



County of Bernalillo

State of New Mexico

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ONE CIVIC PLAZA, N.W.
ALBUQUERQUE, NEW MEXICO 87102
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January 31, 1995

Duane Logan, P.E., L.S.
4124 Dietz Farm Circle NW
Albuquerque, New Mexico 87107

RE: DRAINAGE PLAN SUBMITTED FOR WARD RESIDENCE, LOT 17, BLOCK 10,
TRACT 2, UNIT 1, NORTH ALBUQUERQUE ACRES (C22/D41) (PWD-94-231),
ENGINEER'S STAMP DATED 1/13/95.

Dear Mr. Logan:

Based on the information provided with the above referenced submittal of January 13, 1995, the drainage plan is approved for Building permit release.

Please be advised that prior to the County Building Department performing final inspection, the Engineer's Certification must be submitted to and approved by this office.

If you should have any questions, or if I may be of further assistance, please do not hesitate to call me.

Sincerely,

A handwritten signature in cursive script, reading "Susan Calongne".

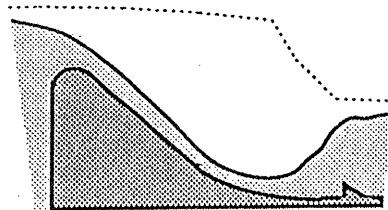
Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Chris Rivera, City Hydrology
Roger Paul, County PWD
Kurt Browning, AMAFCA
Carter Ward, Owner
File



Richard J. Heggen

PE, PH, PhD
Water Resources
Engineering
620 Ridgecrest SE
Albuquerque, NM 87108



Friday, December 16, 1994

Duane Logan, PE
4124 Dietz Farm Cr. NW
Albuquerque, NM 87107

Dear Duane:

I have run HEC-2 and a scour analysis for 11201 Wilshire NE., North Albuquerque Acres. The house pad is outside of both the 100-year flood plain indicated on the FEMA flood map and the flood zone determined by my HEC-2.

The pad is also outside of the EGL and the erosion setback, although these determinations are more subjective for two reasons. (1) The channel cross-section overbank slope is very mild, making lateral spread highly sensitive to slight differences in topography. (2) The thalweg of the existing channel is ill-defined. I'm deferring to your FL placement.

From a larger perspective, the unlined arroyo may someday shift and consume some of the erosion setback. The whole stretch along Wilshire could have overland flow, should the channel avulse upstream. In these respects, this property is like large portions of North Albuquerque Acres. At some future time, site protection improvements might be in order. I don't believe that these possibilities are now regulatory concerns, but the owner should be aware.

I note that the FF is at 5830, roughly 5 feet higher than the existing grade on the west end. I highly endorse this degree of conservative design, given the possibilities discussed above.

While the pad is not in the designated scour zone, some stray water could brush along its north face. I would encourage ample stemwall depth for this reason, even if the sediment design guide doesn't require it.

I hope your approval process can be soon completed.

Sincerely,

Richard J. Heggen, PE

cc: Carter Reed

RECEIVED

JAN 13 1995

**BERNALILLO COUNTY
PUBLIC WORKS**

THIS RUN EXECUTED 30NOV94 17:10:52

HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

eggen

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*K5	VCH	AREA	.01K
	1.000	.00	.00	.00	27.00	730.00	28.38	28.87	29.98	601.98	10.16	71.87	29.75
	2.000	25.00	.00	.00	26.00	730.00	27.20	27.61	28.57	481.22	9.38	77.79	33.28
	3.000	25.00	.00	.00	25.00	730.00	26.38	26.73	27.51	326.63	8.54	85.52	40.39
	4.000	25.00	.00	.00	24.00	730.00	25.53	25.92	26.72	304.69	8.75	83.47	41.82
	5.000	25.00	.00	.00	23.00	730.00	24.25	24.74	25.79	429.52	9.97	73.24	35.22
*	6.000	25.00	.00	.00	22.00	730.00	24.20	24.27	24.96	151.15	6.97	104.78	59.38
*	7.000	25.00	.00	.00	22.00	730.00	23.18	23.52	24.38	324.13	8.77	83.27	40.55
*	8.000	25.00	.00	.00	21.00	730.00	23.02	23.02	23.97	114.07	7.81	93.53	68.35

