City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 6, 2003

Wallace Bingham, P.E.
Bingham Engineering
6344 Belcher Ave.
Albuquerque, NM 87109

Re: Eagle Rock Estates Unit II Pond Reclamation, Final Plat
Engineer's Stamp dated 4-22-03 (C19/D18)
Certification dated 9-14-03

Dear Mr. Bingham,

Based upon the information provided in your submittal dated 9-15-03, the above referenced project is approved for final plat signoff by the City Engineer.

If you have any questions, you can contact me at 924-3981.

Sincerely,

Kristal D. Metro
Engineering Associate, Planning Dept.
Development and Building Services

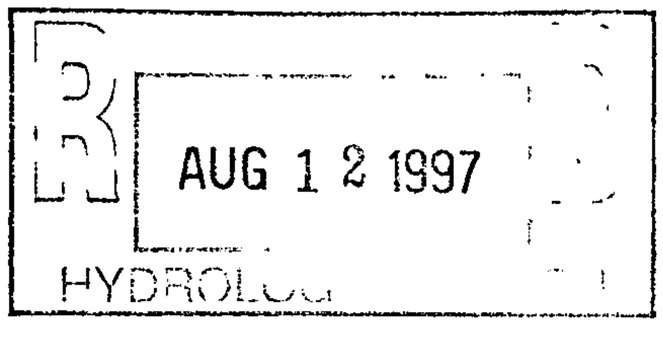
C: Brad Bingham
file

DRAINAGE REPORT

for

EAGLE ROCK ESTATES UNIT 2

AUGUST 1997



I. LOCATION AND DESCRIPTION

The proposed Eagle Rock Estates Unit 2 is comprised of approximately 8.0 acres and is located in North Albuquerque Acres (Figure 1). Proposed development includes the infrastructure to support the development of 46 single family residential homes.

The topographic relief in the area is in an westerly direction at a slope of approximately 3.4 percent.

The FEMA map indicates that all of the site is within the 100-year floodplain (Figure 2). AMAFCA has submitted a LOMR to FEMA to remove the floodplain based on the dike constructed at Wyoming and Louisiana. To date, AMAFCA has not heard from FEMA.

II. DRAINAGE DESIGN CRITERIA AND PREVIOUS REPORTS

The design criteria used in this report was in accordance with Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria, January 1993 edition. The drainage management plan for this project is based on the previously approved ***Eagle Rock Subdivision Conceptual Drainage Master Plan Report, (C18/D39)*** *dated April, 1997 and the supplemental information dated June 12, 1997. The Eagle Rock Subdivision Future Conditions Exhibit from their supplemental information with revised flows and flow patterns is included in the appendix pocket. Their previously calculated flows for future conditions is reproduced in this report and shown in Table 1. These flows were used in this project storm drain design.*

III. EXISTING DRAINAGE CONDITIONS

Under existing drainage conditions, runoff flows in a westerly direction through the site in two roughly defined arroyos. Offsite flows enter the site from the east. Flows in Eagle Rock to the north and Oakland to the south continue in a westerly direction past Louisiana.

IV. FUTURE DRAINAGE CONDITIONS

A. INTERIM CONDITIONS

For the interim condition a retention pond will be constructed in the north west corner of Unit 2. All the onsite drainage will be intercepted by a series of inlets at the north end of Moonstone Drive. A waterblock at the Jasper Drive/Oakland Avenue intersection will prevent offsite flows from entering the site. Inlets in Louisiana and the north side of Oakland at Louisiana will intercept the flows from the new pavement constructed as part of Unit 2. The retention pond will be sized to retain 2.15 acre-feet of runoff which is the 100-year 10-day storm as determined in the Eagle Rock Conceptual Drainage Master Plan. The pond will have 2:1 side slopes, will be 20.0 feet deep and will be fenced.

The storm drain in Louisiana, from Oakland to Eagle Rock and the inlets on the south side of Eagle Rock will be built with Unit 2 and will be sized to carry the 100-year "future conditions" runoff as determined in the Eagle Rock Conceptual Drainage Master Plan (see Table 1). The storm drain connection in Oakland will be made from Louisiana to the storm drain presently under construction as part of the Quail Springs Subdivision. A plug will be placed at the north end of manhole #2 so that flows from Louisiana and Eagle Rock Avenue will be directed to the retention pond. A plug will be placed at the east end of manhole #4 and shall remain in place until all downstream improvements to the la Cueva channel and the storm drain connection from Louisiana and Modesto to the channel are in place.

