



June 9, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Ronald Bohannon, PE  
Tierra West Development  
4421 McLeod Road NE  
Albuquerque, New Mexico 87109

RE: CERTIFICATION FOR THE PLAZA AT JOURNAL CENTER- PHASE II(D-17/D3B2)  
ENGINEER'S CERTIFICATION STATEMENT MAY 19, 1997.

Dear Mr. Bohannon:

Based on the information provided on your May 29, 1997 submittal, the above referenced project is approved for Certificate of Occupancy release.

If you should have any questions, please feel free to contact me at 924-3986

Sincerely,

A handwritten signature in cursive script that reads 'Bernie Montoya'.

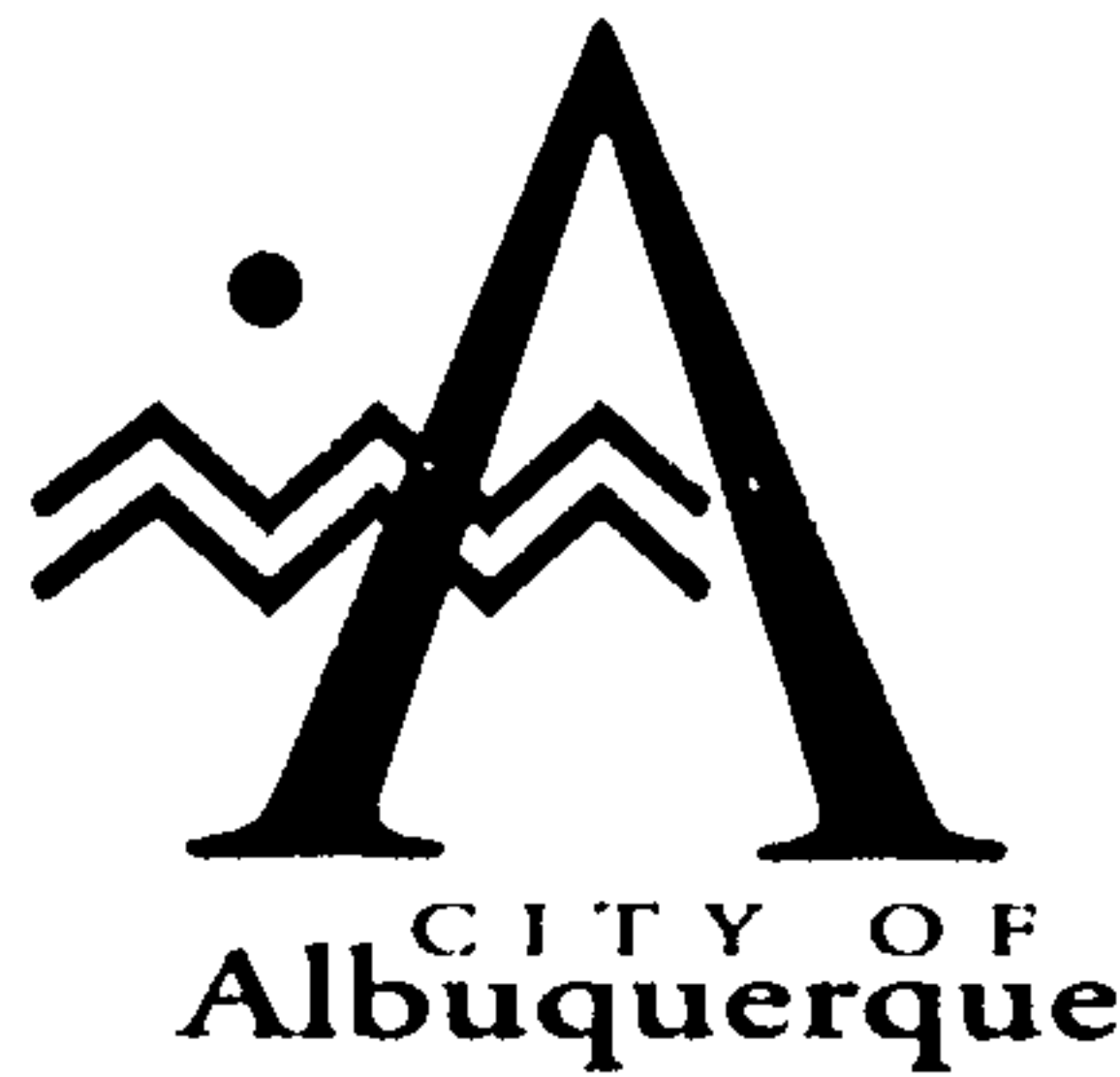
Bernie Montoya  
Engineering Associate

c: Andrew Garcia  
☒ File

Good for You, Albuquerque!

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





Public Works Department

March 13, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

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

**RE: THE PLAZA AT JOURNAL CENTER PHASE 7 - 5130 SAN FRANCISCO ROAD  
NE (D17-D3B2). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF  
OCCUPANCY. ENGINEER'S CERTIFICATION DATED 3-4-97.**

Dear Mr. Bohannon:

Based on the information provided on your March 5, 1997 submittal,  
the above referenced project is approved for Certificate of  
Occupancy.

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: Andrew Garcia  
<File>

Good for You, Albuquerque!





