CITY OF
Albuquerque

July 21, 1997

Martin J. Chávez, Mayor

Shahab Biazar, P.E.
4421 McLeod Road NE
Suite D
Albuquerque, NM 87109

RE: MARKET PLACE AT JOURNAL CENTER (D17-D3B1). UPDATED GRADING PLAN FOR BUILDING PERMIT APPROVAL. ENGINEER'S STAMP DATED JULY 15, 1997.

Dear Mr. Biazar:

Based on the updated information provided on your July 15, 1997 submittal, the above referenced plan is approved for Building Permit.

Prior to Certificate of Occupancy approval, an Engineer's Certification will be required. Be certain to certify the drawing approved per this letter (stamped 7-15-97).

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

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Andrew Garcia
File

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

April 4, 1994

James Topmiller, P.E.
Bohannan-Huston, Inc.
7500 Jefferson NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR SUNWEST BANK @ JOURNAL CENTER (D-17/D3B) RECEIVED MARCH 22, 1994 FOR CERTIFICATE OF OCCUPANCY APPROVAL AND FINANCIAL GUARRANTY RELEASE; ENGINEER'S STAMP DATED 3/12/94

Dear Mr. Topmiller:

Based on the information included in the submittal referenced above, City Hydrology approves this project for Certificate of Occupancy and Financial Guarranty release.

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

Sincerely,

John P. Curtin

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

c: Andrew Garcia
Lynda-Michelle DeVanti; Project No. 4656.80

WPHYD/7449/jpc

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 11, 1994

CERTIFICATE OF COMPLETION AND ACCEPTANCE
**** REVISED****

Journal Center Corporation
7777 Jefferson N.E.
Albuquerque, NM 87109

RE: PROJECT NO. 4656.80 JOURNAL CENTER SUNWEST BANK (MAP D-17)

Dear Sirs:

This is to certify that the City of Albuquerque accepts Project No. 4656.80 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- The contractor removed existing sidewalk, placed 302 Linear feet of 10" PVC waterline, 1 fire hydrant and 198 linear feet of 42" RCP storm drain for improvements to private roadway at Journal Center.

The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

Rick Roybal, PE
City Engineer,
Engineering Group
Public Works Department

Sincerely,

Russell B. Givler, PE
Chief Construction Engineer,
Engineering Group
Public Works Department

RECEIVED
JAN 13 1994
HYDROLOGY DIVISION

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 6, 1994

CERTIFICATE OF COMPLETION AND ACCEPTANCE

Journal Center Corporation
7777 Jefferson N.E.
Albuquerque, NM 87109

RE: PROJECT NO. 4656.80 JOURNAL CENTER SUNWEST BANK (MAP D-17)

Dear Sirs:

This is to certify that the City of Albuquerque accepts Project No. 4656.80 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- The contractor placed 302 Linear feet of 10" PVC waterline, 1 fire hydrant and 198 linear feet of 42" RCP storm drain for improvements to private roadway at Journal Center.

The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

Rick Roybal, PE
City Engineer,
Engineering Group
Public Works Department

Sincerely,

Russell B. Givler, PE
Chief Construction Engineer,
Engineering Group
Public Works Department

RECEIVED
JAN 11 1994
HYDROLOGY DIVISION

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

June 28, 1993

Craig Hoover, P.E.
Bohannan-Huston, Inc.
7500 Jefferson NE
Albuquerque, N.M. 87109

RE: GRADING & DRAINAGE PLAN FOR SUNWEST BANK @ JOURNAL CENTER (D-17/D3B)
RECEIVED JUNE 28, 1992 FOR BUILDING PERMIT APPROVAL
STAMPED & DATED 4/16/93; REVISED 5-24-93

Dear Mr. Hoover:

Based on the information included in the submittal referenced above, City Hydrology APPROVES this project for Building Permit.

