HYDROLOGY E22/D1 FIVE PLANS 1 of

E 22 - D1

5 PLANS

E22/D

BOHANNAN-HUSTON INC.

4125 CARLISLE BOULEVARD, NORTHEAST, ALBUQUERQUE, NEW MEXICO 87107 (505) 881-2000

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DRAINAGE ANALYSIS
OF
PROSPECTORS RIDGE SUBDIVISION
December, 1980

DRAINAGE ANALYSIS
OF
PROSPECTORS RIDGE SUBDIVISION
(Formerly Burning Bush Subdivision)

December, 1980

PREPARED FOR

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DRAINAGE ANALYSIS OF
PROSPECTORS RIDGE SUBDIVISION
(Formerly Burning Bush Subdivision)

INTRODUCTION

The purpose of this drainage report is to detail the method for handling storm water runoff resulting from the construction of Prospectors Ridge Subdivision, and to protect the site from upland flows.

Prospectors Ridge Subdivision is located on the east mesa, north of Spain Road and east of Academy Place Unit 5 (see Figure 1). The site slopes from east to west at a natural 4 to 6 percent. The parcel to be developed contains approximately 47.68 acres of R–1 and the east parcel of 13.74 acres for future development. Total acreage is 61.8, which includes Spain Road 1.63 acre and Lowell Street, 1.38 acre. Proposed development calls for single family residential units with an overall density of 3.7 dwelling units per acre.

RECOMMENDATIONS FOR CONSTRUCTION

The following items are needed to insure that the developed flows, resulting from Prospectors Ridge Subdivision, can be controlled and will not present a hazard to the subdivision or downstream developments:

In both phases, grading of the lots and installing water blocks will insure the drainage configuration shown on Plate 4 is established.

Phase I Improvements (Plate 3)

There will shortly be under construction a storm sewer in Spain Road that will drain Peppertree Subdivision and Prospector's Ridge. This storm sewer will be utilized in Phase I to control the runoff from Prospector's Ridge and protect Prospector's Ridge from upland flows.

Plate 3 shows temporary drainage improvements proposed to protect Phase I from upland flows. In Basin A, a drainage swale will be constructed to carry sheet flow runoff to a desilting pond. This swale will have a 10' bottom width and 3:1 side slopes, minimum depth 2'–0". Undeveloped 100-year flow is 13.5 CFS, depth of flow

in the swale would be .52 feet with a velocity 2.20 ft/sec. A 24" CMP standpipe will discharge the runoff to San Victoria Street. This flow will be picked up by the inlets at Vista Bonita and Molly Brown. These inlets will have excess capacity in Phase I, since part of the upland basin will not be developed until Phase II. Capacity of the 24" CMP standpipe with 2'–0" of head is 14 CFS. The overflow spilling will be 10'–0" wide with 3:1 side slopes and 1'–0" deep (see Calculations).

Basin B (see Plate 3) will use a graded portion of Nuggett Street and a berm to convey the runoff to a detention pond. From here, utilization of the future storm sewer line will allow the discharge of the runoff into the Spain Road storm sewer. This line will be built from the Spain Road storm sewer north on Nuggett Street, with provisions for future inlet hook-ups, and terminate at the detention pond. A CMP standpipe will be used as a desilting device and will discharge into a 24" RCP (see Detail C Plate 3). The capacity of the standpipe with 3 feet of head is 20 CFS (see Calculations, page 8). 100-year undeveloped runoff from basin B is 16.3 CFS. An earthen overflow swale will be constructed around the east end of the berm. With 10' bottom width and 3:1 side slopes, capacity of the overflow swale will be 16.3 CFS. If the overflow swale is used, this flow will enter Molly Brown Street and flow west to the inlets at the intersection of Molly Brown and Vista Bonita.

Basin I, 100-year undeveloped flow (see Plate 3) will drain west to an existing diversion berm. The berm turns the flow south where a drainage swale will convey the runoff to a detention pond. The drainage swale would be 10' wide, minimum 2'–0" deep with 3:1 side slopes. A CMP standpipe will be provided and will discharge into a 27" RCP. This RCP is a future storm sewer drain for the east parcel and will be constructed with the Spain Road storm sewer. Capacity of the 27" CMP standpipe is 66.4 CFS (see Calculations, page 4&5). 100-year undeveloped flow is 79.5 CFS. The excess flow of 13.1 CFS will enter Spain Road and will be picked up by inlets in Spain Road located near the west boundary of Prospector's Ridge. A 100-year capacity overflow swale will be provided and will discharge into Spain Road. The overflow is 30' wide at the bottom, with 3:1 side slopes (see detail A Plate 3).

The 100-year undeveloped flow of 44.8 CFS in Basin II will be intercepted by a drainage swale that runs south. This swale is 10' wide, minimum 2'–0" deep with 3:1 side slopes and ends in a small detention pond. A 36" CMP standpipe will be provided with a capacity of 50 CFS (see Calculations, page 7). This standpipe will discharge into the Spain Road storm sewer. A 100-year capacity overflow swale will be provided and will discharge into Spain Road. This swale will be 20' wide at the bottom with 3:1 side slopes.

Phase II Improvements (Plate 5)

The 100-year developed flows are shown on Plate 4 for Phase II development. A system of storm sewers will be built to convey the 100-year runoff to the Bear Arroyo, i.e., the Spain Road storm sewer and southwest Prospectors Ridge storm sewer. The streets will be used to convey the storm water to two points of pick up. The first point of pick up is at the intersection of Molly Brown and Nugget Street. Here a series of drop inlets, 4 in number, size 3'–1" x 12', pick up the flow in the street and transfer it to the Spain Road storm sewer. The inlets located on Molly Brown Street, east of Nuggett Street will intercept a total of 12.32 CFS each. The total 100-year flows in the street at this point is 26.2 CFS. This will leave 1.6 CFS that will continue west on Molly Brown. The two inlets located in Nugget Street, north of Molly Brown will intercept a total of 9.43 CFS each, leaving 3.64 CFS to flow west on Molly Brown. The 100-year flow in Nuggett Street, at the point of pick up, is 22.5 CFS.

The second pick up point is located at the intersection of Vista Bonita and Molly Brown. Flow from Molly Brown, Forty Niner Street and Vista Bonita will total 78.4 CFS. This flow will be picked up by three double "C" inlets. A 42" RCP will carry the storm runoff under Spain Road and discharge into a concrete lined drainage channel, which empties into the Bear Arroyo (see Calculations, page 23, for inlets capacity).

An earthen drainage swale will be located on the east boundary of the subdivision. This swale will intercept flows from the east parcel and direct them to the southeast corner of the parcel. Here, the facilities used in Phase I will be used to direct the flow into the Spain Road storm sewer. The undeveloped flow from this parcel is 28.4 CFS. In Phase I, this standpipe would carry 66.4 CFS, so no additional capacity needs to be added (see Plate 5).

The desilting basin located in Basin II can be used until Lowell Street is built. At this time, flows in Lowell Street will be picked up by the storm sewer to be constructed in Lowell Street and upland flows that enter Spain Road will be picked up by inlets located in Spain Road east of the west boundary of Prospector's Ridge.

The storm sewer that will eventually serve the east parcel was designed to accept the 100-year developed runoff from this parcel.

PROCEDURE AND DISCUSSION

The procedures used in determining the flows from the basins is outlined in the "Introduction to Hydrology" by Viessman, Knapp, Lewis second edition. Specifically, the rational method was employed with a composite C factor being derived for each basin in the analysis. Flow lengths and elevation differences were determined for each basin and combination of basins. With this information, the rate of flow was determined at each point listed in Table I and II (See Calculations).

The hydraulic computation methods were taken from a number of different references, but the two main references are "Handbook of Hydraulics" by King and Brater sixth edition, and the "Bureau of Engineering Manuel" by the City of Los Angeles.

The goal of the drainage report is to offer solutions for handling the runoff resulting from storms of 100-Year intensity, to insure the subdivision meets city criterion for the safe control of stormwater runoff.

10–YEAR VELOCITIES AND DEPTHS

The city criterion which states that the depth resulting from the 10-year runoff multiplied by the 10-year velocity shall not exceed 4.8, has been satisfied throughout the entire subdivision. Table I shows the velocities, depths, and flows from the basins and is keyed to Plate 4 (see Calculations for basin lengths and ponded areas).

10-YEAR VALUES

TABLE I

Basin	Area (Acres)	C	Q_{10} (CFS)	$V_{10} \times D_{10}$	V_{10} (Ft/Sec)	S (Ft/Ft)	D_{10} (Ft)
1	2.04	0.70	3.1	0.46	3.3	.0381	0.14
2	14.36	0.69	17.2	1.05	3.0	.0095	0.35
3	12.67	0.69	19.3	1.46	5.2	.0389	0.28
4	8.19	0.70	11.2	0.71	2.1	.0051	0.34
5	8.38	0.69	13.0	1.13	4.7	.0389	0.24
6	13.14	0.86	3.0	–	–	–	–

100-YEAR DEPTHS

The City of Albuquerque has another policy of not exceeding a water depth of 0.2 feet above the top of curb elevation anywhere in the subdivision for the 100-year storm. The curb used in this analysis is standard city curb with a height of .67 feet. Located in Table II is a tabulation of the 100-year depths and velocities throughout the subdivision. As with the ten year velocities and depths, the 100-year values are keyed to the basins located on Plate 4.

100—YEAR VALUES
TABLE II

Basin	Area	C	Q_{100} CFS	$V_{100} \times D_{100}$	V_{100} Ft/Sec	S Ft/Ft	D_{100} Ft
1	2.04	0.70	6.2	0.74	3.9	.0381	0.19
2	14.36	0.69	34.5	1.76	4.0	.0095	0.44
3	12.67	0.69	38.7	2.3	6.4	.0389	0.36
4	8.19	0.70	22.5	1.13	2.7	.0051	0.42
5	8.38	0.69	26.2	1.74	5.6	.0389	0.31
6	13.14	0.86	60.5	—	—	—	—

ARROYO DEL OSO DAM CAPACITY

During preceding months, it has been shown by several private engineering firms and the City of Albuquerque that the Arroyo Del Oso Dam does not have capacity for the undeveloped runoff that currently reaches that dam. The past bond election provided money in the Capitol Improvements Program to remedy this situation. The criterion to be used for the upgrading of the dam was set to be the total developed discharge from the remaining undeveloped land up-stream. With this in mind, we are proposing to discharge the entire developed flow rate from the subdivision less the flow from lots that must retain a portion of the water that falls on the lot. This total discharge from Prospector's Ridge to the Bear Arroyo via storm sewers amounts to 182.4 CFS.

The build-out schedule and availability of water for Prospectors Ridge will correspond with the improvements to the Arroyo del Oso Dam and should not pose any problems from the increased developed runoff.

SPAIN CROSSING STRUCTURE

As stated above, with additional capacity available in the Arroyo Del Oso Dam, increased developed discharge from Prospectors Ridge is logical in an attempt to minimize lot ponding. The Spain Road crossing will consist of one 42" RCP and the Spain Road storm sewer, size 66" RCP (see Drawings C-29–33 for Spain Road storm sewer).

