City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 19, 1999

Shahab Biazar, P.E.
Advanced Engineering and Consulting
10209 Snowflake Ct. NW
Albuquerque, New Mexico 87114

RE: Engineer's Certification Plan for Lot 22, Block 26, Tract A, Unit B, NAA, (C18/D53) Submitted for Temporary Certificate of Occupancy Approval, Engineer's Certification Stamp Dated 10/19/99.

Dear Shahab:

Based on the information provided, the above referenced plan is acceptable for the release of a Temporary Certificate of Occupancy for the Office/Warehouse located at 6705 Eagle Rock Avenue.

Prior to release of the permanent C.O., however, the final engineer's certification must be provided to verify that all improvements have been constructed.

If you have any questions, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Whitney Reierson, City Hydrology
File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Lot 22, Block 26, Tract A, Unit B, North Alb. Acres **ZONE ATLAS/DRNG. FILE #:** C-18 / D53

DRB #: _____ **EPC #:** _____ **WORK ORDER #:** _____

LEGAL DESCRIPTION: Lot 22, Block 26, Tract A, Unit B, North Albuquerque Acres

CITY ADDRESS: 6705 Eagle Rock Avenue, NE, Albuquerque, New Mexico

ENGINEERING FIRM: *Advanced Engineering and Consulting, LLC* **CONTACT:** Shahab Biazar

ADDRESS: 10205 Snowflake Ct. NW, Alb., NM 87114 **PHONE:** (505) 899-5570

OWNER: Rutherford Enterprise, LLC **CONTACT:** Rick Rutherford

ADDRESS: 112 Thane's Way, Corrales, New Mexico 87048 **PHONE:** (505)243-4846

ARCHITECT: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

_____ DRAINAGE PLAN

_____ CONCEPTUAL GRADING & DRAINAGE PLAN

_____ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

X AS-BUILT GRADES

PRE-DESIGN MEETING:

_____ YES

X 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

_____ BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

_____ GRADING PERMIT APPROVAL

_____ PAVING PERMIT APPROVAL

_____ S. A. D. DRAINAGE REPORT

_____ DRAINAGE REQUIREMENTS

X TEMP. C.O.

RECEIVED
OCT 19 1999
HYDROLOGY SECTION

DATE SUBMITTED: 10/19/99

BY: Shahab Biazar, P.E.

SURFACE DRAINAGE EASEMENT

The undersigned Grantor, for and in consideration of the sum of One Dollar ($1.00) and other valuable consideration hereby acknowledged paid, does hereby grant and convey unto the undersigned Grantee, its successors, assigns, and/or lessees a perpetual easement to allow surface drainage of storm water across its property in Bernalillo County, New Mexico, more particularly described as follows, to wit:

An easement within Lot 22, Block 26, Tract A, Unit B, North Albuquerque Acres, as the same is shown and designated on the plat filed for record in the office of the County Clerk of Bernalillo County on April 24, 1936, in Plat Book D, Page 130-A. Said easement shall be fifteen feet in width, following the west property line along the northerly 140 feet of the lot; thence following the established drainage path across the parking lot of the subject property to its outfall onto Eagle Rock Avenue, NE.

This grant of easement shall in no way be construed to be a representation of ownership by the Grantee, nor shall it limit the Grantor's right or ability to improve, landscape, park upon, or otherwise use the Easement area, provided that drainage functions are not adversely affected, in keeping with the approved Grading and Drainage Plan prepared by Advanced Engineering and Consulting, LLC, (Engineer's stamp dated May 2, 1999) and signed by the City of Albuquerque Development Review Board on June 3, 1999.

SIGNED this 30 day of NOV, 1999.

Rutherford Enterprises, LLC

managing member

Ric Rutherford, Managing Member

GOA, LLC

Elvidio Diniz, Managing Partner

WITNESS:

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on this 30 day of November, 1999.

Notary Public
(Seal)

OFFICIAL SEAL
LORIE J. CHRISTIAN
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 08/28/01

WITNESS:

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on this 30 day of November, 1999.

Notary Public
(Seal)

OFFICIAL SEAL
LORIE J. CHRISTIAN
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 08/28/01

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 28, 1999

Shahab Biazar, P.E.
Advanced Engineering & Consulting, LL
10205 Snowflake Ct. NW
Albuquerque, NM 87114

RE: LOT 22, BLOCK 26, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES (C18-D53). GRADING AND DRAINAGE PLAN FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT, BUILDING PERMIT, AND GRADING PERMIT APPROVALS. ENGINEER'S STAMP DATED MAY 2, 1999.

