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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

July 27, 1992

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PATRICK J. PADILLA, TREASURER

GLADYS M. DAVIS, CLERK

MARK J. CARRILLO, ASSESSOR

THOMAS J. MESCALL, PROBATE JUDGE

Chris Weiss, P.E.
Weiss-Hines Engineering, Inc.
1100 Alvarado, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR LOT 1477, SANDIA HEIGHTS SOUTH
(D-23/D26) ENGINEER'S STAMP DATED JULY 15, 1992

Dear Mr. Weiss:

Based on the information provided, it appears additional fill material was placed along the edge of the floodplain. I want to caution you that in the future we will require additional analysis when this is done contrary to the approved plan. Be advised this additional fill material is susceptible to erosion, and the County and AMAFCA are not liable.

Otherwise, the plan is acceptable for the County Building Department to perform their final inspection.

If you should have any questions, please do not hesitate to call me at 768-2650.

Cordially,

Gilbert Aldaz, P.E. & P.S.
City/County Floodplain Administrator

xc: Clifford E. Anderson, AMAFCA
Bob Foglesong, Bernalillo County
Jay Parks, Contractor
Tom Burlison, Bernalillo County

GA

wp+3179

DRAINAGE INFORMATION SHEET

PROJECT TITLE: DON MAESTAS RESIDENCE ZONE ATLAS/DRNG. FILE #: D-23 / D-26

LEGAL DESCRIPTION: LOT 952 SANDIA HEIGHTS SOUTH, UNIT 9

CITY ADDRESS: 952 DEER DRIVE

ENGINEERING FIRM: Lovelady & Associates CONTACT: Frank Lovelady

ADDRESS: 7408 Morrow Ave. NE 87110 PHONE: 883-7973

OWNER: DON MAESTAS CONTACT: DON MAESTAS

ADDRESS: 817 MILDRED NE 87123 PHONE: 505-299-2645

ARCHITECT: DESIGN DELINIATION CONTACT: ALAN MEYER

ADDRESS: _____ PHONE: 764-8550

SURVEYOR: FRANK LOVELADY CONTACT: FRANK LOVELADY

ADDRESS: 7408 MORROW NE PHONE: 883-7973

CONTRACTOR: W.D. VALDEZ CONST. CONTACT: W.D. VALDEZ

ADDRESS: _____ PHONE: 298-9608

PRE-DESIGN MEETING:

_____ YES

_____ NO

_____ COPY OF CONFERENCE RECAP

_____ SHEET PROVIDED

_____ BRIEFLY SPOKE W/GILBERT ALDAZ

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT

☒ DRAINAGE PLAN

_____ CONCEPTUAL GRADING & DRAIN. PLAN

_____ GRADING PLAN

_____ EROSION CONTROL PLAN

_____ ENGINEER'S CERTIFICATION

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

CHECK TYPE OF APPROVAL SOUGHT:

_____ SKETCH PLAT APPROVAL

_____ PRELIMINARY PLAT APPROVAL

_____ SITE DEVELOPMENT PLAN APPROVAL

_____ FINAL PLAT APPROVAL

☒ BUILDING PERMIT APPROVAL

_____ FOUNDATION PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY APPROVAL

_____ ROUGH GRADING PERMIT APPROVAL

_____ GRADING/PAVING PERMIT APPROVAL

DATE SUBMITTED: NOV 4, 1992

BY: Frank D. Lovelady
Frank D. Lovelady, P.E.

OTHER ☒ (SPECIFY)

CLIFF ANDERSON REQUESTED
A COURTESY COPY BE
SENT TO GILBERT ALDAZ

9210196

0001084

January 30, 1992

Mr. Gilbert Aldaz, P.E.
Hydrology Section
City of Albuquerque
POB 1293
Albuquerque, NM 87103

RE: LOT ¹⁴⁷⁷ ~~1477~~, SANDIA HEIGHTS SOUTH - HOLD HARMLESS AGREEMENT

Dear Gilbert:

The purpose of this letter is to provide the requested Hold Harmless Agreement and request a variance from the Flood Hazard Ordinance No.88-46 and County Drainage Ordinance No.90-6 for the approval of the Building Permit for the subject lot. The undersigned lot owner agrees to save the City of Albuquerque, County of Bernalillo and AMAFCA (the authorities) harmless from any and all liability arising from the Authorities approval of this drainage plan. It is understood that the Authorities do not agree to save the undersigned owner harmless from any liability which may arise from the owner's negligent use of the property and drainage facilities constructed with the approved plan.

The undersigned lot owner fully understands that a portion of this property is within a 100-year floodplain as shown on the National Flood Insurance Program "Flood Insurance Rate Map" and may be subject to flooding. Any development of this property must conform to the Bernalillo County Flood Damage Prevention Ordinance. For financing purposes, the property may be subject to the flood insurance requirements of the Federal Emergency Management Agency (FEMA) and until such time that a map revision is approved by FEMA for existing drainage improvements, flood insurance is likely to be required.

