HYDROLOGY K17/D44 TWO PLANS

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

RECEIVED
OCT 16 1986
HYDROLOGY SECTION

LEGAL DESCRIPTION

LOT 9A, BLOCK 43,
VALLEY VIEW ADDITION
FILED FEB 12, 1986 C29-119
BERNALILLO COUNTY, N.M

MARVIN R. KORTUM
NEW MEXICO
6519
REGISTERED PROFESSIONAL ENGINEER

BENCH MARK: 6-K18
A DISK SET IN CONCRETE ON MEDIAN OF CENTAL AVE.
233.5 FT. EAST FROM CENTER LINE OF SAN MATEO BLVD.
ELEV. 5259.774

MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

NOTICE TO CONTRACTOR

1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with City of Albuquerque Interim Std. Specifications, Public Works Construction, 1985
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to Residential street use.

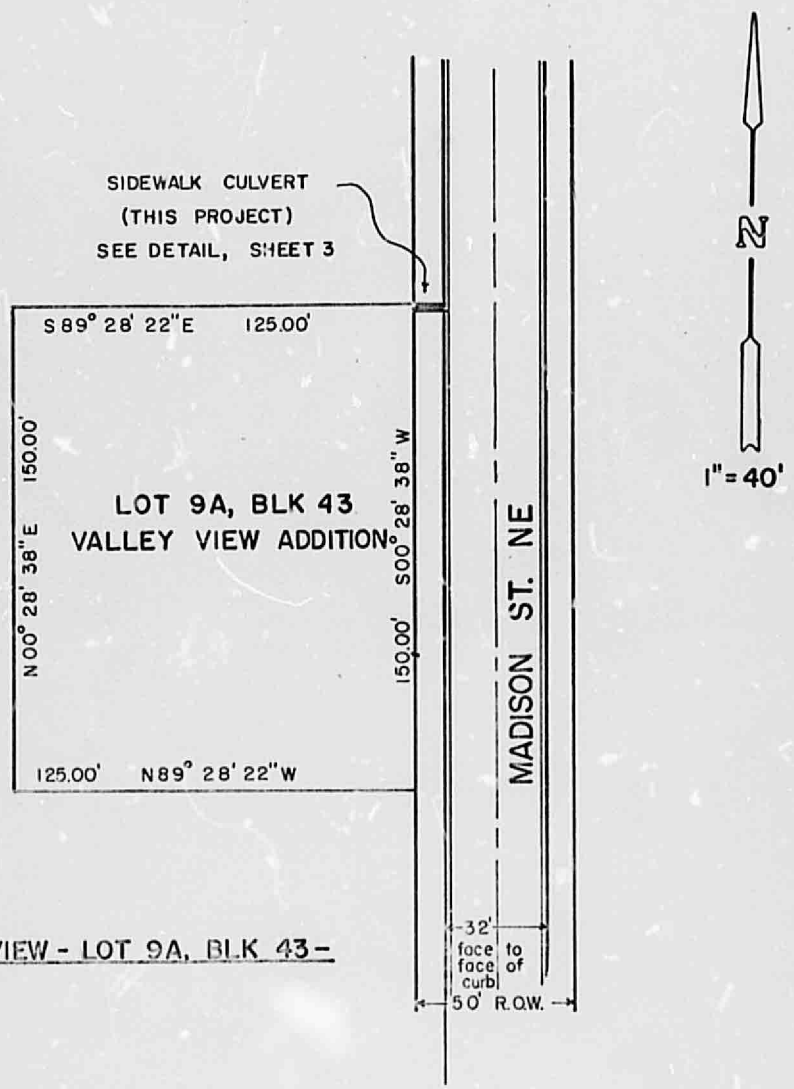
F-21

MENDOZA CONSTRUCTION

APPROVALS	NAME	DATE	TITLE 131 MADISON ST. NE HELIN OFFICE BUILDING SIDEWALK CULVERT
A.C.E./DESIGN		8/27/86	
INSPECTOR			DWG. 29538
APPROVED			MAP NO. K 17

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN VIEW - LOT 9A, BLK 43 -

MENDOZA CONSTRUCTION

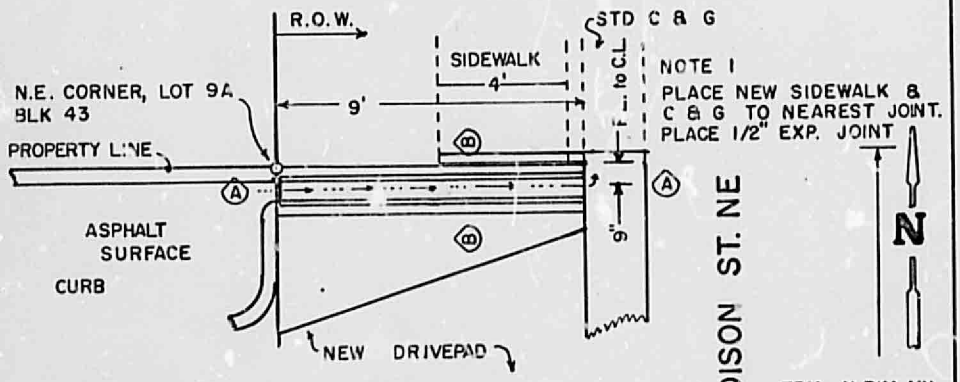
F-21

APPROVALS	NAME	DATE	TITLE: 131 MADISON ST. NE HELIN OFFICE BUILDING SIDEWALK CULVERT
A.C.E./DESIGN		6/17/06	
INSPECTOR			PERMIT NO. 29538
A.C.E./FIELD			SHEET 2 OF 3

