

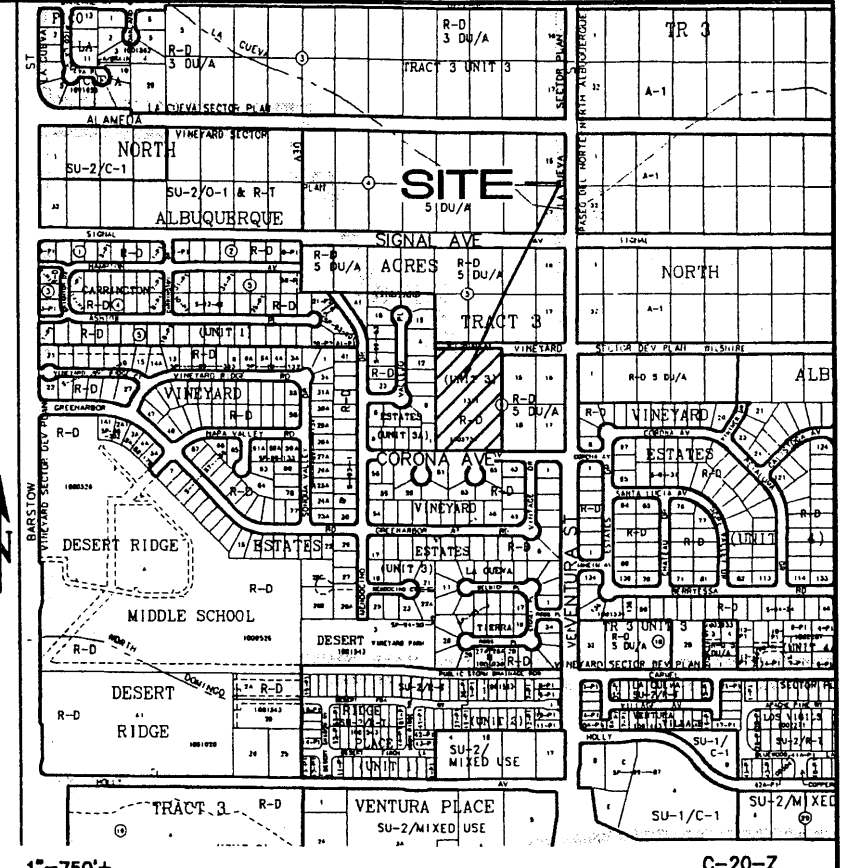
PERIMETER & RETAINING WALL CERTIFICATION

I, FRED C. ARFMAN, NMPE 7322, OF THE FIRM ISAACSON & ARFMAN, P.A., HEREBY CERTIFY THAT THE PERIMETER AND RETAINING WALLS SHOWN HEREON FOR THE VILLA FIRENZE GRADING AND DRAINAGE PLAN, STAMPED 09/12/06 HAVE BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE DESIGN INTENT OF THE SUBJECT PLANS. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 07/18/07 AND HAVE DETERMINED BY VISUAL INSPECTION THAT ALL WALLS ARE IN PLACE AND THE PLAN IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST OF FINAL PROJECT CLOSEOUT AND RELEASE OF FINANCIAL GUARANTEE.

