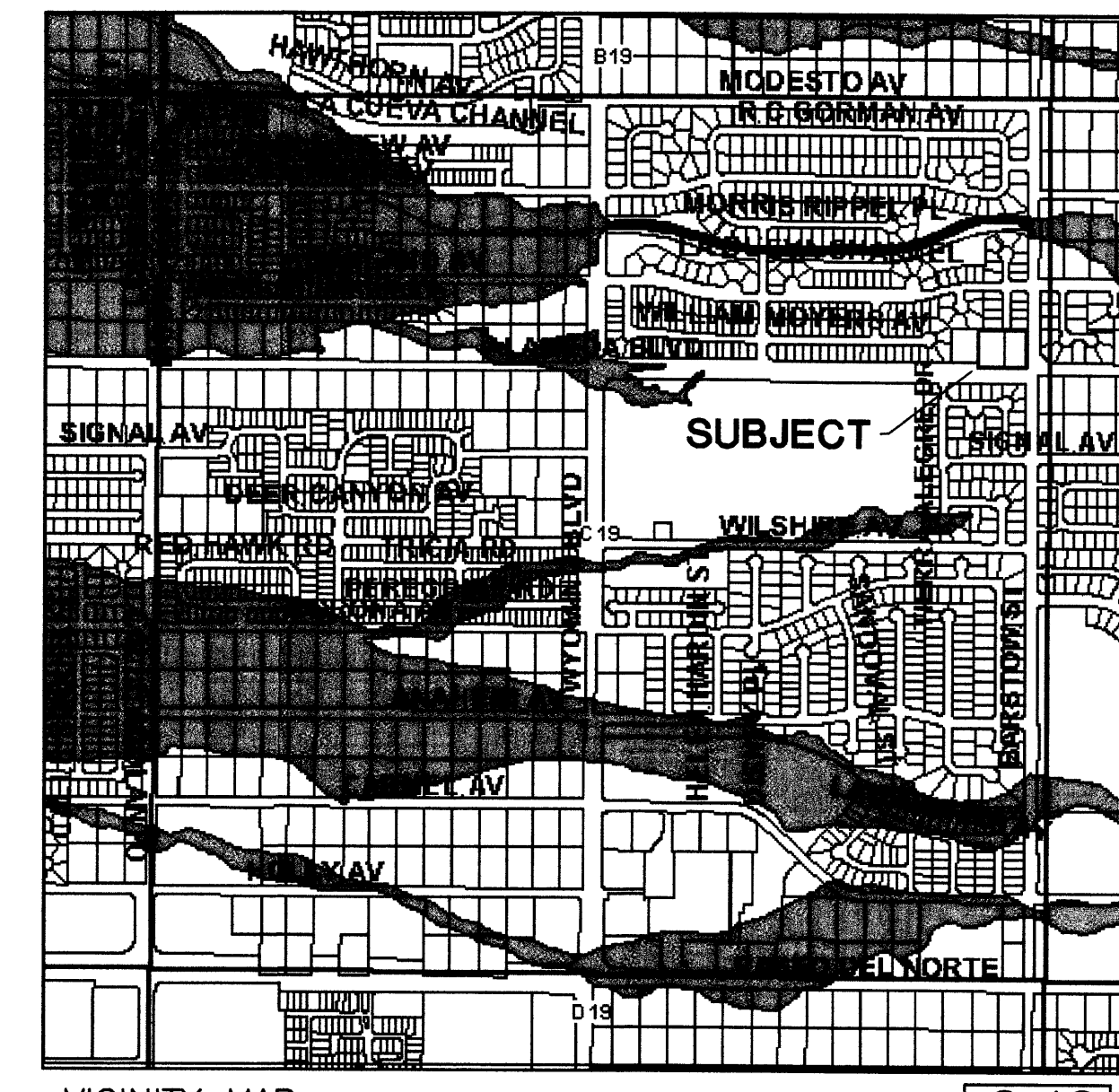
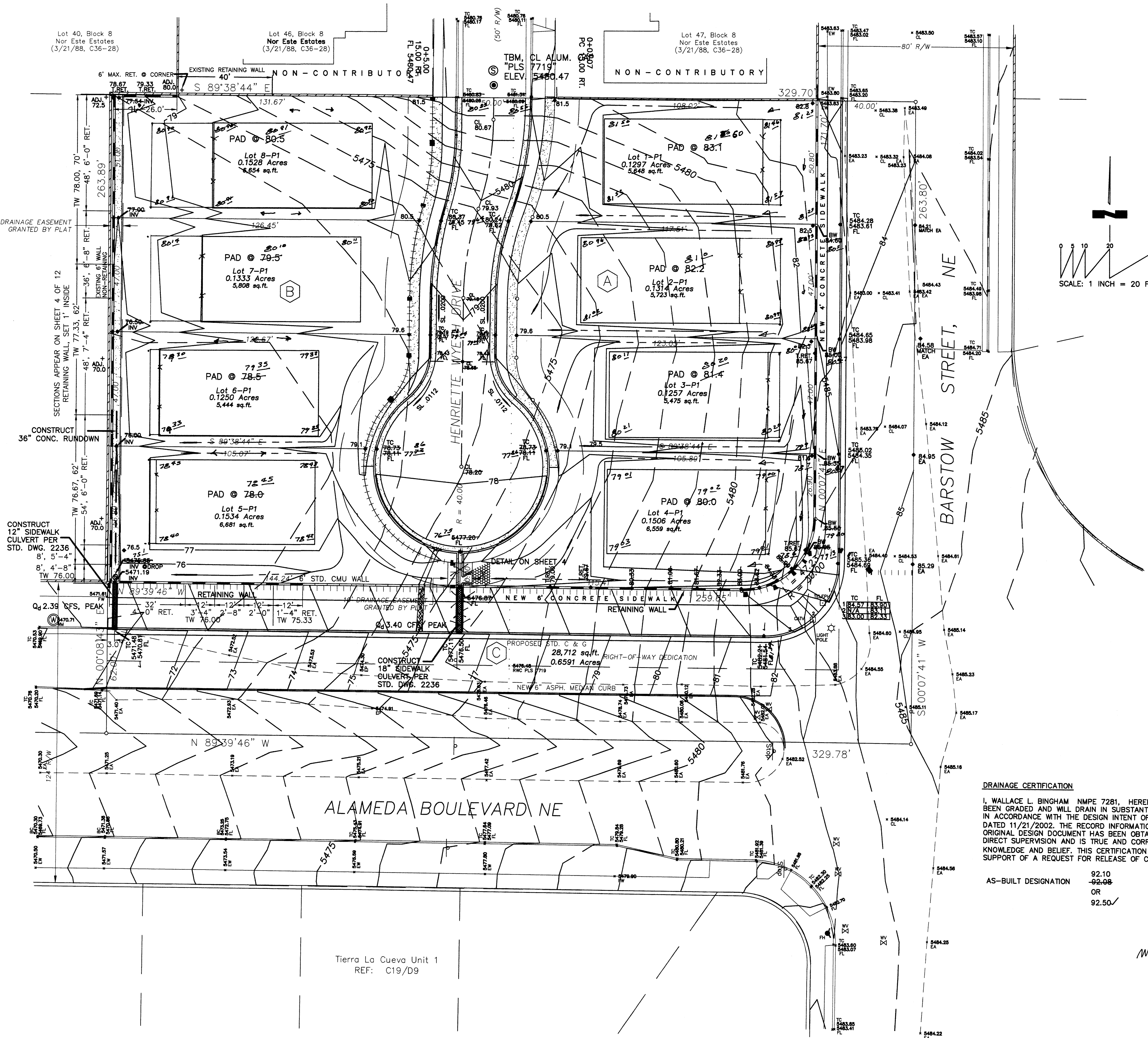