Dear Mr. Biazar:

Based on the information provided on your May 3, 1999 submittal, the above referenced project is approved for Site Development Plan for Building Permit, Building Permit, and Grading Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

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

Sincerely,

John P. Murray, P.E.
Hydrology

c: File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 29, 1999

Shahab Biazar, P.E.
Advanced Engineering & Consulting, LL
10205 Snowflack Ct. NW
Albuquerque, NM 87114

flaka

RE: LOT 22, BLOCK 26, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES (C18-D53). GRADING AND DRAINAGE PLAN FOR SITE DEVELOPMENT PLAN FOR BUILDING PERMIT, AND FOR BUILDING AND GRADING PERMIT APPROVALS. ENGINEER'S STAMP DATED APRIL 2, 1999.

Dear Mr. Biazar:

Based on the information provided on your April 2, 1999 submittal, the above referenced project is approved for Site Development Plan for Building Permit, Building Permit, and Grading Permit.

The Solid Waste Management Department's confimation (4/27/99) for the utilization of their on-site pond makes your on-site retention option unnecessary.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy approval, an Engineer's Certification per the DPM will be required.

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

Sincerely,

John P. Murray, P.E.
Hydrology

c: S. Calongne
Andrew Garcia
File

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Lot 22, Block 26, Tract A, Unit B, North Alb. Acres **ZONE ATLAS/DRNG. FILE #:** C-18 / D53

DRB #: _____ **EPC #:** _____ **WORK ORDER #:** _____

LEGAL DESCRIPTION: Lot 22, Block 26, Tract A, Unit B, North Albuquerque Acres

CITY ADDRESS: 6705 Eagle Rock Avenue, NE, Albuquerque, New Mexico

ENGINEERING FIRM: *Advanced Engineering and Consulting, LLC* **CONTACT:** Shahab Biazar

ADDRESS: 10205 Snowflake Ct. NW, Alb., NM 87114 **PHONE:** (505) 899-5570

OWNER: Rutherford Enterprise, LLC **CONTACT:** Rick Rutherford

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SURVEYOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

CONTRACTOR: _____ **CONTACT:** _____

ADDRESS: _____ **PHONE:** _____

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION
- ____ OTHER

PRE-DESIGN MEETING:

- ____ YES
- X NO
- ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ____ SKETCH PLAN APPROVAL
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- X S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY APPROVAL
- X GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S. A. D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ OTHER

RECEIVED
APR 02 1999
HYDROLOGY SECTION

DATE SUBMITTED: 04/02/99

BY: Shahab Biazar, P.E.

DRAINAGE REPORT
FOR

Lot 22, Block 26, Tract A, Unit B, North Albuquerque Acres

Prepared by:

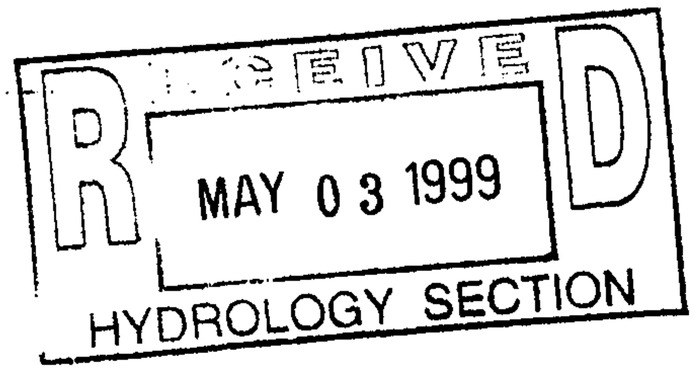
ADVANCED ENGINEERING and CONSULTING, LLC

10205 Snowflake Ct. NW
Albuquerque, New Mexico 87114

Prepared For:

Rutherford Enterprise, LLC
112 Thane's Way
Corrales, New Mexico 87048

Revised May 1999



Shahab Biazar
PE NO. 13479

TABLE OF CONTENTS

Location

Lot 22, Block 26, Tract A, Unit B, North Albuquerque Acres, is approximately 1700 feet east of San Pedro Drive on the north side of the Eagle Rock Avenue containing ±0.885 acres. See attached Zone Atlas page number C-18-Z for exact location. The owner is proposing to build an office/warehouse building.

Purpose

The purpose of this drainage report is to present a grading and drainage solution for the proposed site. We are requesting rough grading, site development plan for building permit, and building permit approval.