MAP NO. K 17

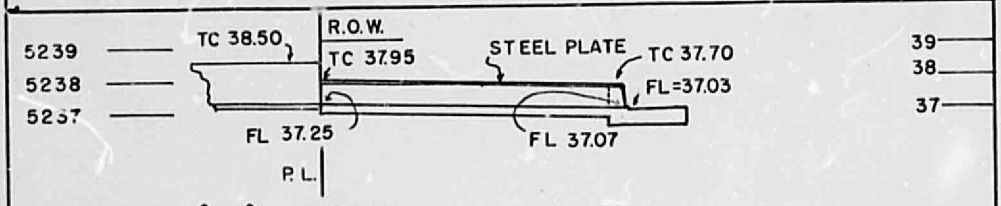
CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

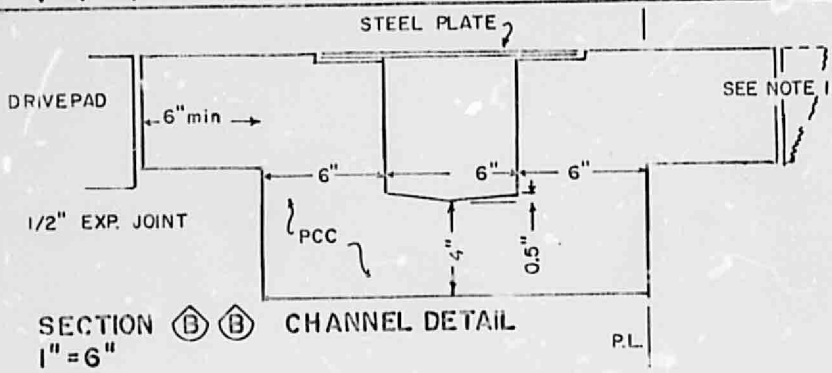


PLAN VIEW
LOCATION OF CULVERT
1" = 4'

BUILD SIDEWALK CULVERT ACCORDING TO CITY OF ALBUQUERUE STD. DETAIL K-16



SECTION (A)(A) PROFILE
H: 1" = 4'
V: 1" = 4'



SECTION (B)(B) CHANNEL DETAIL
1" = 6"

SEE STD. DETAIL K-16 FOR DOWEL, FASTENER AND PLATE DETAILS.

MARVIN R. KORTEZ
NEW MEXICO
6519
REGISTERED PROFESSIONAL ENGINEER

F-21

MENDOZA CONSTRUCTION

APPROVALS	NAME	DATE
A.C.E./DESIGN		02/27/86
INSPECTOR		
A.C.E./FIELD		

TITLE: 131 MADISON ST. NE
HELIN OFFICE BUILDING
SIDEWALK CULVERT

PERMIT NO. 29538
SHEET 3 OF 3

MAP NO. K-17

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

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

March 19, 1986

Marvin R. Kortum, P.E.
1605 Speakman Drive SE
Albuquerque, New Mexico 87123

RE: REVISED DRAINAGE PLAN FOR HELIN OFFICE BUILDING (K17-D44)
ENGINEER'S STAMP DATED 3/17/86

Dear Mr. Kortum:

Based on the information provided on your March 17, 1986 resubmittal, the above referenced drainage plan is approved for Building Permit.

Please attach a copy of this approved drainage plan along with the appropriately approved copy of the "Drainage Facilities Within City R/W" document to the City construction sets before Hydrology will sign-off.

Please be advised that no ponding will be allowed on the east side of the building within the landscaped area, provisions will need to be made for release of any ponded water.

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

Sincerely,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Flood Plain Admin.

CAM:BJM:mrk

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HELIN OFFICE BLDG ZONE ATLAS/DRNG. FILE #: K-17 D44

LEGAL DESCRIPTION: Lot 9A, Block 43 Valley View Addition

CITY ADDRESS: 131 Madison Street, NE

ENGINEERING FIRM: Marvin R Kortum CONTACT: Marvin R Kortum

ADDRESS: 1605 Speakman Dr. SE Albuquerque NM 87123 PHONE: (505) 299-0774

OWNER: Barry Helin CONTACT:

ADDRESS: 2655-G Pan American Freeway NE Albuquerque, NM 87107 PHONE: 344-2338

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: S W Survey CONTACT: Dan Graney

ADDRESS: 333 Lomas Blvd NE Albuquerque, NM 87102 PHONE: 247-4444

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

RECEIVED MAR 17 1986 HYDROLOGY SECTION

PRE-DESIGN MEETING:

x YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 86-81

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

x DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

x GRADING PLAN

x EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

x 1st Resubmittal

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

x BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: MARCH 17, 1986

BY: Marvin R Kortum MRK

March 17, 1986

Marvin R. Kortum
1605 Speakman Drive S. E.
Albuquerque, New Mexico 87123
Phone: 299-0774
N.M.P.E. 6519

RECEIVED
MAR 17 1986
HYDROLOGY SECTION

City of Albuquerque
Design Hydrology Section
123 Central Avenue N. W.
Albuquerque, New Mexico 87102

RE: (A) Drainage Plan for Helin Office Building (K-17/D 44)

(B) Your letter same subject, February 24, 1986

Dear Carlos,

The following comments are in response to your letter of February 24, 1986.

1. A new information sheet is attached to this resubmittal.

2. A front cover with engineers stamp and revision date is attached.

3. The temporary benchmark is more clearly identified.

4. The landscaped area does not now show ponding.

5. The "Drainage Facilities Within City Right-ofWay" document has been submitted to the City Design Section (copy attached). Upon approval, copies will be forwarded to you.

6. The notation concerning certification by an engineer for construction adjacent to the existing building is shown on the drawings.

