DRAINAGE INFORMATION SHEET

PROJECT TITLE: PRAIRIE RIDGE UNIT II ZONE ATLAS/DRNG. FILE #: E-12-Z DUE

LEGAL DESCRIPTION: TRACT 33A-1, TAYLOR RANCH

CITY ADDRESS:

ENGINEERING FIRM: TIERRA ENGINEERING Consult. CONTACT: Dorothy Chávez-Dolan

ADDRESS: 105 Sixth St SW Albq. NM 87102 PHONE: 242-2270

OWNER: BELLAMAH COMMUNITY DEV. CONTACT: Bob Eyals

ADDRESS: P.O. BOX 3300 Albq. NM 87190 PHONE: 884-6606

ARCHITECT: N/A CONTACT:

ADDRESS: N/A PHONE:

SURVEYOR: ESPEY-HUSTON & ASSOC. INC CONTACT: TIM ALDERIDGE

ADDRESS: 4801 Indian School PHONE: 255-1625

CONTRACTOR: CCM (Construction Contracting & Manag. Inc) CONTACT: Jerry Jones

ADDRESS: 8019 Edith Blvd PHONE: 898-7777

RECEIVED
OCT 15 1986
HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 86-317/86-608

EPC NO.

PROJ. NO. 3042

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

X FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

X OTHER Construction Plan Approval (SPECIFY)

DATE SUBMITTED: Oct. 14 1986

BY: Dorothy Chávez-Dolan

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

March 17, 1987

Dorothy Chavez-Dolan
Tierra Engineering Consultants, Inc.
105 Sixth Street, SW
Albuquerque, New Mexico 87102

RE: REVISED GRADING PLAN OF PRAIRIE RIDGE, UNIT II RECEIVED MARCH 3, 1987 FOR FILE UPDATE (E-12/D4E)

Dear Dorothy:

The above referenced submittal, revised February 15, 1897, is approved as a revision to the previous Grading Plan. Builders will be expected to develope the lots in accordance with this Grading Plan.

If you have any questions, call me at 768-2650.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

cc: Andre Houle, DRC
Bob Ryals, BCD

RAG/bsj

TABLE OF CONTENTS

INTRODUCTION

Bellamah Community Development is currently planning the development of their 26.3 acre Prairie Ridge Subdivision, Unit II, in northwest Albuquerque. The subdivision will consist of approximately 109 R-1 lots. The purpose of this report is to present a drainage plan for the proposed development which is within the Drainage Management Plan guidelines and complies with the current city of Albuquerque Drainage Ordinances and associated technical criteria as published in the Development Process Manual.

Prairie Ridge, Unit II is located in Tract 33A-1, Taylor Ranch. The area is bound on the east by proposed Santalina Drive; on the south by Tract 33A-2; on the west by existing Prairie Ridge Subdivision I; and on the north by proposed La Orilla Road, as shown on Plate 1. The parcel tends to slope in a northeast direction.

EXISTING DRAINAGE CONDITIONS

As can be seen on Plate 2, no offsite watershed basins drain into Prairie Ridge, Unit II. The basin areas 18.1W, 18.2W, 19.1W and 19.2W were designated by the A.M.A.F.C.A. study for the North Coors Drainage Management Plan. Approximately 0.5 acres of the 26.3 acres (Prairie Ridge, Unit II) is within the 18.1W basin and the remaining 25.8 acres is within the 18.2W basin.

These basin areas drain towards Coors Rd. Further information concerning these basin areas can be found in the North Coors Drainage Management Plan and the Drainage Management Plan for Bulk Land Parcelization of Portions of Taylor Ranch.[1]

DEVELOPED DRAINAGE CONDITIONS

Developed drainage flows from Basin V of Prairie Ridge Subdivision I are to drain through a concrete lined, 12' wide drainage easment located at the NE corner of the subdivision. Plate I of the Prairie Ridge Subdivision I drainage report delineates Basin V.[2] The basin is shown to include all of the lot areas of Lots 6 through 18 of Block B. According to Drainage Management Plan the flows from the back of these lots are to drain into Prairie Ridge, Unit II. It must also be noted, that through the revision of the Drainage Management Plan, the drainage flows from 12' drainage easement forementioned will not drain into Unit II, but into the storm drain system of La Orilla Road.

