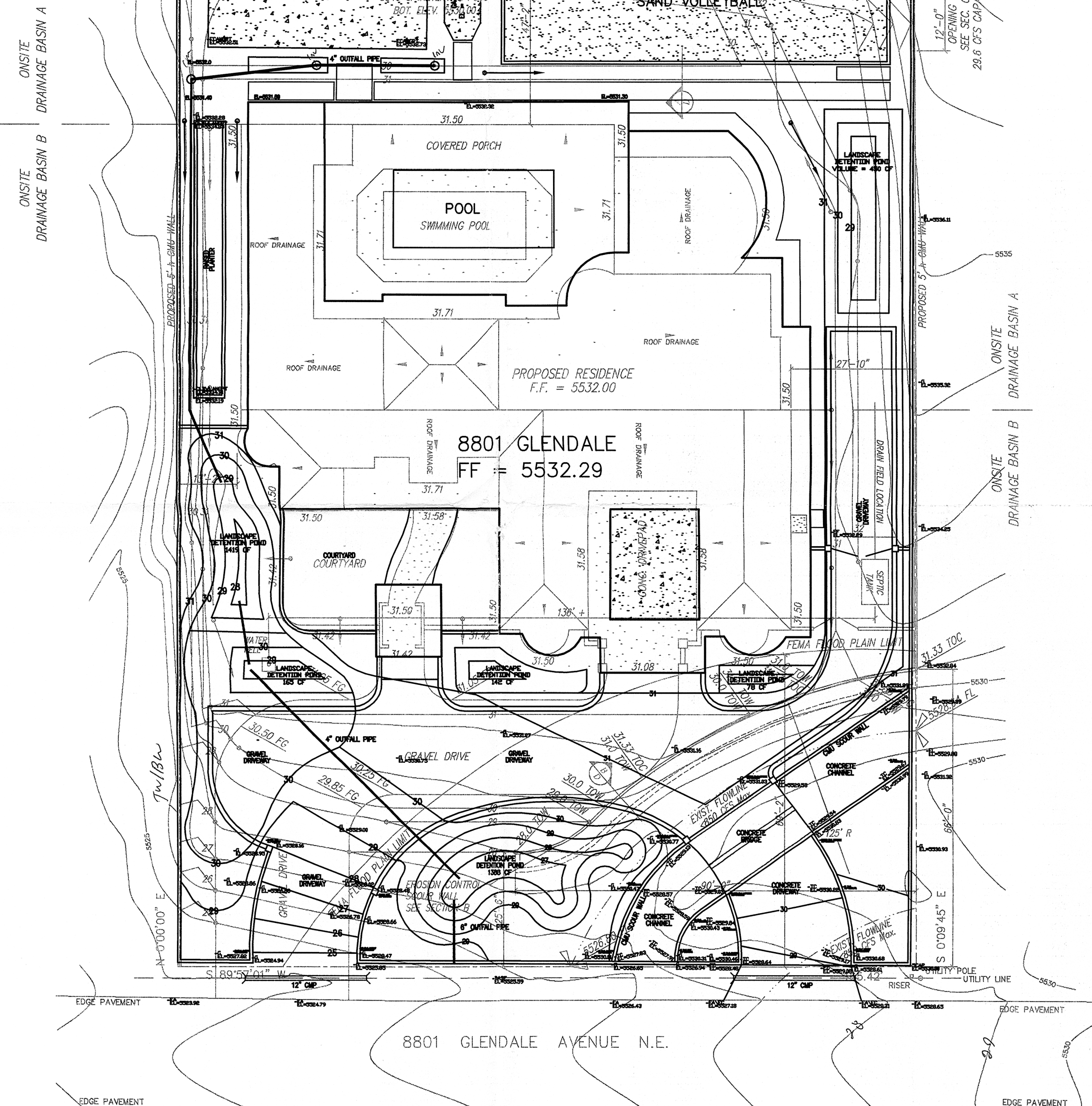


PROPOSED DEVELOPED CONDITIONS AS-BUILT	ONSITE	BASIN A	0 SF	0 SF	9,038 SF	6,649 SF	15,667 SF	PROPOSED DEVELOPED CONDITIONS AS-BUILT	ONSITE	BASIN A	1.74	0.99	2,279 CF	1,298 CF	1.48 CFS	0.83 CFS
		BASIN B	0 SF	500 SF	14,673 SF	7,750 SF	22,923 SF			BASIN B	1.64	0.91	3,140 CF	1,742 CF	2.08 CFS	1.29 CFS
							38,610 SF						5,419 CF			