Existing Drainage Conditions

The site is a vacant land that drains from east to west and north to south. Lot 22, at 100-year/6-hour flow rate of 2.00 cfs, drains to Eagle Rock Avenue. The offsite runoff to the north drains west and does not enter this site. The offsite runoff to the south is intercepted by Eagle Rock Avenue. The offsite runoff to the west, drains west and does not enter this site. Portion of Lot 21 (a ~0.885 acre site), with the existing runoff of 2.00 cfs, to the east, drains to Lot 22 and then to Eagle Rock Avenue. From Eagle Rock Avenue, the runoff drains to the

City of Albuquerque Convenience Center's detention pond. Mark Goodwin and Associates prepared the drainage report for the City of Albuquerque Convenience Center No. 3 in 1992. They designed the detention pond for the Convenience Center to intercept an offsite flow of 95 cfs and 13 cfs of on-site runoff.

Flood Plain

The site is on the revised FIRM Map No. 35001C 0129 D and 0137 D, as shown on the attached excerpt. The map shows that the site does not lie within any 100-year floodplain. The floodplain was removed based on the revised FIRM map as off September 11, 1998. See Appendix A for the letter from the Federal Emergency Management Agency.

Proposed Conditions and On-Site Drainage Management Plan

This site falls within basin 201 of RTI's Master Drainage Plan. Under the RTI's basin map a 36" pipe is proposed (in Eagle Rock) fronting Lot 22. Mark Goodwin & Associates (under City Drainage # C218/D50) have re-analyzed the drainage basin and a 30" RCP will be adequate for the storm runoff in Eagle Rock Avenue. See attached Appendix B for the exhibit from Mark Goodwin & Associates drainage report.

According to John Curtin, with City Hydrology Department, status of the construction of the storm sewer structures are unknown and no budget is set for this project.

Orlando Sedillo, the director of the solid waste department, has allowed the continuos discharge to the Convenience Center's detention pond under developed conditions. See Appendix C for the signed letter from Orlando Sedillo which was obtained by Mark Goodwin & Associates (under City Drainage # C18/D50).

Lot 22 will be developed in two phases. A separate grading plan will be submitted for Phase II. Under Phase I construction the entire parking lot, office, and the 10,000 sf of the warehouse will be built. Under Phase II construction the future expansion of the warehouse will be built. For Phase I, the site will surface flow to Eagle Rock Avenue through the driveways at a flow rate of 3.78 cfs, and then from there will surface flow to the Convenience Center's detention pond. Under Phase II, with a developed discharge of 4.28 cfs, the site will continue to free discharge to Eagle Rock Avenue.

The street flow capacity, according to Mark Goodwin & Associates (under City Drainage # C18/D50), is more that 26 cfs with the existing temporary curb. The discharge just upstream of our project is 9.72 cfs and the fully developed runoff rate from our site is only 4.28 cfs. Therefore, the total discharge to Eagle Rock Avenue is 14 cfs (which is less than 26 cfs, street flow capacity). See Appendix D for the street flow capacity calculation prepared by Mark Goodwin & Associates (under City Drainage # C18/D50).

We calculated the street flow capacity under developed conditions (Eagle Rock Avenue built with curb and gutter), and no additional storm structures will be required (such as inlets) fronting our property. See the street flow capacity calculations for the Eagle Rock Avenue inside the revised drainage report. The design of the road and the 30" storm sewer pipe will be submitted to DRC.

Lot 21 will also be developed at the same time as Lot 22, therefore, intercepting all the offsite runoff to east. The grading and drainage plan of Lot 22 is under City Drainage number C18/D50.

Calculations

City of Albuquerque, Development Process Manuel, Section 22.2, Hydrology Section, revised January, 1993, was used for runoff calculations. See this report for Summary Table for runoff results. See also this report for AHYMO input and output files for runoff and ponding calculations.

RUNOFF DRAINAGE DATA

The site is @ Zone 3

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 x 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.

RUNOFF CALCULATION RESULTS

BASIN	AREA SF	AREA AC	AREA (MI^2)
ON-SITE	38552.25	0.8850	0.001383

ULTIMATE CONDITIONS

BASIN	Q-100 CFS	Q-10 CFS	TREATMENT			
			A	B	C	D
ON-SITE	4.28	2.80	0.00%	5.00%	5.00%	90.00%

INTERMEDIATE CONDITIONS

BASIN	Q-100 CFS	Q-10 CFS	TREATMENT			
			A	B	C	D
ON-SITE	3.78	2.35	0.00%	25.00%	10.00%	65.00%

EXISTING CONDITIONS

BASIN	Q-100 CFS	Q-10 CFS	TREATMENT			
			A	B	C	D
ON-SITE	2.00	0.77	45.00%	55.00%	0.00%	0.00%

BASIN	AREA SF	AREA AC	AREA (MI^2)
Eagle Rock Ave.	49533.00	1.1371	0.001777

PROPOSED CONDITIONS

BASIN	Q-100 CFS	Q-10 CFS	TREATMENT			
			A	B	C	D
Eagle Rock Ave.	5.50	3.60	0.00%	5.00%	5.00%	90.00%

