PUBLIC WORKS/HYDROLOGY
L15/D8

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L15/D8

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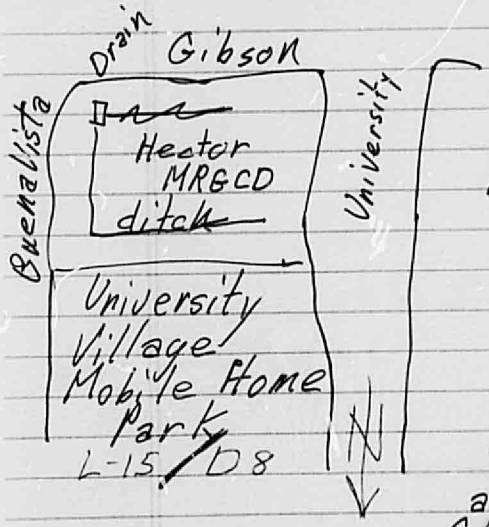
Jerry Ward 247-2631
7-13-93

University & Gibson

Ditch between UVMHP & Gibson



Ditch not maintained
overflow into Mobile
Home Park

Talked to Glenn
Jurgensen 7-15-93
about cleaning ditch.
Glenn said he would
take a look at the
ditch & see what he
can do. I told Mrs Ward
this. the same day.

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FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR KEN SCHULTZ | CHIEF ADMINISTRATIVE OFFICER GENE ROMO | DEPUTY CAO PUBLIC SERVICES FRANK MARTINEZ | DEPUTY CAO PLANNING/DEVELOPMENT BILL MUELLER

April 21, 1988

Jeff Mortensen, P.E.
Tom Mann Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: CONCEPTUAL GRADING & DRAINAGE PLAN FOR UNIVERSITY VILLAGE SUBMITTED APRIL 4, 1988, FOR SITE DEVELOPMENT PLAN APPROVAL (L15/D8)

Dear Mr. Mortensen:

Your submittal, referred to above, is approved for Site Development Plan sign-off by the Hydrology Section.

Before we can approve a Building Permit for any phase, however, we will need a drainage easement for the arroyo which borders the site on the north.

When sizing the storm drain to replace the arroyo, please use the guidelines found in the May, 1986, paper by Richard Heggen, "Closed Conduit Conveyance of Arroyo Flow". If you do not have a copy of this paper, we will gladly provide you with a one.

When making the street capacity calculations, please check that the depth of flow for the 10 year storm runoff does not exceed 0.5' and that the product of the depth and the velocity is less than 6.5, per the DPM.

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

Cordially,

Roger A. Green, PE

For G. Stuart Reeder, P.E.
C.E./Hydrology Section

GSR

xc: owner
architect

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61003

DRAINAGE INFORMATION SHEET

PROJECT TITLE: UNIVERSITY VILLAGE ZONE ATLAS/DRNG. FILE #: L-15/D8

LEGAL DESCRIPTION: TRACTS A, B&C, UNIVERSITY VILLAGE

CITY ADDRESS:

ENGINEERING FIRM: TOM MANN & ASSOC CONTACT: J.G. MORTENSEN

ADDRESS: 811 DALLAS NE PHONE: 265-5611

OWNER: RICHARD CHESS CONTACT: ARCHITECT

ADDRESS: PHONE:

ARCHITECT: LAWRENCE GARCIA CONTACT: LAWRENCE GARCIA, JR

ADDRESS: 10200 Menaul NE #215 87112 PHONE: 292-7229

SURVEYOR: N/A CONTACT:

ADDRESS: PHONE:

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

RECEIVED APR 04 1988 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 88-0171

EPC NO.

PROJ. NO. 45/D8

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

✓ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

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

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 04-04-88

BY: J.G. MORTENSEN

25×10 32×10

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

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

September 15, 1986

Leonard P. Utter
Tom Mann & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: REVISED CONCEPTUAL GRADING & DRAINAGE PLAN SUBMITTAL OF UNIVERSITY VILLAGE - RECEIVED AUGUST 29, 1986 FOR SITE DEVELOPMENT AGREEMENT (L-15/D8)

Dear Leonard:

The above referenced submittal, revised August 29, 1986, is approved for Site Development Plan.

At time of Building Permit request, a detailed Drainage Plan will be required. An interim drainage scheme to discharge Basin 2 into the existing arroyo must be included with this detailed Drainage Plan.

If you have any questions, call me at 766-7644.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

RAG/bsj

PUBLIC WORKS DEPARTMENT
Walter Nickerson, P.E., City Engineer
ENGINEERING GROUP
Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

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61001.

