



County of Bernalillo

State of New Mexico

ONE CIVIC PLAZA, N.W.
ALBUQUERQUE, NEW MEXICO 87102
ADMINISTRATION (505) 768-4000
COMMISSION (505) 768-4217
FAX (505) 768-4329

BOARD OF COUNTY COMMISSIONERS

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DISTRICT 2

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JOE BOWDICH, SHERIFF

H. R. FINE, TREASURER

December 11, 1995

Jake Bordenave, P.E.
Bordenave Design
P. O. Box 91194
Albuquerque, New Mexico 87199

RE: ENGINEER'S CERTIFICATION FOR JOHNSON RESIDENCE, LOT 1511, SANDIA
HEIGHTS SOUTH, (D23/D36) (PWD 93-201) SUBMITTED FOR CERTIFICATE OF
OCCUPANCY APPROVAL, ENGINEER'S STAMP DATED 11/27/95.

Dear Mr. Bordenave:

Based on the information provided in the submittal of December 4, 1995, the Engineer's
Certification for the above referenced property located at 1511 Eagle Ridge Road is acceptable
for Certificate of Occupancy release.

If I may be of further assistance to you, please do not hesitate to call me at 768-2666.

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 Public Works
Kurt Browning, AMAFCA
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: JOHNSON RESIDENCE ZONE ATLAS/DRNG. FILE #: D23/D36

DRB #: - EPC #: - WORK ORDER #: -

LEGAL DESCRIPTION: Lot 1511, Sandia Heights South

CITY ADDRESS: 1511 EAGLE RIDGE ROAD

ENGINEERING FIRM: BORDENAVE DESIGN CONTACT: J Bordenave

ADDRESS: P.O. Box 91194, 87199 PHONE: 823-1344

OWNER: W. JOHNSON CONTACT: W. Johnson

ADDRESS: 1511 Eagle Ridge Rd 87124 PHONE: 821-4162

ARCHITECT: R. Schalk CONTACT: R. Schalk

ADDRESS: 1610 Old Town Rd NW 87104 PHONE: 843-7277

SURVEYOR: Surv Tek CONTACT: R. Hugg

ADDRESS: 5643 Paradise Blvd NW 87114 PHONE: 897-3366

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION
- ☐ OTHER _____

PRE-DESIGN MEETING:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☒ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (SPECIFY)

DATE SUBMITTED: 12/01/95

BY: [Signature]

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Johnson Residence ZONE ATLAS/DRNG. FILE #: D23/D36
 DRB #: - EPC #: - WORK ORDER #: -
 LEGAL DESCRIPTION: Lot 1511, Sandia Heights South, Unit 15
 CITY ADDRESS: 1511 Eagle Ridge Road
 ENGINEERING FIRM: Bordenave Designs CONTACT: J. Bordenave
 ADDRESS: P.O. Box 91194 PHONE: 823-1344
 OWNER: W. Johnson CONTACT:
 ADDRESS: PHONE:
 ARCHITECT: R. Schalk CONTACT: R. Schalk
 ADDRESS: 7400 Montgomery NE Suite 39 87109 PHONE: 883-1808
 SURVEYOR: Bohannon/Huston CONTACT:
 ADDRESS: 7500 Johnson NE 87109 PHONE: 823-1000
 CONTRACTOR: CONTACT:
 ADDRESS: PHONE:

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☒ DRAINAGE PLAN
☐ CONCEPTUAL GRADING & DRAINAGE PLAN
☒ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

☐ YES
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☐ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

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☐ CERTIFICATE OF OCCUPANCY APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☐ OTHER (SPECIFY)

DATE SUBMITTED: 10/17/94
 BY: PPB



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DISTRICT 5

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RAY GALLAGHER, SHERIFF

H. R. FINE, TREASURER

November 14, 1994

Jake Bordenave, P.E.

P.O. Box 91194

Albuquerque, NM 87199-1194

RE: GRADING AND DRAINAGE PLAN FOR JOHNSON RESIDENCE, LOT 1511, SANDIA HEIGHTS SOUTH, UNIT 15, (D-23/D36), (PWD-93-201), RESUBMITTED FOR BUILDING PERMIT APPROVAL, ENGINEER'S STAMP DATED 10/16/94.

Dear Mr. Bordenave:

Based on the information provided in the referenced resubmittal of October 17, 1994, the drainage plan is approved for Building Permit release.

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

It appears on the plan that the flood plain, as scaled from the Flood Insurance Rate Map, is outside the platted drainage easement. In the future, please reference any existing easements, and if they are granted by plat, include a copy of the plat.

Also, with all future submittals, show complete calculations and the entire site. All easements, setbacks and flood plain boundaries must also be shown on the site plan.

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

Sincerely,

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

Susan M. Calongne, P.E.