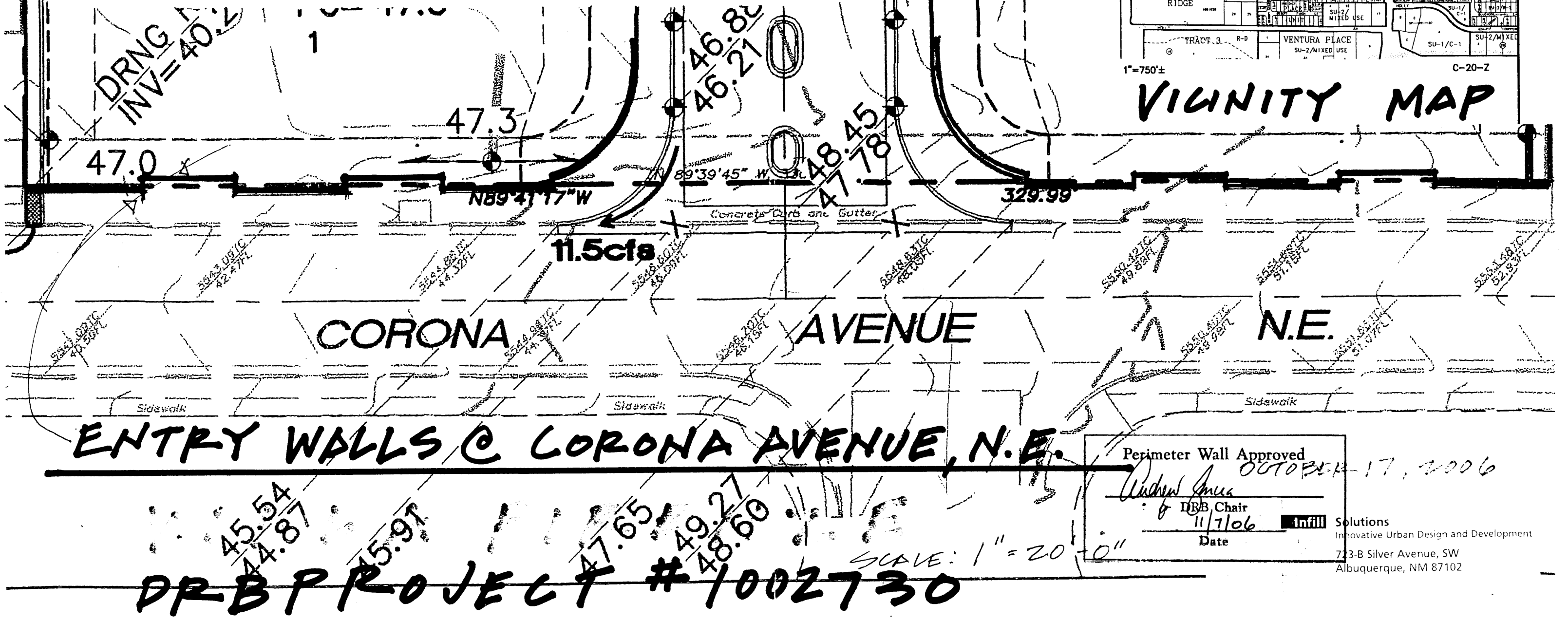
Fred C. Arfman
FRED C. ARFMAN, PE
FOR ISAACSON & ARFMAN, P.A.



