City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

June 28, 1999

Mark Goodwin, PE
Mark Goodwin & Assoc, PA
P.O. Box 90606
Albuquerque, NM 87199

RE: ENGINEER'S CERTIFICATION FOR EAGLE ROCK ESTATES UNIT 4
RECEIVED JUN 2, 1999 FOR FINAL PLAT
ENGINEER'S STAMP DATED 6/1/99 (C-18/D39A)

Dear Mr. Goodwin:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification of drainage & grading for Final Plat. Contact the DRB to get the Plat signed.

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

Sincerely,

John P. Curtin, P.E.
Project Manager, PWD/Hyd

c: Inspector
Fred Aguirre, DRB 97-486

DRAINAGE REPORT

for

EAGLE ROCK ESTATES UNIT 4

OCTOBER 1997

I. LOCATION AND DESCRIPTION

The proposed Eagle Rock Estates Unit 4 is comprised of approximately 6.55 acres and is located in North Albuquerque Acres just west of the proposed Eagle Rock Estates Unit 1 between Modesto Avenue and Eagle Rock Avenue (Figure 1). Proposed development includes the infrastructure to support the development of 36 single family residential homes.

The topographic relief in the area is in an westerly direction at a slope of approximately 3.5 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. A master drainage management plan for this area in North Albuquerque Acres which included the Unit 3 property was prepared and approved by Hydrology this year and was called the ***Eagle Rock Subdivision Conceptual Drainage Master Plan Report, (C18/D39)*** *dated April, 1997 with supplemental information dated June 12, 1997. The results for their "existing drainage conditions" analysis were assumed still valid for purposes of this report. Their proposed interim and future drainage conditions presented in their report are being modified in this submittal because the project limits for the Eagle Rock Estates have been changed since the time of their approved plan.*

III. EXISTING DRAINAGE CONDITIONS

Under existing drainage conditions, runoff flows in a westerly direction through the site in one well defined arroyo. Offsite flows enter the site from the east. Flows in Eagle Rock Avenue to the south continue in a westerly direction within and along side street section.

IV. FUTURE DRAINAGE CONDITIONS

A. INTERIM CONDITIONS

For the interim condition a temporary retention pond will be constructed on two lots in the southwest corner of Unit 4 and retain a minimum of 1.58 acre-feet. The pond will have 2:1 side slopes protected with a 2" thick gravel mulch , will be 14.5 feet deep and will be fenced. All the onsite drainage will be intercepted by a series of inlets at the south end of Obsidian Street. A storm drain in Eagle Rock Avenue will be built from the Obsidian Street intersection west to the property line for the future connection into the proposed storm drain in Eagle Rock Avenue. For the interim condition, the storm drain flows will be diverted into the retention pond. A waterblock at the ~~Olivine/Oakland~~ Pumice / Modesto intersection will prevent offsite flows from entering the site.

1. Louisiana Blvd. and Modesto Avenue

Offsite flows generated east of the proposed Louisiana Blvd. centerline will be intercepted by the inlets in Louisiana Blvd. at Modesto Avenue and Oakland Avenue and by the temporary retention ponds in Unit 1 and 2. Any nuisance flows not intercepted will be prevented from crossing over Louisiana Blvd. by the crown section and instead will be directed south or north along the Louisiana Blvd. east flowline. Most of the offsite flows generated in the west half of Louisiana Blvd. will be directed north and then west along Modesto Avenue. Since Modesto Avenue west of Louisiana Blvd. does not presently exist,

all offsite flows in Modesto Avenue will be intercepted by the offsite temporary retention Pond along Unit 4 west property boundary as shown on the grading and drainage plan.

2. Eagle Rock Avenue

Offsite runoff in Eagle Rock Avenue adjacent to Unit 4 will continue to flow in a westerly direction following the same historical flow pattern. Eagle Rock Avenue is currently paved all the way to San Pedro Avenue. The proposed arterial Louisiana Blvd. crown section will prevent any offsite flows in Eagle Rock east of Louisiana Blvd. from crossing over Louisiana Blvd. Offsite flows in Eagle Rock Avenue east of Louisiana Blvd. will be intercepted by inlets in Eagle Rock at Louisiana Blvd.