[1] Community Sciences Corporation, Update of Drainage Management Plan for Bulk Land Parcelization of Portions of Taylor Ranch, August, 1986.

[2] Rhombus Professional Associates, Drainage Report for Prairie Ridge Subdivision I.

Prairie Ridge Unit II has been divided into the basins shown on Plate 3. Please refer to Drainage Management Plan for confirmation that the detention facility downstream from this development has the capacity to contain these flows.

Basin A will be conveyed by Mesquite Drive to La Orilla Road. This flow will then be diverted by storm sewer to the detention facility along Coors Rd,

Basins C, D and E will be conveyed by Spanish Broom Ct., Hillspire Ct. and Rabbit Brush Ave. to Location (1). Location 1 is a low point on Santalina Drive.

Basins B, F, G and H are to be conveyed by Prairie Sage Drive, Purple Sage Ave and Rabbit Brush Ave to Location (2). Location 2 is a low point on Santalina Drive.

As shown on the Drainage Management Plan, the flows from Unit II will be conveyed through Tract 34 to the detention facility along Coors Rd. The drainage report for the development of Tract 34 (Prairie Ridge, Unit VI) is being prepared by Community Science Corporation and submittal to the City of Albuquerque Hydrology Section will be concurrent with this report if not soon after.

La Orilla Rd storm drain system has been included in the Drainage Management Plan and the drainage report for Prairie Ridge Unit III. The design plans will be incorporated into the drainage report for Unit VI. The portion of the system fronting Unit II will be built with Unit II.

Bellamah Community Development is planning to develop Unit VI in conjunction with Unit II. should there be a major scheduling change which would prevent this, a possible interim drainage solution for the flows from Locations 1 and 2 is shown on Plate 6.

DESIGN CRITERIA

1.1 Engineering Parameters

- In accordance with the City of Albuquerque drainage criteria, analysis is based on the 100 year frequency - 6 hour duration storm as shown on Plate 22.2 D-1 of the DPM. The applicable rainfall value is 2.2 inches

- SCS Soil Group - Type B

- A runoff coefficient value of 0.40 has been used as per the DPM.

- A runoff coefficient value of 0.55 has been calculated for the developed conditions of Basins C through H. And a calculated C valve of 0.50 was used for Basins A & B. Please refer to C-1 of calculation sheets in Appendix.

2. Analysis

The existing onsite drainage for this development:

Undeveloped Condition (Refer to Plate 2-Watershed Map)

Area P-1:
Area = 25.8 acres
Tc = 10 minutes
C = 0.40
I_{100} = 4.65 in/hr
Q_{100} = 48.92 cfs
Q_{10} = 32.14 cfs

Area P-2:
Area = 0.5 acres
Tc = 10 minutes
C = 0.40
I_{100} = 4.65 in/hr
Q_{100} = 0.93 cfs
Q_{10} = 0.61 cfs

The developed site has been divided into the basins show on Plate 2. The following table shows 10 year flows, 100 year flows for each basin and related data. Refer to attached calculations for determination of the following.

Total Developed Flows: Q_{100}=(23.34 + 28.86 + 10.40)=62.60cfs
Q_{10} =41.13cfs

3. STREET HYDRAULICS

Street hydraulics design for this development was based on the design criteria of section 22.3 of the Development Review Process. Plates 22.23 D-1 through 22.3 D-3 were used in the hydraulic design of the streets. Refer to attached calculations for flow depths, velocities and related design checks.

EROSION CONTROL

Excessive soil erosion which would affect the surrounding areas of Prairie Ridge Unit II, will be controlled temporary with a berm as needed. Note the spot elev of Plate 3 reflect the need for the berm mainly 300' east & 300' west of the Mesquite Dr./La Orilla Rd. intersection. Please refer to Plate 4 for Erosion Berm Detail.