I, TIMOTHY K. HIGHTOWER, NMPE 10815, OF THE FIRM THAMES ENGINEERING, HEREBY CERTIFY THAT THE PROJECT SHOWN ON THIS MAP HAS BEEN GRADED AND WILL BE MAINTAINED IN SUBSTANTIAL COMPLIANCE WITH THE ACCORDANCE WITH THE DESIGN DETAIL ON THE APPROVED PLAN DATED 03/01/17. I HAVE READ AND UNDERSTAND THE INFORMATION EDITED onto the original design document HAS BEEN OBTAINED BY NMPE 13240, OF THE FIRM AM SURVEYING. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED 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 FOR CERTIFICATE OF OCCUPANCY.

THE INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.


OTHER PURPOSE: Timothy K. Hightower 3/1/13  
TIMOTHY K. HIGHTOWER, NMPE 10815 DATE:


LEGAL DESCRIPTION  
LOT 22, BLOCK 16, TRACT 1, UNIT 3, NORTH ALBUQUERQUE ACRES


PROPERTY ADDRESS  
8801 GLENDALE AVE. NE: ALBUQUERQUE, NM 87122


UPC NO: 102 006 517 406 930 211


**LEGEND**


EXISTING ELEVATION 

NEW CONTOUR 

SPOT ELEVATION 

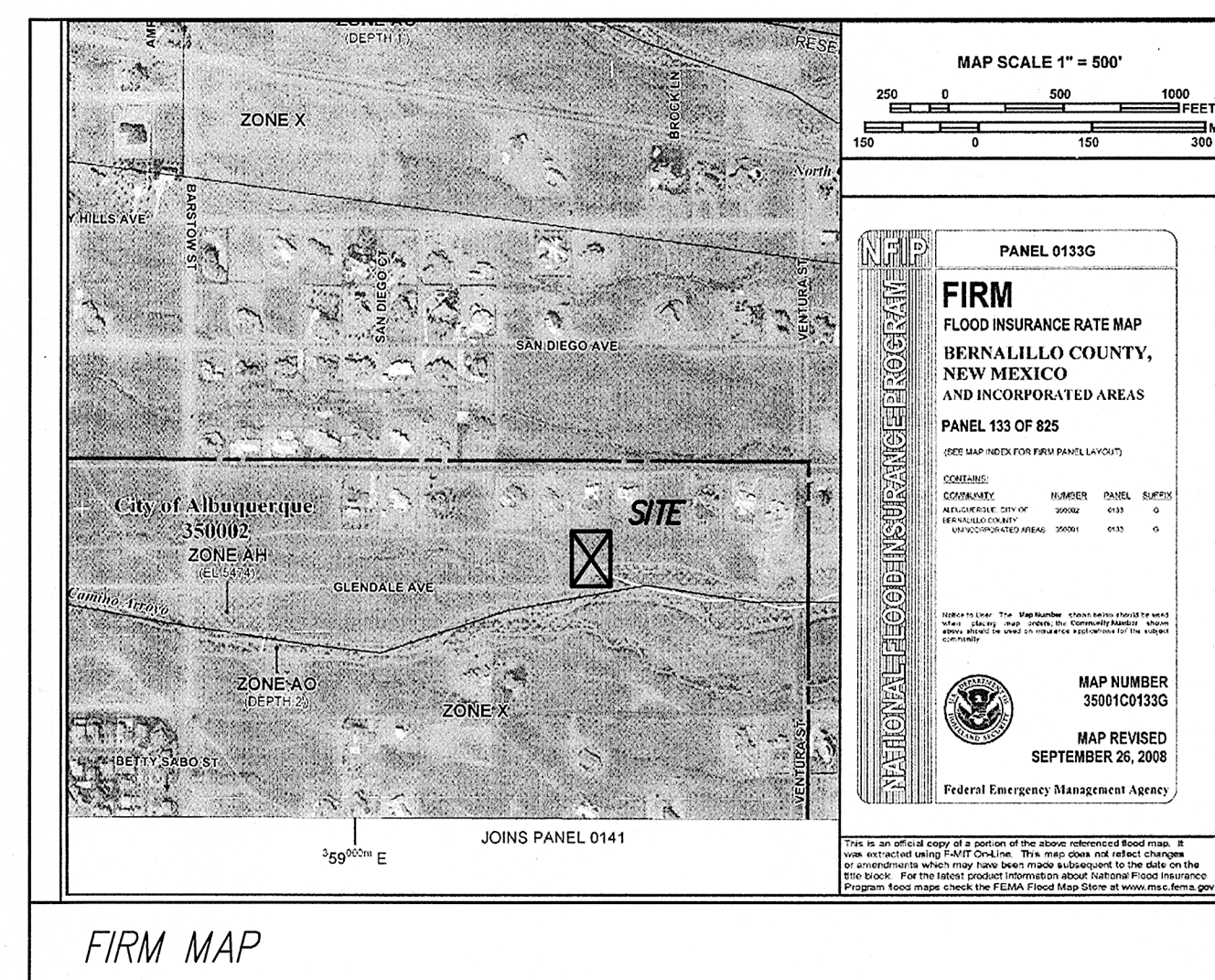
FLOWLINE 

DRAINAGE SWALE 

PROPERTY LINE 

BENCH MARK:  
C.O.A. MONUMENT: 7-B20  
ELEVATION: 5566.66

TEMPORARY SITE BENCH MARK:  
TOP OF CAPPED REBAR, NW PROPERTY CORNER  
ELEVATION: 5529.13



**GENERAL NOTES:**

1. It is the applicants responsibility to obtain all other appropriate Federal, State, and Local permits.
2. Any changes to this drainage plan would have to be approved by the design engineer and the City of Albuquerque.
3. Sidewalk culverts in the COA ROW are required to be permitted by an S019 Permit and built per COA Std. Dwg. 2236.
4. See Architectural drawings for all dimensions not shown.