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name:

Comment: 30" RCP Capacity Calculations

Solve For Actual Depth

Given Input Data:

Diameter.....	2.50 ft
Slope.....	0.0310 ft/ft
Manning's n.....	0.012
Discharge.....	53.20 cfs

Computed Results:

Depth.....	1.51 ft
Velocity.....	17.14 fps
Flow Area.....	3.10 sf
Critical Depth....	2.34 ft
Critical Slope....	0.0124 ft/ft
Percent Full.....	60.46 %
Full Capacity.....	78.26 cfs
QMAX @.94D.....	84.19 cfs
Froude Number.....	2.68 (flow is Supercritical)

The full capacity of the pipe is 78.26 cfs >> 53.20 cfs

Open Channel Flow Module, Version 3.12 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

MAXIMUM STREET FLOW CAPACITY CALCULATIONS

Based on trial and error maximum street flow capacity was calculated for 100-year storm.

The followings are the input and output files for street flow capacity using the Manning's equation.

Q = Flow
S = Slope of the street
Dn = Water normal depth
Vn = Velocity based on the water normal depth
D*V = (Water normal depth) x (Velocity based on the water normal depth)
Fr = Froude number
E = Energy Grade Line
D2 = Hydraulic Jump

---------- INPUT FILE ----------
---------- 40-FT F-F, 8" CURB STREET SECTION----------
----------100-YR STORM----------
100 59.00 0.03345
---------- END OF THE INPUT FILE ----------
999 0.00 0.00

---------- OUTPUT FILE ----------
---------- 40-FT F-F, 8" CURB STREET SECTION ----------
---------- STREET CAPACITY BASED ON 100-YR STORM ----------

Q (CFS)	S (FT/FT)	Dn (FT)	Vn (FT/S)	D*V (FT^2/S)	Fr	E (FT)	D2 (FT)
59.00	0.00345	0.522	6.109	3.190	1.490	1.102	0.870

---------- END OF THE OUTPUT FILE ----------

The maximum street flow capacity is 59.00 cfs >> the actual flow in the street 14.00 cfs.

```
**********************************************************************
*          LOT 22, BLOCK 26,  NORTH ALBUQUERQUE ACRES                *
**********************************************************************
*        100-YEAR,  6-HR STORM (UNDER ULTIMATE CONDITIONS)           *
**********************************************************************
START               TIME=0.0
*
RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                    RAIN ONE=2.14 IN RAIN SIX=2.60 IN
                    RAIN DAY=3.10 IN DT=0.03333 HR
*
COMPUTE NM HYD      ID=1 HYD NO=100.0 AREA=0.001383 SQ MI
                    PER A=0.00 PER B=5.00 PER C=5.00 PER D=90.00
                    TP=-0.1333 HR MASS RAINFALL=-1
*
**********************************************************************
*        10-YEAR,  6-HR STORM (UNDER ULTIMATE CONDITIONS)            *
**********************************************************************
START               TIME=0.0
*
RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                    RAIN ONE=1.43 IN RAIN SIX=1.73 IN
                    RAIN DAY=2.07 IN DT=0.03333 HR
*
COMPUTE NM HYD      ID=1 HYD NO=110.0 AREA=0.001383 SQ MI
                    PER A=0.00 PER B=5.00 PER C=5.00 PER D=90.00
                    TP=-0.1333 HR MASS RAINFALL=-1
*
**********************************************************************
*        100-YEAR,  6-HR STORM (INTERMEDIATE CONDITIONS)             *
**********************************************************************
START               TIME=0.0
*
RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                    RAIN ONE=2.14 IN RAIN SIX=2.60 IN
                    RAIN DAY=3.10 IN DT=0.03333 HR
*
COMPUTE NM HYD      ID=1 HYD NO=100.0 AREA=0.001383 SQ MI
                    PER A=0.00 PER B=25.00 PER C=10.00 PER D=65.00
                    TP=-0.1333 HR MASS RAINFALL=-1
*
**********************************************************************
*        10-YEAR,  6-HR STORM (INTERMEDIATE CONDITIONS)              *
**********************************************************************
START               TIME=0.0
*
RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                    RAIN ONE=1.43 IN RAIN SIX=1.73 IN
                    RAIN DAY=2.07 IN DT=0.03333 HR
*
COMPUTE NM HYD      ID=1 HYD NO=110.0 AREA=0.001383 SQ MI
                    PER A=0.00 PER B=25.00 PER C=10.00 PER D=65.00
                    TP=-0.1333 HR MASS RAINFALL=-1

**********************************************************************
*        100-YEAR,  6-HR STORM (UNDER EXISTING CONDITIONS)           *
**********************************************************************
START               TIME=0.0

RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
```

```
                    RAIN ONE=2.14 IN RAIN SIX=2.60 IN
                    RAIN DAY=3.10 IN DT=0.03333 HR
*
COMPUTE NM HYD      ID=1 HYD NO=101.0 AREA=0.001383 SQ MI
                    PER A=45.00 PER B=55.00 PER C=0.00 PER D=0.00
                    TP=-0.1333 HR MASS RAINFALL=-1
*
**********************************************************************
*          10-YEAR,  6-HR STORM (UNDER EXISTING CONDITIONS)          *
**********************************************************************
START               TIME=0.0
*
RAINFALL            TYPE=1 RAIN QUARTER=0.0 IN
                    RAIN ONE=1.43 IN RAIN SIX=1.73 IN
                    RAIN DAY=2.07 IN DT=0.03333 HR
*
COMPUTE NM HYD      ID=1 HYD NO=111.0 AREA=0.001383 SQ MI
                    PER A=45.00 PER B=55.00 PER C=0.00 PER D=0.00
                    TP=-0.1333 HR MASS RAINFALL=-1
*
FINISH
```