Ward Summary

Entry		1	2	3	4	5	6	7	8
Hydraulics									
Station		1	2	3	4	5	6	7	8
Q	cfs	730	730	730	730	730	730	730	730
ALOB	sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ACH	sf	71.9	77.9	85.5	83.5	73.2	104.8	83.3	93.5
AROB	sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A tot	sf	71.9	77.9	85.5	83.5	73.2	104.8	83.3	93.5
TOPWID	ft	93.9	96.7	91.6	91.7	76.2	85.0	85.0	50.0
D	ft	0.77	0.81	0.93	0.91	0.96	1.23	0.98	1.87
V	fps	10.15	9.37	8.54	8.74	9.97	6.97	8.76	7.81
F		2.04	1.84	1.56	1.61	1.79	1.11	1.56	1.01
≈ q	cfs/ft	7.78	7.55	7.97	7.96	9.58	8.59	8.59	14.60
≈ yc	ft	1.23	1.21	1.25	1.25	1.42	1.32	1.32	1.88
≈ ys	ft	1.86	1.73	1.64	1.67	2.00	1.41	1.73	1.89
≈ R	ft	0.75	0.79	0.92	0.89	0.94	1.20	0.96	1.74
≈ n		0.030	0.030	0.029	0.027	0.029	0.030	0.030	0.029
V2/2g	ft	1.60	1.36	1.13	1.19	1.54	0.75	1.19	0.95
E	ft	2.37	2.17	2.07	2.10	2.50	1.99	2.17	2.82
ys below EGL		0.50	0.44	0.42	0.42	0.50	0.58	0.45	0.93

[illegible]

GRANT OF EASEMENT
: FLOODWAY AND STORM DRAINAGE WORKS

CARTER S. WARD & SYLVIA SPICER WARD Grantors,
being the owner(s) of the property described herein, for good and valuable consideration, the receipt of which is hereby acknowledged, does grant, bargain, sell and convey unto the ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY, a political subdivision of the State of New Mexico, (AMAFCA), and its successors and assigns, the permanent right and easement for drainage, flood control and conveyance of storm water and the construction, reconstruction, operation and maintenance of, and access to such facilities on, in, under, over and across the following described real estate:

The land in which the foregoing rights and easements are granted is located within Lot(x) 17 of Block 10 Tract 2 Unit 1 of North Albuquerque Acres in Bernalillo County, New Mexico and is more particularly described in Exhibit "A" attached hereto and incorporated herein by reference.

Except by the written approval of AMAFCA, no fence, wall, building, or other obstruction may be placed or maintained in said easement and there shall be no alteration of the grades or contours in said easement. The granting of this easement shall not obligate AMAFCA to maintain natural arroyos, drainage channels, or facilities that do not meet the standards of AMAFCA for design, construction, and maintainability; nor shall this granting require the protection of property lying outside of the easement granted. AMAFCA shall only maintain property and/or improvements that it specifically agrees, by written agreement filed for public record, to maintain. Unless AMAFCA specifically agrees, by such written agreement, to maintain property and/or improvements, such maintenance responsibility shall remain with the Grantor, its successors or assigns. Landscaping or maintenance work, by the Grantor, within the easement hereby conveyed shall not alter the present flowline, capacity, or permeability of the present flood way area, except in an emergency. If emergency work is performed, Grantor shall notify AMAFCA as soon as practical thereafter. AMAFCA will then determine if the emergency work can remain or must be removed or modified. Safe locations for structures built on lands adjacent to the rights and easements described herein may be substantially outside of the described area.

TO HAVE AND TO HOLD the said right and easement for the uses and purposes aforesaid, unto AMAFCA, its successors and assigns, forever, except that any portion of the easement granted herein shall revert to the Grantor, its successors or assigns, as and to the extent said portion is declared unnecessary for flood control or drainage by the Board of Directors of the Albuquerque Metropolitan Arroyo Flood Control Authority. Any reversion shall be conveyed by quitclaim deed.

Sheet 1 of 4 by (initial) EB VB

THERE IS RESERVED to the Grantor, its successors and assigns, the right to use said lands for open space and landscaping. Such open space and landscaping shall not interfere with the rights and easements granted to AMAFCA. Other purposes, which will not interfere with the rights and easements hereby granted, may be permitted, provided that Grantor obtains AMAFCA's written licensed approval for such use, not to be unreasonably withheld.

WITNESS _____ hand(s) and seal(s) this 11th day of JANUARY, 1994.