CITY OF  
Albuquerque

Public Works Department

February 25, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

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

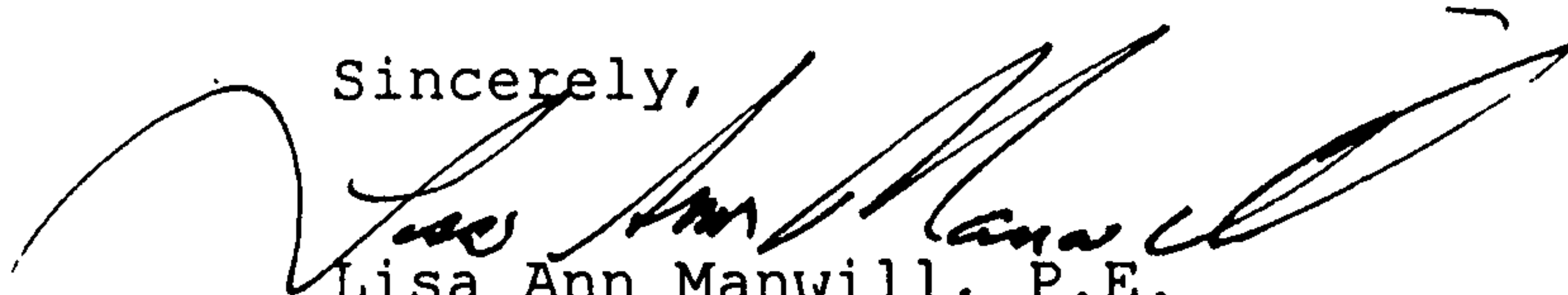
**RE: THE PLAZA AT JOURNAL CENTER PHASE 5 - 5100 SAN FRANCISCO ROAD  
NE (D17-D3B2). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF  
OCCUPANCY. ENGINEER'S CERTIFICATION DATED 12-24-96.**

Dear Mr. Bohannon:

Based on the information provided on your February 21, 1997  
submittal, the above referenced project is approved for Certificate  
of Occupancy

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: Andrew Garcia  
File

Good for You, Albuquerque!

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





February 5, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Ronald Bohannon  
Tierra West  
4421 McLeod Road NE  
Suite D  
Albuquerque, NM 87109

**RE: THE PLAZA AT JOURNAL CENTER PHASE 1 - 5140 SAN FRANCISCO ROAD  
NE (D17-D3B2). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF  
OCCUPANCY. ENGINEER'S CERTIFICATION DATED 12-24-96.**

Dear Mr. Bohannon:

Based on the information provided on your February 3, 1997  
submittal, the above referenced project is approved for Certificate  
of Occupancy

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

Sincerely,

A handwritten signature in cursive script, appearing to read 'Lisa Ann Manwill'.

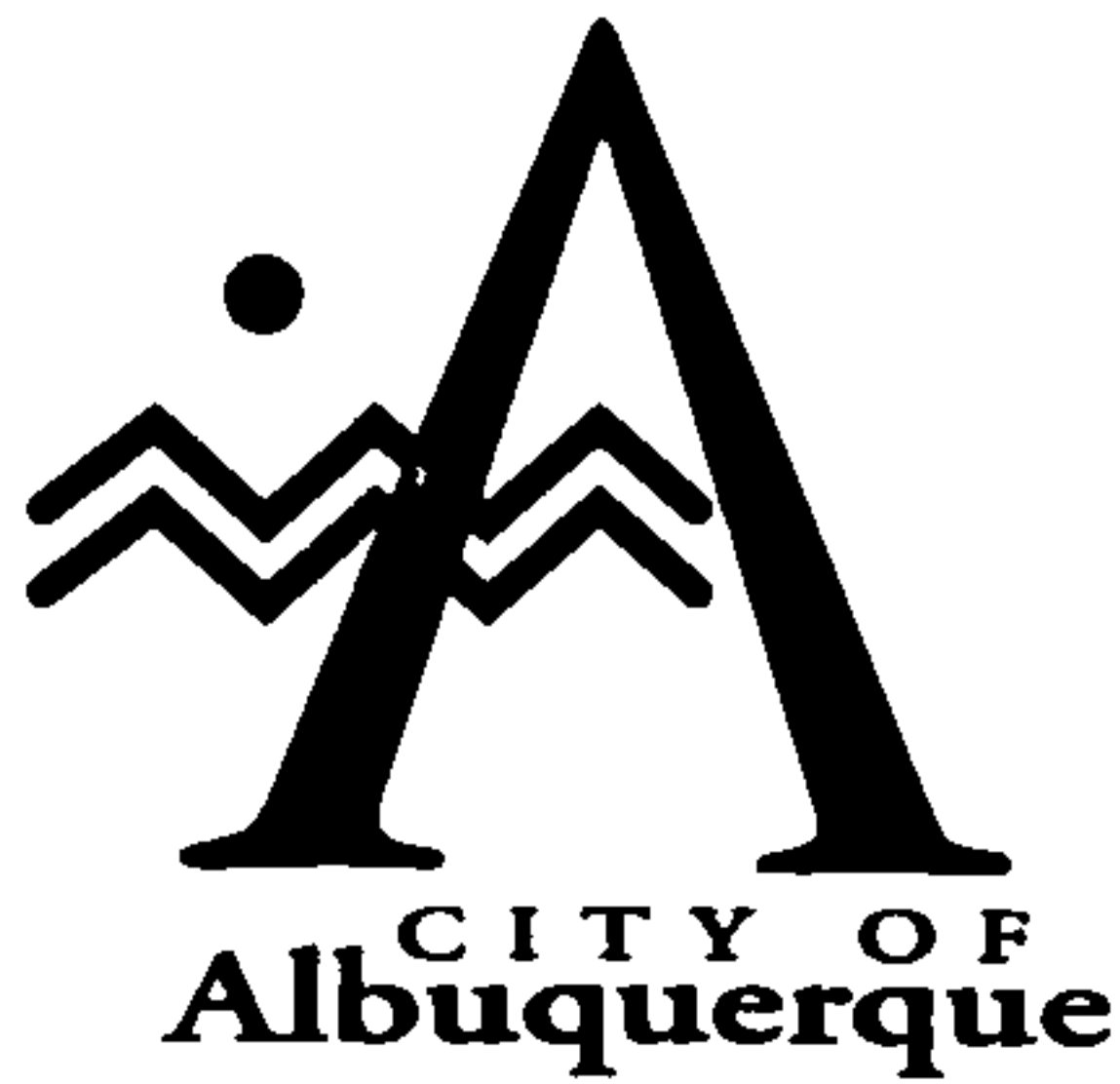
Lisa Ann Manwill  
Engineering Assoc./Hyd.