City/County Floodplain Administrator

c: Chris Rivera
Roger Paul, County PWD
Kurt Browning, AMAFCA
P. Wilson
File

wphyd/8103

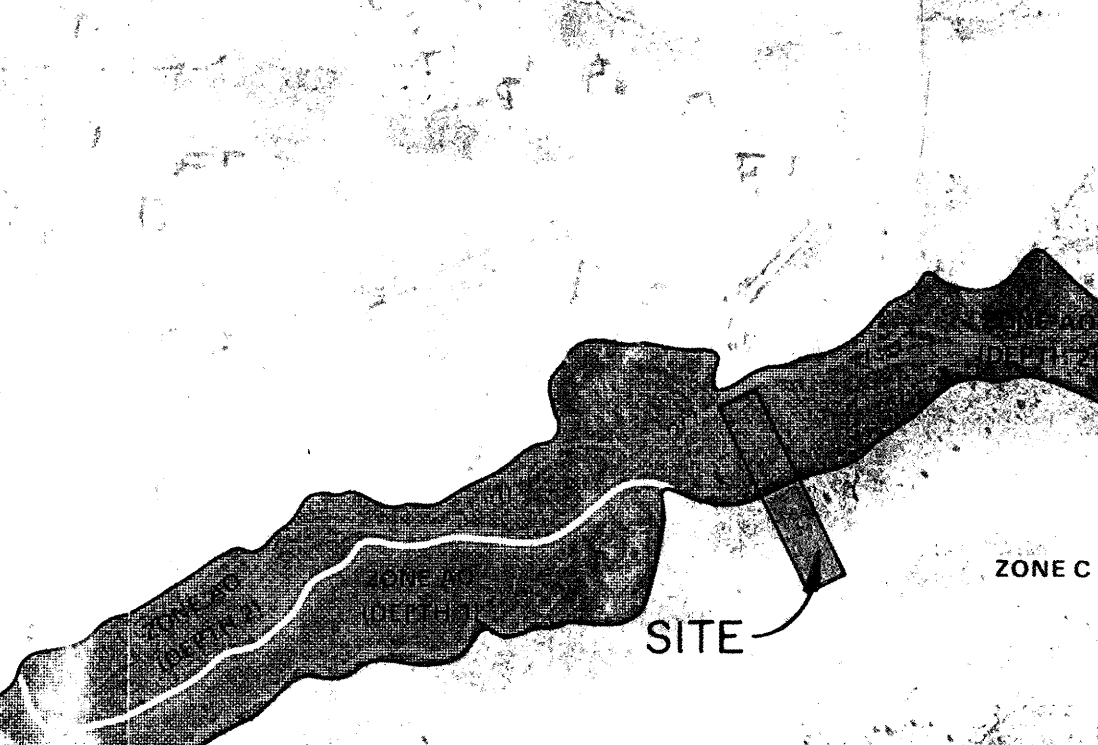
LEGEND

TBM	TEMPORARY BENCHMARK
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOW LINE
TA	TOP OF ASPHALT
TC	TOP OF CONCRETE
TP	TOP OF PAD
TS	TOP OF SIDEWALK
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PED	ELEC. OR TEL. PEDESTAL
---	FEMA FIRM BOUNDARY
---	DRAINAGE BASIN BOUNDARY
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	EXISTING ELEVATION
XX.X	PROPOSED ELEVATION
---	AS-BUILT ELEVATION

