



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 14, 1999

Daniel S. Aguirre, P.E.
Wilson & Company
4775 Indian School Rd. Suite 200
Albuquerque, New Mexico 87110

***RE: Engineer's Certification for Cordova Residence, Lot 27, Block 12, Tract 1, Unit 3,
NAA, (B19/D11) Engineer's Certification Stamp Dated 11/17/98.***

Dear Mr. Aguirre:

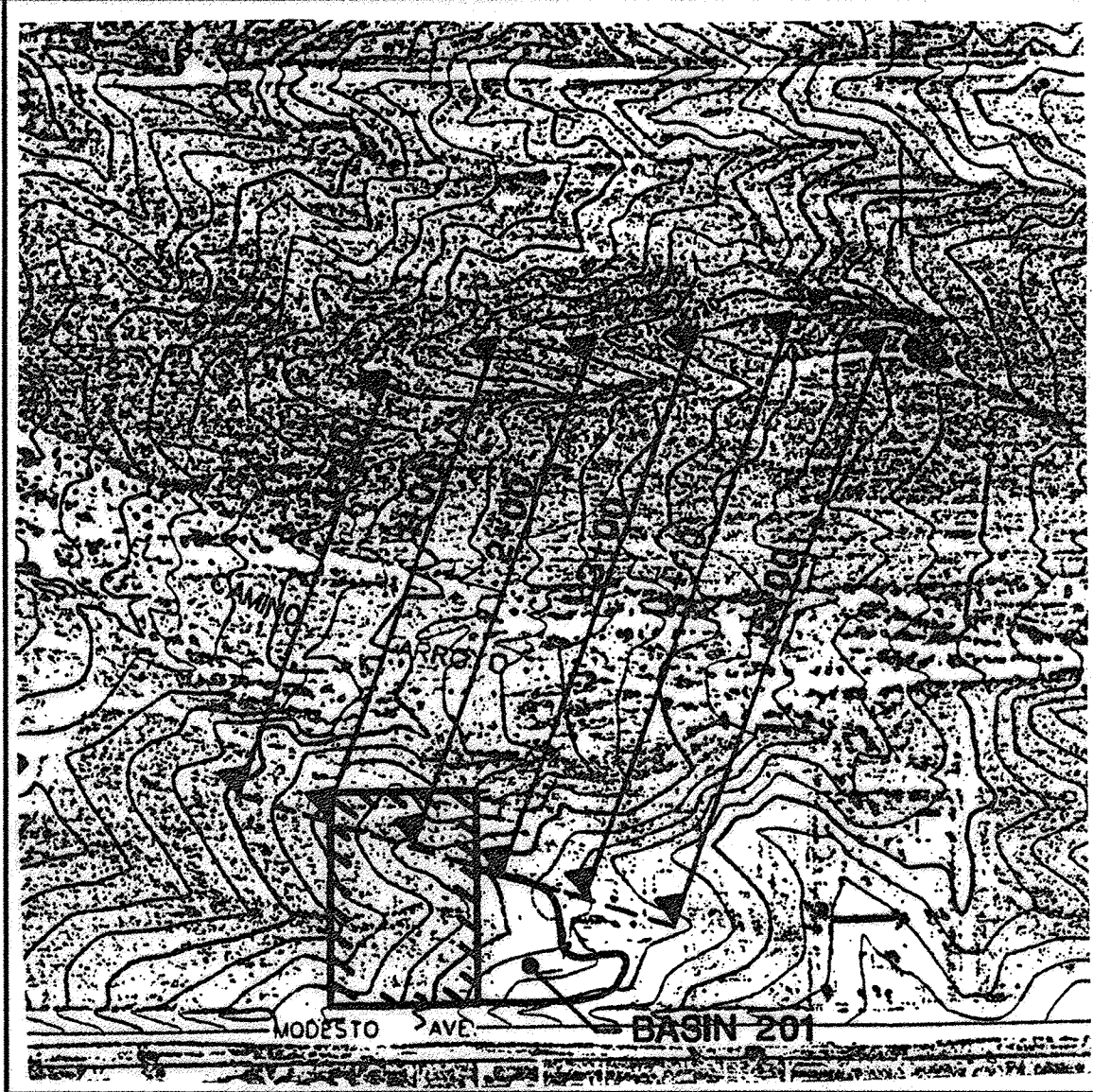
Based on the information provided in the submittal of December 21, 1998, the above referenced Engineer's Certification plan is adequate for release of the Certificate of Occupancy for this residence.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Andrew Garcia, City Hydrology
File



OFFSITE BASIN & CROSS SECTIONS
N.T.S.