BY ..... DATE ..... SUBJECT ..... SHEET NO. ..... OF .....
CHKD. BY ..... DATE ..... JOB NO. .....

HYDROLOGIC FLOW PARAMETERS

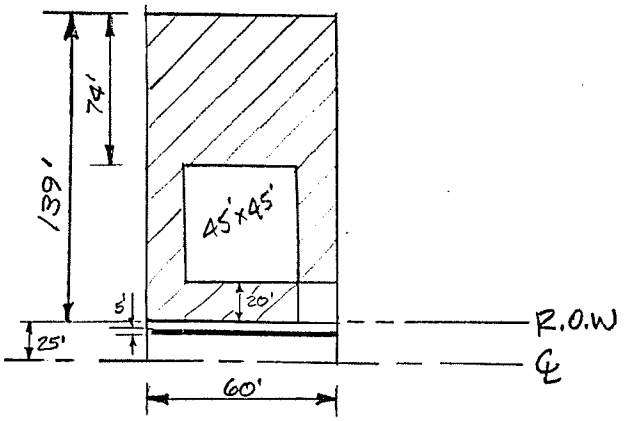
BASIN	A	B	C	D	E	F	G	H	SANTALINA DR ½ street width LOCATION 1	SANTALINA DR ½ street width LOCATION 2
AREA (ac.)		8.69	2.71	1.91	3.75	0.99	1.82	0.40	0.45	0.41
TRAVEL LENGTH		1555	532	397	12.30	440	515	115		
HIGH ELEV.		101.50	90.10	68.50	101.50	71	69.50	66.50		
LOW ELEV		63.20	56.10	58.10	60.40	60.40	55.40	59.38		
SLOPE (%)		2.46	6.38	2.53	3.33	2.41	2.74	6.19		
Tc (minutes)		9.31	2.82	3.22	6.91	3.55	3.82	0.88		
C runoff		0.50	0.55	0.55	0.55	0.55	0.55	0.55	0.95	0.95
I_{100} (in/hr)		4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65	4.65
Q_{100} (cfs)	10.40	20.20	6.93	4.88	9.59	2.53	4.65	1.02	1.99	1.82
Q_{10} (cfs)	6.83	13.27	4.55	3.21	6.30	1.66	3.06	0.67		

Note: Refer to calculations included with this report for flow parameters of Basin A

APPENDIX A

DETERMINATION OF "C" VALUES

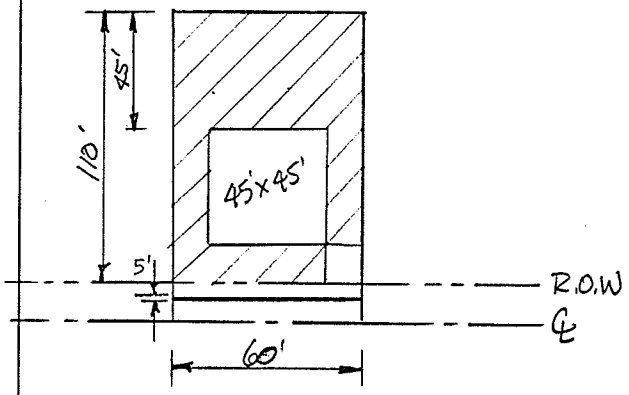
CASE 1 - Lots of Basins A & B



LEGEND

	STREETS/DRIVES/WALK	C = 0.95
45'x45'	ROOFS	C = 0.90
	LAWNS/LANDSCAPING	C = 0.25
	UNDEVELOPED	C = 0.40

CASE 2 - Lots of Remaining Basins



CASE 1

Total area = 9840 SF

Streets, etc.	=	1500 SF
Roofs	=	2025 SF
Lawns, etc	=	6015 SF
Undev.	=	300 SF

$$C_{weighted} = 0.95\left[\frac{1500}{9840}\right] + 0.90\left[\frac{2025}{9845}\right] + 0.40\left[\frac{300}{9840}\right] + 0.25\left[\frac{6015}{9845}\right]$$

