HYDROLOGY G14/D18 ONE PLAN

G 14-D 18

1 PLAN

INFORMATION SHEET

PROJECT TITLE RIFFENBURGH DUPLEX TYPE OF SUBMITTAL DRAINAGE PLAN

ZONE ATLAS PAGE NO. G-14 CITY ADDRESS 3724, 3726 & 3728 - 11TH ST. N.W.

LEGAL DESCRIPTION GLAZEBROOK REPLAT OF THE MONKBRIDGE ADDITION LOT B

ENGINEERING FIRM ENCHANTMENT ENGINEERING CONTACT JOHN BETTES

ADDRESS 9910 INDIAN SCHOOL 87111 PHONE 294-8859

OWNER ART & RUTH RIFFENBURGH CONTACT

ADDRESS 3555-7TH ST. N.W. 87107 PHONE 344-5986

~~ARCHITECT~~ DESIGNER RUTH E RIFFENBURGH CONTACT RUTH

ADDRESS 3555-7TH ST. NW 87107 PHONE

SURVEYOR JOHN BETTES CONTACT JOHN BETTES

ADDRESS 9910 INDIAN SCHOOL PHONE 294-8859

CONTRACTOR RUTH E. RIFFENBURGH CONTACT

ADDRESS 3555-7TH ST. NW. PHONE 344-5986

DATE SUBMITTED 11/7/83

BY

Use this Information Sheet when submitting the following:

Drainage report or plan, conceptual grading and drainage plan, engineer's certification plan, erosion plan and grading plan. Provide the information applicable to your submittal.

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NOV 07 1983
HYDROLOGY SECTION

FILE COPY

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

November 21, 1983

Mr. John Bettis
Enchantment Engineering
9910 Indian School Road NE
Albuquerque, NM 87111

REF: RIFFENBURGH DUPLEX DRAINAGE REPORT (G14-D18)

Dear Mr. Bettis:

These are my comments on the above mentioned report:

1. Per the Development Process Manual, a drainage plan only, not a report, is required for sites less than 5 acres.

2. The plan, exhibit 3, should be stamped, signed and dated.

3. Address off-site flows.

4. Plan needs a legend.

5. Provide developed runoff volume calculations and provide an emergency spillway to public Right-of-Way or poding sufficient to hold that volume in the case where the 8 inch pipe were clogged.

6. Address flows in the storm sewer in the street. Will public waters flow from this pipe back onto private property through the 8" pipe?

7. Show the zone atlas page on the vicinity map.

8. Establish a temporary bench mark on-site and reference it on the drawing. Reference should also be made to the City control datum used to establish grades at the site.

9. Show limits of paving with proposed grades.

10. Need more existing and proposed spot elevations to adequately define site:

    a. Existing grades should extend a minimum of 25 feet beyond property line along with any improvements and finished floor elevations.

    b. Show top of curb and flowline elevations along with the curb cut with required elevations.

    c. Define drainage swales with spot elevations and flow arrows. Show enough detail to insure that no water stands near building foundations.

11. Need to show details of the proposed drop inlet and storm drain connection along with hydraulic calculations. This will also require "Drainage Facilities Within City R/W" documents to be approved and attached to the permit sets prior to Hydrology sign-off.

12. In future submittals, please include a completed information sheet from the DPM.

If you have any questions on the above, please call me at 766-7644.