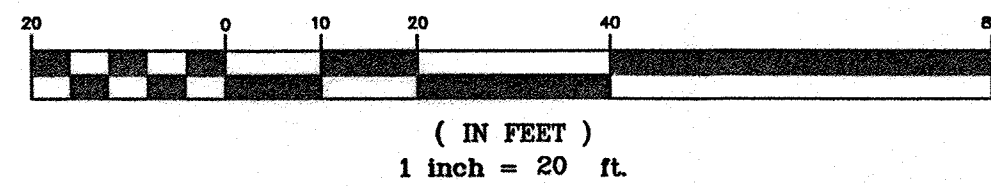
ENGINEER'S CERTIFICATION

I, DANIEL S. AGUIRRE, DO HEREBY CERTIFY THAT THIS SITE IS GRADED AS HERON AND IS IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED DRAINAGE PLAN.
DATED 3/27/98



BASIN 201
OFFSITE FLOWS
AREA=.33 Ac.
Q₁₀₀=1 cfs

GRAPHIC SCALE



LEGEND

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING OVER HEAD POWER
- EXISTING PROPERTY LINE
- EXISTING DRAINAGE BASIN BOUNDARY
- FINISHED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED SWALE
- PROPOSED CULVERT
- PROPOSED FLOODWALL/FOUNDATION

HEC-RAS Plan: Cordova River: El Camino Arroyo Reach: Cordova

Station	Area (ac)	Flow (cfs)	Velocity (ft/s)	Depth (ft)	Width (ft)	Length (ft)	Volume (cu ft)	Time (min)
500	1100.00	5422.00	5423.66	5424.60	5425.43	0.020007	5.39	204.25
501	3300.00	5422.00	5424.48	5424.60	5425.43	0.020025	7.83	421.38
502	1100.00	5420.00	5421.67	5421.81	5422.50	0.056781	7.33	150.04
503	3300.00	5420.00	5422.34	5422.83	5423.94	0.044996	10.12	326.02
504	1100.00	5418.00	5420.15	5420.15	5420.57	0.020027	5.15	213.51
505	3300.00	5418.00	5420.70	5421.08	5421.97	0.032105	9.04	366.44
506	1100.00	5416.00	5417.91	5418.19	5418.85	0.058391	7.78	141.36
507	3300.00	5416.00	5418.68	5419.14	5420.18	0.040195	9.81	336.29
508	1100.00	5414.00	5416.04	5416.17	5416.68	0.029291	6.41	171.70
509	3300.00	5414.00	5416.75	5417.20	5418.26	0.036422	9.84	335.23
510	1100.00	5412.00	5414.05	5414.27	5414.84	0.047622	7.11	154.68
511	3300.00	5412.00	5414.76	5415.28	5416.30	0.042574	9.94	331.89
512	1100.00	5410.00	5411.98	5412.27	5412.83	0.033821	7.38	149.13
513	3300.00	5410.00	5412.79	5413.27	5414.14	0.042160	9.33	353.73
514	1100.00	5408.00	5409.35	5409.38	5409.70	0.025916	4.76	231.17
515	3300.00	5408.00	5409.87	5410.05	5410.73	0.027452	7.42	444.46
516	1100.00	5406.00	5406.03	5406.06	5406.42	0.025430	4.98	220.88
517	3300.00	5406.00	5406.68	5408.00	5409.50	0.022400	7.29	452.64
518	1100.00	5405.00	5406.91	5406.95	5407.33	0.023381	5.22	210.84
519	3300.00	5405.00	5407.68	5407.76	5408.48	0.018839	7.19	458.99

DRAINAGE REPORT

Site Location: This site is located in North Albuquerque Acres on Modesto Avenue N.E. six lots east of Wyoming Blvd. The site is described as lot 27, Block 12, Tract 1, Unit 3 of North Albuquerque Acres.