DRAINAGE INFORMATION S

PROJECT TITLE: UNIVERSITY VILLAGE ZONE ATLAS/DRNG. FILE #: L-15

LEGAL DESCRIPTION: TRACTS A, B+C OF UNIVERSITY VILLAGE

CITY ADDRESS: NOT KNOWN

ENGINEERING FIRM: MANN + ASSOC CONTACT: LEONARD P. UTTER

ADDRESS: 811 DALLAS N.E. PHONE: 265-5611

OWNER: CONTACT ARCHITECT CONTACT: LARRY GARCIA

ADDRESS: PHONE: 292-7229

ARCHITECT: LARRY GARCIA CONTACT: LARRY GARCIA

ADDRESS: PHONE: 292-7229

SURVEYOR: CONTACT: LARRY GARCIA

ADDRESS: PHONE: 292-7229

CONTRACTOR: NOT KNOWN CONTACT:

ADDRESS: PHONE:

RECEIVED AUG 29 1986 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. L15-DB

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

✓ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

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

✓ OTHER RESUBMITTAL (SPECIFY)

DATE SUBMITTED: AUG 29 1986

BY: [signature]

25×10 32×10

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811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110 • 505 265-5611

Tom Mann Associates, Inc.
Engineers

RECEIVED
AUG 29 1986
HYDROLOGY SECTION

61001
August 28, 1986

Mr. Roger A. Green
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Conceptual Grading & Drainage Plan (L15/D8)

Dear Mr. Green:

I have reviewed your comments on the above referenced project and have addressed the comments as follows:

1. The street capacity for the 10 year storm runoff allows on free driving lane as shown in the calculations.

2. There is an existing depressed sidewalk channel located on the west side of University Boulevard N.E. which discharges directly into the arroyo which is the outfall for the Basin. The calculations have determined adequate capacity for the 100-year storm runoff.

Should you have any questions or comments concerning any aspect of this project, please do not hesitate to call.

Sincerely,

TOM MANN & ASSOCIATES, INC.

Leonard P. Utter
Project Engineer

LPU:djj

25×10 32×10

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X.C.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

August 14, 1986

Jeff Mortensen, P.E.
Tom Mann & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: CONCEPTUAL GRADING & DRAINAGE PLAN SUBMITTAL OF UNIVERSITY VILLAGE - RECEIVED JULY 28, 1986 FOR SITE DEVELOPMENT PLAN APPROVAL (L-15/D8)

Dear Jeff:

I have reviewed the above referenced submittal, dated July 25, 1986, and have the following items to be addressed before Site Development Plan approval:

1. Provide street capacity calculations for University Boulevard to see if ordinance criteria, requiring one free driving lane, is being met with the developed discharge from University Village.

2. Provide capacity of existing storm drain inlets in University Boulevard to direct street flows into the arroyo.

If you have any questions, call me at 766-7644.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

RAG/bsj

25×10 32×10

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: UNIVERSITY VILLAGE ZONE ATLAS/DRNG. FILE #: L-15/D8

LEGAL DESCRIPTION: TRACTS A, B+C OF UNIVERSITY VILLAGE

CITY ADDRESS: NOT KNOWN

ENGINEERING FIRM: TOM MANN + ASSOC CONTACT: LEONARD P. UTTEL

ADDRESS: 811 DALLAS N.E. PHONE: 265-5611

OWNER: CONTACT ARCHITECT CONTACT: LARRY GARCIA

ADDRESS: PHONE: 292-7229

ARCHITECT: LARRY GARCIA CONTACT: LARRY GARCIA

ADDRESS: PHONE: 292-7229

SURVEYOR: CONTACT: LARRY GARCIA

ADDRESS: PHONE: 292-7229

CONTRACTOR: NOT KNOWN CONTACT:

ADDRESS: PHONE:

RECEIVED JUL 28 1986 HYDROLOGY SECTION

PRE-DESIGN MEETING:

✓ YES

___ NO

✓ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

✓ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

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

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: July 28, 1986

BY: [signature]

25×10 32×10

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61001
07-24-86
JGM

STREET ANALYSIS:

$Q_{100} = 56.5$ cfs ; $Q_{10} = 37.1$ cfs.
$n = 0.017$
$S = 0.014$

RECEIVED
JUL 28 1986
HYDROLOGY SECTION

32' FF STREET
FROM PLATE 22.3D-1 FOR 1/2 FLOW = 28.2 (100)
18.6 (10)

@ $\frac{1}{2}Q_{10}$ = 18.6 cfs, $v \simeq 2.1$ fps
$d \simeq 0.26$ ft

@ $\frac{1}{2}Q_{100}$ = 28.2 cfs, $v \simeq 2.4$ fps
$d \simeq 0.3$ ft.