B. ULTIMATE CONDITIONS

For the ultimate drainage conditions, the onsite temporary retention pond will disappear when the downstream storm drain improvements have been built. The temporary Modesto-Louisiana Retention pond will disappear when the adjacent property owner develops their site. At that time when development of their property occurs, these offsite flows will need to be addressed.

TABLE 1
EXISTING CONDITIONS
HYDROLOGIC CHARACTERISTICS
AND
100-YEAR FLOW RATES

BASIN	AREA SQ.MI.	% A	% B	% C	% D	TP HRS	V100 AC-FT	Q100 CFS
101	.0094	85	0	5	10	.13	.41	12.8
102	.0247	85	0	5	10	.13	1.07	33.5
103	.0112	85	0	5	10	.13	.49	15.2
201	.0254	85	0	5	10	.13	1.10	34.4
202	.0179	85	0	5	10	.13	.78	24.3
203	.005	85	0	5	10	.13	.22	6.8
204	.0095	85	0	5	10	.13	.41	12.9

TABLE 2

SUMMARY OF INLET CALCULATIONS

Eagle Rock Estates, Unit 4

LOCATION	CURB	WIDTH ft.	SLOPE %	Q cfs	DEPTH ft	EG ft	Q INLET cfs	#/TYPE of INLETS	REMAIN Q (cfs)
Schist Street	MTB	26' FF	4.156	11.8	0.24	0.51	N/A		
Schist Street	STD	26' FF	0.600	11.8	0.41	0.49	N/A		
Gabbro Street	MTB	28' FF	4.912	8.9	0.24	0.51	N/A		
Obsidian Street	STD	32' FF	0.600	24.7	0.51	0.64	6.4	2 DBL A	11.80
Obsidian Street	STD	32' FF	0.600	11.8	0.42	0.42	3.6	2 SGL C	4.60
Obsidian Street	STD	32' FF	0.600	4.6	0.31	0.36	1.8	2 SGL C	1.00

MTB = Mountable Curb
STD = Standard Curb

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D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 828-2200 FAX 797-9539
e-mail: dmg@swcp.com

PROJECT Eagle Rock IV
SUBJECT Hydrology Addendum
BY DMA DATE
CHECKED DATE
SHEET OF

Onsite Area = 6.325 acres = 0.009882 8 sq mi (refer to rpt. 12-8-97)

Single Family n = 46 units / 6.55 acres = 7.0

Tr. D = $7(72+5(7))^{.5}$ = 64.15 ≃ 64.2

Tr. C = 17.9

Tr. B = 17.9

Q100 (revised) = 26.0 cfs Q100 (previous) = 24.68 cfs

Vol. 100 = .975 Ac-Ft. Vol. 100 = .872 Ac-Ft.

	Area (acres)	Qrevised (cfs)	Qprevious (cfs)
SB-1	3.014	11.8	12.4
SB-2	2.284	8.9	9.4
SB-3	1.027	4.0	4.2

Req'd Volume = $V_{10DAY} = V_{360} + A_D \left(\frac{P_{10DAY} - P_{360}}{12}\right)$

$V_{10} = .942 + 6.325(.642)\left(\frac{4.9-2.6}{12}\right)$ = 1.72 Ac Ft

Design Volume Pond (11' depth)

$A_1 = 127' \times 86'$ = 10922 SF

$A_2 = 83 \times 42'$ = 3486 SF

$Vol = \frac{1}{3}(11)(10922 + 3486 + \sqrt{3486 \cdot 10922})$

= 75454 CF = 1.73 Ac-Ft.

