HYDROLOGY K19/D47 2 PLANS

K19/D47

2 Plans

DENNEY - GROSS & ASSOCIATES, INC.
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, N.M. 87107
TELEPHONE: (505) 884-0696

LETTER OF TRANSMITTAL

DATE AUG 20, 1984	F.D. JOB NO. 742.12
ATTENTION	
REASON	

TO CARLOS MONTOYA
DESIGN HYDROLOGY SECTION
123 CENTRAL AVE NW
ALBUQUERQUE, NM 87102

GENTLEMEN:

WE ARE SENDING YOU ☐ ATTACHED ☐ UNDER SEPARATE COVER VIA _____ THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☒ PRINTS ☐ PLANS ☐ PROJECT ESTIMATE ☐ SPECIFICATIONS
☐ COPY OF LETTER ☐ CHANGE ORDER ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	JUNE 6, 84		REPLAT - LOTS 18 & 19, BLOCK 2, MESA VERDE ADDITION
			TO LOT 18-1, BLOCK 2, MESA VERDE ADDITION

THESE ARE TRANSMITTED as checked below.

☐ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RETURN ____ COPIES FOR DISTRIBUTION
☐ FOR YOUR USE ☐ APPROVED AS NOTED ☐ RETURN ____ SIGNED ORIGINALS
☒ AS REQUESTED
☐ FOR REVIEW AND COMMENT ☐ _____
☐ FOR BIDS DUE _____ 19 ____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS
YOUR FILE (K19-A47). AS REQUESTED IN YOUR LETTER of AUG 16, 1984.

RECEIVED AUG 20 1984 HYDROLOGY SECTION

COPY TO _____

SIGNED: [signature]

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

August 14, 1984

Mr. Richard T. Williams
Denney-Gross & Associates
2400 Comanche Road NE
Albuquerque, NM 87107

REF: DRAINAGE PLAN FOR MESA VERDE ADDITION (K19-D47) RECEIVED JULY 17, 1984

Dear Mr. Williams:

The above referenced plan, dated July 17, 1984, is approved.

Prior to the release of the C.O., please provide documentation of the recorded, removing of lot lines, replat.

If I can be of further assistance, please contact me at 766-7644.

Sincerely yours,

Carlos A. Montoya
City/County Flood Plain Admin.

CAM:mrk

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

August 10, 1984

Mr. Richard Williams
Denney-Gross & Assoc.
2400 Comanche Rd. NE
Albuquerque, New Mexico 87107

REF: DRAINAGE & GRADING PLAN FOR MESA VERDE ADDITION (K-19 D-47)
RECEIVED JULY 17, 1984

Dear Mr. William:

I have reviewed the above referenced plan and foward the following comments:

Flows across lot lines is not permitted. The 3.3 cfs which enters the property from the south is crossing lot lines. Lot lines should be removed through platting or a drainage covenent.

If I can be of further assistance, please contact me at 766-7644.

Sincerely,

Carlos A. Montoya
Civil Engineer/Hydrology

CAM/cl

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0696

Rec'd Greg Olson 5:30 pm 7/18/84

July 17, 1984

HAND DELIVERED

Mr. Billy J. Goolsby, P.E.
City of Albuquerque
Design Hydrology Section
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Plan
DGA Job No. 742.12

Dear Mr. Goolsby:

Enclosed herewith for your approval, is one (1) copy of the Drainage Plan for Lot 18-1, Block 2 (formerly Lots 18 & 19) of the Mesa Verde Addition.

If you have any questions or need assistance, please feel free to call our office at your convenience.

Very truly yours,

RTWilliams

Richard T. Williams, P.E.

RTW/cbk

Enclosure

K19 047

RECEIVED
JUL 17 1984
HYDROLOGY SECTION

DRAINAGE PLAN

LOT 18-1, BLOCK 2
(Formerly Lots 18 & 19)
MESA VERDE ADDITION

PREPARED FOR:

CHARLES BATES

JULY, 1984
DGA JOB NO. 742.12

RECEIVED
JUL 17 1984
HYDROLOGY SECTION

Prepared By:

DENNEY-GROSS & ASSOCIATES, INC.
Consulting Engineers
2400 Comanche Road N.E.
Albuquerque, New Mexico 87107

INFORMATION SHEET

PROJECT TITLE Drainage Plan-Lot 18-1, Block 2 Mesa Verde Addition TYPE OF SUBMITTAL Drainage Plan

ZONE ATLAS PAGE NO. K-19 D47 CITY ADDRESS 120 Rhode Island Street N.E.