$v_{10} \times d_{10} = 2.1(0.26) = 0.55' \ll 6.5$

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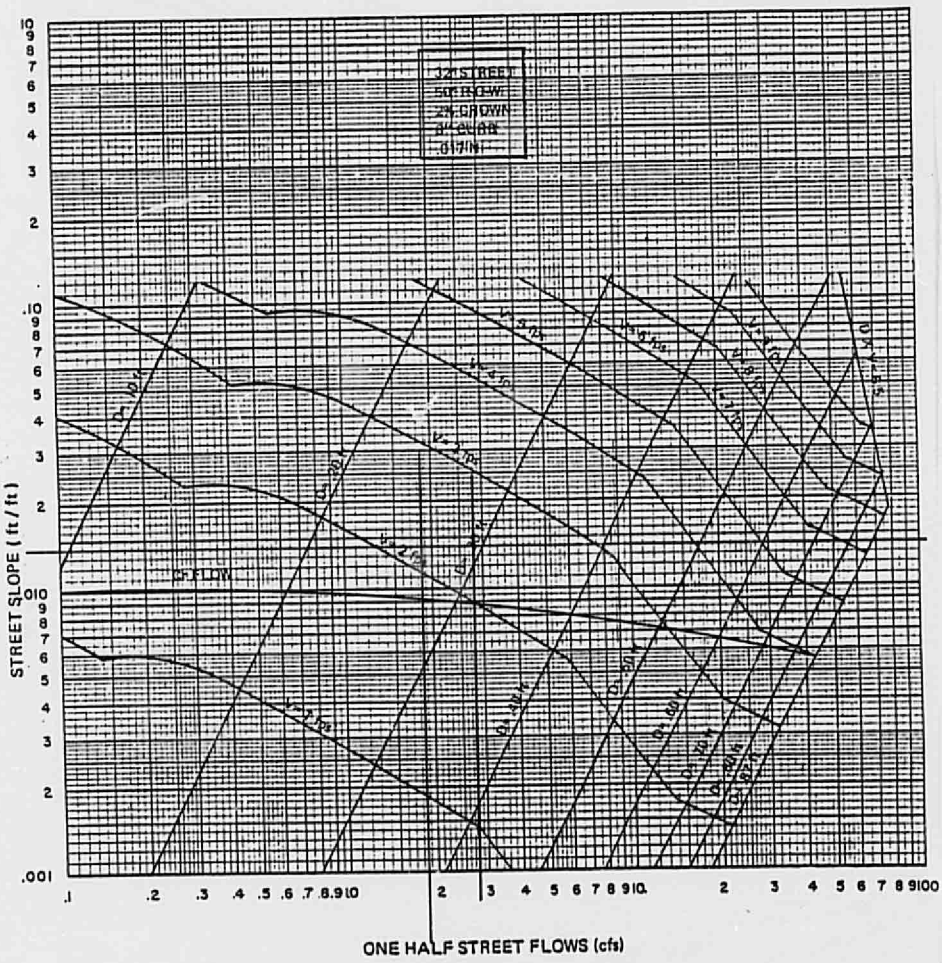
STREET CAPACITY

RECEIVED
JUL 28 1986
HYDROLOGY SECTION



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CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: L15-D8 DATE: 6/18/86

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: _____

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: [illegible]

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
X	SITE DEVELOPMENT PLAN (SUBDIVISION)	____	BUILDING PERMIT
____	OTHER	____	ROUGH GRADING

	WHO	REPRESENTING
ATTENDANCE:	Jeff [illegible]	Tom Mann
	Carl Nelson	City
	Eric T. Ramos	City

FINDINGS:

1. An approved copy of the grading and drainage plan must be in the site development by the City Engineer prior to any development. The plan must be signed by the developer, drainage engineer.

2. Development of the property must be in compliance with the approved drainage management plan at the property boundary. If the developer wishes to deviate from the approved plan, a request must be submitted to the City Engineer.

3. Engineer must be in agreement with the proposed changes, improvements at the property boundary. If the developer wishes to deviate from the approved plan, a request must be submitted to the City Engineer.

4. Setback must be [illegible] to provide protection from the effects of climate change. A 100' setback from the [illegible] must be [illegible] Reduce a setback [illegible] Developer [illegible]

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:	[illegible]	SIGNED:	[illegible]
TITLE:	[illegible]	TITLE:	
DATE:	6/18/86	DATE:	06-18-86

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

25×10 32×10

0000 0000 1585

JOHN B. ROBERT
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
FRED LUJAN, JR., VICE-CHAIRMAN
RICHARD H. CLOUGH, SEC.-TREAS.
WILLIAM V. HEREFORD, DIRECTOR
FRANCES McCOY, DIRECTOR

Albuquerque Metropolitan Arroyo Flood Control Authority
2112 GIRARD N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 268-4519

March 26, 1975

Mr. Hans Coucheron-Aamot, P.E.
Molzen-Corbin & Associates, Inc.
Post Office Box 3632
Albuquerque, New Mexico 87110

Dear Mr. Coucheron-Aamot:

We have reviewed the drainage report for the University Village Mobile Home Park, Phase III, which you transmitted by your letter of March 25, 1975. The report meets the requirements of Drainage Resolution #1972-2 provided that the most northerly lots of the most easterly terrace, as indicated by an asterisk on the attached drainage drawing, not be occupied or developed until such time as the channel along the northerly property line has been stabilized so that the danger of erosion, which would cause cave-offs and endanger mobile homes placed on those two sites, has been eliminated.