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =10/27/1998
INPUT FILE = EAGLE4R.DAT USER NO.= M_GOODWN.I01

COMMAND	HYDROGRAPH ID NO.	AREA (SQ MI)	PEAK DISCH (CFS)	RUNOFF VOLUME (AC-FT)	RUN OFF (INCH)	TIME TO PEAK (HRS)	CFS PER ACRE	PAGE = 1 NOTATION
START					TIME= .00			
RAINFALL TYPE= 1					RAIN6= 2.450			
COMPUTE NM HYD	100.00 - 1	.00988	26.06	.942	1.78749	1.500	4.122	PER IMP= 64.20
COMPUTE NM HYD	101.00 - 1	.00093	2.60	.095	1.92318	1.500	4.374	PER IMP= 75.50
COMPUTE NM HYD	102.00 - 1	.00113	3.20	.118	1.95560	1.500	4.422	PER IMP= 78.20
COMPUTE NM HYD	103.00 - 1	.00067	1.92	.071	1.97721	1.500	4.475	PER IMP= 80.00
FINISH								

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e-mail: dmg@swcp.com

PROJECT Eagle Rock IV
SUBJECT Modesto Ave. Pond
BY DLH DATE 3-18-98
CHECKED ____ DATE ____
SHEET 2 OF 2

RETENTION VOLUME CALCS.

$$V_{10} = V_{360} + A_D\left(\frac{P_{10D} - P_{360}}{12}\right)$$

Treatment D = 22,240 SF = .51056 acres

$$V_{10} = (0.1106 - .0245)AF + .51056\left(\frac{4.9 - 2.6}{12}\right)$$

$$= .0861\,AF + .0979\,AF = 0.1840\,AF$$

POND DESIGN

Top of Pond = 5281.0 $\quad Area_T$ = 3733.6 SF

Bottom of Pond = 5278.0 $\quad Area_B$ = 2292.1 SF

Depth = 3.0 Ft.

$$\text{Design Volume} = \frac{1}{3}(\text{Depth})(A_T + A_B + \sqrt{A_T * A_B})$$

$$= \frac{1}{3}(3)(3733.6 + 2292.1 + \sqrt{3733.6 * 2292.1})$$

$$= 8951\ CF$$

$$= .205\ AF$$

Req'd Volume = 0.184 AF

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Eagle Rock Unit 4
SUBJECT LAND TREATMENT
BY _____ DATE _____
CHECKED _____ DATE _____
SHEET ____ OF ____

Eagle Rock Unit 4
OFFSITE

LOUISIANA BLVD.

PAV (37)(528') = 19,536 (75.5)
TR.B (12)(528') = 6,336 (24.5)

25,872 SF = .000928 SQMI

MODESTO

	Tr. D		TR. B	
PAV (29)(620) =	17980		6(620) =	3720
PAV (36)(75) =	2700	------	10(75) =	750
LOT 1-P1 =	3961	---- LOT 1-P1 TR.B =	2400	9811 SF = .225 Ac.
	24641 SF = (78.2%)		6870 SF = 21.8%	

TOTAL = 31,511 SF = .00113 SQMI

EAGLEROCK

PAV (24)(620) = 14880 (80%)
TR.B(6)(620) = 3720 (20%)

18600 SF = .00067 SQMI

ONSITE 6.55 ac - .225 = 6.325 ac. = .00988 SQMI
SINGLE FAMILY N = 36 UNITS/6.55 AC = 5.5
Tr. D = $7((5.5)^2 + 5(5.5))^{.5}$ = 53.2%
Tr. B = 23.4%
Tr. C = 23.4%