GRANTOR(S):

Cate S Ward Sylvia Spicer Ward

ACKNOWLEDGMENT FOR CORPORATION

STATE OF NEW MEXICO)

) SS

COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this _____ day of

_____, 199___ by _____
(name)

(title) (name of corporation)

a _____ corporation on behalf of said corporation.
(state)

My commission expires:

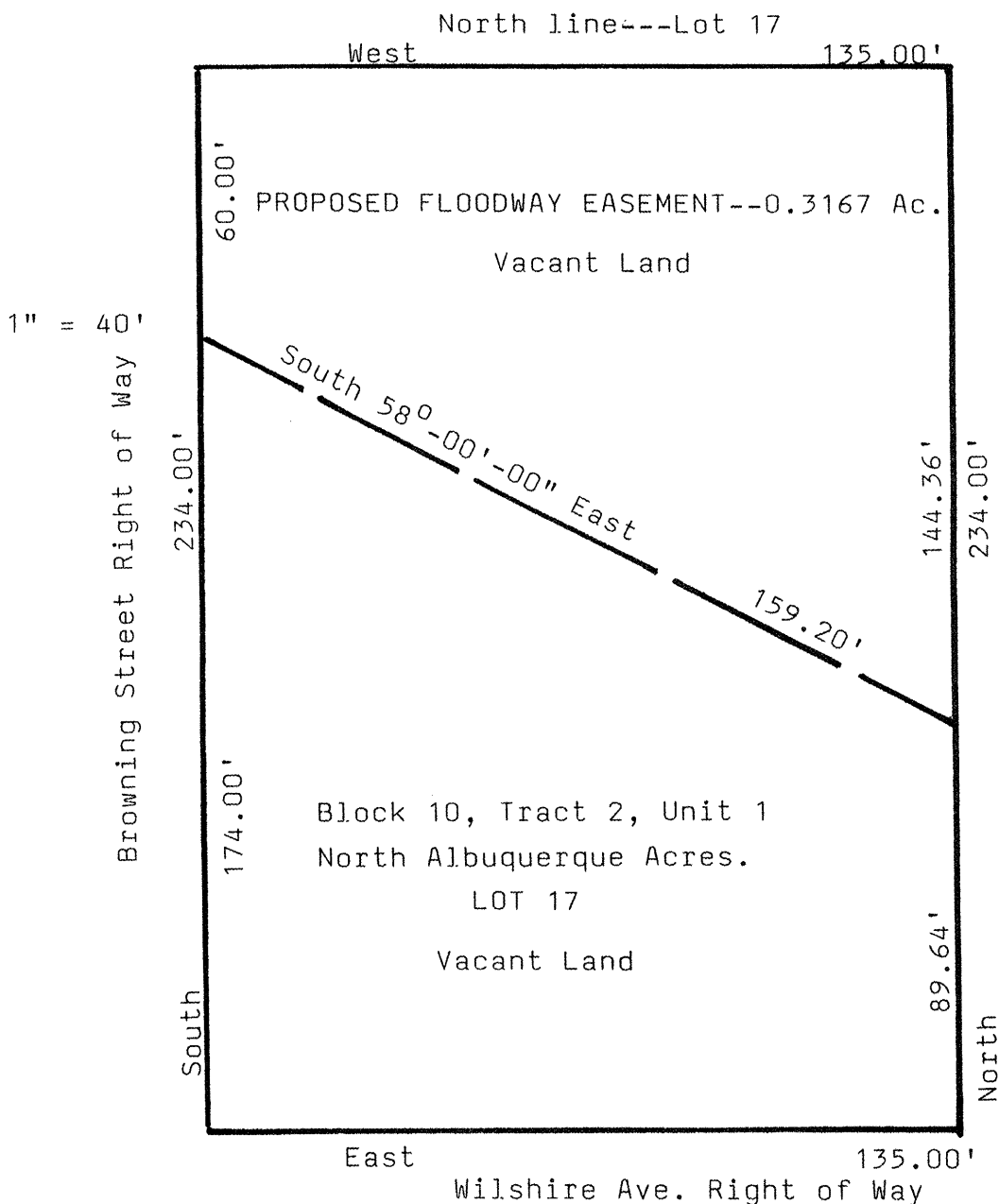
(SEAL) Notary Public

FLOODWAY EASEMENT

LEGAL DESCRIPTION:

A certain tract of land to be designated as a Flood Plain Easement being the Northerly portion of Lot numbered seventeen (17) in Block numbered ten (10) of Tract 2, Unit 1, North Albuquerque Acres, Albuquerque, New Mexico, 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 June 8, 1931; Book D, page 133, and being more particularly described as follows:

Beginning at the Northwest corner of the tract, being the Northwest corner of Lot 17, being a point on the East right of way line of Browning Street, N.E.; thence from said point of beginning along said right of way due South 60.00 feet to the Southwest corner; thence South 58°-00'-00" East a distance of 159.20 feet to the Southeast corner of the tract herein described, being a point on the East property line of Lot 17; thence due North along said property line a distance of 144.36 feet to the Northeast corner of Lot 17, thence due West along the North property line of Lot 17 a distance of 135.00 feet to the Northwest corner of Lot 17, and point of beginning and containing 0.3167 acres, more or less.

