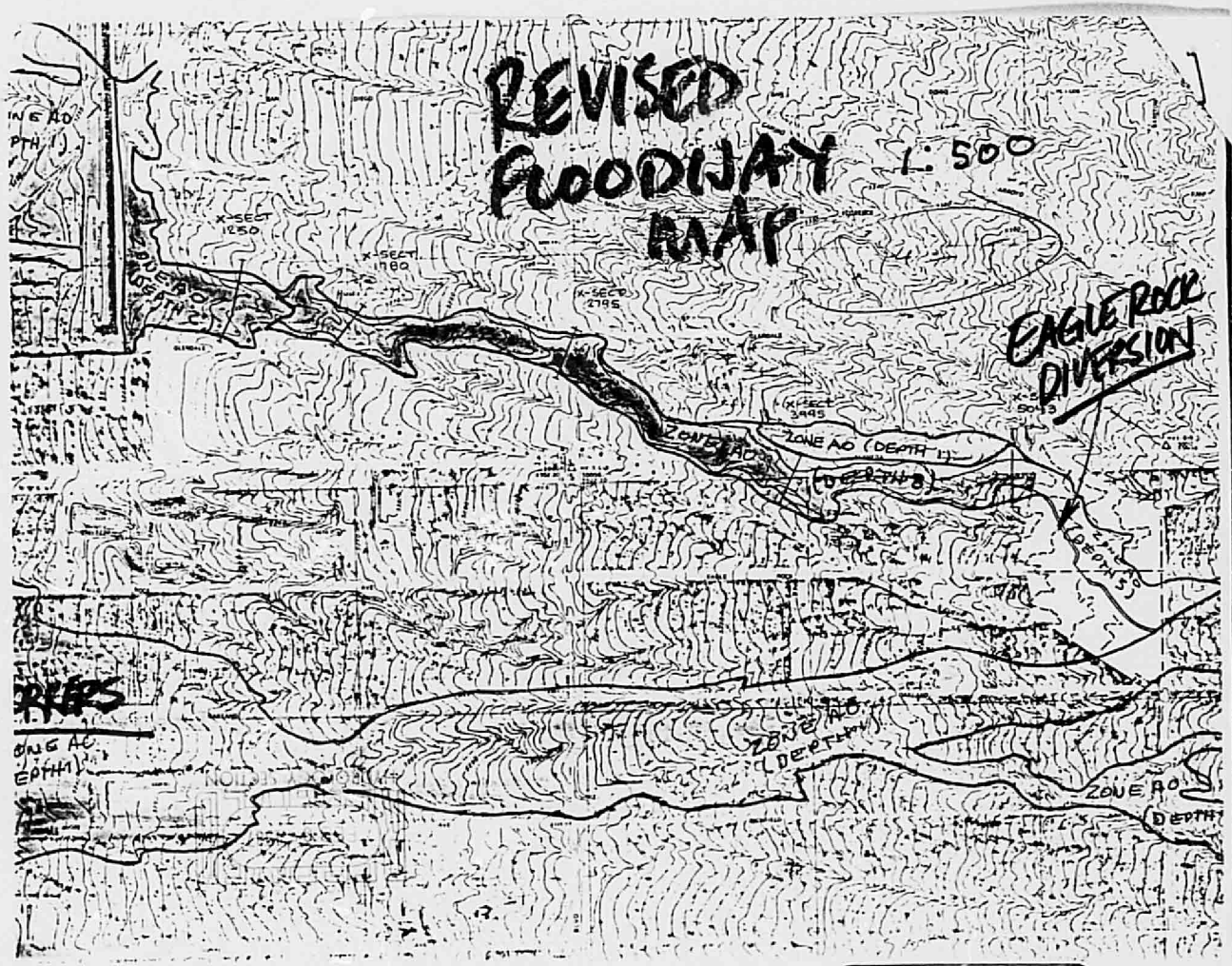
SUBJECT _____ JOB NO. ____
BY _____ DATE _____ SHEET NO. ____ OF ____

25 × 10 32 × 10

0000 0000 1863



25×10
32×10


REVISED
FLOODWAY
MAP
1:500
EAGLE ROCK
DIVERSION
X-SECT
1250
X-SECT
1980
X-SECT
2795
X-SECT
3995
ZONE AO
(DEPTH 1)
ZONE AO
(DEPTH 1)
ZONE AO
(DEPTH 1)
ZONE AO
(DEPTH 1)
ZONE AO
(DEPTH 1)

0000 0000 1865

RUNOFF CALCULATIONS

PROJECT: Reyco Pipe & Supply **Analysis Point#** 0

DRAINAGE AREA:
Planimeter Rdg. 12 x .015

x Map Scale 500 2 ÷ 43,560 A = 1.0 acres

TIME OF CONCENTRATION:
Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
Tc = 0.0078 $\frac{L0.77}{S0.385}$ = _____ min. Tc = _____ min.