Sincerely,

Marvin R. Kortum

PROJECT TITLE:	Grading and Drainage Plan HELIN OFFICE BUILDING
ZONE ATLAS:	K-17
ADDRESS:	131 Madison Street N.E.
LEGAL DESCRIPTION:	Lots 9 through 14, Block 43, VALLEY VIEW ADDITION filed September 2, 1911 Bernalillo County, N.M.
ENGINEERING FIRM:	Marvin R. Kortum 1605 Speakman Dr. S.E. Albuquerque, N.M. 87123 (505) 299-0774
OWNER:	Mr. Barry Helin 2655-G Pan American Freeway N.E. Albuquerque, N.M. 87107 (505) 344-2338
ARCHITECT:	
SURVEYOR:	Southwest Surveying Co., Inc. 333 Lomas Blvd. N.E. Albuquerque, N.M. 87102
CONTRACTOR:	
DATE SUBMITTED:	FEB 20, 1986 RE-SUBMITTAL MARCH 17 1986

RECEIVED
MAR 17 1986
HYDROLOGY SECTION

MARVIN R. KORTUM
NEW MEXICO
6818
REGISTERED PROFESSIONAL ENGINEER
FEB 20 1986
March 17, 1986

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

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

February 24, 1986

Marvin R. Kortum, P.E.
1605 Speakman Drive, SE
Albuquerque, New Mexico 87123

RE: DRAINAGE PLAN FOR HELIN OFFICE BUILDING
RECEIVED FEBRUARY 20, 1986 (K-17/D44)

Dear Mr. Kortum:

Based on the information provided on your February 20, 1986 submittal, listed you will find certain concerns that will need to be addressed before final approval is granted:

1. New information sheet with resubmittal designation.

2. Engineer's stamp with signature and revision date.

3. Benchmark - location, description and elevation of the:

   A. Temporary Benchmark on site (either painted or notched).

4. The landscaped area on the East side of proposed building cannot pond water; your grades show that there will be at least .3' ponded.

5. "Drainage Facilities Within City Right-of-Way" document must be submitted to City Design Section for review and approval.

6. Notation on plan that the PCC strip along the header curb will be certified by the Engineer.

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

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

DRAINAGE INFORMATION SHEET

PROJECT TITLE: HELIN OFFICE BLDG ZONE ATLAS/DRNG. FILE #: K-17 / D44

LEGAL DESCRIPTION: Lot 9A, Block 43 Valley View Addition

CITY ADDRESS: 131 Madison Street, NE

ENGINEERING FIRM: Marvin R Kortum CONTACT: Marvin R Kortum

ADDRESS: 1605 Speakman Dr. SE Albuquerque NM 87123 PHONE: (505) 299-0774

OWNER: Barry Helin CONTACT:

ADDRESS: 2655-G Pan American Freeway NE Albuquerque, NM 87107 PHONE: 344-2338

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: S W Survey CONTACT: Dan Graney

ADDRESS: 333 Lomas Blvd NE Albuquerque, NM 87102 PHONE: 247-4444

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

__ NO

__ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED FEB 20 1986 HYDROLOGY SECTION

DRB NO. 86-81 2/11/86 delegated

EPC NO. —

PROJ. NO.

TYPE OF SUBMITTAL:

__ DRAINAGE REPORT

X DRAINAGE PLAN

__ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

X EROSION CONTROL PLAN

__ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

__ SKETCH PLAT APPROVAL

__ PRELIMINARY PLAT APPROVAL

__ SITE DEVELOPMENT PLAN APPROVAL

__ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

__ FOUNDATION PERMIT APPROVAL

__ CERTIFICATE OF OCCUPANCY APPROVAL

__ ROUGH GRADING PERMIT APPROVAL

__ GRADING/PAVING PERMIT APPROVAL

__ OTHER _____ (SPECIFY)

DATE SUBMITTED: Feb 20 1986

BY: M R Kortum

PROJECT TITLE:	Grading and Drainage Plan HELIN OFFICE BUILDING
ZONE ATLAS:	K-17
ADDRESS:	Madison Street N.E.
LEGAL DESCRIPTION:	Lots 9 through 14, Block 43, VALLEY VIEW ADDITION filed September 2, 1911 Bernalillo County, N.M.
ENGINEERING FIRM:	Marvin R. Kortum 1605 Speakman Dr. S.E. Albuquerque, N.M. 87123 (505) 299-0774
OWNER:	Mr. Barry Helin 2655-G Pan American Freeway N.E. Albuquerque, N.M. 87107 (505) 344-2338
ARCHITECT:	
SURVEYOR:	Southwest Surveying Co., Inc. 333 Lomas Blvd. N.E. Albuquerque, N.M. 87102
CONTRACTOR:	
DATE SUBMITTED:	

RECEIVED
FEB 20 1986
HYDROLOGY SECTION

MARVIN R. KORTUM
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

Grading and Drainage Plan
HELIN OFFICE BUILDING
Madison St. N.E.
Lots 14 - 19, Block 43
VALLEY VIEW ADDITION

1. On-Site Conditions

A. Characteristics:

Lots 9 through 14, Block 43, consists of a rectangular tract 125 feet east to west, and 150 feet north to south, containing .4304 acres. The east boundary is the west right-of-way of Madison Street N.E., and is located near the midpoint of the block between Central Avenue and Copper Avenue N.E. The west boundary is at the midpoint between Madison Street and Jefferson Street to the west. The west, north, and south boundaries are common with adjacent private properties. Buildings on adjacent properties are as shown on the plan. There is presently one small building on the tract, the remainder being earth hardstand and driveway, with a 2,800-square-foot grass and rock landscaped area (15 percent of area). The area had been used as a cabin camp or tourist court in the past, the majority of buildings now being removed. Care should be taken that any existing utilities are removed or inactivated prior to placing new pavements and structures.