$$= 0.4950 \doteq \boxed{0.50 = C}$$

CASE 2

Total area = 8100 SF

Streets, etc.	=	1500 SF
Roofs	=	2025 SF
Lawns, etc.	=	4500 SF
Undev.	=	300 SF

$$C_{wt} = 0.95\left[\frac{1500}{8100}\right] + 0.90\left[\frac{2025}{8100}\right] + 0.40\left[\frac{300}{8100}\right] + 0.25\left[\frac{4500}{8100}\right] = 0.5546 \doteq \boxed{0.55 = C}$$

Note: See Page 4 of Drainage Report/Hydr. Flow Parameters

DETERMINATION OF DIRECT RUNOFF for VOLUME / POND CALCS.

* % Imperviousness = $\frac{\text{Area not covered by grass/vegetation}}{\text{Total Area}}$

Case 1 $\frac{1500+2025+300}{9840}$ = 39 % impervious

Case 2 $\frac{1500+2025+300}{8100}$ = 47 % impervious

* % Pervious

From Footnote 4, Pasture/Rangeland: Good Condition
CN = 61 PLATE 22.2 C-2

* Composite Runoff Curve Number

Case 1 39 % imperv.
pervious CN = 61 Comp. CN = 75

Case 2 47 % imperv.
pervious CN = 61 Comp CN = 78 PLATE 22.2 C-3

* Direct Runoff

P = Rainfall (Q) = direct runoff

$S = \frac{1000}{CN} - 10$

Case 1

Comp. CN = 75
(Q) = 0.5" - graph
(Q) = 0.48" - calculated

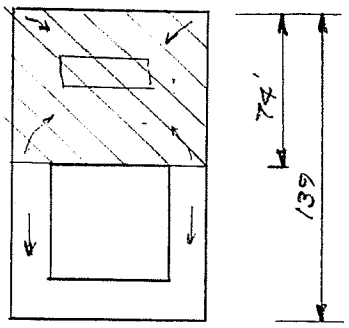
Case 2

Comp. CN = 78
(Q) = 0.6" - graph
(Q) = 0.60" - calc. PLATE 22.2 C-4

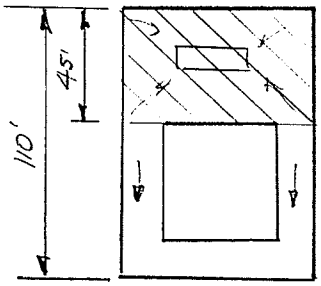
Direct Runoff$_1$ = 0.48"	Direct Runoff$_2$ = 0.60"

LOT PONDING

Case1



Case 2



lot area draining to pond
= 74'x60' = 4440 ft²
= 0.10 ac

direct runoff x Area
0.48 x 0.10
= 0.0489 in-a
= 177.60 ft³

@ 0.5' max depth (FHA Std)

Ponding Area = Volume / Depth = 355.2 SF

Min. Pond. Base = 9'x40'

lot area draining to pond
= 45'x60' = 2700 SF
= 0.60 ac

direct runoff x area
0.60 x 0.06
= 0.0372 in-ac
= 135 ft³

@ 0.5 max depth (FHA Stds)

Ponding Area = Volume/Depth = 270 ft²

Min. Pond Base = 9'x30'

Total Dev. Flows (See Plate 3 - Drainage Basin Map & Pg. 4, Hydrological Flow Parameters)

Location 1:

area = 8.82 ac
travel length = 1755'
Hi Pt = 101.50
Low Pt 55.75
S = 2.61 %

$T_c = \frac{(1755)^{.77}}{(.0261)^{.385}}(.0078) = 10.03$ min

$I_{(6hrs)} = 6.84(T_c)^{-.51} = 2.11$ $I_{100} = P \times I_{(6hrs)} = 4.64$ in/hr

$C = 0.55\left[\frac{8.37}{8.82}\right] + 0.95\left[\frac{0.45}{8.82}\right] = 0.57$