$\sum$ Tc = 10 min. (by inspection

RUNOFF COEFFICIENT:

Development	C	x	A*	÷ 100	Cc**
Streets, Drives & Walks	.95				
Roofs	.90				
Lawns & Landscaping	.25				
Undeveloped	.40				
				=	

c = .40

RAINFALL INTENSITY:
100 year depth = 2.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:
Q = CIA = .40 x 4.85 x 1.0 Q_{100} = 1.9 cfs
x 0.657 = Q_{10} = 1.3 cfs

VOLUME OF RUNOFF:
Soil Group A (B) C D (Etc Soil)
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 0 %
CN (Composite) = 70 (Pl 22.2 C-3)
Direct Runoff, q_{100} = .36 " (Pl 22.2 C-4)
V_{100} = q A = $\frac{.36}{12}$ x 1.0 ac x 43,560 = 1307 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

25×10 32×10

0000 0000 1866

RUNOFF CALCULATIONS

PROJECT: Rayco Pipe & Supply **Analysis Point#** A (existing)

DRAINAGE AREA: 234' x 300' lot
Planimeter Rdg. — x .015

x Map Scale — 2 ÷ 43,560 A = 1.61 acres

TIME OF CONCENTRATION:
Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
Tc = 0.0078 $\frac{L^{0.77}}{S^{0.385}}$ = _____ min. Tc = _____ min.

$\sum$ Tc = 10 min. (by inspection)

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RUNOFF COEFFICIENT:

Development	C	x	A*	÷ 100	Cc**
Streets, Drives & Walks	.95		31		.29
Roofs	.90		—		—
Lawns & Landscaping	.25		—		—
Undeveloped	.40		69		.28
				=	.57

C = .57

RAINFALL INTENSITY:
100 year depth = 2.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:
Q = CIA = .57 x 4.85 x 1.61 Q_{100} = 4.4 cfs
x 0.657 = Q_{10} = 2.9 cfs

VOLUME OF RUNOFF:
Soil Group A (B) C D
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 31 %
CN (Composite) = 78 (Pl 22.2 C-3)
Direct Runoff, q_{100} = .9 " (Pl 22.2 C-4)
V_{100} = q A = $\frac{.9}{12}$ x 1.61 ac x 43,560 = 4091 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

25×10 32×10

0000 0000 1867

RUNOFF CALCULATIONS

PROJECT: Rayco Pipe & Supply **Analysis Point#** A (developed)

DRAINAGE AREA: 234 x 300' lot

Planimeter Rdg. _____ x .015

x Map Scale _____ 2 ÷ 43,560 A = 1.61 acres

TIME OF CONCENTRATION:

Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:

v = _____ ft/sec (Pl 22.2 B-1)

Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:

v = _____ ft/sec. (Pl 22.2 B-2)

Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:

Tc = 0.0078 $\frac{L^{0.77}}{S^{0.385}}$ = _____ min. Tc = _____ min.

DEC 29 1986 HYDROLOGY SECTION

$\sum$ Tc = 10 min. (by inspection)

RUNOFF COEFFICIENT:

Development	C	x	A*	÷ 100	Cc**
Streets, Drives & Walks	.95		65		.62
Roofs	.90		30		.27
Lawns & Landscaping	.25		5		.01
Undeveloped	.40				
				=	.90

C = .90

RAINFALL INTENSITY:

100 year depth = 2.3 " (Pl. 22.2 D-1)

Intensity Factor = 2.11 (Pl.22.2 D-2)

Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:

Q = CIA = .90 x 4.85 x 1.61 Q_{100} = 7.0 cfs

x 0.657 = Q_{10} = 4.6 cfs

VOLUME OF RUNOFF:

Soil Group A (B) C D

CN (Pervious) = 70 (Pl 22.2 C-2)

Percent Impervious = 95 %

CN (Composite) = 95 (Pl 22.2 C-3)

Direct Runoff, q_{100} = 1.75 " (Pl 22.2 C-4)

