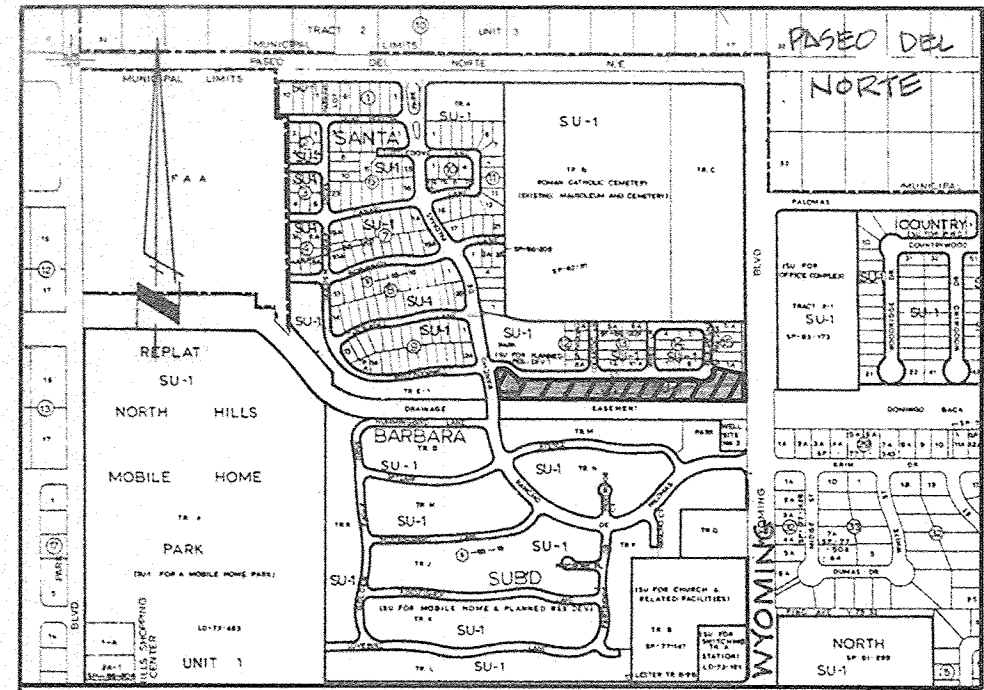




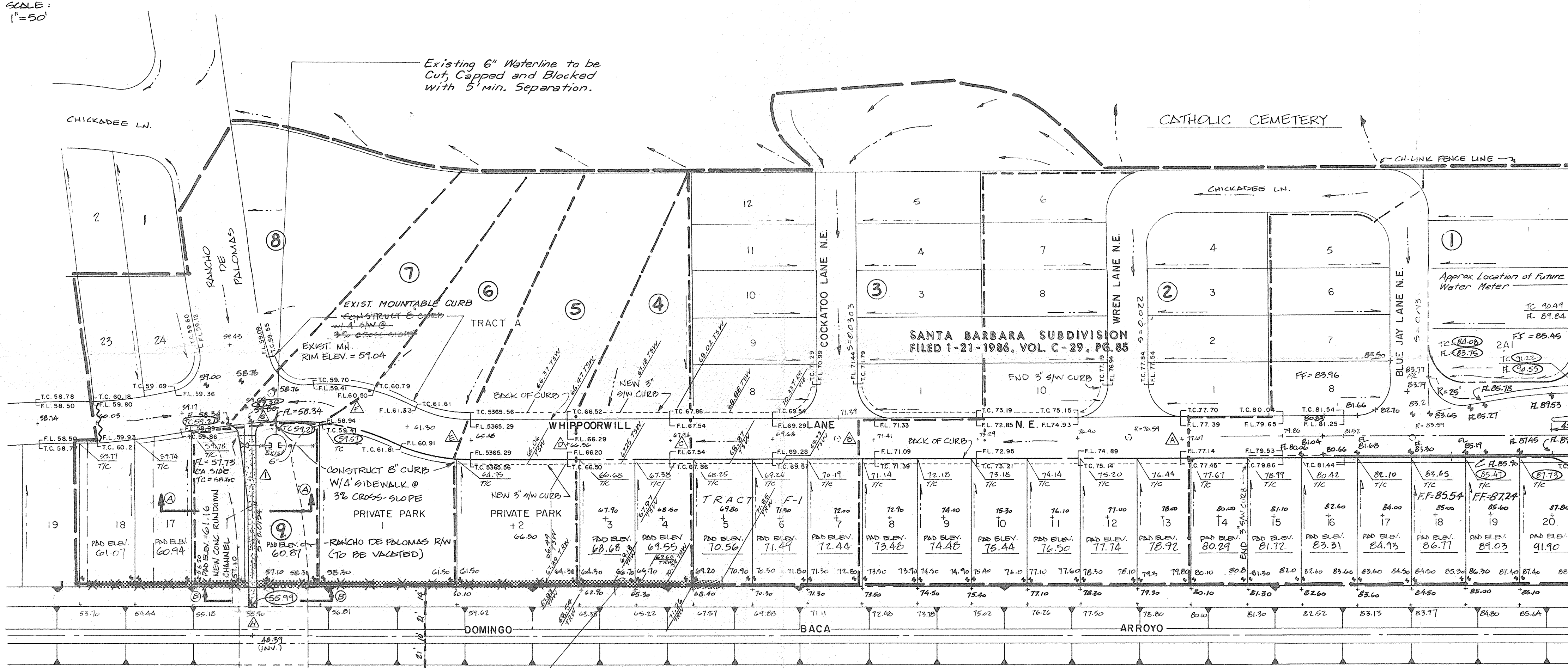
VICINITY MAP: D-19 SCALE: 1"=800'