Include a copy of the Grading & Drainage Plan in the set of construction documents that you submit to the One Stop for your 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

John P. Curtin, P.E.
PWD/Hydrology

xc: Alan Martinez

WPHYD+7449;jpc

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

January 15, 1993

James Topmiller, P.E.
Bohannan-Huston, Inc.
7500 Jefferson NE
Albuquerque, N.M. 87109

RE: CONCEPTUAL GRADING & DRAINAGE PLAN FOR SUNWEST BANK @ JOURNAL CENTER
RECEIVED DECEMBER 23, 1992 FOR SITE DEVELOPMENT PLAN APPROVAL
STAMPED & DATED 12-11-92; (D-17/D3B)

Dear Mr. Topmiller:

Based on the information included in the submittal referenced above, City Hydrology approves the Site Development Plan for this project.

Before Final Plat & Building Permit approval the following comments must be addressed:

1. All drainage reports needs to be signed & sealed.
2. Include all of the asphalt swale and detention basin in the grading & drainage plan. Submit design calculations and details for the earthen swale, the asphalt swale and the detention basin.
3. Indicate the Qs where the site drains into the private street, where the private street drains into the asphalt swale, where the earthen swale drains into the asphalt swale and the total for the asphalt swale.
4. Label the cross hatched area and the dashed canopy areas.
5. A maintenance covenant will be required for the swales and the detention basin. AMAFCA will require a license agreement for the outlet to the North Pino Arroyo.

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

Sincerely,

John P. Curtin

John P. Curtin, P.E.
PWD/Hydrology

xc: Fred Aguirre, City Hydrologist
Cliff Anderson, AMAFCA

WPHYD+7449;jpc

FINAL DRAINAGE REPORT FOR SUNWEST BANK IN JOURNAL CENTER INDUSTRIAL PARK

FEBRUARY 1993

FINAL DRAINAGE REPORT FOR SUNWEST BANK IN JOURNAL CENTER INDUSTRIAL PARK

Prepared for:

JOURNAL CENTER CORPORATION
7777 JEFFERSON ST., NE
ALBUQUERQUE, NM 87109

SUNWEST BANK
SUNWEST BANK BUILDING
500 4TH ST., NW
ALBUQUERQUE, NM 87102

Prepared by:

BOHANNAN-HUSTON INC.
ENGINEERS ARCHITECTS PHOTOGRAMMETRISTS SURVEYORS
COURTYARD I, 7500 JEFFERSON NE ALBUQUERQUE, NM 87109 TEL (505) 823-1000 FAX (505) 821-0892

DRAINAGE MANAGEMENT PLAN

PURPOSE

This report presents the Drainage Management Plan for preliminary/final plat and site plan approval for the Sunwest Bank Journal Center Industrial Park. The plan is prepared in accordance with prior reports approved by the City of Albuquerque and in accordance with the Development Process Manual (DPM) of the City of Albuquerque including the latest revisions dated August 1991 (DPM update).

PROJECT LOCATION AND DESCRIPTION

The Sunwest Bank Site is located immediately east of Jefferson Street and approximately 400' south of San Francisco Road in northeast Albuquerque. The site is zoned IP and consists of 1.74 acres within a 18.71 acre watershed. The Existing Site Topography and Offsite Drainage Basin Map included in the back pocket identifies the site's location (Basin 3A-4).

EXISTING CONDITIONS

The site is bounded by Jefferson Street to the west, the proposed access road to the south and the vacant land to the north and east. The site is currently undeveloped and drains primarily from northeast to southwest. Runoff from the site combines with runoff from the surrounding area within the watershed and sheet flows into the North Pino Arroyo.

The slope of the site is ranges from approximately 1.5% to 2%. The site vegetation consists of sparse native grasses and weeds. The site soils are classified by the SCS's "Soil Survey of Bernalillo County" as EmB (Embudo Series). The Embudo series consists of deep, well drained soils that formed in decomposed granitic alluvium on old alluvial fans. These soils experience moderate runoff and water erosion.

HYDROLOGIC ANALYSIS

The criteria used to develop the hydrology for the site was the latest revision of Chapter 22, Section 22.2 of the DPM dated August 1991. The site is located in precipitation zone 2. As such the peak rainfall intensities for the 6 hour storm are 3.41 and 5.05 inches/hour for the 10-year and 100-year return events respectively. The 10-year and 100-year existing and developed conditions flow rates were determined using the Rational Method as included in the simplified procedure for small watersheds provided in the DPM.