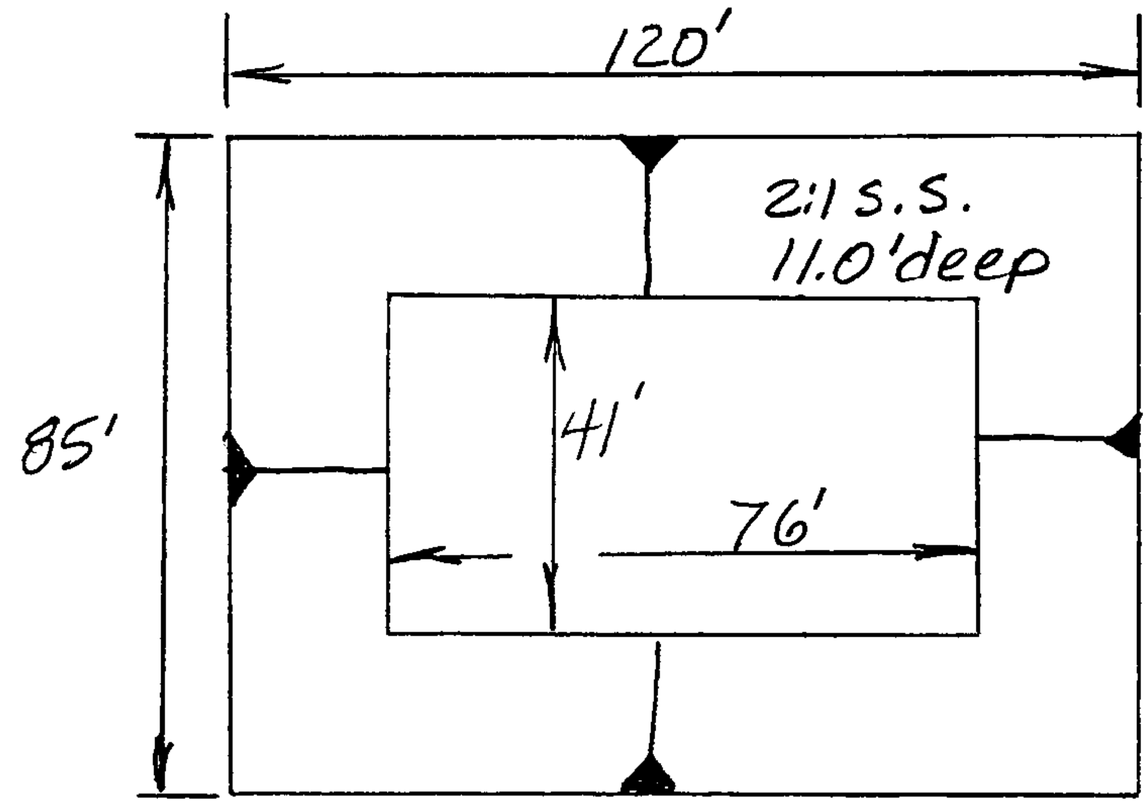
AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
RUN DATE (MON/DAY/YR) =10/16/1997
INPUT FILE = EAGLE4.DAT USER NO.= M_GOODWN.I01

COMMAND	HYDROGRAPH IDENTIFICATION NO.	FROM ID NO.	TO ID NO.	PEAK AREA (SQ MI)	RUNOFF DISCHARGE (CFS)	VOLUME (AC-FT)	TIME TO RUNOFF (INCHES)	CFS PEAK (HOURS)	PAGE = 1 PER ACRE NOTATION
START						TIME= .00			
RAINFALL TYPE= 1							RAIN6= 2.450		
COMPUTE NM HYD	100.00	-	1	.00988	24.68	.872	1.65541	1.500	3.903 PER IMP= 53.20
COMPUTE NM HYD	101.00	-	1	.00093	2.60	.095	1.92318	1.500	4.374 PER IMP= 75.50
COMPUTE NM HYD	102.00	-	1	.00113	3.20	.118	1.95560	1.500	4.422 PER IMP= 78.20
COMPUTE NM HYD	103.00	-	1	.00067	1.92	.071	1.97721	1.500	4.475 PER IMP= 80.00
FINISH									

D. G. Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Eagle Rock Unit IV
SUBJECT
BY DATE
CHECKED DATE
SHEET OF

Onsite Retention Pond



$$\text{Design Volume} = \frac{1}{2}(\text{Depth})(A_1 + A_2 + \sqrt{A_1 \cdot A_2})$$

$A_1 = 120 \times 85 = 10200$ SF

$A_2 = 76 \times 41 = 3116$ SF.