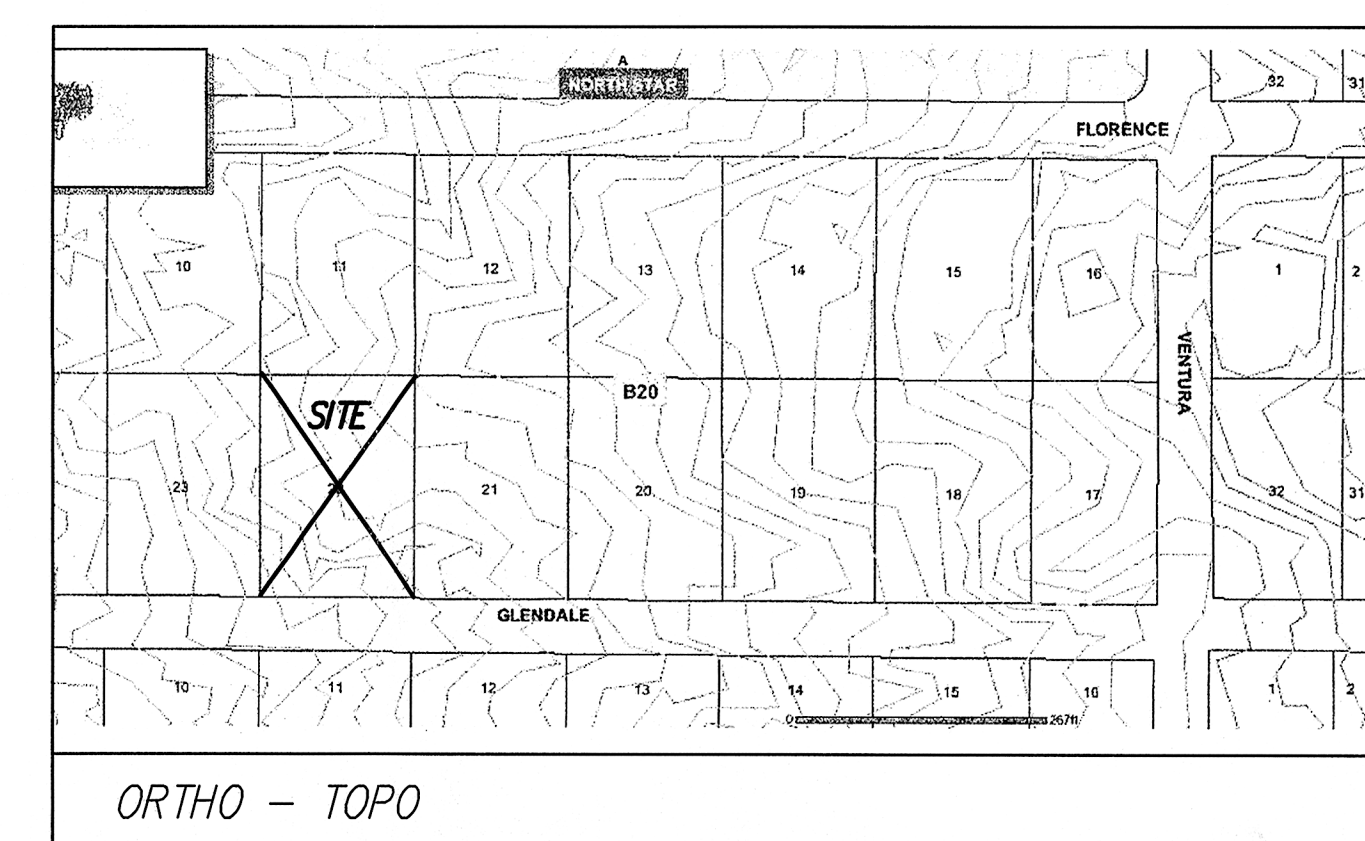
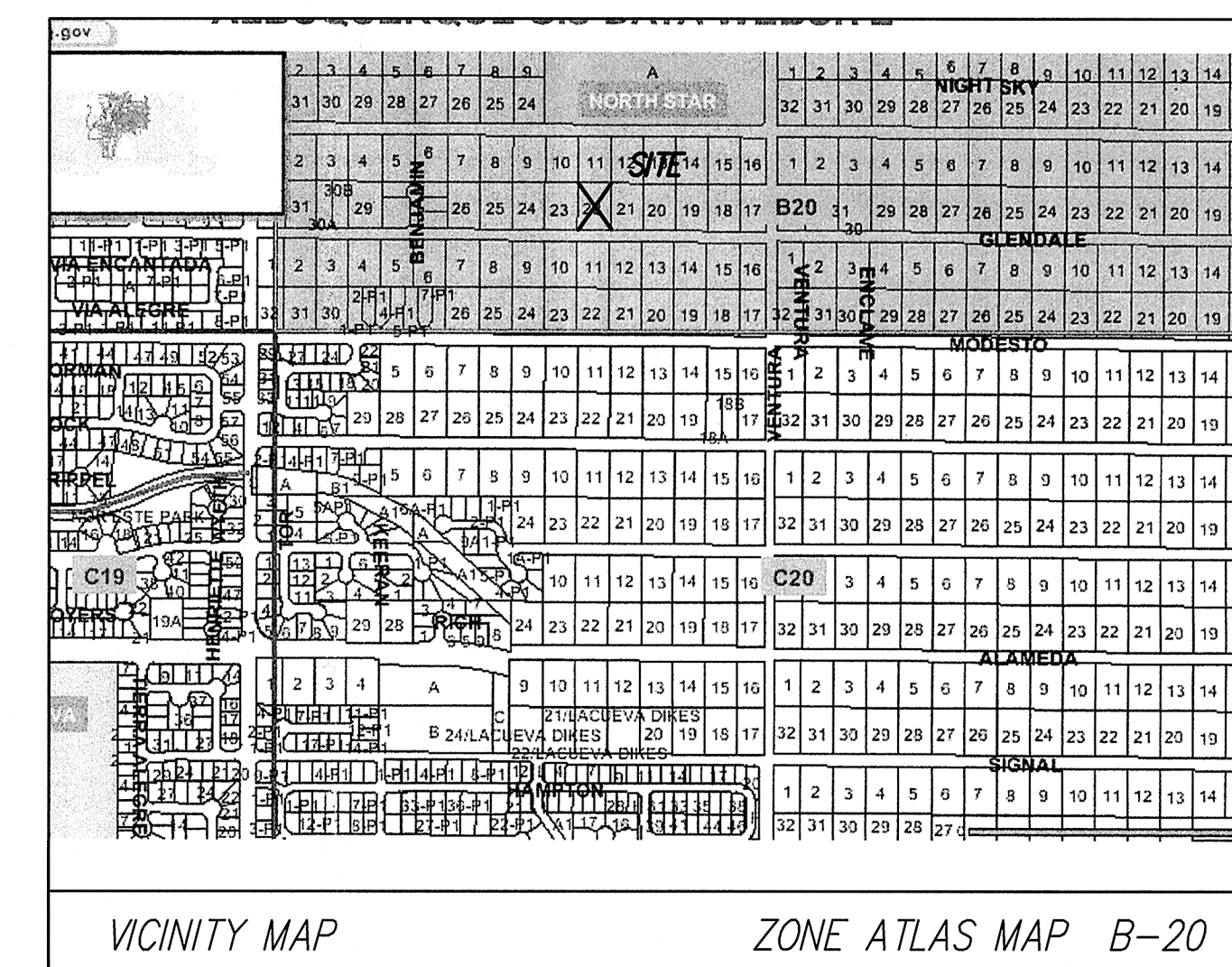