LEGAL DESCRIPTION Lot 18-1, Blk 2 (Formerly Lots 18 & 19) Mesa Verde Addition

ENGINEERING FIRM Denney-Gross & Assoc. CONTACT Richard T. Williams, P.E.

ADDRESS 2400 Comanche Road N.E. PHONE 884-0696

OWNER Charles Bates CONTACT Charles Bates

ADDRESS 8009 Marble N.E. PHONE 266-5803

ARCHITECT _____ CONTACT _____

ADDRESS _____ PHONE _____

SURVEYOR Denney-Gross & Associates CONTACT Steven L. Y-utsey, L.S.

ADDRESS 2400 Comanche Road N.E. PHONE 884-0696

CONTRACTOR _____ CONTACT _____

ADDRESS _____ PHONE _____

PRE-DESIGN MEETING:

X YES
___ NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
X GRADING/PAVING PERMIT APPROVAL
___ OTHER _____ (SPECIFY)

RECEIVED
JUL 17 1984
HYDROLOGY SECTION

DATE SUBMITTED: JUL 17, 1984

BY: RTWilliams
Richard T. Williams, P.E.

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. K-19 DATE: 7/2/84

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Lots 18 & 19, Block 2
Mesa Verde Addition

ATTENDANCE: WHO	REPRESENTING
Rick Williams	DG&A
Billy Goolsby	City

FINDINGS: ① Approved Drainage Plan per DPM required prior to release of building permit.
② State Fairground's Storm relief system may eliminate area from flood hazard zone - Verify with Jim Fink. If ponding is required 1-4" sidewalk culvert is acceptable.
③ Platting should be done to remove lotline.

Please provide a copy of recap w/ submittal.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Billy J. Goolsby SIGNED: RW Williams
TITLE: CE/Hydrology TITLE: _____
DATE: 7/2/84 DATE: JUL 2, 84

I, Richard T. Williams, hereby certify that the enclosed documents and drawings were prepared under my supervision and are true and correct to the best of my knowledge and belief.

RTWilliams

New Mexico Professional Engineer No. 7309

RICHARD T. WILLIAMS
NEW MEXICO
7309
REGISTERED PROFESSIONAL ENGINEER

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DRAINAGE PLAN

LOT 18-1, BLOCK 2
(Formerly Lots 18 and 19)
MESA VERDE ADDITION

I. PURPOSE:

The purpose of this Drainage Plan is to analyze and manage the developed flows resulting from the six hour-100 year runoff event according to methodology presented in the City of Albuquerque Development Process Manual.

II. EXISTING CONDITIONS:

The site is located on the east side of Rhode Island Avenue, N.E., between Central Avenue and Chico Road. It has an area of 0.16 acres. The site slopes to the west at about one percent, and slopes to the north at less than one percent.

There is a 66-inch RCP storm drain which flows north from Central Avenue along Dallas Street, two blocks west of the site. However, the capacity of this system is inadequate. According to the National Flood Insurance Program Flood Boundary and Floodway Map, panel 30, the site is not located within a 100-year flood plain. The site drains north on Rhode Island Avenue to Chico Road. Chico Road is within a 100-year flood plain. Consequently, a controlled-discharge situation is proposed.

III. PROPOSED SOLUTION:

An existing building will be moved on to the site. Because of the layout of the building, it will be sited adjacent to the north boundary of the site. Roof drainage will be controlled so that no drainage enters the lot to the north.

The hydrograph included with the computations indicates that 336 CF of ponding volume is required. A 364.5 CF pond is proposed. This will be drained to Rhode Island Avenue by means of a 4" PVC drain line through the curb. A concrete overflow spillway is proposed for the northeast corner of the pond. This will allow excess flows to leave the pond and enter Rhode Island Avenue over the proposed drive-pad.

An offsite flow area of 0.65 acres to the south of the site has been considered in the design of the overflow spillway. This area generates a peak flow of 3.30 cfs.