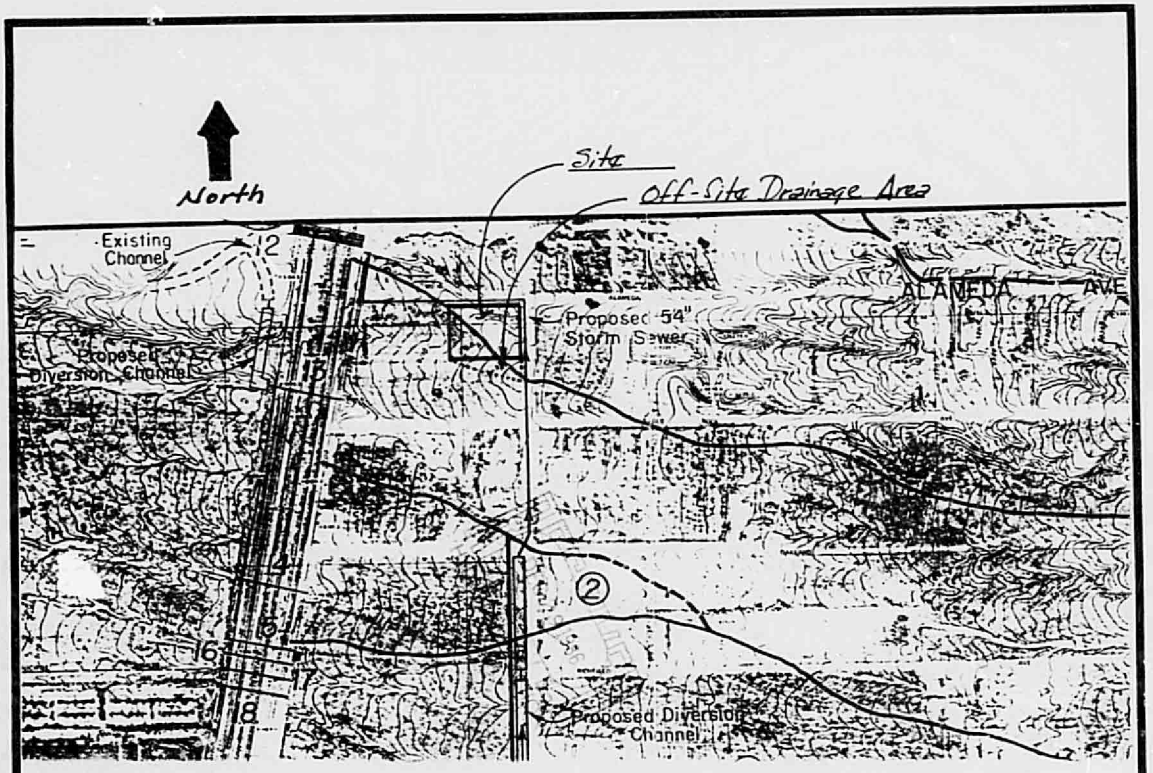
V_{100} = q A = $\frac{1.75}{12}$ x 1.61 ac x 43,560 = 10,230 cu. ft.

* Percent of Total Area

** C Value Component

(11/86)

25×10 32×10



OFFSITE DRAINAGE

1" = 500'

Isaacson & Arfman, P.A.

SUBJECT _____ JOB NO. ____

BY _____ DATE _____ SHEET NO. ____ OF ____

25 × 10
32 × 10
0000 0000 1888

0000 0000 1869

RUNOFF CALCULATIONS

PROJECT: Ralco Pipe & Supply Analysis Point# 0

RECEIVED FEB 17 1987 HYDROLOGY SECTION

DRAINAGE AREA:
Planimeter Rdg. 12 x .015
x Map Scale 500 2 ÷ 43,560 A = 1.0 acres

TIME OF CONCENTRATION:
Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
$Tc = 0.0078 \frac{L^{0.77}}{S^{0.385}}$ = _____ min. Tc = _____ min.

$\sum$ Tc = 10 min. (by inspection

RUNOFF COEFFICIENT:

Development	C	x A*	÷ 100	Cc**
Streets, Drives & Walks	.95			
Roofs	.90			
Lawns & Landscaping	.25			
Undeveloped	.40			
			=	

C = .40

RAINFALL INTENSITY:
100 year depth = 8.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