EXISTING HYDROLOGY

The existing predeveloped hydrology consists of upland flows from Peppertree Subdivision and flows generated on-site (see Plate 1 & 2). The flows from the upland basins are generated on 69.4 acres, and were divided into two drainage basins. The flows were calculated using the Rational Formula. These flows are noted on Plate 2. (See Calculations). These flows currently run through the subdivision, then turn south running to Spain Road via the north end of the old Bear Arroyo diversion.

DEVELOPED HYDROLOGY

The runoff resulting from the development of Prospectors Ridge Subdivision are tabulated for the 10-Year storm and the 100-Year storm in Tables I and II, respectively. These flows are keyed to Plate 4 which show the basin boundaries, direction of flow and flow rates at basin boundaries.

TRAMWAY DIVERSIONS

Two diversions on both sides of Tramway insure that the upland flows generated east of Tramway will not impact Prospectors Ridge Subdivision.

The first diversion channel is on the west side of the Tramway right-of-way. The diversion channel has a 60-foot bottom width with 3:1 side slopes. The channel has a grade sloping north to south of 0.5% for the majority of its length.

The second diversion is located on the east side of Tramway Boulevard and in the county right-of-way for Tramway Boulevard. This diversion insures the sheet flows, assumed to go to the Bear Canyon Tributary, stay in that arroyo system.

CONCLUSION

Prospectors Ridge Subdivision will be adequately protected if the guidelines set forth in this report are followed. It is again stressed that improvement of the Arroyo del Oso Dam will coincide with the buildout schedule for Prospector's Ridge, and its absence should not hinder work to be performed on the grading and utility installation.

Protection for the phased construction will make use of the Spain Road storm sewer which will be constructed in early 1981. With this storm sewer and the one located in the southwest corner of Prospector's Ridge, all developed flow will be diverted to the Bear Arroyo. Upland flows will be diverted to the storm sewer in Lowell and Spain Road, and none will pass through Prospector's Ridge.

There is a possibility that Phase I and II would be constructed together and if this happens, there would be no need for Phase I temporary improvements. In this case, Phase II construction could be used to protect Prospectors Ridge.

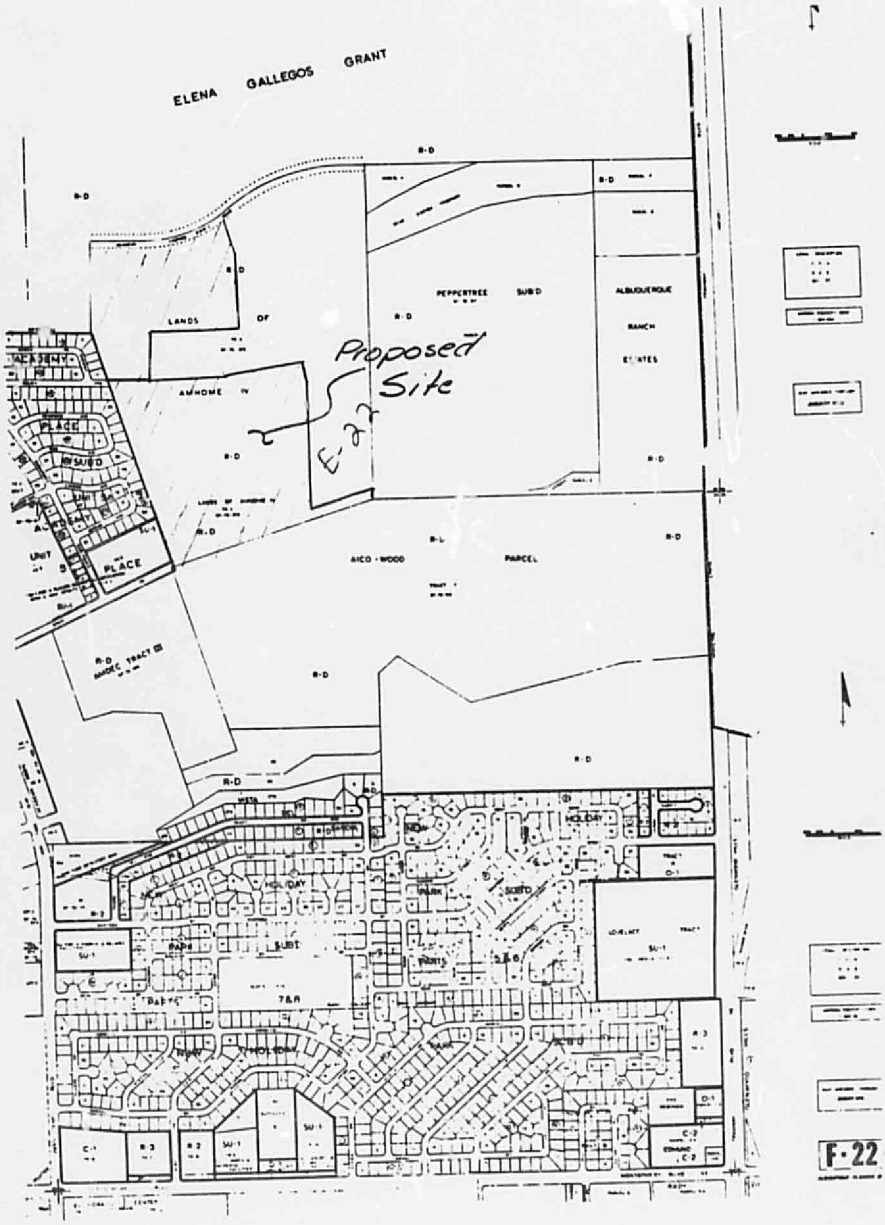
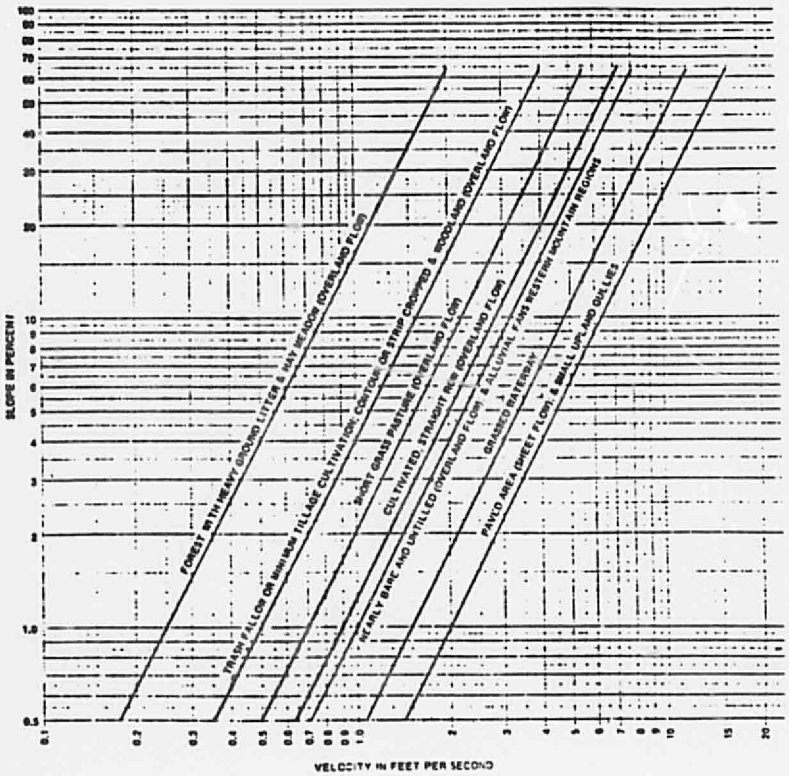

ELENA GALLEGOS GRANT
R-D
LANDS OF
PEPPERTREE SUB'D
ALBUQUERQUE RANCH ESTATES
Proposed Site
E-22
AMHOME IN
PLACE
UNIT 3
AICO-WOOD PARCEL
HOLIDAY
PARK
SUB'D
7&R
F-22

FIGURE I



Velocities for ~~upland~~ method of estimating T_c

FIGURE 2

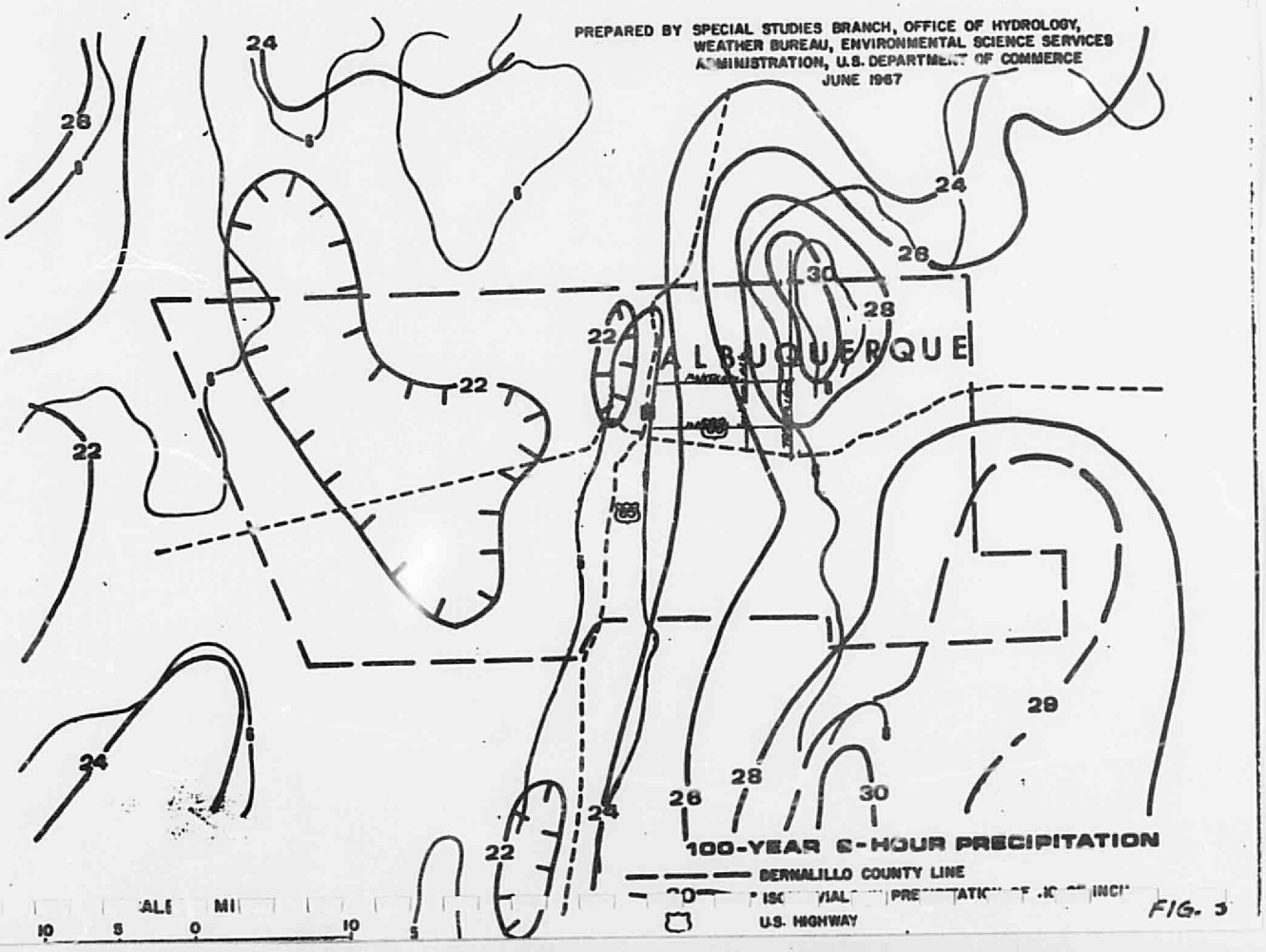
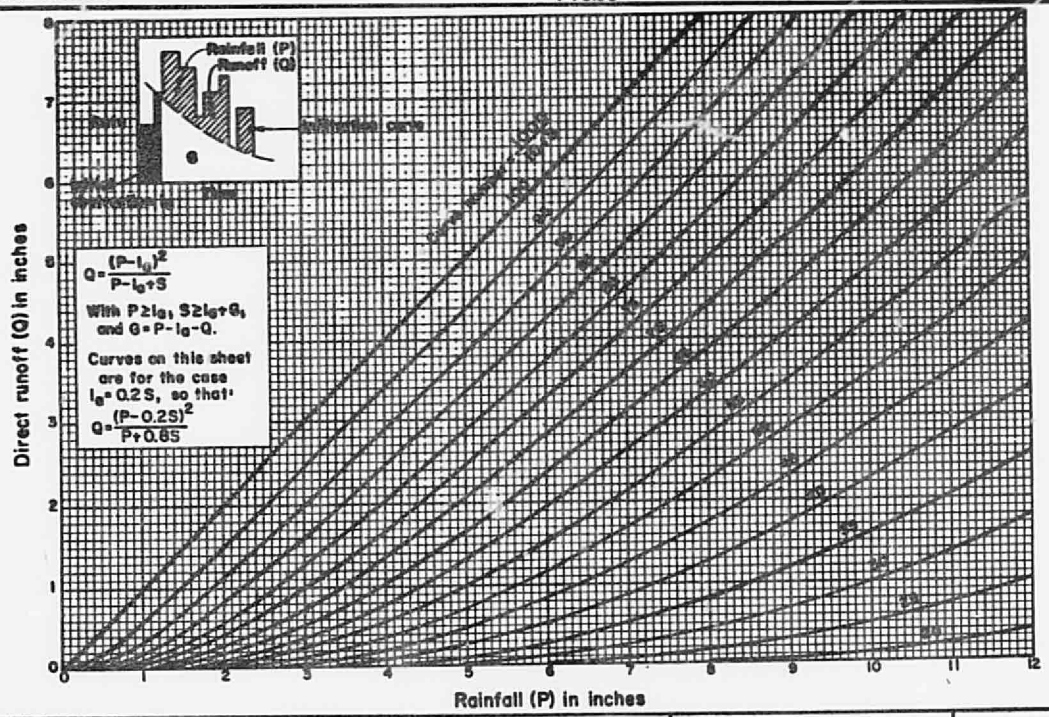

