OCTOBER 18, 2010

SUPPLEMENTAL INFORMATION

FOR

SAGE & UNSER MARKETPLACE

BY

10.18.10

I&A PROJECT NO. 1802/1761

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 Fax. 505-268-2632

Isaacson & Arfman, P.A. Consulting Engineering Associates

Thomas O. Isaacson, PE & LS * Fred C. Arfman, PE * Åsa Nilsson-Weber, PE

October 18, 2010

UNSER AND SAGE MARKETPLACE

MASTER DRAINAGE STUDY

The referenced PROPERTY is an undeveloped commercial property located within City of Albuquerque (C.O.A.) Vicinity Map M-10-Z. The 9.1590 acre site is bound to the east and south by developed residential property, to the west by Unser Blvd. SW, and to the north by Sage Road SW. The PROPERTY, as shown on this preliminary plat submittal, will be sub-divided into five tracts as follows:

Lands of Albuquerque South Unit 1-B, City Of Albuquerque, Bernalillo County, New Mexico.

Tract A-1: 4.79 Acres (to be subdivided into four tracts by future plating actions)

Tract A-2: 1.01 Acres

Tract A-3: 1.37 Acres

Tract A-4: 1.10 Acres

Tract A-5: 0.83 Acres

Proposed improvements: the proposed improvements include new commercial buildings, site walks, access and parking pavement and associated landscaping.

The purpose of this master plan is to identify overall basins, drainage patterns and allowable discharge rates. The individual tracts will be developed separately and will be required to adhere to the master drainage and grading plan as follows:

- The development of each tract must include the preparation of a drainage and grading plan for C.O.A. Hydrology review and approval for building permit.

- The maximum allowable discharge from each tract is based on the 100-year, 6-hour storm event based on land treatment of 10% B, 10% C and 80% D. as follows:

TRACT Q100 SUMMARY

Tract No:	Tract Area (ac)	*Discharge (Q)
A-1	4.7931	19.1
A-2	1.0086	4.0
A-3	1.3693	5.5
A-4	1.1023	4.4
A-5	0.8257	3.3
TOTAL	9.0990	36.29

*Each Tract discharge (Q) based on 10% B, 10% C, 80% D. Discharge genereated in excess of this must be detained on individual tract.

- Each tract exceeding the above discharge rate must provide on-site detention pond(s) or underground storage as required to reduce the tract discharge to the allowable rate.
- Each tract drainage and grading plan must include temporary off-tract erosion control features such as desiltation ponds, temporary swales, etc. as required to protect undeveloped portion of PROPERTY.

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BENCHMARK: vertical datum is based on AGRS monument "1-M10", a brass disc set in concrete located in the southeast quadrant of the intersection of Unser Blvd. And Sage Rd. SW. Elevation=5082.757 (navd88)

SURVEYOR: Aldrich Land Surveying, contact – Tim Aldrich, Phone: 505-884-1990

FLOOD ZONE: As shown on Flood Insurace Rate Map No: 35001C0336G, revised September 26, 2009 (see attached exhibit), The PROPERTY appears to lie mostly within ZONE X (areas determined to be outside the 0.2% annual chance flood plain.) The northerly boundary appears to be in close proximity to ZONE AO: Depth 1' (special flood hazard area – subject to inundation by the 1% annual flood chance – usually sheet flow on sloping terrain – average depths determined). The northwesterly corner appears to be in close proximity to ZONE X SHADED (areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood).

OFF-SITE DRAINAGE: No off-site drainage will pass through the overall property. All proposed tracts will be covered by a blanket drainage easement.

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DRAINAGE PLAN CONCEPT:

The undeveloped property currently generates approximately 16.5 cfs during the 100-year 6-hour storm. The fully developed condition will generate approximately 36.3 cfs.

CALCULATIONS: Unser and Sage Marketplace : August 11, 2010

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITE

AREA OF SITE: 396356 SF = 9.1

100-year, 6-hour

HISTORIC FLOWS:		Treatment SF	%	DEVELOPED FLOWS:		Treatment SF	%	EXCESS PRECIP:	
								Precip. Zone	1
Area A	=	158542.2707	40%	Area A	=	0	0%	E_A	= 0.44
Area B	=	198177.8384	50%	Area B	=	39636	10%	E_B	= 0.67
Area C	=	39635.56767	10%	Area C	=	39636	10%	E_C	= 0.99
Area D	=	0	0%	Area D	=	317085	80%	E_D	= 1.97
Total Area	=	396355.6767	100%	Total Area	=	396355.6767	100%		

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted } E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

Historic E	=	0.61 in.	Developed E	=	1.74 in.	

On-Site Volume of Runoff: V360 = E*A / 12

Historic V_{360}	=	20148 CF	Developed V_{360}	=	57538	CF

On-Site Peak Discharge Rate: $Qp = Q_{pA}A_A + Q_{pB}A_B + Q_{pC}A_C + Q_{pD}A_D / 43{,}560$

For Precipitation Zone 1

Q_{pA}	=	1.29	Q_{pC}	=	2.87
Q_{pB}	=	2.03	Q_{pD}	=	4.37

Historic Q_p	=	16.5 CFS	Developed Q_p	=	36.3	CFS

Per the approved Drainage Master Plan for The Rolling Hills Subdivision prepared by Isaacson & Arfman, P.A. and dated January, 1996, PROPERTY will be divided into two drainage basins.