The agreements and obligation of this letter of the owner as set forth herein shall be binding on the owner, his heirs, assigns and successors and on the owner's property and constitute covenants running the owner's property until released by the Authorities.

WITNESS its hand and seal this 31 day of JAN., 1992.

[Signature]
Lot Owner

Lot Owner

ACKNOWLEDGEMENT FOR NATURAL PERSONS

STATE OF NEW MEXICO)
) SS
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 31 day of January, 1992 by Jay M. Parks

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

[Signature]
Notary Public

92 FEB -4 PM 3: 39

My Commission Expires: 7-28-94

92-3 1084
BK BCR. PG
GLADYS M. DAVIS
CO CLERK & RECORDER
[Signature]

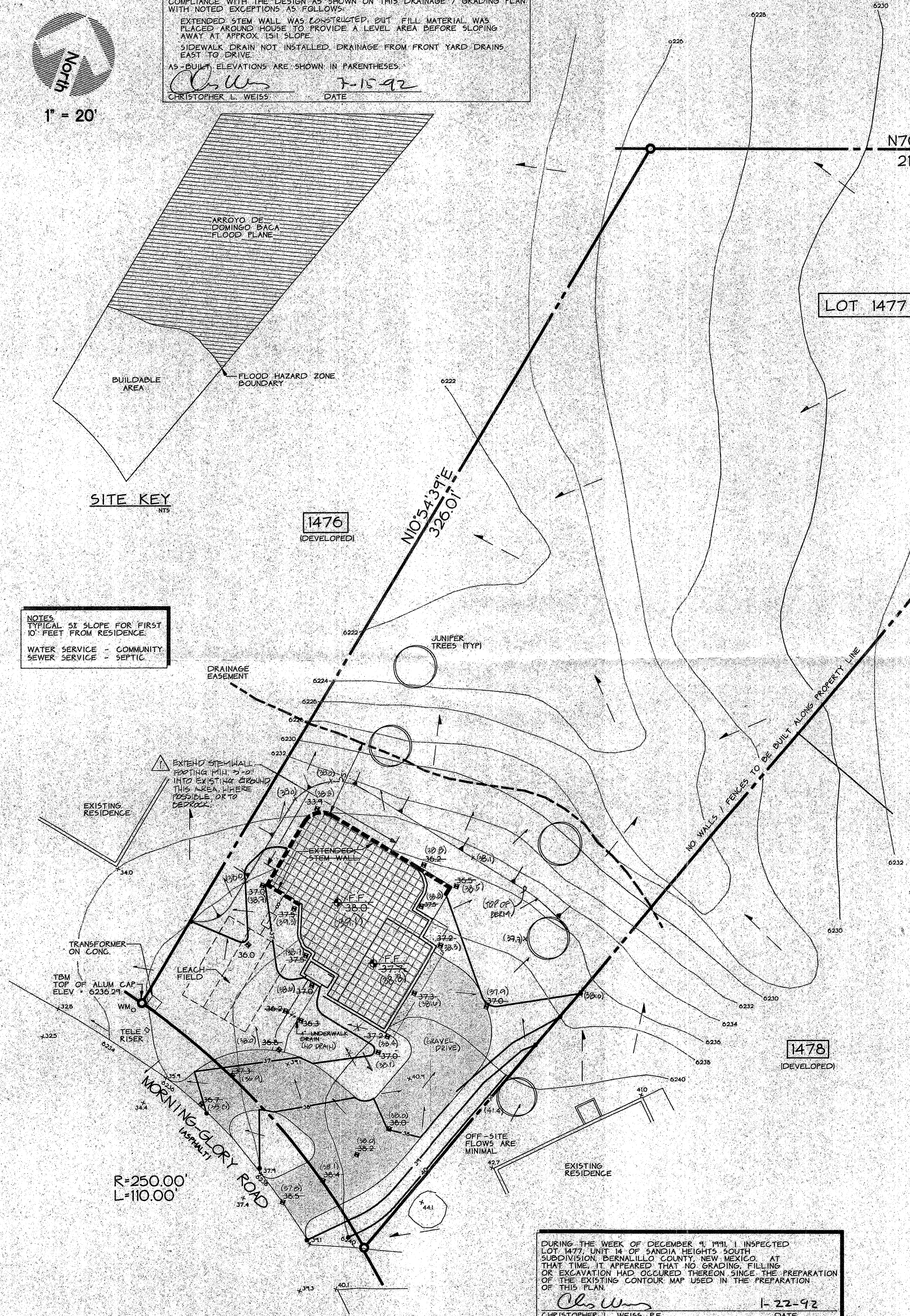


1" = 20'