LEGEND

- DRAINAGE BASIN BOUNDARY
- +55.0' EXISTING SPOT ELEVATION
- +59.00' PROPOSED SPOT ELEVATION
- +59.00' AS BUILT SPOT ELEVATION
- EXISTING MANHOLE
- WATER BLOCK
- △ ANALYSIS POINT
- EARTH RETAINING STRUCTURES
- ④ DRAINAGE AREA SUBBASIN

NOTES:

- HYDROLOGY CRIT. BASED ON DPM VOL. 2 SECTION 22.2, AS AMENDED, DRAFT DATED JUNE, 1991
- FIELD SURVEYS PROVIDED BY DOUGLAS SMITH, JR.
- MAX. PAD DIMENSION: 30' x 50'
- DOMINGO BACK CONC. CHANNEL:
 - BOTTOM WIDTH = 10'
 - SIDE SLOPES = 2:1
 - DEPTH = 7.0'
- UTILITY FEATURES NOT SHOWN FOR CLARITY
- NEW CURB RETURNS AT WYOMING AND WHIPPOORWILL SHALL BE CITY STD. CURB AND GUTTER. BEGIN TRANSITION TO PRIVATE MOUNTABLE CURB AND GUTTER AT P.C. ON WHIPPOORWILL.
- WYOMING MEDIAN OPENINGS SHALL BE SEPARATE C.O.D. WORK ORDER
- PROPERTY COVERED BY DRAINAGE PLAN: REPLAT OF TRACT F-1; PRIVATE PARK; LOT 1A, BLOCK 15, SANTA BARBARA SUBDIVISION; (LOTS 1-20, BLOCK 15)
- PROJECT BENCHMARK: STATION "HEAVEN" ON PASO DEL NORTE 0.15 MILES WEST OF WYOMING. ELEV. = 5376.761 MSL



CHANNEL CAPACITY

PER MANNING'S EQUATION:
 $Q = 1.49 A R^{2/3} S^{1/2}$
 WHERE $n = 0.013$

A = AREA, SF
 R = HYD. RADIUS, FT
 S = SLOPE, FT/FT

BY SOLUTION FOR DEPTH:
 $Y_0 = 0.83$ FT, $V_0 = 9.3$ FTS
 $Q_{max} = 45.5$ CFS @ SECT B-B

CHANNEL ENTRANCE

ANALYSIS POINT A AT WHIPPOORWILL LN. AND RANCHO DE PALOMAS - ENTRANCE TO NEW CONCRETE RUNDOWN CHANNEL ASSUME POOLING OF WATER IN THE INTERSECTION - VELOCITY OF APPROACH RD; WATER SURFACE @ T/C ELEV.