c: Andrew Garcia  
~~File~~

Good for You, Albuquerque!

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





December 27, 1996

Martin J. Chávez, Mayor

Ronald Bohannon  
Tierra West  
4421 McLeod Road NE  
Suite D  
Albuquerque, NM 87109

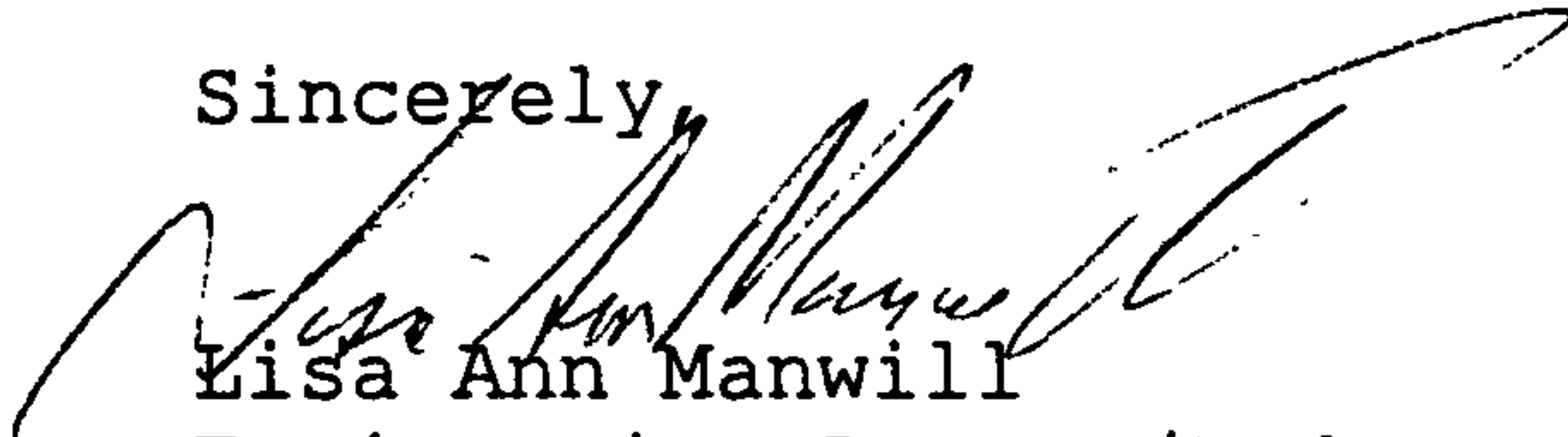
**RE: THE PLAZA AT JOURNAL CENTER PHASE 6(D17-D3B2). ENGINEER'S  
CERTIFICATION FOR CERTIFICATE OF OCCUPANCY. ENGINEER'S  
CERTIFICATION DATED 12-24-96.**

Dear Mr. Bohannon:

Based on the information provided on your December 26, 1996  
submittal, the above referenced project is approved for Certificate  
of Occupancy

If I can be of further assistance, please feel free to contact me at  
768-3622.