$Q_{100} = CIA = 0.57 \times 4.64 \times 8.82 = 23.34$ cfs
$Q_{10} = 15.34$ cfs

Location 2:

area = 12.31 ac
travel length = 1905'
hi pt 101.50'
low pt 55.75'
S = 2.44 %

TOTAL DEVELOPED FLOWS

Location 2 con't:

$$T_c = \frac{(1905)^{.77}}{(.0244)^{.385}}(0.0078) = 10.92 \text{ minutes}$$

$$I_{(6hrs)} = 6.84(10.92)^{-.51} = 2.02$$

$$I_{100} = 2.02 \times 2.2 = 4.44 \text{ in/hr}$$

$$C = 0.50\left[\frac{8.69}{12.31}\right] + 0.55\left[\frac{3.21}{12.31}\right] + 0.95\left[\frac{0.41}{12.31}\right] = 0.53$$

$$Q_{100} = CIA = 0.53 \times 4.44 \times 12.31 = \boxed{28.86 \text{ cfs}}$$

$Q_{10} = 18.96$ cfs

Location 3:

Basin A drains to Location 3, where the La Orilla Rd. storm drain system has been sized/designed to carry this additional flow. Since Tierra Engineering assisted Community Sciences Corporation in the development of the hydrologic flow parameters of Basin A, we feel justified in referencing the Updated Drainage Management Plan for these parameters and using their

$Q_{100} = 10.4$ cfs

$Q_{10} = 6.83$ cfs

Street Hydraulics

↑ Also see C-6 to C-11 for long hand calculations of these depths and hydraulic jump checks

From Plate 22.3 D-1

Mesquite Dr.

Q_{100} = 10.4 cfs $Q_{1/2}$ = 5.2 cfs

S_1 = 0.6 % D_1 = .39' V = 1.9 fps

S_2 = 2.0 % D_2 = .34' V = 3.2 fps

D < 0.87 ok

Prairie Sage Dr.

$Q_{1/2}$ street due to Basin B

$Q_{1/2}$ = 21.01 cfs

S_1 = 1.32 % S_2 = 1.10 %

D_1 = 0.53' D_2 = 0.54'

V_1 = 4.3 fps V_2 = 4.1 fps

D < .87

$Q_{1/2}$ street due to Basin E

$Q_{1/2}$ street = 9.94 cfs

S = 1.32 %

D_1 = 0.43'

V_1 = 3.2 fps

Spanish Broom Ct.

Q_{100} = 7.18 cfs

$Q_{1/2}$ = 3.59 cfs

S = 2.76 %

D = ~~.42'~~ 0.28'

V = ~~1.5 fps~~ 3.3 fps

Hillspire Ct

Q_{100} = 5.06 cfs

$Q_{1/2}$ = 2.53

S = 2.48 %

D = ~~0.31'~~ 0.26'

V = ~~1.2 fps~~ 2.8 fps

Rabbit Brush

Q_{100} due to Basin E

$Q_{100} = 9.94$ cfs $= Q_{1/2}$

$S = 2.54\%$

$D = 0.44'$

$V = 3.9$ fps

Q_{100} due to Basin F

$Q_{100} = 2.62$ cfs $= Q_{1/2}$

$S = 2.54\%$

$D = 0.26'$

$V = 2.8$ fps

$D < .87'$

Purple Sage

$Q_{100} = \cancel{24.15}$ 4.82 cfs $\quad Q_{1/2} = 2.41$ cfs

$S = 3.61\%$
$D = 0.25'$
$V = 3.3$ fps

Santalina Drive

From Plate 22.3 D-2

$Q_{100} = 24.15$ cfs $\quad S = 0.81\% \quad D = 0.61' \quad V = 3.6$ fps

$Q_{100} = 2.62 \quad S = 1.95\% \quad D = 0.27' \quad V = 3.9$ fps

$Q_3 = 27.44 \quad S = 1.74\% \quad D = 0.56' \quad V = 4.7$ fps

$D < 0.87'$

La Orilla Road

Qs can be found in Updated of Drainage Management Plan, August 1986.