It will also be necessary for your client to construct the catchment basins and provide the necessary rundowns indicated in your plans prior to occupancy of any portion of this phase of the development.

Sincerely yours,

John B. Robert

John B. Robert
Executive Engineer

cj
Enclosure
cc: City of Albuquerque Planning Dept.
" " " Engineering Dept.
" " " Building & Inspection.

RECEIVED
MAR 28 1975
BUILDING
DEPARTMENT

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DRAINAGE REPORT

FOR

UNIVERSITY VILLAGE, PHASE III

MOBILE HOME PARK

March 24, 1975

SCOPE: This report presents a proposed drainage plan for the University Village, Phase III, Mobile Home Park.

EXISTING CONDITIONS: The area proposed for development is presently raw land with sparse grass. The land has been terraced such that the present run-off goes to the arroyo along the north side of the property, except that the run-off from the small area (approximately 0.9 acres) projecting from the southwest corner goes to Eastern Avenue. The run-off from this area in a developed condition was included in the Drainage Report for University Village, Phase II (April 1973).

There are no significant areas contributing run-off from outside the property. Run-off from the east is intercepted by Buena Vista Avenue, and the existing mobile home park area to the south drains to Eastern Avenue.

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PROPOSED PLAN:

It is proposed to divide the property into four drainage areas as shown on the attached drainage plan. Run-off from Area I, II, and III will be collected in drop inlets and conducted to the existing arroyo in corrugated metal pipes. The run-off from Area IV will drain to Eastern Avenue as shown in the Drainage Report for University Village Phase II.

COMPUTATIONS:

The "rational formula", for run-off determination was used as follows:

Q = C I A, in which:

Q = run-off in cubic feet per second

C = run-off coefficient

I = rainfall intensity in inches per hour

A = watershed area in acres

The coefficient, C, was determined as follows:

Roofs and paved areas	60% @ 0.90	=	0.54
Lawn area	40% @ 0.15	=	0.06
C		=	0.60

The rainfall intensity was determined by using the 100 year storm intensity-duration curve from Chart No. 1 of "Master Plan of Drainage, City of Albuquerque, New Mexico, and Environs, 1963", by Gordon Herkenhoff and Associates.

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The times of concentrations, etc. for the purpose of determining rainfall intensities were obtained from D. L. Yarnell's nomograph for overland flow time as published in Seelye's "Data Book for Civil Engineers".

The results of the computations were tabulated as follows:

Area	C	tc. (Min.)	I (in/hr.)	A (acres)	Q (cfs.)
I	0.6	7.25	5.4	3.3	10.7
II	0.6	8.1	5.4	3.3	10.7
III	0.6	8.75	5.4	3.7	12.0
IV	0.6	4.0	5.4	0.9	2.9

A City of Albuquerque, Type D drop inlet will require a head of H ft. to accept 12.0 cfs.

$$Q = 2/3\ C\ A \sqrt{2gH}$$

$$12 = 2/3 \times 0.6 \times 4.0 \sqrt{64.4\ H}$$

$$H = 0.87'$$

CONCLUSIONS AND RECOMMENDATIONS:

The proposed plan will result in some additional run-off due to the large percentage of impervious area in the development. However, more than 90% of the run-off will be discharged into the

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existing arroyo along the north side, and the increased flow, approximately 20 cfs., is well within the capacity of the arroyo.

The unpaved areas of the development should be graded to minimal or no slope where possible to provide as much water retention and infiltration as possible.

The arroyo along the north side of the property was investigated as shown in Appendix A to this report.

The expected flow from a 100 year storm is well within the capacity of the arroyo. However, the large quantities at high velocities that would be discharged from the 54" diameter storm sewer at the northeast corner of the property would probably cause considerable bank caving and a dangerous situation at the outlet and immediately downstream.

The Owner is currently negotiating with the City of Albuquerque for the construction of facilities to solve this potential problem. It is strongly recommended that the two northernmost mobile home sites on the top level of the park be left vacant until such construction has been completed.

