HYDROLOGY E19/D6 2 PLANS

E19/D6

2 Plans

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE February 25, 1980 REF. NO._____

TO: File

FROM: Bruno Conegliano, Assistant City Engineer/Hydrology BC.

SUBJECT: Bear Canyon Village Addition

I talked today with John McNerney, and I indicated to him that I had no objection to rollover curbs, provided that he supplies details for the rundown. The flow from the east must be prevented from crossing the street, but must be directed in a northerly direction towards Truchas Blvd.

BC/lc
cc: Richard Heller
Dwayne Sheppard

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 28, 1980

Mr. John McNerney
Mossman-Gladden, Inc.
2700 San Mateo Blvd., NE
Albuquerque, New Mexico 87190

Reference: Drainage Report Tract G, Bear Canyon Village Addition

Dear Mr. McNerney:

As verbally indicated, the drainage report for the above referenced parcel, had been reviewed and found consistent with the City requirements. I will therefore, be able to sign the plat when submitted.

Very truly yours,

Bruno Conegliano
Assistant City Engineer-Hydrology

BC/lc
xc: Richard Leonard, AMAFCA

Mossman-Gladden, Inc. builders • realtors
P.O. BOX 3010 • ALBUQUERQUE, NEW MEXICO 87190 • 2700 SAN MATEO BLVD., N.E. • PHONE 505-881-7111

November 14, 1979

Mr. Bruno Conegliano
City Engineer's Office
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RECEIVED
NOV 15 1979
CITY ENGINEER

Dear Bruno:

Enclosed is a drainage report for a new subdivision to be known as A Replat of the Central Portion of Tract G in Block 5 of Unit No. 2 of the Bear Canyon Village Addition.

Very truly yours,

John E. McNerney

JEM:de
Encl.

DRAINAGE REPORT

A Replat of the Central Portion of Tract G in Block 5 of Unit No. 2 of the Bear Canyon Village Addition

Mossman-Gladden, Inc. Owners

Location: A tract of 1.903 acres on the south side of Burlison Drive, NE between Truchas Drive and Quemado Drive in Tract G in Block 5 of Unit No. 2 of the Bear Canyon Village Addition.

Topography: Slopes, east to west 3%, north to south, none; soil, clean decomposed granitic sand to silty sand (SM-SP). No unusual conditions and no accelerated erosion. Percolation rate, approximately one inch per hour in processed and compacted areas.

Siting: These town houses, with party line walls (see grading plan) will be built on small (4700 sq.ft. average) lots. To achieve privacy and security, side yards will be enclosed by masonry walls connecting house front corners with side property line walls. Where gates are built into the enclosing walls, small threshold type dikes will retain runoff. Front yards will be landscaped with lawns, shrubs and trees.

Hydrology: Rain falling on roofs and on side and rear yards will be retained on the site. Rain discharged as runoff will be that falling on front yard landscaped areas and on paved surfaces.

Assuming a four inch per hour rain intensity for both historic (undeveloped) and developed conditions and using the rational formula:

Undeveloped: Total area, 1.903 acres

$Q = ciA$

$= 0.4 \times 4 \times 1.903$ = 3.04 cfs

Developed:

Drives	$Q = 1.0 \times 4 \times 0.159$	= 0.64 cfs
Street	$Q = 1.0 \times 4 \times 0.344$	= 1.38 cfs
City walk	$Q = 1.0 \times 4 \times 0.05$	= 0.20 cfs
Landscaped area	$Q = 0.2 \times 4 \times 0.254$	= 0.20 cfs
Total Developed Runoff		= 2.42 cfs

Net reduction in runoff due to development = 0.62 cfs

Conclusion: Development of this tract will not increase storm water runoff.

John E. McNerney
Reg. P.E. & L.S. No.1104

Enclosures

1. Plat
2. Topography
3. Area tabulations
4. Grading plan
5. Typical plot plan

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 19, 1979

E19-D6

Mr. John E. McNerney
Mossman-Gladden, Inc.
P. O. Box 3010
Albuquerque, New Mexico 87110

SUBJECT: REPLAT OF TRACT H AND J, UNIT 2, BEAR CANYON VILLAGE ADDITION

Dear John:

I have received the information requested in my letter dated September 7, 1979. The Drainage Report is therefore hereby approved.