EXISTING CONDITIONS

Under existing conditions the watershed is almost completely undeveloped. Around the perimeter of the watershed is a landscaped strip. The only development with in the watershed is the I-25 southbound frontage road in basin 3A-1 and the existing Sunwest Bank ATM Building in basin 3A-2 (see the Existing Site Topography and Offsite Drainage Basin Map). The land treatment category for each basin under existing conditions is shown below:

		LAND TREATMENT			
BASIN	**AREA (AC)**	**A**	**B**	**C**	**D**
3A-1	0.63	0.0	0.21	0.49	30.0
3A-2	10.71	86.0	11.0	0.0	3.0
3A-3A	2.34	93.0	7.0	0.0	0.0
3A-3B	2.89	97.0	3.0	0.0	0.0
3A-4	1.74	91.0	9.0	0.0	0.0
3A-5	0.40	0.0	0.0	50.0	50.0

For each land use treatment the rational method coefficient (C) used in determination of the peak flow rate is shown below:

LAND TREATMENT	RATIONAL METHOD COEFFICIENT, C (ZONE 2)
A	0.11/0.31
B	0.28/0.45
C	0.50/0.62
D	0.92/0.93
	(10 YEAR/100 YEAR)

Finally, the calculation of the 6-hour 10-year and 100-year peak flow rates is shown below.

10 YEAR STORM:

BASIN 3A-1 Q = (0.11)(3.41)(0.0)(0.63) + (0.28)(3.41)(0.21)(0.63) + (.50)(3.41)(0.49)(0.63) + (0.92)(3.41)(0.30)(0.63)

= 1.25 CFS

BASIN 3A-2 Q = (0.11)(3.41)(0.86)(10.71) + (0.28)(3.41)(0.11)(10.71) + (0.50)(3.41)(0.0)(10.71) + (0.92)(3.41)(0.03)(10.71)

= 5.59 CFS

BASIN 3A-3A Q = (0.11)(3.41)(0.93)(2.34) + (0.28)(3.41)(0.07)(2.34) + (0.50)(3.41)(0.0)(2.34) + (0.92)(3.41)(0.0)(2.34)
= 0.97 CFS

BASIN 3A-3B Q = (0.11)(3.41)(0.97)(2.89) + (0.28)(3.41)(0.03)(2.89) + (0.50)(3.41)(0.0)(2.89) + (0.92)(3.41)(0.0)(2.89)
= 1.13 CFS

BASIN 3A-4 Q = (0.11)(3.41)(0.91)(1.74) + (0.28)(3.41)(0.09)(1.74) + (0.50)(3.41)(0.0)(1.74) + (0.92)(3.41)(0.0)(1.74)
= 0.74 CFS

BASIN 3A-5 Q = (0.11)(3.41)(0.0)(0.40) + (0.28)(3.41)(0.0)(0.40) + (0.50)(3.41)(0.50)(0.40) + (0.92)(3.41)(0.50)(0.40)
= 0.97 CFS

TOTAL Q = 9.40 CFS (NOT INCLUDING BASIN 3A-1)

100 YEAR STORM:

BASIN 3A-1 Q = (0.31)(5.05)(0.0)(0.63) + (0.45)(5.05)(0.21)(0.63) + (.62)(5.05)(0.49)(0.63) + (0.93)(5.05)(0.30)(0.63)
= 2.15 CFS

BASIN 3A-2 Q = (0.31)(5.05)(0.86)(10.71) + (0.45)(5.05)(0.11)(10.71) + (0.62)(5.05)(0.0)(10.71) + (0.93)(5.05)(0.03)(10.71)
= 18.61 CFS

BASIN 3A-3A Q = (0.31)(5.05)(0.93)(2.34) + (0.45)(5.05)(0.07)(2.34) + (0.62)(5.05)(0.0)(2.34) + (0.93)(5.05)(0.0)(2.34)
= 3.78 CFS

BASIN 3A-3B Q = (0.31)(5.05)(0.97)(2.89) + (0.45)(5.05)(0.03)(2.89) + (0.62)(5.05)(0.0)(2.89) + (0.93)(5.05)(0.0)(2.89)
= 4.59 CFS