Albert D. Corbin, P.E.
MOLZEN-CORBIN & ASSOCIATES

25×10 32×10

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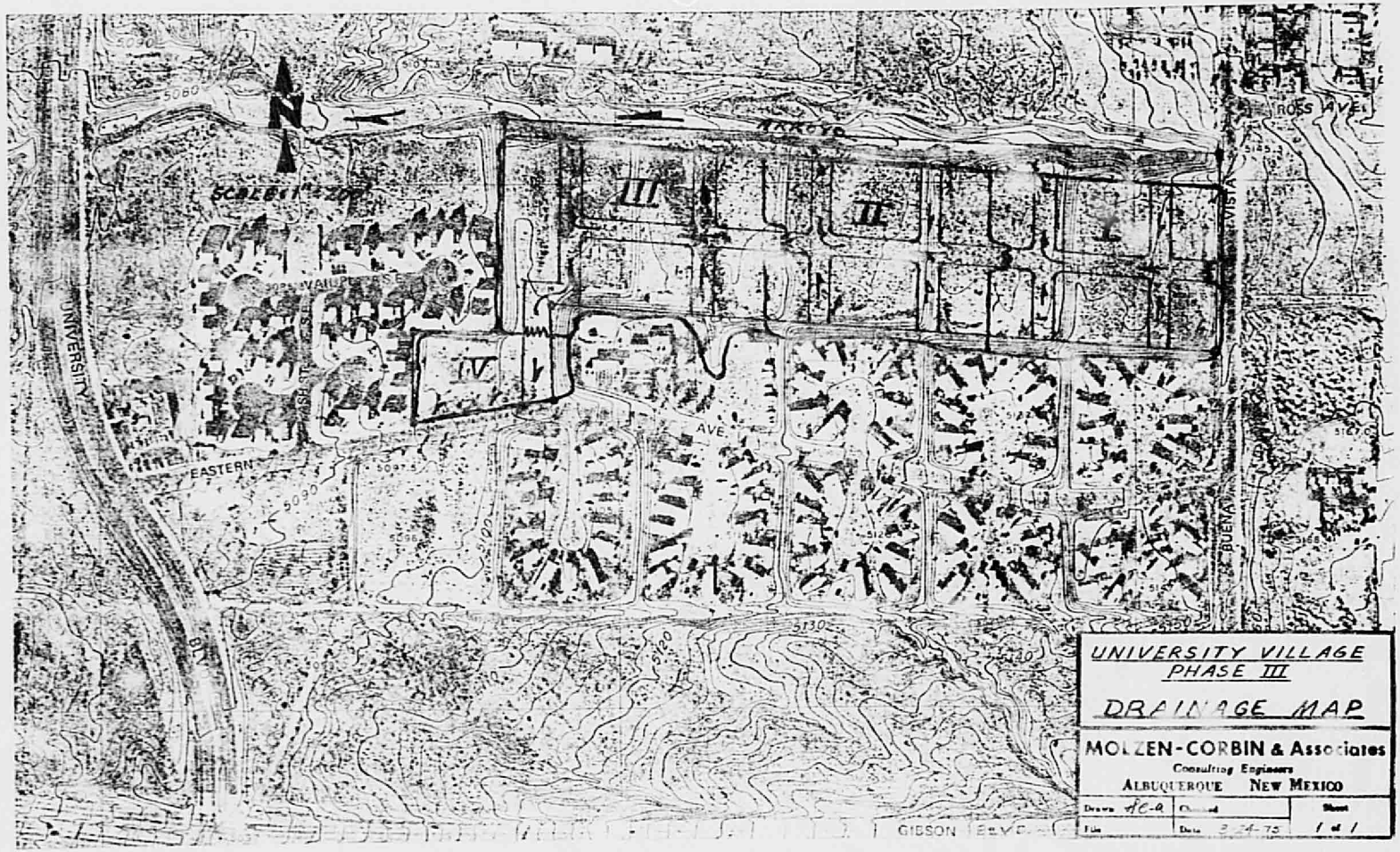
OF THE ORIGINAL DOCUMENT



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APPENDIX A

DRAINAGE REPORT

FOR

UNIVERSITY VILLAGE, PHASE III

ARROYO ALONG NORTH SIDE OF THE PROPERTY:

The watershed and storm sewer system contributing to flows in the arroyo along the north side of University Village is shown on the attached part copies of "Albuquerque East" USGS quadrangle map and City of Albuquerque storm sewer map.

The overland flow from Area II is cut off by Gibson Boulevard, however, as much as 130 c.f.s. could be picked up by the storm sewer from this area.

The drainage from Area I was determined by the "rational formula", Q = CIA, in which C was taken as 0.5 (future fully developed conditions); I_{100} = 4.2 in/hr. was obtained from Chart No. 1 of "Master Plan of Drainage, City of Albuquerque, New Mexico and Environs, 1963" by Gordon Herkenhoff and Associates, using a T_c of 20 minutes; and the area, 270 acres, was planimetered from the quadrangle map.

Flow from Area I = 0.5 x 4.2 x 270 - approximate 570 c.f.s.

Flow from Area II = - approximate 130 c.f.s.

Total flow to arroyo @ Buena Vista Dr.-approximate 700 c.f.s.