Sincerely,

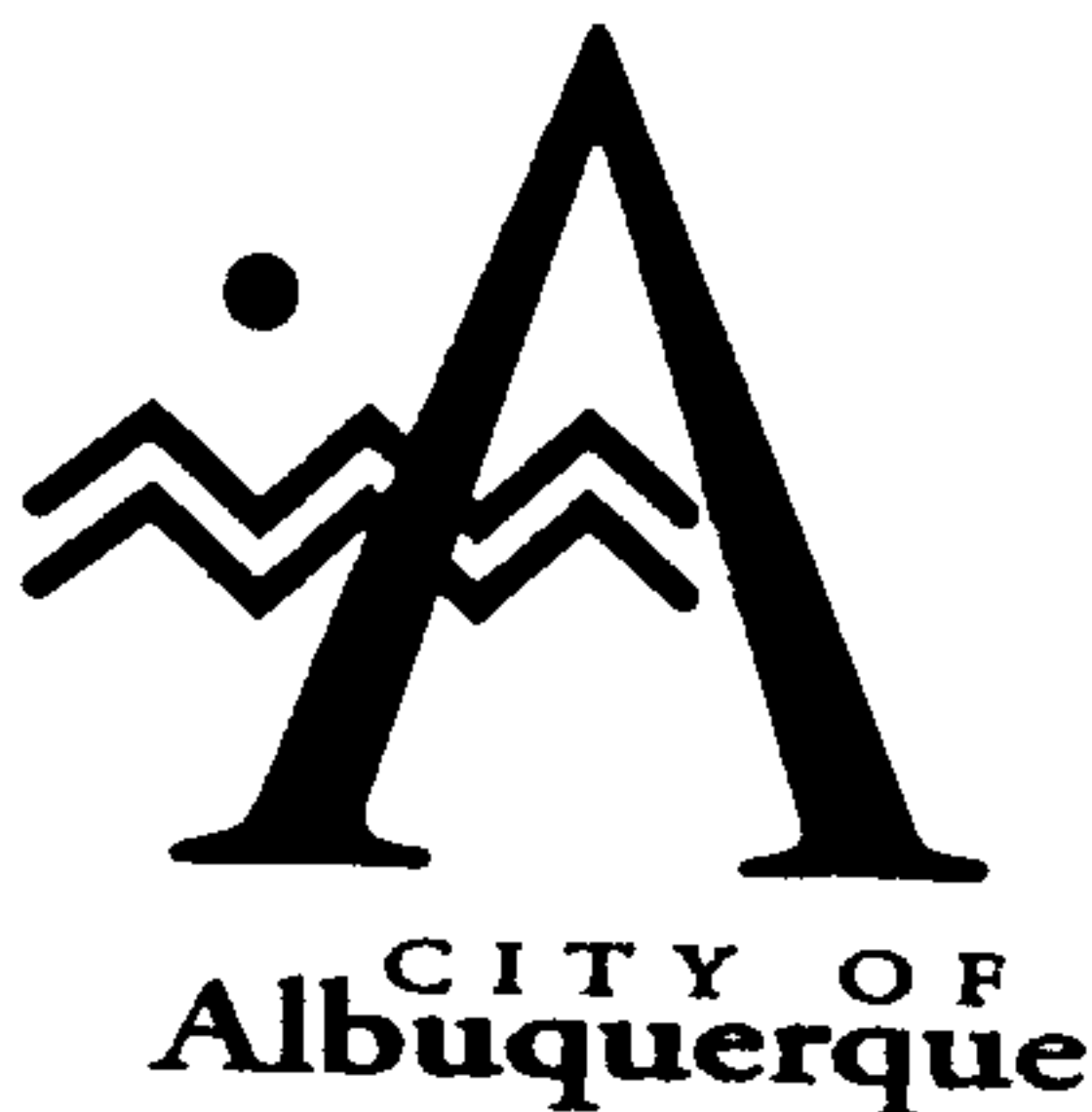


Lisa Ann Manwill  
Engineering Assoc./Hyd.

c: Andrew Garcia  
File,

Good for You, Albuquerque!





P.O. Box 1293 Albuquerque, NM 87103

November 1, 1996

Martin J. Chávez, Mayor

Ronald R. Bohannon, PE  
Tierra West Dev Mgt Ser  
4421 Mcleod Rd NE Suite D  
Albuquerque, NM 87109

RE: DRAINAGE REPORT FOR THE PLAZA @ J.C. (D-17/D3B2)  
RECEIVED OCTOBER 21, 1996 FOR SITE DEV PLAN & BUILDING PERMIT  
ENGINEER'S STAMP DATED 10-21-96

Dear Mr. Bohannon:

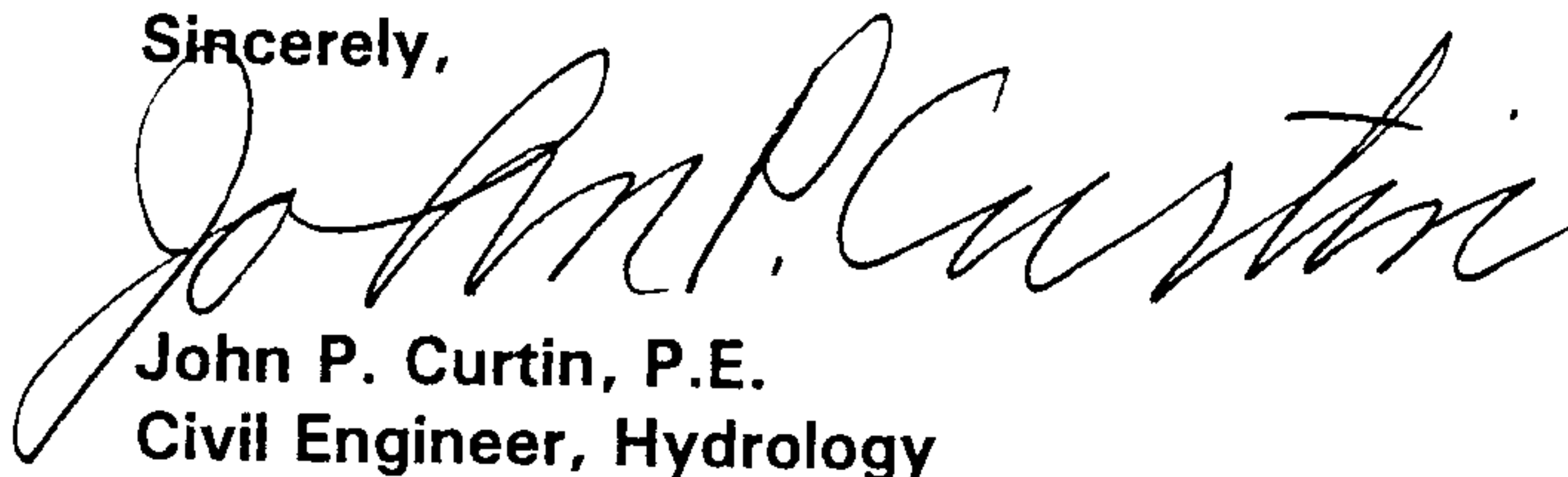
Based on the information included in the submittal referenced above, City Hydrology accepts the Drainage Report for Site Development Plan & Building Permit.