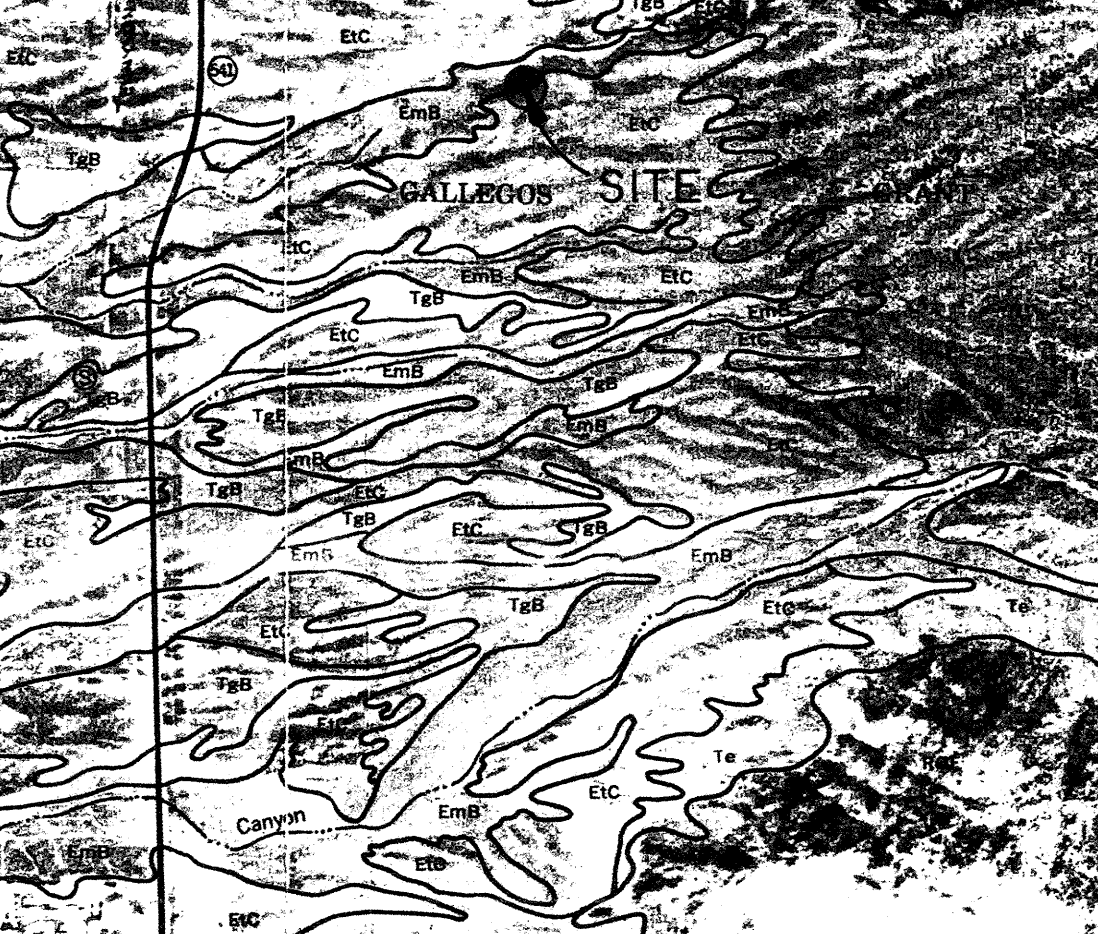
VICINITY MAP D-23



FEMA FIRM NO. 11



SCS SOILS MAP NO. 22



ENGINEER'S CERTIFICATION

I, Jean J. Bordenave, New Mexico Professional Engineer and Land Surveyor No. 5110, hereby certify that I have personally inspected the property shown hereon and that it appears that no grading, filling or excavation has occurred thereon since the contour map shown hereon was prepared.

Jean J. Bordenave 09/02/94
 Jean J. Bordenave
 NMPE & LS No. 5110

LEGAL DESCRIPTION

LOT 1511, SANDIA HEIGHTS SOUTH, UNIT 15

PERMANENT BENCHMARK

NOTES

- There is flow increase of 0.42 and 0.48 cfs for the 10 year and 100 year storms respectively. The 6 hour runoff volumes for the two storms increase by 778 and 1029 cubic feet. The 100 year peak flow rate for the developed condition is 0.03 cfs below the accepted average runoff value for the area.
- The proposed residence is located on the south bank of the Pino Arroyo. The Pino is a major arroyo (3411 cfs) and the erosion setback has been shown hereon for the centerline condition. Bank setbacks were not computed as the dominant channel is not evident and centerline setback computations were considered to be the most realistic. As shown by the topography map of the site there is no offsite drainage that directly affects the residence.
- The rear portion of the lot is located in a designated flood hazard area (AO Zone, 2' depth) per FEMA FIRM No. 11, dated October 14, 1983.
- Topography shown on this sheet was prepared by others.
- No walls or fences, other than as shown hereon, are proposed for the site. Any proposed perimeter fences must be included on a revision of this plan and approval shall be obtained from the County Surface Water Hydrologist prior to construction.
- Earth surfaces disturbed in the construction process shall be planted in accordance with City of Albuquerque Standard Specification No. 1012.

ONSITE DRAINAGE CALCULATIONS

CONDITION	STORM RETURN PERIOD	TREATMENT TYPE	TREATMENT AREA	EXCESS PRECIPITATION	PEAK RUNOFF	RUNOFF VOLUME	RUNOFF RATE
	year	(TABLE 4)	sq. ft.	(TABLE 8)	(TABLE 9)	cu. ft.	cfs
EXISTING	10	A	27140	0.28	0.87	633	0.54
		B	4170	0.46	1.45	160	0.14
		C	9440	0.73	2.26	574	0.49
		TOTAL	40750			1367	1.17
DEVELOPED	10	A	27140	0.80	2.20	809	1.37
		B	4170	1.08	2.92	375	0.28
		C	9440	1.46	3.73	1149	0.81
		TOTAL	40750			3333	2.46
DEVELOPED	100	A	19250	0.80	2.20	449	0.38
		B	3710	0.46	1.45	142	0.12
		C	11890	0.73	2.26	723	0.61
		TOTAL	5900	1.69	3.57	931	0.48
DEVELOPED	100	A	19250	0.80	2.20	1283	0.97
		B	3710	1.08	2.92	334	0.25
		C	11890	1.46	3.73	1447	1.01
		TOTAL	5900	2.64	5.25	1298	0.71
COURT	10	A	2030	0.80	2.20	135	0.10
		B	540	1.08	2.92	49	0.04
		C	2140	1.46	3.73	260	0.18
		TOTAL	470	2.64	5.25	103	0.06

CATCH BASIN

$$Q = 0.38 \text{ cfs} = CA(2gh)^{0.5}$$

where C = 0.6
 h = 0.3 ft
 therefore A = 0.14 s.f.
 Use 12 in square grate w/ 10 in square basin

OUTLET PIPE

$$Q = 0.38 \text{ cfs} = CA(2gh)^{0.5}$$

where C = 0.6
 h = 1.5 ft
 therefore A = 0.063 s.f.
 $Q = 0.38 \text{ cfs} = \frac{1.495}{n} AR^{4/3} S^{0.5}$
 where n = 0.013
 S = 0.02 ft/ft
 therefore r = 0.19 ft, A = 0.11 ft.
 Use 6" PVC Outlet Pipe (A = 0.20 s.f.)