WEIR EQN @ AP A: $Q = CLH^{3/2}$
 $L = 16.2'$
 $H = 0.75'$
 $C = 3.0$ (PRATER & KING - HANDBOOK OF HYDRAULICS 6TH ED. P. 5-41, TABLE 5-5 "VALUES OF C FOR BROADCRESTED WEIRS WITH CRESTS INCLINED SLIGHTLY DOWNWARD")

$Q = (3.0)(16.2)(0.75)^{3/2} = 31.6$ CFS
 $Q_p @ A = 30.09$ CFS

ANALYSIS POINT B CURVE

USE AP A: $Q = 25.50$ CFS FOR CURVE IN WHIPPOORWILL DOWNSTREAM AP B (REFER TO TYP. ST. SECTION)
 $S = 0.0811$
 $V = 3.869$ FTS
 $V = 6.610$ FT/SEC
 FLOW DEPTH ALONG SOUTH CURB = 0.45'
 FLOW DEPTH ALONG NORTH CURB = 0.030'
 SUPERELEVATION CALCULATION:
 RADIUS OF SOUTH CURB LINE = 122'
 FLOW WIDTH = 27.80 FT
 SUPERELEV. = $(6.610)(27.80) = 0.31$ (32.11) (122.0)

TOTAL DEPTH = $0.45 + 0.31 = 0.76'$
 S. CURB FL. ELEV. = 60.91
 W.S. ELEV. = $60.91 + 0.76 = 61.67'$

$Q = (3.0)(16.2)(0.75)^{3/2} = 31.6$ CFS
 $Q_p @ A = 30.09$ CFS

CHANNEL ENTRANCE POOL

DOWNSTREAM ANALYSIS PT. A
 $S = 0.0111$ A = 6.3209 $Q = 26.45$ CFS
 FLOWLINE DEPTH = 0.31'
 $V = 4.18$ FT/SEC
 FLOW WIDTH = 27.80'
 $E = 0.31 + \frac{(4.18)^2}{2(32.17)} = 0.64'$
 CRITICAL DEPTH = 0.30' < 0.64'
 FLOW IS SUBCRITICAL; NO HYD. JUMP

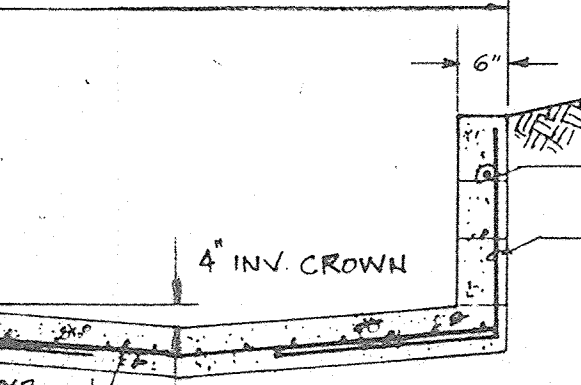
REAR YARD POND VOLUME

DRAINAGE AREA: 0.0065 AC/LOT
 $E = 0.92$ TREATMENT B
 $VOL = (0.92)(0.0065) = 0.006$ AF = 55 CU FT

EXIST. MOUNTABLE CURB

TYPICAL STREET SECTION

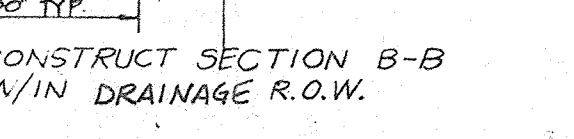
VARIES 7.0' - 16.2'



NOTE: CONSTRUCT CHANNEL LINING PER C.O.D. DWG. 2260 - TYPE 'B', EXCEPT FOR STEEL REINF. SHOWN LIKE 'B' AND CHAIRS

SECTION A-A

CHANNEL SECTIONS (CONSTRUCTED AS SHOWN)