BASIN 3A-4 Q = (0.31)(5.05)(0.91)(1.74) + (0.45)(5.05)(0.09)(1.74) + (0.62)(5.05)(0.0)(1.74) + (0.93)(5.05)(0.0)(1.74)
= 2.83 CFS

BASIN 3A-5 Q = (0.31)(5.05)(0.0)(0.40) + (0.45)(5.05)(0.0)(0.40) + (0.62)(5.05)(0.50)(0.40) + (0.93)(5.05)(2.50)(0.40)
= 1.57 CFS

TOTAL Q = 31.38 CFS (NOT INCLUDING BASIN 3A-1)

DEVELOPED CONDITIONS

Under developed conditions basins 3A-4 (the new Sunwest Bank site) and 3A-5 (the proposed street) will be fully developed, while the remaining basins remain unchanged from existing conditions. The land treatment category for each developed basin under existing conditions is shown below:

BASIN	AREA (AC)	A	B	C	D
3A-4	1.74	0.0	23.0	0.0	77.0
3A-5	0.40	0.0	0.0	7.0	93.0

10 YEAR STORM:

BASIN 3A-4 Q = (0.11)(3.41)(0.0)(1.74) + (0.28)(3.41)(0.23)(1.74) + (0.50)(3.41)(0.0)(1.74) + (0.92)(3.41)(0.77)(1.74)
= 4.58 CFS

BASIN 3A-5 Q = (0.11)(3.41)(0.0)(0.40) + (0.28)(3.41)(0.0)(0.40) + (0.50)(3.41)(0.07)(0.40) + (0.92)(3.41)(0.93)(0.40)
= 1.21 CFS

TOTAL Q = 13.48 CFS (INCLUDES BASINS 3A-2, 3A-3A, AND 3A-3B WHICH ARE UNCHANGED FROM EXISTING CONDITIONS)

100 YEAR STORM:

BASIN 3A-4 Q = (0.31)(5.05)(0.0)(1.74) + (0.45)(5.05)(0.23)(1.74) + (0.62)(5.05)(0.0)(1.74) + (0.93)(5.05)(0.77)(1.74)
= 7.20 CFS

BASIN 3A-5 Q = (0.31)(5.05)(0.0)(0.40) + (0.45)(5.05)(0.0)(0.40) + (0.62)(5.05)(0.07)(0.40) + (0.93)(5.05)(0.93)(0.40)
= 1.83 CFS

TOTAL Q = 36.01 CFS (INCLUDES BASINS 3A-2, 3A-3A, AND 3A-3B WHICH ARE UNCHANGED FROM EXISTING CONDITIONS)

The total increase in flow rates due to the proposed development will be 4.08 cfs for the 10-year storm and 4.68 cfs for the 100-year storm.

SITE RUNOFF

Under developed conditions, the site (Basin 3A-4) will graded to drain to the southernmost corner of the property. Additionally, the proposed service road (Basin 3A-5) adjacent to the site will be graded to drain to the same location. The runoff will then be conveyed from this location by an improved swale to a sedimentation pond and then into a culvert which will discharge into the North Pino Arroyo just east of Jefferson Street. The swale be trapezoidal with a bottom width of 10' and a depth of 0.5'. The swale will be asphalt lined to prevent erosion. These proposed improvements are shown on the Final Utility and Grading Plan. The sedimentation pond and outfall pipe are discussed in a later section of this report.

OFFSITE RUNOFF

Runoff from Basin 3A-1 for both developed and undeveloped conditions discharges directly to the North Pino Arroyo, near the frontage road. No changes to Basin 3A-1 are proposed.

Runoff from Basin 3A-3A will be directed to the north corner of the site by a 10' bottom trapezoidal earthen swale. Low velocities allow swale to be earthen. A small desiltation pond is proposed to remove sediment from this runoff prior to directing the flow across the site. The desiltation pond is sized to store the average annual sediment yield for Basin 3A-3A as determined by the Universal Soil Loss Equation (USLE). The average annual sediment yield was determined to be 4.3 cubic yards (see Appendix for calculations). The pond will have a 10' x 30' bottom and will have 3 to 1 side slopes and a depth 0.5'. Overflow from the pond will be conveyed to the site by a 4' wide concrete valley gutter within a 10' grass lined swale. A 10' section of the 6" curb along the north east side of the site parking lot will be deleted to allow the flow to enter the site.