IV. CONCLUSION:

The material contained herein demonstrates a storm water management scheme which will provide the development with a practical and effective plan for handling storm water runoff during times of precipitation.

Approval of this plan is respectfully requested.

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0695

LOCATION LOTS 18 & 19, BLOCK 2 MESA VERDE ADDITION

PROJ. NO. 742.12

DATE JUN 26, 1984

DESIGNER PTW

PAGE 1

A = 50 x 135 = 6750 SF = 0.16 AC

SOIL TYPE = MWA (MADUREZ - WINK ASSOCIATION, GENTLY SLOPING. THIS MAPPING UNIT IS ABOUT 55 PERCENT A MADUREZ FINE SANDY LOAM THAT HAS 1 TO 5 PERCENT SLOPES AND 25 PERCENT A WINK FINE SANDY LOAM THAT HAS 1 TO 7 PERCENT SLOPES. THE GENTLY SLOPING MADUREZ SOIL IS MAINLY ON SLIGHTLY CONVEX PIEDMONT FANS. THE GENTLY SLOPING WINK SOIL IS ON THE SIDES of LOW RIDGES. INCLUDED IN THIS UNIT IN MAPPING ARE AREAS of BLUEPOINT, PAJARITO, AND LATENE SOILS, WHICH MAKE UP ABOUT 20 PERCENT of the UNIT. RUNOFF IS SLOW, AND THE HAZARD of SOIL BLOWING IS MODERATE TO SEVERE. THIS MAPPING UNIT IS USED for RANGE, WILDLIFE HABITAT, WATERSHED, AND COMMUNITY DEVELOPMENT.) (SCS - SOIL SURVEY of BERNALILLO COUNTY, NM, MAP 31 & pp 27-28).

HYDROLOGIC SOIL GROUP = B (op. cit. pp. 78-79)

ASSUME 100% IMPERVIOUS ⇒ C = 1

R = 2.4" (DPM VOL 2, p. 22.2 D-1) (6 HR - 100 YR)

ASSUME t_c = 10 MIN

$I = 2.4(6.84)(10)^{-0.51} = 5.07$

$Q_{100} = CIA = 1.00(5.07)(0.16) = 0.81$ CFS

$V_{100} = CRA = 1.00\left(\frac{2A}{12}\right)(6750) = 1350$ CF

$t = \frac{2V}{Q} = \frac{2(1350)}{0.81(60)} = 55.6$ MIN USE 60

OFFSITE FLOWS

$A = \frac{135 \times 210}{43560} = 0.65$ AC

$Q_{100} = 1(5.07)(0.65) = 3.30$ CFS

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LOCATION
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OUTFLOW PIPE:

USE 4" PVC @ S = 0.0208

$n = 0.009$

$A = \frac{\pi d^2}{4} = \pi \frac{(0.33)^2}{4} = 0.086$ SF

$WP = \pi d = 0.33\pi = 1.037'$

$Q = \frac{1.486}{n} A r^{\frac{2}{3}} s^{\frac{1}{2}} = \frac{1.486}{0.009}(0.086)\left(\frac{0.086}{1.037}\right)^{\frac{2}{3}}(0.0208)^{\frac{1}{2}} = 0.39$ cfs

OVERFLOW SPILLWAY

TOTAL Q = ONSITE + OFFSITE = 0.81 + 3.30 = 4.11 CFS

$Q = CLH^{\frac{3}{2}}$, $Q = 4.11$ CFS, $C = 2.6$, $L = 22'$

$H = \left[\frac{Q}{CL}\right]^{\frac{2}{3}} = \left[\frac{4.11}{2.6(22)}\right]^{\frac{2}{3}} = 0.17'$ USE 0.20'

POND VOLUME:

$(62.20 - 61.66)\left(\frac{90}{2}\right)(15) = 364.5$ CF > 336 OK

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0665

LOCATION
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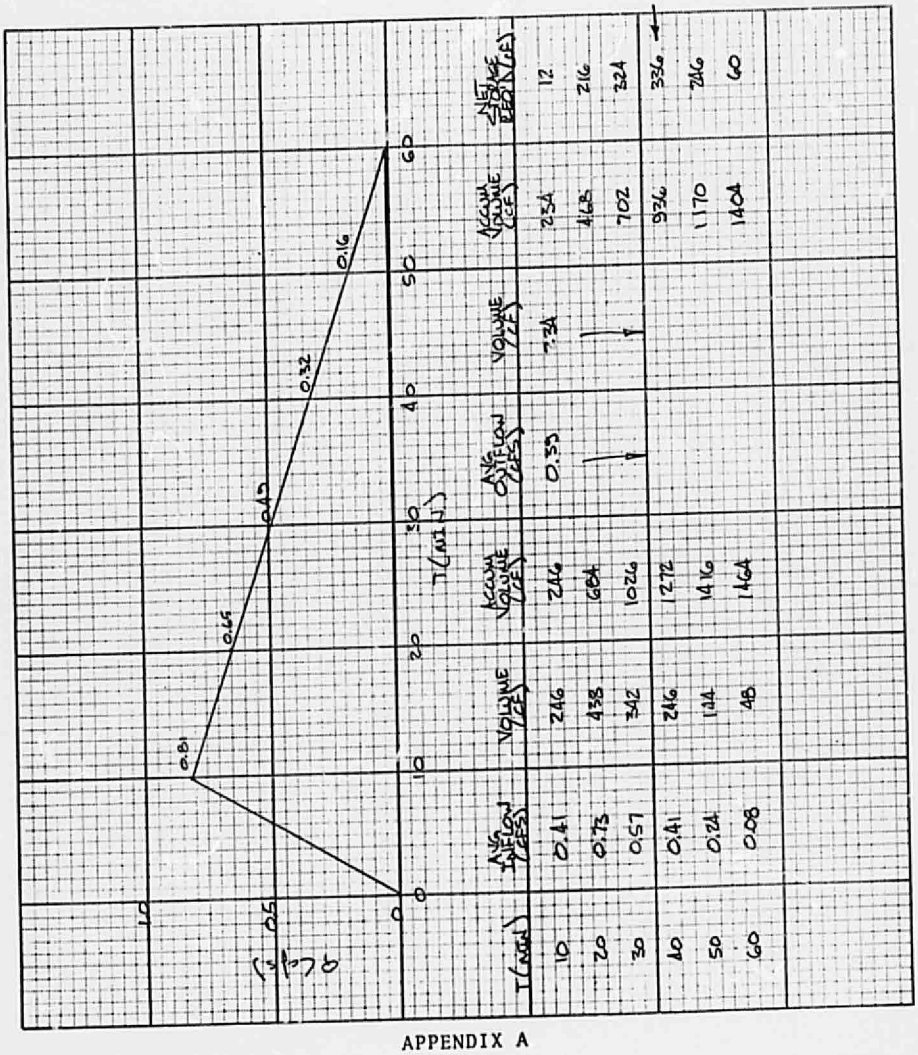
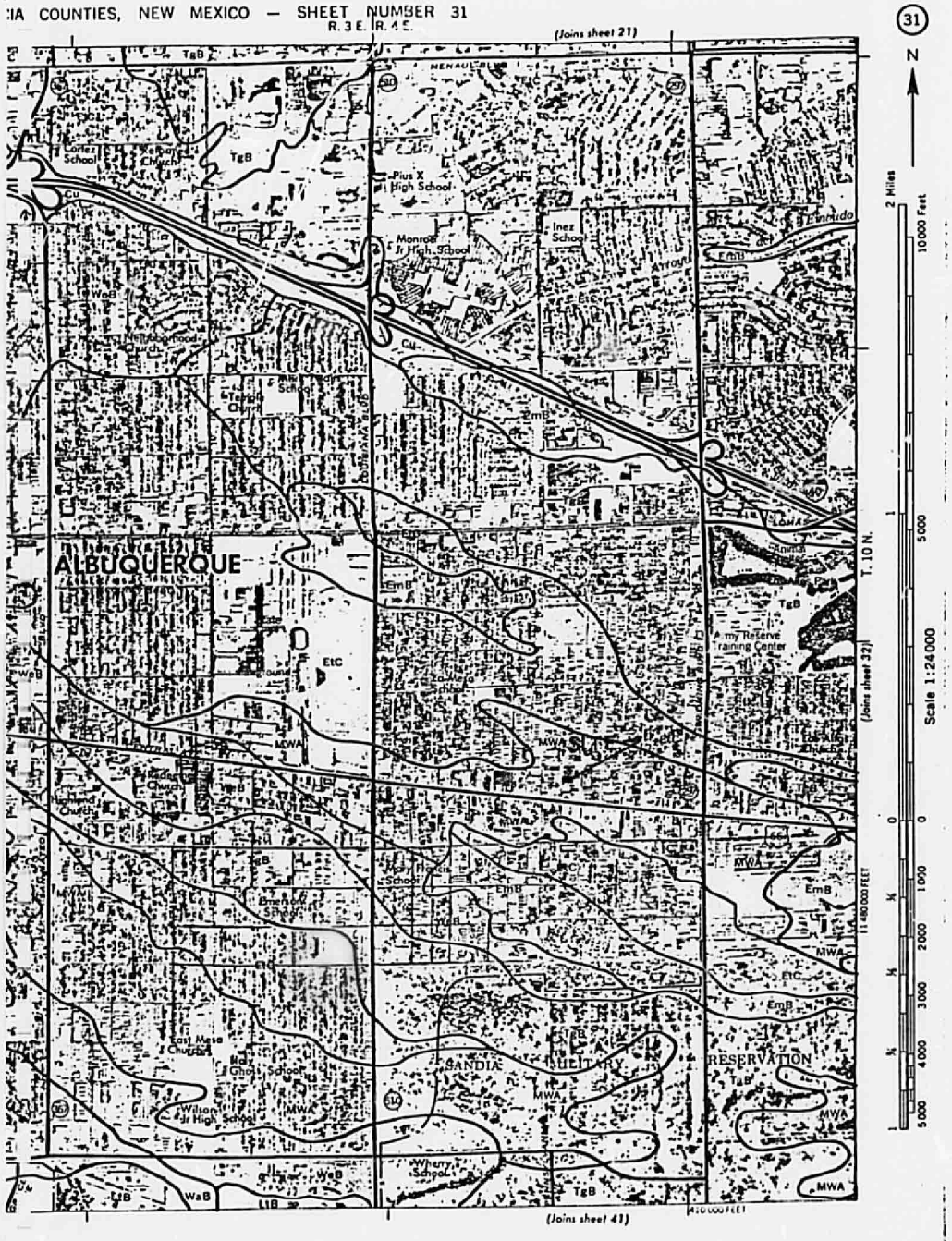