INDIVIDUAL TRACT CALCULATIONS

TRACT NO: A-1		DESCRIPTION	TOTAL TRACT DISCHARGE
Area of basin flows =	208789	SF =	4.7931 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 30309 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 19.1 cfs

TRACT NO: A-2		DESCRIPTION	TOTAL TRACT DISCHARGE
Area of basin flows =	43935	SF =	1.0086 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 6378 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 4.0 cfs

TRACT NO: A-3		DESCRIPTION	TOTAL TRACT DISCHARGE
Area of basin flows =	59648	SF =	1.3693 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 8659 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 5.5 cfs

TRACT NO: A-4		DESCRIPTION	TOTAL TRACT DISCHARGE
Area of basin flows =	48018	SF =	1.1023 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 6971 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 4.4 cfs

TRACT NO: A-5		DESCRIPTION	TOTAL TRACT DISCHARGE
Area of basin flows =	35966	SF =	0.8257 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

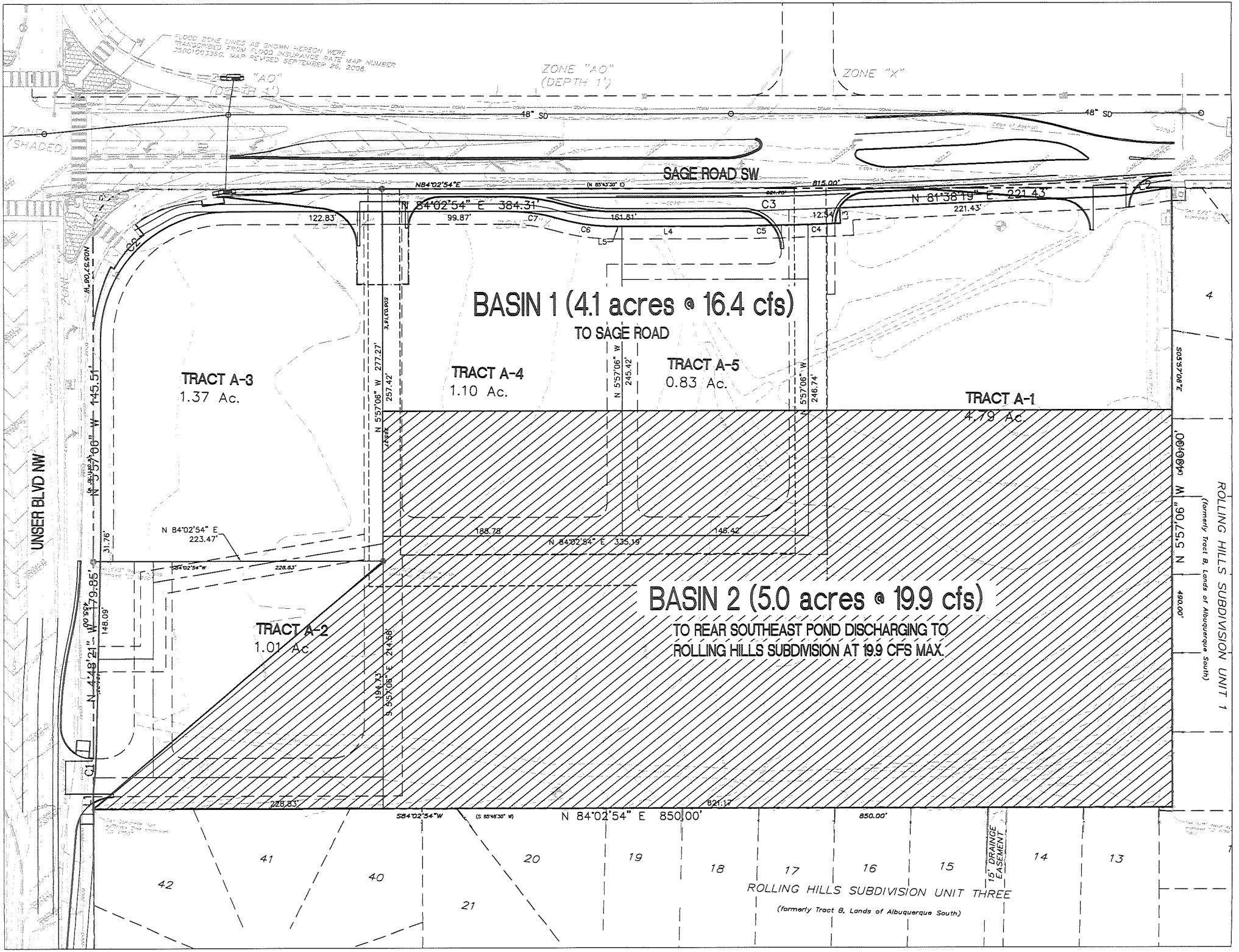
V_{360} = 5221 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 3.3 cfs

