



Martin J. Chávez, Mayor

September 9, 1997

Ronald R. Bohannon
Tierra West, LLC
4421 McLeod Rd. NE Suite D
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR FIRST STATE BANK @ JOURNAL CENTER (D17-D3U)
ENGINEER'S STAMP DATED 8/15/97

Dear Mr. Bohannon:

Based on the information provided on August 15, 1997 submittal, the above referenced site is approved for Building Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM will be required.

If I can be of further assistance, please feel free to contact me at 924-3986.

C: Andrew Garcia
File

Sincerely

Bernie J. Montoya CE
Associate Engineer

Good for You, Albuquerque!





City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 12, 1996

**Ronald R. Bohannon, P.E.
Tierra West Dev. Mgt. Ser.
4600 Montgomery NE Suite #3
Albuquerque, N.M. 87109**

**RE: ENGINEER'S CERTIFICATION FOR FIRST STATE BANK (D-17/D3U)
RECEIVED MARCH 8, 1996 FOR CERTIFICATE OF OCCUPANCY
ENGINEER'S STAMP DATED 3/7/96**

Dear Mr. Bohannon:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification. Contact Vicki Chavez at Code Administration to obtain the Certificate of Occupancy for 7900 Jefferson NE.

If I can be of further assistance, You may contact me at 768-2727.

Sincerely,

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

**c: Andrew Garcia
First State Bank, 1418 Carlisle NE; Alb, N.M. 87110**

*Notified Melissa
on 3-12-96 JPC*



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 11, 1995

**Ronald R. Bohannon, P.E.
Tierra West Dev. Mgt. Ser.
4600 Montgomery NE Suite #3
Albuquerque, N.M. 87109**

**RE: GRADING & DRAINAGE PLAN FOR FIRST STATE BANK (D-17/D3U)
RECEIVED APRIL 10, 1995 FOR BUILDING PERMIT
ENGINEER'S STAMP DATED 4-10-95**

Dear Mr. Bohannon:

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

Include a copy of the approved Grading & Drainage Plan, dated 4-10-95, in the set of construction documents that will be submitted to Code Administration for the Building Permit.

Engineer's Certification of grading & drainage per DPM checklist must be approved before any Certificate of Occupancy will be released.

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
First State Bank, 1418 Carlisle NE; Alb, N.M. 87110**

Storm Sewer Inlet Type "DBL-D"

Using 50% Clogging Factor

$$L = 88\frac{3}{4}" - \underset{\substack{\uparrow \\ \text{Ends}}}{2(6") - 6"} - \underset{\substack{\uparrow \\ \text{Center Piece}}}{14(1\frac{1}{2})} \rightarrow \text{Middle Bars}$$

$$L = 63\frac{3}{4}" = 5.3125'$$

$$W = 25\frac{1}{2}" - 13(1\frac{1}{2}) = 19" = 1.5833'$$

$$\text{Area} = 5.3125 \times 1.5833 = 8.41 \text{ SF}$$

$$\text{Effective Area} = 8.41 - 0.5(8.41) = 4.21 \text{ SF}$$

\nwarrow Clogging Factor

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

$$C = 0.6$$

$$A = 4.21$$

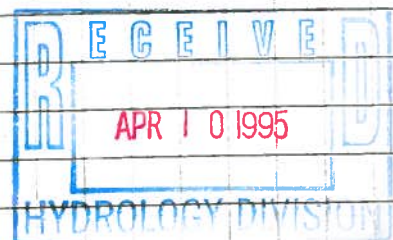
$$Q = 24.3$$

Solve For h :

$$h = \left(\frac{Q}{CA} \right)^2 \frac{1}{2g}$$

$$= \left(\frac{24.3}{0.6 \times 4.21} \right)^2 \frac{1}{2g}$$

$$= 1.44' < (34.7 - 33) = 1.70' \quad \text{OK}$$



Storm Sewer Inlet Type "D" ^{Double}

Using Effective Area

Area @ The Grate: (Effective Area)

$$L = 40'' - 7\left(\frac{1}{2}''\right) - 2\left(\overset{3''}{6}''\right) = \overset{30.5''}{24.5''}$$

Middle Bars Ends

$$W = 25\frac{1}{2}'' - 13\left(1\frac{1}{2}''\right) = 19''$$

$$\text{Area} = L \times W = \left(\frac{24.5}{12} \times \frac{19}{12}\right) = \overset{4.0}{3.23} \text{ SF}$$

$$Q = CA\sqrt{2gh} = .6(4.0)\sqrt{64.4(1.70)} = 25.1 \text{ cfs}$$

$$Q = 24.3$$

$$C = 0.8 \quad \text{0.6}$$

$$A = 3.23$$

Solve for h:

$$h = \left(\frac{Q}{CA}\right)^2 \frac{1}{2g}$$

$$= \left(\frac{24.3}{0.8(3.23)}\right)^2 \frac{1}{2g}$$

$$= 1.37' \quad \text{Water Depth @ The Drop Inlet.}$$

$$\frac{33.00}{34.37}$$

Storm Sewer Inlet Type "D"