Thank you,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

cc: Ruth Riffenburgh

INFORMATION SHEET

PROJECT TITLE DUPLEX TYPE OF SUBMITTAL DRAINAGE PLAN

ZONE ATLAS PAGE NO. G-14 Z18 CITY ADDRESS 3724 ELEVENTH STREET NW

LEGAL DESCRIPTION LOT-B, GLASSBROOK'S REPLAT, MONKBRIDGE ADDITION

ENGINEERING FIRM ENCHANTMENT ENG. CONTACT ED KIESS

ADDRESS 9910 INDIAN SCHOOL RD. NE 87112 PHONE 294-8859

OWNER RUTH RIFFENBURGH CONTACT

ADDRESS 3555 7TH STREET, ABQ 87107 PHONE 344-5986

ARCHITECT OWNER CONTACT

ADDRESS PHONE

SURVEYOR ENCHANTMENT CONTACT

ADDRESS PHONE

CONTRACTOR OWNER CONTACT

ADDRESS PHONE

DATE SUBMITTED

BY

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DEC 05 1988

ENGINEERING

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

December 22, 1983

Mr. Ed Kiess
Enchantment Engineering
9910 Indian School Road NE
Albuquerque, New Mexico 87111

RE: RIFFENBURGH DUPLEX DRAINAGE PLAN (G14-D18)

Dear Mr.Kiess:

The above mentioned plan, dated November 15, 1983, addresses all the concerns in my letter of November 21, 1983 with the exception of items 5 and 6, more explicitly:

Item 5: Provide calculations for the ponded volume shown on the plan.

Item 6: Show that the hydraulic gradeline in the existing storm drain is below the grate elevation on site.

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

Thank you,

John Armstrong
Civil Engineer-Hydrology

JA/ca

ENCHANTMENT ENGINEERING, INC.

CIVIL CONSULTING ENGINEERS
J.W. BETTIS, REG. P.E. & L.S.

9910 INDIAN SCHOOL NE
PHONE 294-8859

MAIL TO BOX 11571
ALBUQUERQUE, NEW MEXICO 87192

January 18, 1984

Mr. John Armstrong
Civil Engineer/Hydrology
City of Albuquerque, New Mexico

RE: RIFFENBURGH DUPLEX DRAINAGE PLAN (G14-D-18)

Dear John:

Attached please note the changes made to the above mentioned drainage plan. I've included a short synopsis of the tributary area and the reason for deleting the previously included drain pipe. It does appear that backflows onto the site would occur under 100-year storm conditions. Note that pond calculations have now been included on the plan sheet together with sections across the site that could aid in construction. It is our intention that the lowest area of the retention pond be used for landscaping.

Yours truly,

Ed Kiess

cc: Riffenburgh
files

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

January 26, 1984

Mr. Ed Keiss
Enchantment Engineering
9910 Indian School Road NE
Albuquerque, NM 87111

REF: RIFFENBURGH DUPLEX DRAINAGE PLAN (G14-18)

Dear Mr. Keiss:

The above mentioned plan, revised 1/10/84, is okay with the exception that the pond does not drain. According to the drainage ordinance, all ponds must drain within 24 hours. A small sump pump could be used to accomplish this.

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

Thank you,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

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

February 24, 1984

Mr. Ed Keiss
Enchantment Engineering
9910 Indian School Road NE
Albuquerque, NM 87111

REF: RIFFENBURGH DUPLEX DRAINAGE PLAN (G14-D18)

Dear Mr. Keiss:

The above mentioned plan, as revised 2/16/84, is hereby approved. Please be sure that copies of the latest plan, along with approved "Drainage Within City Right-of-Way" documents are attached to the permit set prior to submittal to Hydrology for sign-off.

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

Thank you,

John Armstrong
Civil Engineer/Hydrology

JA:mrk

cc: Ruth Riffenburgh, 3555 7th Street, NW 87107

DRAINAGE REPORT FOR RIFFENBURG DUPLEX

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HYDROLOGY SECTION

PREPARED BY

Drainage Report For Riffenburg Duplex

This report was prepared with the intent of complying with Section 21.B of the Albuquerque Subdivision Ordnance and to present a conceptual plan for safely disposing of water generated by construction of a Duplex apartment and the supporting parking areas.

The area is identified as Lot B of GLASSERBROOK'S REPLAT of Lot numbered eight (8) in Block numbered eighteen (18) of MONKBRIDGE ADDITION to the City of Albuquerque, filed in the office of the County Clerk of Bernalillo County, New Mexico on September 4, 1941, Zone Atlas G-14-Z. It is bounded on the West by 11th street,on the North and South by partially developed lots and on the East by a large vacant lot.