PREPARED BY SPECIAL STUDIES BRANCH, OFFICE OF HYDROLOGY,
WEATHER BUREAU, ENVIRONMENTAL SCIENCE SERVICES
ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE
JUNE 1967
ALBUQUERQUE
24
26
22
30
28
29
100-YEAR 6-HOUR PRECIPITATION
BERNALILLO COUNTY LINE
U.S. HIGHWAY
10 5 0 10 5

FIG. 3

HYDROLOGY · SOLUTION OF RUNOFF EQUATION $Q = \frac{(P-0.2S)^2}{P+0.8S}$

P=0 to 12 inches
Q=0 to 8 inches



REFERENCE
Mockus, Victor; Estimating direct runoff amounts from storm rainfall: Central Technical Unit, October 1955.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ENGINEERING DIVISION – CENTRAL TECHNICAL UNIT

FIG. 4.

SUMMARY
SEE PLATE 4
10-YEAR VALUES

DEVELOPED RUN-OFF RATES

BASIN	AREA	C comp	L (ft)	ΔELEV	TC (min)	Q (cfs)
1	2.04 .4 PONDED 1.64	0.70	562	18'	10	3.1
2	14.36 2.73 PONDED 11.63	0.69	3100'	60'	18.5	17.2
3	12.67 1.66 PONDED 11.01	0.69	2050'	41'	11.8	19.3
4	8.19 1.89 PONDED 6.30	0.70	1700	22'	11.8	11.2
5	8.38 1.36 PONDED 7.02	0.69	1600	33'	10	13
6	13.14	0.86	1850	40'	10.3	30

PROJECT NAME PROSPECTORS RIDGE SHEET 1 OF 2
PROJECT NO. D134 BY RGB DATE 11/18/90
SUBJECT RUN OFF SUMMARY CH'D DATE

SUMMARY

100 YEAR VALUES

DEVELOPED RUN-OFF RATES

SEE PLATE 4

BASIN	AREA	C_{comp}	L (ft)	ΔELEV	Tc (MIN)	Q (cfs)
1	2.04 .4 PONDED 1.64	0.70	562	18'	10	6.20
2	14.36 2.73 PONDED 11.63	0.69	3100'	60'	18.5	34.5
3	12.67 1.66 PONDED 11.01	0.69	2050'	41'	11.8	38.7
4	8.19 1.89 PONDED 6.3	0.70	1700	22	11.8	22.5
5	8.38 1.36 PONDED 7.02	0.69	1600	33'	10	26.2
6	13.14	0.86	1850	40'	10.3	60.5

TOTAL 58.79 AC

SPAIN RD 1.63 AC

LOWER 1.38 AC

61.79 – TO MATCH PLATE 4

PROJECT NAME PROSPECTORS RIDGE SHEET 2 OF 2

PROJECT NO. D134 BY RGB DATE 11/18/00

SUBJECT RUN OFF SUMMARY CH'D DATE

BASIN I UNDEVELOPED RUN-OFF RATES
SEE PLATE 1

AREA = 44.0 AC

$Q = CIA$

$C = .35$

$\Delta ELEV = 130'$

$L = 3000'$

$S = .043$

FROM FIG 2 $Vel = 4.3$

$Tc = 11.6$

$I = \frac{189}{25+11.6} = 5.16$

$Q = 44(5.16) \cdot .35$

$= 79.5$ cfs

BASIN II UNDEVELOPED

AREA = 25.4 AC

$\Delta ELEV = 120$

$L = 3000'$

$S = .04$

FROM FIG 2 $Vel = 4$ ft/sec

$Tc = 12.5$

$I = \frac{189}{12.5+25} = 5.04$

$Q = .35(5.04)(25.4)$

$= 44.8$ cfs

PROJECT NAME PROSPECTOR'S RIDGE SHEET 1 OF 24
PROJECT NO. 01340 BY RGB DATE 12/2/80
SUBJECT UPLAND FLOWS CHKD DATE

BASIN III UNDEVELOPED, SEE PLATE 2

AREA = 39 AC

Δ ELEV = 74

L = 2100

S = .035

FROM FIG 2 V_N = 3.8

T_C = 9.2

use 10

I = 5.4

Q = .35 (39) 5.4

= 73.7

PROJECT NAME PROSPECTORS RIDGE SHEET 2 OF 24

PROJECT NO. 01340 BY RGB DATE 12/2/80

SUBJECT UPLAND FLOWS CH'D DATE

PHASE I

BASIN A SEE PLATE 3

A = 7.1 AC

ΔELEV = 44.0

L = 1080

S = .0407

From Fig 2 Vel 2 ft/sec

Tc = 10

I = 5.4

C = .35

Q = 5.4(7.1).35

Q = 13.5 CFS

BASIN B

A = 8.8

ΔELEV = 58'

L = 1350'

S = .043

Vel = 2.1

Tc = 10.7

I = 5.29

Q = 5.29(8.8)(.35)

= 16.3 cfs

PHASE I

BASIN A SEE PLATE 3

A = 7.1 AC

ΔELEV = 44.0

L = 1080

S = .0407

FROM FIG 2 UDI 2 ft/sec

TC = 10

I = 5.4

C = .75

Q = 5.4(7.1).75

Q = 13.5 CFS

BASIN B

A = 8.9

ΔELEV = 58'

L = 1350'

S = .043

UDI = 2.1

TC = 10.7

I = 5.29

Q = 5.29(8.9)(.75)

= 16.3 cfs

PROJECT NAME PROSPECTOR'S RIDGE SHEET 3 OF 24

PROJECT NO. 01340 BY RGB DATE 12/4/82

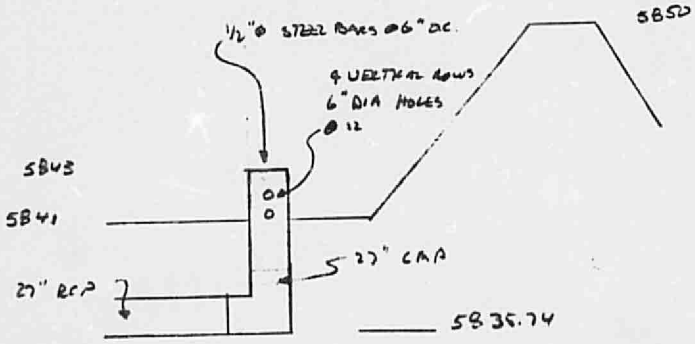
SUBJECT UPLAND FLOWS CH'D DATE

PHASE I

BASIN I, SEE PLATE 3
UNDED FLOW = 79.5 cfs

27" RCP FROM SPAIN ROAD
STORM SEWER.

PIPE INV = 35.74



6" DIA HOLE CAP

ORIFICE EQUATION

$Q = CA\sqrt{2gh}$ $C = .6$

$A = 3.14159\,(3)^2 \div 144 = .196\ ft^2$

Bottom Hole $h = 8.25$

$Q = .6(.196)\sqrt{64.4(8.25)}$ 4

$= 11.17$ cfs

PROJECT NAME	PROSPECTOR'S RIDGE	SHEET 4	OF 24
PROJECT NO.	D1340	BY RGB	DATE
SUBJECT	STAND PIPE CAP	CH'D	DATE

TOP HOLES $H = 7.75'$

$Q = .6(.196)\sqrt{64.4(7.75)}$ +

$= 10.5$ CFS

INLET CONTROL FOR CMP TOP OPENING. HEAD = 7'