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The least capacity of the arroyo occurs west of University Boulevard where it runs through natural sandy ground with a channel bottom of 25'± and 5' to 6' vertical banks. The capacity here was determined by Manning's formula as follows:

$$Q = A \frac{1}{n} R^{2/3} S^{1/2} = (25 \times 5) \frac{1}{0.025} \left(\frac{25 \times 5}{(25 + 10)}\right)^{2/3} \sqrt{0.022}$$

$= 1,733$ c.f.s.

A flow of 1,000 c.f.s. would produce a depth of flow of 3.5 ft., leaving a freeboard of approximately 2 ft.

From University Boulevard approximately 1600 ft. eastward, the arroyo bottom varies from 25 to 40 feet in width and the banks vary from nearly vertical to approximately 4:1 sideslope with a least height of 6 to 7 ft. The last 5-600 ft. from here to the existing concrete rundown at Buena Vista Drive has recently been filled in from both sides with earth and rubble such that at present only a V-ditch with 1:1 sideslopes and banks varying from 15 to 25 ft. high remains.

The 54" diameter outlet from the storm sewer system could discharge 350-400 c.f.s. of the total 700 c.f.s. runoff from the 100 year storm at velocities up to 25 fps.

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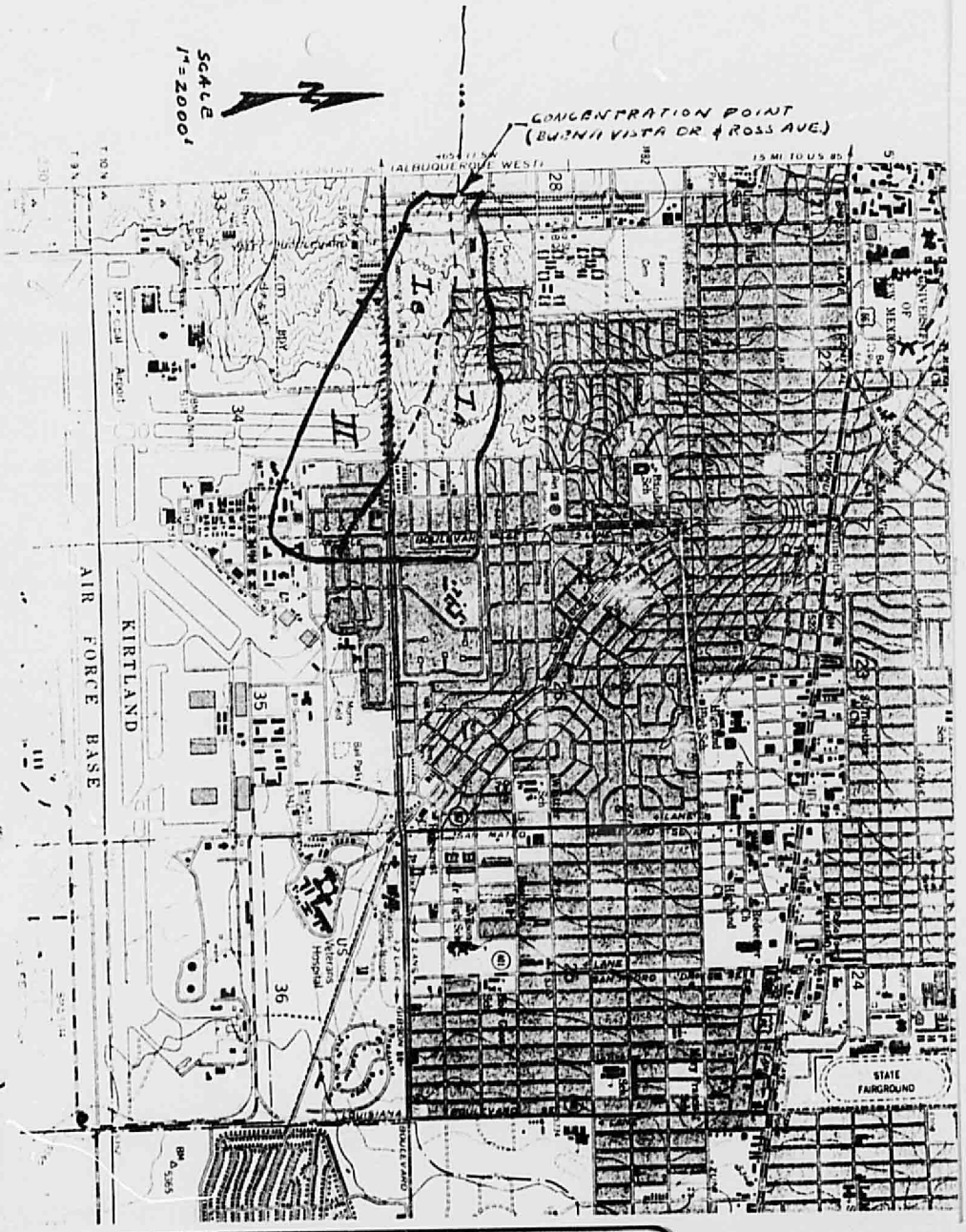
Scale
1"=2000'
CONCENTRATION POINT
(BUENA VISTA DR & ROSS AVE)
ALBUQUERQUE WEST
15 MI TO US 85
UNIVERSITY OF NEW MEXICO
KIRTLAND
AIR FORCE BASE
STATE FAIRGROUND
Airport
Hospital
Park
Ball Park
Mesa
Arroyo
Ridge
Tank
Well
Pipeline
Trail
Cemetery
Sewage Disposal
Pumping Station
Power Line
Substation
Tower
Water Tank
Gas Tank
Oil Tank
Pump
Windmill
Spring
Mine
Quarry
Gravel Pit
Sand Pit
Dump
Cut
Fill
Levee
Dam
Bridge
Culvert
Ford
Footbridge
Wharf
Dock
Boat Ramp
Lighthouse
Beacon
Buoy
Light
Fence
Gate
Cattle Guard
Corral
Stockade
Kennel
Pen
Stable
Barn
Shed
Hut
Cabin
Tent
Camp
Picnic Area
Campground
Trailer Park
Golf Course
Stadium
Arena
Racetrack
Rodeo Grounds
Zoo
Aquarium
Museum
Monument
Statue
Fountain
Pool
Tennis Court
Basketball Court
Playground
Swing
Slide
Merry-Go-Round
Ferris Wheel
Roller Coaster
Amusement Park
Theme Park
Water Park