- LEGEND**
- 5565— EXISTING INDEX CONTOURS @ 5' INTERVALS
 - EXISTING INTERMEDIATE CONTOURS @ 1' INTERVALS
 - 65— PROPOSED CONTOURS @ 1.0' INTERVALS
 - +58.0 EXISTING SPOT ELEVATION
 - 58.0 PROPOSED SPOT ELEVATION
 - FL — FLOW LINE
 - PROPOSED CONCRETE SURFACING
 - PROPOSED BUILDING PADS
SEE NOTES ON SHEET D-2
 - PROPOSED RETAINING WALL
 - PROPOSED CMU WALL
 - STREET SIGN
 - DRAINAGE BASIN DIVIDE
 - BASIN DESIGNATION

DESIGN CRITERIA

STREET WIDTH IS BASED ON CITY OF ALBUQUERQUE DPM TABLE 23.2.1.C. BASIS FOR INTERMITTENT PARKING DESIGN IS CRITERIA 1: "FOUR OFF-STREET PARKING SPACES PER RESIDENCE."

CUL-DE-SAC RADIUS IS BASED ON TABLE 23.5.3

BUILDING PADS ARE SHOWN ARE 35 X 60 FEET WITH MINIMUM FRONT SETBACKS

LEGAL DESCRIPTION

LOTS NUMBERED SEVENTEEN (17) AND EIGHTEEN (18), BLOCK NUMBERED THIRTEEN (13), NORTH ALBUQUERQUE ACRES, TRACT 2, UNIT 3, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT THEREOF, FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON SEPTEMBER 10, 1931, IN PLAT BOOK D1, PAGE 20.

DRAINAGE CERTIFICATION

I, WALLACE L. BINGHAM NMPE 7281, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 11/21/2002. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR RELEASE OF CERTIFICATE OCCUPANCY.