Using 50% Clogging Factor

$$L = 40'' \quad W = 25\frac{1}{2}''$$

$$\text{Area} = \left(\frac{40'' \times 25\frac{1}{2}''}{12^2} \right) = 8.36 \text{ SF}$$

Assuming 50% Clogging Factor:

$$\begin{aligned} 50\% \text{ Area} &= 0.5 (8.36) \\ &= 4.18 \text{ SF} \end{aligned}$$

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

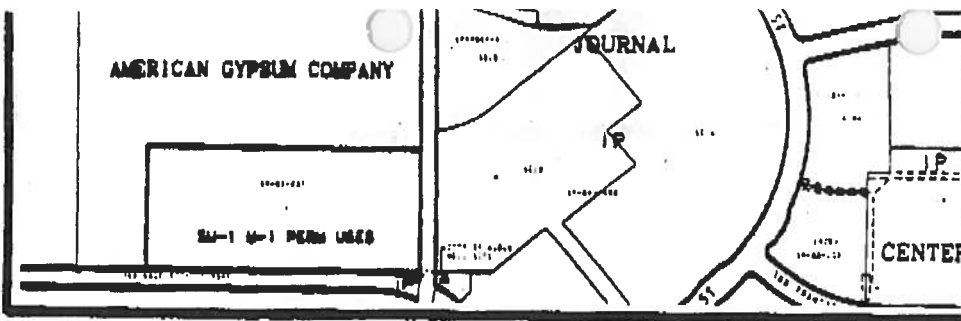
Solve For h:

$$h = \left(\frac{Q}{CA} \right)^2 \frac{1}{2g}$$

$$= \frac{24.3}{0.8(4.18)} \frac{1}{2g}$$

$$= 0.82' \quad (\text{Water Depth @ The Drop Inlet})$$





LOCATION MAP

ZONE ATLAS INDEX MAP No. D-17-Z
NOT TO SCALE

DISCLOSURE STATEMENT

The purpose of this plat is to subdivide Tract 1A of the JOURNAL CENTER, filed June 30, 1983 in Volume C21, Folio 126, excepting that portion acquired by the New Mexico State Highway Department, shown as Parcel C-8-3 on New Mexico State Highway Department Right of Way Map for Project SP-GRM-4054(200), Section "C", into four (4) Tracts, to dedicate Street Right-of-Way to the City of Albuquerque and to grant Easements.

SUBDIVISION DATA

1. DRB No. **94-061**
2. Zone Atlas Index No. D-17-Z.
3. Gross Subdivision Acreage: 25.7073 Acres.
4. Total Number of Tracts created: 4 Tracts.
5. Total mileage of full width Streets created: 0.2443 Mile.
6. Date of Survey: November, 1994.
7. Plat is located within the Elena Gallegos Grant, in Projected Section 23, T11N, R3E, NMPM.

NOTES

1. Bearings are New Mexico State Plane Grid Bearings (Central Zone).
2. Distances are ground distances.
3. All easements of record are shown.
4. Centerline (in lieu of R/W monumentation) to be installed at all centerline PC's, PT's, angle points and street intersections prior to acceptance of subdivision improvements and will consist of a standard four-inch (4") aluminum alloy cap stamped "City of Albuquerque", Centerline Monumentation", "Survey Marker", "Do Not Disturb", PLS#6544.
5. Prior to development, City of Albuquerque Water and Sanitary Sewer Service to Tract 1A-2, JOURNAL CENTER must be verified and coordinated with the Public Works Department, City of Albuquerque, via a request for water and sanitary sewer availability statement.
6. A private, reciprocal cross-drainage easement is provided across Tract 1A-3 for drainage from Tract 1A-5. This easement is provided for the benefit of Tract 1A-5 but shall be maintained by Tract 1A-3.

PUBLIC UTILITY EASEMENTS

PUBLIC UTILITY EASEMENTS shown on this plat are ten (10) feet wide and are for the common joint use of:

- A. The Public Service Company of New Mexico for the installation, maintenance, and service of overhead and underground electrical lines, transformers, and other equipment, fixtures, structures and related facilities reasonably necessary to provide electrical service.
- B. The Gas Company of New Mexico for installation, maintenance, and service of natural gas lines, valves and other equipment and facilities reasonably necessary to provide natural gas.