FROM HYD. ENG. CIR. NO 5 pg 5-25

$H_w = 7 \Rightarrow \frac{H_w}{D} = 3.1$

$Q = 48$ CFS

TOTAL Q =
48
10.5
11.2
69.7 CFS

CHECK CAP & ELBOW

$Q = .6(A)\sqrt{2gh}$, $h = 12$

$A = 3.14159(1.125)^2$
$= 3.98$

$Q = .6(3.98)\sqrt{64.4(12)}$
$= 66.4$ CFS

FLOW TO ENTER SPWY ROAD $79.5 - 66.4 = 13.1$ CFS

SPILLWAY WIDTH

Q FROM BASIN I = 79.5 CFS

BROAD CRESTED WIER

$Q = 2.7 L H^{3/2}$

PROJECT NAME PROSPECTOR'S RIDGE SHEET 5 OF 24
PROJECT NO. 01340 BY RGB DATE 12/12/
SUBJECT STANDPIPE CAP CH'D DATE

$Q = 79.5$ cfs

$H = 1'$

$L = ?$

$79.5 = 2.7 (L) 1^{1.5}$

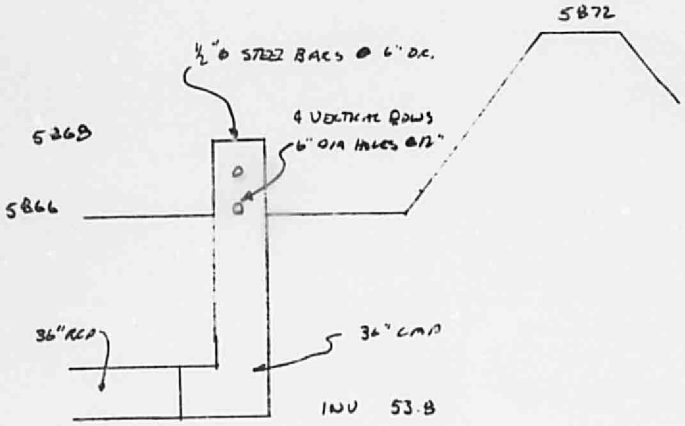
$L = 29.4'$

use 30'

BASIN II Q_{100YR} = 44.8 cfs

36" RCP FROM SPAIN ROAD STORM SEWER

INV 53.8'



PROJECT NAME	PROSPECTOR'S RIDGE	SHEET	6	OF	24
PROJECT NO	01340	BY	RGB	DATE	12/2/00
SUBJECT	STANDPIPE CAP	CH'D		DATE	

FROM HYDRAULIC ENG CIR NO 5
PG 5-25

$H_w = 4 \Rightarrow \frac{H_w}{D} = 1.3$

Q = 50 CFS

PIPE WILL FLOW UNREG. RUNOFF

BROAD CRESTED WIER

Q = 44.8
H = 1

44.8 = 2.7 (1) (L)

L = 16.6 use 20'

BASIN A

UNDEVELOPED FLOW
Q = 13.5 CFS

DRAINAGE SWALE

TRAP SEC
10' WIDE
3:1 SIDE SLOPE

MIN 2.0' DEEP, S = .019, N = .035

FROM HP-67 PROG.

DEPTH OF FLOW + VEL
S = .01 D = .52 ft
Vel = 2.20 ft/sec

24" CMP STAND PIPE CAPACITY w/ 2.0' head
= 14 CFS

PROJECT NAME	PROSPECTORS RIDGE	SHEET 7	OF 24
PROJECT NO.	D134D	BY RGB	DATE 12/2/80
SUBJECT	STANDPIPE CAP	CH'D	DATE

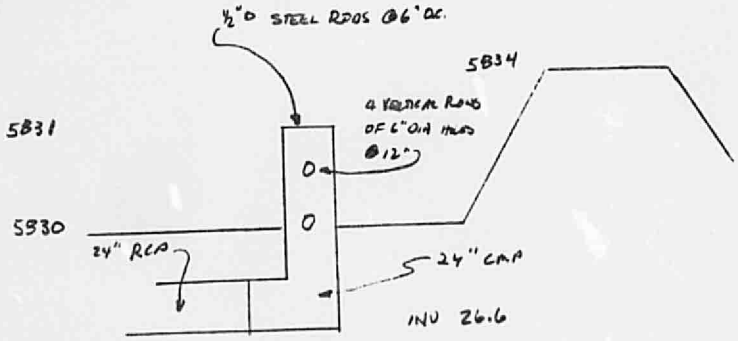
SPILLWAY $Q = 13.5$ CFS

$H = 1$

$13.5 = 2.7(1)L$

$L = 5'$, use 10' WIDE SPILLWAY

BASIN B, $Q_{100} = 16.3$ CFS



FROM HYDRAULIC ENG CIR NO 5

PG 5-25

$H_w = 3 \Rightarrow \frac{H_w}{D} = 1.5$

$Q = 20$ CFS

BROADCRESTED WIER, SPILLWAY

$Q = 16.3$ CFS

$H = 1$

$16.3 = 2.7(1)L$

$L = 6'$

PROJECT NAME PROSPECTORS RIDGE SHEET 8 OF 24

PROJECT NO. 01340 BY RBB DATE 12/2/90

SUBJECT STANDPIPE CAP CH'D DATE

BASIN I, PHASE I
SEE PLATE 3

FLOW QUANTITIES IN COLLECTOR
DRAINAGE SWALE

S = .0139
N = .075
Q = 79.5
DEPTH OF FLOW = 1.22'
VEL = 4.7 ft/sec

BASIN II

S = .0059
N = .075
Q = 44.8
DEPTH OF FLOW = 1.12
VEL = 2.9 ft/sec

PROJECT NAME PROSPECTOR'S RIDGE SHEET 9 OF 24
PROJECT NO. D1340 BY RGB DATE 12/2/80
SUBJECT COLLECTOR DRAINAGE SWALES CHKD DATE

PHASE II

PLATE 5

DRAINAGE SWALE @ RT PARCEL

EAST OF HOME SITE:

DRAINAGE SWALE

Q = 28.4, UNDEV FLOW

S = .027

N = .035

WIDTH = 10'

S:S = 3:1

DEPTH OF FLOW = 0.56'

VEL = 4.24 ft/sec

S = .0196

DEPTH OF FLOW = 0.62'

VEL = 3.82 ft/sec

USE STAND PIPE, SPILLWAY + POND FROM

PHASE I.

PROJECT NAME PROSPECTORS RIDGE SHEET 10 OF 24

PROJECT NO. D1340 BY RGB DATE [illegible]

SUBJECT RT DRAINAGE SWALE CH'D DATE

AU LOT SIZE — NON-PONDED LOTS

65' X 115' = 7475 FT²

½ STREET 65' x 25' = 1625 FT²

TOTAL 9100 FT²

IMPER. SURFACE

STREET	16(65)
SIDEWALK	4(65)
HOUSE	50(55)
DRIVEWAY	18(20)
	4410 SQ FT

PER. SURFACE

9100 - 4410 SQ FT = 4690 SQ. FT.

C_{IMP} = .98
C_{PER} = .40

$$C_{COMP} = \frac{.98(4410) + .40(4690)}{9100}$$

= 0.69 HOME LOTS NO PONDS

PROJECT NAME PROSPECTORS RIDGE SHEET 11 OF 27
PROJECT NO. 01343 BY RGB DATE 12/2/80
SUBJECT "C" FACTORS CH'D DATE

PONDED LOTS

PONDED PORTION

65 X 67.5 = 4388 SQ. FT.

NON PONDED PORTION + ½ STREET

47.5 X 65 = 3088 SQ. FT

25 X 65 = 1625 SQ FT

TOTAL 4713 SQ FT

IMPER

STREET	16(65)	=	1040
SIDEWALK	4(65)	=	260
HOUSE	27.5(50)	=	1375
DRIVEWAY	18(20)	=	360
			3035 SQ. FT.

PERF

4713 - 3035 = 1678 SQ FT

$$C_{comp} = \frac{0.40(1678) + .98(3035)}{4713}$$

$$= 0.77$$

PROJECT NAME PROSPECTORS RIDGE SHEET 12 OF 24

PROJECT NO. D1343 BY RGB DATE 12/2/88

SUBJECT "C" FACTORS CH'D DATE

RT SITES

80% IMP

20% PERF

$C_{comp} = 0.8(.98) + 0.2(.40)$

$= 0.86$

RUN-OFF CALC

BASIN 1

TOTAL AREA 2.04 AC

PONDED AREA

$\frac{62.5 \times 282}{43560} = 0.4$ AC

NON-PONDED AREA

$2.04 - .4 = 1.64$ AC

AREA W/C OF 0.77 $= \frac{47.5(305)}{43560}$

$= 0.33$ AC

AREA W/C OF 0.69 $= 1.64 - .33 = 1.31$ AC

$C_{comp} = \frac{0.69(1.31) + 0.77(0.33)}{1.64}$

$= 0.70$

$L = 562$

$\Delta ELEV = 18'$

$TC = 10$ MIN

$I = \frac{189}{35} = 5.4$

PROJECT NAME PROSPECTOR'S RIDGE	SHEET 13	OF 24	
PROJECT NO. D1343	BY RGB	DATE 11/17/90	
SUBJECT 'C' FACTORS	CH'D	DATE	

BASIN 2

TOTAL AREA 14.36 Ac

PONDED AREA

$[72.5 \times 980] + 5700 + 9700 + 5000 \times 2$

$62.5 \times 130 + 67.5 \times 65 + 10{,}000 = 2.73$ Ac

AREA U/C OF .77

$42.5 \times 1430 \div 43560 = 1.56$ Ac

AREA U/C OF 0.68

$14.36 - 2.73 - 1.56 = 10.07$

COMP C $\dfrac{10.07 \times .68 + 1.56 \times .77}{11.63}$

$= 0.69$

$L = 3100$

$A_{EQU} = 60'$

$S = 0.019$

SEE PLATE $V_{el} = 2.8$ ft/sec

$T_c = \dfrac{3100}{2.8} \div 60 = 18.5$

$I = \dfrac{189}{25 + 18.5} = 4.3$

$Q = 0.69(11.63)\,4.3$

$= 34.5$ cfs

PROJECT NAME PROSPECTOR'S RIDGE SHEET 14 OF 24

PROJECT NO. 01343 BY RGA DATE 11/17/80

SUBJECT RUN OFF CH'D DATE

BASIN 3 TOTAL AREA 12.67

PONDED AREA

$[67.5 \times 390] + 5000 + 9000$

$+ 67.5 \times 77 + 72.5 \times 70 + 21500 \div 43560 = 1.66$ AC

AREA W/C OF .77

$47.5 \times 910 \div 43560 = 0.99$

AREA W/C OF .68

$12.67 - .99 - 1.66 = 10.02$

$$\text{COMP } C = \frac{.68(10.02) + .77(.99)}{11.01}$$

$= 0.67$

$L = 2050$

DELEV = 41

$S = .020$

Vel = 2.9 ft/sec

$$T_c = \frac{2050}{2.9} \div 60 = 11.8$$

$$I = \frac{189}{25 + 11.8} = 5.1$$

$Q = 0.67(11.01)5.1$

$= 38.7$

PROJECT NAME	PROSPECTORS RIDGE	SHEET 15	OF 24
PROJECT NO.	01343	BY RGB	DATE 11/17/80
SUBJECT	RUN OFF	CH'D	DATE

BASIN 4 TOTAL AREA 8.19

PONDED AREA

[73 x 325] + [66 x 67]
+ 27250 + [67.5 x 195]
+ 13750 ÷ 43560 = 1.89 ac

AREA W/ C OF .77

47.5 x 1040 ÷ 43560 = 1.13

AREA W/C OF .68

8.19 - 1.89 - 1.13 = 5.17

$$\text{Comp } c = \frac{5.17(.68) + .77(1.13)}{6.3}$$

= 0.70

L = 1700

BELEV = 22

S = 0.013

Vel = 2.4

$$T_c = \frac{1700}{2.4} \div 60 = 11.8$$

$$I = \frac{182}{25 + 11.8} = 5.1$$

Q = 6.3 (.70) 5.1

= 22.5 CFS

PROJECT NAME PROSPECTOR'S RIDGE SHEET 16 OF 24
PROJECT NO. 0134 BY RGB DATE 11/17/80
SUBJECT RUN OFF CHD DATE

BASIN 5 TOTAL AREA 8.38

PONDED AREA

[72.5 x 325] + 6000 + 6250 + 6000 +
17500 ÷ 43560 = 1.36 AC

AREA W/C OF .77
425 x 715 ÷ 43560 = 0.78 AC

AREA W/C OF .63

8.38 - 0.78 - 1.36 = 6.24 AC

$$C_{COMP} = \frac{0.63(6.24) + 0.77(0.78)}{7.02}$$

= 0.69

L = 1600

Δ ELEV = 33'