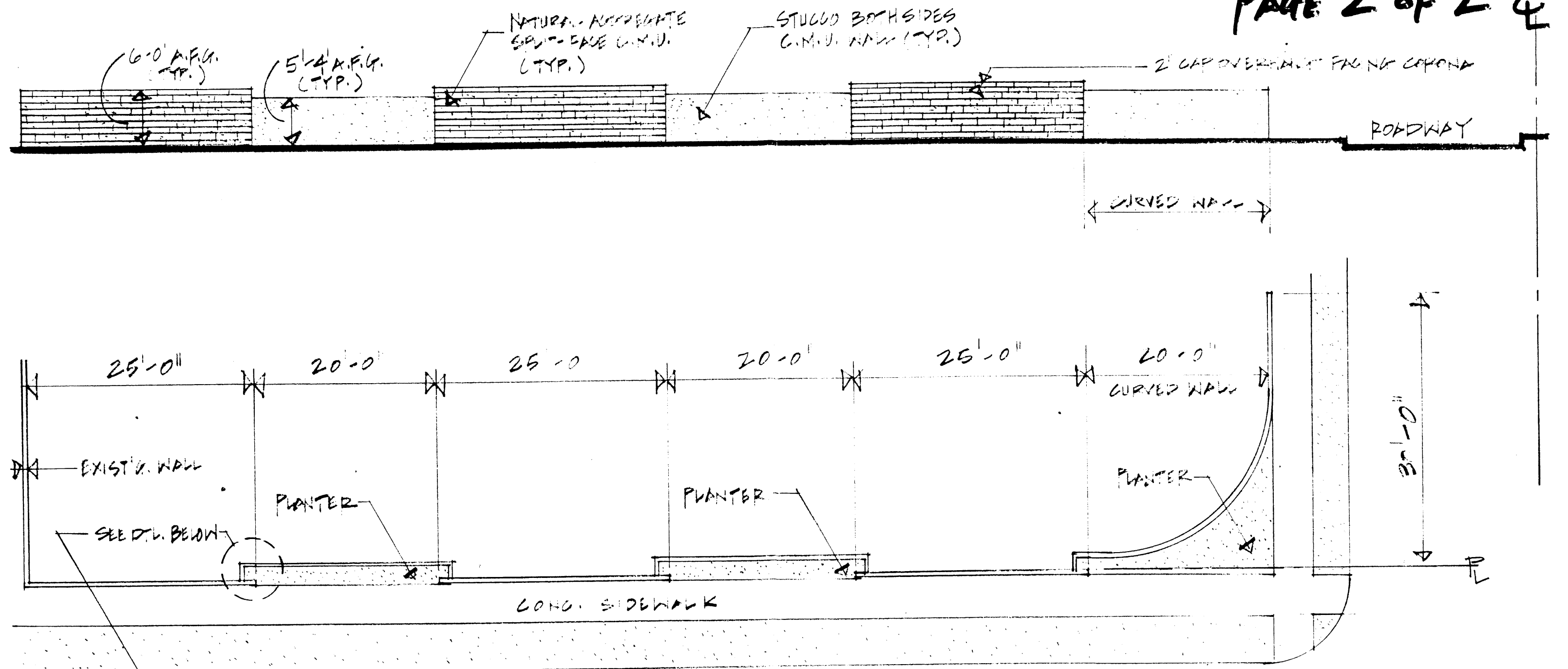
DATE 07-19-07



VICINITY MAP



Perimeter Wall Approved
William Arfman
DRB, Chair
11/7/06
Date
Infill Solutions
Innovative Urban Design and Development
723-B Silver Avenue, SW
Albuquerque, NM 87102



TYPICAL PLAN & ELEVATION C CORONA AVENUE, N.E.

1" = 10'-0"

09/12/06

DRB PROJECT #1002730

SITE CALCULATIONS

CALCULATIONS: Corona Subdivision : August 15, 2006

Based on Drainage Design Criteria for City of Albuquerque Section 22.2. DPM, Vol 2, dated Jan., 1993

ON-SITE			
AREA OF SITE:	164414 SF	=	3.8 Ac
HISTORIC FLOWS:			
On-Site Historic Land Condition		On-Site Developed Land Condition	
Area a = 0 SF		Area a = 0 SF	
Area b = 164414 SF		Area b = 24662 SF	
Area c = 0 SF		Area c = 32883 SF	
Area d = 0 SF		Area d = 106869 SF	
Total Area = 164414 SF		Total Area = 164414 SF	
EXCESS PRECIP:			
		Precip. Zone	4
Ea = 0.80		Eb = 1.08	
Ec = 1.46		Ed = 2.64	

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)			
Weighted E =		$\frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$	
Historic E	=	1.08 in	Developed E = 2.17 in.
On-Site Volume of Runoff V360 = E*A / 12			
Historic V360	=	14797 CF	Developed V360 = 29732 CF

On-Site Peak Discharge Rate: Qp = QpaAa + QpbAb + QpcAc + QpdAd / 43.560

For Precipitation Zone 4

Qpa = 2.20 Qpb = 2.92 Qpc = 3.73 Qpd = 5.25

Historic Qp = 11.0 CFS Developed Qp = 17.3 CFS

DRAINAGE SUB-BASIN CALCULATIONS

BASIN NO.	E	DESCRIPTION	Draining to main road, then south to Corona Ave.
Area of basin flows =	91133 SF		2.1 Ac
The following calculations are based on Treatment areas as shown in table to the right			
Sub-basin Weighted Excess Precipitation (see formula above)			
Weighted E =	2.05 in	TREATMENT	
Sub-basin Volume of Runoff (see formula above)		A =	0%
V360 =	15584 CF	B =	15%
Sub-basin Peak Discharge Rate (see formula above)		C =	30%
Qp =	9.3 cfs	D =	55%
BASIN NO.	W	DESCRIPTION	Draining through west lots to sdwk culvert to Corona Ave.
Area of basin flows =	73281 SF		1.7 Ac
The following calculations are based on Treatment areas as shown in table to the right			
Sub-basin Weighted Excess Precipitation (see formula above)			
Weighted E =	2.27 in	TREATMENT	
Sub-basin Volume of Runoff (see formula above)		A =	0%
V360 =	13872 CF	B =	10%
Sub-basin Peak Discharge Rate (see formula above)		C =	18%
Qp =	8.0 cfs	D =	72%

LEGEND

EXISTING CONTOUR	PROPOSED CONTOUR
PROPOSED SPOT ELEVATION	FLOW ARROW
FINISH FLOOR ELEVATION	SIDEWALK CULVERT
TOP OF CURB ELEVATION	TOP OF WALL ELEVATION
INVERT ELEVATION	AREA DRAIN
INVERT ELEVATION	INVERT ELEVATION
DRAIN LINE WITH SIZE	STORM DRAIN MANHOLE
DRAINAGE BASIN LIMITS	6" PVC DRAIN PENETRATION

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FRED C. ARFMAN, PE
FOR ISAACSON & ARFMAN, P.A.