Soils in the area consist of the Gila loam. Location and engineering characteristics are outlined in exhibits 1 and 2 of this report.

There are two buildings and several trees on the lot. One additional building, an apartment duplex will be constructed. Most of the trees will remain and will have small tree wells.

Drainage is generally from the North to South. However, due to the surrounding buildings and historical irrigation practices there seems to be little or no drainage from the lot. Exhibit 3 shows drainage patterns in greater detail. There is no evidence of any offsite drainage into the lot.

Drainage calculations were performed on the assumption that the entire lot, exclusive of the buildings, would be paved. All drainage computations were based on the guidelines issued by the City of Albuquerque's Development Process Manual. Assuming a 100 year, 6 hour rainfall and using the Rational Formula the Computations are as follows:

Time of concentration $T_c = .0078 \frac{L^{.77}}{S^{.385}}$ where $L = 223$, $S = .0036$

$= 4.3$, use 10 min. as a minimum.

Using the Rational Formaula

$Q = c\ i\ a$

$c = 0.9$, since 100% impermeability is assumed,

$i = (2.2)(2.2)$ from DPM 22D.1 and 22D.2

$= 4.8$, use 5

$a = 16553$ sq. ft.

$Q = 1.7$, use 2 as estimate

Volume $= \frac{(16533)(.9)(2.2)}{12} = 2731$ c.f.

There is an existing storm drain manhole on 11th street with an existing 10 inch pipe to the property line. The water generated by the development will be directed to a drop inlet thence via a pipe into the 10 inch storm drain stubout. All grading and paving on the lot will be sloped toward directing the water to the drop inlet, see exhibit 3.

Exhibit 1

BKD
BCC
BCC
BKD
BCC
TP
TP
TP
BKD
RIO
GRANDE
ELENA
GALLEGOS
GRANT
Wm Taft Jr High School
Alvarado School
Douglas MacArthur School
Griegos School
Trinity School
MONTANO RD
TOWN OF
ALBUQUERQUE
GRANT
Valley High School
Garfield Jr High School
Theatre Church
Presbyterian School
Duplex
(Joins sheet 21)

Exhibit 2

TABLE 7.—*Engineering classification*

Soil series and map symbols	Depth to— Bedrock	Depth to— Seasonal high water table	Depth from surface	USDA texture of representative profile	Classification Unified	Classification AASHTO	Coarse fraction greater than 3 inches
	Feet	*Feet*	*Inches*				*Percent*
Brazito: Br, Bs, Bt	>5	>5	0-9	Fine sandy loam to silty clay loam.	SM, CL-ML, or CL	A-4 or A-6	----------
			9-60	Sand	SP or SP-SM	A-3	----------
Burnac: BUE	>5	>5	0-6	Gravelly loam and very gravelly loam.	GM	A-2 or A-4	5-20
			6-14	Gravelly sandy clay loam.	SC-SM or SC	A-2, A-4, or A-6	5-15
			14-60	Clay	CH	A-7	----------
Carlito: CAF	>5	>5	0-4	Stony loam	CL-ML or CL	A-4	15-45
			4-60	Clay and silty clay.	CL or CH	A-7	----------
Cut and fill land: Cu. No valid estimates; material too variable.	>5	>5					
*Embudo: EmB, EtC. For Tijeras part of EtC, see Tijeras series.	>5	>5	0-20	Gravelly fine sandy loam and gravelly sandy loam.	SM	A-2, A-4	----------
			20-60	Gravelly loamy coarse sand.	SM	A-1	----------
Escabosa. Mapped only with Laporte soils and Rock outcrop.	1.5-3.5	>5	0-15	Loam	CL-ML or ML	A-4	----------
			15-23	Gravelly loam	GM or CL-ML	A-4	0-10
			23	Bedrock.			
*Gila: GA, Gb, Ge, GH. For Hantz part of GH, see Hantz series.	>5	[1]>5	0-44	Stratified loam to sandy loam.	SM or ML	A-4	----------
			44-60	Sand	SP or SP-SM	A-3	----------
Gc, Gd, GF	>5	[1]3->5	0-60	Stratified loam to sandy loam.	SM or ML	A-4	----------
Glendale: Gk, Gm, Gs	>5	[1]>5	0-6	Clay loam or loam.	CL-ML or CL	A-4 or A-6	----------
			6-38	Silt loam	CL	A-6	----------
			38-60	Clay loam	CL	A-6	----------
Hantz: Ha	>5	[1]>5	0-65	Silty clay	CL or MH	A-7	----------
Ildefonso: ILC	>5	>5	0-60	Gravelly and very gravelly sandy loam.	GM or SM	A-1 or A-2	0-15
*Kim: KaB, KbB, KD. No valid estimates for Badland part of KD.	>5	>5	0-60	Loam and clay loam.	CL-ML or CL	A-4 or A-6	----------
*Kokan: KOE, KR. No valid estimates for Rock outcrop part of KR	>5	>5	0-60	Gravelly sand and very gravelly sand.	GP, GP-GM, or GM	A-1	0-30