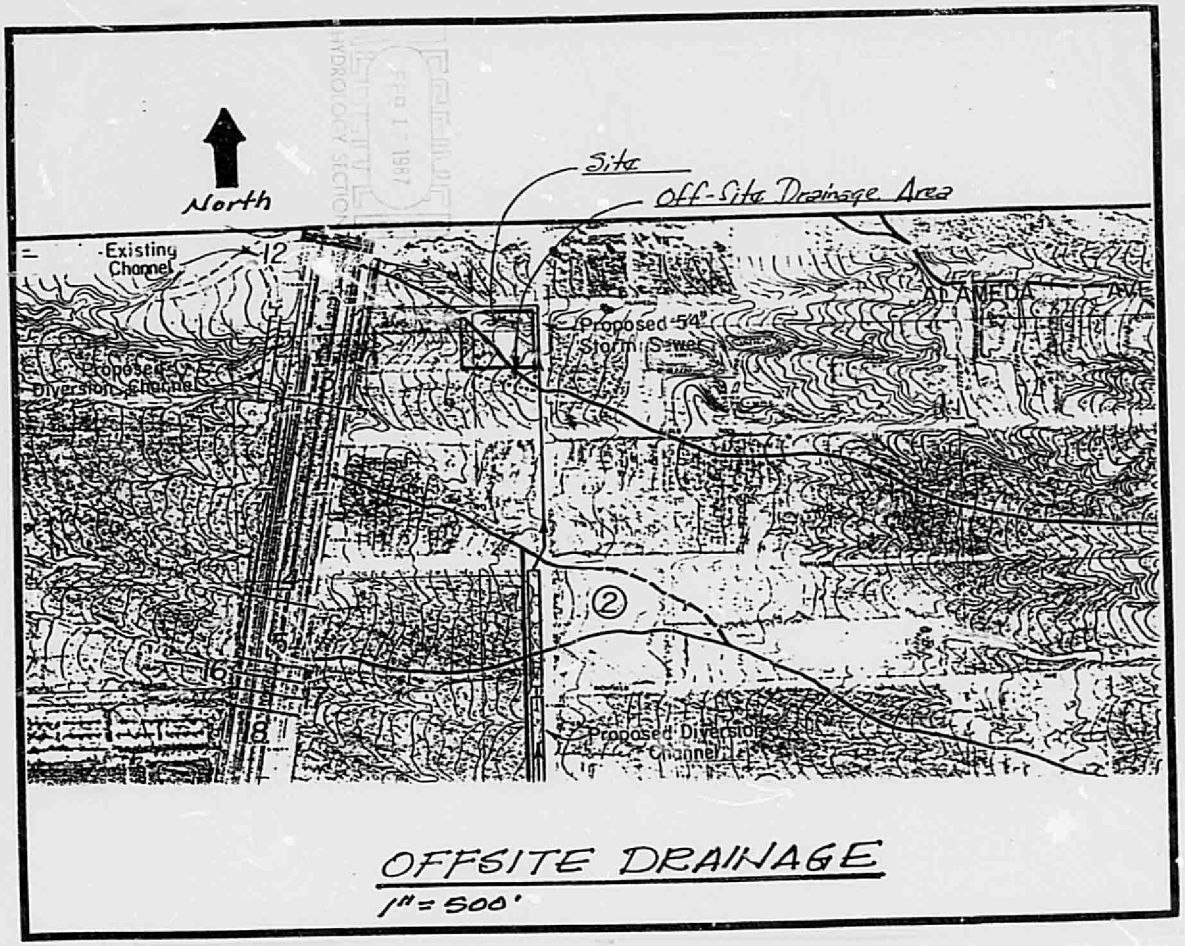
PEAK RUNOFF RATE:
Q = CIA = .40 x 4.85 x 1.0 Q_{100} = 1.9 cfs
x 0.657 = Q_{10} = 1.3 cfs

VOLUME OF RUNOFF:
Soil Group A (B) C D (Etc Soil)
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 0 %
CN (Composite) = 70 (Pl 22.2 C-3)
Direct Runoff, q_{100} = .36 " (Pl 22.2 C-4)
V_{100} = q A = $\frac{.36}{12}$ x 1.0 ac x 43,560 = 1307 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

25× 32×



OFFSITE DRAINAGE

1" = 500'

Isaacson & Arfman, P.A.

SUBJECT _____ JOB NO. ____

BY _____ DATE _____ SHEET NO. ____ OF ____

FEB 1 1987 HYDROLOGY SECTION

25X 32X

0000 0000 1871

RUNOFF CALCULATIONS

PROJECT: Rayco Pipe & Supply Analysis Point# A (existing)

DRAINAGE AREA: 234' x 300' lot
Planimeter Rdg. — x .015
x Map Scale — 2 ÷ 43,560 A = 1.61 acres

RECEIVED FEB 17 1987 HYDROLOGY SECTION

TIME OF CONCENTRATION:
Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
Tc = 0.0078 $\frac{L0.77}{S0.385}$ = _____ min. Tc = _____ min.