Methodology: For this site, Section 22.2 of the City of Albuquerque DPM was followed to calculate the design run-off. The charts and formulas in Part A were followed using the 10th year frequency 6-hour rainfall event as the design storm. The site is located in Zone 3 as determined from Table A-1. The total storm volume was calculated as per section A.5. Peak discharge was calculated as per section A.6.

Existing Conditions: The site is currently an undeveloped residential site. The site is outside of the El Camino Arroyo Flood Plain. The site is divided into two basins. The northern basin 101 consists of .28 acres and flows north west to the El Camino Arroyo. The southern basin 102 consists of .60 acres and flows west two a small arroyo. Off-site flows pass through this site in a tributary across the front of the lot (Basin 201). The off-site flows have been cut off by the two homes constructed to the east of the property. The basin has been reduced to a .33 acre parcel from lot 26. Modesto is currently a dirt road with no curb and gutter. For the calculations we have assumed developed conditions for the offsite basins. Basin 201 is assumed to have residential development at 1 residence per acre.

EXISTING CONDITIONS

Basin	Area (ac)	% A	% B	% C	% D	V ₁₀₀ (ac-ft)	Q _p (cfs)
101	0.28	100	0	0	0	0.02	0.5
102	0.6	100	0	0	0	0.03	1.1
TOTAL	0.88						1.6

Offsite Flows (Developed)

Basin	Area (ac)	% A	% B	% C	% D	V ₁₀₀ (ac-ft)	Q _p (cfs)
201	0.33	40	10	40	10	0.17	1.0
TOTAL	0.33					0.00	0.0

Proposed Conditions: The site will be developed as a residential lot with a driveway, patios and walkways. We propose to install a floodwall/foundation along the north side of the houses and under the first east side wall. The design flow in the La Cueva was taken from the "Report on North Albuquerque Acres Arroyo Avulsion Problems for La Cueva, El Camino, and North Camino Arroyos drainage Management Plan", Prepared for AMAFCA, by Resource Technology, Inc. The future condition flow with no avulsion control is 3300 cfs. The future condition flow with avulsion control is 1100 cfs. We used the HEC-RAS computer program to model the El Camino Arroyo through the area adjacent to this property. From the output we have shown the EGL, and the 100 year W.B.E.L. The output from the HEC-RAS model is shown on this sheet. The hydrologic calculations for the proposed condition is as follows:

DEVELOPED CONDITIONS

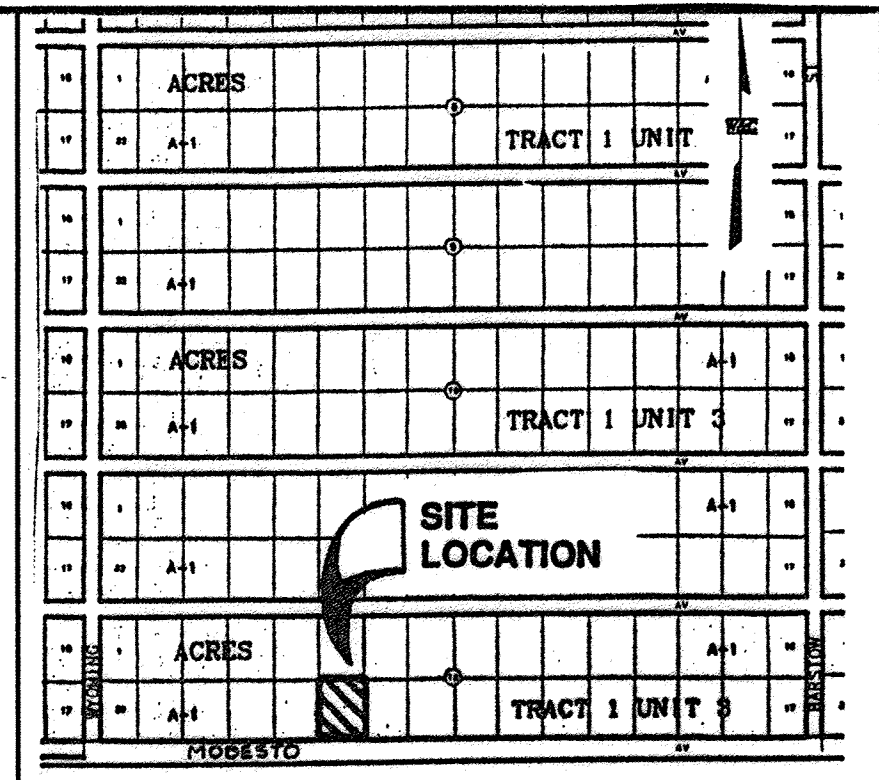
Basin	Area (ac)	% A	% B	% C	% D	V ₁₀₀ (ac-ft)	Q _p (cfs)
101	0.28	25	17	51	7	0.11	0.8
102	0.60	63	10	10	17	0.48	1.6
TOTAL	0.88						2.4

