

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

July 8, 1997

INTEROFFICE CORRESPONDENCE

HYDROLOGY DIVISION

TO: Desiderio Salas, Street Maintenance Division
FROM: Lisa Ann Manwill, P.E. Engineering Associate, PWD *LAM*
SUBJECT: **PRIVATE DRAINAGE FACILITIES WITHIN PUBLIC RIGHT-OF-WAY
DRAINAGE FILE NUMBER F19-D29.**

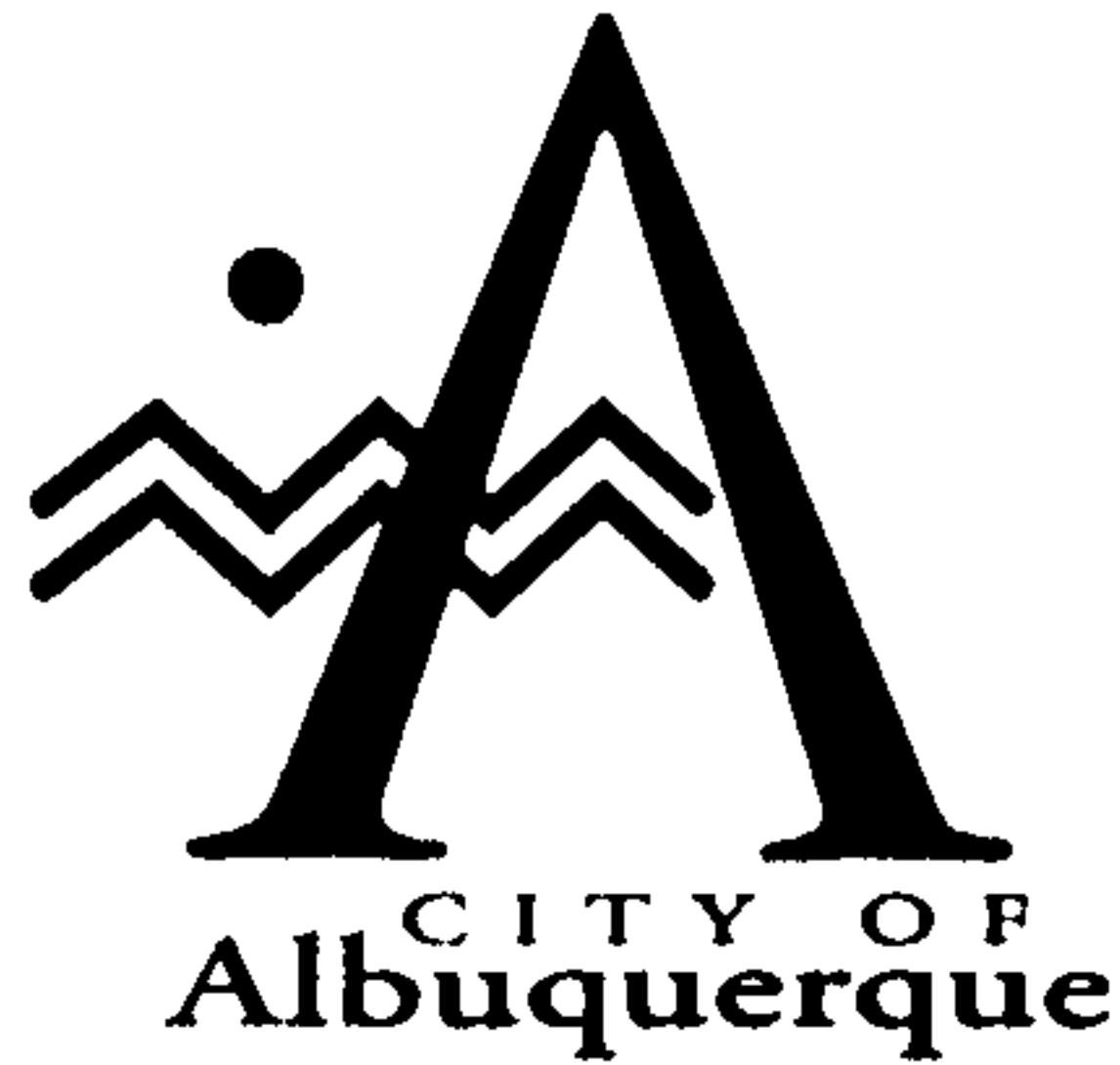
Transmitted herewith, is a copy of the approved drainage plan for the referenced project incorporating the SO #19 design.