AS-BUILT DESIGNATION 92.10
-92.08
OR
92.50

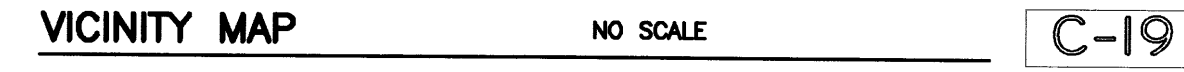
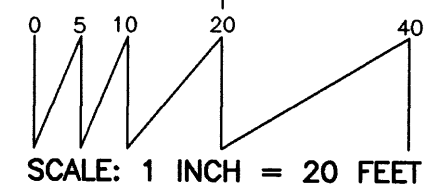
CARTESIAN SURVEYS

P.O. BOX 44414 RIO RANCHO, N.M. 87174
Phone (505) 898-3050 Fax (505)891-0244

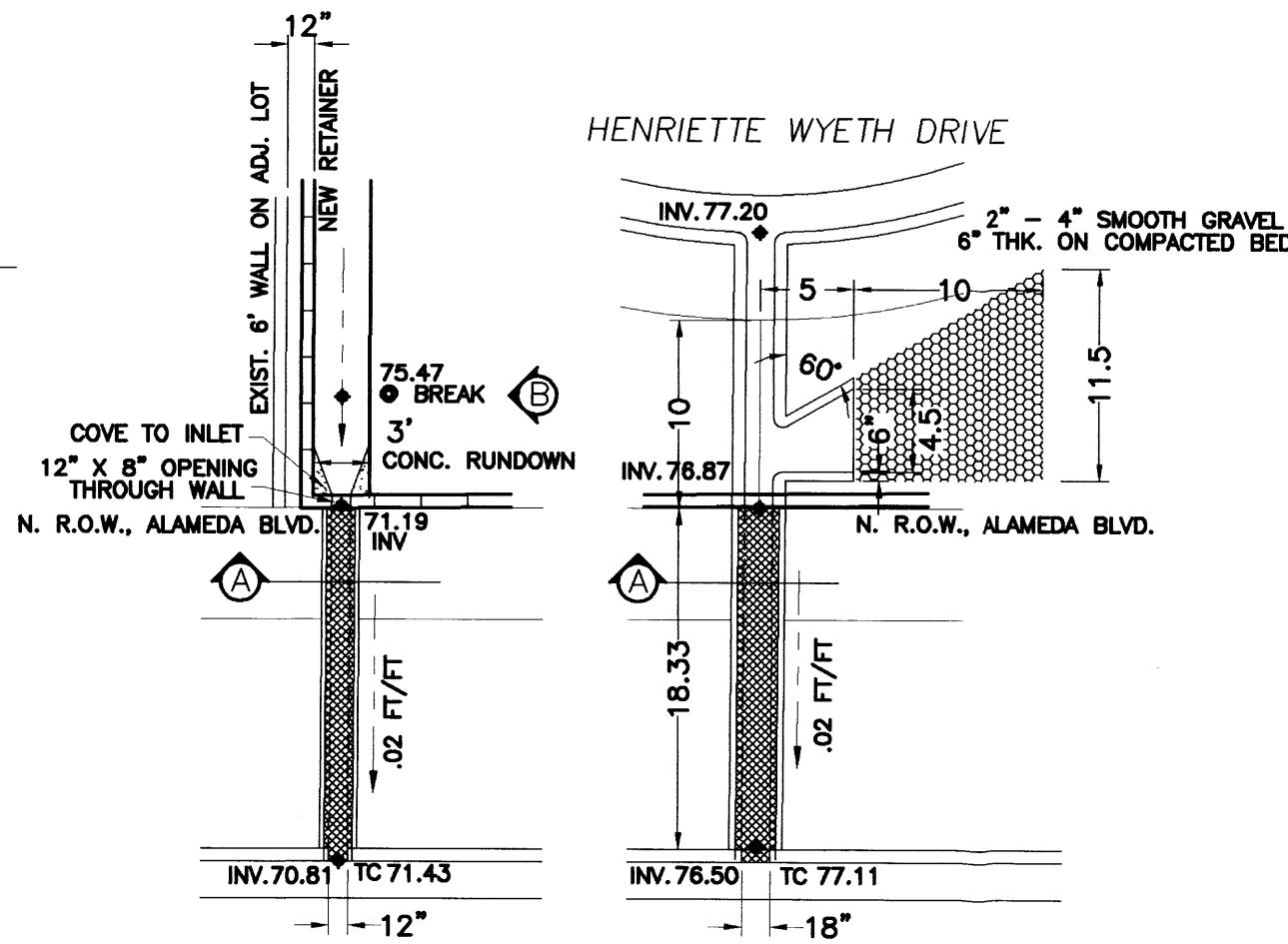
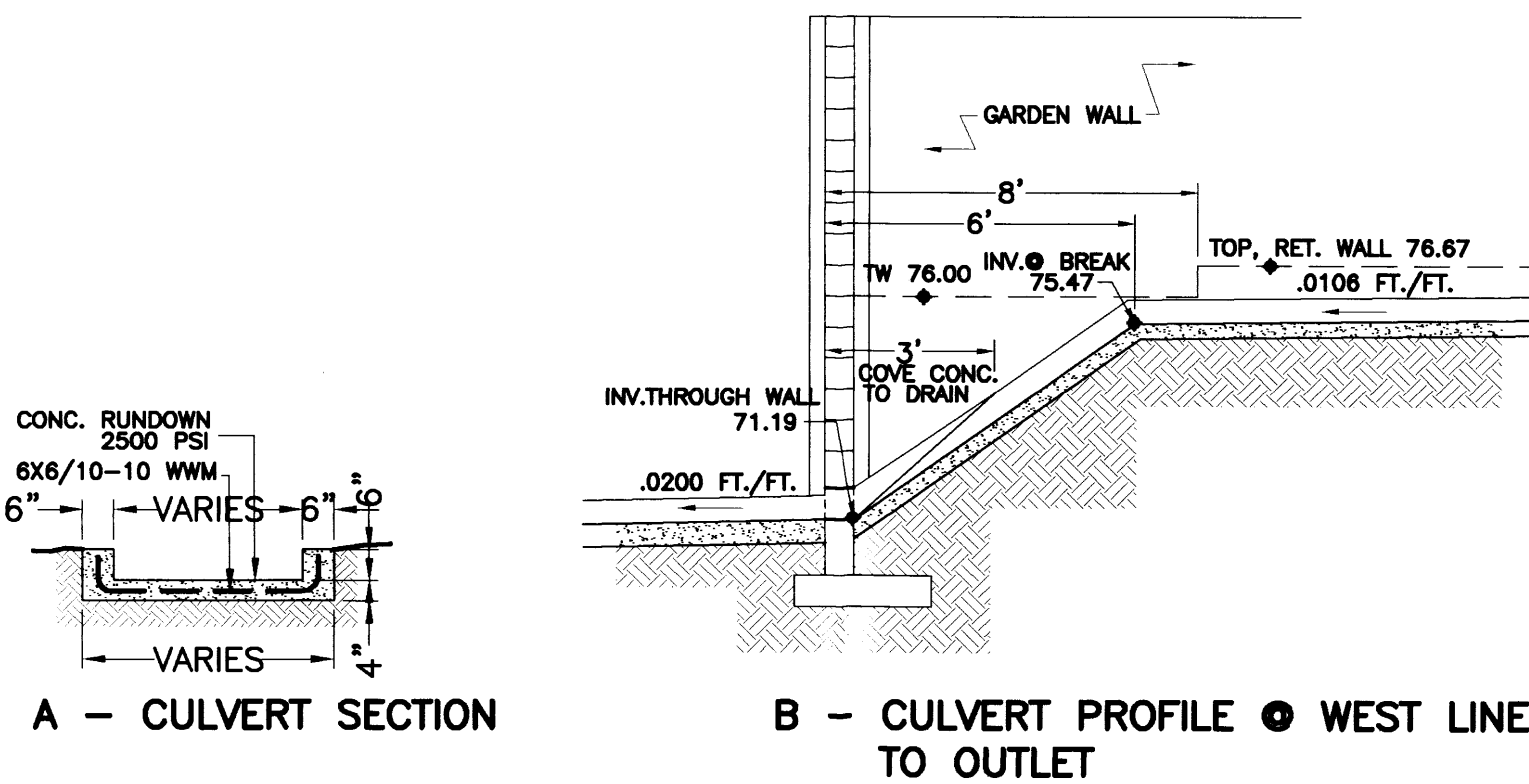


CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: THE COURTYARDS AT ALAMEDA DRAINAGE & GRADING	
Design Review Committee	City Engineer Approval
City Project No. 714481	Zone Map C-19
Sheet 3	Of 11

SURVEY INFORMATION		BENCH MARK		AS-BUILT INFORMATION	
NO.	DATE	NO.	DATE	NO.	DATE
1	DATE	1	DATE	1	DATE
2	DATE	2	DATE	2	DATE
3	DATE	3	DATE	3	DATE
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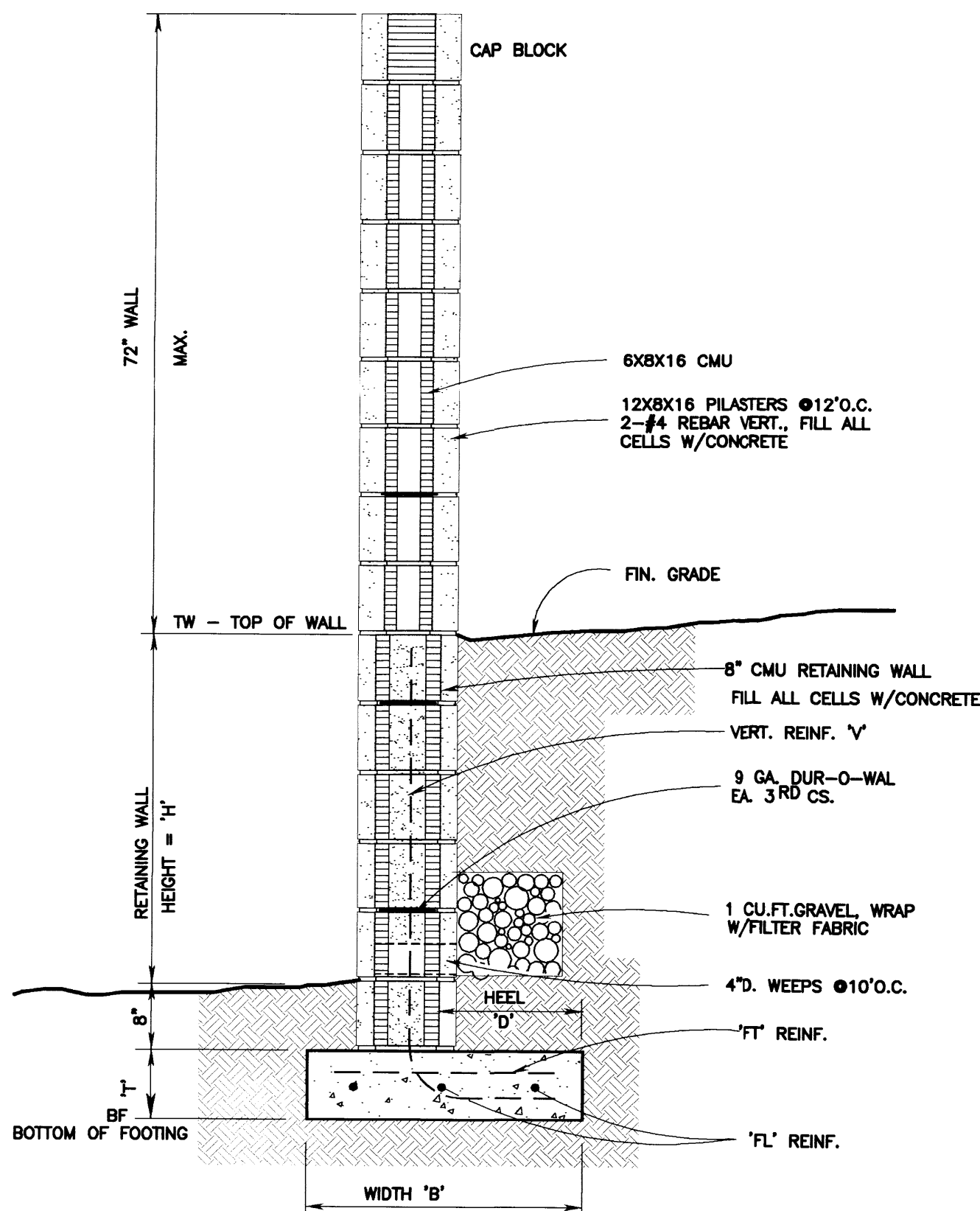


JUN 11 2003	
HYDROLOGY SECTION	