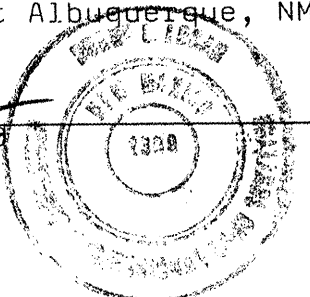


SURVEYOR'S CERTIFICATE

I, Duane Logan, licensed under the laws of the State of New Mexico, do hereby certify that this exhibit was prepared by me from hydrological calculations made specifically for this location.

This certificate is executed at Albuquerque, NM on January 13, 1995.

Duane L. Logan
Duane L. Logan, NMPE & LS #2300
4124 Dietz Farm Circle, NW
Albuquerque, NM 87107
(505) 344-8100



DRAINAGE PLAN

LOT 17, BLOCK 10, TRACT 2, UNIT 1

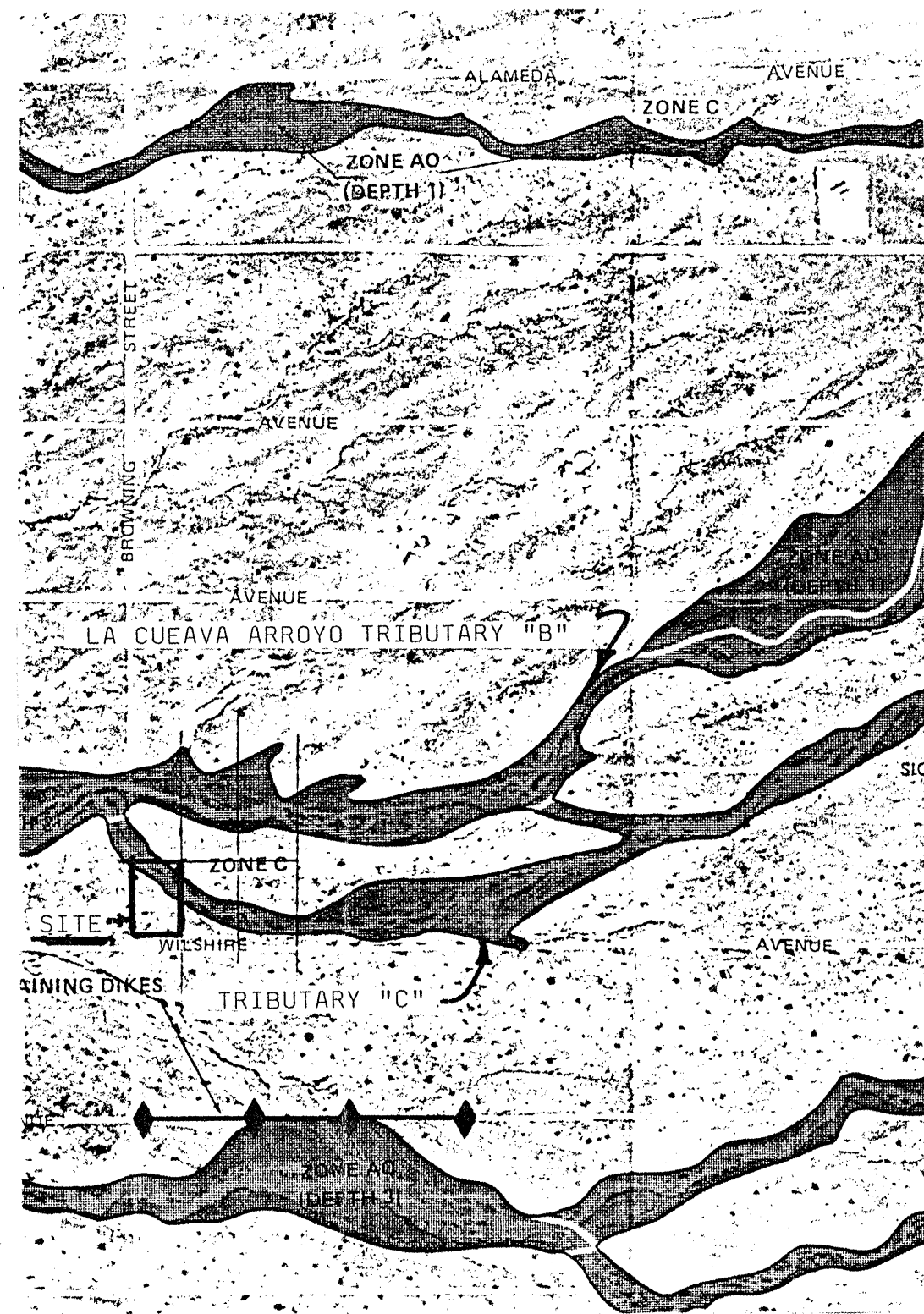
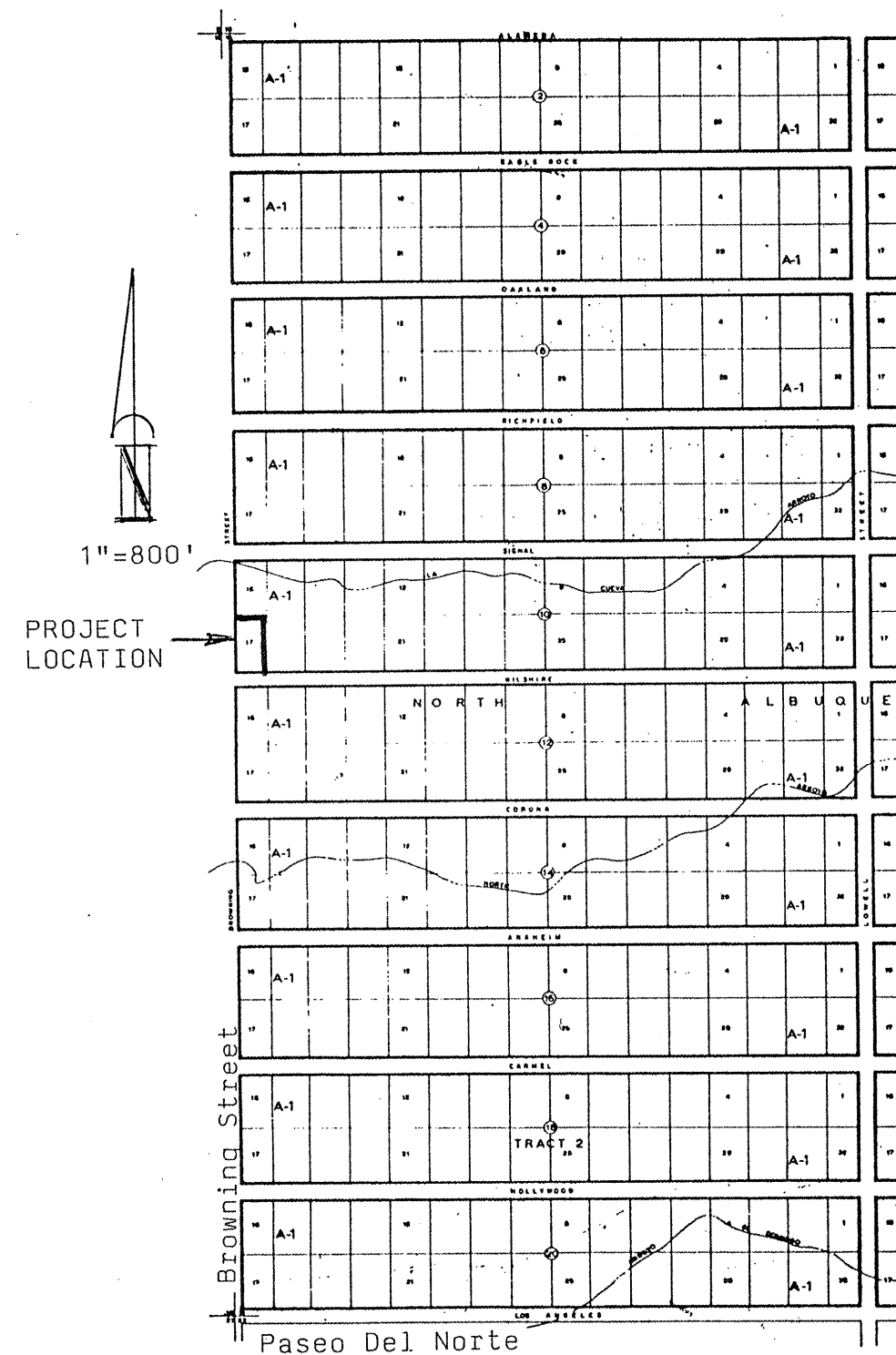
NORTH ALBUQUERQUE ACRES

ALBUQUERQUE, NEW MEXICO

ZONE MAP C-22Z, FLOOD PANEL 0011

SOIL TYPE "B", BENCH MARK 2-C21 AT 5834.1

FILE NO C22/D41 & PWD-94-231 APPROVED:



HYDROLOGY

Reference: Section 22.2 of the Development Process Manual, City of Albuquerque, New Mexico, January 1993.