07.19.07
DATE

VILLA FIRENZE
Worksheet for Trapezoidal Channel

Project Description	
Project File	m:\active\project documents\1526\calcs\1526.fm2
Worksheet	Backyard conc rundown - SECTION C-C
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

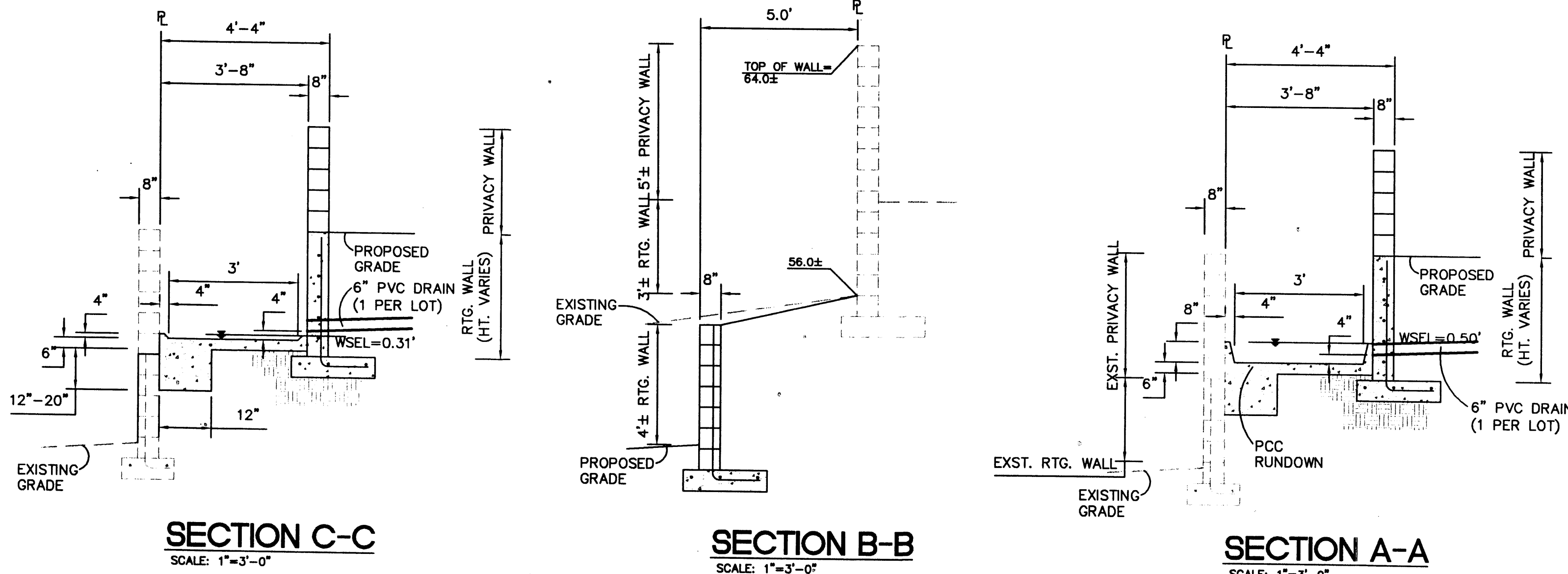
Input Data	
Manning's Coefficient	0.013
Channel Slope	0.007000 ft/ft
Left Side Slope	0.750000 H : V
Right Side Slope	0.750000 H : V
Bottom Width	3.00 ft
Discharge	4.00 cfs

Results	
Depth	0.31 ft
Flow Area	1.01 ft²
Wetted Perimeter	3.78 ft
Top Width	3.47 ft
Critical Depth	0.37 ft
Critical Slope	0.004024 ft/ft
Velocity	3.96 ft/s
Velocity Head	0.24 ft
Specific Energy	0.56 ft
Froude Number	1.30
Flow is supercritical.	