ALAMEDA	
Mo./Day/Yr.	Mo./Day/Yr.
Sheet	Of
3	12



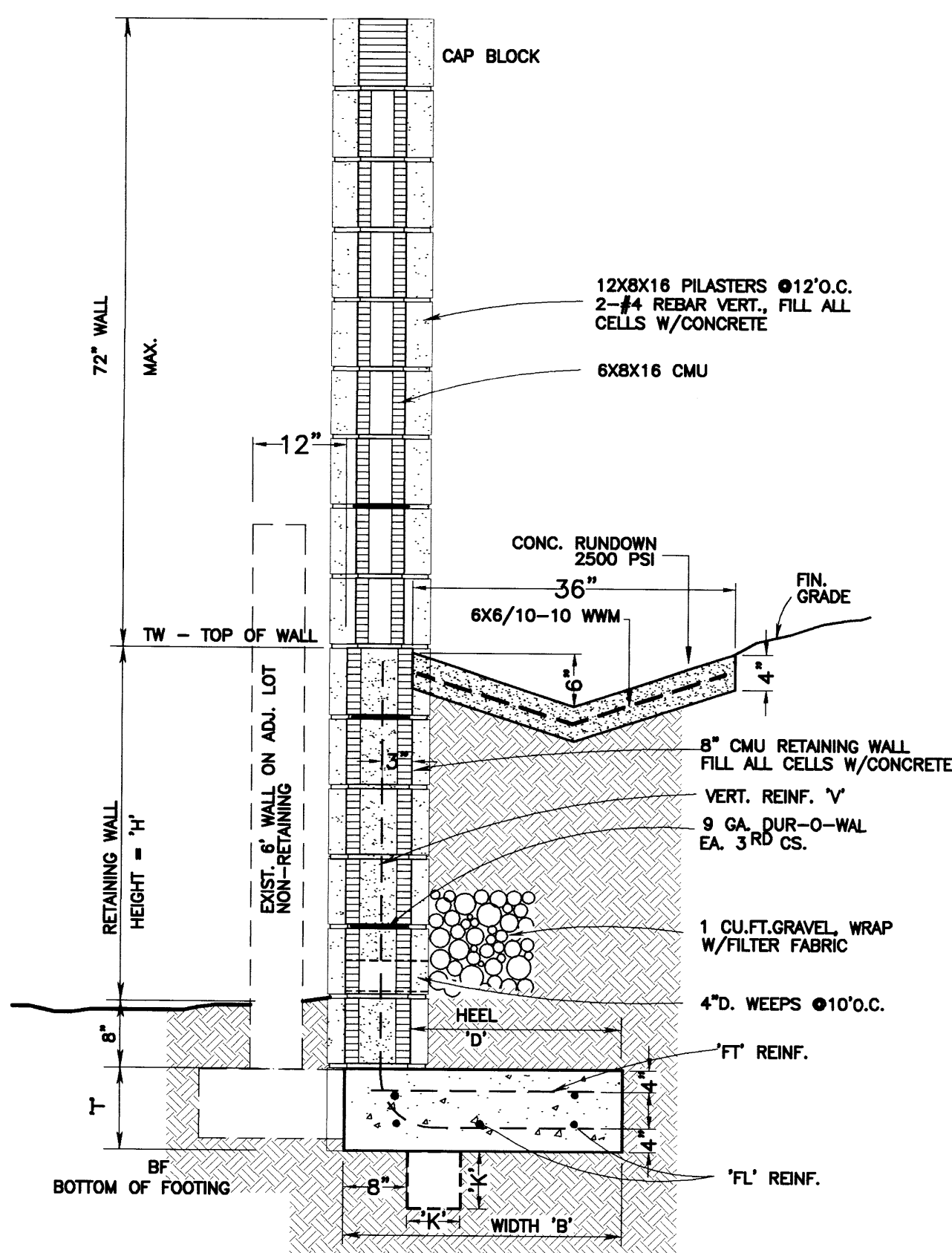
NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE PREPARATION INCLUDING EXCAVATION, COMPACTION AND BACKFILL.
- REINFORCING BARS SHALL HAVE STANDARD DEFORMATIONS AND A YIELD STRENGTH OF 40,000 PSI.
- CONCRETE STRENGTH (F_c) 2500 PSI @ 30 DAYS.
- ALTERNATE VERTICAL REINFORCING BARS MAY BE TERMINATED AT MID-HEIGHT OF RETAINER AS MEASURED FROM LOWER FINISH GRADE.