12' Dry lane Criteria as specified by DPM (See attached Table 3 from this report) →

TABLE 3

Street Flow Characteristics

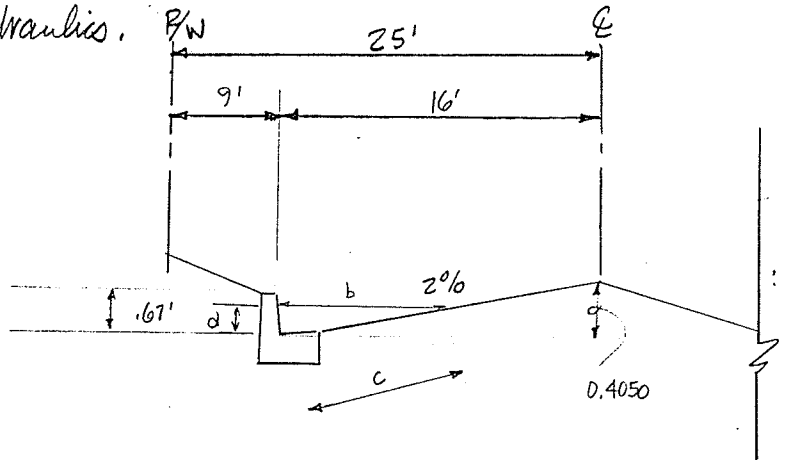
Point Designation	100 yr. Peak Flow	10 yr. Peak Flow	Estimated Street Slope	100 yr. Flow Depth	10 yr. Flow Depth	10 yr. Vel.	V x D	Remarks
E2	49.8	32.8	4.5%	0.38	0.34	5.62	1.91	OK, Revised 8/86
C1	103.6	51.9	2.2%	0.59	0.30	2.4	2.54	OK

Community Sciences Corp., UPDATE of DRAINAGE MANAG Plan for BULK LAND PARCELIZATION OF PORTIONS of Taylor Ranch, Aug, 1986.

La Orilla Road

Street hydraulics for this street were checked by Community Science Corp on Management Plan/Prairie Ridge Unit VI reports.

Depth of flows & velocities were recalculated by hand as opposed to using those values from the DPM Plates (see previous pages C-4 & C-5) Refer to following pages for check of street hydraulics.



$b = \frac{16d}{0.4050} = 39.5062d$

$c = \sqrt{b^2 + d^2} = 39.5188d$

$p = d + c = 40.5188d$

$A = \frac{1}{2}d \times b = \frac{1}{2}d(39.5062) = 19.7531d^2$

$R = A/p = d/2.0513$

$n = 0.017$ $\quad V = \frac{1.486\ R^{2/3} S^{1/2}}{n}$ solve for d using these equation

$F = \frac{V}{\sqrt{gd}}$

$\frac{D_2}{D_1} = \frac{1}{2}\left(\sqrt{1 + 8F^2} - 1\right)$

where $D_2 < .87'$

Street Mesquite Dr

Q = ½ street flow = 5.2 cfs

S 0.6%

	Trial #1	Trial 2	Trial 3	Trial 4
d	0.39'	0.37'	0.35'	0.36' = d
V	2.24 fps	2.16 fps	2.08	2.12 fps
Check Q = VA	6.73 cfs	5.85 cfs	5.04 cfs	5.43 cfs

$F = \frac{V}{\sqrt{g d'}}$

$= 0.6227 < 1$

subcritical flow

$0.36 < 0.87$

OK

Q = 5.2 cfs

S 2.0%

	Trail 1	Trail 2	Trial 3	Trial 4	Trial 5
d	0.34'	0.32'	0.30'	0.28'	0.29'
V	3.73 fps	3,58	3,43'	3.28	3.36 fps
Check Q = VA	8.52 cfs	7,25 cfs	6.10	5.08 cfs	5,57 cfs

F = 1.10

1.10 > 1

supercritical flow

check depth of Hydraulic jump.