Runoff from Basin 3A-3B will be directed parallel to the southeast boundary of the site around the proposed temporary street turnaround to the confluence with the asphalt swale downstream of the site. The runoff will be conveyed by a 10' bottom trapezoidal earthen swale.

Runoff from Basin 3A-2 will follow undeveloped flow patterns. The proposed asphalt swale and sedimentation pond at the outfall of the swale (described below) is located to intercept the runoff from this basin, as well as the rest of the watershed, prior to entering the North Pino Arroyo.

SEDIMENTATION POND AND OUTFALL PIPE

The sedimentation pond serves two purposes. The first is to remove sediment. The second is to pond runoff to develop the head required for flow to enter the 42" outfall discharge pipe.

The sediment storage pond volume is sized to store the average annual sediment yield for the entire watershed. As for the desiltation pond the average annual sediment yield was calculated using the USLE. The sediment yield was determined to be 56 cubic yards (see Appendix for calculations). To provide sediment storage, the pond bottom will be 10' x 50' and the pond will have 3 to 1 side slopes and a depth 1.8'.

To convey flow from the sedimentation pond to the North Pino Arroyo, a 42" RCP is proposed. The outfall pipe will be inlet controlled, meaning the pipe's capacity is determined by the ability of the flow to enter the pipe. This ability is determined by the amount of head, or depth of water, established at the inlet of the pipe. The pond and outfall pipe are configured to optimize the developable amount of head and allow the pipe to convey 120% of the 100-year storm developed conditions for the entire watershed. The fully developed 100-year storm peak discharge rate is 75 cfs (see Appendix for calculations). 120% of the 100-year storm is thus 89.70 cfs. Based on Bureau of Public Roads nomographs for inlet controlled concrete pipes a 42" pipe must have 5.2' of head to pass 90 cfs (see Appendix). This translates to a total pond depth of 7' (1.8' + 5.2').

The proposed sedimentation pond and discharge pipe have been discussed with the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). We anticipate AMAFCA approval of the plans and outlet pipe connection to the arroyo and permission for free discharge of the developed conditions runoff to the North Pino Arroyo.

MAINTENANCE OF PROPOSED DRAINAGE IMPROVEMENTS

All of the proposed drainage improvements with the exception of the 42" outfall pipe shall be maintained by the tract owner, the owner of Tract 3A-2. The 42" outfall pipe shall be public and a drainage easement for the same will be created with the filing of the plat or by paper document. The maintenance responsibilities are defined by the draft drainage covenant conditions included in the back pocket. The tract owner shall be responsible for maintenance of both of the drainage swales, the desiltation pond and the sedimentation pond.

CONCLUSIONS

The proposed development will not significantly increase the peak discharge rate for watershed. For the 10-year and 100-year storms the proposed development will increase the peak discharge rate by 4.08 cfs and 4.68 cfs respectively. Runoff from the site will be conveyed by a asphalt lined swale to a sedimentation pond where sediment from flows from the entire watershed will be removed. Clear water will then discharge from the pond through a 42" RCP directly to the North Pino Arroyo.

This plan complies with the approved overall Drainage Management Plan for Journal Center.

SEDIMENT POND (Design for 2 Year Storm)

1. Size Pond Using Settling Velocity for 100% Removal of Very Fine Sand (D = 0.06mm)

For Very Fine Sand: $V_s = 0.009$ fps (Fig 2.2)

Surface Area (SA) = $(1.2 K Q_2)/(V_s)$

where Q_2 = 2 Year Storm (Site Developed Watershed Conditions) = 3.81 cfs

$\Rightarrow SA = (1.2 K 3.81)/(0.009) = \underline{\underline{508.05 \text{ sf}}}$

Assume Pond Length $\geq$ 3 x Pond Width

Maximum Width (3W · W) = SA = 508.0 $\Rightarrow W_{max} = 13.01$

Use Width = 10 Feet $\Rightarrow L = \frac{SA}{W} = 50.8$ use 50

2. Size Pond for Sediment Storage

From USLE (Universal Soil Loss Equation) (See attached worksheet).