See footnotes at end of table.

Exhibit 2

and estimated properties—Continued

Percentage passing sieve—				Liquid limit	Plasticity index	Permeability	Available water capacity	Reaction	Salinity	Shrink-swell potential	Risk of corrosion to—	
No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.074 mm)								Uncoated steel	Concrete
						Inches per hour	*Inches per inch of soil*	*pH*	*Millimhos per centimeter at 25° C*			
--------	100	70-100	40-95	15-35	0-15	0.6-2.0	0.13-0.21	7.9-8.4	1-4	Low to moderate.	Moderate...	Low.
--------	100	65-85	0-10	NP	NP	6.0-20.0	0.05-0.07	7.9-8.4	0-1	Low.....	Low.....	Low.
40-70	35-65	30-60	20-50	<30	NP-5	0.6-2.0	0.09-0.11	6.6-7.3	0-1	Low.....	Low.....	Low.
70-80	65-75	55-65	20-40	20-35	5-15	0.6-2.0	0.12-0.14	6.1-6.5	0-1	Low.....	Low.....	Low.
90-100	85-95	35-90	70-85	50-65	25-35	<0.06	0.14-0.16	6.1-7.3	0-1	High.....	High.....	Low.
95-100	90-100	75-100	60-90	20-30	5-10	0.2-0.6	0.14-0.18	7.4-7.8	0-1	High.....	High.....	Low.
--------	100	90-100	75-95	40-55	20-30	0.06-0.2	0.15-0.18	7.8-8.4	0-1	High.....	High.....	Low.
85-95	70-85	40-75	25-50	NP	NP	0.6-0.2	0.07-0.09	7.9-8.4	0-1	Low.....	Low.....	Low.
80-95	50-70	20-45	10-25	NP	NP	>20	0.04-0.06	7.9-8.4	0-1	Low.....	Low.....	Low.
--------	100	85-95	60-70	20-35	5-10	0.6-2.0	0.16-0.18	7.9-8.4	0-1	Low.....	High.....	Low.
65-95	60-90	50-85	40-65	20-30	0-5	0.6-2.0	0.13-0.15	7.9-8.4	0-1	Low.....	High.....	Low.
--------	100	95-100	40-60	NP	NP	0.6-2.0	0.13-0.18	7.9-8.4	0-1	Low.....	Moderate...	Low.
--------	100	50-90	0-10	NP	NP	6.0-2.0	0.05-0.07	7.9-8.4	0-1	Low.....	Low.....	Low.
--------	100	95-100	40-75	NP	NP	0.6-2.0	0.07-0.12	7.9-9.0	4-8	Low.....	High.....	Low.
--------	100	90-100	60-80	25-35	5-15	0.2-0.6	[2]0.16-0.20	7.4-7.8	[1]1-4	Moderate...	High.....	Low.
--------	100	90-100	75-90	30-40	10-15	0.2-0.6	[2]0.19-0.21	7.9-8.4	[1]1-4	Moderate...	High.....	Low.
--------	100	90-100	70-80	30-40	10-15	0.2-0.6	[2]0.19-0.21	7.4-8.4	[1]1-4	Moderate...	High.....	Low.
--------	100	95-100	90-95	40-65	20-30	<0.06	0.10-0.12	8.5-9.0	4-8	High.....	High.....	Low.
40-75	35-60	20-40	10-30	20-25	0-4	2.0-6.0	0.06-0.08	7.9-9.0	2-4	Low.....	High.....	Low.
--------	100	85-100	60-80	25-35	5-15	0.6-2.0	0.16-0.20	7.4-8.4	0-1	Moderate...	Moderate...	Low.
45-60	40-55	20-45	0-20	NP	NP	>20.0	0.03-0.05	7.4-7.8	0-1	Low.....	High.....	Low.