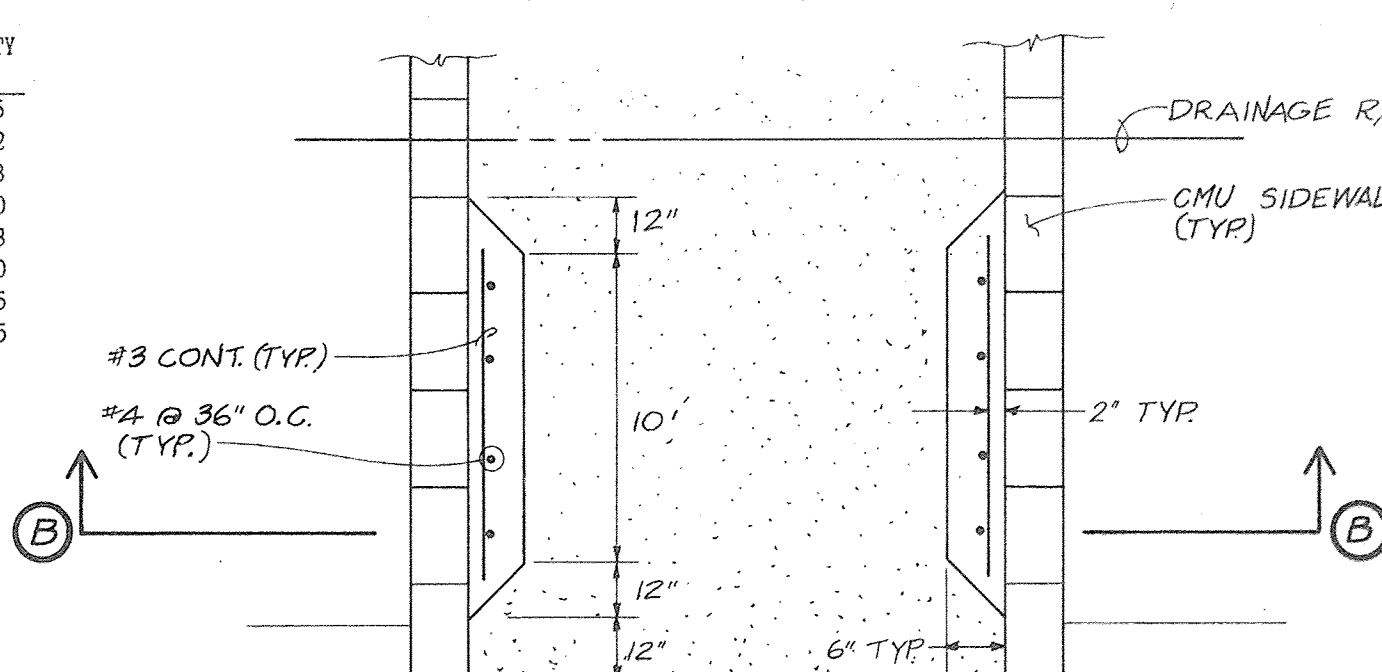
SECTION B-B

CHANNEL SECTIONS (CONSTRUCTED AS SHOWN)

CRITERIA	TREATMENT			
	A	B	C	D
INITIAL ABST. (in.) (TABLE 6)	0.65	0.50	0.35	0.10
INITIAL TRACT (in.) (TABLE 7)	1.57	1.25	0.83	0.04
EXCESS PRECIP. - SEP. 8, 2006 (TABLE 8)	0.66	0.92	1.29	2.36
RATIONAL C, 2006 (TABLE 11)	0.35	0.48	0.64	0.93
RATIONAL I, (in./hr. @ t=12) (TABLE 10)	5.38	5.38	5.38	5.38
PEAK DISCH. (cfs/acre) (TABLE 9)	1.87	2.60	3.45	5.02