Average Annual Sed. Yield (A) = 56.16 cf

$\Rightarrow$ Sediment Storage Volume: 56.16 cf
= 1516.32 cf

3. Size Pond

- Max. Sediment Storage Depth = 3'
  Min. Settling Depth = 2'

⇒ Pond Bottom @ Elev 5142.7 based on invert of proposed storm drain

Elev.	Pond Dimensions (ft x ft)	Area (sf)	Volume (cf)	Cum. Volume (cf)
41.3	10' x 50'	500	0	0
42.3	16' x 56'	896	698	698
43.3	22' x 62'	1364	1130	1828

⇒ Sed. Storage Vol. = 1516 cf ⇒ Elev. = 43.1

Top Pond = Sed. Storage Elev + 2'
= 43.1 + 2
= 45.1

⇒	43.1	20.8' x 60.8'	1264.6	364.2	1582.2
	44.1	26.8' x 66.8'	1790.2	1527.3	3089.5
	45.1	32.8' x 72.8'	2387.8	2088.0	5178.5

⇒ Minimum Pond Depth = 2.8' (45.1' - 41.3')

4. Adjust Pond & Obtain Required Hydraulics for Outfall Pipe.

$Q_{100\ design}$ = 75.75 cfs (Entire watershed developed)

(See attached sheet)

Use 1.2 Factor of Safety ⇒ Q_{design} = 75.00 x 1.2
= 90.0 cfs

Assume 42" ø RCP
From Bureau of Public Roads Chart 2
$\frac{HW}{D}$ = 1.67 ⇒ HW = (0.47)(3.5') = 5.45'

PROJECT NAME SUNWEST BANK SHEET 2 OF 5
PROJECT NO. 92285.42 BY CWH DATE 2/23/93
SUBJECT SEDIMENTATION POND CH'D _____ DATE _____

5. Pond Dimensions

Length = 50'
Width = 10'
Depth = 7'

Total Volume = 18,494 CF
= 684.96 CY

BOHANNAN-HUSTON INC.

PROJECT NAME SUNWEST BANK SHEET 3 OF 5
PROJECT NO. 92295.42 BY CWH DATE 2/23/93
SUBJECT SEDIMENTATION POND CH'D _____ DATE _____

SEDIMENTATION POND FLOW RATE CALCULATIONS

DEVELOPDED CONDITIONS - FLOW RATES

BASIN	AREA (AC)	A	B	C	D
3A-2	10.71	86.0	11.0	0.0	3.0
3A-3A	2.34	93.0	7.0	0.0	0.0
3A-3B	2.89	97.0	3.0	0.0	0.0
3A-4	1.74	0.0	23.0	0.0	0.0
3A-5	0.40	0.0	0.0	7.0	93.0

2 YEAR STROM:

BASIN 3A-2 Q = (0.00)(2.04)(0.86)(10.71) + (0.04)(2.04)(0.11)(10.71) + (0.29)(2.04)(0.0)(10.71) + (0.91)(2.04)(0.03)(10.71)
= 0.69 CFS

BASIN 3A-3A Q = (0.00)(2.04)(0.93)(2.34) + (0.04)(2.04)(0.07)(2.34) + (0.29)(2.04)(0.0)(2.34) + (0.91)(2.04)(0.0)(2.34)
= 0.01 CFS

BASIN 3A-3B Q = (0.00)(2.04)(0.97)(2.89) + (0.04)(2.04)(0.03)(2.89) + (0.29)(2.04)(0.0)(2.89) + (0.91)(2.04)(0.0)(2.89)
= 0.01 CFS

BASIN 3A-4 Q = (0.00)(2.04)(0.0)(1.74) + (0.04)(2.04)(0.23)(1.74) + (0.29)(2.04)(0.0)(1.74) + (0.91)(2.04)(0.77)(1.74)
= 2.52 CFS