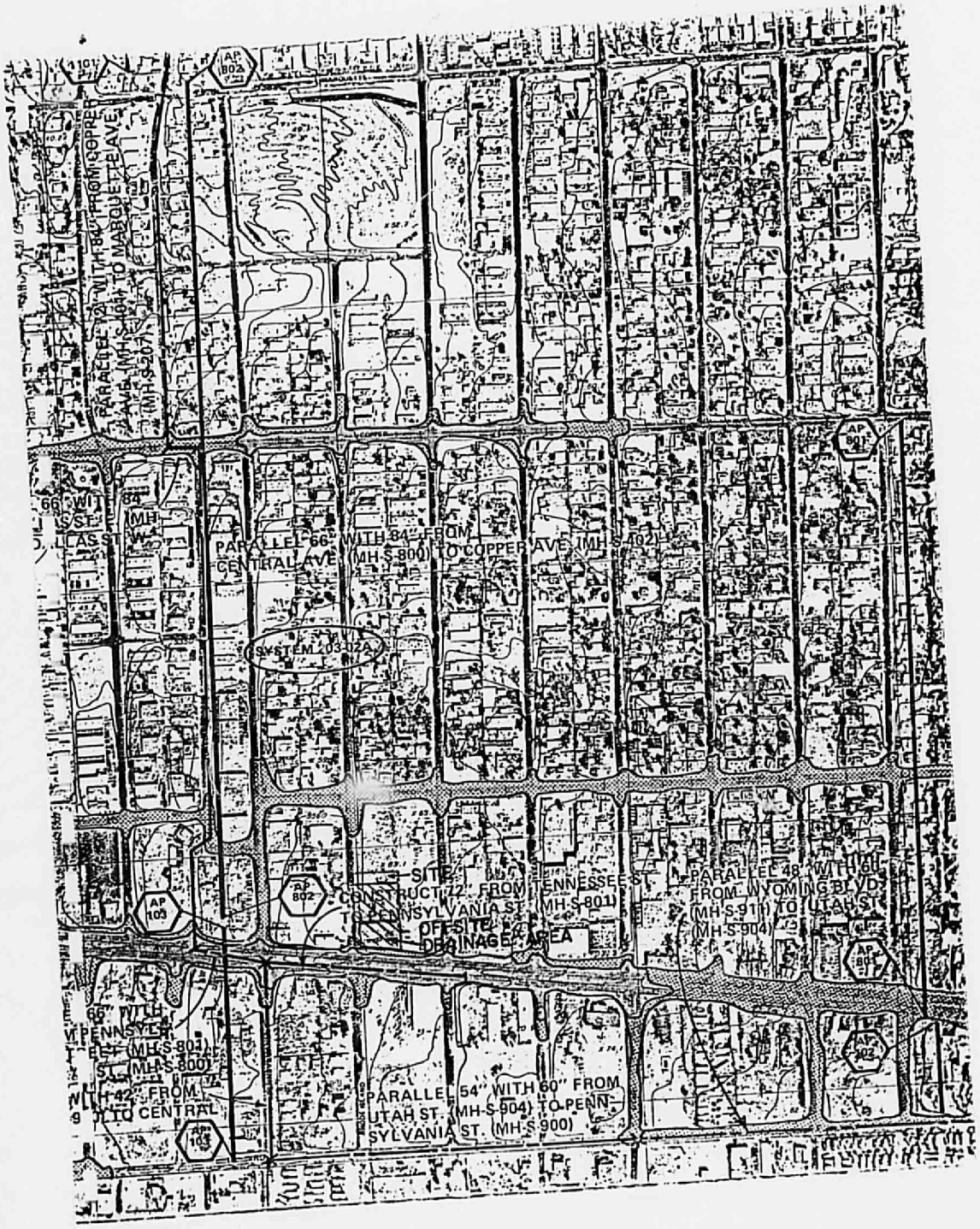
T (MIN)	AVG INFLOW (CFS)	VOLUME (CF)	ACCUM VOLUME (CF)	AVG OUTFLOW (CFS)	VOLUME (CF)	ACCUM VOLUME (CF)	NET VOLUME (CF)
10	0.41	246	246	0.35	234	234	12
20	0.73	438	684			468	216
30	0.57	342	1026			702	324
40	0.41	246	1272			936	336
50	0.24	144	1416			1170	246
60	0.08	48	1464			1464	60