Include a copy of the drainage & grading plan, dated 10-21-96, in the set of construction documents that will be submitted to Code Administration for the Building Permit. The Contractor must obtain permission from Sunwest Bank before constructing the rundown on their property.

Engineer's Certification of grading & drainage per DPM checklist must be accepted by City Hydrology before any Certificate of Occupancy will be released. A separate certification will be required for each phase/building.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

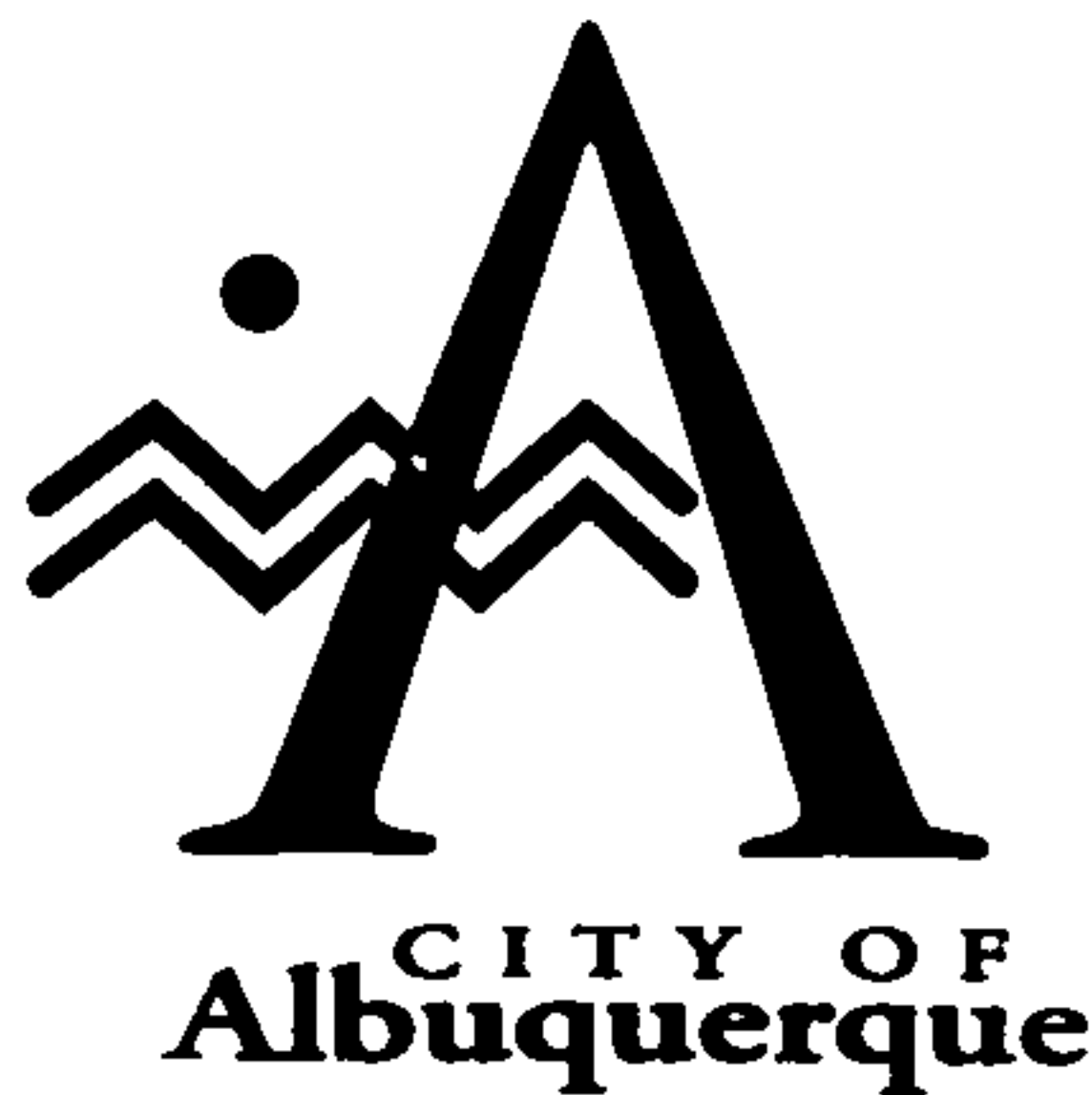


John P. Curtin, P.E.  
Civil Engineer, Hydrology

c: Andrew Garcia  
Fred Aguirre, DRB 94-225  
Bill Chapman, Chapman Companies, 1500 St Francis Dr, Santa Fe, NM 87505

Good for You, Albuquerque! 6





P.O. Box 1293 Albuquerque, NM 87103

November 1, 1996

Martin J. Chávez, Mayor

Ronald R. Bohannon, PE  
Tierra West Dev Mgt Ser  
4421 Mcleod Rd NE Suite D  
Albuquerque, NM 87109

RE: DRAINAGE REPORT FOR THE PLAZA @ J.C. (D-17/D3B2)  
RECEIVED OCTOBER 21, 1996 FOR SITE DEV PLAN & BUILDING PERMIT  
ENGINEER'S STAMP DATED 10-21-96

Dear Mr. Bohannon:

Based on the information included in the submittal referenced above, City Hydrology accepts the Drainage Report for Site Development Plan & Building Permit.