TOTAL AREA = 9.1 ACRES

Q_{100} = 36.3 cfs


FLOOD ZONE LINES AS SHOWN HEREON WERE TRANSCRIBED FROM FLOOD INSURANCE RATE MAP NUMBER 35001C0133G, MAP REVISED SEPTEMBER 26, 2008.
ZONE "AO" (DEPTH 1')
ZONE "AO" (DEPTH 1')
ZONE "X"
ZONE "X" (SHADED)
48" SD
48" SD
SAGE ROAD SW
N84°02'54"E
(N 85°43'30" E)
815.00'
N 84°02'54" E 384.31'
N 81°38'19" E 221.43'
221.43'
122.83'
99.87'
161.61'
12.54'
C1
C2
C3
C4
C5
C6
C7
L4
L5
BASIN 1 (4.1 acres @ 16.4 cfs)
TO SAGE ROAD
TRACT A-3
1.37 Ac.
TRACT A-4
1.10 Ac.
TRACT A-5
0.83 Ac.
TRACT A-1
4.79 Ac.
UNSER BLVD NW
N 5°57'06" W 145.51'
N 5°57'06" W 277.27'
N 5°57'06" W 257.42'
N 5°57'06" W 245.42'
5°57'06" W 246.74'
S 5°57'06" E
N 5°57'06" W 490.00'
(formerly Tract B, Lands of Albuquerque South)
ROLLING HILLS SUBDIVISION UNIT 1
N 84°02'54" E 223.47'
31.76'
S84°02'54"W 228.83'
188.78'
N 84°02'54" E 335.19'
146.42'
N 4°48'21" W 179.85'
148.09'
BASIN 2 (5.0 acres @ 19.9 cfs)
TO REAR SOUTHEAST POND DISCHARGING TO ROLLING HILLS SUBDIVISION AT 19.9 CFS MAX.
TRACT A-2
1.01 Ac
194.73'
S 5°57'06" E 214.68'
228.83'
S84°02'54"W
(S 85°48'30" W)
N 84°02'54" E 850.00'
821.17'
850.00'
15' DRAINGE EASEMENT
ROLLING HILLS SUBDIVISION UNIT THREE
(formerly Tract B, Lands of Albuquerque South)
41
42
40
21
20
19
18
17
16
15
14
13
4

BASIN 1 will free discharge to Sage Road to enter the existing public storm drain via existing and / or new inlets. The overall basin will consist of the following Tract portions:

Portion of Tract A-1:	1.08 Acres	4.3 CFS
Portion of Tract A-2:	0.50 Acres	2.0 CFS
Portion of Tract A-3:	1.37 Acres	5.5 CFS
Portion of Tract A-4:	0.67 Acres	2.7 CFS
Portion of Tract A-5:	0.49 Acres	2.0 CFS

Total Discharge to Sage Road = 16.4 CFS (4.1 acres).

BASIN 2 consisting of the remaining portions of the site tracts is permitted a to free discharge 19.9 cfs to the existing public 15' wide Drainage R.O.W. dedicated to the City of Albuquerque by the Plat for Rolling Hills Subdivision, Unit Three, dated March 1997 (see attached copy of plat) located near the southeast portion of PROPERTY. The overall basin will consist of the following Tract portions:

Portion of Tract A-1:	3.71 Acres	14.8 CFS
Portion of Tract A-2:	0.51 Acres	2.0 CFS
Portion of Tract A-4:	0.43 Acres	1.7 CFS
Portion of Tract A-5:	0.34 Acres	1.3 CFS

Total Discharge to ~~Rear Detention Pond~~ Drainage Row = 19.9 CFS (5.0 acres).

Flow in excess of the allowable tract discharge rate will be detained within detention ponds on each tract. See basin calculations and supplemental information for a more detailed analysis of site discharge.

TRACT PORTIONS DRAINING TO Sage Rd.

BASIN NO. A-1		DESCRIPTION		Portion To Sage Road
Area of basin flows =	46982	SF	=	1.08 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 6820 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 4.3 cfs

BASIN NO. A-2		DESCRIPTION		Portion To Sage Road
Area of basin flows =	21640	SF	=	0.50 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 3141 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 2.0 cfs

BASIN NO. A-3		DESCRIPTION		Portion To Sage Road
Area of basin flows =	59573	SF	=	1.37 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 8648 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 5.5 cfs

BASIN NO. A-4		DESCRIPTION		Portion To Sage Road
Area of basin flows =	29253	SF	=	0.67 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 4247 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 2.7 cfs

BASIN NO. A-5		DESCRIPTION		Portion To Sage Road
Area of basin flows =	21384	SF	=	0.49 Ac.

The following calculations are based on Treatment areas as shown in table to the right

LAND TREATMENT	
A =	0%
B =	10%
C =	10%
D =	80%

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.74 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 3104 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_P = 2.0 cfs

TOTAL AREA = 4.1 acres

Q_{100} = 16.4 cfs

Tract Portions Draining to SE R.O.W.