The grading plan will have to be expanded in the sense of showing a temporary diversion channel conveying the offsite flow from Tract A-1 to the proposed drainage easement. A temporary desilting facility will also have to be constructed to prevent sediment being conveyed onto Cielo Grande Loop, N. E.

If you have any questions on the above, please don't hesitate to call.

Very truly yours,

Bruno Conegliano
Asst. City Engineer-Hydrology

BC:bm
CC: R. E. Leonard, AMAFCA
R. S. Heller
Drainage File

May 11, 1977

RECEIVED
MAY 16 1977
CITY ENGINEERS

Mr. Bruno Conegliano
Assistant City Engineer - Hydrology
City of Albuquerque
400 Marquette Ave.
Albuquerque, New Mexico 87102

E19-D6

RE: STORM DRAINAGE STUDY RELATIVE TO DEVELOPMENT OF TRACT "A" AND A PORTION OF TRACT "B", BEAR CANYON VILLAGE FOR THE NORTH TOWNE SHOPPING CENTER, ALBUQUERQUE, NEW MEXICO.

Dear Mr. Conegliano:

In response to letter, your office, dated April 21, 1977, the following information is provided:

1. Acceptable materials and compaction requirements for retention pond earthwork are specified under the earthwork section of the specifications 02200. Testing requirements are also specified in that section. Copies of soils tests will be forwarded to your office.

2. The outlet side of the 12" discharge pipe will be provided with an energy dissipator/stilling basin as per attached sketch.

3. Weep holes and gravel back up will be provided at 6' - 0" O.C. along the base of the concrete rip rap. Addenda No. 1, Item #7.