This plan is being submitted to you for permitting and inspection. Please provide this section with a signed-off copy per the signature block upon construction and acceptance by your office.

As you are aware, the signed off SO #19 is required by this office for Certificate of Occupancy release; therefore your expeditious processing of this plan would be greatly appreciated and would avoid any unnecessary delay in the release of the Certificate of Occupancy.

Thank you for your cooperation and if you should have any questions and/or comments, please feel free to call me at 924-3984.

Attachment



July 8, 1997

Martin J. Chávez, Mayor

Ronald Bohannon, P.E.
Tierra West
4421 McCleod NE
Suite D
Albuquerque, NM 87109

RE: LOUISIANA OFFICE BUILDING (F19-D29). GRADING PLAN SUBMITTAL FOR BUILDING, GRADING, AND SO #19 PERMITS. ENGINEER'S STAMP DATED JULY 2, 1997.

Dear Mr. Bohannon:

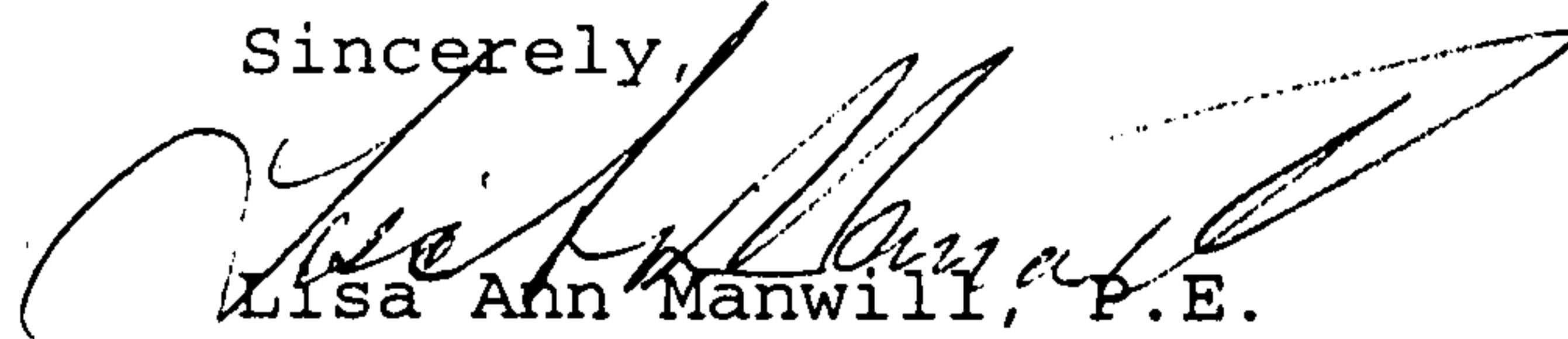
Based on the information provided on your July 3, 1997 submittal, the above referenced project is approved for Grading, Paving, and SO #19 Permits. Building Permit approval does not appear to be required on this project and is therefore denied.

A separate permit is required for construction within the City right-of-way. A copy of this approval letter must be on hand when applying for the excavation permit.

An Engineer's Certification will be required. Please provide a copy of the City inspector's "green tag" for the tie into the back of the existing inlet.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,



Lisa Ann Manwill, P.E.
Engineering Assoc./Hyd.