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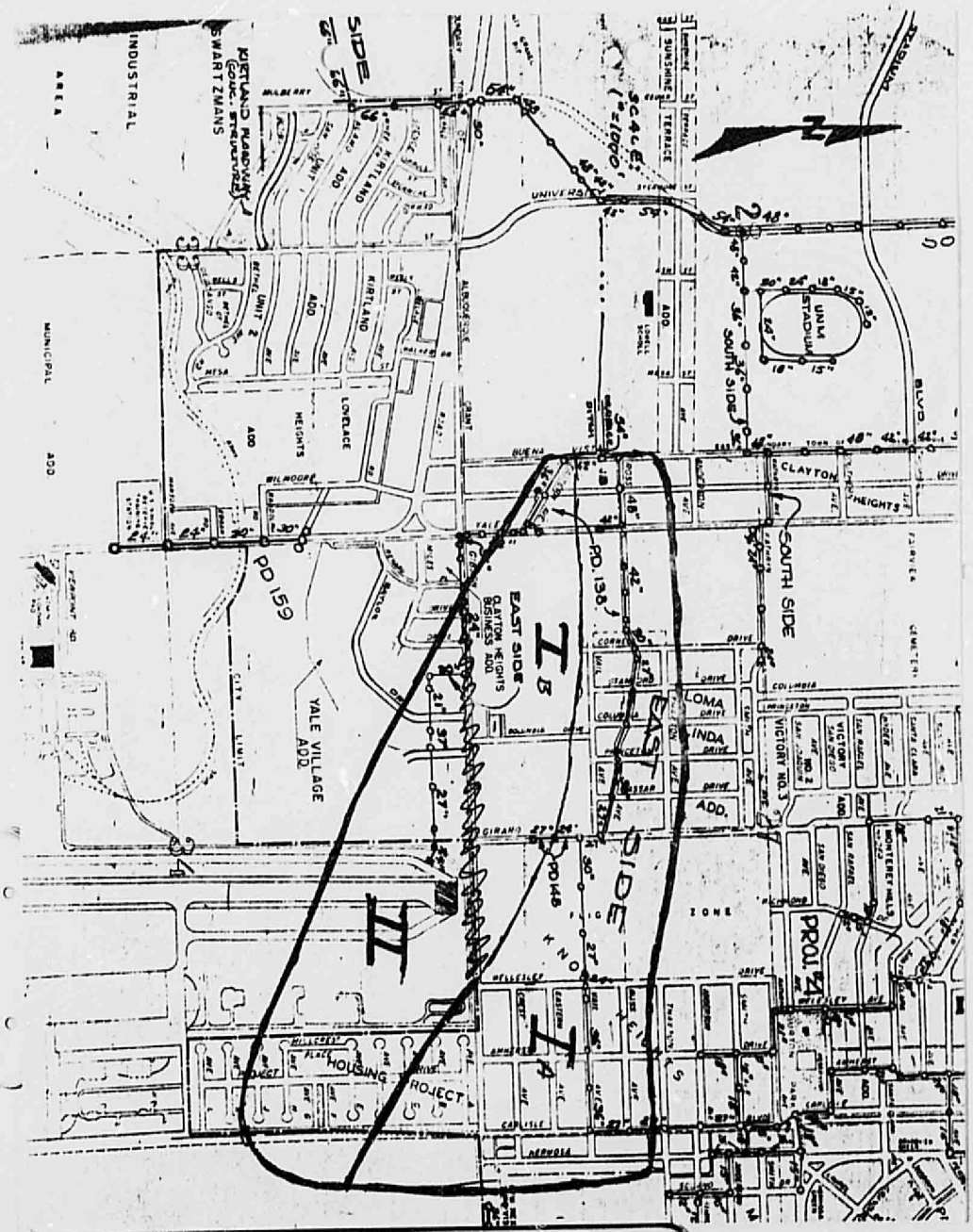
OF THE ORIGINAL DOCUMENT