BASIN NO. A-1		DESCRIPTION		Portion To SE Drainage R.O.W.
Area of basin flows =	161807 SF	=	3.71 Ac.	
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)			A =	0%
Weighted E =	1.74 in.		B =	10%
Sub-basin Volume of Runoff (see formula above)			C =	10%
V_{360} =	23489 CF		D =	80%
Sub-basin Peak Discharge Rate: (see formula above)				
Q_P =	14.8 cfs			

BASIN NO. A-2		DESCRIPTION		Portion To SE Drainage R.O.W.
Area of basin flows =	22280 SF	=	0.51 Ac.	
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)			A =	0%
Weighted E =	1.74 in.		B =	10%
Sub-basin Volume of Runoff (see formula above)			C =	10%
V_{360} =	3234 CF		D =	80%
Sub-basin Peak Discharge Rate: (see formula above)				
Q_P =	2.0 cfs			

BASIN NO. A-4		DESCRIPTION		Portion To SE Drainage R.O.W.
Area of basin flows =	18833 SF	=	0.43 Ac.	
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)			A =	0%
Weighted E =	1.74 in.		B =	10%
Sub-basin Volume of Runoff (see formula above)			C =	10%
V_{360} =	2734 CF		D =	80%
Sub-basin Peak Discharge Rate: (see formula above)				
Q_P =	1.7 cfs			

BASIN NO. A-5		DESCRIPTION		Portion To SE Drainage R.O.W.
Area of basin flows =	14598 SF	=	0.34 Ac.	
The following calculations are based on Treatment areas as shown in table to the right			LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)			A =	0%
Weighted E =	1.74 in.		B =	10%
Sub-basin Volume of Runoff (see formula above)			C =	10%
V_{360} =	2119 CF		D =	80%
Sub-basin Peak Discharge Rate: (see formula above)				
Q_P =	1.3 cfs			