Conclusion: The discharge from the site do to developed conditions is increased by .3 cfs to the north and .5 cfs to the small arroyo. The increased discharge is minimal and will reach the downstream channel prior to the peak of the Arroyo. This discharge will not have a negative impact to the down stream basins. The discharge to channel for the offsite flows has increased slightly. Since the historic flows to this channel have been cut off this will not impact the downstream channel. This channel will require a culvert under the driveway and some regrading with the construction of this residence. The flood wall will be constructed with a bottom elevation 3 feet below the thalweg of the La Cueva Arroyo. This will allow for scour at the wall. The finished floor is set above the energy grade line of the existing arroyo.

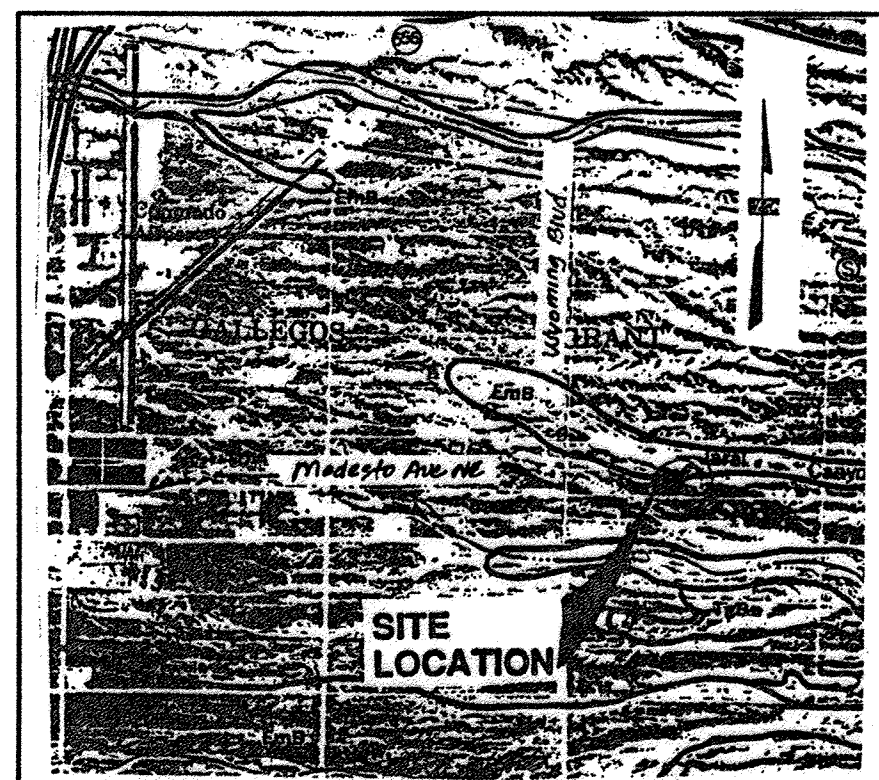
SCOUR CALCULATION

WITHOUT AVULSION CONTROL
d=±3 FEET (HEC-RAS)
fr= 1.50 (HEC-RAS)
PARALLEL FLOODWALL
ds=(734-14x3.14xfr²)
ds= 5 FEET
EROSION SET BACK LIMIT
3300 cfs x 6 FT. =198 FEET
100 cfs