$\frac{D_2}{D_1} = 1.13$ $D_2 = 0.33 < 0.87$

OK

Street Prairie Sage Dr.

due to Basin B, Q = 21.01 cfs

S 1.32 %

	Trial 1	Trial 2
d	0.53'	(0.52' = d)
V	4.07 fps	4.02 fps
Q = VA check	22.61 cfs	21.49 cfs

$F = \frac{V}{\sqrt{gd}} = 0.98 < 1$ subcritical flow

$0.52 < 0.87$

OK

Spanish Broom Ct.

S 2.76 % $Q_{100} = 7.18$ cfs ½ street flows = 3.59 cfs

	Trial 1	Trial 2	Trial 3
d	0.28	0.26	(0.24)
V	3.85 fps	3.66 fps	3.47 fps
Q = VA check	5.96 cfs	4.89 cfs	3.95 cfs

F = 1.25 > 1 super critical flow

Check for hydraulic jump depth

$\frac{D_2}{D_1} = 1.33$ $D_2 = 0.32 < 0.87$

OK

Hillspire Ct

Q = 5.06 ½ street flow = 2.53 cfs

S 2.48

	Trial 1	Trial 2	Trial 3
d	0.26	0.24	(0.22)
V	3.47 fps	3.29	3.11 fps
Q = VA check	4.64	3.75 cfs	2.97

F = 1.17 > 1 Super critical flow

Check for hydraulic jump depth

$\frac{D_2}{D_1} = 1.2265$, $D_2 = 0.27 < 0.87$

OK

Rabbit Brush Ave

due to Basin E $Q = 9.94$ cfs

½ street flow = 9.94 cfs

S	2.54%					
Q	9.94 cfs (Trial 1)	Trial 2	Trial 3	Trial 4		
d	0.44	0.40	0.36	0.34	0.35	$F = \frac{4.29}{\sqrt{32.2 \times .35}}$
V	4.99 fps	4.69	4.37	4.20	4.29 fps	$= 1.28 > 1$
Check Q = VA	19.09 cfs	14.81	11.18	9.60	10.37 cfs	

Check for hydraulic jump $\frac{D_2}{D_1} = 1.38$ $D_2 = 0.48 < 0.87$ OK

due to Basin F $Q = 2.62$ cfs (½ street flow)

S	2.54%				
Q	2.62 cfs (Trial 1)	Trial 2	Trial 3		
d	0.26	0.24	0.22	$F = \frac{3.15}{\sqrt{32.2 \times .22}} = 1.18 > 1$	
V	3.52 fps	3.33	3.15		
check Q = VA	4.69 cfs	3.79	3.01		

check for hydraulic jump $\frac{D_2}{D_1} = 1.25$ $D_2 = 0.27 < 0.87$ OK

Purple Sage Ave

Q_{100} = 4.82 cfs

½ street flow = 2.41 cfs = Q

S 3.61%

	Trial 1	Trial 2	Trial 3	Trial 4
d	0.25'	0.23	0.21	(0.20)
V	4.08 fps	3.86	3.64	3.52
Check Q=VA	5.05 cfs	4.04 cfs	3.16	2.78 cfs

$F = \frac{3.52}{\sqrt{32.2 \times .2}} = 1.39$ supercritical, check for hydraulic jump depth

$\frac{D_2}{D_1} = 1.5243$ $D_2 = 0.30 < 0.87$ ok

Santalina Drive

Q_{100} = 24.15 cfs Location One

S 0.81%

	Trial 1	Trial 2	Trial 3
d	0.63	0.61	(0.60)
V	3.58 fps	3.51	3.47
Check Q=VA	28.08 cfs	25.76 cfs	24.65

$F = \frac{3.47}{\sqrt{32.2 \times .6}} = 0.79 < 1$ subcritical flow.