BASIN 3A-5 Q = (0.00)(2.04)(0.0)(0.40) + (0.04)(2.04)(0.0)(0.40) + (0.29)(2.04)(0.07)(0.40) + (0.91)(2.04)(0.93)(0.40)
= 0.58 CFS

TOTAL Q = 3.81 CFS

SUNWEST BANK SEDIMENT YIELD ANALYSIS
UNIVERSAL SOIL LOSS EQUATION

DESCRIPTION	VARIABLE	UNIT	3A-2	3A-3A	3A-3B	3A-4	3A-5
BASIN							
Drainage Area	DA	Sq. Mi.	0.017	0.004	0.005	0.003	0.001
Slope	S	Ft/Ft	0.064	0.030	0.030	0.021	0.005
Slope Angle	THETA	Radians	0.064	0.030	0.030	0.021	0.005
	L	Feet	400.000	400.000	400.000	260.000	290.000
Rainfall	R		25.000	25.000	25.000	25.000	25.000
Soil Erodability*	K		0.280	0.280	0.280	0.280	0.280
Slope Length Factor	LS		1.233	0.516	0.516	0.316	0.156
Cover*	C		0.170	0.170	0.170	0.011	0.011
Support Practice Factor	P		1.000	1.000	1.000	1.000	1.000
Sediment Yield	A	Tons/Acre	1.467	0.614	0.614	0.024	0.012
		Tons	15.683	1.453	1.767	0.040	0.005
		Cy	11.617	1.076	1.309	0.030	0.003
			Total Annual Sediment Yield			14.036	Cy
Estimated Soil Unit Weight	100.000	Lbs/Cf	Adjustment Factor			4.000	
			Adjusted Sediment Yield			56.143	Cy

NOTE: The Universal Soil Loss Equation typically underestimates the actual sediment yield by 4 times so a factor of 4 is applied to the total annual sediment yield.

WESTBOUND DESILTATION POND
(Located at Outfall of Basin 34-38)

1. Size Pond for Sediment Storage

From USLE for Basin 34-38

Avg. Annual Sediment Yield = 4.3 cy
= 116.21 cf

Use 10' width
Length = 3 x width = 30'

⇒ Volume = (width)(3 x width)(Depth) = 116.21

⇒ Depth = $\frac{116.21}{300}$ = 0.39'

Use Depth = 0.5'

Note storing the pond (surface area) for the 2 Year Storm is not necessary because the flow rate is negligible (only 0.01 cfs)

2. Pond Dimensions

Length = 30'
Width = 10'
Depth = 0.5'

Volume = 150 cf = 5.56 cy

93060551

1376

DRAINAGE COVENANT

This Drainage Covenant, between Journal Center Corporation ("Owner"), whose address is 7777 Jefferson NE Albuquerque, New Mexico, and the City of Albuquerque, New Mexico municipal corporation ("City"), whose address is P.O. Box 1293, Albuquerque, New Mexico 87103, is made in Albuquerque, Bernalillo County, New Mexico and is entered into as of the date Owner signs this Covenant.

1. Recital. Owner is the owner of certain real property described as: Tract 3A-1, Journal Center in Bernalillo County, New Mexico (the "Property").

Pursuant to City ordinances, regulations and other applicable laws, the Owner is required to construct and maintain certain Drainage Facilities on the Property, and the parties wish to enter into this Agreement to establish the obligations and responsibilities of the parties.

2. Description and Construction of Drainage Facilities. Owner shall construct the following "Drainage Facility" within the Property at Owner's sole expense in accordance with the standards, plans and specifications approved by the City pursuant to Drainage File No. D-17/D3B: Sedimentation Pond

The Drainage Facility is more particularly described in the attached Exhibit A. The Owner will not permit the Drainage Facility to constitute a hazard to the health or safety of the general public.

3. Maintenance of Drainage Facility. The Owner will maintain the Drainage Facility at Owner's cost in accordance with the approved Drainage Report and plans.

4. City's Right of Entry. The City has the right to enter upon the Property at any time and perform whatever inspection, maintenance or repair of the Drainage Facility it deems appropriate, without liability to the Owner.

