DRAINAGE REPORT

FOR

MCMAHON PROPERTY

Prepared for

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PROPOSED MANAGEMENT PLAN

This subdivision will free discharge fully developed flows through an on-site storm sewer system into West Side Blvd. The on-site storm sewer and surface drainage system is sized to convey developed flows from the upstream off-site area through this site.

West Side Blvd. will be capable of conveying all of the 100 year flow (Q_{100} = 180 cfs+) from the downstreams northeast corner of this development to Unser Blvd. where several alternatives including ponding at that point are being considered. The West Side Blvd. storm sewer is sized in a separate report. First in the Los Suenos Subdivision Drainage Report dated 1-15-01 and again later in the "Rio Rancho/Unser Blvd. Gateway Master Drainage Plan dated March 5, 2001. Capacity analysis for West Side Blvd. is not included herein (see separated documents).

A small area of drainage Basin K is too low to drain north to West Side Blvd., so it will drain east into Los Suenos Subdivision (Basin #K, Area = 2.7 acre, Q_{100} = 8.65 cfs).

Every effort has been made to minimize drainage to McMahon Blvd. but it is in a deep cut next to this project so some rear yards will drain to McMahon, and 0.4 acre on-site will drain into McMahon at the main entrance at Milky Way Street (Basin #L, Q_{100} = 1.27 cfs).

Downstream off-site facilities may not be constructed or they may be incomplete at the time of this development, so this development will provide temporary on-site retention of 100 year, 10 day volume to serve both this development and the upstream off-site undeveloped area.

The grading interface with Los Suenos, on our east boundary, has been discussed, but no plan has been prepared and submitted to the Dunlop Partnership for approval.

Table 1 - Summary of Hydrology

Description	Basin ID	Area Acres	Area Sq. Mi.	Land Treatment				Q_{100} cfs	V_{100} ac•ft	
				A	B	C	D		6 hr	10 day
Off-Site Upstream	101	26.8	0.0367	0	25	25	50	79.94	2.722	4.364
On-Site & West Side Blvd.	102	37.3	0.0583	0	29	14	57	118.29	4.501	7.105
McMahon Blvd.	103	9.5	0.0148	0	33	22[(1)]	45	28.06	1.039	1.563
Off-Site Upstream	101 Existing	26.8	0.0367	90	0	0	10	37.26	1.158	1.486

(1) *McMahon includes steep slopes in adjacent back yards because it is in deep cut.*

100 YEAR PRECIPITATION *(From Figures D, E and F, and Eq. 28 of DPM 22.2)*
P_{60} = 1.87", P_{360} = 2.20", P_{1440} = 2.66", P_{10} days = 10.0-[24.9/(2.66")$^{1.4}$] = 3.67"