Total Area = 5.0 Acres

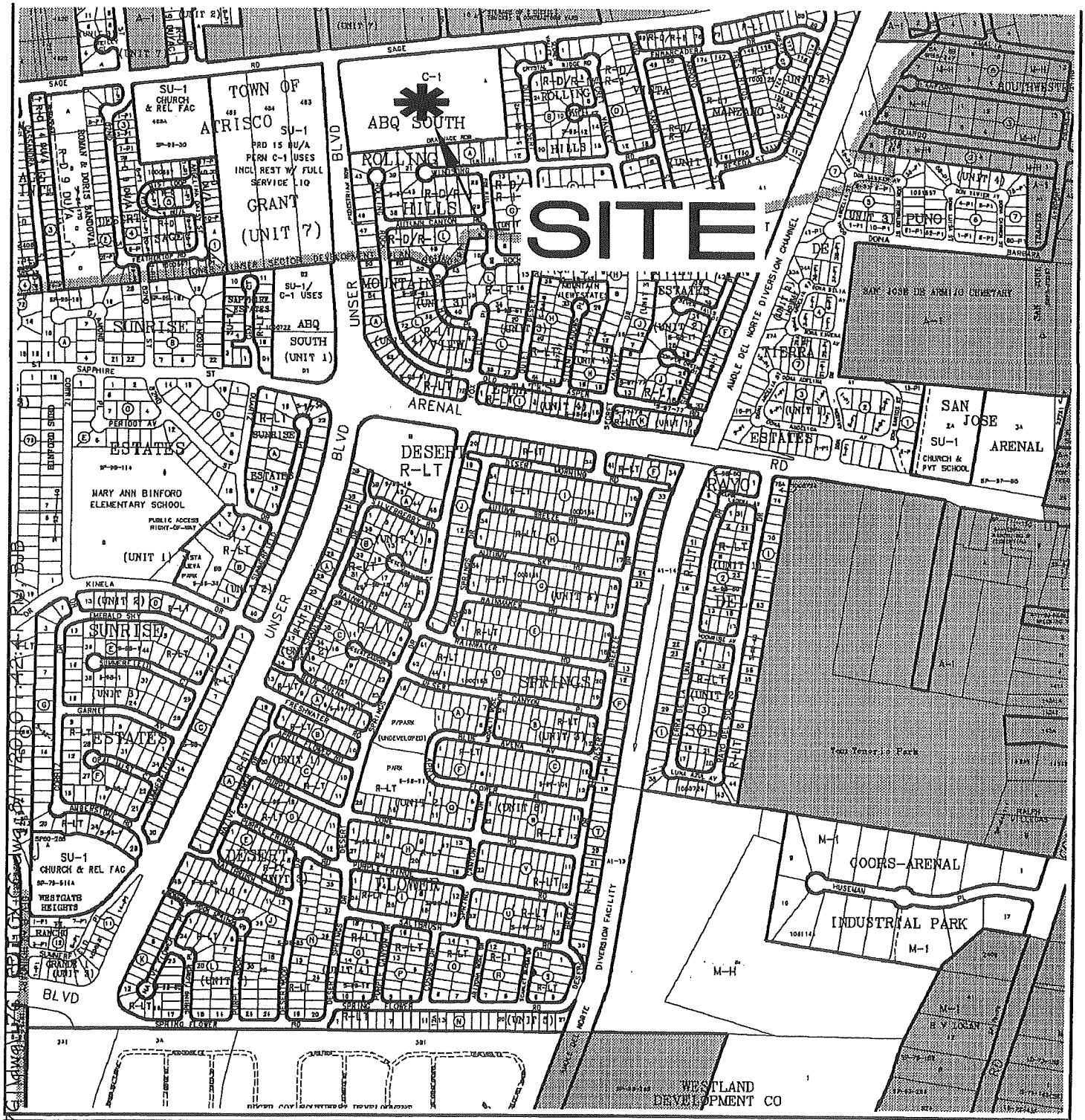
Q_{100} = 19.9 cfs

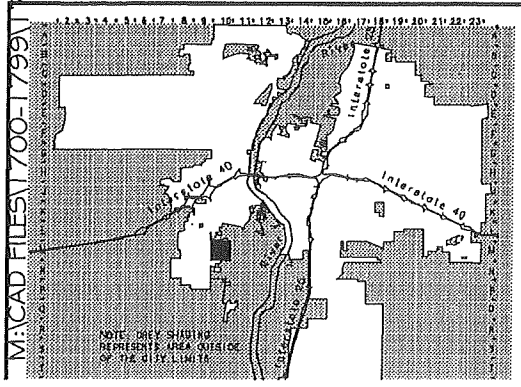
Isaacson & Arfman, P.A. Consulting Engineering Associates

*Thomas O. Isaacson, PE & LS * Fred C. Arfman, PE * Åsa Nilsson-Weber, PE*

EXHIBITS

- **City of Albuquerque Vicinity Map M-10**
- **Aerial photograph of site and surrounding area**
- **Flood Plain exhibit**
- **Rolling Hills Subdivision Master Drainage Plan referencing allowable PROPERTY discharge**
- **Rolling Hills Subdivision Unit Three Plat (recorded June 20, 1997) with 15' drainage R/W granted**
- **Sage and Unser Marketplace Preliminary Plat**
- **Master Drainage Plan**