ENGINEER'S CERTIFICATION:
I CERTIFY THAT CONSTRUCTION OF SITE IMPROVEMENTS ARE IN SUBSTANTIAL COMPLIANCE WITH THE DESIGN AS SHOWN ON THIS DRAINAGE / GRADING PLAN WITH NOTED EXCEPTIONS AS FOLLOWS:
EXTENDED STEM WALL WAS CONSTRUCTED, BUT FILL MATERIAL WAS PLACED AROUND HOUSE TO PROVIDE A LEVEL AREA BEFORE SLOPING AWAY AT APPROX. 15% SLOPE.
SIDEWALK DRAIN NOT INSTALLED. DRAINAGE FROM FRONT YARD DRAINS EAST TO DRIVE.
AS-BUILT ELEVATIONS ARE SHOWN IN PARENTHESES.
CHRISTOPHER L. WEISS
DATE 7-15-92

SITE KEY
NTS

NOTES:
TYPICAL 5% SLOPE FOR FIRST 10' FEET FROM RESIDENCE.
WATER SERVICE - COMMUNITY
SEWER SERVICE - SEPTIC



LOT 1477

1449

1478
(DEVELOPED)

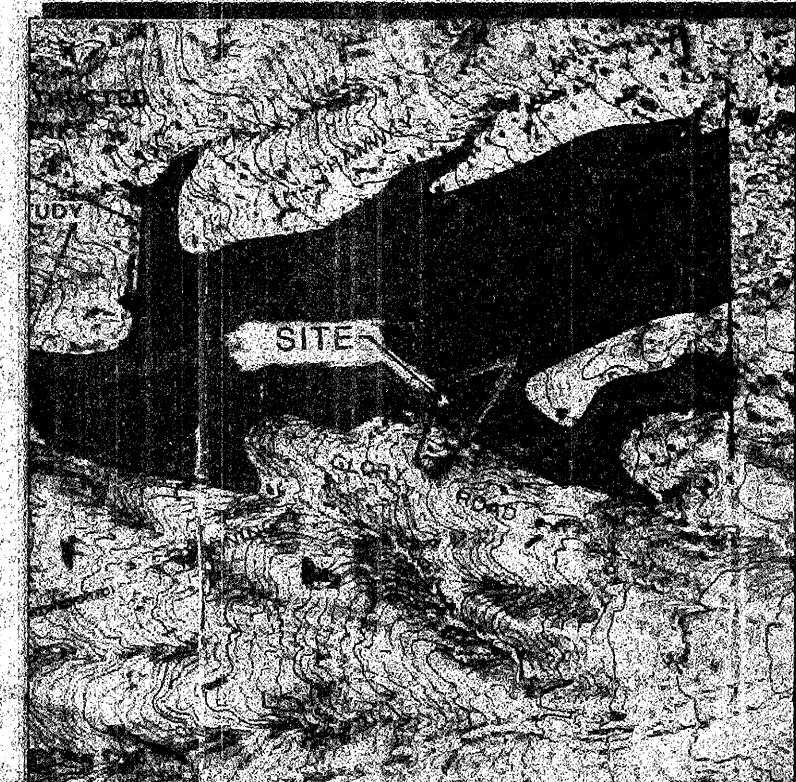
N70°12'35"E
210.00'

RESUBMITTAL - 1-30-92
DESIGNATION OF EXTENDED
STEMWALL FOOTINGS
CHRISTOPHER L. WEISS
DATE 1-30-92

SIGNATURES
FLOODPLAIN ADMINISTRATOR 2/05/92
BERNALILLO COUNTY PUBLIC WORKS 2/14/92
AMAFCA Feb. 9, 1992
* Based on letter from Christopher L. Weiss, P.E.
dated Feb. 9, 1992 and Hold Harmless Agreement
dated Jan. 31, 1992.



VICINITY MAP D-23



FLOOD HAZARD MAP

SCOPE:

- The proposed improvements are comprised of a 2500 SF (footprint) private residence with associated driveway, walks, and patio area.
- The present site is undeveloped land sloping at 3% westerly. The property fronts on Morning Glory Road NE, and undeveloped land to the south. Existing private residences occupy the lots east and west of the site.
- The intent of this plan is to show:
- Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.
 - The extent of proposed site improvements, including buildings, walks and pavement.
 - The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet County requirements for drainage management.
 - The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT: A shallow earth swale south of the residence will carry flows north to the floodway drainage easement crossing the property. All other run off onsite and offsite will be allowed to follow existing flow patterns in a westerly direction.

Calculations apply only to buildable area designated on key at left.