$\sum$ Tc = 10 min. (by inspection)

RUNOFF COEFFICIENT:

Development	C	x	A*	÷ 100	Cc**
Streets, Drives & Walks	.95		31		.29
Roofs	.90		—		—
Lawns & Landscaping	.25		—		—
Undeveloped	.40		69		.28
				=	.57

C = .57

RAINFALL INTENSITY:
100 year depth = 2.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:
Q = CIA = .57 x 4.85 x 1.61 Q_{100} = 4.4 cfs
x 0.657 = Q_{10} = 2.9 cfs

VOLUME OF RUNOFF:
Soil Group A (B) C D
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 31 %
CN (Composite) = 78 (Pl 22.2 C-3)
Direct Runoff, q_{100} = .7 " (Pl 22.2 C-4)
V_{100} = q A = $\frac{.7}{12}$ x 1.61 ac x 43,560 = 4091 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

25×10 32×10

0000 0000 1872

RUNOFF CALCULATIONS

PROJECT: Rayco Bldg Analysis Point# A1

DRAINAGE AREA:
Planimeter Rdg. 2210 x .015
x Map Scale 20 2 ÷ 43,560 A = 0.30 acres

RECEIVED FEB 17 1987 HYDROLOGY SECTION

TIME OF CONCENTRATION:
Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft.

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
$Tc = 0.0078 \frac{L^{0.77}}{S^{0.385}}$ = _____ min. Tc = _____ min.

Σ Tc = 10 min. (By Inspection)

RUNOFF COEFFICIENT:

Development	C	x	A*	÷ 100	Cc**
Streets, Drives & Walks	.95		7		.07
Roofs	.90		80		.72
Lawns & Landscaping	.25				
Undeveloped	.40		13		.05
				=	.84

C = .84

RAINFALL INTENSITY:
100 year depth = 2.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:
Q = CIA = .84 x 4.85 x .30 Q_{100} = 1.2 cfs
x 0.657 = Q_{10} = 0.8 cfs

VOLUME OF RUNOFF:
Soil Group A (B) C D
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 87 %
CN (Composite) = 92 (Pl 22.2 C-3)
Direct Runoff, q_{100} = 1.7 " (Pl 22.2 C-4)
$V_{100} = q\,A = \frac{1.7}{12} \times .30$ ac x 43,560 = 1850 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

TDI 2-16-87

25× 32×

0000 0000 1873

RUNOFF CALCULATIONS

PROJECT: Rayco Bldg Analysis Point# A2

RECEIVED SEP 17 1987 HYDROLOGY SECTION

DRAINAGE AREA:

Planimeter Rdg. 3215 x .015

x Map Scale 20 2 ÷ 43,500 A = 0.44 acres

TIME OF CONCENTRATION:

Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
$Tc = 0.0078 \frac{L0.77}{S0.385}$ = _____ min. Tc = _____ min.

Σ Tc = 10 min. (By Inspection)

RUNOFF COEFFICIENT:

Development	C	x A*	÷ 100	Cc**
Streets, Drives & Walks	.95	100		.95
Roofs	.90			
Lawns & Landscaping	.25			
Undeveloped	.40			
			=	.95

C = .95

RAINFALL INTENSITY:

100 year depth = 2.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:

Q = CIA = .95 x 4.85 x .44 Q_{100} = 2.0 cfs
x 0.657 = Q_{10} = 1.3 cfs

VOLUME OF RUNOFF:

Soil Group A (B) C D
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 100 %
CN (Composite) = 98 (Pl 22.2 C-3)
Direct Runoff, q_{100} = 2.2 " (Pl 22.2 C-4)
$V_{100} = q A = \frac{2.2}{12} \times .44$ ac x 43,560 = 3190 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

TOI
2.16.87

25× 32×

0000 0000 1874

RUNOFF CALCULATIONS

PROJECT: Rayco Bldg Analysis Point# A3

DRAINAGE AREA:
Planimeter Rdg. 6316 x .015
x Map Scale 20 2 ÷ 43,560 A = 0.87 acres

RECEIVED FEB 17 1987 HYDROLOGY SECTION

TIME OF CONCENTRATION:
Drainage Basin Data:

L = _____ ft., fall = _____ ft., slope = _____ ft/ft

☐ Overland Flow:
v = _____ ft/sec (Pl 22.2 B-1)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Street Flow:
v = _____ ft/sec. (Pl 22.2 B-2)
Tc = _____ sec. = _____ min. Tc = _____ min.