APPENDIX A

SOILS MAP


31
R. 3 E. R. 4 E.
(Joins sheet 21)
(Joins sheet 41)
(Joins sheet 32)
T. 10 N.
N
ALBUQUERQUE
Cortez School
Pius X High School
Monroe Jr. High School
Inez School
Arroyo
Arroyo Del Oso
Tanoan
Army Reserve Training Center
Wilson Jr. High School
Wherry School
SANDIA
MILITARY
RESERVATION
Scale 1:24 000
2 Miles
10 000 Feet
5000
4000
3000
2000
1000
0
1
2

FLOOD MAP


AP 802
PARALLEL 72" WITH 84" FROM COPPER AVE (MH-S-904) TO MABQUE AVE (MH-S-207)
AP 801
66" WIT
84"
MH
ST
LAS ST
PARALLEL 66" WITH 84" FROM CENTRAL AVE (MH-S-800) TO COPPER AVE (MH-S-902)
SYSTEM 103-02A
AP 802
AP 103
SITE CONSTRUCT 72" FROM TENNESSEE ST (MH-S-801) TO PENNSYLVANIA ST
OFFSITE DRAINAGE AREA
PARALLEL 48" WITH 60" FROM WYOMING BLVD (MH-S-911) TO UTAH ST (MH-S-904)
AP 801
66" WITH
PENNSYLV
ST (MH-S-803)
ST (MH-S-800)
WITH 42" FROM
TO CENTRAL
AP 103
PARALLEL 54" WITH 60" FROM UTAH ST (MH-S-904) TO PENNSYLVANIA ST (MH-S-900)
AP 902