WALL HEIGHT 'H'	MIN. BLOCK	FOOTING WIDTH 'B'	HEEL 'D'	FTG. THK. 'T'	VERTICAL REINF. 'V'	TRANSVERSE REINF. 'T'	CONTINUOUS REINF. 'FL'
1'-4"	8"	1'-4"	8"	8"	#3 @ 24" O.C.	—	2-#3 CONT.
2'-0"	8"	1'-10"	10"	8"	#3 @ 24" O.C.	—	2-#3 CONT.
2'-8"	8"	2'-4"	1'-2"	8"	#4 @ 24" O.C.	—	2-#4 CONT.
3'-4"	8"	2'-8"	1'-4"	8"	#4 @ 24" O.C.	#3 @ 24" O.C.	2-#4 CONT.
4'-0"	8"	3'-0"	1'-7"	8"	#4 @ 16" O.C.	#3 @ 16" O.C.	3-#4 CONT.
4'-8"	8"	3'-4"	1'-9"	10"	#4 @ 16" O.C.	#4 @ 16" O.C.	3-#4 CONT.

STANDARD RETAINING WALL



WALL HEIGHT 'H'	FOOTING WIDTH 'B'	HEEL 'D'	FTG. THK. 'T'	VERTICAL REINF. 'V'	TRANSVERSE REINF. 'T'	KEY 'K'	CONTINUOUS REINF. 'FL'	REINF. PLACEMENT
4'-0"	3'-4"	2'-8"	10"	#4 @ 16" O.C.	#4 @ 16" O.C.	—	4-#4 CONT.	2-TOP, 2-BOT.
4'-8"	3'-8"	3'-0"	12"	#5 @ 16" O.C.	#4 @ 16" O.C.	—	5-#4 CONT.	2-TOP, 3-BOT.
5'-4"	4'-0"	3'-4"	12"	#5 @ 16" O.C.	#4 @ 16" O.C.	—	5-#4 CONT.	2-TOP, 3-BOT.
6'-0"	4'-4"	3'-8"	12"	#5 @ 16" O.C.	#5 @ 16" O.C.	8"x8"	6-#4 CONT.	3-TOP, 3-BOT.
6'-8"	4'-8"	4'-0"	12"	#5 @ 16" O.C.	#5 @ 16" O.C.	10"x10"	7-#4 CONT.	3-TOP, 4-BOT.
7'-4"	5'-0"	4'-4"	12"	#6 @ 8" O.C.	#5 @ 8" O.C.	12"x12"	8-#4 CONT.	4-TOP, 4-BOT.

RUNDOWN SECTION REVERSE FOOTING RETAINER

EXISTING ON-SITE CONDITIONS

THIS SITE COMPRISES TWO REMAINING, UNDEVELOPED, ORIGINAL NORTH ALBUQUERQUE ACRES LOTS. CHARACTER OF SITE MAY BEST BE DESCRIBED AS OPEN AND SEMI-COMPACTED BY LIGHT VEHICULAR ACTIVITY.

VEGETATION IS SPARSE AND IS LIMITED TO LOW ANNUAL GROWTH. THERE IS NO EVIDENCE OF ANY PREVIOUS CONSTRUCTION NOR IS THERE ANY FORMAL LANDSCAPING ON SITE. EXISTING IS FROM NORTHEAST TO SOUTHWEST AND VARIES FROM 1.5 TO 10 PERCENT. SURFACE TREATMENT BREAKDOWN IS 73% B AND 27% C (WHERE SLOPES EXCEED 10%).

