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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

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MARK J. CARRILLO, ASSESSOR

THOMAS J. MESCALL, PROBATE JUDGE

January 19, 1993

Ronald R. Bohannon, P.E.
Tierra West Development
4600 Montgomery NE, Suite 9
Albuquerque, NM 87109

DRAINAGE PLAN FOR LOT 1448, UNIT 14, SANDIA HEIGHTS SOUTH,
(D-23/D32), ENGINEER'S STAMP DATED DECEMBER 2, 1992

Dear Mr. Bohannon:

Based on the information provided on the referenced submittal received December 29, 1992, the plan is acceptable for Building Permit release.

Please be advised that prior to final inspection being performed by the County Building Department, an Engineer's Certification that the site was built in substantial compliance with the approved plan must be submitted and approved by this office.

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

Cordially,

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

xc: Clifford E. Anderson, AMAFCA
Bob Foglesong, County PWD
Tom Burlison, County Building Dept.
Bill Fox, Owner
File

wp+3800

DRAINAGE INFORMATION SHEET

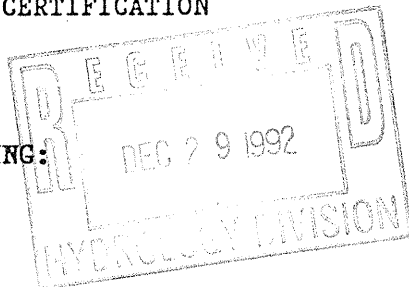
PROJECT TITLE: Lot 1448 ZONE ATLAS/DRNG. FILE #: D-23/032
DRB #: _____ EPC #: _____ WORK ORDER #: _____
LEGAL DESCRIPTION: Lot 1448 Sandia Heights South Unit 14
CITY ADDRESS: _____
ENGINEERING FIRM: TieriaWest Development CONTACT: Ron Bohannon
ADDRESS: 4600 Montgomery Blvd PHONE: 883-7596
OWNER: Alvarado Realty CONTACT: Bill Fox
ADDRESS: 10 Tramway Loop PHONE: 296-9585
ARCHITECT: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
SURVEYOR: Mont Goodwin & Assoc CONTACT: Richard Berger
ADDRESS: _____ PHONE: 828-2200
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:

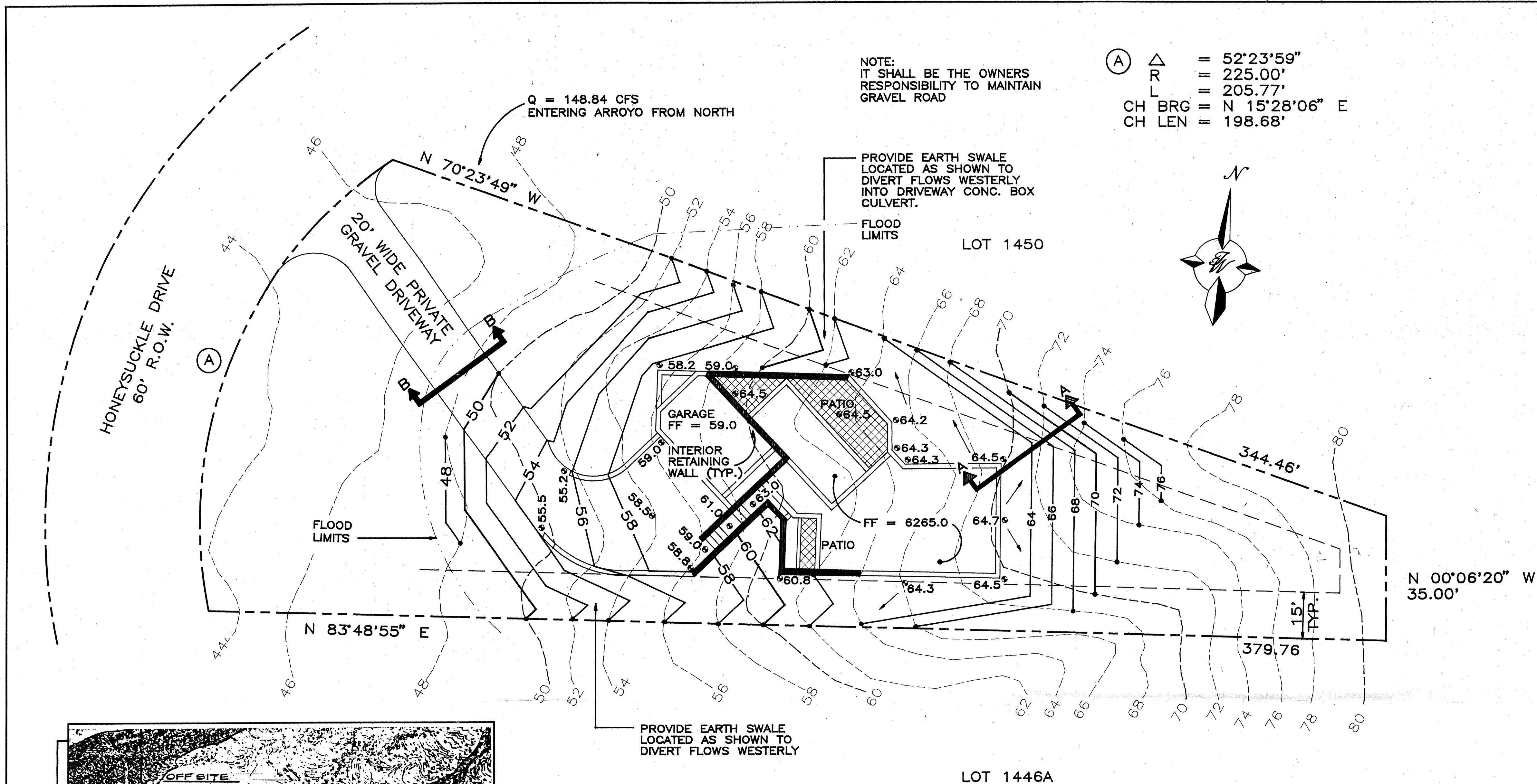
- ☐ YES
☒ NO
☐ COPY PROVIDED



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: 12/18/92BY: RWA



(A) Δ = 52°23'59"
R = 225.00'
L = 205.77'
CH BRG = N 15°28'06" E
CH LEN = 198.68'

DRAINAGE CALCULATIONS

CALCS. ARE BASED ON THE "DRAINAGE DESIGN CRITERIA FOR BERN. CO."
APRIL 1990 PART A
TOTAL LOT: 37,156.68 SQ.FT. = 0.853 AC.

ON-SITE DEVELOPED:

CONDITIONS
A₁ = .113 AC.
A₂ = .137 AC.
A₃ = .256 AC.
A₄ = .202 AC.
A₅ = .708 AC. ± USABLE PORTION

ON-SITE WEIGHTED EXCESS PRECIPITATION (100 YR. 6 HR. STORM-PRECIP. ZONE 4)

WEIGHTED E = $\frac{E_1 A_1 + E_2 A_2 + E_3 A_3 + E_4 A_4 + E_5 A_5}{A_1 + A_2 + A_3 + A_4 + A_5}$
= $\frac{(0.113)(0.80) + (0.137)(1.08) + (0.256)(1.46) + (0.202)(2.64) + (0.708)(2.64)}{0.7238}$
= 1.60"

ON-SITE VOLUME RUN-OFF

V₃₆₀ = $\frac{1.60(0.853)}{12} = 0.1134$ AC.FT.