S = 0.021

V = 2.9 ft/sec

$T_c = \frac{1600}{2.9} \div 60 = 9.2$

I = 5.4

Q = 0.69(7.02)5.4
= 26.2 CFS

PROJECT NAME PROSPECTOR'S RIDGE SHEET 17 OF 24
PROJECT NO 0134 BY RGB DATE 11/10/90
SUBJECT RUN OFF CH'D DATE

BASIN 6 TOTAL AREA 13.14

NO PONDING RT

C = 0.86

L = 1850

ΔELEV = 40'

s = 0.022

Vel = 3 ft/sec

$T_c = \frac{1850}{3} / 60 = 10.3$

$I = \frac{184}{25+10.3} = 5.35$

Q = 0.86 (13.14) 5.35

= 60.5

POND SIZE
FROM FIG 3, RAINFALL 2.8"

$C_N = 80 \Rightarrow$ DIRECT RUNOFF = 1.1"

PONDED AREA = 4388 sq ft

pond vol = $\frac{1.1}{12} \times 4388 = 402$ cu ft

MIN POND SIZE 10 X 55 X 1

= 550 cu. ft.

PROJECT NAME	PROSPECTOR'S RIDGE	SHEET 18	OF 24
PROJECT NO.	D134	BY RCS	DATE 11/13/00
SUBJECT	RUN OFF	CH'D	DATE

GRATE INLETS NUGGET ST.

FLOW IN STREET

$Q = 22.5$ CFS

$S = .0051$

$n = .015$

DEPTH OF FLOW FROM HP 67 PROGRAM

$D = 5.0'' = .42'$

$V = 2.77$ ft/sec

CAPACITY OF GRATE FROM
CHOW - OPEN CHANNEL HYDRAULICS pg 337-339

$$L_g = \frac{Q}{\epsilon C b \sqrt{2gE}}$$

Q = FLOW OVER GRATE

C = COEFFICIENT OF DISCHARGE
= 0.48

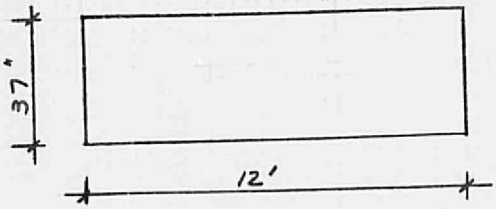
ϵ = % OPENINESS OF GRATE

b = WIDTH OF GRATE

E = TOTAL ENERGY $= y + \frac{V^2}{2g}$

L_g = REQUIRED LENGTH OF GRATE FOR TOTAL WITHDRAWAL

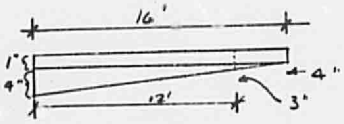
PROJECT NAME PROSPECTORS RIDGE SHEET 19 OF 24
PROJECT NO. 01340 BY RGB DATE 11/20/90
SUBJECT GRATE INLET CAPACITY CH'D DATE



1/2" BARS @ 1 1/4 C.TO C.

60% OPEN AREA

Q PASSING OVER INLET



$A = 2[.083 \times 12] + 0.5(.25)(12)$

$= 3.49 \ ft^2$

$Q = 3.49(2.7) = 9.43$ CFS

$\frac{V^2}{2g} = \frac{(2.7)^2}{64.4} =$

$$L_g = \frac{9.43}{0.60\,(.48)\,12\sqrt{2(32.2)(.11+.42)}}$$

$= 0.47' < 3.09'$

ALL FLOW REMOVED THAT PASS OVER GRATE

TOTAL FLOW FOR TWO INLETS

$9.43 \times 2 = 18.86$ CFS

FLOW LEFT IN STREET

$22.5 - 18.86 = 3.64$ CFS

PROJECT NAME	PROSPECTOR'S RIDGE	SHEET 30	OF 24
PROJECT NO	D1340	BY RGB	DATE 11/07/95
SUBJECT	GRATE INLET CAPACITY	CH'D	DATE

GRATE INLET CAPACITY

MOLLY BROWN AVE

FLOW IN STREET

$Q = 26.2$ CFS

$S = .0389$

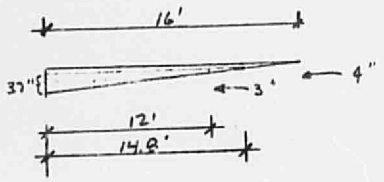
$n = .015$

DEPTH OF FLOW

$D = 3.7'' = .31$ ft

$V = 5.6$ ft/sec

Q PASSING OVER INLET



$A = .05B(12) + .5(.25)(12)$

$= 2.2$ ft^2

$Q = 2.2(5.6) = 12.32$ CFS

$V^2/2g = \frac{5.6^2}{64.4} = 0.49$

$L_g = \frac{12.32}{0.6(.48)12\sqrt{64.4(.31+.49)}}$

$= 0.49 < 3.08$

PROJECT NAME PROSPECTOR'S RIDGE SHEET 21 OF 24

PROJECT NO. 01340 BY RGB DATE 11/21/90

SUBJECT GRATE INLET CAPACITY CH'D DATE

ALL FLOWS REMOVED THAT
PASS OVER GRATE

Q REMOVED FROM STREETS

$12.32 \times 2 = 24.6$ CFS

Q LEFT IN STREET

$26.2 - 24.6 = 1.6$ CFS

HEAD REQUIRED FOR FLOWS
TO ENTER 18" RCP
FROM CONCRETE DESIGN MANUAL
Pg 207

$Q = 9.43$ CFS

FIG 29

$\frac{H_w}{D} = 1.5$

$H_w = 2.25'$

$Q = 12.32$ CFS

$\frac{H_w}{D} = 1.9$

$H_w = 2.85'$

PROJECT NAME PROSPECTORS RIDGE SHEET 22 OF 24
PROJECT NO. 01340 BY RGS DATE 11/12/03
SUBJECT GRATE INLET CAPACITY CH'D DATE

FLOW @ INTERSECTION
OF VISTA BONITA + MOLLY BROWN

Q = 78.44

MOLLY BROWN

Q = 43.94 cfs, V = 6.7 ft/sec, D = .37'

VISTA BONITA

34.5 cfs, V = 4.0, D = 0.44'

ORIFICE SIZE FOR FLOW
TO ENTER FROM HANDBK OF HYDRAULICS
BRATER + KING pg 4-3

$Q = CA\sqrt{2gh} \times 2/3$ (CLOGGING COEF.)

C ~ .6
h = .67
g = 32.2
Q = 78.44

$78.44 = .6(A)\sqrt{64.4(.67)} \times .67$

A = 29.8 sq ft

AREA OF DOUBLE "C"

$(6.5 \times 2.17).6 + .29(6.5) = 10.3$

use 3 DOUBLE "C" INLETS

PROJECT NAME PROSPECTOR'S RIDGE	SHEET 23	OF 24	
PROJECT NO 01240	BY RGB	DATE 11/19/90	
SUBJECT INLET CAPACITY	CH'D	DATE	

HEAD REQUIRED FOR
26 CFS TO ENTER 24" RCP
FROM CONCRETE PIPE DESIGN
MANUAL Pg 207

$\frac{H_w}{D} = 2.05$

$H_w = 4.1$ ft

HEAD REQUIRED FOR
28.4 CFS TO ENTER
42" RCP w/ INLET
CONTROL

$\frac{H_w}{D} = 1.5$

$H_w = 5.25'$

DRAINAGE OF EAST R7 PARCEL

27" RCP STUB OUT
ELEV @ 5840.8'

$Q = CIA$, $C = 0.4$, $I = 5.4$, $A = 13.14$

$Q = 0.4(5.4)(13.14)$
$= 28.4$ CFS

HEAD REQUIRED

$\frac{H_w}{D} = 1.7$

$H_w = 3.8'$

PROJECT NAME	PROSPECTORS RIDGE	SHEET 24	OF 24
PROJECT NO.	01340	BY RGB	DATE [illegible]
SUBJECT	INLET CAPACITY	CH'D	DATE

Calc. by RGB

Chk. by

Project:

SUMMARY OF HYDRAULIC CALCULATIONS

FULL CLOSED CONDUIT DESIGN

Lines: Freq.: Yr.

Proj. No. 01340

Date 11/19/83

Sheet 1 of 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
											LOSSES										
	STRUCTURE	STATION	S.D. TYPE SIZE	Q	A	V	K	S_F	L	Δ	H_F	H_B	H_J	H_T	H_{MH}	H_{MISC}	ΣH_L	E.G.	h_v	H.G.	
1	Y	748.56	←	LOCATED ON SPA.	RD,	SPRING RD	STREET						.79				.79	28.28	.60	27.68	A
2			36	44	7.07	6.22	667	.0044	18.5		.08						.08	29.07	.60	28.47	1A
3	Y	752.06														.02	.02	29.15	.60	28.55	2A
4			36	44	7.07	6.22	667	.0044	107		0.47						.47	29.17	.60	28.57	3A
5	MH	643.06	←	LOCATED ON			STREET								.57		.57	29.64	.60	29.04	4A
6			24	19	3.14	6.05	226	.0071	115		.81						.81	30.21	.57	29.64	5A
7	Y	528.06	←	LOCATED ON			STREET						.08				.08	31.02	.57	30.45	6A
8			24	9.5	3.14	3.02	226	.0018	30		.05						.05	31.10	.15	30.95	7A
9	INLET	490.06	←	LOCATED ON														31.15	.15	31.00	8A
10																					9A
11																					10A
12	Y	528.06	←	LOCATED ON			STREET						.07				.07	31.02	.45	30.57	11A
13			18"	9.5	1.77	5.38	125	.0082	40		.33						.33	31.09	.45	30.64	12A
14	INLET	488.06	←	LOCATED														31.42	.45	30.97	13A
15																					14A
16																					15A
17	MH	643.06	←	LOCATED ON			STREET														16A
18			24"	25	3.14	7.96	226	.0122	25		.31						.31	29.64	.98	28.66	17A
19	Y	618.06	←	LOCATED ON									.12				.12	29.95	.98	28.97	18A
20			24"	12.5	3.14	3.98	226	.0031	30		.09						.09	30.07	0.25	29.82	19A
																		30.16	0.25	29.91	20A

INLET 588.06 ← LOCATED ON NORTH SIDE MOLLY BROWN STREET

NOTES:

SUMMARY OF HYDRAULIC CALCULATIONS

FULL CLOSED CONDUIT DESIGN

Calc. by RGB
Chk. by
Project:
Lines: Freq.: Yr.