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =02/09/1999

INPUT FILE = 9865 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	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.600
COMPUTE NM HYD	100.00	-	1	.00138	4.28	.164	2.22881	1.500	4.840	PER IMP=	90.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.730
COMPUTE NM HYD	110.00	-	1	.00138	2.80	.103	1.39263	1.500	3.165	PER IMP=	90.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.600
COMPUTE NM HYD	100.00	-	1	.00138	3.78	.139	1.88584	1.500	4.274	PER IMP=	65.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.730
COMPUTE NM HYD	110.00	-	1	.00138	2.35	.082	1.11772	1.500	2.655	PER IMP=	65.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.600
COMPUTE NM HYD	101.00	-	1	.00138	2.00	.058	.79179	1.500	2.259	PER IMP=	.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.730
COMPUTE NM HYD	111.00	-	1	.00138	.77	.020	.27295	1.533	.871	PER IMP=	.00
FINISH											

```
**********************************************************************
*          LOT 22, BLOCK 26,  NORTH ALBUQUERQUE ACRES                *
*                 STREE BASIN (EAGEL ROCK AV.)                       *
**********************************************************************
*       100-YEAR,  6-HR STORM (UNDER ULTIMATE CONDITIONS)            *
**********************************************************************
START                TIME=0.0
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.14 IN RAIN SIX=2.60 IN
                     RAIN DAY=3.10 IN DT=0.03333 HR
*
COMPUTE NM HYD       ID=1 HYD NO=100.0 AREA=0.001777 SQ MI
                     PER A=0.00 PER B=5.00 PER C=5.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
**********************************************************************
*         10-YEAR,  6-HR STORM (UNDER ULTIMATE CONDITIONS)           *
**********************************************************************
START                TIME=0.0
*
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.43 IN RAIN SIX=1.73 IN
                     RAIN DAY=2.07 IN DT=0.03333 HR
*
COMPUTE NM HYD       ID=1 HYD NO=110.0 AREA=0.001777 SQ MI
                     PER A=0.00 PER B=5.00 PER C=5.00 PER D=90.00
                     TP=-0.1333 HR MASS RAINFALL=-1
*
FINISH
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AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =03/14/1999

INPUT FILE = 9865-ST

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	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.600
COMPUTE NM HYD	100.00	-	1	.00178	5.50	.211	2.22881	1.500	4.834	PER IMP=	90.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.730
COMPUTE NM HYD	110.00	-	1	.00178	3.60	.132	1.39263	1.500	3.162	PER IMP=	90.00
FINISH											

Copy

Federal Emergency Management Agency

Washington, D.C. 20472

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Jim Baca
Mayor, City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

IN REPLY REFER TO:
Case No.: 98-06-660P

Community: City of Albuquerque, New Mexico
Community No.: 350002
Panels Affected: 35001C0128 D, 0129 D,
0133 D, 0137 D, and 0141 D
Effective Date of
This Revision: SEP 1 1 1998

102-I-A-C

Dear Mayor Baca:

This responds to a request that the Federal Emergency Management Agency (FEMA) revise the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for Bernalillo County, New Mexico and Incorporated Areas (the effective FIRM and FIS report for your community), in accordance with Part 65 of the National Flood Insurance Program (NFIP) regulations. In a letter dated January 31, 1997, Ms. Susan M. Calongne, P.E., Floodplain Administrator, City of Albuquerque, requested that FEMA revise the FIRM and FIS report to show the effects of the following projects in the La Cueva Arroyo watershed:

North La Cueva Arroyo:

- La Cueva training dike at Eagle Rock Avenue
- Three 10-foot by 10-foot reinforced-concrete box culverts beneath Interstate Highway 25 (I-25)
- A concrete-lined channel from I-25 to North Diversion Channel

South La Cueva Arroyo:

- San Pedro storm drain beneath San Pedro Drive from Signal Avenue to Modesto Avenue
- A concrete-lined channel from I-25 to the North La Cueva channel
- Wildflower Training Dike to guide floodwaters to the South La Cueva channel

South El Camino Arroyo:

- South El Camino Diversion to divert floodwaters from South El Camino Arroyo to the North La Cueva channel

This request also included more detailed topographic information along North La Cueva Arroyo from its confluence with North Diversion Channel to Wyoming Boulevard; along South La Cueva Arroyo from its confluence with North La Cueva Arroyo to approximately 1,400 feet upstream of Louisiana Boulevard; and along South El Camino Arroyo from approximately 1,200 feet downstream of San Mateo Boulevard to I-25. This revision is entirely within the City of Albuquerque because portions of the unincorporated areas of Bernalillo County were annexed by the City in March 1995.