GRAPHIC SCALE IN FEET

250 0 750 1000

Albuquerque Geographic Information System

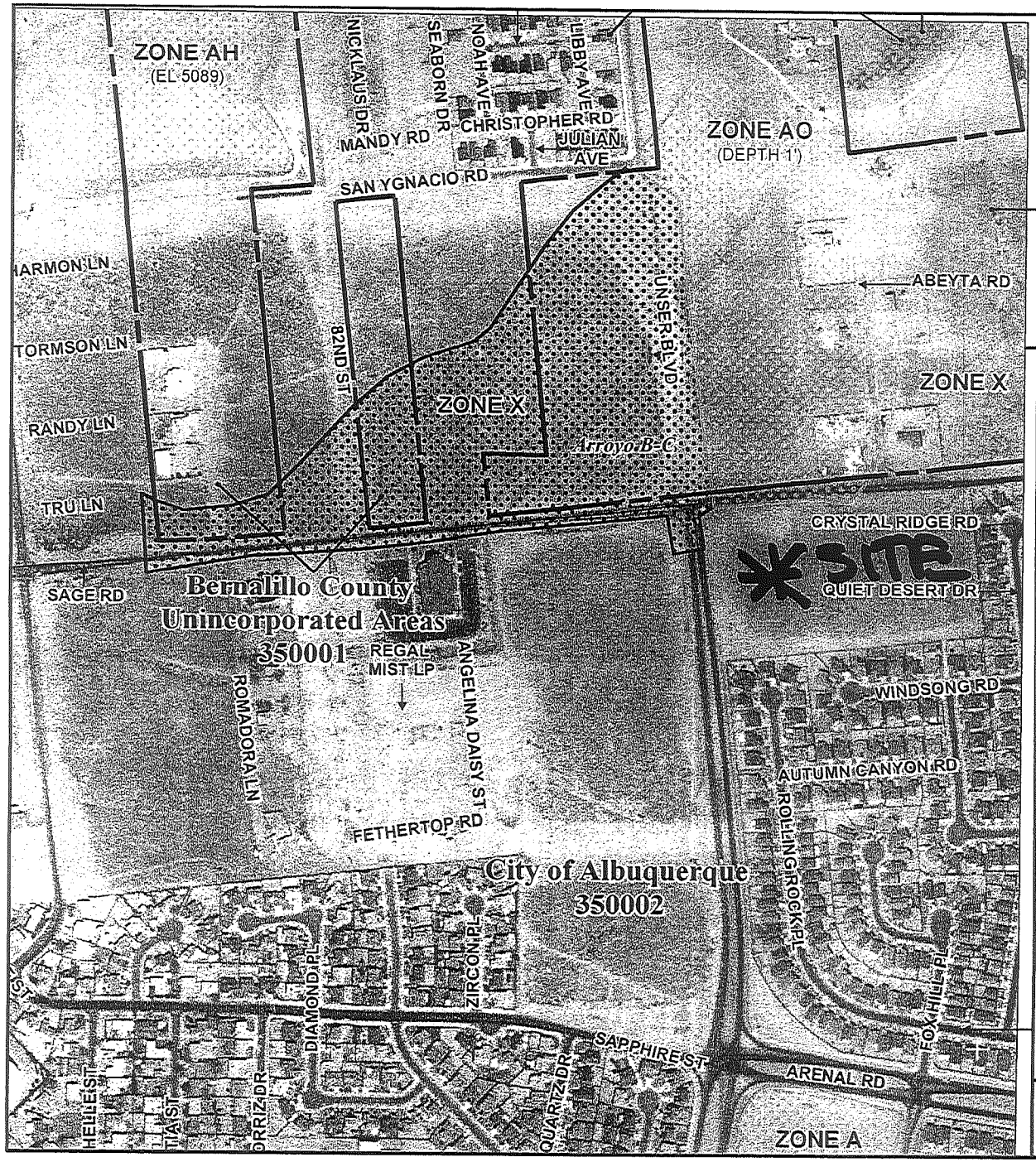
PLANNING DEPARTMENT

Zone Atlas Page

M-10-Z

Map Amended through February 01, 2005


ABENTA
INGER



MAP SCALE 1" = 500'

0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0336G

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO

AND INCORPORATED AREAS

PANEL 336 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0336	G
BERNALILLO COUNTY UNINCORPORATED AREAS	350001	0336	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community