☐ Arroyo Flow:
$Tc = 0.0078 \frac{L^{0.77}}{S^{0.385}}$ = _____ min. Tc = _____ min.

$\sum$ Tc = 10 min. (By Inspection)

RUNOFF COEFFICIENT:

Development	C	x	A*	÷ 100	Cc**
Streets, Drives & Walks	.95		68		.65
Roofs	.90		28		.25
Lawns & Landscaping	.25		4		.01
Undeveloped	.40				
					= .91

C = .91

RAINFALL INTENSITY:
100 year depth = 2.3 " (Pl. 22.2 D-1)
Intensity Factor = 2.11 (Pl.22.2 D-2)
Intensity = depth x factor I = 4.85 "/hr.

PEAK RUNOFF RATE:
Q = CIA = .91 x 4.85 x .87 Q_{100} = 3.8 cfs
x 0.657 = Q_{10} = 2.5 cfs

VOLUME OF RUNOFF:
Soil Group A (B) C D
CN (Pervious) = 70 (Pl 22.2 C-2)
Percent Impervious = 96 %
CN (Composite) = 97 (Pl 22.2 C-3)
Direct Runoff, q_{100} = 2.1 " (Pl 22.2 C-4)
V_{100} = q A = $\frac{2.1}{12}$ x .87 ac x 43,560 = 6630 cu. ft.

* Percent of Total Area
** C Value Component

(11/86)

TO/
2.16.87

25×10 32×10

0900 0000 1875

FREE DISCHARGE JUSTIFICATION:

RECEIVED FEB 17 1987 HYDROLOGY SECTION

Site Discharges Westerly to a flooding zone along the east side of the east Frontage Road, I-25, as shown on the advance Flood Hazard Map under preparation by Bohannan-Huston (See Figure A)

The local drainage discharges to a series of of culverts under I-25 (See Figure 'B' - Structure #12) This culvert system consists of 8 each 36" diameter RCP's which have a capacity of 600 cfs. The peak discharge to this culvert system is 196 cfs (See Figure 'C')

It is obvious that the flooding does not result from under-capacity of Structure #12. Structure #11 has recently been reconstructed with a triple cell, 10'x10' box culvert. The capacity of this new structure is 3500 cfs (D.M.S. p.16) and the 100 year discharge is 3982 cfs (Figure 'C'). Consequently a constriction occurs at this location and the drainage basin for this location is responsible for creating the flooding conditions along the Interstate.

Isaacson & Arfman, P.A.

SUBJECT _____ JOB NO. ____
BY _____ DATE _____ SHEET NO. ____ OF ____

25×10 32×10

0000 0000 1876

COMPUTE TIME of CONCENTRATION for RUNOFF FROM SITE TO EAST FRONTAGE ROAD:

Flow will be in roadside ditch

$L = 850'$ (to Structure #12)

Fall = 5212 − 5196 = 16'

$S = \frac{16}{850} = .0188$

$T_c = .0078 \frac{850^{0.77}}{.0188^{0.385}} = \underline{\underline{6.5 \text{ minutes}}}$

RECEIVED FEB 17 1987 HYDROLOGY SECTION

COMPUTE T_c for Drainage Area @ Structure #11:

Arroyo Flow

$L = 41{,}000'$

Fall = 9400 − 5200 = 4400'

$S = 4400 \div 41{,}000 = 0.11$

$T_c = 0.0078 \times \frac{41{,}000^{0.77}}{0.11^{0.385}} = \underline{\underline{65.0 \text{ minutes}}}$

SUMMARY: Site flows will peak @ 6.5 minutes while basin flows will peak @ 65 minutes. Consequently site flows will have been evacuated before basin flows peak and free discharge from site is justified.

Isaacson & Arfman, P.A.

SUBJECT _____ JOB NO. ____

BY _____ DATE _____ SHEET NO. ____ OF ____

25 × 10 32 × 10

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FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

March 6, 1987

Thomas Isaacson
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINAGE PLAN FOR RAYCO PIPE & SUPPLY
(C-18/D15) RECEIVED FEBRUARY 17, 1987

Dear Mr. Isaacson:

The above referenced plan dated February 16, 1987, is approved for Building Permit.

AMAFCA is in the process of revising the 100 year floodplain maps for the area. The preliminary maps show your site to be out of the 100 year floodplain; therefore, we can release the building permit.

Please attach a copy of this plan to both sets of building permit plans submitted to Hydrology for sign-off.