SUBBASIN	AREA ac.	SUBBASIN DATA							AREA ac.	CUMULATIVE TREATMENT ¹						
		TREATMENT				HYDROLOGY				TREATMENT ¹				HYDROLOGY		
		A	B	C	D	WTD (in.)	in.	ac.ft.		Qp cfs	A	B	C	D	WTD (in.)	in.
1	1.639	-	0.270	0.334	1.035	1.905	0.260	7.050	1.639	-	0.270	0.334	1.035	1.905	0.260	7.050
2	1.624	-	0.253	0.313	1.058	1.929	0.261	7.049	3.263	-	0.523	0.647	2.093	3.834	0.521	14.101
3	1.532	0.285	0.216	0.268	0.763	0.323	0.041	5.849	4.795	0.285	0.739	0.915	2.856	4.157	0.562	19.599
4	0.415	-	0.038	0.223	0.154	1.653	0.057	1.641	5.210	0.285	0.777	1.138	3.010	5.810	0.619	21.599
5	0.581	-	0.040	0.381	0.160	1.559	0.075	2.222	5.791	0.285	0.817	1.519	3.170	7.359	0.694	23.411
6	0.546	-	0.250	0.236	0.060	1.238	0.056	1.765	6.337	0.285	1.067	1.755	3.230	8.607	0.750	25.458
7	0.259	-	0.107	0.107	0.045	1.323	0.029	0.873	6.596	0.285	1.174	1.862	3.275	9.930	0.779	26.58
8	0.923	-	0.044	0.259	0.420	1.679	0.129	3.634	7.519	0.285	1.418	2.121	3.695	11.609	0.808	27.387
9	0.282	-	0.046	0.057	0.179	1.909	0.045	1.215	7.801	0.285	1.464	2.178	3.874	13.518	0.823	28.210

ANALYSIS POINT	Qp cfs	SLOPE	CAPACITY cfs
A	7.05	2.96	26.15
B	14.10	2.03	78.32
C	19.95	2.29	80.13
D	21.59	1.26	63.20
E	23.61	1.26	98.28
F	25.58	8.11	121.80
G	30.09	1.34	93.45
H	31.30	1.34	93.45



RUNDOWN CHANNEL PLAN

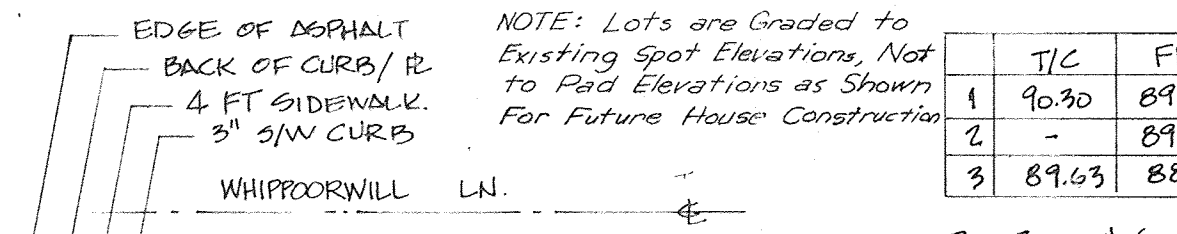
N.T.S.

TC	FL
1	90.48
2	90.00
3	91.02

R = 30.00' (FL)
 $\Delta = 90^{\circ}11'00''$
 T = 30.10'

DESIGN APPROVED: *Shawn J. Brasher* 7-1-92
 CONSTRUCTION APPROVED: *Shawn J. Brasher* 7-29-92
 DATE

RECORD DRAWING
 This drawing as modified shows improvements as constructed. These modifications have been made using surveying data and measurements obtained by Paul Brasher, P.E. and are shown for the minimum requirements for record drawing criteria as required by the City of Albuquerque per Development Process Manual Section 27.4. I am the best of my knowledge and belief.
 Paul Brasher, P.E. 7282



NOTE: Lots are Graded to Existing Spot Elevations, Not to Pad Elevations as Shown For Future House Construction

TC	FL
1	90.30
2	89.64
3	89.63

R = 30.00' (FL)
 $\Delta = 89^{\circ}49'00''$
 T = 29.90'

CROSS - DRAINAGE

STREET	SLOPE	Qp	V	d	E = d + V^2/2g
FT/FT	CEG	FT/SEC	FT^2	FT	FT
BLUE JAY	0.013	2.82	1.92	1.47	0.23
WREN	0.022	3.52	2.47	1.42	0.27
COCKATOO	0.0303	4.39	2.93	1.49	0.31

PLAN UPDATE TO SHOW AS BUILT RUNDOWN CHANNEL - SECTIONS A-A, B-B & PLAN VIEW 6-1-92
 MODIFICATION TO EXISTING CHANNEL (PROPOSED)

SANTA BARBARA SUBDIVISION
DRAINAGE PLAN
 BRASHER ENGINEERING INC.
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 ALBUQUERQUE, NEW MEXICO 87112
 (505) 296-0422
 SHT. 2A of 4
 AUGUST, 1991