EROSION SETBACK CALCULATIONS

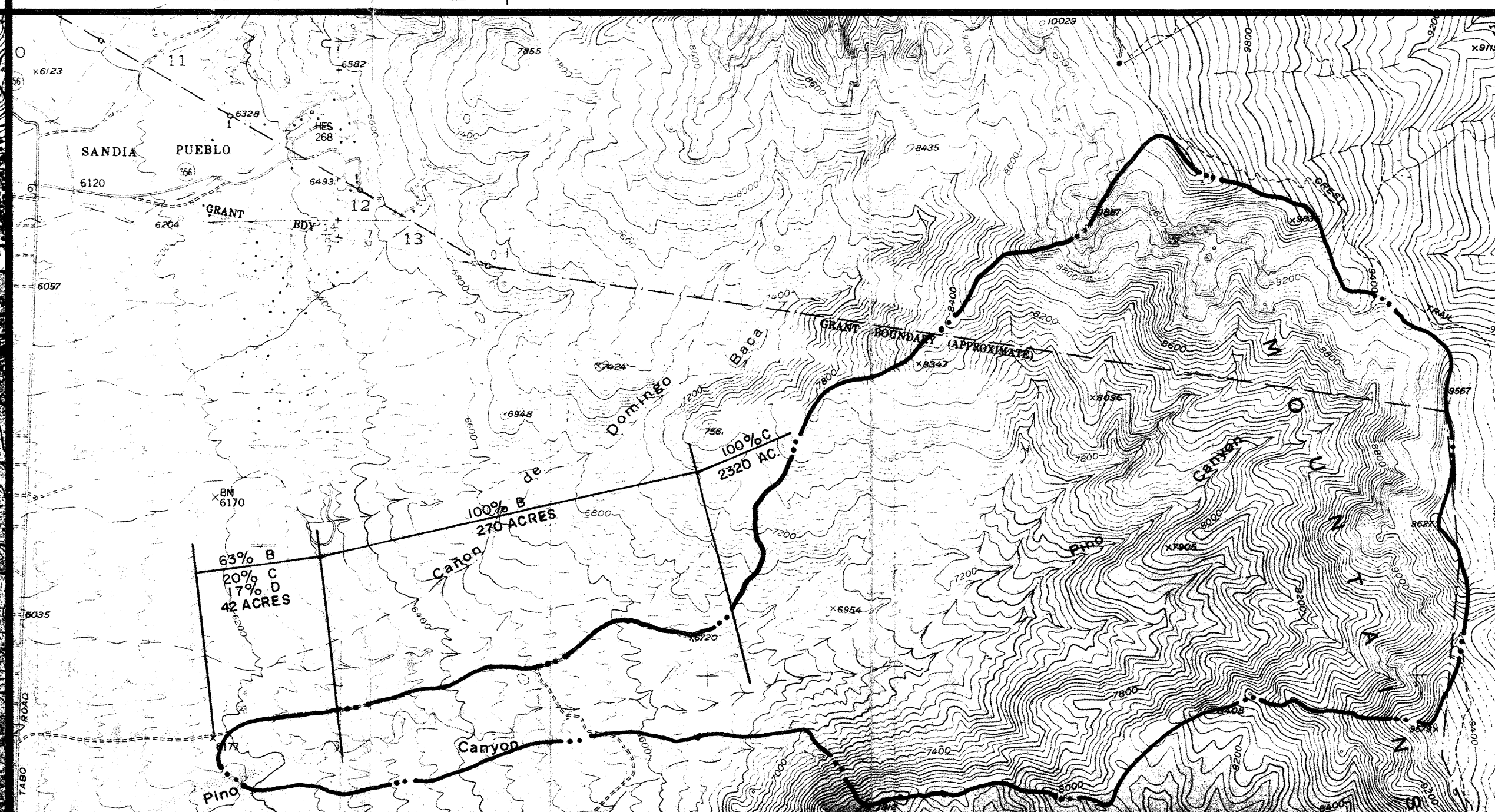
ARROYO FLOW
 Basin Centroid
 $T_{CA} = 14778$
 $L = 24050 \text{ ft}$
 Slope Adjustment
 $s' = [(1700+7500)(0.05542)+(5800)(0.05934)+(7050)(0.06200)+(2000)(0.08301)]/23050$
 $= 0.06059 \text{ ft/ft}$
 Basin Factor
 $K_N = [(1700)(0.025)+(7500)(0.033)+(14850)(0.042)]/24050$
 $= 0.038$
 Time of Concentration
 $T_C = (26)(0.038)(24050)/(5280)^2(0.06059)(5280)^{0.5}$
 $= 0.984 \text{ hours}$
 $t_C = 4/3t_C = 1.178 \text{ hours}$
 Intensity of Rainfall
 $I = 90.726(\log_0(24.6)(1.178))(1/1.178)(2.23)$
 $= 2.009 \text{ in/hr}$
 $Q_p = (1697.64)(2.009) = 3411 \text{ cfs}$

CENTERLINE SETBACK
 Dominant Flow
 $Q_D = 0.20 = 682 \text{ cfs}$
 Critical & Actual Slope
 $S_C = 0.037$
 $Q_D^{-0.133} = 0.0155 \text{ ft/ft}$
 $S = 0.05 \text{ ft/ft}$
 Dominant Width
 $W_D = 4.6Q_D^{0.4} = 62.5 \text{ ft}$
 Centerline Setback
 $CSB = [0.92+4.61\log(Q_D)]Q_D^{0.4} + 0.5W_D$
 $= 221 \text{ ft.}$