If you have any questions, call me at 768-2650.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM:dsj

25×10 32×10

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: Rayco Pipe & Supply ZONE ATLAS/DRAINAGE FILE # C-18

LEGAL DESCRIPTION: Lots A-2 & B, Block 9, Tract 'A', Unit 'B', North Albuquerque Acres

CITY ADDRESS: ---

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Thomas Isaacson

ADDRESS: 128 Monroe NE , Albuquerque, N.M. PHONE: 268-8828

OWNER: Rayco Pipe Supply CONTACT: Ray Cohen

ADDRESS: 5608 Alameda Place NE, 87113 PHONE: 822-1234

ARCHITECT: Miller & Associates CONTACT: Jim Miller

ADDRESS: 2819 Richmond Dr. NE PHONE: 884-1255

SURVEYOR: Isaacson & Arfman, P.A. CONTACT: T.Isaacson

ADDRESS: 128 Monroe NE , Albuquerque, N.M. PHONE: 268-8828

CONTRACTOR: N/A CONTACT: ____

ADDRESS: ____ PHONE: ____

PRE-DESIGN MEETING:

_x_ YES

___ NO

_X_ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED FEB 17 1987 HYDROLOGY SECTION

DRB NO. ____

EPC NO. ____

PROJECT NO. ____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

_x_ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

_x_ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ 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)

2/17/87
2/11/87

DATE SUBMITTED: 12/24/86

BY: Thomas D. Isaacson

REV. 6/85

25×10 32×10

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Isaacson & Arfman, P.A.

Consulting Engineering Associates

Letter of Transmittal

Date 2-17-87

To City of Albuquerque
Design Hydrology Section

Job No.

RECEIVED
FEB 17 1987
HYDROLOGY SECTION

Attn: Carlos Montoya

Reference Rayco Bldg

Gentlemen:

We transmit to you 1 copy(ies) of the following

- ☐ Plats
- ☐ Plans
- ☐ Specifications
- ☐ Report
- ☒ Grading & Drainage Plan w/ Attachments
- ☒ Drainage Covenant
- ☐ Shop Drawings
- ☐ Submittals
- ☐ Material Specifications
- ☐ Copy of Letter

This information is transmitted:

- ☐ As per your request
- ☒ For your review & approval
- ☐ For your information
- ☐ For your attention
- ☐ For your signature
- ☐ For your files
- ☐ For your use
- ☐ Please review & return
- ☐ For return to your files
- ☐ Please advise

Remarks:

Copies To

By: Tom Isaacson

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

25×10 32×10

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FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

February 3, 1987

Thomas Isaacson
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINAGE PLAN FOR RAYCO PIPE & SUPPLY
(C-18/D15) RECEIVED DECEMBER 29, 1986

Dear Mr. Isaacson:

This letter is a clarification and update of my letter dated January 27, 1987. First, no development will be allowed in a floodway. The City's Drainage Ordinance and Floodplain Ordinance does not allow construction in a floodway. Second, if the property is determined to be out of a floodway by a FEMA map revision needs to be finalized to point where it is being submitted to FEMA before we can act on the updated information.

If you should have any questions, please call me at 768-2610.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/ds

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

25×10 32×10

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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

January 27, 1987

Thomas Isaacson
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINAGE PLAN FOR RAYCO PIPE & SUPPLY
(C-18/D15) RECEIVED DECEMBER 29, 1986

Dear Mr. Isaacson:

I have reviewed the referenced report and forward the following comments:

1. The site is located in a flood zone designated AO-1.

2. The floodplain maps indicate that a minor arroyo crossed your property. The existing contours from the drainage plan indicates that the arroyo has been shifted toward Alameda Place. The Floodplain Ordinance does not allow shifting of the floodplain.

3. The historic floodplain runoff needs to be accepted and conveyed through the site. Dedication of the floodplain is needed. The historic floodplain discharge through the site needs to be quantified.

4. If any street paving or curb and gutter work is needed, then you need to address its impacts on the floodplain.

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

25×10 32×10

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5. If you consider the site out of the floodplain, we will need a more detailed drainage plan. The floodplain needs to be quantified with discharge values and new limits of floodplain.