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DRAINAGE REPORT FOR

**First State Bank
Tract 1-A3
Journal Center**

Prepared for:

**Jack A. Westman
Westman Investments
4600 Montgomery Boulevard, NE, Suite 7
Albuquerque, New Mexico 87109
(505) 883-5221**

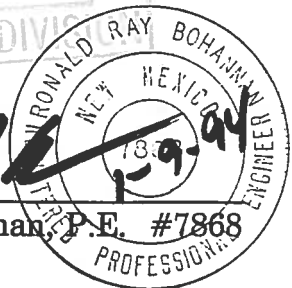
Prepared by:

**Tierra West Development Management Services
4600 Montgomery Boulevard, NE, Suite 3
Albuquerque, New Mexico 87109
(505) 883-7592**

November, 1994



Ronald R. Bohannon, P.E. #7868



Purpose & Legal Description

The purpose of this submittal is to analyze and prepare a grading and drainage plan for Tract 1A-3 of the Journal Center. The Tract is situated on southeast corner of Jefferson Street and the future extension of Lang Avenue. The site has been highlighted on zone atlas sheet D-17.

Existing Conditions

The site has a natural slope of 3% falling from the east to the west side of the Tract. The drainage for this site was done as part of the Journal Center Master Drainage Plan, and the existing drainage system is setup for the developed conditions. This Tract is part of Basin C of the master drainage plan and drains to the Domingo Baca Arroyo via a 48" RCP on the west side of the Tract 1A-2. A water block is set at the south side of the site and diverts all the flow to an existing drainage structure on the southwest side of the lot and then to Tract 1A-2. The off-site flows from Tract 1A-5 on the east side drains to this site and to the drop inlet. The off-site flows from the north (Tract 1A-4) drain to Lang Avenue to a drop inlet. Tract 1A-2 drains via surface flows to the 48" RCP pipe on the west side of the Tract. All the runoffs from the south of the Tract are intercepted by Jefferson Street and drained via storm drain system to Domingo Baca Arroyo. See attached (B.H. Master Plan) sheet.

Proposed Conditions

The site will follow the same management plan included in the Master Drainage Plan. Tract 1A-3 is divided into two Basins A and B. Basin A (4.27 cfs) will drain to Lang Avenue to a future drop inlet, to Tract 1A-2, and then to a 48" RCP which is eventually drained to Domingo Baca Arroyo. Basin B (4.78 cfs) drain to Basin A in will follow the same drainage path. Tract 1A-5 currently is being analyzed by Issacon & Arfman, P.A. They are proposing to drain a total runoff (19.21 cfs) from the Tract via storm drain system to southwest corner of Tract 1A-3. The runoff from Tract 1A-5 (19.21 cfs) and runoff from Basin on Tract 1A-3 (9.05 cfs) a total of 28.26 cfs will drain via surface flow to a new drop inlet on the southwest corner of the Tract 1A-3. The outlet (24" SD) from the new drop inlet is designed for 24.3 cfs as per B.H. Master Drainage Plan. See calculation sheet for ponding calculation for flow difference from BHI and this report. See enclosed (BHI Master Plan) sheet.

Wrong

The site lies on Panel 9 of the National Flood Insurance Program Maps prepared for the Federal Emergency Management Agency (FEMA), dated October 14, 1983, under panel number 350002 0009. The site does not lie within any flood plain as shown on that map.

Hydrology Calculations

The calculations were performed using AHYMO analysis by the guidelines under Section 22.2 Hydrology of the Development Process Manual Volume 2, latest revision January, 1993.

RPOPOSED CONDITIONS

BASIN	HYMO #	AREA (SQ MI)	FLOW (CFS)	VOLUME (AC-FT)
100-YEAR STORM				
A	101.1	0.00149	4.27	0.157
B	101.2	0.00167	4.78	0.177
10-YEAR STORM				
A	101.3	0.00149	2.76	0.098
B	101.4	0.00167	3.10	0.110

EXISTING CONDITIONS

BASIN	HYMO #	AREA (SQ MI)	FLOW (CFS)	VOLUME (AC-FT)
100-YEAR STORM				
A	102.1	0.00149	2.18	0.062
B	102.2	0.00167	2.44	0.069
10-YEAR STORM				
A	102.3	0.00149	0.89	0.022
B	102.4	0.00167	1.00	0.025

Ponding Calculation

From BHI Master Plan (Basin C):