5. Demand for Construction or Repair. The City may send written notice ("Notice") to the Owner requiring the Owner to construct or repair the Drainage Facility within 14 days ("Deadline") of receipt of the Notice, as provided in Section 11, and the Owner will comply promptly with the requirements of the Notice. The Owner will perform all required work by the Deadline, at Owner's sole expense.

6. Failure to Perform by Owner and Emergency Work by City. If the Owner fails to comply with the terms of the Notice by the Deadline, or if the City determines that an emergency condition exists, the City may perform the work itself. The City may assess the Owner for the cost of the work and for any other expenses or damages which result from Owner's failure to perform. The Owner agrees promptly to pay the City the amount assessed. If the Owner fails to pay the City within thirty (30) days after the City gives the Owner written notice of the amount due, the City may impose a lien against Owner's Property for the total resulting amount.

(Approved by Legal Dept.
as to form only 06/90)

7. Liability of City for Repair after Notice or as a Result of Emergency. The City shall not be liable to the Owner for any damages resulting from the City's repair or maintenance following notice to the Owner as required in this agreement or in an emergency unless the damages are the result of the reckless conduct or gross negligence of the City.

8. Indemnification. Owner agrees to indemnify and save the City, its officials, agents and employees harmless from all claims, actions, suits and proceedings arising out of or resulting from the Owner's negligent maintenance, construction, repair or use of the Drainage Facility. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

9. Cancellation of Agreement and Release of Covenant. This Agreement may be released if the Drainage Facility is no longer required for the protection of the public health, safety and welfare by the City filing a "Notice of Release" with the Bernalillo County Clerk. The Notice of Release must be signed by the City's Chief Administrative Officer, or his designee, and the approval of the City Hydrologist must be endorsed thereon.

10. Assessment. Nothing in this agreement shall be construed to relieve the Owner, his heirs, assigns, and successors from an assessment against Owner's Property for improvements to the property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Drainage Facility will not reduce the amount assessed by the City.

11. Notice. For purposes of given formal written notice to the Owner, Owner's address is:

Journal Center Corporation
7777 Jefferson NE
Albuquerque, New Mexico 87109

Notice may be given to the Owner either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the Owner within three days after the notice is mailed if there is no actual evidence of receipt. The Owner may change Owner's address by given written notice of the change by Certified Mail, return receipt requested, to the City Public Works Department, P.O. Box 1293, Albuquerque, New Mexico, 87103.

12. Term. This Agreement shall continue until terminated by the City pursuant to Section 9 above.

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

93 JUN -9 PM 3:59

93 315 PG 1376-1379

JUDY D. WOODWARD
CO. CLERK & RECORDER
DEPUTY

(Approved by Legal Dept.
as to form only 06/90)

13. Binding on Owner's Property. The covenants and obligations of the Owner said forth herein shall be binding on Owner, its heirs, personal representatives, assigns and successors and on Owner's Property and shall constitute covenants running the Owner's Property until released by the City.

14. Entire Agreement. This Agreement contains the entire agreement of the parties and supercedes any and all other agreements or understanding, oral or written, whether previous to the execution hereof or contemporaneous herewith regarding this subject matter.

15. Changes to Agreement. Changes to this Agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this Agreement is held to be invalid or unenforceable, the remainder of the Agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

17. Captions. The captions to the sections or paragraphs of this Agreement are not part of this Agreement and will not affect the meaning or construction of any of its provisions.

OWNER:

By: [signature]
Its: Michael N. Callahan - Vice President
Dated: 5-7-93

STATE OF New Mexico)
) ss
COUNTY OF Bernalillo)

The foregoing instrument was acknowledged before me this ____ day of _____, 199___, [by name of person:] Michael N. Callahan, [title or capacity, for instance "president" or "owner":] Vice President of [Subdivider:] Journal Center Corporation.

[signature]
Notary Public

My Commission Expires:
4-12-95

OFFICIAL SEAL
KATHY M. BERRY
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 4-12-95

CITY OF ALBUQUERQUE:

Approved:

By: [signature]
Title: For the City Engineer
Dated: 5/27/93

(EXHIBIT A ATTACHED)

(Approved by Legal Dept.
as to form only 06/90)

(WP+124529)