City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 22, 1993

Jackie McDowell, P.E.
Brasher Engineering Inc.
11930 Menaul Blvd NE Suite 113
Albuquerque, N.M. 87112

RE: ENGINEER'S CERTIFICATION FOR GARCIA/ORION SUBDIVISON (C-19/D6B2)
RECEIVED DECEMBER 21, 1993 FOR FINANCIAL GUARANTY RELEASE
ENGINEER'S STAMP DATED 12-20-93

Dear Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology releases the Financial Guaranty for this project.

The City Construction Division must also accept Project # 4644.90 before Lynda-Michelle will release the Financial Guaranty.

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

xc: Lynda-Michelle DeVanti - Project # 4644.90
Wayne & Roberta Garcia, 7306 Santa Fe Trail, Albuquerque, N.M. 87120

WPHYD+7345;jpc

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 21, 1993

Jackie McDowell, P.E.
Brasher Engineering Inc.
11930 Menaul Blvd NE Suite 113
Albuquerque, N.M. 87112

RE: GRADING & DRAINAGE PLAN FOR GARCIA SUBD/N ALBUQ ACRES (C=19/D6B2)
RECEIVED APRIL 14, 1993 FOR FINAL PLAT & BUILDING PERMIT APPROVAL
ENGINEER'S STAMP DATED 4-12-93

Ms. McDowell:

Based on the information included in the submittal referenced above, City Hydrology approves this project for Final Plat & Building Permit.

Include the Grading & Drainage Plan in the set of construction documents submitted to DRC for sign off.

Engineer's Certification of grades per the DPM checklist must be approved before the Financial Guaranty will be released.

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

Sincerely,

John P. Curtin

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

xc: Fred Aguirre
Alan Martinez
Lynda-Michelle DeVanti - Project # 4644.90

WPHYD+7345;jpc

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN REVIEW COMMITTEE MEETING

04-21-93 2:30 P.M.

PROJECT: Orion Estates Subdivision

Project No: 4644.90

CONSULTANT: Brasher Engineering

PRESENT: Billy Goolsby, DRC Chairman
John Curtin, Hydrology
Richard Dourte, Transportation Development
Jackie McDowell, Consultant

COMMENTS:

1. Verbal comments were provided by John Curtin, Hydrology which were noted by the Consultant. John also provided markups.

2. Verbal comments and mark-ups were also provided by Richard Dourte.

3. Utility Development was not present at the session. The Consultant will need to contact Bob Kane if necessary.

The Consultant will make the appropriate corrections and submit the mylars and mark-ups to the Master Scheduler to route for signatures.

BG:vg1(WP+125490)

Project: High Point Subdivision Project No.: 90452

14-Apr-93

Calculations: Total Basin

Calculations are based on "Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria for the City of Albuquerque, New Mexico, August 1991 - basins < 40 acres".

Precipitation Zone = 3

Depth at 100-year, 6-hour storm: (Table 2) P = 2.60 inches

Land Treatments:

From Table 5 - Percent Treatment D
Single Family Residential =
7*SQR((N*N) +(5*N))
where N = units/acre
N = 5/2.0 = 2.5, ok < 6 N = 2.50
Therefore Percent Treatment D = 30.31%
(includes local streets)

Areas: (acres)	Existing	Proposed
Treatment A	2.00	0.00
Treatment B	0.00	1.39
Treatment C	0.00	0.00
Treatment D	0.00	0.61
Total (acres) =	2.00	2.00

Excess Precipitation (E): (Table 8)	100 yr	10 yr	2 yr
Treatment A	0.66	0.19	0.00
Treatment B	0.92	0.36	0.06
Treatment C	1.29	0.62	0.2
Treatment D	2.36	1.50	0.89

Weighted E:	100 year Existing E*A	100 year Proposed E*A	10 year Existing E*A	10 year Proposed E*A	2 year Existing E*A	2 year Proposed E*A
Treatment A	1.32	0.00	0.38	0.00	0.00	0.00
Treatment B	0.00	1.28	0.00	0.50	0.00	0.08
Treatment C	0.00	0.00	0.00	0.00	0.00	0.00
Treatment D	0.00	1.44	0.00	0.92	0.00	0.54
Total	1.32	2.72	0.38	1.42	0.00	0.63