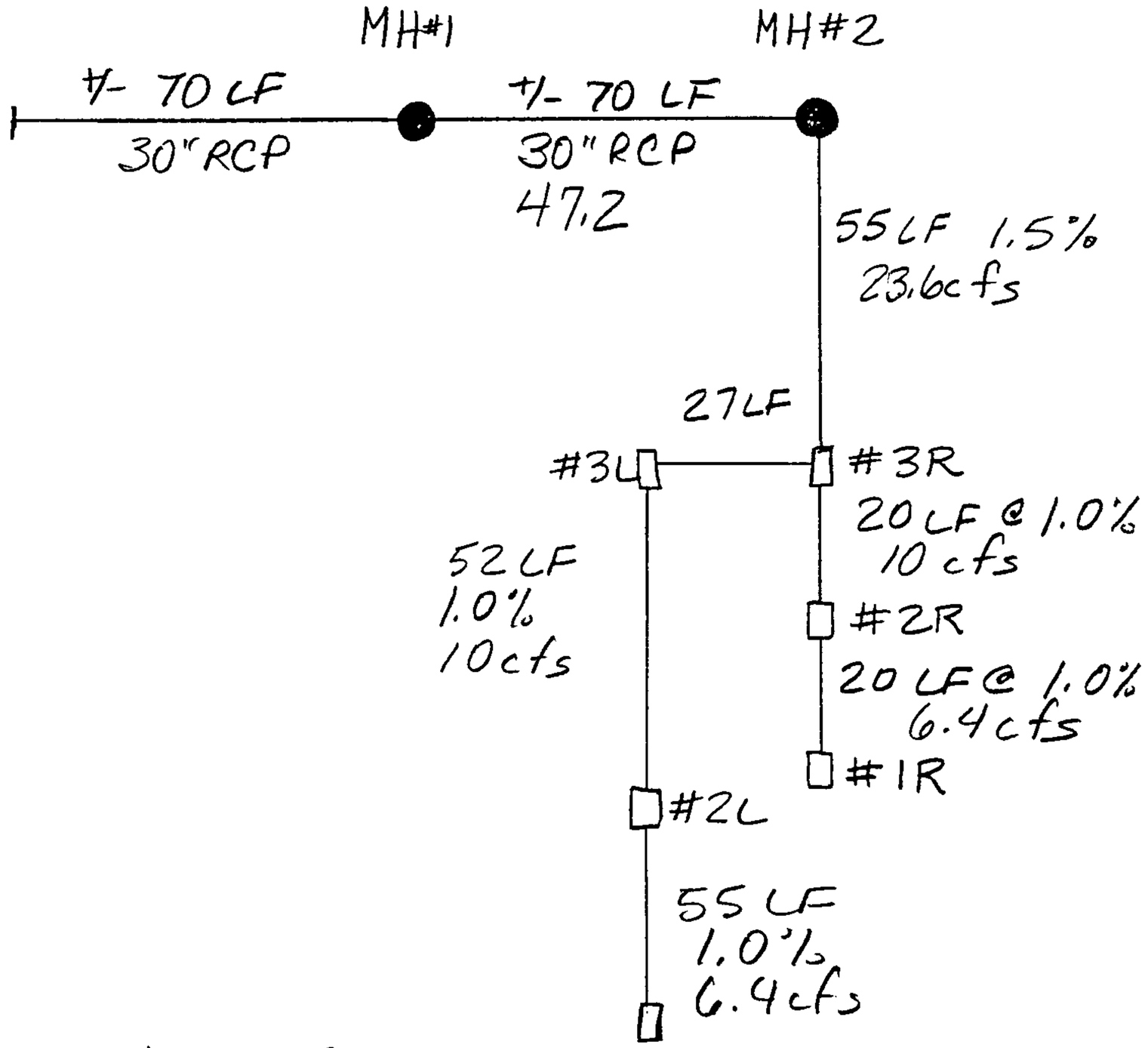
$$\text{Design Vol.} = \frac{1}{3}(11)(10200 + 3116 + \sqrt{10200 \cdot 3116})$$