Proj. No. D1340
Date 11/19/80
Sheet 2 of 2

	1 STRUCTURE	2 STATION	3 S.D. TYPE SIZE	4 Q	5 A	6 V	7 K	8 S_F	9 L	10 Δ	11 LOSSES H_F	12 H_B	13 H_J	14 H_T	15 H_{MH}	16 H_{MISC}	17 ΣH_L	18 E.G.	19 h_v	20 H.G.
A																				
1A																				
2A																				
3A																		29.95	.78	29.17
4A													.12				.12	30.07	.78	29.29
5A	Y	618.06	←	LOCATED ON MAIN BEAVER STREET							.35						.35	30.42	.78	29.64
6A			18	12.5	1.77	7.07	105	0.0142	25											
7A	INLET	573.06	←	LOCATED SOUTH SIDE MAIN BROWN STREET																
8A																				
9A																				
10A																				
11A																				
12A																				
13A																				
14A																				
15A																				
16A																				
17A																				
18A																				
19A																				
20A																				

NOTES:

E22/D1

File with report

cc - CT
- HRO
- FRED A
Refman
DH0304 8/20

1594

candlelight homes

August 15, 1985

RECEIVED
AUG 19 1985
CITY ENGINEER

Mr. C. Dwayne Sheppard, P.E.
City Engineer
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Dear Dwayne:

This is to confirm our conversation this morning as follows:

1. Engineering plans for improvements on Ouray Road and installation of sidewalks on Ouray Road have been approved by the City and we are presently obtaining estimates from contractors for this work. Financing is available and it is anticipated we will have paper work ready sometime in October.

2. Also in October we will commence work installing sidewalks on Spain Road abutting Prospectors Ridge Subdivision.

3. My commitment to the homeowners abutting Lomas Blvd. was a contribution of $40,000.00 at such time as improvements would be taking place. We had been placing money in Escrow on a per house basis at First American Title Company for this purpose, since it was anticipated that an inproved district would be established for improvements of Lomas Blvd. Since Elmer Sproul elected not to place the Lomas improvements an improvement district the funds we had in Escrow was released to Elmer Sproul, for this purpose. My feeling would be that these funds were to cover any improvements on Lomas Blvd., whether it be paving or drainage. I called Elmer Sproul today and set up an appointment for September 3 to discuss this matter. Elmer is going to call Ron Brown and have him at the meeting also.

Upon my return from my vacation I shall contact you and advise further.

Very truly yours,
CANDLELIGHT HOMES

Gerhard Muller,
President

GM:sd
cc: Eric Muller

650 e. montana, suite a las cruces, n.m. 88001 phone (505) 526-9716

ANDRE H.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 6, 1982

James D. Smith, Vice President
AMDeC
6400 Uptown Blvd
Albuquerque, New Mexico 87110

Ref: Prospectors Ridge Phase 1A
Rough Grading (E22-D1)

Dear Mr. ~~Smith~~ Jim

Attached hereto is a copy of the discussion meeting held in my office regarding rough grading of the aforementioned subdivision. Certain drainage commitments were conditional for permission to rough grade this subdivision. The commitment for a temporary stilling basin, detention pond and outfall to the channel between ALCO-WOOD and Overlook have never been fulfilled. This Summer during the rain large amounts of flows and sediment was discharged from this site as a result of the rough grading of this site.

In order to prevent the same sediment and maintenance problems experienced in the Summer of 1982 from occurring in 1983, I hereby request your performance of the temporary drainage improvements referred to in your memo. Your attention to resolve this matter is appreciated.

Sincerely,

Dick.

Richard S. Heller
City Engineer

RSH/AH/el

cc: Charles M. Easterling, City Engineers
Richard Leonard, AMAFCA

THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE May 11, 1981 REF. NO._____

TO: Richard S. Heller, City Engineer

FROM: Charles M. Easterling, Principal Assistant City Engineer/Hydrology CME

SUBJECT: Rough Grading of Prospector's Ridge, Phase II

I have three problems with allowing the Prospector's Ridge Phase II rough grading due to Jim Smith's (of AMDEC) reluctance to comply with AMAFCA's Resolution 80-15 requirement for dedication of the arroyo right-of-way. As far as I am concerned, until Mr. Smith sees fit to begin discussions with AMAFCA, this subdivision is no closer to final acceptance than it was three years ago. If AMAFCA maintains its current stand, AMDEC will be reluctant to install the improvements required to protect the downstream public improvement and private development. Based on this my problems are.

1. Most lots grade toward the streets at about 2% slope.
2. The streets are steeper than 3%.
3. This combination and unimproved lots and streets will generate substantial sediment which will be left for the City and AMAFCA to clean up and shoulder the responsibility and liabilities from resulting damages.

Also, the note " Approved for rough grading ± 1'" is not acceptable as some of the interim or temporary drainage improvement had better be built closer than ± 1.0 foot.

CME/fs

Chuck,

If a suitable erosion control plan was submitted Items 1-3 would be negated. As for the last ¶ the ±1' is relative not construction grades. If a structure is to have a 10' deep dam section w/ crest @ 1000 then the section can not vary between 9'-11', the crest elev can 1001-999.

RSH

5/12/81

P.S. We should not worry as they are doing nothing now!

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

March 12, 1981

E22-D1C

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RECEIVED
MAR 16 1981
CITY ENGINEER

Re: Prospectors Ridge Subdivision Drainage

Dear Mr. Heller:

In our conversation on March 5, 1981, you expressed concern over two intersections where street flows change directions or enter flood control facilities. These being Molly Brown and Lost Dutchmen; Molly Brown and Vista Bonita.

At Molly Brown and Lost Dutchman, most of the flow in Molly Brown is removed east of the intersection through storm inlets. Most of the flow at this point travels south down Lost Dutchmen and turns west on Molly Brown. The hydraulic properties of this flow in Lost Dutchman are as follows:

Q = 38.7 cfs
N = .015
S = .0058 ft/ft (Lost Dutchman Street slope)
Depth of Flow = 6.1 inch
V = 3.6 ft/sec
F = 1.1

Since the Froude number is so low, the possibility of a hydraulic jump is low. If this flow did jump and assuming 100% conversion, then the total depth would be 8 inches. Lost Dutchman Street is warped to match the grade on Molly Brown Street, and this warp helps turn the water to match the flow in Molly Brown.

At the intersection of Molly Brown and Vista Bonita, there are two flows converging at a knuckle. The hydraulic properties for this confined flow at the knuckle are listed below:

78.4
38.7
39.7

39.7
38.7
78.4

Q = 78.4 cfs
S = .02 ft/ft
N = .015
Street Width = 72 feet
Depth of Flow = 2.7"
V = 4.4 ft/sec
F = 1.6

If this flow jumps and assuming 100% conversion, total depth would be 6". The grate inlets to accept this flow were sized using a clogging factor and without considering the curb opening admitting flow. With these two additional safety factors added to the design, we feel that the drainage system will work with no danger to the surrounding properties.

In summary, we feel that both intersections are designed to prevent any major flood damage as they are presently detailed. Our calculation for these intersections are enclosed for your use.

If you have any questions, please feel free to contact Ron Booth or me at this office.

Sincerely yours,

Michial M. Emery, P.E.
Vice President

Enclosure

cc: Mr. Allan Whitesel

RGB/js
Job No. 0 134 0

MOLLY BROWN & LOST DUTCHMAN

INTERSECTION

Q @ LOST DUTCHMAN

38.7 CFS

Q @ MOLLY BROWN

5.24 CFS

LOST DUTCHMAN

$Q = 38.7$ CFS

$N = .015$

$S = .0058$ ft/ft

DEPTH = 6.1 IN

$V = 3.6$ ft/sec

$A = 10.8$ ft^2

$$F = \frac{V}{\sqrt{gd}}, \quad d = \frac{A}{T_W} = \frac{10.8}{32} = 0.3$$

$$= \frac{3.6}{\sqrt{32.2(.3)}} = 1.1$$

SINCE THE F IS SO LOW, THE POSSIBILITY OF A HYDRAULIC JUMP IS VERY LOW. IF THIS FLOW DID JUMP & ASSUMING 100% CONDITION, DEPTH = 8" OR TO TOP OF CURB

PROJECT NAME PROS. RIDGE SHEET 1 OF

PROJECT NO. 01343 BY RGB DATE

SUBJECT DRAINAGE CH'D DATE

VISTA RONDA

Q = 34.5 cfs
S = .0095
N = .015
DEPTH = 5.3 in
V = 4.2 ft/sec
A = 8.2 ft²

$d = \frac{8.2}{32} = 0.3$

$F = \frac{4.2}{\sqrt{32 \times 0.3}} = 1.5$

ENERGY LOSS FIG 8
≈ 5%

COMBINED FLOW @ KNUCKLE

Q = 78.4 cfs
S = .02
N = .015
WIDTH = 72' ← WIDTH OF ROW
DEPTH = 2.7"
vel = 4.4 ft/sec

IF 100% SUMP

$\frac{V^2}{2g} = \frac{4.4^2}{64.4} = .3'$

TOTAL DEPTH = .5'

STILL WITHIN CURB HEIGHT

PROJECT NAME	PRES RIDGE	SHEET 3	OF
PROJECT NO.	01341	BY RGM	DATE
SUBJECT	DRAINAGE	CH'D	DATE

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

January 26, 1981

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Prospector's Ridge Subdivision

Dear Mr. Heller:

Enclosed are three (3) copies of the Drainage Analysis for Prospector's Ridge Subdivision for your review. These reports incorporate changes to the drainage scheme which were requested by Mr. Conegliano after his review of the report.

If you have any questions, please feel free to contact Ron Booth or me at this office.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

Enclosures

cc: Mr. Allan Whitesel
Mr. Bruno Conegliano

RGB/s
Job No. 0 134 0

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

January 26, 1981

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
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Re: Prospector's Ridge Subdivision

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If you have any questions, please feel free to contact Ron Booth or me at this office.

Sincerely yours,

Michael M. Emery

Michael M. Emery, P.E.
Vice President

Enclosures

cc: Mr. Allan Whitesel
Mr. Bruno Conegliano ✓

RGB/js
Job No. 0 134 0

RECEIVED
DEC 03 1980
CITY ENGINEER

MEMO TO FILE: Prospectors Ridge Phase 1A Grading Plan

DATE: Wednesday, November 26, 1980

FROM: Allan Whitesel

SUBJECT: Discussion with Dick Heller Concerning Current Bohannan Grading Plan

IN ATTENDANCE: Dick Heller - City Engineer
Ron Booth - Design Engineer, Bohannan Engineering
Allan Whitesel - AMDeC

Ron, Dick and I discussed in some detail the original plan that Ron Booth had proposed to the City for grading of Prospectors Ridge Phase 1A. At that time I pointed out that the philosophy behind doing the grading now for the Phase 1A was to do the rough grading for the lots and the streets so that the 7-E Master Plan Water Line could be constructed at this point in time to roughly the same grades as the future streets would be. I told Dick I realized that there would have to be some berms placed east of Prospectors Ridge Phase 1A prior to any houses or future construction within the Phase 1A site. I asked Dick if it would not be acceptable to simply provide a temporary drainage pond and outlet in the far southwest corner of Prospectors Ridge through the proposed easement in that area for the rough grading phase (i.e. Phase 1A).