Existing Site Conditions: Area = 135' * 234' = 31590 sq. ft. = 0.725 acres.

Per Table A-1, Zone 4 applies.

Per Table A-4, Treatment "A" applies for 0.725 acres

Per Table A-8, Excess precipitation = 0.80" for "A", 1.08" for "B", 1.46" for "C", and 2.64" for "D".

Existing Runoff Volume (to La Cueva Arroyo Tributary "C" on the North) = 0.80" * 0.725 ac. = 0.584", and 0.584/12 * 0.725 = 0.036 ac. ft. = 1548 cu. ft. to the arroyo.

Off-Site Area: La Cueva Arroyo Tributary "C" traverses the rear third of the subject property. Area = 300 acres and flow for the 100 year, 6 hour storm is predicted to be 730 cfs through the lot. See attached Exhibit "A".

Proposed Conditions: The proposed residence will comprise 4250 sq. ft. of roofed area plus 1770 sq. ft. of concrete walks, patios, and courtyards for a total of 6020 sq. ft. Impervious area = 19% of the lot area. Allowable = $7\sqrt{N}N^{1/5}N$ and $N = 1/0.725 = 1.38$ and $7\sqrt{1.38} * 1.38 = 5 * 1.38 = 6.90$ and $6.90/12 = 0.575$. Lawn proposed = 9500 sq. ft. = 30%, graveled areas = 1600 sq. ft. = 5%, undeveloped area = 46%.

Runoff Volume to the Arroyo increases with 19% "D" = $2.64" * 0.14$ ac. = 0.37" and 5% "C" = $1.46" * 0.04$ ac. = 0.06", and 30% "B" = $1.08" * 0.22$ ac. = 0.24", and 46% "A" = $0.80" * 0.33$ ac. = 0.27". Total = 0.94" and $0.94/12 * 0.725$ ac. = 0.057 ac. ft. = 2490 cu. ft. = 940 cu. ft. additional to the Arroyo.

Peak Discharge: Per Table A-9, "cfs/acre"

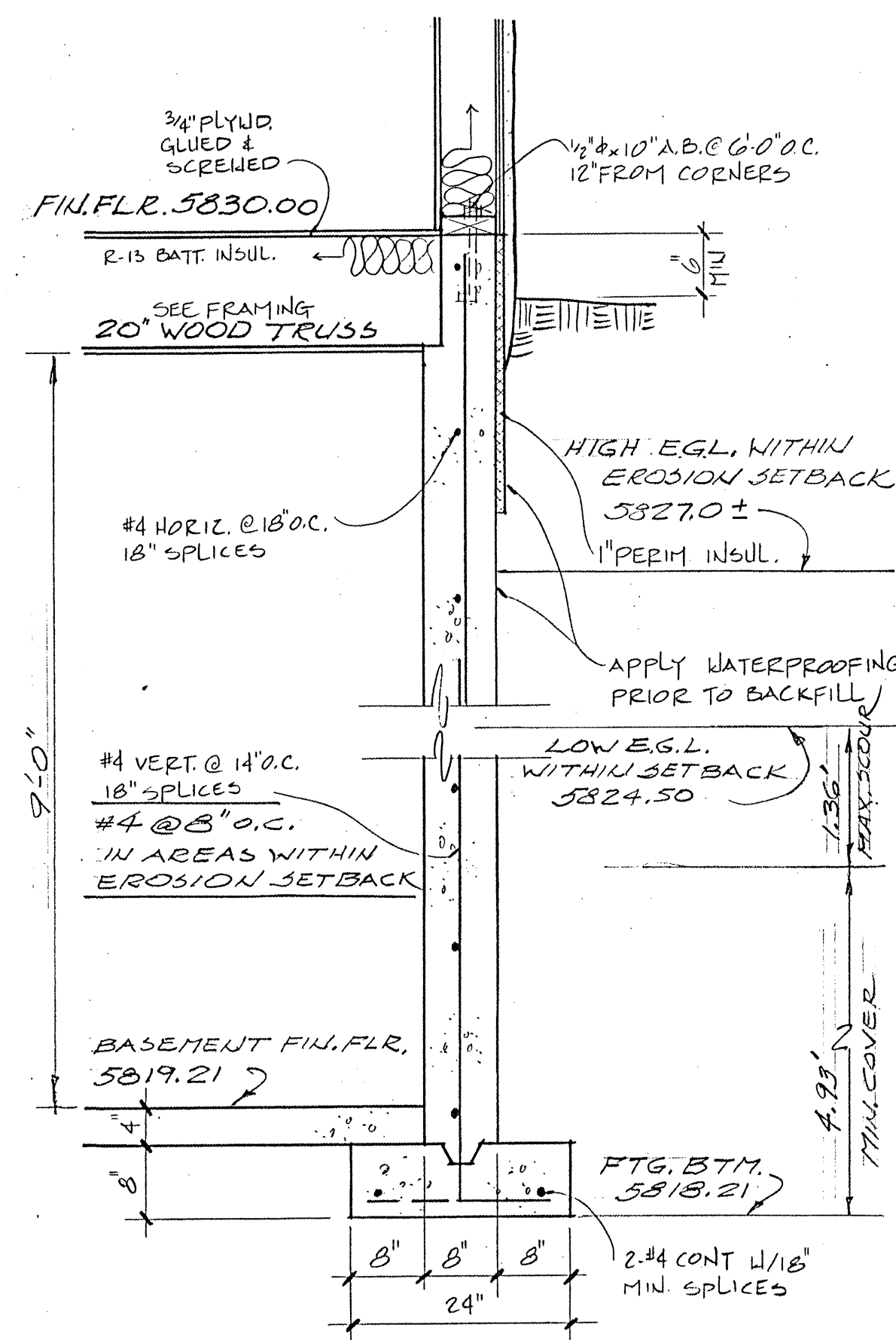
Treatment "A" = $2.20" * 0.33$ ac. = 0.73 cfs