ON-SITE PEAK DISCHARGE RATE

Q_p = Q₁₀₀ A₁ + Q₁₀ A₂ + Q₁₀ A₃ + Q₁₀ A₄ + Q₁₀ A₅
= (0.113)(2.20) + (0.137)(2.92) + (0.256)(3.73) + (0.202)(5.25) + (0.708)(5.25)
Q(100-6) = 2.665 CFS TO ARROYO @ WEST PROPERTY LINE

OFF-SITE: CALCULATIONS BY HALL ENGINEERING

APPROVED BY A.M.A.F.C.A. 3-23-92
APPROVED BY BERNALILLO CO. PWD

ENTRY & CONVEYANCE ADJACENT THIS SITE IS VIA A CHANNEL DRAINING
17 LOT ACRES, ALL OF WHICH IS U.S. FOREST SERVICE LAND EXCEPT FOR
LOT TO THE SOUTH.

PEAK DISCHARGE (ZONE 4, TREATMENT "A")

Q₁₀₀ = 2.26 CFS AC X 17 AC = 38.4 CFS PEAK

Q₁₀ = 0.99 CFS AC X 17 AC = 16.8 CFS

SLOPE: 5.8% AVE., SMALL UPLAND GULLY

VELOCITY: 2 √5.8 = 4.8 FT. SEC.

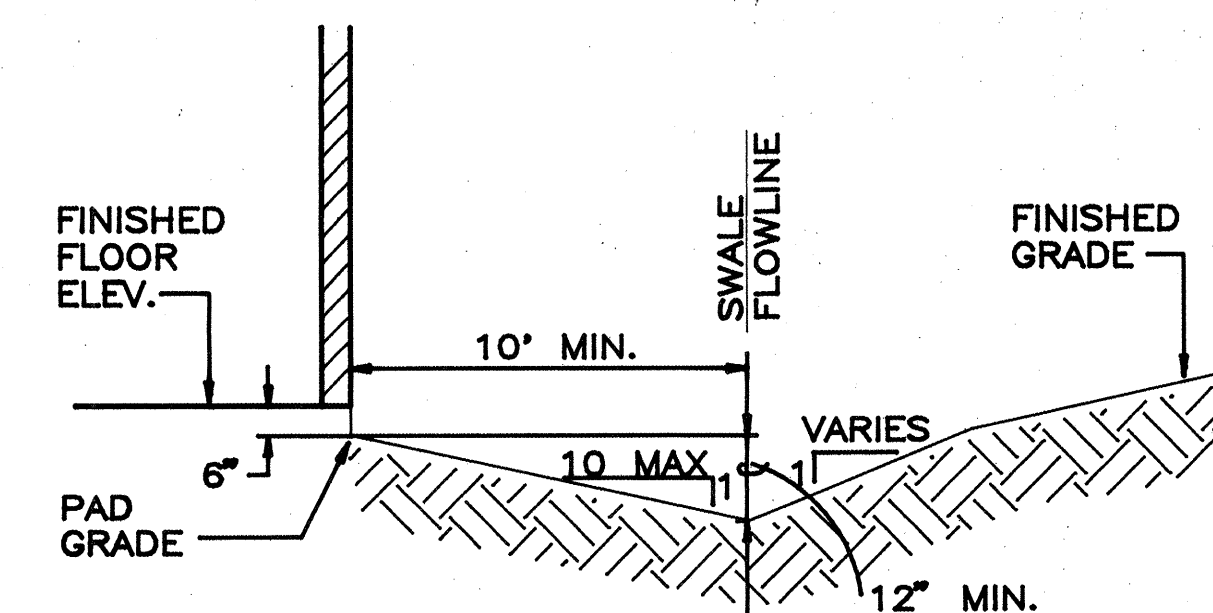
TYPICAL CROSS-SECTIONAL AREA @ Q₁₀₀ = $\frac{38.4 \text{ CFS}}{4.8 \text{ FT/SEC}} = 8.0 \text{ FT}^2$

FOR THE 6-HOUR RUNOFF VOLUMES WILL INCREASE BY 1052 CU. FT.