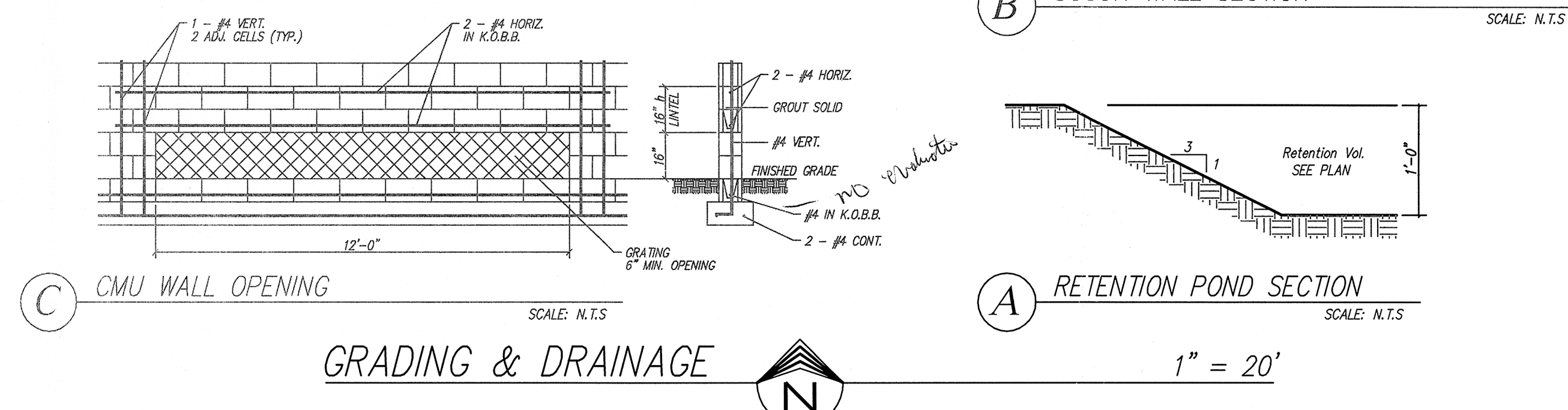
### PROCEDURE AND HYDRAULIC CALCULATIONS FOR 40 ACRE AND SMALLER CONTRIBUTORY WATERSHEDS.