EROSION SETBACK

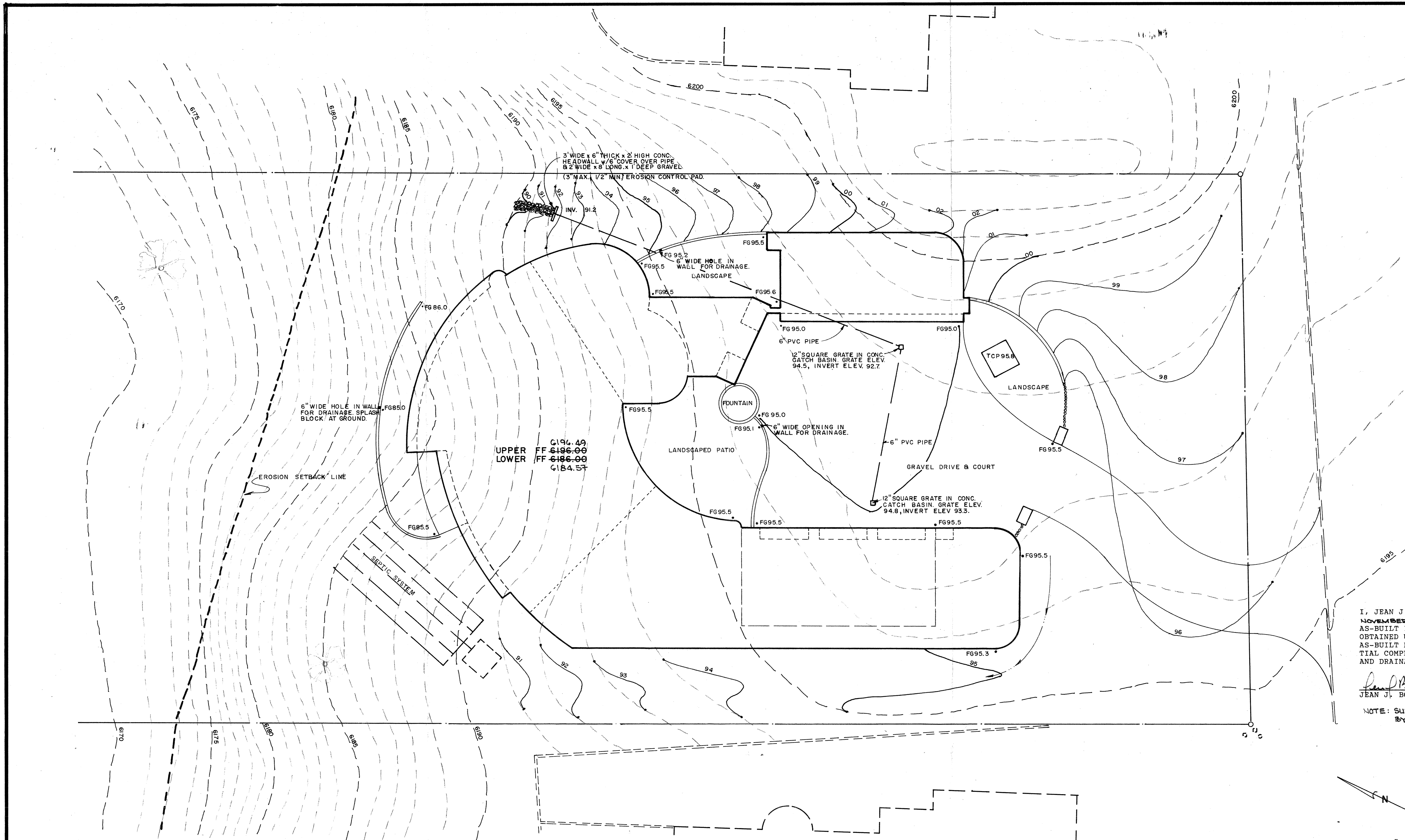