Treatment "B" = $2.92" * 0.22$ ac. = 0.64 cfs

Treatment "C" = $3.73" * 0.04$ ac. = 0.15 cfs

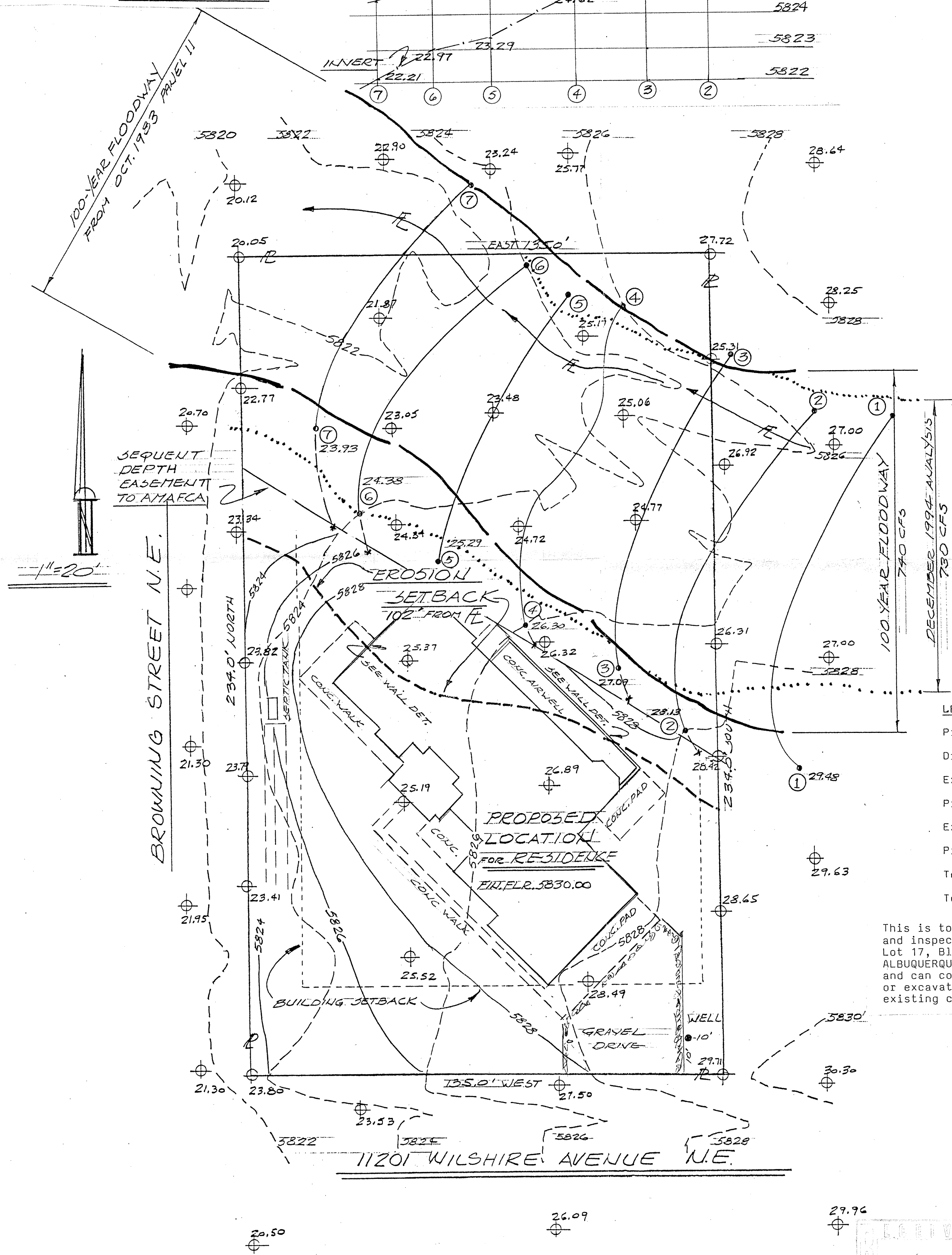
Treatment "D" = $5.25" * 0.14$ ac. = 0.74 cfs