TOTAL AREA OF SITE: 2.00 ACRES.

PROPOSED DEVELOPMENT

SITE IS TO BE REDIVIDED INTO EIGHT (8) SINGLE-FAMILY RESIDENTIAL LOTS WITH .66 ACRE BEING DEDICATED TO THE CITY OF ALBUQUERQUE FOR STREET RIGHT-OF-WAY. NET AREA COVERED BY PRIVATE DEVELOPMENT IS 1.34 ACRES.

EXISTING RETAIL BUILDING AND PARKING LOT TO NORTH OF IT IS TO REMAIN IN PLACE, UNALTERED.

OFFSITE FLOWS

THIS SITE IS SUBJECT TO EXISTING OFFSITE FLOWS FROM TEMPORARY PAVEMENT IN ADJOINING BARSTOW STREET.

STORMWATER ROUTING

SITE IS TO BE GRADED AND DEVELOPED TO DIRECT GENERATED FLOWS INTO ALAMEDA BOULEVARD. THIS SITE DOES NOT LIE WITHIN A 100-YEAR FLOOD HAZARD ZONE AS INDICATED ON PANEL 141 OF 825 OF THE FLOOD INSURANCE RATE MAPS FOR ALBUQUERQUE, NEW MEXICO, EFFECTIVE DATE SEPTEMBER 20, 1996. FROM THE POINTS OF DISCHARGE ONTO ALAMEDA BOULEVARD RIGHT-OF-WAY, FLOWS TRAVEL WESTWARD WITHIN ALAMEDA BOULEVARD TO INTERSECTION BY A PUBLIC STORM DRAIN LOCATED AT THE INTERSECTION OF ALAMEDA AND WYOMING BOULEVARD, NE. FLOWS ARE CONVEYED NORTH FROM THAT POINT BY STORM SEWER TO THE LA CUEVA ARROYO, A DISTANCE OF APPROXIMATELY 750 FEET. THIS SITE LIES WITHIN THE LA CUEVA ARROYO WATERSHED. LA CUEVA ARROYO IS THE OUTFALL FOR THIS SITE. THE DEVELOPMENT OF TIERRA LA CUEVA UNIT 1, LYING DIRECTLY ACROSS ALAMEDA BOULEVARD FROM THIS SITE TO THE SOUTH (HYDROLOGY FILE NO. C19/D9) ESTABLISHED THE CONCEPT OF FREE DISCHARGE TO ALAMEDA BOULEVARD. THAT PLAN AS REFERENCED, DEMONSTRATES DOWNSTREAM CAPACITY AND THE SUITABILITY OF DISCHARGING THE RUNOFF FROM THIS SITE TO THE LA CUEVA ARROYO VIA ALAMEDA BOULEVARD, NE.

DRAINAGE DATA

PRECIPITATION ZONE 3 ON-SITE CONDITIONS									
CONDITION	STORM RETURN PERIOD TABLE 4 YEAR	TREATMENT TYPE	TREATMENT AREA(AC.)	EXCESS PRECIP.	PEAK RUNOFF TAB.8 IN.	PEAK RUNOFF TAB.9 CFS/AC	RUNOFF VOLUME CU.FT.	RUNOFF RATE CFS	
EXISTING	100	B	1.34	0.92	2.60	4475	3.48		
	100	C	0.39	1.29	3.45	1826	1.34		
	100	D	0.17	2.36	5.02	1456	0.85		
EXISTING	10	B	1.34	0.36	1.19	1751	1.59		
	10	C	0.39	0.62	2.00	878	0.78		
	10	D	0.17	1.50	3.39	925	0.58		
TOTAL	100		1.90			7757	5.67		
	10		1.90			3345	2.85		
DEVELOPED, TOTAL RELEASE TO ALAMEDA BLVD.									
TOTAL	100		1.34			9092	5.78		
	10		1.34			5358	3.67		

NOTES

- A flow rate increase of 0.12 CFS and 0.72 CFS for the 100-year and 10-year storms, respectively, may be expected. The 6-hour runoff volume will increase by 1457 cubic feet for the 100-year storm and 1898 cubic feet for the 10-year storm.
- Net area discharging to Alameda Boulevard will decrease by 0.21 acre. Flows contributory to this site entering from Barstow Street will be redirected by street improvements to North.
- Exterior area "C" totals are generated with New Street Right-of-way for Alameda and are shown for reference only.
- For the purpose of developed runoff calculations, the following treatment areas were assumed per proposed lot: Impervious (D) 3000 s.f., Soft landscaping (B) 800 s.f., with remaining areas assumed to be Semipervious landscaping (C).