c: Arlene Portillo
Andrew Garcia
File

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103



DRAINAGE INFORMATION SHEET

PROJECT TITLE: <u>LOUISIANA OFFICE BUILDING</u>		ZONE ATLAS/DRNG. FILE #: <u>F-19</u>
DRB #: _____	EPC #: _____	WORK ORDER #: _____
LEGAL DESCRIPTION: <u>LOTS 13 THRU 15, BLOCK 2 OF NORTH ALBUQUERQUE ACRES TRACT 3, UNIT 1</u>		
CITY ADDRESS: <u>NORTHEAST CORNER OF LOUISIANA AND ALCAZAR</u>		
ENGINEERING FIRM: <u>TIERRA WEST DEV. MAGT. SER.</u>		CONTACT: <u>RONALD R. BOHANNAN OR SHAHAB BLAZAR</u>
ADDRESS: <u>4421 McCleod Rd. NE Suite D, 87109</u>		PHONE: <u>(505) 883-7592</u>
OWNER: <u>LEE WELSH</u>		CONTACT: <u>LEE WELSH</u>
ADDRESS: <u>6301 INDIAN SCHOOL RD, NE SUITE 206</u>		PHONE: <u>(505) 881-8020</u>
ARCHITECT: _____		CONTACT: _____
ADDRESS: _____		PHONE: _____
SURVEYOR: <u>Precision Surveys</u>		CONTACT: <u>Larry Medrano</u>
ADDRESS: <u>2929 Coors Blvd, NW Suite 105</u>		PHONE: <u>(505) 839 - 0569</u>
CONTRACTOR: _____		CONTACT: _____
ADDRESS: _____		PHONE: _____

TYPE OF SUBMITTAL:

<u> X </u>	DRAINAGE REPORT
_____	DRAINAGE PLAN
_____	CONCEPTUAL GRADING & DRAINAGE PLAN
<u> X </u>	GRADING PLAN
_____	EROSION CONTROL PLAN
_____	ENGINEER'S CERTIFICATION
_____	OTHER

PRE-DESIGN MEETING:

_____	YES
<u> X </u>	NO
_____	COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

_____	SKETCH PLAN APPROVAL
_____	PRELIMINARY PLAT APPROVAL
_____	S. DEV. PLAN FOR SUB'D. APPROVAL
_____	S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
_____	SECTOR PLAN APPROVAL
_____	FINAL PLAT APPROVAL
_____	FOUNDATION PERMIT APPROVAL
<u> X </u>	BUILDING PERMIT APPROVAL
_____	CERTIFICATE OF OCCUPANCY APPROVAL
<u> X </u>	GRADING PERMIT APPROVAL
_____	PAVING PERMIT APPROVAL
_____	S. A. D. DRAINAGE REPORT
_____	DRAINAGE REQUIREMENTS
<u> X </u>	OTHER SO #19 PERMIT

DATE SUBMITTED: 07/03/97

BY: SARA McCOLLAM

DRAINAGE REPORT

for

Louisiana Office Building

Prepared by

**Tierra West Development Management Services
4421 McLeod Road NE, Suite D
Albuquerque, New Mexico 87109**

Prepared for

**Mr. Lee Welsh
6301 Indian School Rd., NE Suite 206
Albuquerque, New Mexico 87110**

June 1997



Ronald R. Bohannon P.E. No. 7868



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Location

The site located on Louisiana Boulevard between Alcazar Street and Prairie Road. There is an existing office building located on the site. This site is approximately 0.67 acres and is identified as Lots 13 thru 15, Block 2 of North Albuquerque Acres Tract 3, Unit 1. The purpose of this report is to provide the drainage analysis and management plan for the site.

Existing Drainage Conditions

The site is currently developed with an office building and parking lot. The site was developed in 1978 and is referenced by F19/D29. At that time, the Louisiana storm sewer was not built and the site was designed with a ponding solution. The site drains to a french drain located on the south side of the site. This is causing a ponding problem in the parking lot. This drainage plan will attempt to alleviate the existing problem.

There will be no new construction, the only changes will occur to the on-site drainage system. There will be no changes to the existing site layout or the existing grades.

There is one existing basin on the site. This basin drains to a french drain located on the south side of the site. There is 3.18 cfs of existing runoff flowing into the existing drain.

FEMA Map and Soil Conditions

The site is located on FEMA Map section 35001C0139 D as shown on the attached excerpt. The map shows that the site does not lie within any 100 year flood plains.

The site contains two different soils from the Soil Conservation Service Soil Survey of Bernalillo County. One soil is a Tijeras gravelly fine sandy loam, and the other is an Embudo-Tijeras complex. Both soils have medium runoff and the hazard of water erosion is moderate.