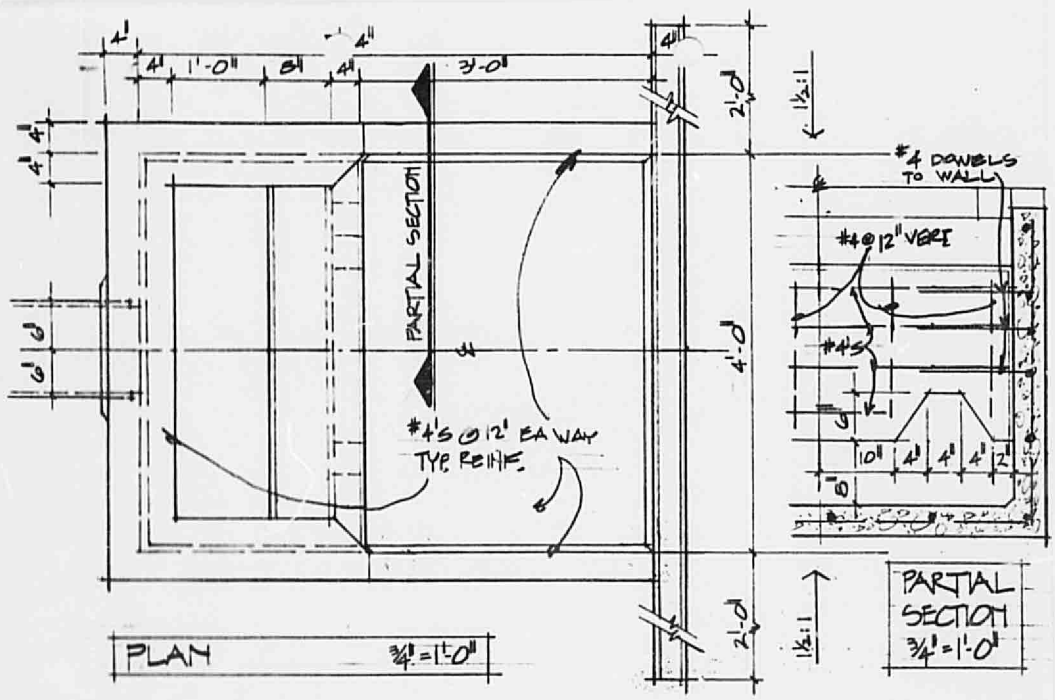
Sincerely,

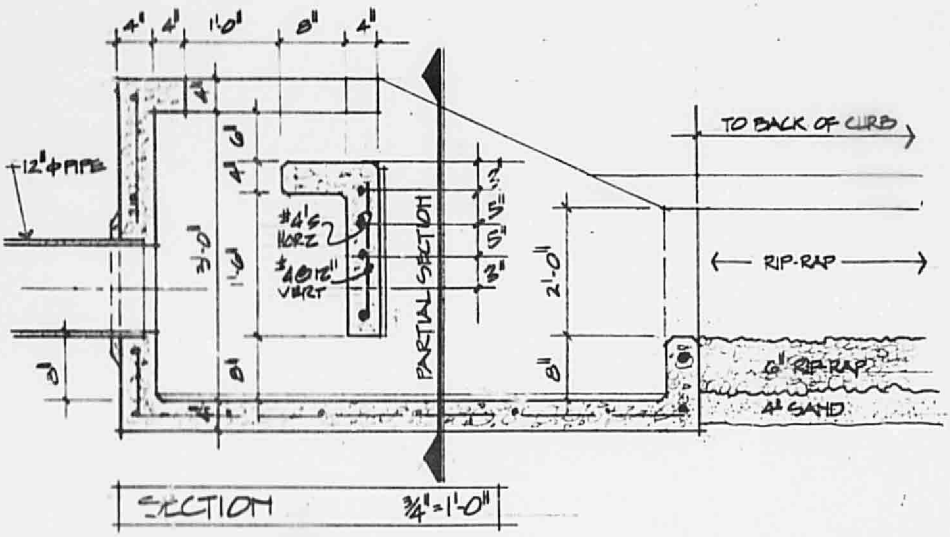
George R. Rainhart, A.I.A.

GRR/jk

Encl: As stated.

3736-c eubank ne/albuquerque nm 87111/505-296-0739





SKETCH # 2 APPR'D STILLING BASIN. JOB No.: 0777

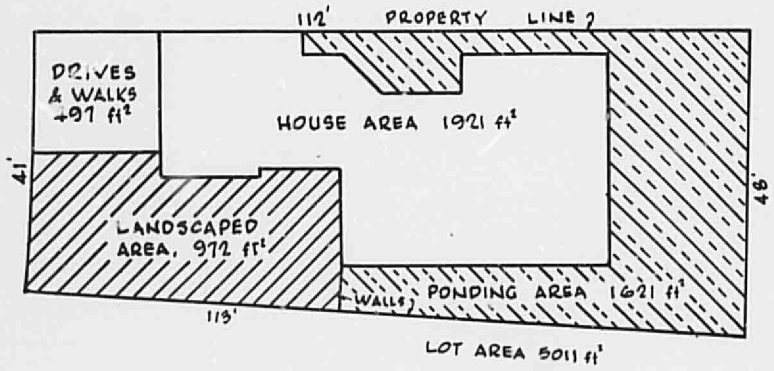
ADDENDUM # 1: NORTH TOWNE PLAZA - SAFEWAY #943

DATE: 3 MAY 1977
BY: R

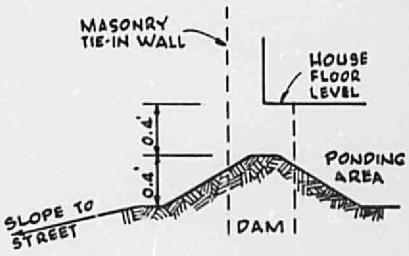
PROJECT ARCHITECTS: GEORGE R. RAINHART
JORGE DE LA TORRE, ARCHITECT, A.I.A.