Include a copy of the drainage & grading plan, dated 10-21-96, in the set of construction documents that will be submitted to Code Administration for the Building Permit. The Contractor must obtain permission from Sunwest Bank before constructing the rundown on their property.

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If you have any questions about this project, You may contact me at 768-2727.

Sincerely,



John P. Curtin, P.E.  
Civil Engineer, Hydrology

c: Andrew Garcia  
Fred Aguirre, DRB 94-225  
Bill Chapman, Chapman Companies, 1500 St Francis Dr, Santa Fe, NM 87505

Good for You, Albuquerque!



# DRAINAGE REPORT

for

## The Plaza at Journal Center

Prepared by

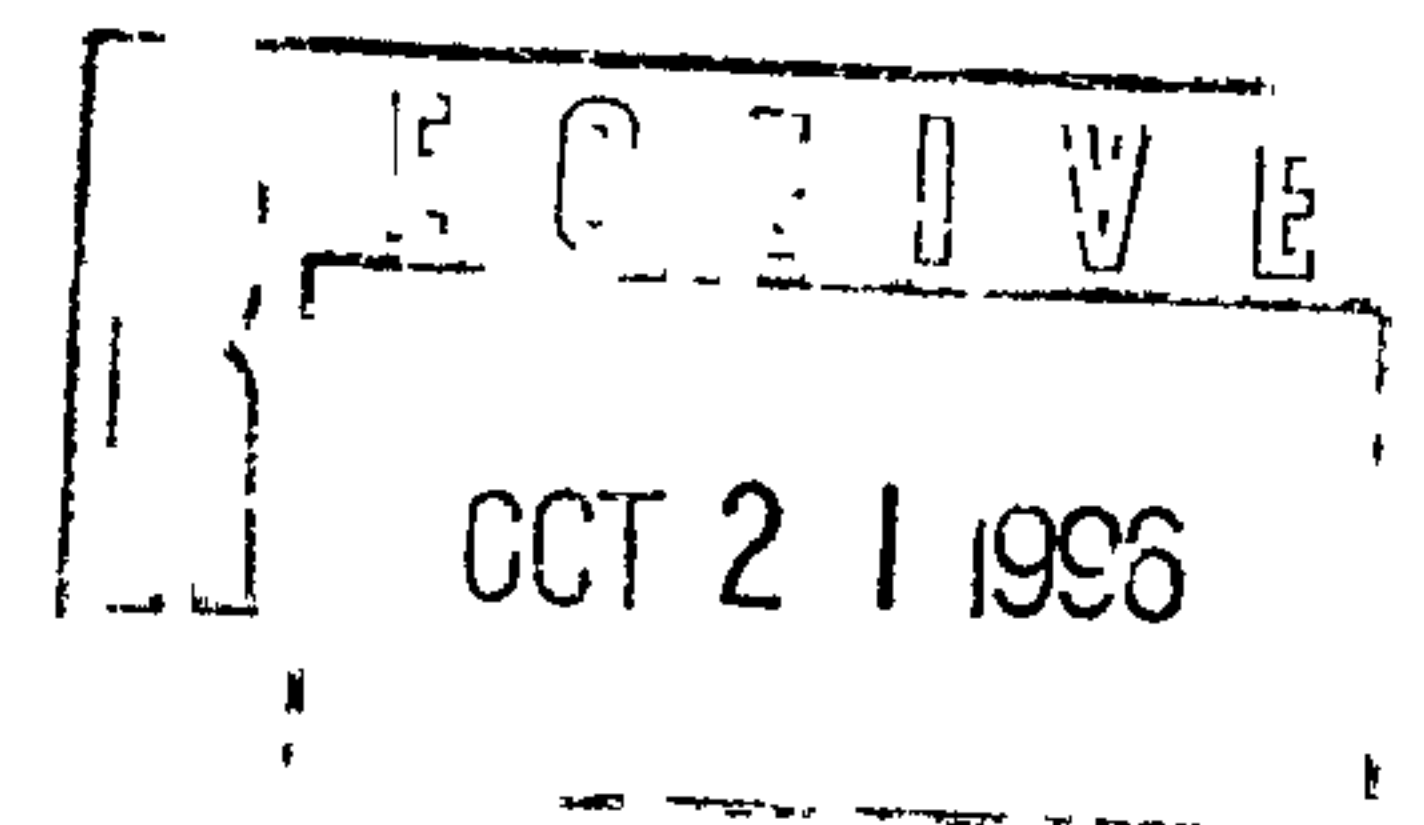
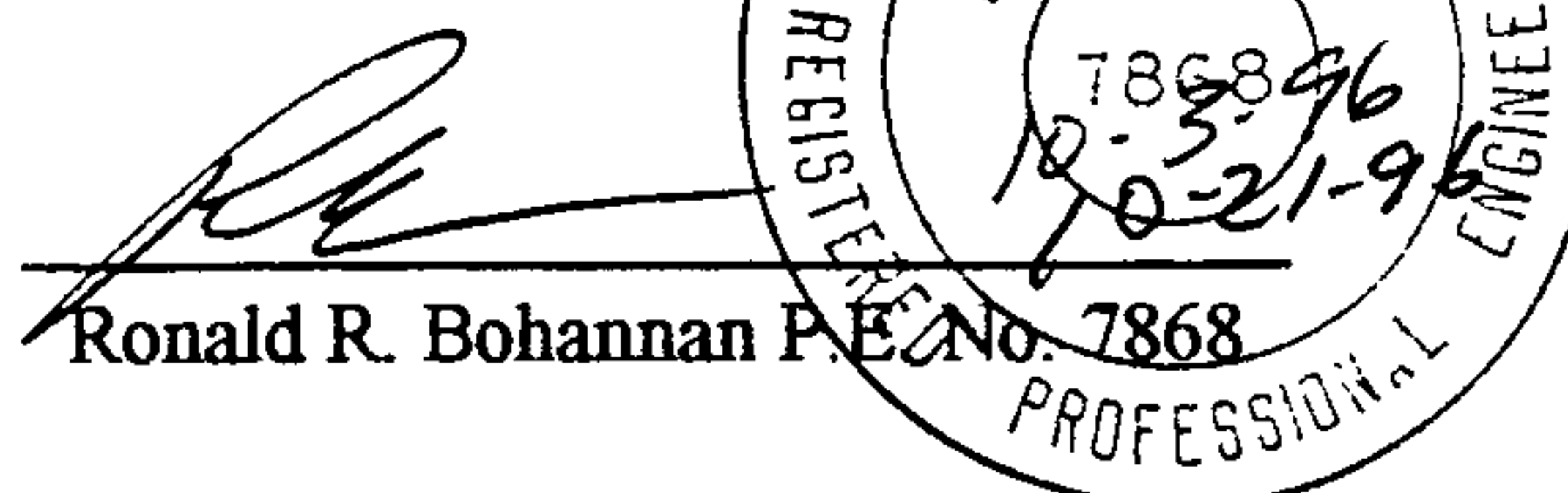
Tierra West Development Management Services  
4421 McLeod Road NE, Suite D  
Albuquerque, New Mexico 87109