AMENDMENT TO DRAINAGE PLAN. RIFFENBURGH 1-11-84
3124 11TH ST. NW
LOT-B GLAGEBROOK'S REPLAT OF MONKBRIDGE ADDITION

18" RCP IN ELEVENTH STREET

SLOPE = .0045

n = .013

$r = \frac{A}{P} = \frac{1.767}{4.712} = .375$

$V = \frac{1.486}{.013} \cdot .375^{.667} \cdot .0045^{.500} = 3.99$ ft/sec.

$Q = Av = 1.767 \times 3.99 = \underline{7.04 \text{ CFS}}$

FROM PLATE 22.3 B5

$Q = Ks^{1/2}$

K for 18" PIPE = 105

$Q = 105 \cdot .0045^{.500} = \underline{7.04 \text{ CFS}}$

TRIBUTARY AREA. SHOWN ON ATTACHED PORTION OF ORTHOTOPO.

PHOTO SCALE: ~ 1" = 200'

STORM SEWER SHOWN AS SOLID RED LINE. TIES TO 24" @ INTERSECTION OF 10TH & CANDELARIA, NW.

APPARENT AREA: 0.4 ACRES

SOILS GROUP B

ASSUME 50% IS IMPERVIOUS

C = .58 PER PL. 22.2 C-1

To = 10 MIN. $I = 22 \times 0.84 \times 10^{-.51} = \underline{4.65 \text{ IN/HR}}$

$Q = .58 \times 4.65 \times 0.4 = \underline{17.26 \text{ CFS}}$, PEAK 100-YR.

SINCE 17.26 CFS > 7.04 CFS STREET FLOWS WILL OCCUR AFTER STORM DRAIN IS LOADED TO CAPACITY.
AS SHOWN ON ORIGINAL SUBMITTED PLAN, DRAIN FROM PROPERTY IS LOWER (63.60) THAN LOWEST ADJACENT CURB FLOWLINE (64.75). THEREFORE BACKFLOWS FROM STREET ONTO PROPERTY THROUGH THE PREVIOUSLY SHOWN 8" VCP WOULD OCCUR DURING 100-YEAR FREQUENCY STORMS.

→ THE INLET AND DRAIN SHALL BE DELETED FROM SUBMITTED PLAN.