Tract G townhouse site drainage area tabulation. 10/30/79

Lot	Area	House area	Drives + walks	Impervious area, house to front lot	Ponding area 2-(3+4+5)	
4G	5307	1841	491	906	2069	
5G	4221	1921	497	652	1151	
6G	4123	1921	497	665	1040	
7G	4835	1841	491	842	1661	
8G	4801	1921	497	932	1451	
9G	4050	1841	491	611	1107	
10G	4116	1841	491	597	1187	
11G	5011	1921	497	972	1621	
12G	5080	1841	491	819	1929	
13G	4325	1921	497	639	1268	
14G	4434	1921	497	631	1385	
15G	5292	1841	491	841	2120	
16G	4928	1921	497	973	1557	
17G	4836	1841	491	988	1516	
	63350	26334	6916	11068	21062	
Acres	1.501	0.605	0.159	0.258	0.483	
Recorded	0.402 Ac	+ street area (28' wide) = 0.344 ac				
Total area	1.903					
Before development						
$Q = CiA$						
$= 0.4 \times 4 \times 1.903$					3.04	
After dev.						
Drives $0.159 \times 4 \times 1.0$		0.64				
Street $0.344 \times 4 \times 1.0$		1.38				
Landscape $0.251 \times 4 \times 0.2$		0.20				
City walk $0.050 \times 4 \times 1.0$		0.20				
		2.42 c/s			3.42	
Net loss after development					0.62	



TYPICAL TOWN HOUSE PLOT PLAN
1" = 20'



SECTION THROUGH LOW DAM AT FRONT HOUSE CORNER WHERE GATE IS USED.

NO SCALE

House Area	1921 sq. ft.
Ponding Area	1621 sq. ft.
Area expected to produce runoff	3542 sq. ft.

Water produced from a 2.5 inch intensity storm in one hour from the above area: $35 \times 2 \times \frac{2.5}{12} = 738$ cf

Depth of water in ponding area: $\frac{738}{1621} = 0.46$ ft.

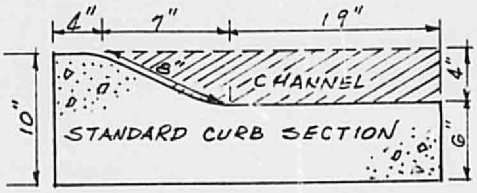
Deduct one inch percolation: - 0.08 ft.

0.38 ft.

This depth can easily be handled in the space provided.

EXAMINATION OF THE FEASIBILITY OF USING MOUNTABLE CURB (ESTATE TYPE) IN TRACTS H & J, UNIT NO. 2, BEAR CANYON ADDITION.

1. CAPACITY OF CURB & ADJACENT STREET.



CURB CHANNEL

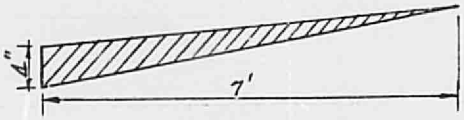
$A = 19\times4 + \frac{7\times4}{2}$

$= 90\ \square" = 0.63\ \square'$

$p = 8+19+4 = 31"$

$= 2.58'$

$r = \frac{0.63}{2.58} = 0.24$



STREET CHANNEL

$A = \frac{7\times0.33}{2} = 1.17\ \square'$

$p = 7+0.33 = 7.33'$

$r = \frac{1.17}{7.33} = 0.16$

2. ANTICIPATED FLOW IN MARILYN AT TRUCHAS, ASSUMING A 4"/HR INTENSITY.

AREA CONTRIBUTING;

MARILYN TO LOT 15, BLOCK 1, $600'\times90' = 54{,}000\ \square'$

CASA LOMA TO VISTA DEL MONTE, $460'\times90' = 41{,}400$

VISTA DEL MONTE (W½) MARILYN TO CASA LOMA $200'\times45' = \underline{9{,}000}$

TOTAL $= 104{,}400\ \square'$

$= 2.40$ ACRE

THIS AREA IS CONSERVATIVE, SINCE 20' ON EACH SIDE OF THE STREET R.O.W. WILL BE LANDSCAPED AND WILL PRODUCE LITTLE RUNOFF.

$Q = CIA = 1\times4\times2.40 = \underline{9.60\ \text{cfs}}$.