Prepared for

Bill Chapman  
Chapman Companies  
1500 St. Francis Drive  
Santa Fe, New Mexico 87505

Submitted: May 1996

Resubmitted: October 1996



## **Location**

The Plaza at the Journal Center is located south of San Francisco Road between Jefferson Street and Sun Lane. The site is approximately 2.7347 acres and is the location of several proposed commercial buildings. The site is identified as Tract 3A-1B Journal Center. The purpose of this report is to provide the drainage analysis and management plan for the site.

## **Existing Drainage Conditions**

The site is currently undeveloped. The natural slope is from east to west at approximately 2.5 percent. There is one existing basin on the site. This basin sheet flows west into Jefferson Street. No upland flows enter the site. All off-site flows are captured in the adjacent streets before they reach the site.

## **FEMA Map and Soil Conditions**

The site is located on FEMA Map section 350002 panel 9 as shown on the attached excerpt. The map shows that the site does not lie within any 100 year flood plains.

The site contains one soil type from the Soil Conservation Service Soil Survey of Bernalillo County. This soil is an Embudo gravelly fine sandy loam. It has a moderate hazard of water erosion and runoff is medium.

## **On-Site Drainage Management Plan**

The site has one proposed drainage basin with a discharge flow of 12.2 cfs. The Drainage Plan for Journal Center, Tract 3A-1 (by BHI dated 9-22-94), indicates that Tract 3A-1B may discharge 10.5 cfs to Tract 3A-2 (Sunwest Bank). All flows will be routed towards the southwest side of the site where a proposed parking lot pond will collect the flow. Extended stem walls will be used around Phases 2, 3, 4, and 5 as the grades of the buildings are lower than the surrounding area. A 6.5 foot wide break in the curb will allow the flow to enter six 8" PVC pipes.

The pipes will limit the flow to 8.85 cfs which is less than the allowable of 10.5 cfs. The pipes will limit the flow by acting as an orifice. The remaining volume will pond in the parking lot and drain in less than 24 hours. The six 8" pipes will then tie into an existing concrete rundown that drains into the Sunwest bank site. From that point the drainage will continue to follow the drainage management plan for Tract 3A-2.

The pond shown on the plat was specifically designed to prevent sediment from leaving the site. The development of the site eliminates all sediment transportation and relieves the need for the pond. Interim erosion control measures around each building will be built during construction. This action will eliminate the sediment pond.

### **Summary**

The single drainage basin on the site has a discharge flow of 12.2 cfs which is greater than the allowable discharge of 10.50 cfs. The runoff will be ponded on-site and released at a confined rate of 8.85 cfs into the adjoining Sunwest Bank site through six 8" pipes that will tie to an existing section of the Sunwest Bank site.

The following tables show the detailed runoff calculations for the site along with the AHYMO runs for review.