OFFSITE DRAINAGE

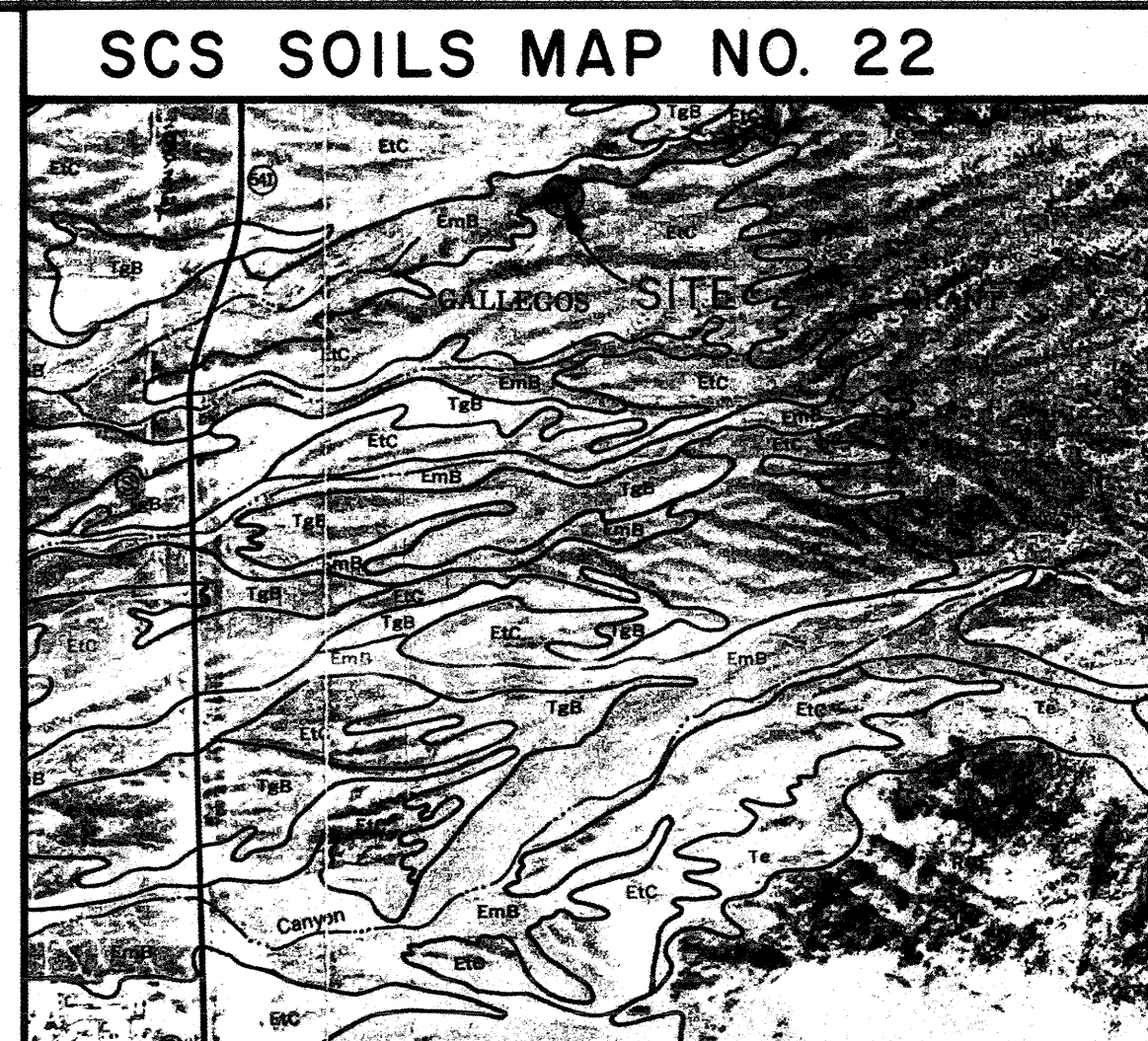