A 1.0 foot high floodwall along the east property boundary will be constructed since the entire site is within the

100-year floodplain with average flood depths of 1.0'. In the future flows in Eagle Rock east of Unit 2 will be intercepted by additional inlets constructed as part of future development that occurs upstream. Inlets adjacent to Unit 2 in Oakland Avenue are presently under construction as part of the Quail Springs Subdivision to the south. As part of their development addition inlets upstream of Unit 2 are being constructed.

A. ULTIMATE CONDITIONS

For the ultimate conditions, the onsite retention pond will disappear. The storm drain connection from the low point in the knuckle to the storm drain in Louisiana will be built. But for this ultimate condition to occur the storm drain extension from the Louisiana/Modesto intersection to the La Cueva Channel will have to be built and the La Cueva Channel improvements will have to be in place.

TABLE 1

FUTURE CONDITION
BASIN HYDROLOGIC CHARACTERISTICS
AND 100-YEAR FLOW RATES
(Rev. 6/97)

UNIT I

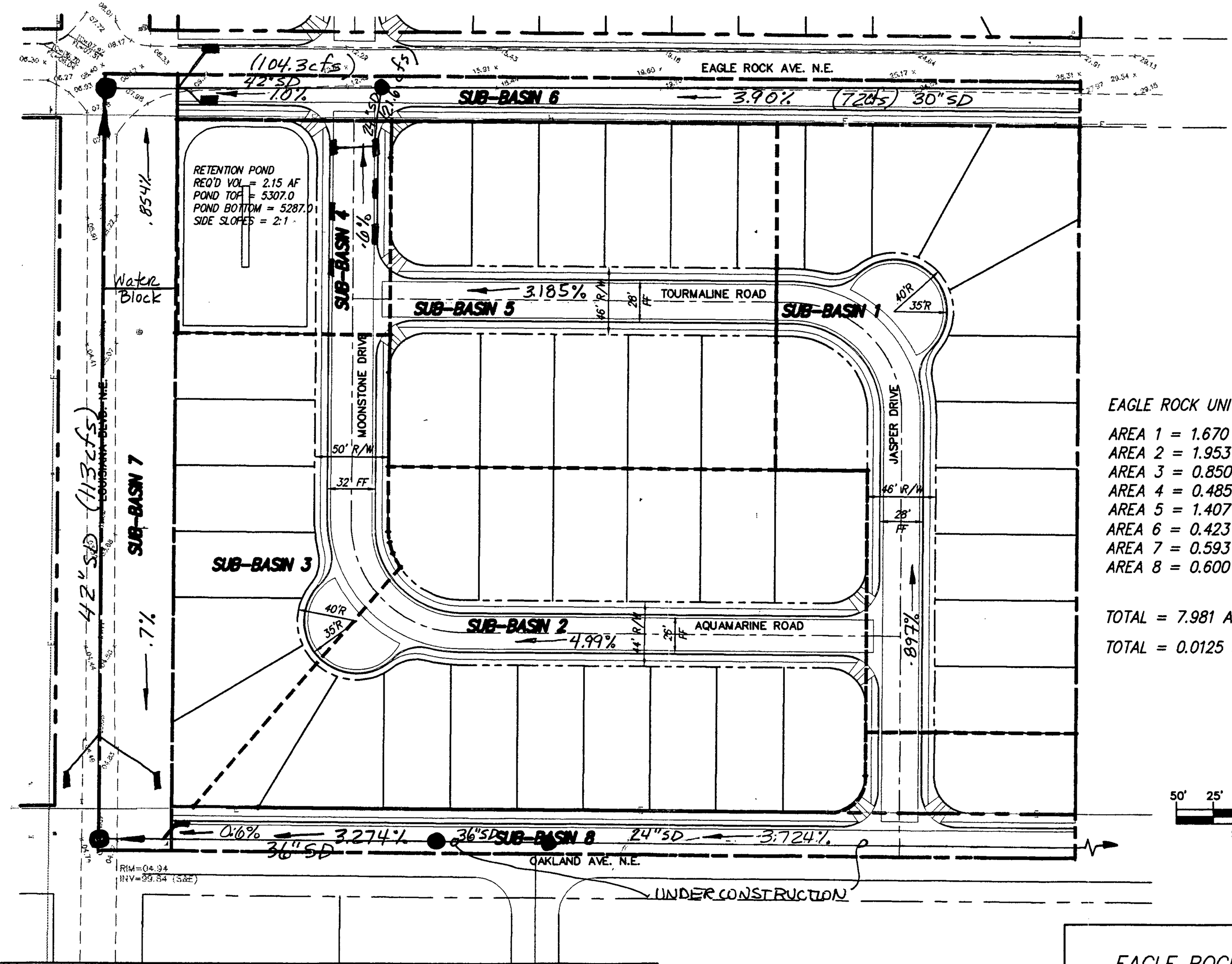
BASIN	AREA SQ MI	%A	%B	%C	%D	TP HRS	V100 AC-FT	Q100 CFS
101	.0313	0	35	15	50	.13	2.98	76.1
102	.0438	0	25	15	60	.13	4.58	113.2
103	.0125	0	35	15	50	.13	1.31	32.3
104	.0125	0	25	15	60	.13	1.31	32.3