GENERAL NOTES:

LEGAL: Lot 1477, Unit 14, Sandia Heights South, Bernalillo, New Mexico.

SURVEYOR: Forstbauer Surveying, Albuquerque, New Mexico

B.M.: City of Albuquerque brass cap, "1-C24". Elevation = 6,353.00'.

I.B.M.: Top of aluminum cap. Elevation = 6,236.29'.

SOILS: SCS Soil Survey of Bernalillo County indicates that the soil is Embudo-Tijeras Complex (EIC), a gravelly fine sandy loam classified in Hydrologic Soil Group 'B'.

FLOOD HAZARD: FEMA Boundary Map indicates the northern half of the site lies within the Arroyo de Domingo Baca Flood hazard zone. See Drainage/Grading plan for flood hazard zone boundary.

OFF-SITE DRAINAGE: Offsite flows from the east are carried across the property in the Arroyo de Domingo Baca. These flows will not impact the area designated for construction. No offsite flows from the north, south or west affect the site.

EROSION CONTROL: The contractor is responsible for retaining onsite all sediment generated during construction by means of temporary earth berms or silt fences at the low points on the west property line.

CALCULATIONS:

Calculations are based on the Drainage Design Criteria for Bernalillo County, April, 1990 (Part A).

AREA OF SITE: 15,240 SF = 0.35 Ac.

PRECIPITATION ZONE 4:

Onsite Land Condition

AA = 9,498 SF

AB = 0 SF

AC = 0 SF

AD = 5,742 SF

TOTAL = 15,240 SF

Onsite Weighted Excess Precipitation (100-Year, 6-Hour Storm):

Weighted E = EAAA + EAB + EAC + EAD

AA + AB + AC + AD

= (0.68)(9498) + (0.65)(0) + (1.13)(0) + (2.59)(5742)

15,240

= 1.39"

Onsite Volume of Runoff:

V360 = (1.39)(15,240) = 1,765 CF

1.2

Onsite Peak Discharge Rate:

Qp = QPA + QPB + QPC + QPD

= (2.28)(9498) + (3.05)(0) + (3.94)(0) + (5.74)(5742)

43,560

= 1.25 CFS unconf. entrained

EROSION LIMITS FOR 100 YEAR FLOOD PLAINS

Exceptions to the Building Setback Requirements for 100-year flood plain is requested due to the following conditions:

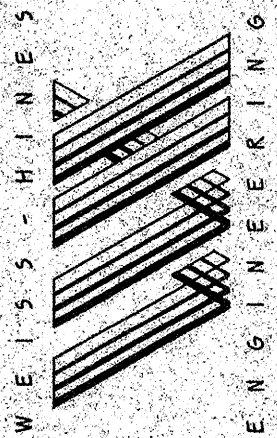
- The 6' for each 100 cfs cannot be met for the lot depth available.
- Prudent line is established by the existing drainage easement line because:
 - Existing vegetation on and within arroyo side slopes has stabilized the arroyo which will control erosion, scour and meandering.
 - Arroyo side slopes are comprised of a mixture of decomposed granite soil and granite boulders ranging in size up to 5' or greater in diameter. This combination of boulders and vegetation will continue to provide a very stable arroyo side slope.
 - The designated flood plain is very wide and has little evidence of being disturbed by recent storm events as determined by physical inspection of the area.
 - The proposed finished elevation of the house is 10' above the drainage easement line and 14 to 16' above the flow line of the arroyo. This elevation difference is consistent in the adjoining residences on Lots 1476 & 1478.

DURING THE WEEK OF DECEMBER 1, 1991, I INSPECTED LOT 1477, UNIT 14 OF SANDIA HEIGHTS SOUTH SUBDIVISION, BERNALILLO COUNTY, NEW MEXICO. AT THAT TIME, IT APPEARED THAT NO GRADING, FILLING OR EXCAVATION HAD OCCURRED THEREON SINCE THE PREPARATION OF THE EXISTING CONTOUR MAP USED IN THE PREPARATION OF THIS PLAN.
CHRISTOPHER L. WEISS, P.E.
DATE 1-22-92