3. CAPACITY OF MARILYN AT TRUCHAS.

SLOPE AT NORTH SIDE = 0.0344,

GUTTER FLOW, $V = \frac{1.486}{0.014}\times(0.24)^{2/3}(0.0344)^{1/2}$

3. GUTTER $V = 106.14 \times 0.38 \times 0.19 = 7.66$ FT/SEC

$Q = 0.63 \times 7.66 = 4.83$ cfs

STREET FLOW,

$V = 106.14 \times (0.16)^{2/3} \times 0.19 = 5.91$ FT/SEC

ASSUME V TO BE ZERO AT THE POINT OF THE CHANNEL TRIANGLE AND THE AVERAGE V TO BE 1/2 OF 5.91 FT/SEC OR 2.95 FT/SEC.

$Q = 1.17 \times 2.95 = 3.45$ cfs

TOTAL Q AT NORTH SIDE = $4.83 + 3.45 = 8.28$ cfs.

SLOPE AT SOUTH SIDE = 0.0512

GUTTER FLOW, $V = 106.14 \times 0.38 \times (0.0512)^{1/2}$

$= 106.14 \times 0.38 \times 0.226 =$ 9.12 FT/SEC

$Q = 0.63 \times 9.12 =$ 5.75 cfs

STREET FLOW, $V = 106.14 \times (0.16)^{2/3} \times 0.226$

$V = 106.14 \times 0.293 \times 0.226$ 7.03 FT/SEC

AVG. V = 3.51 FT/SEC

$Q = 1.17 \times 3.51 =$ 4.11 cfs

TOTAL Q ON SOUTH SIDE = $5.75 + 4.11 =$ 9.86 cfs

TOTAL CAPACITY IN MARILYN = $8.28 + 9.86 =$ 18.14 cfs

SAFE HERE.

4. ANTICIPATED FLOW IN CIELO GRANDE AT TRUCHAS.

AREA CONTRIBUTING;

VISTA DEL MONTE TO CASA LOMA (E 1/2)	
200' × 45'	9,000 □'
CIELO GRANDE TO TRUCHAS	
300' × 90'	27,000 □'
VISTA DEL MONTE. CASA LOMA	
TO CIELO GRANDE, 240' × 90'	21,600 □'
TOTAL	57,600 □'
	= 1.32 ACRE

$Q = 1 \times 4 \times 1.32 =$ 5.28 cfs

ADD MAX. Q FROM DRAIN EASEMENT 11.00 cfs

TOTAL AT TRUCHAS 16.28 cfs

5. CAPACITY OF CIELO GRANDE AT TRUCHAS.

SLOPE IN CIELO GRANDE, NORTH SIDE = 0.033

GUTTER $V = 106.14 \times 0.38 \times (0.033)^{1/2}$

$= 106.14 \times 0.38 \times 0.182 = 7.34$ FT/SEC

$Q = 0.63 \times 7.34 =$ 4.62 CFS

STREET $V = 106.14 \times 0.293 \times 0.182 =$ 5.66 FT/SEC

AVG V = 2.83 FT/SEC

$Q = 1.17 \times 2.83 =$ 3.31 CFS

TOTAL Q, NORTH SIDE 4.62+3.31 = 7.93 CFS

SLOPE IN CIELO GRANDE, SOUTH SIDE = 0.042

GUTTER $V = 106.14 \times 0.38 \times (0.042)^{1/2}$

$= 106.14 \times 0.38 \times 0.205 =$ 8.27 FT/SEC

$Q = 0.63 \times 8.27 =$ 5.21 CFS

STREET $V = 106.14 \times 0.293 \times 0.205 =$ 6.38 FT/SEC

AVG. V = 3.19 FT/SEC

$Q = 1.17 \times 3.19 =$ 3.73 CFS

TOTAL Q ON N. SIDE = 5.21+3.73 = 8.94 CFS

TOTAL CIELO GRANDE CAPACITY = 7.93+8.94 = 16.87 CFS

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6. CONCLUSION:

THE CAPACITIES OF BOTH OUTLETS, MARILYN & CIELO GRANDE, EXCEED THE EXPECTED FLOWS IN THESE STREETS. HOME FLOORS WILL BE A MINIMUM OF 1.5' ABOVE CURB HEIGHT. MOUNTABLE CURBS WILL BE ADEQUATE.

James E McInerney

Enclosures: Larry I sent you this without having it typed. Our secretary is ill.