REFERENCE:  
Volume 2, City of Albuquerque Development Process Manual,  
Section 22.2, Hydrology.

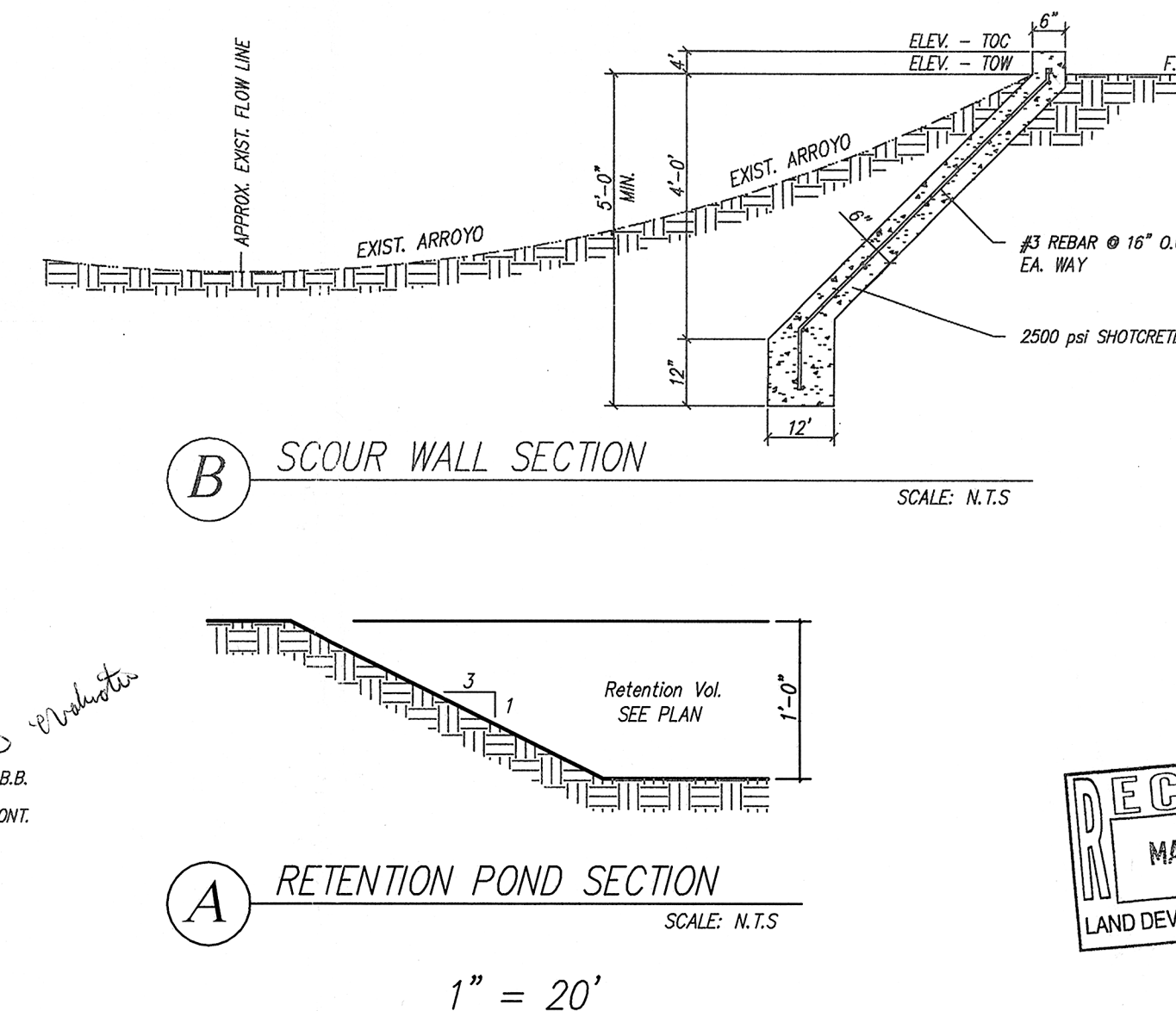
**CRITERIA:**  
Precipitation Zone: 3  
Design Storm: 10 year - 6-hour event; Storm depth = 1.73 inches  
Design Storm: 100 year - 6-hour event; Storm depth = 2.60 inches