On-Site Drainage Management Plan

The proposed drainage management plan is to continue to collect the flows in the same location as the existing french drain. A 12" RCP will be added to the french drain that will convey the 3.18 cfs of flow to an existing drop inlet located in Alcazar Street. The flows will then be conveyed to the existing Louisiana Storm Drain and eventually to the Hahn Arroyo.

Summary

There is an existing office building and parking lot on the site. A 12" RCP pipe will be added to the existing french drain. The pipe will drain 3.18 cfs of existing flow to an existing drop inlet located in Alcazar Street and eventually to the Hahn Arroyo. This will be the only change on the site. There will be no changes to the site layout or the existing grades.

Louisiana Boulevard, N.E.

(60' R.O.W.)

LOT 15

BASIN 1

BUILDING

COVERED

EXISTING NO. 4 REGAR

LOT 11

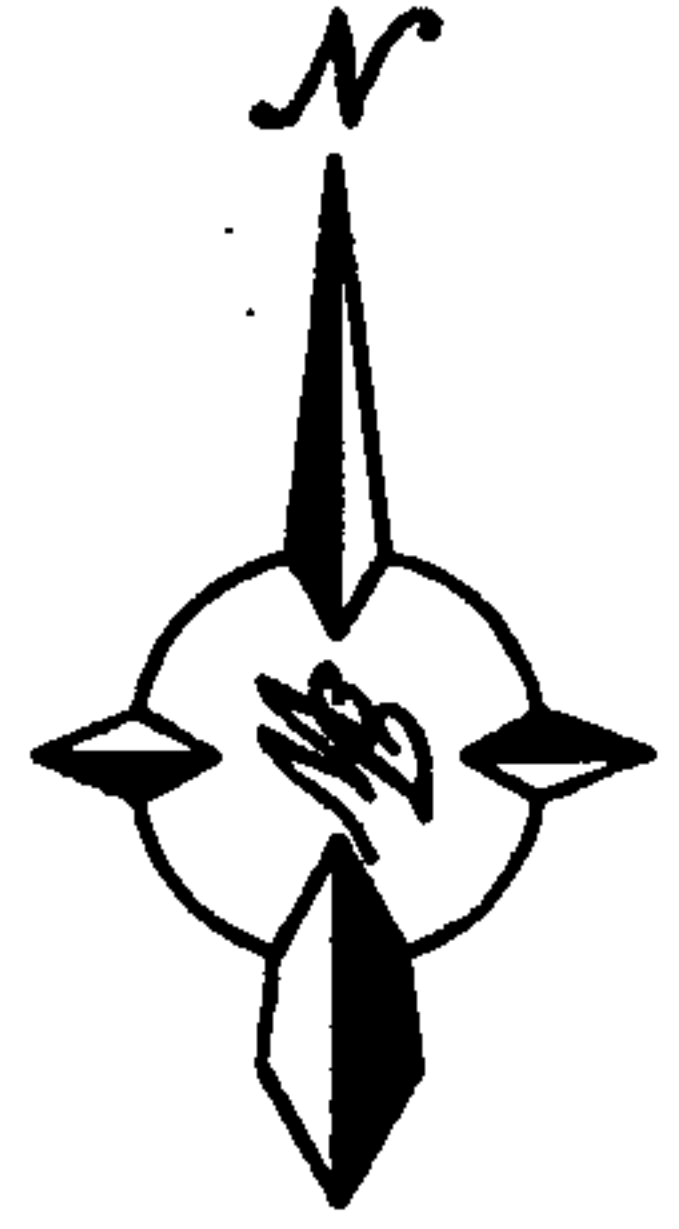
LOT 12

EXISTING FRENCH DRAIN

NEW 12" RCP

EXISTING DROP INLET

Alcazar Street, N.E.
(50' R.O.W.)