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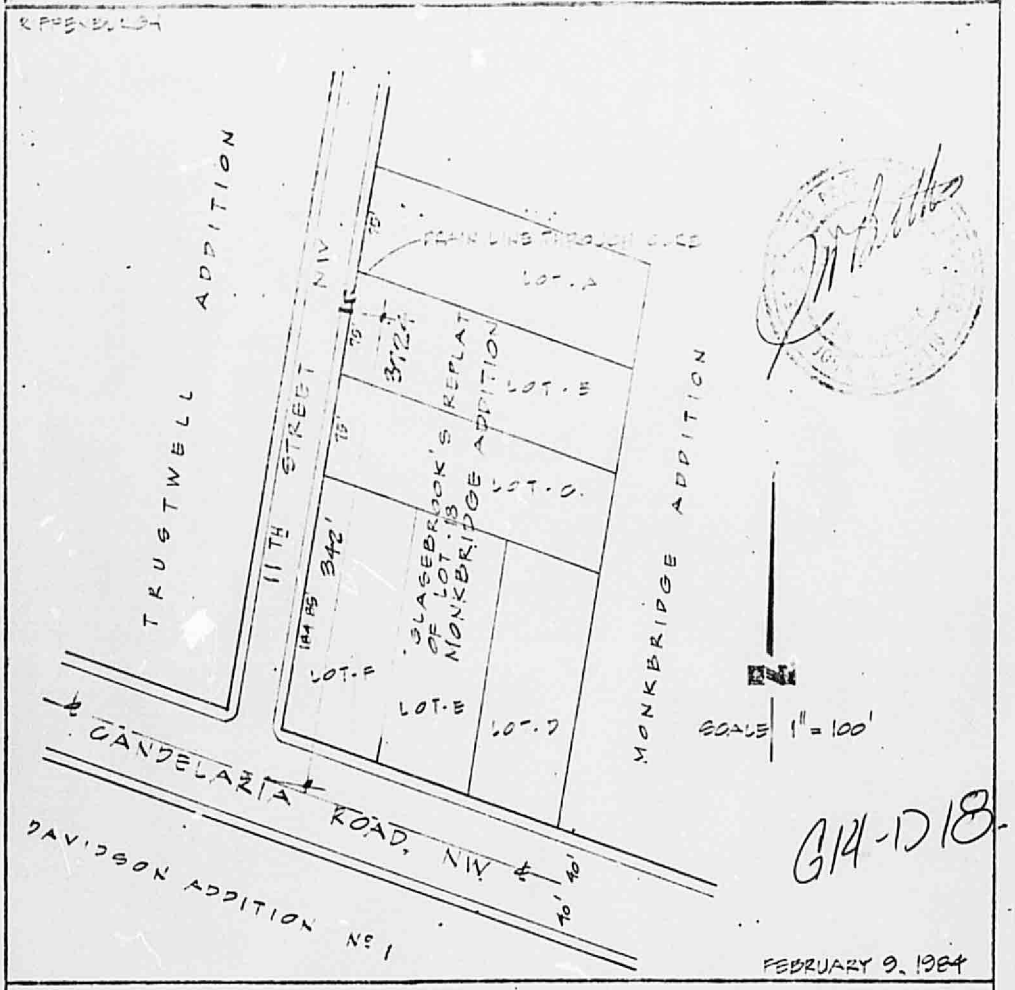
ATLAS INDEX: G-14

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



G14-D18

FEBRUARY 9, 1984

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.

2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with "Contract Documents for Public Works Contracts [illegible] No. 84-1 "

3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.

4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.