All data required to complete our review of this request were submitted with letters from Mr. Kurt Browning, P.E., Drainage Engineer, Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA); Mr. Daniel J. Grochowski, P.E., P.S., Project Manager, Bohannan-Huston, Inc.; and Ms. Calongne.

We have completed our review of the submitted data, the flood data shown on the effective FIRM and FIS report, and the Letter of Map Revision (LOMR) dated August 1, 1997. We have revised the FIRM and FIS report to modify the elevations, floodplain boundary delineations, and zone designations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) along North La Cueva Arroyo from its confluence with North Diversion Channel to Wyoming Boulevard; along South La Cueva Arroyo from its confluence with North La Cueva Arroyo to approximately 1,400 feet upstream of Louisiana Boulevard; and along South El Camino Arroyo from approximately 1,200 feet downstream of San Mateo Boulevard to I-25. As a result of the modifications, the base flood is contained within the channel banks along North La Cueva Arroyo from its confluence with North Diversion Channel to I-25 and along South La Cueva Arroyo from its confluence with North La Cueva Arroyo to I-25. The base flood elevations (BFEs) decreased along the revised reaches of North and South La Cueva Arroyos. The width of the Special Flood Hazard Area (SFHA), the area that would be inundated by the base flood, increased in some areas and decreased in other areas. The increases in SFHA width are contained on property owned by the AMAFCA. The modifications are shown on the enclosed annotated copies of FIRM Panel(s) 35001C0128 D, 35001C0129 D, 35001C0133 D, 35001C0137 D, and 35001C0141 D and affected portions of the Summary of Discharges Table. This LOMR hereby revises the above-referenced panel(s) of the effective FIRM and the affected portions of the FIS report, both dated September 20, 1996.

The modifications are effective as of the date shown above. The map panel(s) as listed above and as modified by this letter will be used for all flood insurance policies and renewals issued for your community.

The following table is a partial listing of existing and modified BFEs:

Location	Existing BFE (feet)*	Modified BFE (feet)*
North La Cueva Arroyo:		
Approximately 500 feet upstream of confluence with North Diversion Channel	2[1]	None[2]
Just downstream of I-25	1[1]	None[2]
Just upstream of I-25	3[1]	None
Just downstream of Wyoming Boulevard	1[1]	None
South La Cueva Arroyo:		
Just upstream of Jefferson Street	3[1]	None[2]
Just downstream of I-25	1[1]	None[2]
South El Camino Arroyo:		
Just downstream of I-25	2[1]	None[3]

*Referenced to the National Geodetic Vertical Datum, rounded to the nearest whole foot
[1]Depth above ground, rounded to the nearest whole foot
[2]Base flood contained in channel
[3]Base flood contained in diversion

Public notification of the proposed modified BFEs will be given in the *Albuquerque Journal* on or about October 8 and October 15, 1998. A copy of this notification is enclosed. In addition, a notice of changes will be published in the *Federal Register*. Within 90 days of the second publication in the *Albuquerque Journal*, a citizen may request that FEMA reconsider the determination made by this LOMR. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that,

until the 90-day period elapses, the determination to modify the BFEs presented in this LOMR may itself be modified.

Because this LOMR will not be printed and distributed to primary users, such as local insurance agents and mortgage lenders, your community will serve as a repository for these new data. We encourage you to disseminate the information reflected by this LOMR throughout the community, so that interested persons, such as property owners, local insurance agents, and mortgage lenders, may benefit from the information. We also encourage you to prepare a related article for publication in your community's local newspaper. This article should describe the assistance that officials of your community will give to interested persons by providing these data and interpreting the NFIP maps.

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all floodplain development, and for ensuring all necessary permits required by Federal or State law have been received. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If the State, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