UNIT II

BASIN	AREA SQ MI	%A	%B	%C	%D	TP HRS	V100 AC-FT	Q100 CFS
201	.0594	0	23	15	62	.13	6.320	155.34
203	.0156	0	80	13	7	.13	.846	27.64
204	.0172	0	35	15	50	.13	1.635	41.86
206	.0672	0	35	15	50	.20	6.388	128.97
207	.0234	0	10	50	40	.13	2.163	57.74
208	.0188	0	15	25	60	.13	2.001	49.59
301	.0250	0	30	15	55	.13	2.495	62.73
302	.0234	0	35	15	50	.13	2.224	56.94
303	.0516	0	30	15	55	.13	5.149	129.46
304	.0313	0	10	50	40	.13	2.893	77.23
305	.0141	0	15	25	60	.13	1.500	37.20

UNIT I FUTURE ULTIMATE CONDITION
FLOW RATES AT SELECTED LOCATIONS
(Rev. 6/97)

LOCATION	Q100 (cfs)	AREA (sq mi)
Oakland & Louisiana	113	.0438
Eagle Rock & Louisiana	249	.1001
Modesto & Louisiana	260	.1048



EAGLE ROCK UNIT 2

AREA 1 = 1.670 AC.	Q = 6.76 CFS
AREA 2 = 1.953 AC.	Q = 7.90 CFS
AREA 3 = 0.850 AC.	Q = 3.44 CFS
AREA 4 = 0.485 AC.	Q = 1.96 CFS
AREA 5 = 1.407 AC.	Q = 5.70 CFS
AREA 6 = 0.423 AC.	Q = 1.71 CFS
AREA 7 = 0.593 AC.	Q = 2.40 CFS
AREA 8 = 0.600 AC.	Q = 2.43 CFS

TOTAL = 7.981 AC. Q = 32.3 CFS

TOTAL = 0.0125 SQ.MI.

N

50' 25' 0 50' 100'

SCALE: 1" = 50'

EXHIBIT 3

EAGLE ROCK ESTATES UNIT 2 DRAINAGE BASIN BOUNDARIES

EAGEXU2.DWG\8-11-97\DLH

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                                      USER NO.= M_GOODWN.I01

                                        FROM  TO                        PEAK
          RUNOFF                      TIME TO    CFS        PAGE =    1
                      HYDROGRAPH    ID   ID          AREA      DISCHA
RGE       VOLUME       RUNOFF      PEAK     PER
    COMMAND         IDENTIFICATION   NO.  NO.       (SQ MI)      (CFS
)         (AC-FT)     (INCHES)  (HOURS)    ACRE     NOTATION

    START                                                 TIME=       .00

    RAINFALL  TYPE= 1                                     RAIN6=    2.450
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.52          .189       .59110    1.500    1.697 PER IMP=     .00
    COMPUTE NM HYD          101.10    -     1          .00670           7.28
.28          .211       .59110    1.500    1.697 PER IMP=     .00
    FINISH
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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 5, 1999

Mark Goodwin, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: Grading and Drainage Certification Plan for Eagle Rock Estates Unit 1 (C19/D19) Submitted for Release of Financial Guarantees, Engineer's Certification Stamp Dated 12/28/98.

Dear Mr. Goodwin:

The above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement per the Infrastructure List last revised on August 4, 1998, for the release of Financial Guarantees for Unit 1.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

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

c: Mark Pagels, Sunset West
Terri Martin, Work Order #580181
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 16, 1998

Mark Goodwin, P.E.
Mark Goodwin & Associates
P.O. Box 90606
Albuquerque, New Mexico 87199

RE: ***Grading and Drainage Certification Plan for Eagle Rock Estates Unit 2 (C19/D18) Submitted for Release of Financial Guarantees, Engineer's Stamp Dated 12/2/98.***

Dear Mr. Goodwin:

The above referenced plan is adequate to satisfy the Grading and Drainage Certification requirement per the Infrastructure List dated October 7, 1997, and last revised on March 17, 1998, for the release of Financial Guarantees for Unit 2.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

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

c: Mark Pagels, Sunset West
Terri Martin, Work Order #580182
File