Total = 2.25 cfs, all to Tributary "C", La Cueva Arroyo.



2-STORY WALL SECTION-RETAINING WALL

E.G.L. PLOT
1"=20' HORIZ & 1"=2' VERTICAL



This is to certify that I have visited and inspected the site at 11201 Wilshire NE, Lot 17, Block 10, Tract 2, Unit 1, NORTH ALBUQUERQUE ACRES, Bernalillo County, N.M. and can confirm that no grading, filling, or excavation has occurred since this existing contour map was prepared.

DUANE LOGAN
CONSULTING CIVIL ENGINEER
424 DIETZ FARM CIRCLE NW
ALBUQUERQUE, N.M. 87107
344-8100
Carter and Sylvia Ward
SHEET 1 OF 1



BOARD OF COUNTY COMMISSIONERS

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DISTRICT 1

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ONE CIVIC PLAZA, N.W.
ALBUQUERQUE, NEW MEXICO 87102

ADMINISTRATION (505) 768-4000

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MARK J. CARILLO, ASSESSOR

JUDY D. WOODWARD, CLERK

THOMAS J. MESCALL, PROBATE JUDGE

RAY GALLAGHER, SHERIFF

H. R. FINE, TREASURER

October 27, 1994

Duane Logan, P.E.
4124 Dietz Farm Circle NW
Albuquerque, New Mexico 87107

RE: DRAINAGE PLAN SUBMITTED FOR WARD RESIDENCE, LOT 17, BLOCK 10, TRACT
2, UNIT 1, NORTH ALBUQUERQUE ACRES (C22/D41), (PWD-94-231),
ENGINEER'S STAMP DATED 9/22/94.

Dear Mr. Logan:

This letter incorporates my comments along with those of Bernalillo County and AMAFCA. Prior to approval of this plan, the following comments must be addressed:

1. Please provide the existing and proposed hydrology for the site per Section 22.2 of the DPM.
2. Please verify the flow calculated for the La Cueva Arroyo. The plan must include the delineation of the off-site drainage basin. Typical land treatment percentages used to determine off-site flows for North Albuquerque Acres are: A=43%, B=20%, C=20%, and D=17%. We understand that this arroyo has been studied under an existing contract with FEMA, so you may wish to compare your calculated flow with the flow determined by the study.
3. A drainage easement for the flood plain must be approved by and dedicated to AMAFCA prior to approval of the drainage plan. The limit of this easement is typically the energy grade line (EGL), or the sequent depth. Please plot the EGL and the proposed easement on the plan.
4. Please include the standard Engineer's statement regarding inspection of the site as outlined in the County ordinance. This statement must be signed and dated.

5. This plan does not adequately address perimeter fencing. The plan should state that perimeter fencing is or is not proposed for the site. Any perimeter fencing proposed must address how off-site flows are to be conveyed through the property.
6. Please show the proposed driveway location. Will a culvert be required? If so, provide a culvert/weir analysis for both normal and plugged conditions.
7. Please show the proposed water well location on the plan.
8. The intent of this plan is unclear. Typically, drainage plans are approved for building permit when all elements, including the erosion setback requirements, have been met.

If you should have any questions regarding these comments, please call me at 768-2650.

Sincerely,



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

c: Chris Rivera, City Hydrology
Roger Paul, M-C, County PWD
Kurt Browning, AMAFCA
File