The basis of this LOMR is, in whole or in part, a channel-modification/culvert project. NFIP regulations, as cited in Paragraph 60.3(b)(7), require that communities ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management regulations. Consequently, the ultimate responsibility for maintenance of the modified channel and culvert rests with your community.

This determination has been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and is in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed minimum NFIP criteria. These criteria are the minimum and do not supersede any State or local requirements of a more stringent nature. This includes adoption of the effective FIRM to which the regulations apply and the modifications described in this LOMR. Our records show that your community has met this requirement.

A Consultation Coordination Officer (CCO) has been designated to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. James LeGrotte
Director, Mitigation Division
Federal Emergency Management Agency, Region VI
Federal Regional Center, Room 206
800 North Loop 288
Denton, Texas 76201-3698
(940) 898-5127

FEMA makes flood insurance available in participating communities; in addition, we encourage communities to develop their own loss reduction and prevention programs. ~~Our~~ Project Impact initiative, developed by FEMA Director James Lee Witt, seeks to focus the energy of businesses, citizens, and communities in the United States on the importance of reducing their susceptibility to the impact of all natural disasters, including floods, hurricanes, severe storms, earthquakes, and wildfires. Natural hazard mitigation is most effective when it is planned for and implemented at the local level, by the entities who are most knowledgeable of local conditions and whose economic stability and safety are at stake. For your information, we are enclosing a Project Impact Fact Sheet. For additional information on Project Impact, please visit our Web site at www.fema.gov.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the CCO for your community at the telephone number cited above. If you have any technical questions regarding this LOMR, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,

Alan A. Johnson, P.E., Project Engineer
Hazards Study Branch
Mitigation Directorate

For: Matthew B. Miller, P.E., Chief
Hazards Study Branch
Mitigation Directorate

Enclosure(s)

cc: Ms. Susan M. Calongne, P.E.
Floodplain Administrator
City of Albuquerque

Mr. Kurt Browning, P.E.
Drainage Engineer
Albuquerque Metropolitan Arroyo
Flood Control Authority

Mr. Daniel J. Grochowski, P.E., P.S.
Project Manager
Bohannan-Huston, Inc.

Table 3. Summary of Discharges for Shallow Flooding Areas (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	100-Year Peak Discharges (cfs)
Boca Negra Arroyo - South[1]	2.82	1,282
Boca Negra Arroyo[1]		
Just downstream of confluence with South Branch	7.20	2,911
Borrega Arroyo "A"[1]		
At confluence of Borrega Arroyo	0.60	293
Borrega Arroyo[1]		
At confluence of Borrega Arroyo "A"	0.32	171
At outfall	1.26	614[3]
South El Camino Arroyo		
At Tramway Boulevard[2]	1.85	2,853
At Ventura Street[2]	2.59	3,301
At Interstate Highway 25	3.17	2,053
North La Cueva Arroyo		
At Tramway Boulevard[2]	2.81	3,759
At Ventura Street[2]	3.54	3,494
At Interstate Highway 25	4.36	2,746
At North Diversion Channel	8.52	4,869
Arroyo De Domingo Baca[2]		
At confluence with Baca Tributary	3.26	2,550
Dam inflow	4.43	3,845
Dam outflow	4.43	761
At Ventura Street	5.84	1,142
At Interstate Highway 25	7.33	2,146
At North Diversion Channel	12.73	3,620

REVISED DATA

[1]Flows from Matotan, 1975
[2]Flows from Northeast Heights Drainage Management Plan - Leonard Rice - April 1975
[3]By Regression Analysis

REVISED TO REFLECT LOMR DATED SEP 11 1998

CHANGES ARE MADE IN DETERMINATIONS OF BASE FLOOD ELEVATIONS FOR THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, UNDER THE NATIONAL FLOOD INSURANCE PROGRAM

On September 20, 1996, the Federal Emergency Management Agency identified Special Flood Hazard Areas (SFHAs) in the City of Albuquerque, Bernalillo County, New Mexico, through issuance of a Flood Insurance Rate Map (FIRM). The Mitigation Directorate has determined that modification of the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) for certain locations in this community is appropriate. The modified base flood elevations (BFEs) revise the FIRM for the community.

The changes are being made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65.