TOTAL FLOWS:

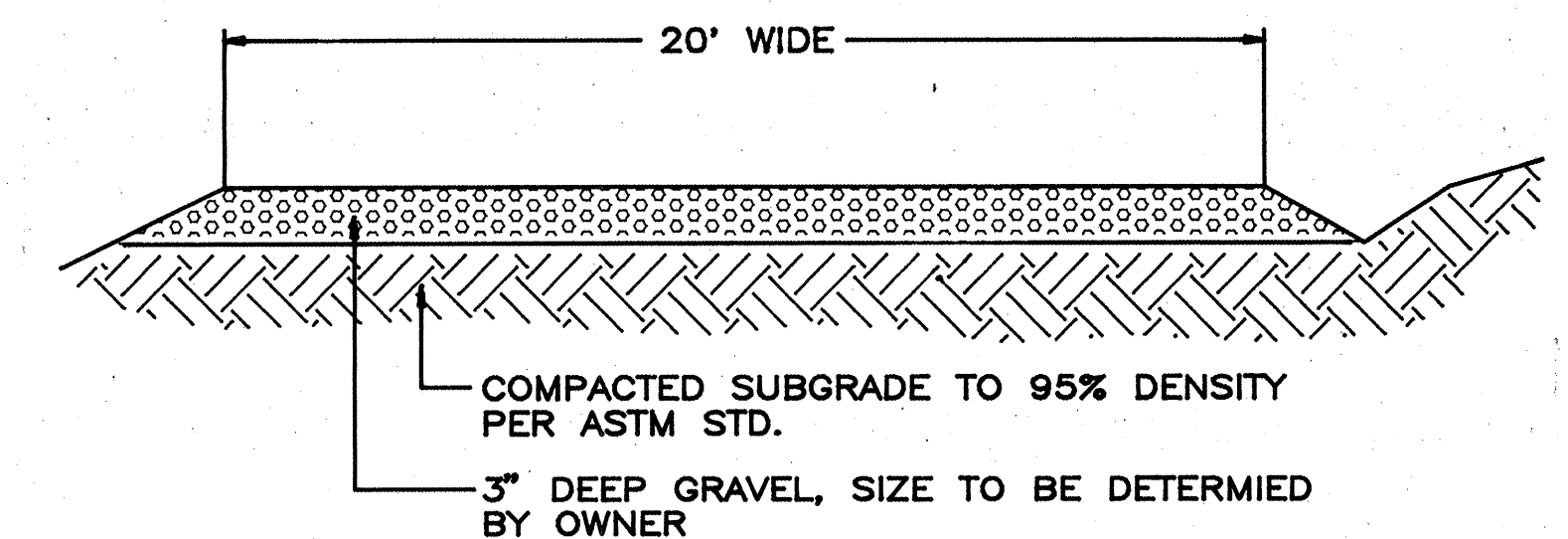
VOLUME FROM SITE
0.1134 AC.FT. (ON-SITE)

PEAK FLOW FROM SITE
2.665 CFS (ON-SITE)
38.4 CFS (OFF-SITE) PER HALL ENGINEERING
41.1 CFS TOTAL



SECTION A-A

SHALLOW EARTH SWALE
NTS



SECTION B-B

TYPICAL GRAVEL ROAD SECTION
NTS

APPROVALS:

CITY/ COUNTY FLOOD PLAIN ADMINISTRATOR DATE
A.M.A.F.C.A. DATE

CITY/ COUNTY FLOOD PLAIN ADMINISTRATOR DATE
BERNALILLO COUNTY PUBLIC WORKS DEPT. DATE

1	12-2-92	FLOOD PLAIN ADMIN. COMMENTS	JCS	DFT BY	CHK BY
NUMBER	DATE	DESCRIPTION			
ENGINEER'S SEAL		DRAINAGE AND GRADING PLAN		DRAWN BY	STAFF
		SANDIA HEIGHTS SOUTH UNIT 14 LOT 1448		DATE	11-11-92
		TIERRA WEST DEVELOPMENT MANAGEMENT SERVICES			92-50.DWG
		4600 MONTGOMERY BLVD. N.E. SUITE 9 ALBUQUERQUE, NEW MEXICO 87109 (505)883-7592			SHEET #
		RONALD R. BOHANNAN P.E. #7868			JOB # 920051