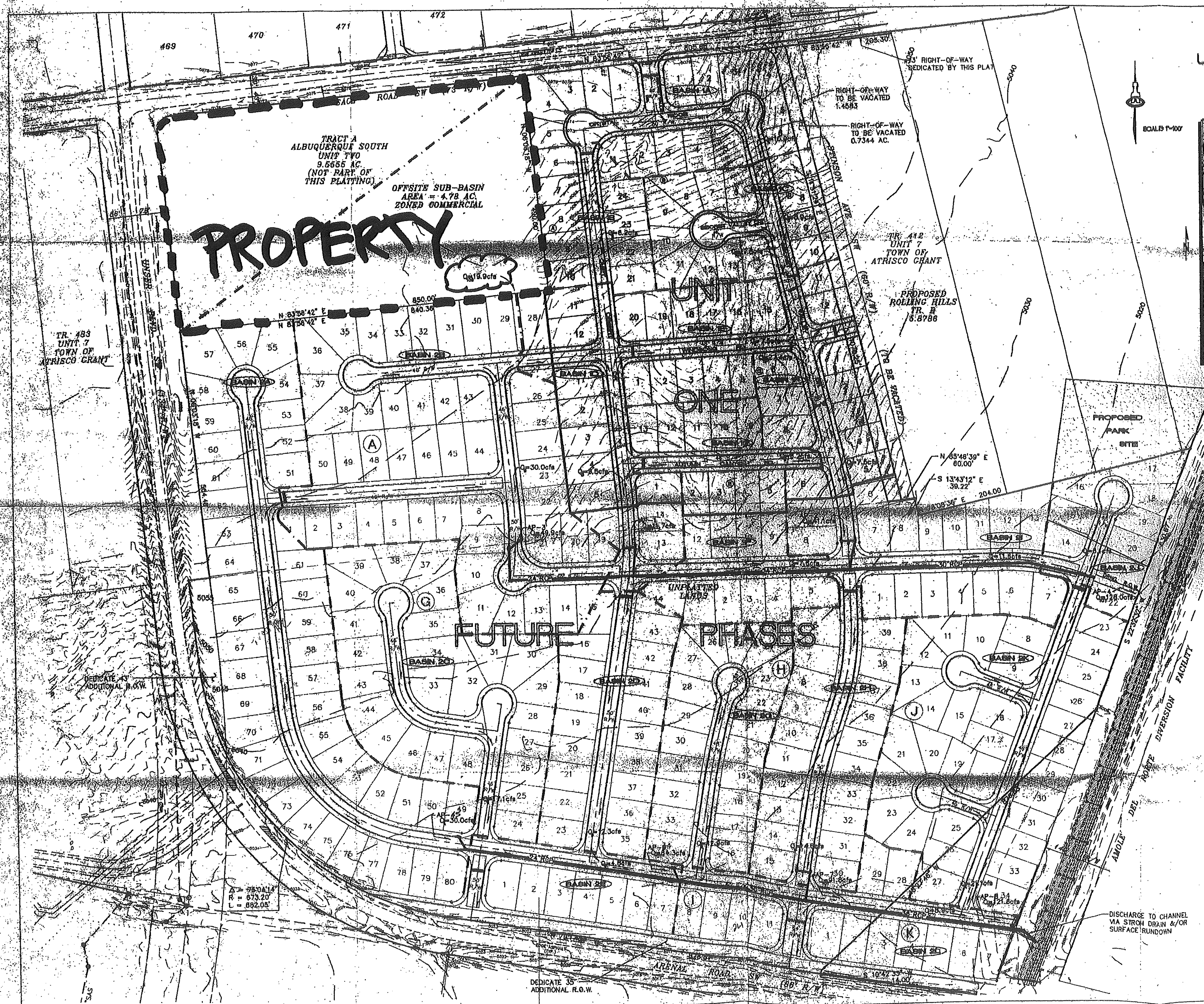
MAP NUMBER
35001C0336G

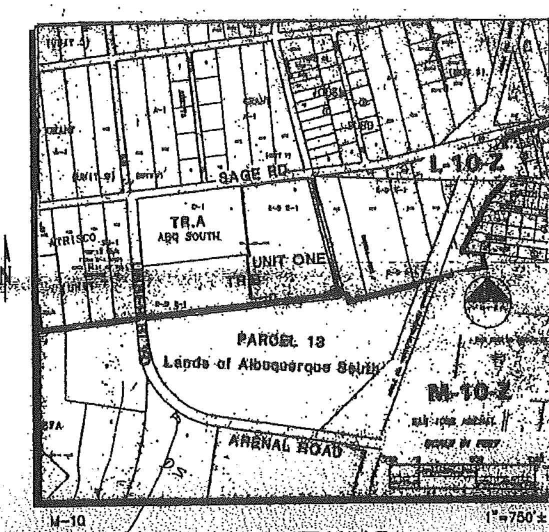
MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency

MASTER DRAINAGE PLAN
LONGFORD HOMES SUBDIVISION
UNIT ONE THROUGH ALL FUTURE PHASES

JANUARY 1999





VICINITY MAP

AP	Q_{100} (CFS)	OUTFALL
1	11.7	24"RCP @ S=1.5%
2	41.1	30"RCP @ S=2.5% & STREET FLOW
3	49.9	24"RCP @ S=1.5% & STREET FLOW
4	128.0	30"RCP DISCHARGES TO RUNDOWN TO AMOLE
5	30.0	24"RCP @ S=2%
6	64.3	30"RCP @ S=2.2% & STREET FLOW
7	91.8	36"RCP @ S=2.7% & STREET FLOW
8	121.8	36"RCP @ S=3.0% DISCHARGES TO RUNDOWN TO AMOLE

BASIN ID	AREA (AC)	Q_{100} (CFS)
1A	3.31	10.7
1B	1.86	6.1
1C	2.69	8.7
1D	1.68	5.4
1E	2.28	7.4
1F	2.28	7.4
1G	1.86	6.1
2A	9.11	29.6
2B	9.11	29.6
2C	5.18	16.8
2D	3.73	12.1
2E	1.45	4.7
2F	2.28	7.4
2G	3.93	12.8
2H	4.14	13.5
2I	3.52	11.4
2J	1.86	6.1
2K	6.62	21.5
2L	2.69	8.7

LONGFORD HOMES SUBDIVISION

MASTER DRAINAGE PLAN

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque New Mexico

1/19/99

SHEET OF

CITY OF ALBUQUERQUE

October 29, 2010

Fred C. Arfman, PE
Isaacson & Arfman, PA
128 Monroe St. NE.
Albuquerque, NM 87108

Re: Sage & Unser Marketplace Master Drainage Plan
Engineer's Stamp dated 10/18/10 (M10/D019)

Dear Mr. Arfman,

Based upon the information provided in your submittal received 10-19-10, the above referenced plan is approved for Preliminary Plat Action by DRB.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Curtis Cherne, P.E.
Senior Engineer, Planning Department.
Development and Building Services

C: File
Brad Bingham

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

#1802

ok

DRAIN[illegible]E AND TRANSPORTATION INFORMAT[illegible]N SHEET
(Rev. 12/05)

PROJECT TITLE: Unser and Sage Marketplace ZONE MAP/DRG. FILE M10 /D019
DRB#: 1008203 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Tract A, Unit 1-B, Lands of Albuquerque South
CITY ADDRESS:

ENGINEERING FIRM: ISSACSON & ARFMAN, PA CONTACT: Fred Arfman
ADDRESS: 128 MONROE NE PHONE: 268-8828
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87108

OWNER: Unser Sage Parnership. CONTACT: George Reinhart
ADDRESS: CO 2325 San Pedro Dr. NE, Suite 2B PHONE: 884-9110
CITY, STATE: Albuquerque, NM ZIP CODE: 87110

ARCHITECT: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

SURVEYING FIRM: Aldrich Surveying LICENSED SURVEYOR: Tim Aldrich
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CONTRACTOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