REVISIONS
JANUARY 22 '92
DESIGNED
DRAWN
CHECKED
CLW

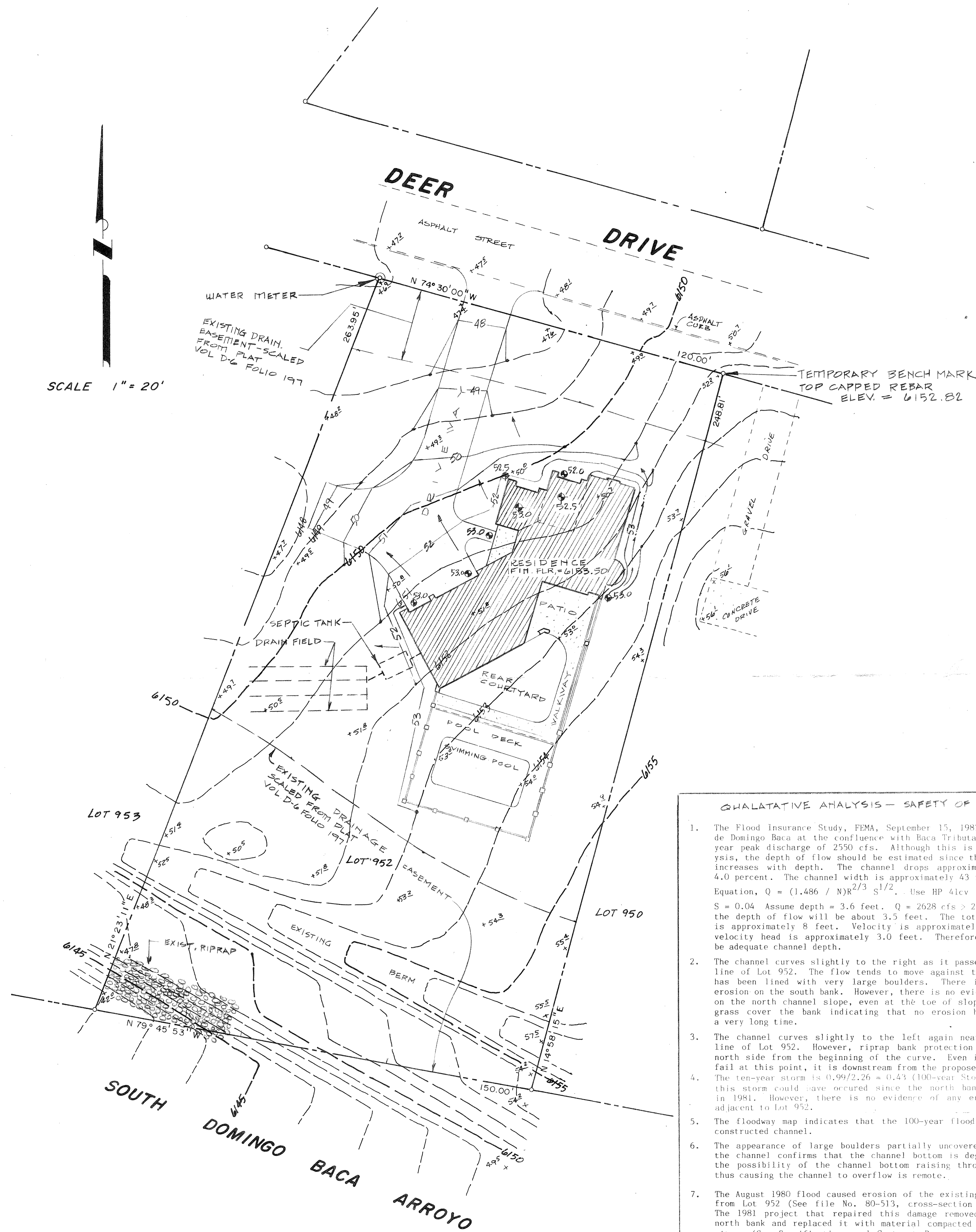
WEISS-HINES
ENGINEERING INC.
1100 ALVARADO NE
ALBUQUERQUE, NEW MEXICO 87102