PROPOSED BASIN LAYOUT

Runoff Calculations

RUNOFF CALCULATIONS

The site is @ Zone 3

LAND TREATMENT

Existing

B = 15%

D = 85%

DEPTH (INCHES) @ 100-YEAR STORM

$P_{60} = 2.14$ inches

$P_{360} = 2.60$ inches

$P_{1440} = 3.10$ inches

DEPTH (INCHES) @ 10-YEAR STORM

$P_{60} = 2.14 \times 0.667$
 $= 1.43$ inches

$P_{360} = 1.73$

$P_{1440} = 2.07$

See the summary output from AHYMO calculations.

Also see the following summary tables.

DRAINAGE BASINS

Existing

BASIN	AREA (SF)	AREA (AC)	AREA (MI ²)
1	29364.80	0.6741	0.001053

RUNOFF CALCULATION RESULTS

Existing

BASIN	Q-100 CFS	Q-10 CFS	V-100 AC-FT	V-10 AC-FT
1	3.18	2.05	0.12	0.074

Storm Sewer

DROP INLET HEAD CAPACITY

Orifice Equation:

$$Q = CA\sqrt{2gH}$$

Q = Flow (cfs)

C = 0.60

A = Area of drop inlet (ft²)

g = 32.2

H = Height of water above drop inlet (ft)

$$H = \frac{\left(\frac{Q}{C * A}\right)^2}{2g}$$
$$H = \frac{\left(\frac{3.18}{0.6 * 2.30}\right)^2}{2 * 32.2}$$

H = 0.08 feet

Allowable depth = 0.84 feet

Required depth = 0.08 feet

0.08 feet < 0.84 feet

STORM DRAIN INLET
EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR

SINGLE 'D':

Area at the grate:

$$\begin{aligned} L &= 38.375" - 7 (1/2" \text{ middle bars}) \\ &= 34.875" \\ &= 2.906' \end{aligned}$$

$$\begin{aligned} W &= 25.5" - 13 (1/2" \text{ middle bars}) \\ &= 19" \\ &= 1.583' \end{aligned}$$

$$\begin{aligned} \text{Area} &= 1.583' \times 2.906' \\ &= 4.601 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Effective Area} &= 4.601 - 0.5 (4.601) \\ &= 2.30 \text{ ft}^2 \end{aligned}$$

$$\text{Effective Area} = 2.30 \text{ ft}^2$$

Pipe Capacity

Manning's Equation:

$Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$

A = Area

R = D/4

S = Slope

n = 0.013

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
1	12	0.88	0.79	0.25	3.35	3.18	4.05

**AHYMO
Runoff Input
and
Summary Output
for
Existing
Drainage Basins**

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
 INPUT FILE = a:p.dat

RUN DATE (MON/DAY/YR) =06/09/1997
 USER NO.= R_BOHANN.101

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.600
COMPUTE NM HYD	100.10	-	1	.00105	3.18	.120	2.13998	1.510	4.713	PER IMP= 85.00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.730
COMPUTE NM HYD	110.10	-	1	.00105	2.05	.074	1.32459	1.510	3.041	PER IMP= 85.00
FINISH										

```

*****
*                LOUISIANA OFFICE COMPLEX                *
*****
*      100-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)      *
*****
*
START              TIME=0.0
*
* BASIN 1
*
RAINFALL           TYPE=1 RAIN QUARTER=0.0 IN
                   RAIN ONE=2.14 IN RAIN SIX=2.60 IN
                   RAIN DAY=3.10 IN DT=0.02253 HR
COMPUTE NM HYD     ID=1 HYD NO=100.1 AREA=0.001053 SQ MI
                   PER A=0.00 PER B=15.00 PER C=0.00 PER D=85.00
                   TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD          ID=1 CODE=1
*
*
*****
*      10-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)      *
*****
*
START              TIME=0.0
*
* BASIN 1
*
RAINFALL           TYPE=1 RAIN QUARTER=0.0 IN
                   RAIN ONE=1.43 IN RAIN SIX=1.73 IN
                   RAIN DAY=2.07 IN DT=0.02253 HR
COMPUTE NM HYD     ID=1 HYD NO=110.1 AREA=0.001053 SQ MI
                   PER A=0.00 PER B=15.00 PER C=0.00 PER D=85.00
                   TP=-0.1333 HR MASS RAINFALL=-1
PRINT HYD          ID=1 CODE=1
*
*
FINISH

```