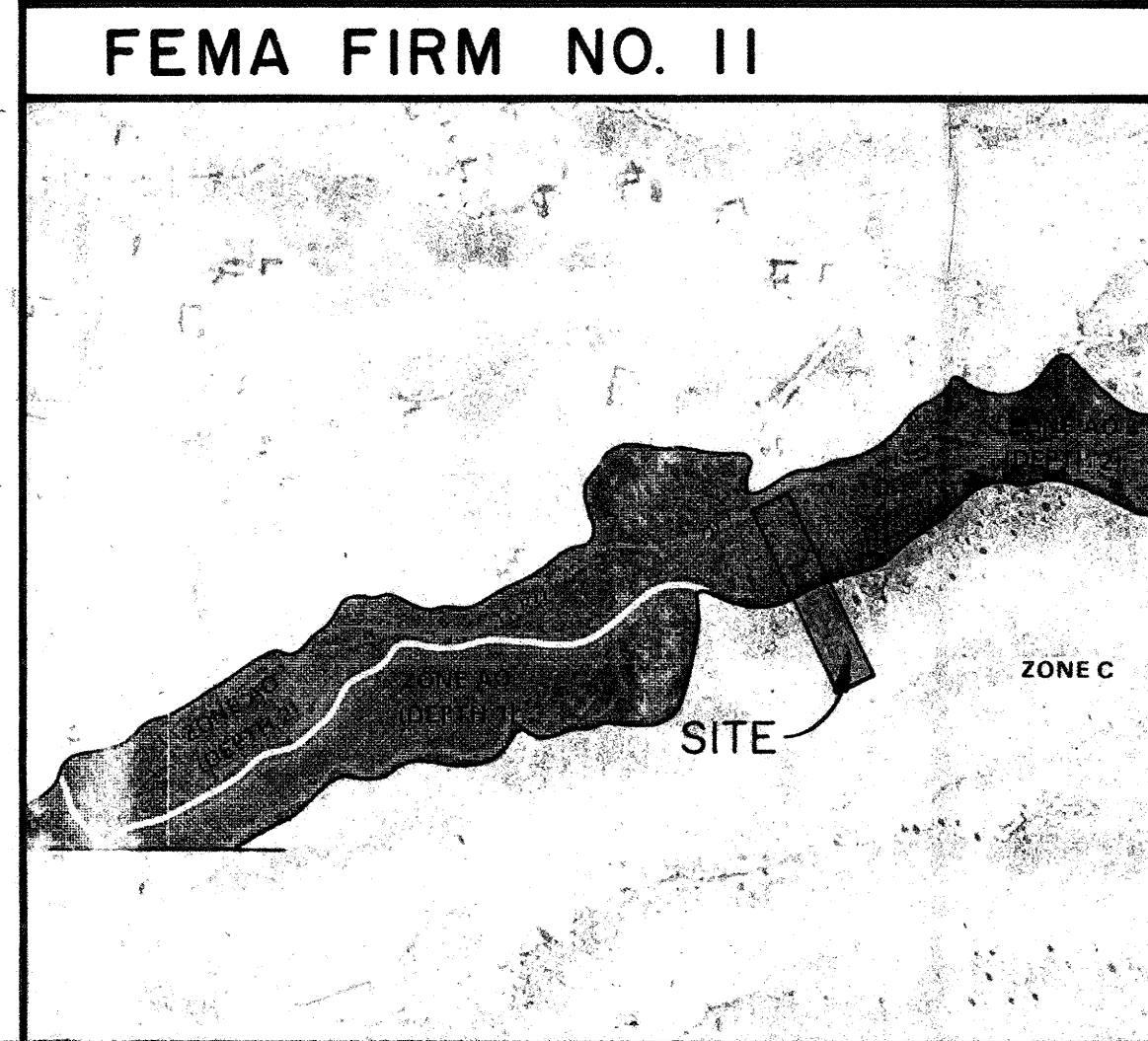
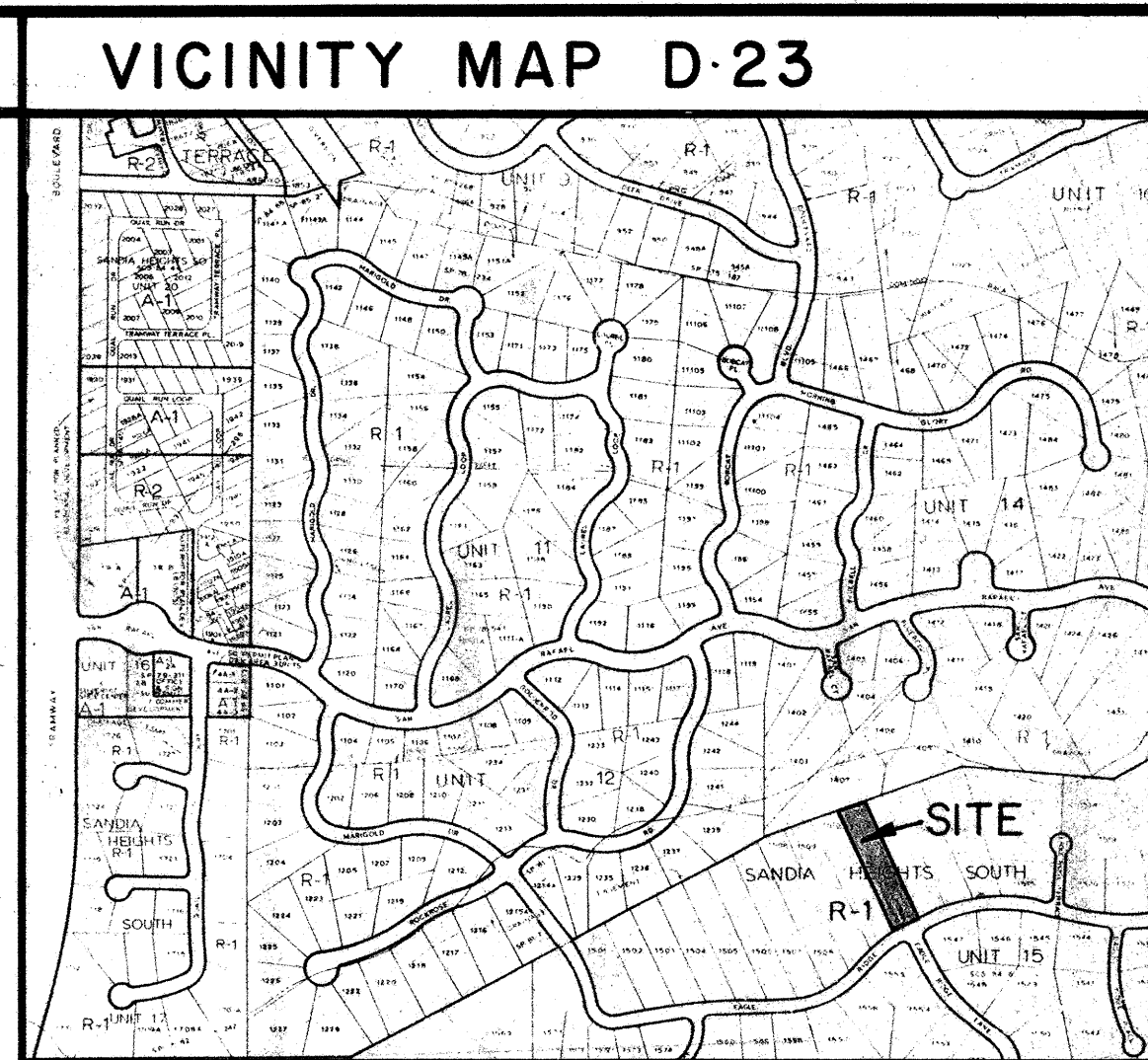