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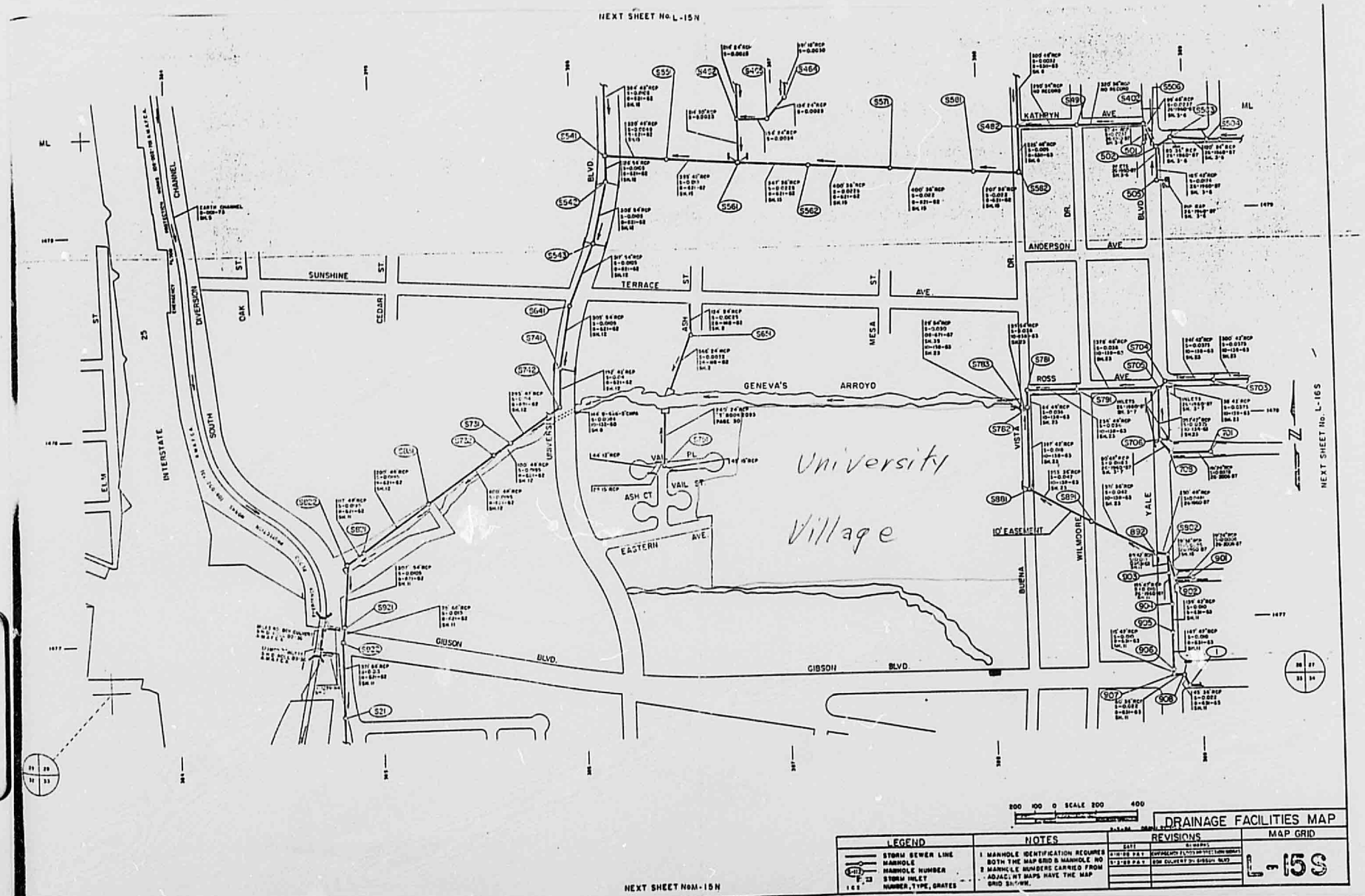

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PLANS/PLATS ON FILE

FILE DESC: 45/D8

PLANS/PLATS 3

25×10 32×10

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