B. Soils:

The soils, as identified on the Bernalillo County Soils Survey by the S.C.S. U.S.D.A., are Tijeras Gravelly Fine Sandy Loam (TgB) over most of the tract, with a small section of Embudo-Tijeras Complex (EtC), identified in the southeast corner. The Tijeras series consists of deep, well-drained soils that formed in decomposed granitic alluvium on old alluvial fans. The TgB is similar, with less gravel and more lime between 10 and 60 inches. Runoff and water erosion are moderate hazards. The engineering characteristics of the TgB soils are well-suited for the proposed use for single story office building and paved hardstand. The soils have low to moderate shrink and swell potential. For ponding, the soils have excellent characteristics in that they are identified as having high seepage. Sub-surface exploration is necessary to insure that seepage does not infiltrate under existing or new structures due to impermeable clay layers. The EtC soils are similar in engineering characteristics. Both soils are identified as hydrologic group B, those soils which absorb more water than is typical. The surface of the tract has been considerably altered, with the addition of clayey and gravel surfacing for driveway and hardstand. The only significant vegetation is in the landscaped area, there being only minor weed growth within the remaining earth-surfaced area.

C. Undeveloped Runoff:

Runoff from the tract in its present condition is computed below. Presently the runoff from the site flows along vehicle tracks in the northwest corner, flowing across undeveloped private property to Jefferson

Street, then down Jefferson Street to Copper Avenue, then west along Copper Avenue.

D. Direct Runoff Volume, Undeveloped Land

The six-hour, 100-year frequency rainfall for the tract is 2.3 inches, per 1973 N.O.A.A. Atlas 2, Volume IV (Plate 22.2, D-1). The present surface CN is as shown below (Plate 22.2, C-2):

	Area	Percent	CN	ΔCN
Dirt & Gravel Hardstand	15,550	83	83.5	69.3
Building	400	2	96	1.9
Grass	2,800 ft^2	15	61	9.1
TOTAL AREA	18,750			
COMPOSITE CN				80.3

For a CN of 80.3, direct runoff is 0.8 inches (Plate 22.2, C-4), for a total volume of (18,750 ft^2 x 0.8 in. / 12 in./ft.) = 1,250 ft^3.

E. Peak Runoff, Undeveloped Land:

Peak runoff can be estimated by use of the rational formula, Q = CIA, where C is a factor which incorporates surface characteristics of the drainage basin, I is the intensity of rainfall for a storm which is determined to give the maximum rate of runoff for the drainage basin, the basin characteristics being expressed as a time of concentration, TC. A is the area in acres. From Kirpich,

$TC = .0078 \frac{L\ 0.77}{S\ 0.385}$. For the tract L 180 feet, and S = 1/180, for which

TC = 3.1 minutes. Using the rainfall intensity factor of 2.15 for ten (10) minutes (Plate 22.2, D-2) and a C = .81 (85% impervious, soil group B), the peak runoff is

Q = (.81)(2.15)(2.3)(.43) = 1.7 ft^3/ sec. This peak flow presently crosses over adjacent private land which is undeveloped or hardstand, and then flows to the gutters of Jefferson Street, then to Copper Avenue.

F. Developed Site runoff:

In the developed state, it is proposed that the tract be developed as an office site, with one single story office building fifty feet (50') east to west, by 75 feet north to south, with asphalt surface drive and hardstand, and a minor landscaping between the building and street. The sides and rear boundary will be closed with a concrete masonry wall. The footing and lower portion of this wall must be designed as a retaining wall to contain the required fill for the rear and north property lines.

Sufficient fill will be added to the site to permit surface flow from the site to the east property line along Madison Street.

G. Direct Runoff Volumes for Developed Property:

Direct Runoff Volume, Developed Land: The six-hour 100-year frequency rainfall for the tract is 2.3 inches. The proposed surface conditions are as shown below.

	Area	Percent	CN	ΔCN
Asphalt Surface Hardstand	14,000	7	96	72
Building	3,750	20	96	19.2
Landscape	1,000	5	61	3
TOTAL	18,750			94.2

For the CN of 94.2, direct runoff is 1.75 inches (Plate 22.2, C-4) for a total volume of (18,750 ft^2 x 1.75 in./ 12 in./ft.) = 2,735 ft^3.

H. Peak Runoff for Developed Property:

Peak runoff for the site can be estimated as discussed above. For the 95% impervious surface, the C factor is .92 (Plate 22.2, C-1). The time of concentration will remain at or below 10 minutes, so use the intensity factor of 2.15, for a Q = CIA = (.92)(2.15)(2.3)(.43) = 1.96 ft^3/ sec.

II. Off-Site Flows

A. Major Terrain Features:

The Helin Office Building (Lot 9A, Block 43, Valley View Addition) is located along the northern edge of the major drainage basin known as the Campus Wash. This basin is generally south of Central Avenue, and east of Carlisle Blvd., narrowing to a deep, natural cut along Campus Blvd., flowing northwest from Central Avenue through the U.N.M. campus toward Lomas Blvd. Studies and experience show that many areas within this basin are subject to flooding. This basin is the subject of a number of studies and on-going construction projects which are intended to lessen the potential for flooding, particularly in the lower portions of the basin. The systems are outlined in the Albuuqerque Master Drainage Study (A.M.D.S.) as System 210-01A, and subsequently refined by numerous other studies and designs.

Several major features of the flood control system for the basin have been completed, as outlined below:

Kirtland A.F.B. Detention System, which detains runoff from the upper (Southeast) reaches of the basin, releasing the detained water over a period of time to reduce peak levels.

Highland Detention Basin, which detains runoff from generally south and east of Highland High School, with a slow release essentially at a rate which will not create flooding downstream. The Highland Detention Basin is located two (2) blocks south of the Helin Office Building.

After completion of the above two major features, studies (reference 2, plates II-3 and II-4) show that the peak downstream flow is reduced from 860 CFS to 560 CFS at the system outflow at Girard Blvd. The computed peak flow is within the storm runoff system (storm drain plus surface) capacity except for a portion of Campus Blvd. between Central Avenue and Monte Vista Blvd. The net impact on the Helin Office Building of the above-discussed major drainage structures is that runoff from the basin upstream of the Helin Office Building is greatly reduced and does not contribute to the flooding downstream of the Helin Office Building.