JOHNSON RESIDENCE
 1511 EAGLE RIDGE ROAD NE
 ALBUQUERQUE, NEW MEXICO 87122

SHEET OF



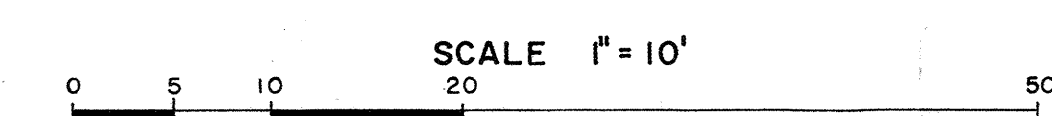
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---	PROPOSED CONTOUR
---	EXISTING ELEVATION
XX.XX	PROPOSED ELEVATION
XX.XX	AS-BUILT ELEVATION



I, JEAN J. BORDENAVE, HEREBY CERTIFY THAT ON NOVEMBER 21, 1995, THE AS-BUILT INFORMATION SHOWN ON THIS SHEET WAS OBTAINED UNDER MY SUPERVISION AND THAT THE AS-BUILT DRAINAGE CONDITIONS ARE IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED GRADING AND DRAINAGE PLAN.

JEAN J. BORDENAVE, PE & PS # 5110

NOTE: SURVEY FOR FF ONLY. SITE GRADING BY OBSERVATION.



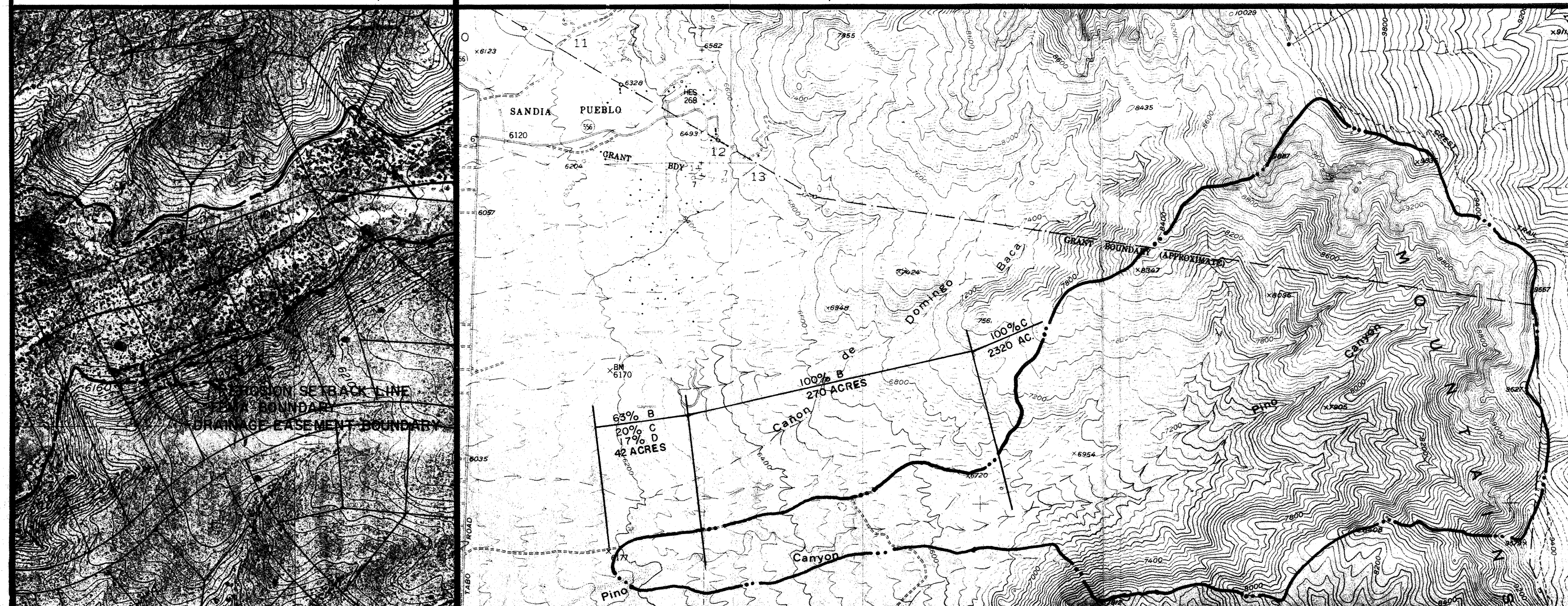
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 $t_c = 4/30 = 1.178$ hours
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 $= 2.009$ in/hr
 $Q_p = (1697.64)(2.009) = 3411$ cfs

CENTERLINE SETBACK
Dominant Flow
 $Q_p = 0.20_c = 682$ cfs
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 $S' = 0.05$ ft/ft
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Centerline Setback
 $CSB = [0.92+4.61\log(Q_p)]Q_p^{0.4} + 0.5W_D$
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EROSION SETBACK

OFFSITE DRAINAGE



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		TOTAL	470	2.64	5.25	103	0.06
		TOTAL	5180			547	0.38

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 $S = 0.02$ ft/ft
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ENGINEER'S CERTIFICATION

I, Jean J. Bordenave, New Mexico Professional Engineer and Land Surveyor No. 5110, hereby certify that I have personally inspected the property shown hereon and that it appears that no grading, filling or excavation has occurred thereon since the contour map shown hereon was prepared.

JEAN J. BORDENAVE 09/12/94
JEAN J. BORDENAVE
NMPE & LS No. 5110

LEGAL DESCRIPTION

LOT 1511, SANDIA HEIGHTS SOUTH, UNIT 15

PERMANENT BENCHMARK

NOTES

- There is flow increase of 0.42 and 0.48 cfs for the 10 year and 100 year storms respectively. The 6 hour runoff volumes for the two storms increase by 778 and 1029 cubic feet. The 100 year peak flow rate for the developed condition is 0.03 cfs below the accepted average runoff value for the area.
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SHEET OF