Area 27.6 Ac

$$Q_{100} (1980 \text{ Report}) = 116 \text{ cfs}$$

$$Q_{100} (\text{Revised } 1992) = 102 \text{ cfs}$$

$$Q/A_c = 116/27.6 = 4.2029 \text{ cfs/Ac}$$

$$Q/A_c = 102/27.6 = 3.6957 \text{ cfs/Ac}$$

From This Report:

$$\text{Area} = 2.0266 \text{ Ac}, \quad Q_{100} = 9.05 \text{ cfs}$$

Using "cfs/Ac" from BHI to calculate Flow:

$$2.0266 (4.2029) = 8.52 \text{ cfs}$$

$$2.0266 (3.6957) = 7.49 \text{ cfs (Conservative value)}$$

Difference in Flow Calculations:

$$9.05 - 7.49 = 1.56 \text{ cfs}$$

Calculating "Volume/cfs" from This report:

$$\text{Volume/cfs} = 0.157/4.27 = 0.03677 \text{ Ac-ft/cfs}$$

Volume required for Ponding

$$1.56 (0.03677) = 0.05736 \text{ Ac-ft}$$

Volume Provided for Ponding

$$0.12695 \text{ Ac-ft} >> 0.05736 \text{ Ac-ft} \quad \text{OK}$$

***** DRAINAGE CALCULATION FOR TRACT 1A-3 *****

***** UNDER PROPOSED CONDITIONS *****

* 100-YR *

* BASIN A

*
START
RAINFALL

TYPE=1 RAIN QUARTER=0.0 IN
RAIN ONE=2.01 IN RAIN SIX=2.35 IN
RAIN DAY=2.75 IN DT=0.03333 HR
ID=1 HYD NO=101.1 AREA=0.001490 SQ MI
PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

COMPUTE NM HYD

* BASIN B

*
COMPUTE NM HYD

ID=1 HYD NO=101.2 AREA=0.001671 SQ MI
PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

***** 10-YR *****

* BASIN A

*
START
RAINFALL

TYPE=1 RAIN QUARTER=0.0 IN
RAIN ONE=1.34 IN RAIN SIX=1.57 IN
RAIN DAY=1.83 IN DT=0.03333 HR
ID=1 HYD NO=101.3 AREA=0.001490 SQ MI
PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

COMPUTE NM HYD

* BASIN B

*
COMPUTE NM HYD

ID=1 HYD NO=101.4 AREA=0.001671 SQ MI
PER A=0.00 PER B=10.00 PER C=0.00 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

***** UNDER EXISTING CONDITIONS *****

* 100-YR *

* BASIN A

*
START
RAINFALL

TYPE=1 RAIN QUARTER=0.0 IN
RAIN ONE=2.01 IN RAIN SIX=2.35 IN
RAIN DAY=2.75 IN DT=0.03333 HR
ID=1 HYD NO=102.1 AREA=0.001490 SQ MI
PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
TP=0.1333 HR MASS RAINFALL=-1

COMPUTE NM HYD

* BASIN B

*
COMPUTE NM HYD

ID=1 HYD NO=102.2 AREA=0.001671 SQ MI
PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
TP=0.1333 HR MASS RAINFALL=-1

***** 10-YR *****

* BASIN A

*
START
RAINFALL

TYPE=1 RAIN QUARTER=0.0 IN
RAIN ONE=1.34 IN RAIN SIX=1.57 IN
RAIN DAY=1.83 IN DT=0.03333 HR
ID=1 HYD NO=102.3 AREA=0.001490 SQ MI
PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
TP=0.1333 HR MASS RAINFALL=-1

COMPUTE NM HYD

* BASIN B

*

COMPUTE NM HYD

ID=1 HYD NO=102.4 AREA=0.001671 SQ MI
PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
TP=0.1333 HR MASS RAINFALL=-1

FINISH

RUN DATE (MON/DAY/YR) =11/01/1994
USER NO.= R BOHANN.I01

		FROM	TO		PEAK	RUNOFF		TIME TO	CFS	PAGE = 1	
COMMAND	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE	NOTATION	
										TIME=	.00
START										RAIN6=	2.350
RAINFALL TYPE= 1										PER IMP=	90.00
COMPUTE NM HYD	101.10	-	1	.00149	4.27	.157	1.98165	1.500	4.475	PER IMP=	90.00
COMPUTE NM HYD	101.20	-	1	.00167	4.78	.177	1.98165	1.500	4.473	PER IMP=	90.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	101.30	-	1	.00149	2.76	.098	1.23171	1.500	2.896	PER IMP=	90.00
COMPUTE NM HYD	101.40	-	1	.00167	3.10	.110	1.23172	1.500	2.895	PER IMP=	90.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.350
COMPUTE NM HYD	102.10	-	1	.00149	2.18	.062	.77821	1.533	2.286	PER IMP=	.00
COMPUTE NM HYD	102.20	-	1	.00167	2.44	.069	.77821	1.533	2.285	PER IMP=	.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	102.30	-	1	.00149	.89	.022	.27828	1.533	.938	PER IMP=	.00
COMPUTE NM HYD	102.40	-	1	.00167	1.00	.025	.27828	1.533	.938	PER IMP=	.00
FINISH											