I explained to Dick that this is rough grading only. I realized before obtaining building permits for homes, that I would have to come back and present an upland water diversion scheme of some sort acceptable to the City Engineer. However, I also mentioned to Dick that the storm sewer in Spain Road was being submitted to the City next week and would be under construction probably by the first of the year, and would be complete much before the next rainy season comes in late summer.

Providing a temporary pond and outlet in the southwest corner of Prospectors Ridge until the Spain Street Storm Sewer is constructed provides me with the flexibility to do my Phase 1A grading now and get my 7-E water line in, protect the downstream property in the southwest corner of Prospectors Ridge, and then at that time I am ready to construct homes on Phase 1A, or any City improvements on Phase 1A, or I am ready to do Phase II, I could use the storm sewer as part of the temporary upland diversion at a much more economical and reasonable manner. Dick agreed with this and said that would be fine if I chose to do this.

The last item we discussed was how to take the water from the southwest corner of Prospectors Ridge Phase 1A, across Spain into that channel between AICO-WOOD and Overlook. Several items were discussed. The

first one was an open ditch with a 10:1 side slope cut across the Spain right-of-way. After discussing this a little bit it was felt that this would probably be a safety hazard for construction crews or other people driving down Spain.

The next item that was discussed was a 24/36 inch C.M.P. to be placed under Spain Road. It was suggested by Ron Booth that possibly Kent Nowlin might have a salvaged pipe that could be put in rather inexpensively.

Further discussion indicated that maybe the best way to handle the flow at this point in time would be to excavate a pond in the southwest corner of Prospectors Ridge Phase 1A. A temporary pond with the top being the same elevation as the current elevation of Spain Road. That would be an interim solution, very inexpensive. And then at the time Spain Road Storm Sewer is completed and the stubout will be put to the north property line of Spain Road, a desilting berm would be constructed at this location and the pond on a temporary basis would drain into the Spain Street Storm Sewer, until such time as Phase 1A was developed and the permanent solution built.

Dick indicated that this would be acceptable to him, however he would need a commitment from the developer that should there be a need for a pipe across Spain or some other facility to current an interim problem developing due to grading of Phase 1A prior to development, that AMDeC would rectify the solution. I indicated that was acceptable and I would write a letter to Dick stating that.

Dick said if the plan was revised to incorporate the items covered in this discussion he would sign the plan for "Rough Grading Only ± One Foot".

affiliated mortgage & development company amdec

a wholly owned subsidiary of Albuquerque Federal Savings and Loan Association

6400 uptown blvd., n.e.
albuquerque, new mexico

mailing address
p. o. box 25000
albuquerque, new mexico 87125

AM - 656

F22-D 1C

November 19, 1980

RECEIVED
NOV 19 1980
CITY ENGINEER

Mr. Richard E. Heller, P.E.
City Engineer
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Subject: Approval for Rough Grading of Prospectors Ridge Phase 1A.

Dear Dick:

Pursuant to our discussion this morning I am requesting your approval to commence rough (1'±) grading only for Phase 1A Prospectors Ridge.

My Consulting Engineer has has provided me with a grading plan and quantity take-off for earthwork which they (engineer) certify as being sufficiently engineered to allow rough grading to proceed.

I understand that your permission to begin rough grading cannot by interpreted as an approval of final plans, drainage, etc. I also understand that if the final approval plans for this subdivision require grading different from that shwon on this Grading Plan, that AMDeC shall be totally responsible for the regrading.

Sincerely,

AFFILIATED MORTGAGE & DEVELOPMENT COMPANY

Allan L. Whitesel

Allan L. Whitesel, P.E.
Chief Engineer

AW/sd

APPROVED
CITY OF ALBUQUERQUE
Municipal Development Department

Richard E. Heller 11/20/80
City Engineer Date

(12)

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

June 4, 1980

Mr. David Milliken
Bohannan-Huston Inc.
4125 Carlisle Blvd. NE
Albuquerque, NM 87107

Reference: Prospector's Ridge Subdivision

Dear Mr. Milliken:

Given the uncertainties in the economy it is not possible for the City to grant approval for a drainage scheme for a parcel to be developed on the basis of anticipated future improvements, to be executed by others.

As it stands today, no facilities exist to divert the flows east of Tramway Blvd., no approved construction plans are available for the collection of the 10 yr. flows from the proposed Peppertree Subdivision and for the safe conveyance of the excess flow from the 100 yr. storm to Spain Road, nor means to intercept and convey all these flows to the Bear Arroyo.

Therefore, acceptance of a drainage scheme for the R-1 portion of this property, is made contingent upon the submission by the developer of a committment to the construction of adequate structures, for the safe collection and conveyance to the Bear Arroyo of the flows generated by the watershed upstream of this parcel. Said committment must be acceptable by the City Attorney's Office, and be on hand before plat approval is granted. An interim solution could be acceptable, provided that it was consistent with the recommendations of the adopted sector development plan.

Reiterating the substance of the statements made by the City Engineer, approval of a summary plat for this parcel cannot be granted, if the ROW for the Bear Arroyo Tributary is not provided in a manner acceptable to the Flood Control Authority, or ROW for Chelwood Park Blvd., for Spain Rd. adjacent to Tract E, for Academy Blvd. adjacent to Tracts A&B and for the street between Tract A&F; an acceptable committment must also be made for the construction of these roads. Any proposed drainage scheme must address the drainage conditions of said roadways, and indicate the means to drain them, under two possible conditions:

HYDROLOGY E22/D1 FIVE PLANS 2 of 2

1. Lands upstream undeveloped before development occurs in this parcel;

2. Developed conditions (or contracts for the construction within upstream properties executed.)

Regarding the internal drainage of the R-1 portion of this parcel, I do not concur with the assumption that no flows will reach the northern most road from Tracts A, D and from the proposed park site. I believe that the drainage scheme must anticipate that the roadway will collect the flows from a strip of land 200 ft. in width, north of the proposed street ROW. It is my opinion also that it would be expedient to convey the flows from this roadway to the Bear Canyon Tributary through a drainage easement, either along the west property line of the park site, or along the west boundary of Tract C.

With specific regard to the park site, I do not believe that the City is interested in assuming the burden for the improvements on the Bear Arroyo as it crosses the 5.47 acres parcel designated as park. Incidentally, I note that the park site is shown as included with this development, but no discussion of its drainage conditions is given.

Regarding the contribution from Tracts E&F, it is my belief that detention of the 100 yr. runoff with a 5 yr. rate of release (as indicated by the interim design guidelines issued last year), should be the design approach for the proposed improvements. The indicated 47.8 CFS entering the road ROW in a direction perpendicular to the traffic flow, would constitute an undue hazard. It is also my opinion that, since the City Engineer's Office does not object to the release of the entire developed runoff, provided that the rate of discharge is controlled, said requirement does not constitute a severe burden. In fact this approach has been adopted by other high density developments in the community.

Regarding the collection of the flows from Basins 2, 3C, & 5, the proposal submitted (Appendix II) appears to constitute a potential attractive nuisance and a public safety hazard. This office is beleagured by complaints regarding storm sewer inlets, entered freely by children and adolescents. It appears difficult to provide either adequate safety measures for the inlets suggested or to police said facilities, once constructed. Therefore, in a manner consistent with the scheme suggested and adopted by the Engineer for the Peppertree Subdivision, the 10 yr. water flows should be intercepted at the confluence of basins 3C & 5 with a short run of storm sewer. The additional flow resulting from a 100 yrs. storm, could be handled much more easily on surface

drainage.

As verbally indicated to you, I have concerns about the capability of controlling the flows at the street intersections, most notably in the proximity of Lots 138, 76, 79 & 80, and 13 & 14. I also have substantial reservations regarding the capability of providing satisfactory protection for Lots 92, 30, & 31 and Lots 27, 28 where the flows from basin 4A to basin 5 could cause backwater conditions. Incidentally, access to Lot 28 seems difficult to accomplish, if water must be prevented from entering the lot.

Again it is my strong recommendation that the possibility of conveying portion of the flows from basins 2 & 3 to the north to Bear Arroyo Tributary, be given thoughtful consideration.

Finally, I ~~have concern~~ am concerned regarding the grading of the lots with a north-south orientation, which appear to be subject to inter-lot runoff. Since this condition is the major source of the complaints received by my office, the grading plan will have to indicate that the water from these lots will be conveyed to the public ROW.

I hope you will be able to address the concerns expressed above, in a manner satisfactory both to your Client and to the City.

Very truly yours,

Bruno Conegliano
Assistant City Engineer/Hydrolo

BC/lc

April 18, 1980

Mr. Michial Emery
Bohannan-Huston, Inc.
4125 Carlisle Boulevard, NE
Albuquerque, NM 87107

Dear Mr. Emery:

Reference your "Drainage Analysis of Prospectors Ridge Subdivision," April, 1980.

With regard to the Bear Arroyo Tributary, a 60 ft. ROW in a 300 ft. floodplain is unacceptable. Either of the following would be acceptable:

1. Construct an improved channel now. A 60' ROW may suffice if a concrete channel is proposed, approved, and built.

2. Dedicate the 100-year floodplain as a drainage ROW and leave the channel essentially natural. However, a transition must be provided to the existing channel west of Prospector's Ridge. A transition may also be needed between the Peppertree Development and Prospector's Ridge. Other modest improvements, e.g., bank armoring may be required to ensure channel stability.

I am available to discuss.

Sincerely,

Richard E. Leonard
Executive Engineer

ic
CC: R. Heller
B. Conaghan
J. Smith
V. Kimmick

May 7, 1980 DRAFT

To: Richard S. Heller
From: Bruno Conegliano
Subject: Prospectos Subdivision

Basic problems exist regarding the drainage plan transmitted to the City. The following being the absence of any committment to improve the Bear Arroyo Tributary or to dedicate the floodway for said channel. Mr. Leonard's letter of April 19, 1980 indicated the unacceptability of the 60' right of way in a 300' floodplain. Previous correspondence (the letter to Mr. Emery dated February 3, 1980) also expressed his concern for the lack of consistency of the proposal with the Northeast Drainage Management Plan. From my conversation this morning with both Mike Emery and Dave Milliken, I have become acquainted with the transactions that conveyed the northeasterly 20 acres to the Albuquerque Academy, the 8.01 acres to Albuquerque Public Schools and 3.5 acres to the Morman Church. The proposal transmitted also shows the dedication as a park site for an additional 5.47 acres. In this manner the former owner of the land previously identified as Pepper Tree West, relinquished all the burdens for the treatment of the arroyo or the dedication of the floodplain as requested by Mr. Leonard. Please approach as substantially and effectively circumvented the regulations instituted by the community in order to insure the continued orderly development. Since Gene Mares has indicated with his letter dated November 14, 1979 that the Subdivision Review Board does not consent to any land division until both the drainage question and the water availability are resolved, I feel that it is premature for the City Engineer's Office to consider the granting of the approval for the southern portion of this parcel without the firm committment to the necessary dedication or channel improvements in the Bear Canyon Arroyo Tributary. I want to also point

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

5 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 88[illegible]000

May 1, 1980

EDR-D/C

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Addendum to Prospector's Ridge Drainage Report Submitted April, 1980

Dear Mr. Heller:

Enclosed is a revised chart of the 100-year flows with the composite "C" values shown. After a more detailed look at the previous calculation, we revised the calculations and removed the ponding areas from the contributing areas for the runoff. New "C" values were also calculated with the ponded areas removed. The total revised flow was reduced by about 10 CFS.