Triangular Channel Analysis & Design
Open Channel - Uniform flow

Description: WESTERLY RUNDOWN

Solve For Discharge

Given Constant Data:

Z-Left..... 3.00

Z-Right..... 3.00

Manning's 'n'..... 0.015

Channel Slope..... 0.0106

Channel Depth..... 0.50

COMPUTED

Z-Left	Z-Right	Manning's	Channel	Channel	Channel
(Hv)	(Hv)	'n'	Slope ft/ft	Depth ft	Discharge (cfs)
3.00	3.00	0.015	0.0106	0.50	2.93
					3.91

INTERIOR BASIN

PRECIPITATION ZONE 3 ON-SITE CONDITIONS									
CONDITION	STORM RETURN PERIOD TABLE 4 YEAR	TREATMENT TYPE	TREATMENT AREA(AC.)	EXCESS PRECIP.	PEAK RUNOFF TAB.8 IN.	PEAK RUNOFF TAB.9 CFS/AC	RUNOFF VOLUME CU.FT.	RUNOFF RATE CFS	
EXISTING	100	B	0.56	0.92	2.60	1870	1.45		
	100	C	0.21	1.29	3.45	983	0.72		
EXISTING	10	B	0.56	0.36	1.19	731	0.67		
	10	C	0.21	0.62	2.00	473	0.42		
TOTAL	100		0.77			2583	2.17		
	10		0.77			1204	1.09		
DEVELOPED	100	B	0.08	0.92	2.60	267	0.21		
	100	C	0.18	1.29	3.45	844	0.63		
	100	D	0.51	2.36	5.02	4369	2.56		
DEVELOPED	10	B	0.08	0.36	1.19	104	0.09		
	10	C	0.18	0.62	2.00	405	0.36		
	10	D	0.51	1.50	3.39	2777	1.73		
TOTAL	100		0.77			5480	3.40		
	10		0.77			3288	2.18		

Rectangular Channel Analysis & Design
Open Channel - Uniform flow

Description: HENRIETTA WYETH TO ALAMEDA

Solve For Bottom Width

Given Constant Data:

Manning's 'n'..... 0.015

Channel Slope..... 0.0200

Channel Depth..... 0.50

Channel Discharge..... 3.40

Variable Input Data Minimum Maximum Increment By

COMPUTED					COMPUTED				
Bottom Width	Manning's	Channel Slope	Channel Depth	Channel Velocity	Bottom Width	Manning's	Channel Slope	Channel Depth	Channel Velocity
ft	'n'	ft/ft	ft	cfs	ft	'n'	ft/ft	ft	cfs
1.15	0.015	0.0200	0.50	3.40	5.80				

Open Channel Flow Module, Version 3.12 (c)
Hoisted Methods, Inc. * 37 Brookside Rd * Waterbury, CT 06708

EXTERIOR AREA INCLUDED WITH ALAMEDA

PRECIPITATION ZONE 3 ON-SITE CONDITIONS									
CONDITION	STORM RETURN PERIOD TABLE 4 YEAR	TREATMENT TYPE	TREATMENT AREA(AC.)	EXCESS PRECIP.	PEAK RUNOFF TAB.8 IN.	PEAK RUNOFF TAB.9 CFS/AC	RUNOFF VOLUME CU.FT.	RUNOFF RATE CFS	
EXISTING	100	B	0.49	0.92	2.60	1636	1.27		
	100	C	0.08	1.29	3.45	375	0.28		
EXISTING	10	B	0.49	0.36	1.19	640	0.58		
	10	C	0.08	0.62	2.00	180	0.16		
TOTAL	100		0.57			2011	1.55		
	10		0.57			820	0.74		
DEVELOPED	100	B	0.08	0.92	2.60	267	0.21		
	100	C	0.19	1.29	3.45	890	0.67		
	100	D	0.30	2.36	5.02	2577	1.51		
DEVELOPED	10	B	0.08	0.36	1.19	104	0.09		
	10	C	0.19	0.62	2.00	428	0.38		
	10	D	0.30	1.50	3.39	1634	1.02		
TOTAL	100		0.57			3734	2.39		
	10		0.57			2165	1.49		

EXTERIOR AREA INCLUDED WITH ALAMEDA

NOTE 3									
CONDITION	STORM RETURN PERIOD TABLE 4 YEAR	TREATMENT TYPE	TREATMENT AREA(AC.)	EXCESS PRECIP.	PEAK RUNOFF TAB.8 IN.	PEAK RUNOFF TAB.9 CFS/AC	RUNOFF VOLUME CU.FT.	RUNOFF RATE CFS	
DEVELOPED	100	C	0.09	1.29	3.45	421	0.31		
	100	D	0.29	2.36	5.02	2484	1.46		
DEVELOPED	10	C	0.09	0.62	2.00	203	0.18		
	10	D	0.29	1.50	3.39	1579	0.98		

THE group

Telck-Hensley Engineering Group

4001 JUAN TABO NE, SUITE A
ALBUQUERQUE, NEW MEXICO 87111
Phone: (505)292-3202 FAX: (505)292-3904

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

JUN 11 2003

TITLE: THE COURTYARDS AT ALAMEDA
DRAINAGE & GRADING- CALCS, DETAILS

Design Review Committee	City Engineer Approval	Last Design Update	Sheet	Of
			4	12

City Project No. 1002472 Zone Map C-19