## **RUNOFF CALCULATIONS**

The site is @ Zone 2

### **LAND TREATMENT**

*Proposed*

B = 10%

D = 90 %

*Existing*

B = 100%

### **DEPTH (INCHES) @ 100-YEAR STORM**

$P_{60} = 2.01$  inches

$P_{360} = 2.35$  inches

$P_{1440} = 2.75$  inches

### **DEPTH (INCHES) @ 10-YEAR STORM**

$P_{60} = 2.01 \times 0.667$   
 $= 1.34$  inches

$P_{360} = 1.57$

$P_{1440} = 1.83$

See the summary output from AHYMO calculations.

Also see the following summary tables.

## DRAINAGE BASINS

### *EXISTING*

BASIN	AREA (SF)	AREA (AC)	AREA (MI <sup>2</sup> )
A	119124.00	2.7347	0.004273

### *PROPOSED*

BASIN	AREA (SF)	AREA (AC)	AREA (MI <sup>2</sup> )
A	119124.00	2.7347	0.004273

## BASINS RUNOFF CALCULATION RESULTS

### *EXISTING*

BASIN	Q-100 CFS	Q-10 CFS
A	12.2	7.9

### *PROPOSED*

BASIN	Q-100 CFS	Q-10 CFS
A	6.23	2.56

**SEE THE FOLLOWING SHEET FOR SAMPLE CALCULATION ON THE BASINS RUNOFF**

# POND VOLUME CALCULATIONS

Ab - Bottom Of The Pond Surface Area

At - Top Of The Pond Surface Area

D - Water Depth

Dt - Total Pond Depth

C - Change In Surface Area / Water Depth

$$\text{Volume} = Ab * D + 0.5 * C * D^2$$

$$C = (At - Ab) / Dt$$

$$Ab = 0.00 \text{ (@ Elevation 5159.15)}$$

$$At = 15.00 \text{ (@ Elevation 5159.65)}$$

$$Dt = 0.50$$

$$C = 30.00$$

$$Ab = 0.00 \text{ (@ Elevation 5159.65)}$$

$$At = 7,205.30 \text{ (@ Elevation 5160.32)}$$

$$Dt = 0.67$$

$$C = 10754.18$$

6 Pipes				h
ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)	
5159.15	0	0.00000	0.00	
5159.55	0.4	0.00006	2.60	
5159.65	0.5	0.00009	4.12	
5159.75	0.6	0.00132	5.21	
5159.85	0.7	0.00502	6.11	0.37
5159.95	0.8	0.01120	6.89	
5160.05	0.9	0.01984	7.59	
5160.15	1	0.03095	8.23	0.67
5160.25	1.1	0.04452	8.83	
5160.32	1.17	0.05550	9.22	0.84

## Orifice Equation

$$Q = CA \text{ SQRT}(2gH)$$

$$C = 0.6$$

$$\text{Diameter (in)} = 8$$

$$\text{Area (ft}^2\text{)} = 0.349066$$

$$H \text{ (Ft)} = \text{Depth of water above center of orifice}$$

$$Q \text{ (CFS)} = \text{Flow}$$

$$Q = 0.6 (6 \times 0.349) \sqrt{64.4 h}$$

$$= 10.08 \sqrt{h}$$

Rectangular Channel Analysis & Design  
Open Channel - Uniform flow

Worksheet Name:

Comment: EXISTING CONCRETE RUNDOWN

Solve For Depth

Given Input Data:

Bottom Width.....	4.00 ft
Manning's n.....	0.013
Channel Slope....	0.0060 ft/ft
Discharge.....	8.85 cfs

Computed Results:

Depth.....	0.47 ft
Velocity.....	4.67 fps
Flow Area.....	1.90 sf
Flow Top Width...	4.00 ft
Wetted Perimeter.	4.95 ft
Critical Depth...	0.53 ft
Critical Slope...	0.0042 ft/ft
Froude Number....	1.20 (flow is Supercritical)

$$\begin{aligned}d_2 &= \frac{d_1}{2} \left( \sqrt{1 + 8Fr^2} - 1 \right) \\&= \frac{0.47}{2} \left( \sqrt{1 + 8(1.20)^2} - 1 \right) \\&= 0.60'\end{aligned}$$

$$0.67' > 0.40' \quad \underline{ok}$$

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= 2.350
COMPUTE NM HYD	101.10	-	1	.00427	12.20	.451	1.98165	1.500	4.463		PER IMP= 90.00
START											TIME= .00
RAINFALL TYPE= 1											RAIN6= 1.570
COMPUTE NM HYD	101.30	-	1	.00427	7.90	.281	1.23172	1.500	2.889		PER IMP= 90.00
START											TIME= .00
RAINFALL TYPE= 1											RAIN6= 2.350
COMPUTE NM HYD	102.10	-	1	.00427	6.23	.177	.77821	1.533	2.280		PER IMP= .00
START											TIME= .00
RAINFALL TYPE= 1											RAIN6= 1.570
COMPUTE NM HYD	102.30	-	1	.00427	2.56	.063	.27828	1.533	.936		PER IMP= .00
FINISH											

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994  
 INPUT FILE = a:sp2.dat

RUN DATE (MON/DAY/YR) =10/03/1996  
 USER NO.= R\_BOHANN.I01

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=	2.350
COMPUTE NM HYD	101.10	-	1	.00427	12.20	.451	1.98165	1.500	4.463	PER IMP=	90.00
ROUTE RESERVOIR	501.00	1	2	.00427	8.85	.451	1.98161	1.600	3.239	AC-FT=	.045
FINISH											