PARK WEST CONSTRUCTION
1477 MORNING GLORY ROAD



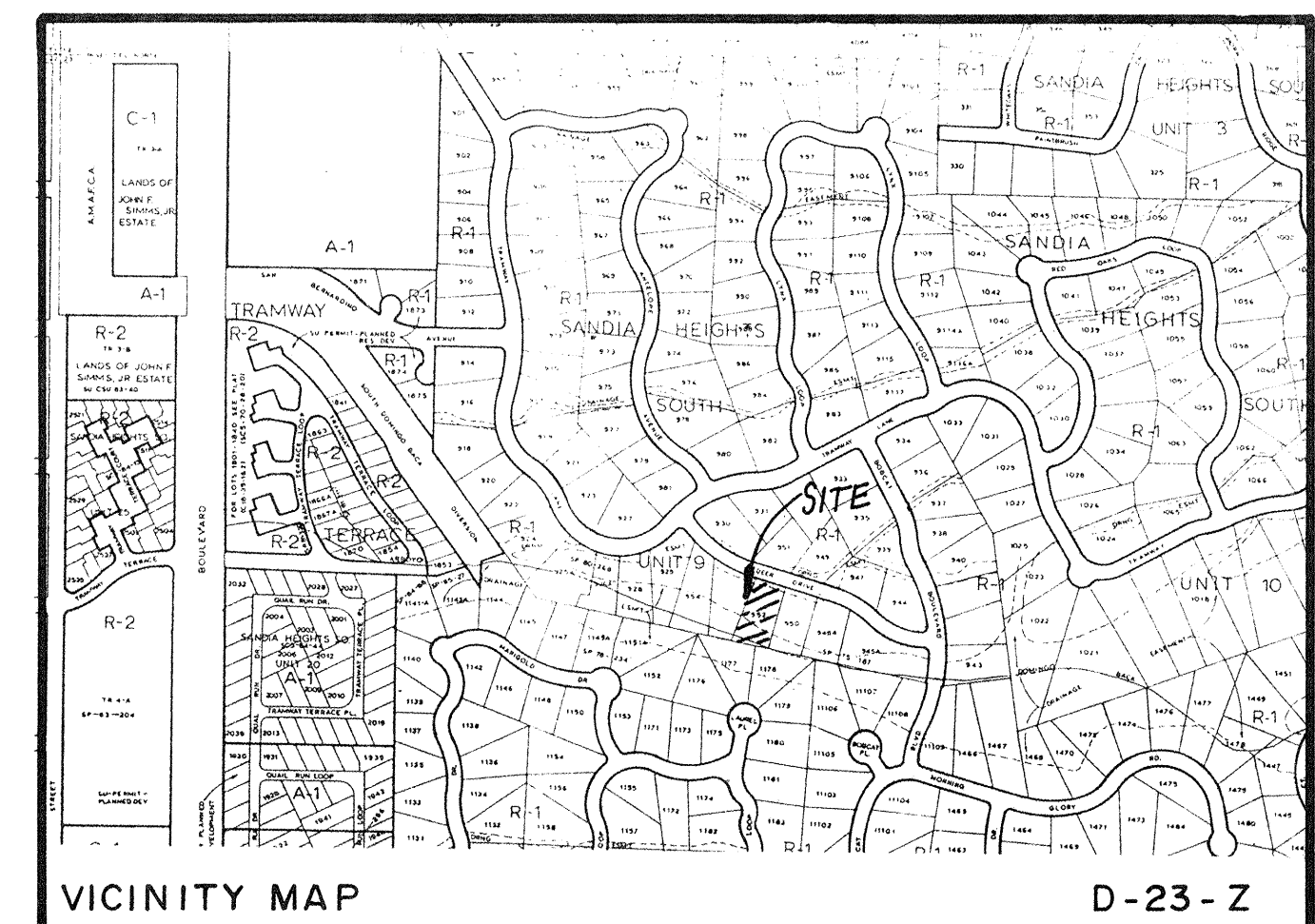
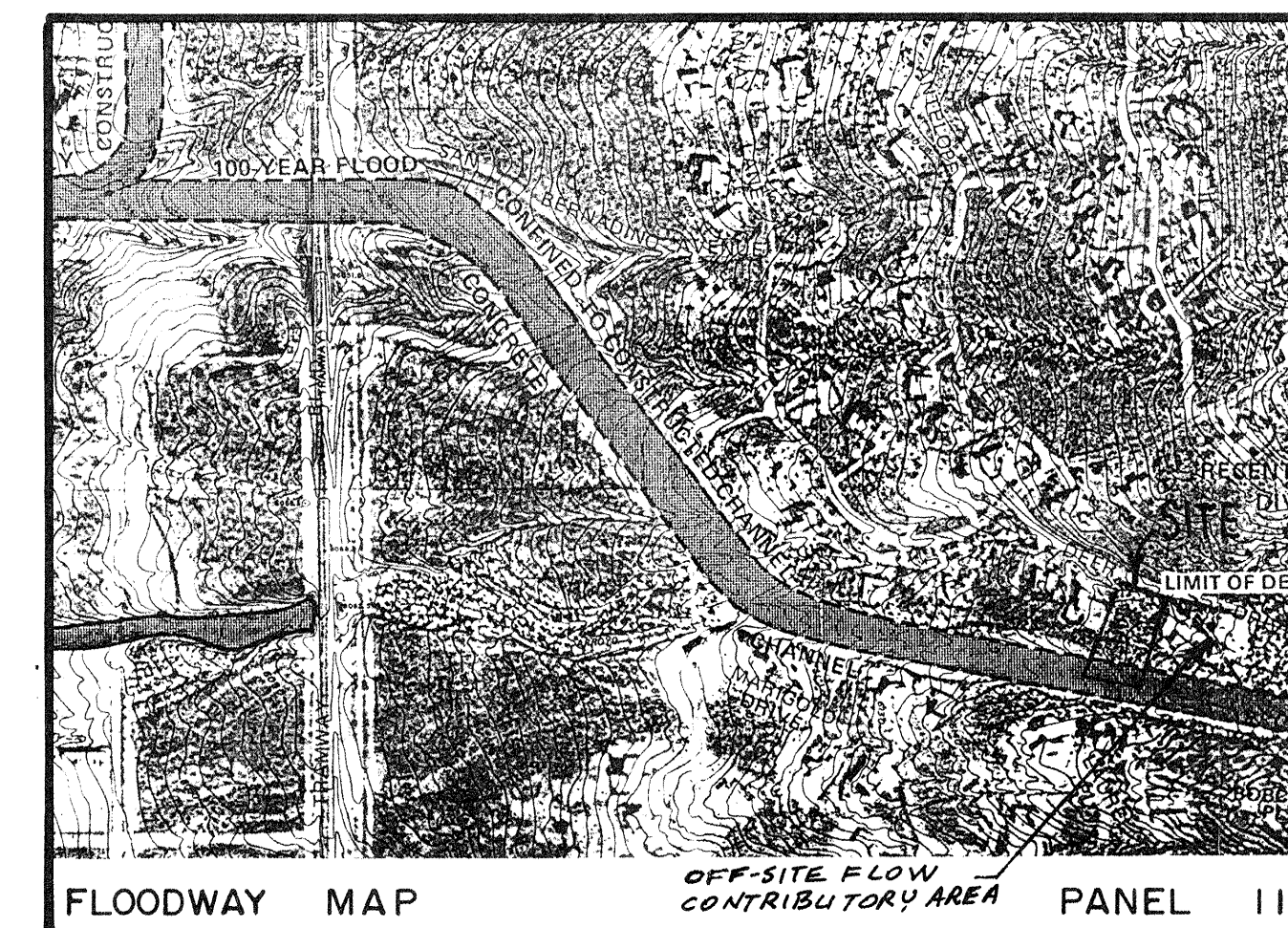
JANUARY 1992