Q_{100} = 2.62 cfs Location Two Draining from South

S 1.95%

	Trial 1	Trial 2
d	0.27	(0.23)
V	3.16	2.84
Check Q=VA	= 4.55 cfs	2.97

$F = \frac{2.84}{\sqrt{32.2 \times .23}} = 1.04 > 1$ supercritical flow

check hydraulic jump depth

$\frac{D_2}{D_1} = 1.0582$ $D_2 = 0.24 < .87$

Santalina Dr con't

Q_{100} = 27.44 cfs Location Two from North

	Trial 1	Trial 2	Trial 3
S	1.74%		
d	0.56	0.54	0.55
V	4.85	4.74	4.79
Q=VA check	30.06 cfs	27.28	28.65

$$F = \frac{4.79}{\sqrt{32.2 \cdot .55}} = 1.14 > 1$$

$$\frac{D_2}{D_1} = 1.1856 \quad D_2 = 0.65$$

$< .87$

OK

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: **PRAIRIE RIDGE UNIT II GRADING PLAN**

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E. Design			Traffic		
A.C. E.-Hydrology			Water		

DRAWING NO. **3042** | MAP NO. | SHEET **6** OF **23**

VICINITY MAP
Scale: 1"=1140'
E-12--Z

PROJECT LOCATION

NORTH

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

NOTE:
NO WALL TO BE BUILT WITHIN CLEAR SIGHT TRIANGLE

CLEAR SIGHT TRIANGLE (TYP.) (SIZE VARIES)

CLEAR SIGHT TRIANGLE DETAIL
NOT TO SCALE

BRASS CAP (IN PLACE)
T11N R2E S24 S25 S29 S30 R2E

LEGEND

- 88.2 TC — Top of Curb Elev
- 67.3 — Pad Elev
- 2' – 6' Retaining Wall
- T.W. — Top of Wall
- B.W. — Bottom of Wall
- Direction of Flow
- 603 — Pond Invert Elev
- 75 — Lot Number
- Water block

BLOCK GARDEN WALL WITH STUCCO TO BE BUILT BY OTHERS

MESQUITE DRIVE

PRAIRIE SAGE AVENUE

LA ORILLA ROAD

SPANISH BROOM COURT

HILLSPIRE COURT

RABBITBRUSH AVENUE

PURPLE SAGE AVENUE

SANTALINA DRIVE

HIPRAP

See Sheet 7 of 23 For Offsite Grading

See Sheet 9 of 23 For Transition

Notes

1. See sheet 22 of 23 of plans for retaining wall and lot grading details
2. Lot pads to be 45' x 45' unless otherwise noted.
3. 4' sidewalk to be constructed along La Orilla Rd
4. Wheelchair ramp @ all corners of intersections as shown; construct per city std. P-16, 17 case 2.
5. Valley gutters to be constructed per city std. P-9.
6. For sight clearance triangle, (see detail this sheet) applicable at intersections of La Orilla Rd & Mesquite Dr. and La Orilla Rd & Santalina Dr.
7. Reference to Soils Report "Geotechnical Investigation Tract 33, Taylor Ranch" by F.M. Fox Consulting Engineers for earthwork specifications.

AS BUILT INFORMATION

	DATE
CONTRACTOR	
WORK STARTED BY	
INSPECTOR'S ACCEPTANCE BY	
FIELD VERIFICATION BY	
DRAWINGS CORRECTED BY	

BENCH MARKS

G.L.O. BRASS CAP FOR SECTIONS 23, 24, 25 AND 26, T11N, R2E, N.M.P.M. LOCATED WITHIN RIVER VIEW PARCEL H-28 APPROXIMATELY 250 FEET NORTH OF THE CENTERLINE OF GOLF COURSE ROAD AND LA ORILLA ROAD, N.W. ELEVATION = 5112.83, MICRO-FILM INFORMATION

RECORDED BY | DATE | NO.

SURVEY INFORMATION

NO.	DATE	FIELD NOTES BY

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	DATE
			DATE
			DATE

DESIGNED BY
DRAWN BY
CHECKED BY

RECEIVED
MAR 04 1987
HYDROLOGY SECTION