$= 69,497$ SF $= 1.595$ AF

Vol. Req'd $= 1.579$ AF

D. k Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT St. Drain Unit IV
SUBJECT Prel. Calcs
BY DLH DATE 12-5-97
CHECKED _____ DATE _____
SHEET ____ OF ____

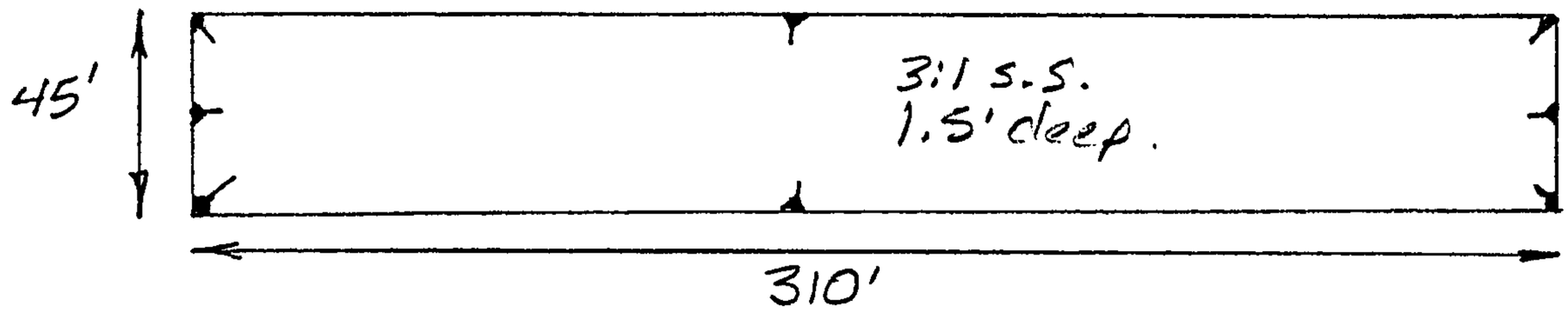


	Slope	Q	Depth	
#1L - #2L	1.0%	6.4 cfs	.95'	18" RCP
#2L - #3L	1.0%	10. cfs	1.5'	18" RCP
#3L - #3R	1.0%	11.8 cfs	pressure	18" RCP
#1R - #2R	1.0%	6.4 cfs	.95'	18" RCP
#2R - #3R	1.0%	10. cfs	1.5'	18" RCP
#3R - MH#2	1.5%	23.6 cfs	1.6'	24" RCP
MH2 - MH#1	3.5%	47.2 cfs.	1.55'	30" RCP
MH#1 - END	3.5%	53.1	1.7'	30" RCP

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Eagle Rock Unit IV
SUBJECT
BY DATE
CHECKED DATE
SHEET OF

Offsite Retention Pond



$$\text{Design Vol.} = \tfrac{1}{3}(\text{Depth})(A_1 + A_2 + \sqrt{A_1 \cdot A_2})$$