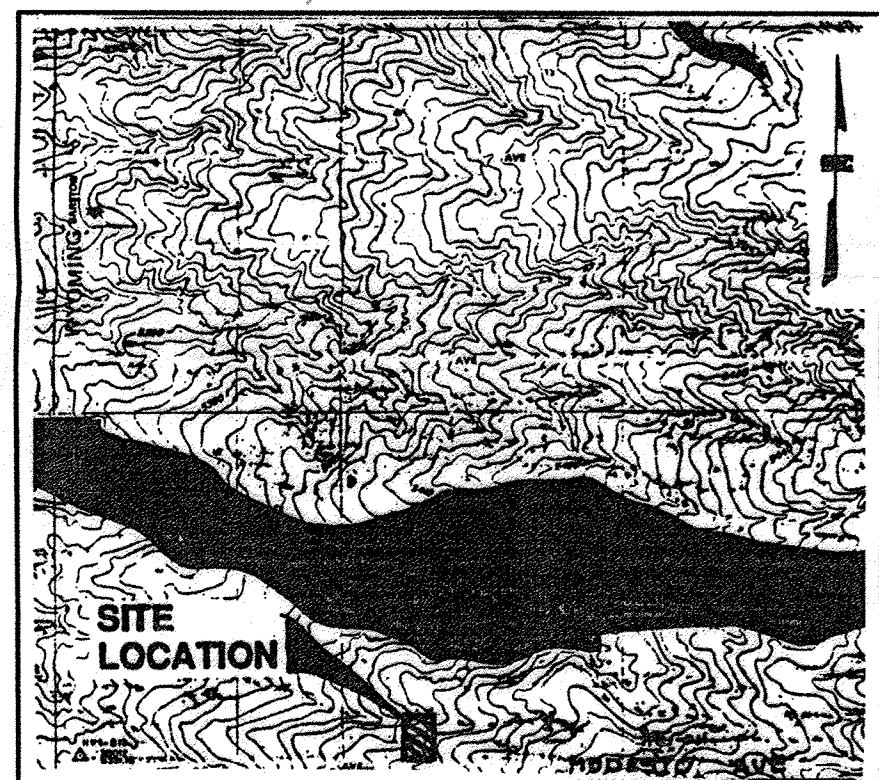
Δ. REVISED 11-98
FOR ACTUAL LOCATION
OF HOUSE AND GRADING.
ORIGINAL PLAN IS
DATED 3-27-98



LOCATION MAP
ZONE ATLAS MAP NO. B-19-Z



SOILS MAP
REFERENCE: SCS BERNALILLO COUNTY SOIL SURVEY
SHEET NO. 11



FLOOD INSURANCE MAP
REFERENCE: FLOOD INSURANCE STUDY
PANEL 10

LEGAL DESCRIPTION

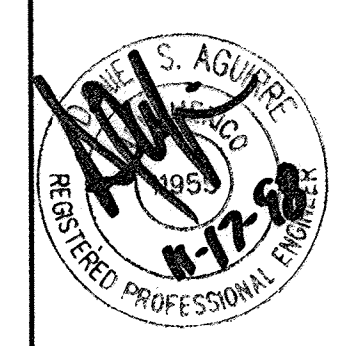
LOT 27, BLOCK 12, TRACT 1, UNIT 3
NORTH ALBUQUERQUE ACRES

BENCH MARK

A STANDARD ACS BRASS TABLET, STAMPED "1-B19", SET IN TOP OF A CONCRETE POST PROJECTING 0.1 FT. ABOVE GROUND, 1998 LOCATED IN THE NORTHEAST QUADRANT OF THE INTERSECTION OF WYOMING BLVD. NE & MODESTO AVE. NE HYDROLOGY SECTION X=407,598.16, Y=1,524,110.18, Z=5393.00

WILSON & COMPANY

4775 INDIAN SCHOOL ROAD N.E.
SUITE 200
ALBUQUERQUE, NEW MEXICO
87110
(505) 254-4000



DATE
JAN. 1998

FILE NO.
98001

DESIGN
DSA

DRAWN
JMB

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

CORDOVA RESIDENCE
GRADING & DRAINAGE PLAN

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
City Project No. N/A	Zone Map No. B-19	Sheet 1	Of 1