SHEET 1 OF 1



QUALITATIVE ANALYSIS - SAFETY OF RESIDENCE

- The Flood Insurance Study, FEMA, September 15, 1983, lists the Arroyo de Domingo Baca at the confluence with Baca Tributary as having a 100-year peak discharge of 2550 cfs. Although this is a qualitative analysis, the depth of flow should be estimated since the severity of scour increases with depth. The channel drops approximately 10' in 250', 4.0 percent. The channel width is approximately 43 feet. Use Manning's Equation, $Q = (1.486 / N) R^{2/3} S^{1/2}$. Use HP 41c program. $N = 0.045$. $S = 0.04$. Assume depth = 3.6 feet. $Q = 2628$ cfs > 2550 cfs. Therefore, the depth of flow will be about 3.5 feet. The total depth of channel is approximately 8 feet. Velocity is approximately 13.6 fps, so the velocity head is approximately 3.0 feet. Therefore, there appears to be adequate channel depth.
- The channel curves slightly to the right as it passes the east property line of Lot 952. The flow tends to move against the south bank which has been lined with very large boulders. There is evidence of some erosion on the south bank. However, there is no evidence of any erosion on the north channel slope, even at the toe of slope. Large brush and grass cover the bank indicating that no erosion has taken place for a very long time.
- The channel curves slightly to the left again near the west property line of Lot 952. However, riprap bank protection is provided on the north side from the beginning of the curve. Even if the riprap should fail at this point, it is downstream from the proposed residence.
- The ten-year storm is $0.99/2.26 = 0.43$ (100-year Storm). Statistically, this storm could have occurred since the north bank was reconstructed in 1981. However, there is no evidence of any erosion of the north adjacent to Lot 952.
- The floodway map indicates that the 100-year flood is confined to the constructed channel.
- The appearance of large boulders partially uncovered in the bottom of the channel confirms that the channel bottom is degrading. Therefore, the possibility of the channel bottom raising through aggradation and thus causing the channel to overflow is remote.
- The August 1980 flood caused erosion of the existing channel downstream from Lot 952 (See file No. 80-513, cross-section at Station 137+00. The 1981 project that repaired this damage removed material from the north bank and replaced it with material compacted to 95% maximum density. (See Specifications and Contract Documents for Construction of Upstream Channel Improvements, South Arroyo De Domingo Baca, Section 203.035.) It is believed that the reason that no erosion took place adjacent to Lot 952 is the slight channel curvature described in Item 2 above. The curvature in the channel is documented in a letter of June 29, 1981 to A.M.A.F.C.A. from Ned A. Green who was concerned about Lot 1178 on the south side of the channel.
- In summary, the integrity of the north channel bank is very high at the section adjacent to Lot 952. Therefore, it is felt that this development will be safe from erosion from the Arroyo De Domingo Baca.