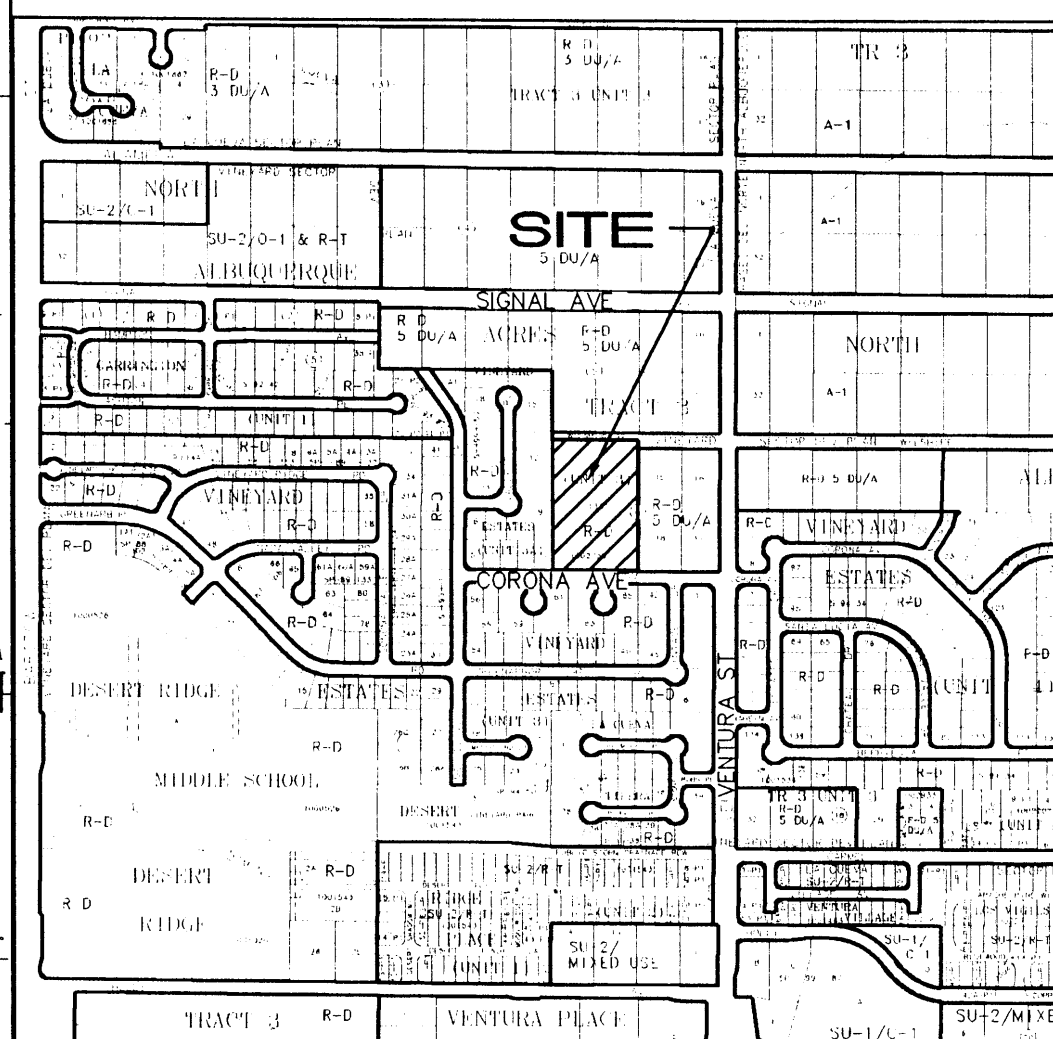
Project Description	
Project File	m:\active\project documents\1526\calcs\1526.fm2
Worksheet	Backyard conc rundown - SECTION A-A
Flow Element	Trapezoidal Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Manning's Coefficient	0.013
Channel Slope	0.007000 ft/ft
Left Side Slope	0.300000 H : V
Right Side Slope	0.300000 H : V
Bottom Width	3.00 ft
Discharge	8.00 cfs

Results	
Depth	0.50 ft
Flow Area	1.57 ft²
Wetted Perimeter	4.04 ft
Top Width	3.30 ft
Critical Depth	0.59 ft
Critical Slope	0.004075 ft/ft
Velocity	5.09 ft/s
Velocity Head	0.40 ft
Specific Energy	0.90 ft
Froude Number	1.30
Flow is supercritical.	