A hydraulic analysis was performed to incorporate a training dike at Eagle Rock Avenue, culverts beneath Interstate Highway 25 (I-25), a concrete-lined channel, and more detailed topographic information along North La Cueva Arroyo; a storm drain beneath San Pedro Drive, a concrete-lined channel, a training dike at I-25, and more detailed topographic information along South La Cueva Arroyo; and a training dike at I-25 along South El Camino Arroyo. The modifications have resulted in increases and decreases in SFHA width and revised BFEs for North La Cueva Arroyo from its confluence with North Diversion Channel to Wyoming Boulevard, for South La Cueva Arroyo from its confluence with North La Cueva Arroyo to approximately 1,400 feet upstream of Louisiana Boulevard, and for South El Camino Arroyo from approximately 1,200 feet downstream of San Mateo Boulevard to I-25. The table below indicates existing and modified BFEs for selected locations along the affected lengths of the flooding source(s) cited above.

Location	Existing BFE (feet)*	Modified BFE (feet)*
North La Cueva Arroyo:		
Approximately 500 feet upstream of confluence with North Diversion Channel	2[1]	None[2]
Just downstream of I-25	1[1]	None[2]
Just upstream of I-25	3[1]	None
Just downstream of Wyoming Boulevard	1[1]	None
South La Cueva Arroyo:		
Just upstream of Jefferson Street	3[1]	None[2]
Just downstream of I-25	1[1]	None[2]
South El Camino Arroyo:		
Just downstream of I-25	2[1]	None[3]

*National Geodetic Vertical Datum, rounded to nearest whole foot
[1]Depth above ground, rounded to the nearest whole foot
[2]Base flood contained in channel
[3]Base flood contained in diversion

Under the above-mentioned Acts of 1968 and 1973, the Mitigation Directorate must develop criteria for floodplain management. To participate in the National Flood Insurance Program (NFIP), the community must use the modified BFEs to administer the floodplain management measures of the NFIP. These modified BFEs will also be used to calculate the appropriate flood insurance premium rates for new buildings and their contents and for the second layer of insurance on existing buildings and contents.

Upon the second publication of notice of these changes in this newspaper, any person has 90 days in which he or she can request, through the Chief Executive Officer of the community, that the Mitigation Directorate reconsider the determination. Any request for reconsideration must be based on knowledge of changed conditions or new scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Mitigation Directorate's determination to modify the BFEs may itself be changed.

Any person having knowledge or wishing to comment on these changes should immediately notify:

The Honorable Jim Baca
Mayor, City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Table 3. Summary of Discharges for Shallow Flooding Areas (Cont'd)

Flooding Source and Location	Drainage Area (square miles)	100-Year Peak Discharges (cfs)
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REVISED DATA

[1]Flows from Matotan, 1975
[2]Flows from Northeast Heights Drainage Management Plan - Leonard Rice - April 1975
[3]By Regression Analysis

REVISED TO REFLECT LOMR DATED SEP 11 1998

Federal Emergency Management Agency

Washington, D.C. 20472

July 30, 1997

Ms. Susan M. Calongne, P.E.
City/County Floodplain Administrator
City of Albuquerque/Bernalillo County
P.O. Box 1293
Albuquerque, New Mexico 87103

IN REPLY REFER TO:
Case No.: 97-06-271P
Communities: City of Albuquerque and
Bernalillo County, New Mexico
Community Nos.: 350002 and 350001

316-ACK.FRQ

Dear Ms. Calongne:

This responds to the receipt of the initial fee required to begin a detailed review of your January 31, 1997, request that the Federal Emergency Management Agency (FEMA) issue a revision to the Flood Insurance Rate Map (FIRM) for Bernalillo County, New Mexico and Incorporated Areas. Pertinent information about the request is listed below.

Flooding Sources:	La Cueva and South El Camino Arroyos
FIRM Panel(s) Affected:	35001C0128 D, 0129 D, 0137 D, 0141 D, and 0142 D

We have completed an inventory of the items that you submitted. We have received the data and the initial fee ($5,000) required to begin a detailed technical review of your request. If additional data are required, we will inform you within 30 days of the date of this letter.

Please direct all questions concerning your request to our Technical Evaluation Contractor at the following address:

Michael Baker Jr., Inc.
3601 Eisenhower Avenue, Suite 600
Alexandria, Virginia 22304

Attention: Mr. Monther S. Madanat
(703) 317-6250

When you write us about your request, you must include the case number referenced above in your letter.

If you have any questions concerning FEMA policy, or the National Flood Insurance Program in general, please contact Mr. Alan Johnson of our staff in Washington, DC, either by telephone at (202) 646-3403 or by facsimile at (202) 646-4596.

Sincerely,

Frederick H. Sharrocks, Jr., Chief
Hazard Identification Branch
Mitigation Directorate

cc: Mr. Kurt Browning, P.E.
Albuquerque Metropolitan Arroyo
Flood Control Authority

Mr. Daniel J. Grochowski, P.E.
Bohannan-Huston, Inc.

Mr. Donald Dixon, P.E.
Resource Technology, Inc.