B. Additional Proposed Improvements:

There are numerous additions to the Campus Wash system which are proposed for construction in the future. Below are listed the systems which will have the most direct impact on the area downstream of the Helin Office Building.

1. Central Avenue bypass at Solano and Copper: a 48-inch R.C.P. to increase flow rate at a stream drain constriction and junction of two (2) storm drain lines.

2. Central Avenue Spur Line: A 30-inch to 42-inch R.C.P. line along Central Avenue from Quincy Street to Madison Street, and

then south along Madison Street to the Highland Detention Basin. This system will divert up to 60 CFS of flow from Central Avenue directly into the detention basin. Without this system, runoff along the west side of Central Avenue will cause a significant flow from South to North along Madison Street past the Helin Office Building. The floodway maps do not indicate such runoff, but flow west on the north gutter line of Central Avenue would effectively divide since the gutter flow line north along Madison is essential at the same downslope grade as west along Central, and the [illegible] no rise or cresting in the Madison Street gutter.

C. Downstream Flooding Hazard:

The completion of the detention basins discussed above results in the placing of the Helin Office Building at the eastern edge of a much smaller drainage basin for flood control purposes. Plate II-1, reference 2 defines this basin as Areas E and F. At this time, flooding in the basin is computed to occur along a portion of Campus Blvd. between Carlisle Blvd. and Monte Vista Blvd. Upon completion of the proposed Solano-Copper bypass, the only flooding would occur along Campus Blvd. between Monte Vista Blvd. and Girard Blvd. Flooding is defined as topping of the street curb by more than 0.2 feet at the time of a 100-year rainfall. The study, reference 2, estimates that there would be little serious property damage in either instance since the buildings on either side of the flooded street are well above the expected flood level.

D. Minor and Nuisance Flows:

Presently, Lot 9A, Block 43, Valley View Addition dumps minor flows onto adjacent properties to the west and north. After the site is developed, these flow paths will be closed by the proposed retaining wall and fence. Very minor flow now entering the site from a five-foot-wide strip of adjacent property back of the Zia Motel will be diverted directly onto Madison Street right-of-way without threat of property damage.

III. Proposed Grading and Drainage

Alternatives for handling of expected off-site flows is discussed below.

A. Alternative I:

One alternative would be to have total or partial ponding of all storm runoff from the site. Total ponding for the 100-year storm would require a pond volume of 2,735 ft^3. At a nominal depth of 4.5 feet, this would require an area of about 20 feet x 30 feet. An area of 20 feet x 16.5 feet would be required to retain only that additional runoff due to development (2,735 - 1,250 = 1,485 ft^3). Discharge from the pond could be by a number of means. Discharge by ground seepage is not recommended due to the nature of the soils, which are identified as having a large proportion of fines and clay. The relatively large area of drain field required for adequate seepage would be uneconomical for the relatively small commercial building lot. Discharge by gravity

flow into the Madison Street right-of-way is not possible due to the level terrain. Either a large shallow area for ponding would be required, or several feet of fill added to the lot to obtain the necessary elevation. Gravity flow from a relatively deep pond would be possible if an easement across adjacent private property to either Jefferson Street or Copper Avenue could be obtained. Gravity discharge would be at some rate and time delay so as to not aggravate downstream flooding. An additional discharge alternative would be by means of an active pumping system. Such discharge would be delayed and at a rate to permit discharge into the Madison Street right-of-way.

B. Alternative II:

The location of the Helin Office Building site on the eastern edge of the drainage basin E and F (reference 2, Plate II-1) provides for a reasonable alternative. A characteristic of basin E and F is the relatively steep side slopes along the middle and lower portion of the basin. The flooding hazard along Campus Blvd. appears to be primarily the result of the fast runoff from the paved streets in the middle to lower portion of the basin. Indeed, the relatively flat portion of the upper basin, generally from the line of Jefferson Street east to San Mateo, between Central Avenue and Copper Avenue, is not included in the flood basin by reference 2, even though runoff from these areas are routed through the same outflow channels along Campus Blvd. It is probable that flow from these extremes do not reach the flooded area until well after the peak from the steep middle and lower portions of the basin has subsided. The re-routing of the storm runoff form Lot 9A away from Jefferson Street to Madison Street and then Copper Avenue will add about five (5) minutes to the time for the runoff to reach the flooded area. (Tc via Jefferson Street to the intersection of Jefferson and Copper is four (4) minutes; Tc to the same intersection via Madison is nine (9) minutes, by Kirpich formula Time of concentration,

$$Tc = .0078 \frac{L\ 0.77}{S\ 0.385}).$$ Adapting this alternative would permit paving of the lot wihtout the requirement for a large amount of fill. A disadvantage is that during periods of intense rain, portions of the drive and parking area of the lot will be covered with water to a depth of a few inches. Walkways to parked cars would remain clear, and surface water would run off within several minutes after the rain stopped.

IV. Conclusions and Recommendations:

A. Lot 9A, Block 43, Valley View Addition is not within a 100-year flood plain as identified on the Albuquerque Flood Hazard Map.

B. The runoff from Lot 9A flows through a flood hazard area, but the runoff does not contribute to the peak, or flood hazard, flow. Development of the Lot 9A and surface runoff to Madison Street will not increase the flood hazard downstream within the basin.