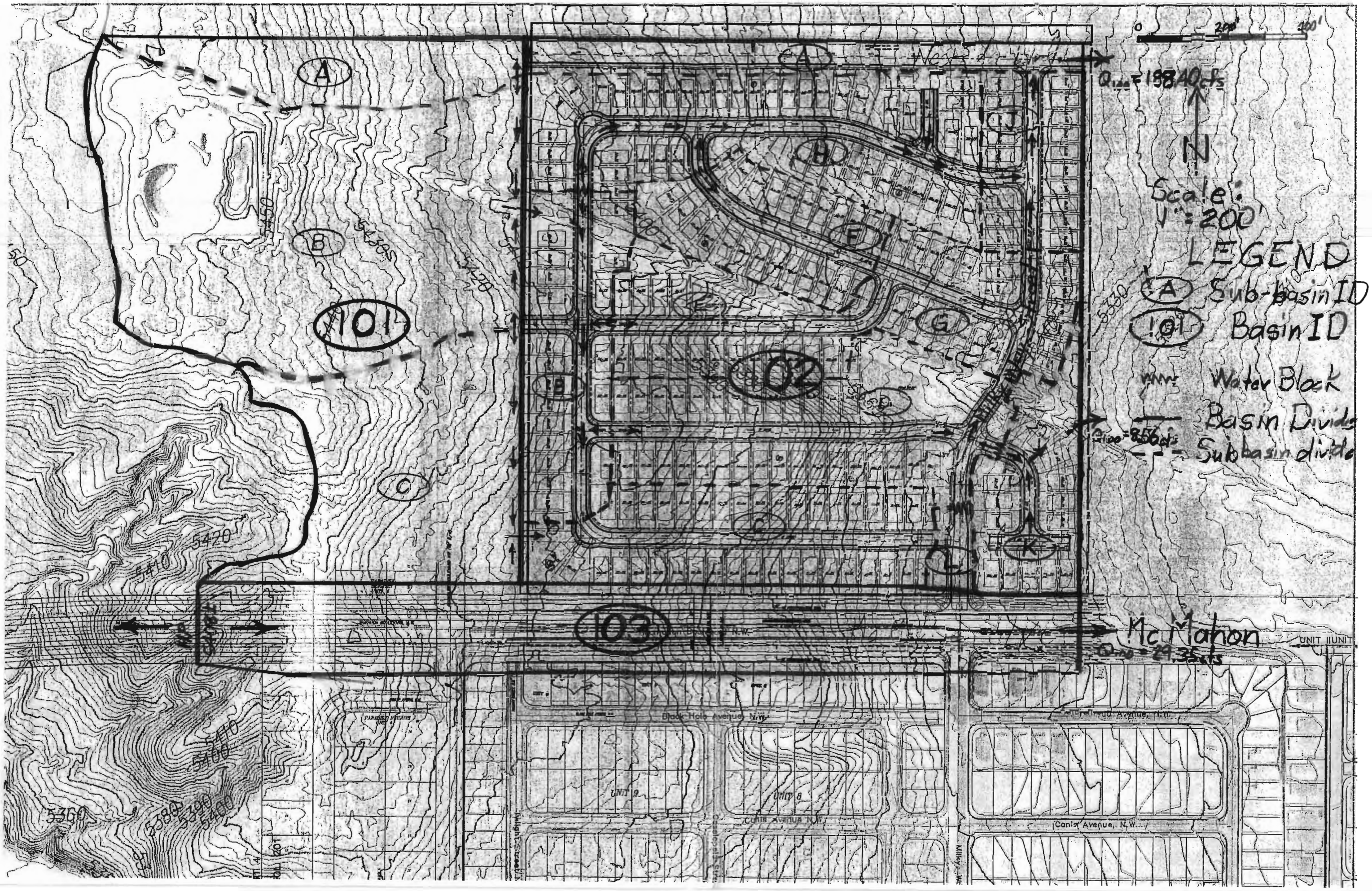
TABLE 2 — STREET DRAINAGE CAPACITIES

Basin No.	Area Ac.	% of Total	100 Year Flow (cfs)		Contributing Basins	Curb Type/Slope	Flow Depth ft[1]	Velocity fps	Energy Depth ft[2]	Location
			Increment.	Cumm.						
101A	2.85	10.63%	8.50	—	—					
101B	16.31	60.86%	48.65	—	—					
101C	7.64	28.51%	22.79	83.81	101B & 102B					
Total 101 A - C	26.80		79.94							
102A	2.10	5.63%	6.66	15.16	101A					
102B	3.90	144.44%	12.37	61.02	101B					
102C	4.60	12.33%	14.59	98.40	101B, 101C & 102B					
102D	5.60	15.01%	17.76	116.15	101B, 101C, 102B & 102C					
102E	2.85	8.31%	9.83	—	—					
102F	2.90	7.77%	9.20	19.03	102E					
102G	3.10	8.31%	9.83	28.86	102E & 102F					
102G		—	—	145.01	101B, 101C & 102B-F					
102H	6.70	17.96%	21.25	—	—					
102J	2.20	5.90%	6.98	173.24	101B, 102C & 102B-H					
102J		—	—	188.40	101A-C & 102A-H					
102K	2.70	7.24%	8.56	—	—					
102L	0.40	1.07%	1.29	—	—					
Total 102 A-L	37.30	—	118.29							
103	3.03	8.61%	28.06							

* *100 year surface flow after inlet interception is accounted for (see inlet calcs).*

(1) *Flow depths are taken from Plate 22.3 D-1 and 22.3 D-2 of the DPM and reduced by 3/4" for roll curb types to account for the difference in gutter depression. Allowable depths may not exceed curb heights which are 0.33' for roll curb and gutter and 0.67' for standard curb and gutter.*

(2) *Energy depth is calculated as flow depth plus energy head. Allowable depths are 0.20' above top of curb.*


A
B
C
D
E
F
G
H
J
K
101
102
103
Q100 = 1588 cfs
Q100 = 856 cfs
Q100 = 29.35 cfs
N
Scale:
1" = 200'
0
200'
400'
LEGEND
Sub-basin ID
Basin ID
Water Block
Basin Divide
Subbasin divide
McMahon
Black Hole Avenue, N.W.
Canis Avenue, N.W.
Railroad Avenue, N.W.
UNIT 9
UNIT 8
UNIT 11
5360
5370
5380
5390
5400
5410
5420
5430
5440
5450