Project: High Point Subdivision Project No.: 90452

Weighted E = Total E*A/Total Area

Total Area = 2

	100 year Existing	100 year Proposed	10 year Existing	10 year Proposed	2 year Existing	2 year Proposed
Weighted E (inches) =	0.66	1.36	0.19	0.71	0.00	0.31
Weighted E (feet) =	0.06	0.11	0.02	0.06	0.00	0.03

Volume = Weighted E * Watershed Area:

	100 year Existing	100 year Proposed	10 year Existing	10 year Proposed	2 year Existing	2 year Proposed
Volume (acre-feet) =	0.11	0.23	0.03	0.12	0.00	0.05
Volume (cubic feet) =	4,792	9,868	1,379	5,138	0	2,273

Peak Discharge (cfs/acre) = Q(p): (Table 9)	Q(p) 100 year	Q(p) 10 year	Q(p) 2 year
Treatment A	1.87	0.58	0.00
Treatment B	2.60	1.19	0.21
Treatment C	3.45	2.00	0.78
Treatment D	5.02	3.39	2.04

Total Q(p), cfs:	100 year Existing Q(p)*A	100 year Proposed Q(p)*A	10 year Existing Q(p)*A	10 year Proposed Q(p)*A	2 year Existing Q(p)*A	2 year Proposed Q(p)*A
Treatment A	3.74	0.00	1.16	0.00	0.00	0.00
Treatment B	0.00	3.61	0.00	1.65	0.00	0.29
Treatment C	0.00	0.00	0.00	0.00	0.00	0.00
Treatment D	0.00	3.06	0.00	2.07	0.00	1.24
Total Q (cfs) =	3.74	6.68	1.16	3.72	0.00	1.54

Project: High Point Subdivision Project No.: 90452

RATIONAL METHOD:

Coefficient C: (Table 11)	100 year	10 year	2 year
Treatment A	0.35	0.16	0.00
Treatment B	0.48	0.33	0.10
Treatment C	0.64	0.55	0.35
Treatment D	0.93	0.93	0.92
Peak Intensity (in/hour): (Table 10)	5.38	3.65	2.21

Q = CIA (cfs):	100 year Existing CIA	100 year Proposed CIA	10 year Existing CIA	10 year Proposed CIA	2 year Existing CIA	2 year Proposed CIA
Treatment A	3.77	0.00	1.17	0.00	0.00	0.00
Treatment B	0.00	3.59	0.00	1.67	0.00	0.31
Treatment C	0.00	0.00	0.00	0.00	0.00	0.00
Treatment D	0.00	3.05	0.00	2.07	0.00	1.24
Total Q (cfs) =	3.77	6.64	1.17	3.74	0.00	1.55

APR 14

BRASHER ENGINEERING, INC.
11930 Menaul Blvd. NE, Suite 113
Albuquerque, New Mexico 87112
(505) 296-0422

Project Name ORION ESTATES SUB'D
Project No 90402 Date 4-14-93
Subject Calcs. for Valley Gutter & Sidewalk Culvert
By JCM Sheet 1 of 1

- Flow to Private Concrete Valley Gutter from Lot 4 to Lot 5 = 1.0 cfs. (100 year)
- Flow from Lot 5 to Private Concrete Valley Gutter @ Sidewalk Culvert = 0.67 cfs. (100 year)

→ Capacity of 4' wide Private Concrete Valley Gutter:

$$Q = 1.486\, A^{5/3} S^{1/2} / n P^{2/3}$$

where, $A = (4)(0.33)(1/2) = 0.66$ sf.
$S = 0.008$ ft/ft
$n = 0.013$ (concrete)
$P = 4$ ft.
$\therefore Q = 2.03$ cfs $>$ 1.0 cfs (Lot 4) ✓ O.K.
$>$ 1.67 cfs (Lot 4 & 5) ✓ O.K.

→ Capacity of 12" wide sidewalk culvert:

$$Q = 1.486\, A^{5/3} S^{1/2} / n P^{2/3}$$

where, $A = (1.0)(0.583) = 0.583$
$S = 0.02$ ft/ft
$n = 0.013$ (Concrete)
$P = 1 + 7/12 + 7/12 = 2.167$ ft.
$\therefore Q = 3.93$ cfs $>$ 1.67 cfs. ✓ O.K.