If you have any questions, please feel free to call me at this office.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

Enclosure

cc: Mr. Allan Whitesel

RGB/js
Job No. 79-162

RICHARD E. LEONARD
EXECUTIVE ENGINEER

S. H. SWINBURNE, CHAIRMAN
WILLIAM V. HEREFORD, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque Metropolitan Arroyo Flood Control Authority
5500 PROSPECT AVE. N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 344-3516

RECEIVED
APR 21 1980
CITY ENGINEER

E22-D1c on D1b

April 18, 1980

Mr. Michial Emery
Bohannan-Huston, Inc.
4125 Carlisle Boulevard, NE
Albuquerque, NM 87107

Dear Mr. Emery:

Reference your "Drainage Analysis of Prospectors Ridge Subdivision," April, 1980.

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I am available to discuss.

Sincerely,

Richard E. Leonard

Richard E. Leonard
Executive Engineer

ic
cc: R. Heller
B. Conegliano
J. Smith
V. Kimmick

RSH	RSH	ADM	
HRO		SUR	
CDS		COUN	
DES		SEC	
INSP		FILE	
HYDRO		RETURN	

5/12/80
5/12/80

ENGINEERS PLANNERS PHOTOGRAMMETRISTS

BOHANNAN-HUSTON INC.

5 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 8 000

E 22 - D 1c + D 1b

April 16, 1980

RECEIVED
APR 17 1980
CITY ENGINEER

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Prospectors Ridge Subdivision Drainage Analysis

Dear Mr. Heller:

Enclosed are three (3) copies of the revised drainage report for Prospectors Ridge Subdivision (formerly Burning Bush). The original report was submitted on February 12, 1980. This revised report is to slightly modify drainage concepts presented in the original report. Please note that there are now two drainage structures that drain the RT and church sites east of the home sites. The calculations have been changed to show this.

As of this date, we have not received any comments on the original drainage report submitted. We would like to have your comments as soon as possible so final design on this project can proceed. If you have any questions, please feel free to contact Ron Booth or me at this office.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

RECEIVED
APR 17 1980
CITY ENGINEER

Enclosures (3)

cc: Mr. Allan Whitesel

RGB/js
Job No. 79-162

Bruno — note the original submission date. RA

RSH RA
HRO
CDS
DES
INSP
HYDRO

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COUN
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FILE
RETURN

BOHANNAN-HUSTON INC.
ENGINEERS, PLANNERS, PHOTOGRAMMETRISTS
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

February 19, 1980

RECEIVED
FEB 21 1980
CITY ENGINEER

Mr. Richard Leonard
Executive Engineer
AMAFCA
P.O. Box 25851
Albuquerque, NM 87125

Re: Your Letter of February 13, 1980, Burning Bush Subdivision

Dear Mr. Leonard:

Thank you for your rapid response on the above-referenced subdivision's drainage report. We are aware of the policy issues that are presently being discussed concerning the treatment of the Bear Tributary Arroyo and understand that our proposal for this channel cannot be approved at this time.

However, the drainage report for the phase of Burning Bush that we are working on now, calls for leaving the existing flood plain on the Tributary undisturbed at this time and has no impact on the system. Therefore, I feel the report, if satisfactory, can be approved for the southern development area with the decision on the Bear Tributary being held in abeyance until such time as the policy decisions are made. For this reason, I hope that the report for the southern portion of the area can continue to be reviewed by the appropriate individual.

If you should have further questions concerning this matter, please feel free to call.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc: Mr. Richard Heller
Mr. Bruno Conegliano ✓
Mr. Jim Smith
Ms. Sheilah Sweenhart

MME/js
Job No. 79-162

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
WILLIAM V. HEREFORD, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque Metropolitan Arroyo Flood Control Authority
3600 PROSPECT AVE. N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 344-3614

RECEIVED
FEB 15 1980
CITY ENGINEER

February 13, 1980

Mr. Michial M. Emery, P.E.
Vice President
Bohannan-Huston, Inc.
4125 Carlisle Blvd., NE
Albuquerque, NM 87107

Dear Mr. Emery:

Reference your February 12, 1980 letter Re: Burning Bush Subdivision Drainage Report.

I am sure you are aware that the drainage report conflicts with the soft lining and ROW requirements of the Northeast Heights Drainage Management Plan. Therefore, other than a flat disapproval, neither the Designee nor I can act on your report until the policy issues are resolved. I trust you will understand.

Sincerely,

Richard E Leonard

Richard E. Leonard
Executive Engineer

ic
cc: R. Heller
B. Conegliano
Jim Smith
S. Sweenhart

BSH	ADM
HRO	SUR
CDS	COUN
DES	SEC
INSP	FILE

Hydrology

BOHANNAN-HUSTON INC.
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
ENGINEERS PLANNERS PHOTOGRAMMETRISTS

February 12, 1980

Response due by March 14

RECEIVED
FEB 13 1980
CITY ENGINEER
ENM RBH ADM
HRO SUR
CDS CUUN
DES SEC
INSP FILE
Hydrology

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Burning Bush Subdivision Drainage Report

Dear Mr. Heller:

Transmitted with this letter are three (3) copies of Burning Bush Subdivision Drainage Report.

Also, approval is needed on the Bear Tributary Channel Design, so design may start on the next phase of the subdivision. The results of the analysis are detailed below.

The Bear Arroyo Tributary was analyzed for three possible upstream conditions in order to determine the structural improvements necessary to safely pass the Bear Tributary through AMDEC's property. The three conditions analyzed were: 1) No diversion east of Tramway, 2) A diversion approximately one mile east of Tramway, and 3) A diversion at Tramway. The watershed below Tramway was considered fully developed and without the drainage constraints of AMAFCA's Resolution 72–2 in effect. The hydrologic results are summarized below.

100–Year Discharges

Location of Design Point	Diversion One Mile East	Diversion At Tramway	No Diversion
At Tramway	299 cfs	0	1207 cfs
At Chelwood	544 cfs	538 cfs	1262 cfs
At Eubank	1367 cfs	1360 cfs	1371 cfs

Channel Requirements
W/ Diversion One Mile East

Location of Design Point	Flow Depth	Channel Depth
At Chelwood	1.7 ft	4.0 ft
At Eubank	2.8 ft	5.5 ft

W/Diversion at Tramway

At Chelwood	1.7 ft	4.0 ft
At Eubank	2.8 ft	5.5 ft

No Diversion

At Chelwood	2.7 ft	5.0 ft
At Eubank	2.8 ft	5.5 ft

The channel necessary, if either of the diversions is built, would be a concrete lined trapezoidal channel with 10'–0" wide bottom, 2:1 side slopes, 4'–0" deep, 3000 feet long and 3100 feet of channel 5'–6" deep.

The channel necessary without an upstream diversion would be 3000 feet of 5'–0" deep channel and 3100 feet of 5'–6" deep channel. A right-of-way of 60 feet will allow adequate room for construction and maintenance for both alternatives.

If you should have any questions regarding this matter, please contact Ron Booth or me at the office.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

Enclosures

cc: Ms. Sheilah Sweenhart

RGB/js
Job No. 79-162

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

MAYOR
David Rusk

November 14, 1979

Sheilah Sweenhart
AMDEC
6400 Uptown NE
Albuquerque, NM 87110

RE: S-79-45

Dear Ms. Sweenhart:

At their meeting of November 8, 1979, the Subdivision Review Board approved the above referenced request of the proposed plat of Burning Bush Subdivision for the SW/4, Section 27 and the N/2 N/2 NW/4 Section 38, T11N, R4E, located on the north side of Spain Rd. (projected) between Juan Tabo and Tramway Blvds. containing approximately 53.13 acres subject to the following conditions:

1. Question of drainage right-of-way at the north edge of plat left open and to be subsequently inserted on plat consistent with the decision of the Planning Commission.
2. Complete signing of the final plat will not be appropriate until such time water is available to all lots subdivided.
3. A revision of the street pattern at the southwest corner to give a street segment from the western most north/south street to meet the intersection on the south side of Spain and elimination of the adjacent access onto Spain must be provided.
4. The entire width of Spain Rd. is to be dedicated on this plat or none of it dedicated on this plat and all to be dedicated on the adjacent plat to the south - which ever comes first.

If you have any questions concerning this matter, please feel free to contact this office at 766-7422.

Sincerely,

Gene Mares

Gene Mares
Principal Planner

GM/ss

cc: Bohannan-Huston, 4125 Carlisle NE; 87107
c/o City Engineer

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

MAYOR
David Rusk

File

October 24, 1979

AMDEC
6400 Uptown NE
Albuquerque, NM 87110

RE: S-79-45

Gentlemen:

At their meeting of October 23, 1979, the Subdivison Review Board deferred the above mentioned request for the proposed Burning Bush Subdivision for the SW/4 Section 27 and the N/2 N/2 NW/4 Section 38, T11N, R4 , located on the north side of Spain Rd. (projected) between Juan Tabo and Tramway Blvds. containing approximately 53.13 acres to allow the Environmental Planning Commission to hear this request as an amendment to the Sector Plan.

If you have any questions concerning this matter, please feel free to contact this office at 766-7422.

Sincerely,

Gene Mares

Gene Mares
Principal Planner

GM/ss

cc: Bohannan-Huston, Inc., 4125 Carlisle NE; 87107
c/ City Engineer

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

MAYOR
David Rusk

file

October 24, 1979

AMDEC
6400 Uptown NE
Albuquerque, NM 87110

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If you have any questions concerning this matter, please feel free to contact this office at 766-7422.

Sincerely,

Gene Mares

Gene Mares
Principal Planner

GM/ss

cc: Bohannan-Huston, Inc., 4125 Carlisle NE; 87107
& City Engineers

Bruno

August 31, 1979

RECEIVED
SEP 04 1979
CITY ENGINEER

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RE: Burning Bush Subdivision Water Extension Request and Approval to Design

Dear Mr. Heller:

In accordance with the requirements of the City Engineering Division and Water Resources Department, we hereby request water line extensions to the Burning Bush Subdivision, church site and school site, and approval to design the subdivision and master plan waterline to service the above-referenced subdivision. A blueline copy of the preliminary plot is provided for the City Engineer and a reproducible copy is provided to be forwarded to the Water Resources Department.

Because of topographic constraints, it is assumed that the subdivision will sewer into a 15" sewer line to be constructed in Spain Road, to be constructed in conjunction with the AICOWOOD Subdivision to the south of Spain Road.

We hope the enclosed materials will aid in your evaluation. If you should have any questions regarding this matter or feel a design conference is warranted, please feel free to contact Mr. David Millikan or me at this office.

Sincerely,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

Enclosures

cc: Mr. Walt Nickerson
Mr. Chuck Haegelin
Ms. Sheilah Sweenhart

JH/mn
Job No. 78-101

APPROVED
CITY OF ALBUQUERQUE
Municipal Development Department

Richard S. Heller 9/4/79
City Engineer Date

BOHANNAN-HUSTON INC.
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

1990