5. Backfill compaction shall be according to RESIDENTIAL street use.

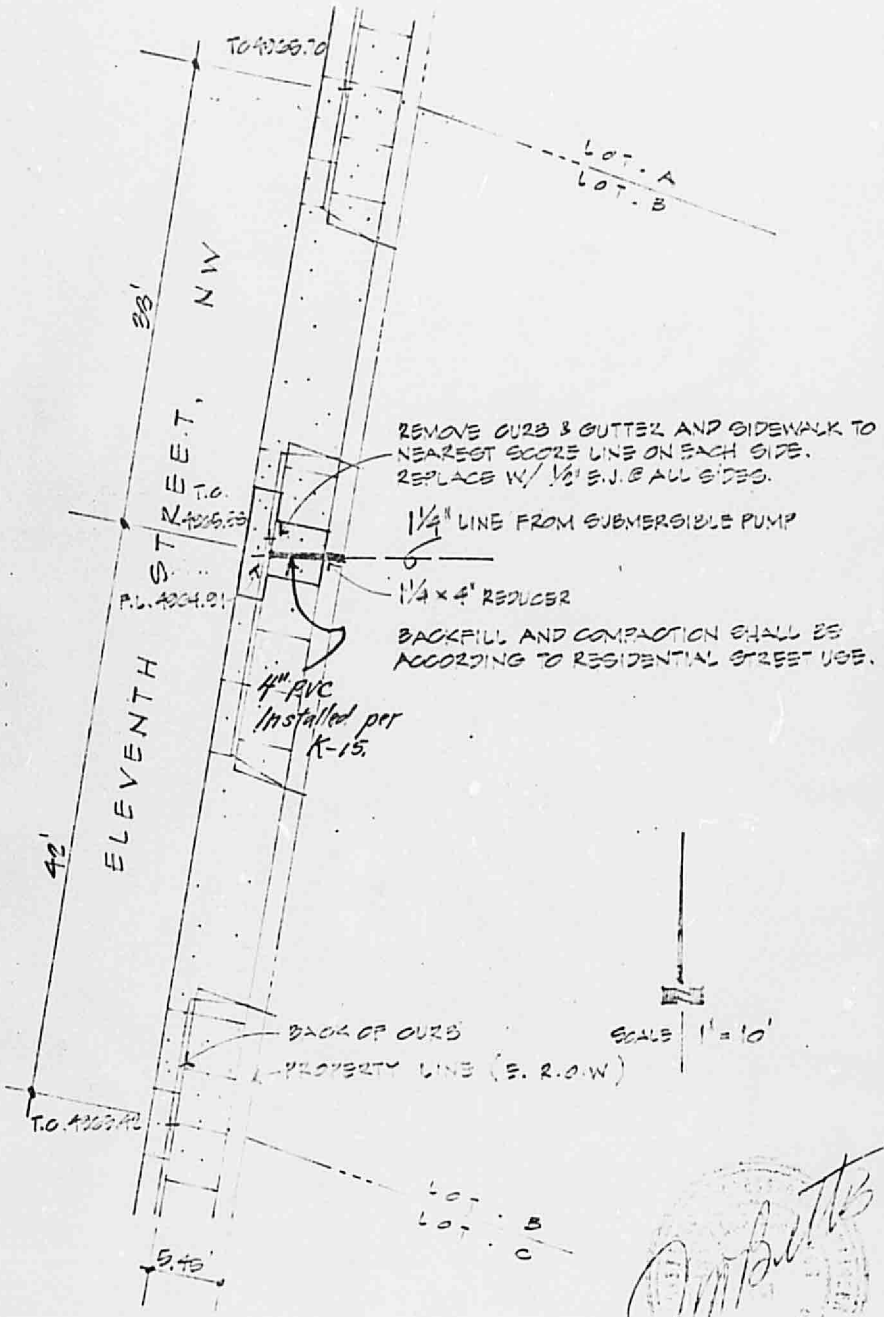
REVISION C-151

APPROVALS	NAME	DATE	TITLE: DRAIN LINE THROUGH CURB 8124 11TH STREET, NW	
A.C.E./DESIGN	[illegible]	23 Feb 84		
INSPECTOR			PERMIT NO.	MAP
A.C.E./FIELD			SHEET 1 OF 2	NO. G-14

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

RIFFENBURGH



C-157 FEBRUARY 2, 1984

APPROVALS	NAME	DATE	TITLE: DRAIN LINE THROUGH CURB 6704 11TH STREET, NW
A.C.E./DESIGN			
INSPECTOR			PERMIT NO. / MAP NO.
A.C.E./FIELD			SHEET 2 OF 2