If you should have any questions, call me at 768-2650.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

25×10 32×10

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DRAINAGE INFORMATION SHEET

New

PROJECT TITLE: Rayco Pipe & Supply ZONE ATLAS/DRAINAGE FILE # C-18 / D 4 15

LEGAL DESCRIPTION: Lots A-2 & B, Block 9, Tract 'A', Unit 'B', North Albuquerque Acres

CITY ADDRESS: ---

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Thomas Isaacson

ADDRESS: 128 Monroe NE , Albuquerque, N.M. PHONE: 268-8828

OWNER: Rayco Pipe Supply CONTACT: Ray Cohen

ADDRESS: 5608 Alameda Place NE, 87113 PHONE: 822-1234

ARCHITECT: Miller & Associates CONTACT: Jim Miller

ADDRESS: 2819 Richmond Dr. NE PHONE: 884-1255

SURVEYOR: Isaacson & Arfman, P.A. CONTACT: T.Isaacson

ADDRESS: 128 Monroe NE , Albuquerque, N.M. PHONE: 268-8828

CONTRACTOR: N/A CONTACT: ____

ADDRESS: ____ PHONE: ____

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ____

EPC NO. ____

PROJECT NO. ____

RECEIVED DEC 29 1986 HYDROLOGY SECTION

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ 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. 6/85

25×10 32×10

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Isaacson & Arfman, P.A.

Consulting Engineering Associates

Letter of Transmittal

To City of Albuquerque
Design Hydrology Section

Date 12/29/86

Job No.

Attn:

Reference Rayco Pipe & Supply

Gentlemen:

RECEIVED DEC 29 1986 HYDROLOGY SECTION

We transmit to you 1 copy(ies) of the following

- [ ] _____ Plats
- [ ] _____ Plans
- [ ] Specifications
- [ ] _____ Report
- [x] Grading & Drainage Plan w/ Attachments
- [ ]
- [ ] Shop Drawings
- [ ] Submittals
- [ ] Material Specifications
- [ ] Copy of Letter

This information is transmitted:

- [ ] As per your request
- [x] For your review & approval
- [ ] For your information
- [ ] For your attention
- [ ] For your signature
- [ ] For your files
- [ ] For your use
- [ ] Please review & return
- [ ] For return to your files
- [ ] Please advise

Remarks:

By: Jim Fauss

Copies To

128 Monroe, NE • Albuquerque, NM 87108 • (505) 268-8828

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CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECORD

DRAINAGE FILE/ZONE ATLAS PAGE NO.: C 12 DATE: 2-22-86
PLANNING DIVISION NOTE SPEC. NO.:
SUBJECT: Repeat submittal
STREET ADDRESS OR LOCATION: 7 Ale Alan Rd
SUBDIVISION NAME: East 1/2 Lot 6a & Lot 6b

REVIEWED REQUESTED

PRELIMINARY PLAT
SITE DEVELOPMENT PLAN
OTHER

FINAL PLAT
BUILDING PERMIT
ROUTING DRAINAGE

REVIEWED BY

ATTENDANCE: Tom Swanson
Carl A Martz

FINDINGS:

1. Site is a 2.0 year draft that
2. In Comm 7 El Camino must include drainage area for site
3. Need to show depth of flow for the 100 year runoff in the street
4. Need to elevate Finish floor to height above elevation at above in Alcade
5. Need to check for on Slope approach in Pdo
6. The discharge allowed for Alcade
7. Flows will be damaged or delight under Lot 23 & drainage allowed subject to Engineer.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Carl A Martz
TITLE:
DATE: 2-28-86

SIGNED: Tom Swanson
TITLE: Engineer/Hydro
DATE: 4-21-86

NOTE PLEASE PROVIDE A COPY OF THIS RECORD WITH THE DRAINAGE SUBMITTAL

25× 32×

0000 0000 1886

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

County

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: C 19 DATE: 7-29-86

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: [illegible]

STREET ADDRESS (IF KNOWN): [illegible]

SUBDIVISION NAME: [illegible]

APPROVAL REQUESTED:

____ PRELIMINARY PLAT	____ FINAL PLAT
____ SITE DEVELOPMENT PLAN	X BUILDING PERMIT
____ OTHER	____ ROUGH GRADING

ATTENDANCE:	WHO	REPRESENTING
	[illegible]	[illegible]
	[illegible]	[illegible]

FINDINGS:

(1) [illegible]

(2) [illegible]

(3) Need to show [illegible] flow [illegible] 100 yr [illegible] on plans

(4) Need to show [illegible] flow [illegible] will [illegible] on plans or show on plans

(5) Need to show [illegible]

(6) [illegible] to plans

(7) Flow will be [illegible] on plans [illegible] I-25 [illegible]

[illegible]

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: [illegible]	SIGNED: [illegible]
TITLE: [illegible]	TITLE: [illegible]
DATE: 7-29-86	DATE: 7/29/86

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

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PLANS/PLATS ON FILE

FILE DESC: C18/D15

PLANS/PLATS 1

25×10 32×10

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