$A_1 = 310 \times 45 = 13{,}950$ SF

$A_2 = 301 \times 36 = 10836$ SF

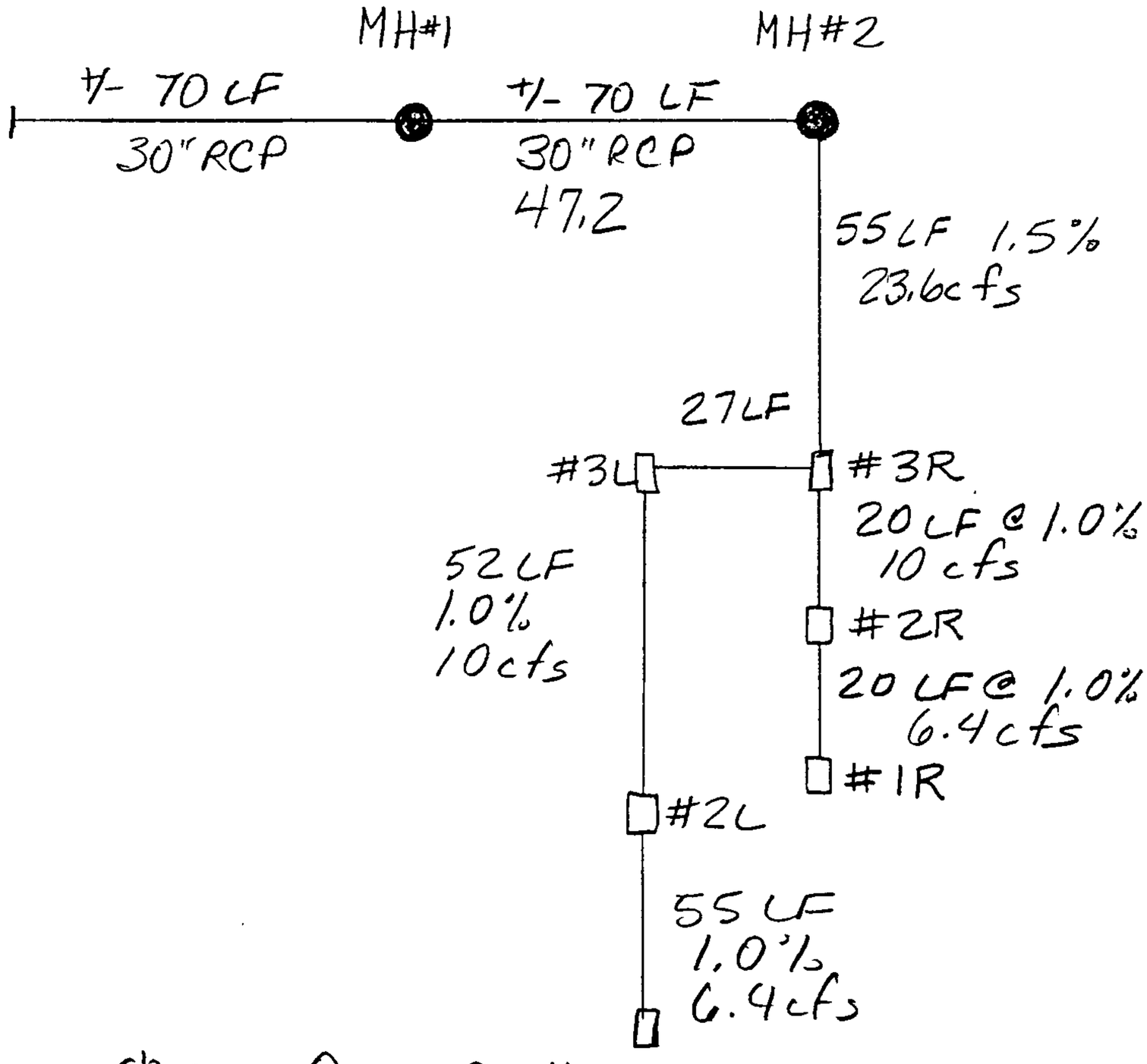
$$\text{Design Vol.} = \tfrac{1}{3}(1.5)(13950 + 10836 + \sqrt{13450 \cdot 10836})$$

$= 18{,}540$ SF $= .426$ AF

Vol. Req'd $= .421$ AF

D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Sto. ... Drain Unit IV
SUBJECT Prel. Calcs
BY DLH DATE 12-5-97
CHECKED _____ DATE _____
SHEET ____ OF ____



	Slope	Q	Depth	
#1L - #2L	1.0%	6.4 cfs	.95'	18" RCP
#2L - #3L	1.0%	10. cfs	1.5'	18" RCP
#3L - #3R	1.0%	11.8 cfs	pressure	18" RCP
#1R - #2R	1.0%	6.4 cfs	.95'	18" RCP
#2R - #3R	1.0%	10. cfs	1.5'	18" RCP
#3R - MH#2	1.5%	23.6 cfs	1.6'	24" RCP
MH2 - MH#1	3.5%	47.2 cfs.	1.55'	30" RCP
MH#1 - END	3.5%	53.1	1.7'	30" RCP