**EXISTING CONDITIONS:**  
Presently the site is located north of Glendale Ave. and east of Barstow Ave. Currently, the site drains from the north to the south through sheet flow into the unimproved El Camino Arroyo at the south boundry of the property. There is a small offsite basin to the NE that generates approximately 13 CFS that enters the property at the northeast corner and drains into the El Camino arroyo at the southern end of the property. The offsite flow from the El Camino arroyo enters the southern third of the property and flows through the southeast corner of the property through multiple flowlines. The El Camino arroyo generates approximately 660 CFS of undeveloped flow in this area as outlined in the North Albuquerque Acres Master Drainage Plan. The maximum depth of runoff in the El Camino Arroyo is 2' deep. There is a current C.O.A. Drainage file #B20D021.

**PROPOSED CONDITIONS;**  
A single family residence and associated improvements are proposed for this site. Finish grading will allow the site to drain into to basins. The northern portion of the lot will drain into Basin A and the southern portion of the lot will drain into the El Camino Arroyo at the south boundary of the property. The finished floor elevation will be a minimum of 4' above the median arroyo invert. The residence will be placed out of the flood plain boundary as shown on the FIRM map. Erosion mitigation measures in the form of a concrete scour wall will need to be installed along a portion of the north edge of the flood plain limit to mitigate potential lateral erosion of the gravel drives and front landscaping areas. The El Camino arroyo generates approximately 850 CFS of fully developed flow in this area as outlined in the Master Drainage Plan. Provide retention for additional developed onsite runoff from Basin A.



SCOUR WALL CALCULATIONS:  
Flow Impinging on a Wall at an Angle:  
 $Y_s = Y(0.73 + 0.14(P/H)^{0.75}) \cos 30^\circ + 4F^{0.32} \sin 30^\circ$   
 $Q = 750 \text{ cfs} \quad S_c = 0.019 \quad W = 85' \quad n = 0.035 \quad Y1 = 1/2(2 \text{ ft})$   
 $Y = [(Q/W) \times n] / 1.486 (S_c)^{0.58} = 1.51'$   
 $V = Q / (W \times Y) = 13.3 \text{ fps}$   
 $F = V / (g \times Y)^{0.5} = 1.91$   
 $Y_s = (1)(0.73 + 0.14(3.14)^{0.75}) \cos 30^\circ + 4(1.91)^{0.32} \sin 30^\circ$   
 $Y_s = 4.5' \quad \text{Use: } 5' \text{ to bottom of turn-down}$




GARY PADILLA RESIDENCE 8801 GLENDALE AVE. NE ALBUQUERQUE, NEW MEXICO 87122	LOT 22 BLOCK 16 TRACT 1, UNIT 3 N. ABQ. ACRES
	GRADING & DRAINAGE
DATE: JULY, 2011	
SCALE: 1" = 20'-0"	
FILE: 8801 - DRN	


**THAMES**  
*ENGINEERING AND DESIGN*

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LICENSE NO. 10815  
 10212 ARROYO BEND NW • ALBUQUERQUE, NEW MEXICO 87114 • 505-944-6216



*DRAINAGE*