DRAINAGE CALCULATIONS

Don Maestas

EXISTING CONDITIONS:

The site is located on Deer Drive in Sandia Heights South, Unit 9. The site slopes from east to west and is covered with natural vegetation. The North Domingo Baca Arroyo is at the south end of the Lot. Channel improvements have been made to the arroyo so that the difference in elevation between the arroyo bottom and the adjacent dike is 9 to 10 feet. Deer drive is an asphalt paved street with asphalt curbs at the edges.

DEVELOPED CONDITIONS:

It is proposed to construct a residence on the lot as shown. The driveway is proposed to be gravel. Since there is no roadside ditch and street runoff is contained within the street by the asphalt curbs, no culverts are required.

DRAINAGE CRITERIA:

The "Interim Drainage Design Criteria for Bernalillo County, New Mexico", April 1991, has been used for the drainage calculations shown on this plan.

PRECIPITATION ZONE:

The site is east of Eubank and is, therefore, in Precipitation Zone No. 4.

LAND TREATMENT AREAS:

No grading has taken place on Lot 952. (See Engineer's Statement). The existing site is assumed to be all Treatment A. The developed Land Treatment areas are shown in the following table:

Land Treatment	q(cfs/acre) 100 / 10	E(Inches) 100 / 10	Percent of Site	Area of Sq. Ft.	Site Acres		
A	2.26	0.99	0.66	0.27	46.8	16085	0.369
B	3.05	1.61	0.85	0.38	5.0	1719	0.039
C	3.94	2.29	1.13	0.55	30.0	10310	0.237
D	5.74	3.91	2.57	1.60	18.2	6255	0.144
Totals					100.0	34369	0.789

VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

Existing Conditions:

$$V_{100} = 34369 (0.66 / 12) = 1890 \text{ cf}; \quad V_{10} = 34369 (0.27 / 12) = 773 \text{ cf}$$

Developed Conditions:

$$V_{100} = \frac{(16085 \times 0.66 + 1719 \times 0.85 + 10310 \times 1.13 + 6255 \times 2.57)}{12} = 3317 \text{ cf}$$

$$V_{10} = \frac{(16085 \times 0.27 + 1719 \times 0.38 + 10310 \times 0.55 + 6255 \times 1.6)}{12} = 1723 \text{ cf}$$

PEAK DISCHARGE:

$$\text{Existing Conditions: } Q_{100} = 0.789 \times 2.26 = 1.78 \text{ cfs}; \quad Q_{10} = 0.789 \times 0.99 = 0.78 \text{ cfs}$$

Developed Conditions:

$$Q_{100} = 0.369 \times 2.26 + 0.039 \times 3.05 + 0.237 \times 3.94 + 0.144 \times 5.74 = 2.71 \text{ cfs}$$

$$Q_{10} = 0.369 \times 0.99 + 0.039 \times 1.61 + 0.237 \times 2.29 + 0.144 \times 3.91 = 1.53 \text{ cfs}$$

OFF-SITE FLOW:

The site has an off-site flow area of approximately 0.6 acre. The standard percentage of Treatment D from the criteria equation for 1 acre lots, approximately 17%, is used. The percentage of other land treatments is as follows:

Treatment A, 48%; Treatment B, 5%; Treatment C, 30%;

$$Q_{100} = 0.29 \times 2.26 + 0.03 \times 3.05 + 0.18 \times 3.94 + 0.10 \times 5.74 = 2.03 \text{ cfs}$$

LEGAL DESCRIPTION:

Lot 952, Sandia Heights South, Unit 9.

BENCH MARK:

Station 1-C23. The station is located 11 miles northeast of downtown Albuquerque. To reach the station from the intersection of Montgomery Blvd. and Tramway Road, go north on Tramway Rd. 3.2 miles to the station on the right. The station mark is a 1-inch diameter iron pipe set in concrete projecting about 0.07 ft. above the ground. Elevation = 6062.966 Feet.

TEMPORARY BENCH MARK (TBM):

Top of capped rebar located at the NE corner of Lot 952. Elevation = 6152.82'

ENGINEER'S STATEMENT:

I hereby state that I have personally inspected the land represented by this plan, most recently on September 24, 1992, and, I certify that the contours shown on this plan reflect the conditions of the site as of that date; and, that no grading, excavation, or filling has taken place on the site.

Frank D. Lovelady 9/25/92
(Signature) (Date)

LEGEND

EXISTING	NEW	DESCRIPTION
---	---	6150
---	---	50
---	---	500
---	---	SPOT ELEVATION
---	---	PROPERTY LINE
---	---	SUALL
---	---	SHEET FLOW

GRADING & DRAINAGE PLAN

DON MAESTAS RESIDENCE

LOT 952, UNIT 9

SANDIA HEIGHTS SOUTH

BERNALILLO COUNTY, NEW MEXICO