VICINITY MAP



SITE DATA

LEGAL DESCRIPTION: LOT 13-A-1, BLK. 6, TRACT 3, NORTH ALBUQUERQUE ACRES, UNIT 3. (07-13-2004; BK. 2004C, PG.209)

AREA: 3.7744 AC. (164414 S.F.)

ENGINEER: ISAACSON & ARFMAN, P.A. (ATTN: FRED C. ARFMAN, P.E.)
128 MONROE ST NE ALBUQUERQUE, NM 87108

SURVEYOR: SURV-TEK, INC. (ATTN: RUSS HUGG)
9384 VALLEY VIEW DR NW ALBUQUERQUE, NM 87114

SITE CONDITIONS: THE SITE IS SEMI-UNDISTURBED NORTHEAST HEIGHTS MESA TERRAIN. SITE WAS PREVIOUSLY ZONED TO ACCOMMODATE A CHURCH SITE AND WAS RECENTLY RE-ZONED TO RESIDENTIAL (R-D).

HYDROLOGICAL CONDITIONS

EXISTING: THE SITE IS APPROXIMATELY 3.77 ACRES AND IS COMPLETELY SURROUNDED BY FULLY DEVELOPED NEIGHBORHOODS TO THE EAST, NORTH AND WEST AND WITH THE STREET SECTION OF CORONA AVENUE BORDERING ON THE SOUTH.

THE EXISTING SURFACE STORM WATER FLOWS CONDITION ARE DIVIDED INTO TWO DISTINCT BASINS. THE NORTHERLY BASIN (1.0 ACRE±) HAS ALL OF ITS STORM WATER FLOWS COLLECTING AT THE NORTHWEST PROPERTY CORNER AGAINST THE REAR YARDS OF THE ADJACENT PROPERTY OWNERS. THERE ARE NO DISCHARGE RUNDOWNS OR EASEMENTS TO RELEASE THESE CAPTURED FLOWS.

THE SOUTHERLY BASIN (2.7 ACRE±) HAS ALL OF THE SURFACE STORM WATERS SHEET FLOWING TO THE WEST WHERE THEY ARE BLOCKED BY THE EXISTING CMU WALLS OF THE ADJACENT RESIDENTIAL SUBDIVISION. FLOWS ARE THEN REDIRECTED TO THE SOUTH WHERE THEY DISCHARGE ONTO THE CORONA AVENUE RIGHT-OF-WAY.

PROPOSED: THE SEVENTEEN LOT SUBDIVISION WILL HAVE TWO DEVELOPED DRAINAGE BASINS. THE EASTERLY BASIN (E) SHALL CONSIST OF APPROXIMATELY THE EASTERN HALF OF THE SITE. DEVELOPED STORM WATERS ARE ALLOWED TO DISCHARGE TO THE PRIVATE STREET AND ARE THEN CONVEYED TO THE SOUTH WHERE THEY WILL DISCHARGE ONTO CORONA AVENUE.

THE WESTERLY BASIN (W) COLLECTS SURFACE STORM WATERS ALONG THE WESTERLY PROPERTY LINE WITHIN A DRAINAGE RUNDOWN BETWEEN THE EXISTING CMU RETAINING WALL AND THE PROPOSED PARALLEL RETAINING WALL (SEE SECTIONS A-A & C-C). STORM WATER FROM EACH LOT WILL BE COLLECTED IN A 6" PVC DRAIN WHICH PENETRATES THE RETAINING WALL BETWEEN THE RUNDOWN AND THE LOT AT 5' FROM THE LOW-SIDE BACKYARD CORNER. ALL STORM WATERS SHALL THEN BE ROUTED TO CORONA AVENUE VIA SIDEWALK CULVERTS.

HOMEBUILDERS WILL BE RESPONSIBLE FOR PROVIDING ON-LOT DRAINAGE IN BASIN (W). SURFACE WATERS SHALL ENTER THE 6" PVC DRAINS ON THE LOW-SIDE REAR YARD CORNERS OF EACH LOT, BY MEANS OF INLET DRAINS AT ALL LOW POINTS AND POINTS OF OBSTRUCTED FLOW IN THE SIDE AND REAR YARDS.

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 Fax. 505-268-2632
1526GRD.DWGthor 08.17.06

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VILLA FIRENZE

INFLILL SOLUTIONS

Date:	No.	Revision	Date	Job No.
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