TYPE OF SUBMITTAL:
- X DRAINAGE REPORT (resubmittal)
- _____ DRAINAGE PLAN 1st SUBMITTAL
- _____ DRAINAGE PLAN RESUBMITTAL
- _____ CONCEPTUAL G & D PLAN
- _____ GRADING PLAN
- _____ EROSION CONTROL PLAN
- _____ ENGINEER'S CERT (HYDROLOGY)
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT
- _____ ENGINEER/ARCHITECT CERT (TCL)
- _____ ENGINEER/ARCHITECT CERT (DRB S.P.)
- _____ ENGINEER/ARCHITECT CERT (AA)
- _____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL SOUGHT:
- _____ SIA/FINANCIAL GUARANTEE RELEASE
- X PRELIMINARY PLAT APPROVAL
- _____ S. DEV. PLAN FOR SUB'D APPROVAL
- _____ S. DEV. FOR BLDG. PERMIT APPROVAL
- _____ SECTOR PLAN APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ FOUNDATION PERMIT APPROVAL
- _____ BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY (PERM)
- _____ CERTIFICATE OF OCCUPANCY (TEMP)
- _____ GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ WORK ORDER APPROVAL
- _____ OTHER (SPECIFY)

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WAS A PRE-DESIGN CONFERENCE ATTENDED:
- _____ YES
- _____ NO
- _____ COPY PROVIDED

RESUBMITTED 10.18.10

SUBMITTED BY: ISAACSON & ARFMAN: Fred Arfman DATE: October 12, 2010

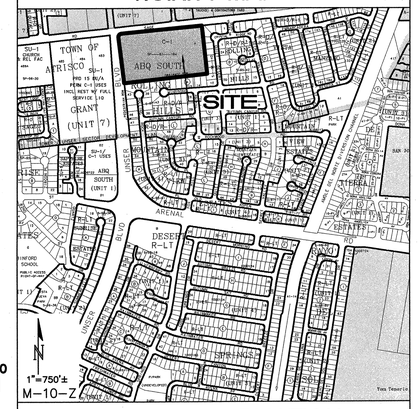
Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

VICINITY MAP



PROJECT INFORMATION

PROPERTY: THE SITE IS AN UNDEVELOPED COMMERCIAL PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP M-10-Z. THE SITE IS BOUND TO THE EAST AND SOUTH BY DEVELOPED RESIDENTIAL PROPERTY, TO THE WEST UNSER BLVD. SW, AND TO THE NORTH BY SAGE ROAD SW.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS ARE EXPECTED TO INCLUDE NEW COMMERCIAL BUILDINGS, SITE WALKS, PAVING AND ASSOCIATED LANDSCAPING. THE OVERALL PROPERTY WILL CONSIST OF TWO DRAINAGE BASINS. BASIN 1 WILL DISCHARGE TO SAGE ROAD TO ENTER THE PUBLIC STORM DRAIN SYSTEM. BASIN 2 WILL DISCHARGE TO THE SOUTHEAST END OF THE PROPERTY TO THE EXISTING PUBLIC DRAINAGE R.O.W. AT A RATE NOT TO EXCEED 19.9 CFS. THE PROPERTY WILL BE DEVELOPED BY TRACT. EACH TRACT WILL PREPARE A DRAINAGE A GRADING PLAN FOR C.O.A. HYDROLOGY REVIEW AND APPROVAL FOR BUILDING PERMIT SPECIFICALLY ADDRESSING THE FOLLOWING:

- INDIVIDUAL DRAINAGE AND GRADING PLAN
- MAXIMUM ALLOWABLE DISCHARGE BASED ON LAND TREATMENT OF 10% B, 10% C, 80% D. (ON-SITE DETENTION REQUIRED FOR EXCESS).
- CONSTRUCTION OF INTERIM EROSION CONTROL (DESILTATION PONDS, TEMPORARY SWALES, PONDING) AS REQUIRED TO PROTECT UNDEVELOPED PORTION OF PROPERTY.
- MASTER PLAN POND AT SOUTHEAST CORNER OF SITE WILL NEED TO BE DESIGNED AND CONSTRUCTED AS PART OF THE FIRST TRACT TO DEVELOP.

BENCHMARK: VERTICAL DATUM IS BASED AGRS MONUMENT "1-M10", A BRASS DISC SET IN CONCRETE LOCATED IN THE SOUTHEAST QUADRANT OF THE INTERSECTION OF UNSER BLVD. AND SAGE RD. SW. ELEVATION=5082.757 (NAVD88)

SURVEYOR: ALDRICH LAND SURVEYING: 505-884-1990

OFF-SITE DRAINAGE: NO OFF-SITE DRAINAGE WILL PASS THROUGH THE OVERALL PROPERTY. ALL TRACTS WILL BE COVERED BY A BLANKET DRAINAGE EASEMENT.

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FRED C. ARFMAN NEW MEXICO 7322 PROFESSIONAL ENGINEER
10.18.10

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Consulting Engineering Associates
128 Monroe Street N.E.
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Ph. 505-268-8828 Fax. 505-268-2632

1761 EXH-DRG STUDY.dwg Oct 18,2010

UNSER AND SAGE MARKETPLACE SITE DEVELOPMENT PLAN FOR SUBDIVISION

UNSER / SAGE PARTNERSHIP

MASTER DRAINAGE PLAN

Date:	No.	Revisions	Date	Job No.
OCT. 2010				1761
Drawn By: .				
Ckd By: .				