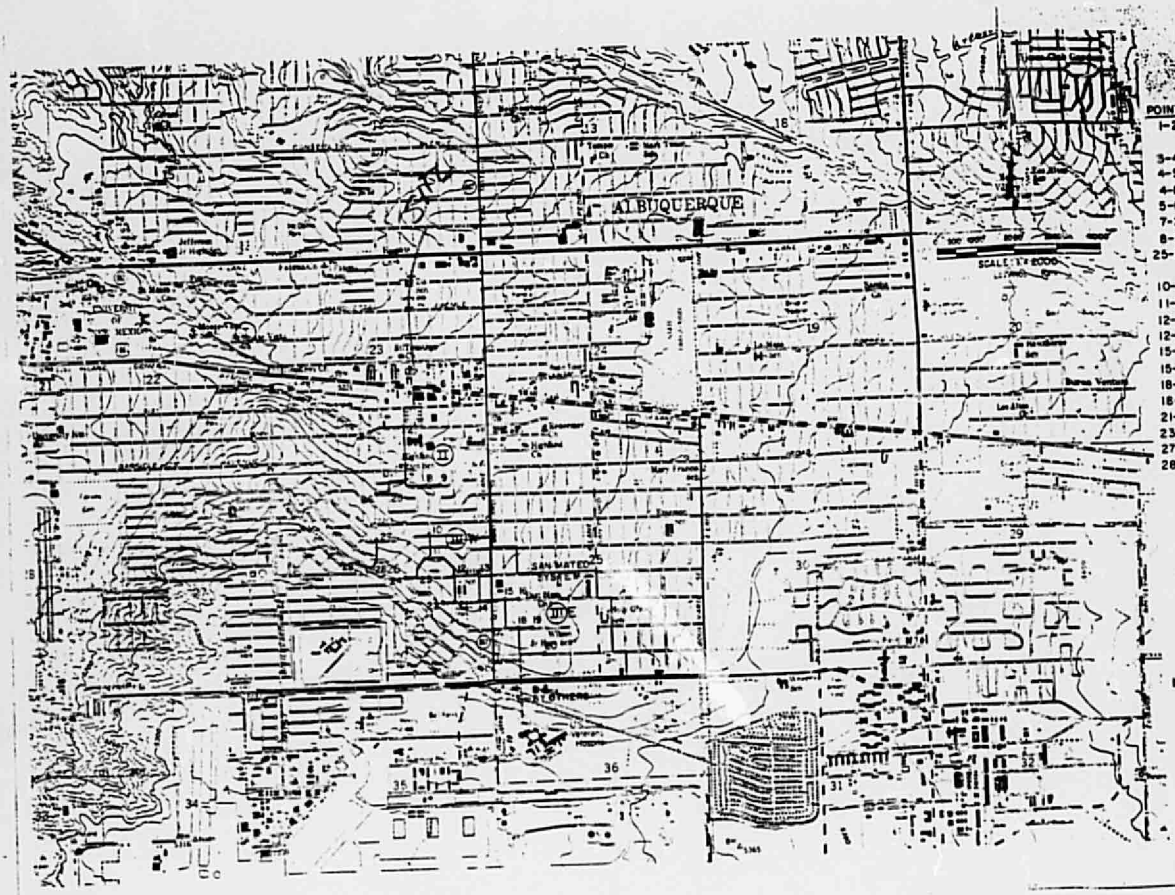
C. The finished floor for the proposed Hellin Office Building should be set above the expected water level within the parking area and driveway, and curbs and retaining walls placed to protect adjacent properties.