MODESTO AVE. N.E. (60' R/W)

2.964% — 5.8 cfs — SUB BASIN 4 — 5.00 %

S89°41'47"E

520.28'

120' TAPER

18"SD

24"SD

MODESTO-LOUISIANA RUNOFF

45 FEET

SUB BASIN 1

SCHIST STREET
4.156 %

44' R/W

28' FF

0.6%

PUMICE STREET

0.827% — 2.6 cfs

98' R/W

SUB BASIN 5

LOUISIANA BLVD. N.E.

RETENTION POND
REQ'D VOL = 2.15 AF
POND TOP = 5303.0
POND BOTTOM = 5285.5
SIDE SLOPES = 2:1

AREA 1 = 3.014 AC.	Q = 11.8 CFS	–
AREA 2 = 2.284 AC.	Q = 8.9 CFS	–
AREA 3 = 1.027 AC.	Q = 4.0 CFS	
AREA 4 = 0.723 AC.	Q = 3.2 CFS	
AREA 5 = 0.594 AC.	Q = 2.6 CFS	
AREA 6 = 0.427 AC.	Q = 1.9 CFS	
TOTAL = 8.069 AC.	Q = 32.4 CFS	
TOTAL = 0.0126 SQ.MI.		

EAGLE ROCK ESTATES
UNIT I

SUB BASIN 3

SUB BASIN 2

0.6%

OBSIDIAN STREET

50' R/W

30' FF

GABBRO STREET
4.912%

48' R/W

28' FF

FUTURE P.L.

TEMPORARY RETENTION POND

2.0 cfs

N89°42'48"W

S89°42'48"W

2.43% — 1.9 cfs — SUB BASIN 6 — EAGLE ROCK AVE. N.E. — 5.38% — 5.1%

1.9 cfs — (60' R/W)

EAGLE ROCK ESTATES
UNIT III

RECEIVED
DEC 09 1997
HYDROLOGY SECTION

N

50' 25' 0 50' 100'
SCALE: 1" = 50'

EXHIBIT 3

EAGLE ROCK ESTATES UNIT 4
DRAINAGE BASIN BOUNDARIES

EAGEXU4.DWG\12-08-97\DLH

CITY OF ALBUQUERQUE

March 29, 2007

Mr. Larry Read, P.E.
Larry Read & Associates, Inc
2430 Midtown Pl. NE Ste. C
Albuquerque, NM 87107

Re: Pond Recovery, 6801 Schist St NE,
Approval of Permanent Certificate of Occupancy (C.O.)
Engineer's Stamp dated 2/13/2006 (C-18/D039B)
Certification dated 03/27/2007

Based upon the information provided in your submittal received 3/28/2007, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

If you have any questions, you can contact me at 924-3982.

Sincerely,

Timothy Sims
Plan Checker-Hydrology, Planning Dept.
Development and Building Services

C: CO Clerk-Katrina Sigala
File

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

CITY OF ALBUQUERQUE

March 17, 2006

Larry D. Read, PE
Larry Read & Associates
2430 Midtown Place NE, Ste C
Albuquerque, NM 87107

Re: Eagle Rock Estates Unit 4 Pond Recovery (Schist) Grading Plan
Engineer's Stamp dated 2-13-06, (C18/D39A)

Dear Mr. Read,

Based upon the information provided in your submittal dated 2-13-06, the above referenced plan is approved for Grading Permit, SO#19 Permit and Preliminary Plat. Prior to Final Plat signoff by City Engineer, please submit an Engineer's certification of this grading plan and provide acceptance of the modification to the sidewalk culvert in Modesto.

If you have any questions, please contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: Ed Elwell, DMD
file

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