REFERENCES

1. Albuquerque Master Drainage Study
   Bohannon-Huston Inc.

2. Highland Detention Basin Study
   Leedshill-Herkenhoff Inc., March, 1984

DARWIN R. KOSTKA
NEW MEXICO
6519
REGISTERED PROFESSIONAL ENGINEER

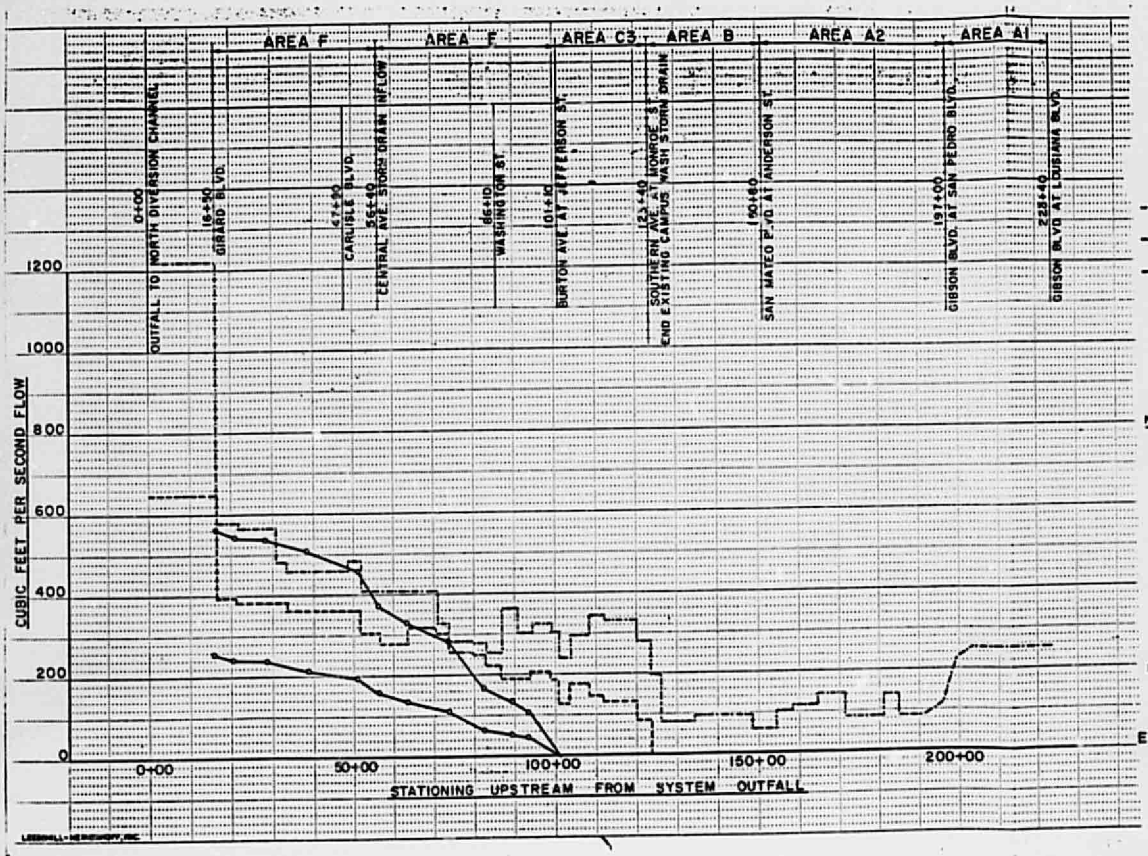


POINTS	PIPE SIZE	PIPE SLOPE
AREA I		
1-2	48"	0.009
AREA II		
3-4	54"	0.006
4-5	42"	0.005
4-8	72"	0.008
5-6	36"	0.005
7-25	36"	0.005
8-9	30"	0.010
25-26	30"	0.010
AREA III		
10-12	60"	0.006
11-23	24"	0.026
12-15	66"	0.004
12-21	36"	0.011
15-16	30"	0.010
15-18	60"	0.004
18-19	24"	0.010
18-20	46"	0.006
21-22	24"	0.010
23-24	24"	0.021
27-28	24"	0.045
28-29	24"	0.006

HIGHLAND DETENTION BASIN STUDY

SYSTEM #3
CAMPUS WASH
EXTENSION

PLATE III-6



LEGEND

- TOTAL SYSTEM CAPACITY
- STORM DRAIN CAPACITY
- 10 AND 100 YEAR EXPECTED FLOWS
- ANALYSIS POINT

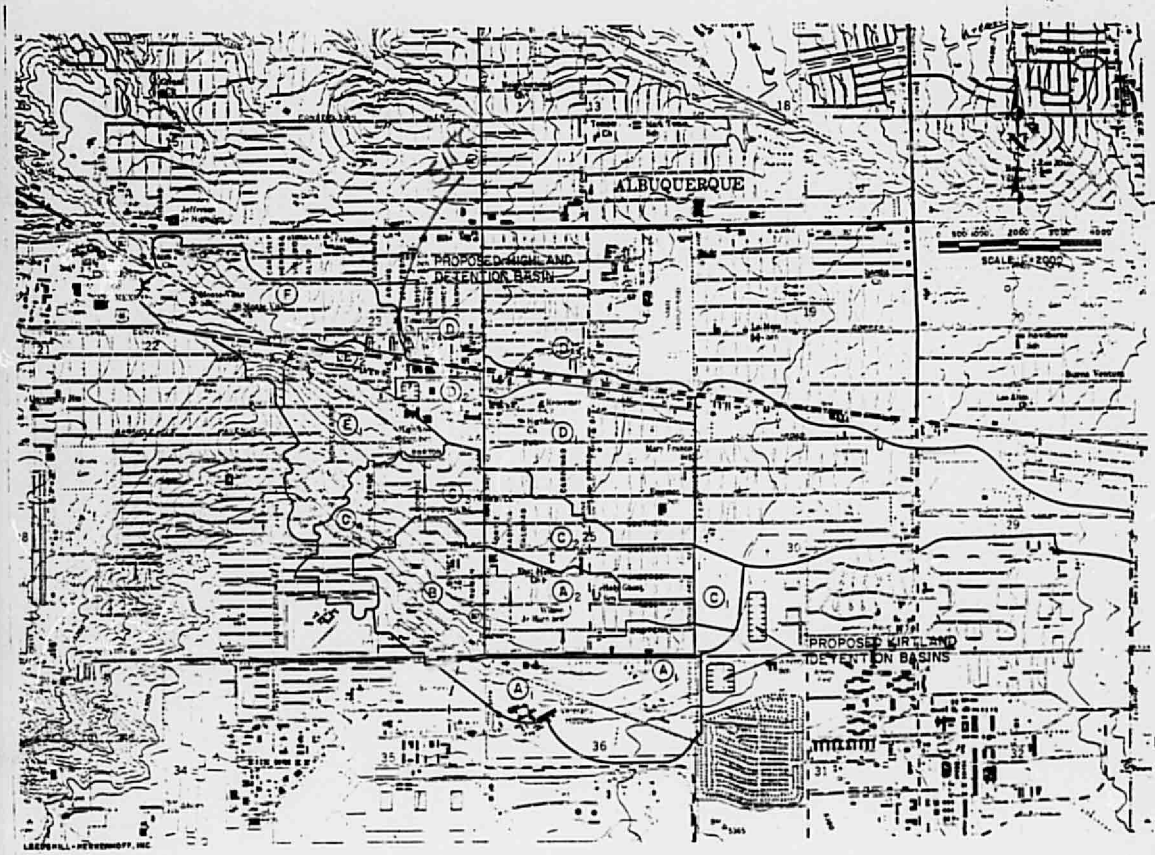
NOTE:
ONLY DRAINAGE AREAS E AND F ARE INCLUDED IN RUNOFF.

SCALES
HORIZ. 1" = 2000'
VERT. 1" = 200 cfs

HIGHLAND DETENTION BASIN STUDY

SYSTEM PROFILE
EXISTING CONDITIONS
DOWNSTREAM OF PROPOSED BASIN

PLATE E-4



HIGHLAND DETENTION BASIN STUDY

MAJOR DRAINAGE DIVIDES AND CAMPUS WASH FLOW PATH

PLATE II-1

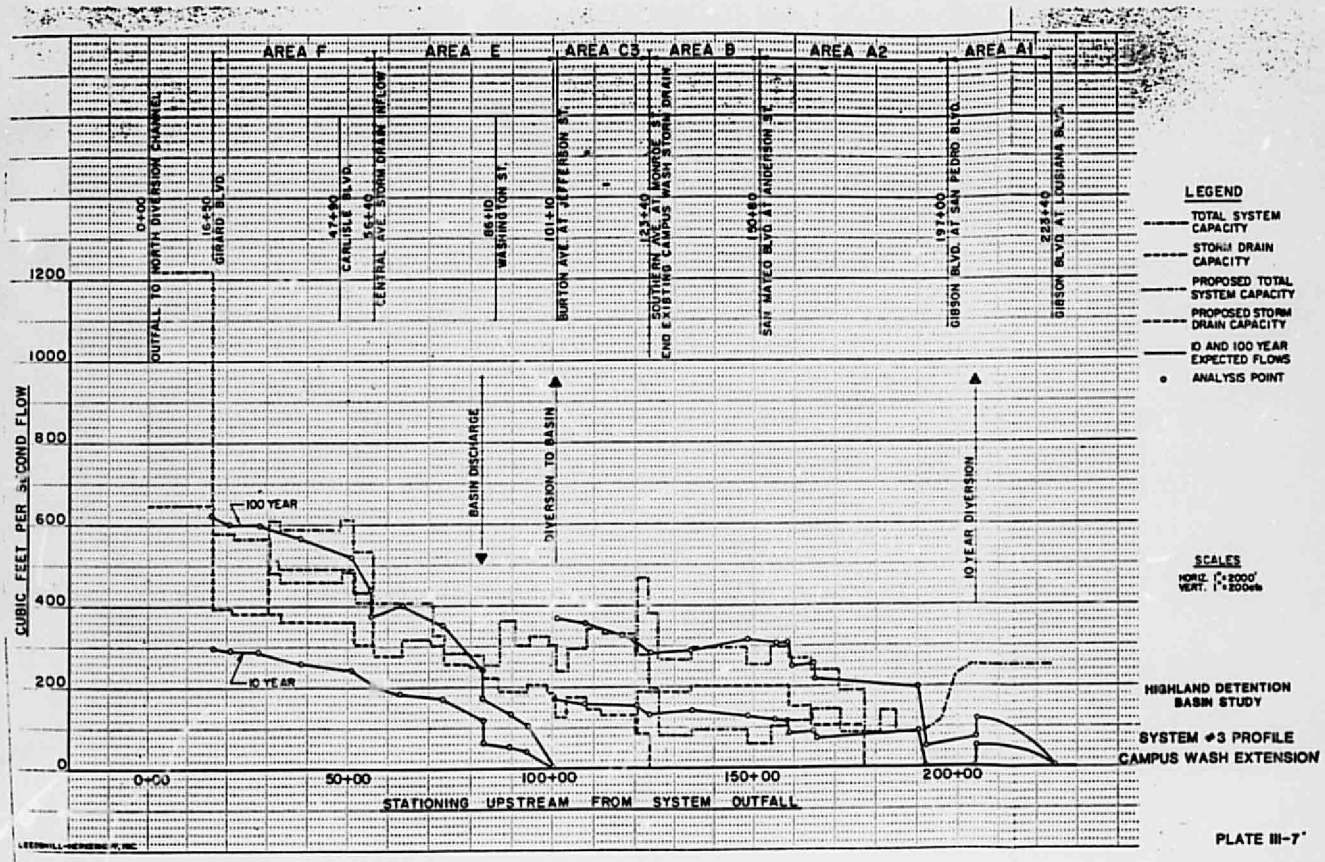

AREA F
AREA E
AREA C3
AREA B
AREA A2
AREA A1
0+00
OUTFALL TO NORTH DIVERSION CHANNEL
16+90
GIRARD BLVD.
47+90
CARLISLE BLVD.
55+40
CENTRAL AVE. STORM DRAIN INFLOW
86+10
WASHINGTON ST.
101+10
BURTON AVE. AT JEFFERSON ST.
123+40
SOUTHERN AVE. AT MONROE ST.
END EXISTING CAMPUS WASH STORM DRAIN
150+80
SAN MATEO BLVD. AT ANDERSON ST.
197+00
GIBSON BLVD. AT SAN PEDRO BLVD.
223+40
GIBSON BLVD. AT LOUISIANA BLVD.
BASIN DISCHARGE
DIVERSION TO BASIN
10 YEAR DIVERSION
100 YEAR
10 YEAR
CUBIC FEET PER SECOND FLOW
1200
1000
800
600
400
200
0
0+00
50+00
100+00
150+00
200+00
STATIONING UPSTREAM FROM SYSTEM OUTFALL
LEGEND
TOTAL SYSTEM CAPACITY
STORM DRAIN CAPACITY
PROPOSED TOTAL SYSTEM CAPACITY
PROPOSED STORM DRAIN CAPACITY
10 AND 100 YEAR EXPECTED FLOWS
ANALYSIS POINT
SCALES
HORIZ. 1" = 2000'
VERT. 1" = 200cfs
HIGHLAND DETENTION BASIN STUDY
SYSTEM #3 PROFILE
CAMPUS WASH EXTENSION
LEEDSHILL-HERSHEY, INC.

PLATE III-7

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: K17 DATE: 1/29/86 @ 9:00

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Helen Office Bldg.

STREET ADDRESS (IF KNOWN): Madison Street

SUBDIVISION NAME: Lots 9, 10, 11, 12, 13, 14 Block 43 Valley View Addition

APPROVAL REQUESTED:

____ PRELIMINARY PLAT	____ FINAL PLAT
____ SITE DEVELOPMENT PLAN	x BUILDING PERMIT
____ OTHER	____ ROUGH GRADING

ATTENDANCE: WHO	REPRESENTING
Marvin Kartum	Self
Billy Goolsby	Design Hydro.

FINDINGS:

① Discharge to be determined by analysis of downstream capacity

② An approved erosion control plan for the period of construction will be required to ensure sediments remain on-site

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: M. Kartum

TITLE: CE/Design Hydrology TITLE: Marvin Kartum

DATE: 1/29/86 DATE: 1/29/86

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

THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT