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

October 7, 1981

Mr. David M. Millikan, P.E.
Bohannan-Huston, Inc.
4125 Carlisle Blvd. N. E.
Albuquerque, New Mexico 87107

RE: Jeannedale Drive Office Building Drainage Report Dated August, 1981
(File No. H-18-D16)

Dear David:

Attached are my comments for the referenced Drainage Report, please address the items checked No and any corresponding comments. This Report was not reviewed for construction detail, therefore, before any Building Permit can be released compliance with the Construction Checklist will be required.

If you have any questions concerning the above, please feel free to call me.

Sincerely,

Fred J. Aguirre, P.E.
Civil Engineer/Hydrology

FJA/el

cc: Reading File
Drainage File

✓				K. Elevation of property line at least 1 ft. above flowline (A-21B).
✓				L. Retaining wall required when a vertical grade change greater than 18" is indicated (A-21B; B-7A).
	✓		8	M. Details of ponds, swales, rundowns, curb cuts, water blocks, and all other significant drainage structures with contours, cross-sections, and spot elevations when appropriate. NOTE: All proposed construction within the public right-of-way must follow the City Engineer's Special Order No. 19 (A-21B; B-7B).

OTHER:

YES	NO	NA	SEE COMMENTS	
		✓		22. Erosion Control Plan (A-21B; B-7B).
	✓		4	23. Owners commitment to construct, operate, and maintain drainage facilities in substantial compliance with drainage report and grading plan (A21B).

COMMENTS: 1) Owner's option, please indicate owner's preference

2) One foot above what point of Indian Sch Rd.

3) If applicable, discuss any other condition that may adversely impact on this site.

4) Please submit completed Drainage Covenant

5) Provide the hydraulic grade line with the supporting calculations for the proposed 48" S.D. connection. Also, your inlet capabilities for the single "C" should take into account a clogging

6) Allowed to direct discharge into 72" storm sewer without ponding

7) Indicate property line

8) Special Order 19 required for the proposed S.D. connection.

DRAINAGE REPORT COMMENTS

For Proposed Jeannedale Drive Office Building

***Comment No.**

1. The owner preference is for the City of Albuquerque to provide certification.

2. From the AMDS, dated 1981, the depth of water at the gutter is equal to 0.71'. Accordingly, it is required that the difference in elevation between the tops of the embankments fronting on Indian School Road and the adjacent top of curb on Indian School Road be a minimum of 1.0'. Where the driveway entrance occurs, the high point of the driveway pavement surface will be a minimum of 1.5' above the adjacent flowline of the gutter in Indian School Road.

3. There are no conditions which may adversely impact the site, except those addressed in the report.

4. The drainage covenant is being completed at the present time, and when completed, will be forwarded to the city for final action.

5. Hydraulic grade line calculations will be provided with final design plans and information required by special Order No. 19. The single "C" catch basin specification shall be revised to specify a double "C" catch basin to provide a clogging factor of safety of 2.0.

6. Allowed discharge per meeting with Charles Easterling on July 27, 1981.

7. Plan revised to show property line (attached).

8. When final design plans are submitted, details regarding the specific construction of the connection to the existing storm sewer will be submitted for examination and approval, in accordance with Special Order No. 19.

*Refer to the attached copy of the Comments from the City of Albuquerque, Hydrology Department.

BOHANNAN-HUSTON INC.
ENGINEERS & PHOTOGRAMMETRISTS
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

October 14, 1981

#18-D14

Fred J. Aguirre, P.E.
Hydrology Department
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Jeannedale Drive Office Building Drainage Report Dated August 1981

Dear Mr. Aguiree:

Enclosed are our replies to your comments and questions concerning the above-referenced report, which were contained in your letter dated October 7, 1981. Also attached is a revised developed drainage map to be made a part of the report.

From the minor nature of the comments, it is assumed that your office has approved this report, subject to the resolution of the attached comments.

If you have any questions concerning this matter, please do not hesitate to call Mr. Hal Stelmar or me.

Sincerely,

Michial M. Emery, P.E.
Vice President

cc: Mr. Joseph MacComiskey

Enclosures

HS/dlh
Job No. 1 106 0

APPROVED FOR DRAINAGE
10-28-81
DATE
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

RECEIVED
OCT 14 1981
CITY ENGINEER

Drainage Report approved
Comply with the
Const. Checklist requirements
when submitting for a Bldg permit

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 28, 1981

H-18-D16

Michial M. Emery, P.E.
Vice President
Johannan-Huston Inc.
1125 Carlisle Blvd., N.E.
Albuquerque, New Mexico 87107

Re: Jeannedale Drive Office Building Revised Drainage Report Dated October 14, 1981.

Dear Mr. Emery:

The referenced Drainage Report is conceptually approved with the understanding that compliance with the construction plan checklist will be required before a building permit can be issued.

If you have any questions concerning this matter, please do not hesitate to call me at 766-7644.

Sincerely,

Fred J. Aguirre, P.E.
Civil Engineer/Hydrology

FJA/el

cc: Drainage File
Reading File

BOHANNAN-HUSTON INC.
ENGINEERS PLANNERS PHOTOGRAMMETRISTS
4125 CARLISLE BLVD, N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000
6713 VISCOUNT BLVD. EL PASO, TEXAS 79925 915 778-4491
330 GARFIELD, SANTA FE, NEW MEXICO 87501 505 988-7671

March 29, 1982

Fred J. Aguirre, P.E.
Civil Engineer, Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Jeannedale Drive Office Building Drainage Report Revisions

Dear Fred:

Enclosed are three (3) copies of the revised drainage report for the above-referenced project. Pursuant to your telephone conversations with Hal Stelmar of our office, we are sending you only the portions of the text and plates that have been revised. The drainage concepts have not changed, merely the location of the parking lot and building.

Your prompt attention to this matter will be greatly appreciated. If you have any questions, please do not hesitate to call Hal Stelmar, Dave Millikan, or me.

Sincerely yours,

Michial M. Emery, P.E.
Vice President

cc: Mr. Ralph Butterfield

Enclosures

HS/dlh
Job No. 1 106 0

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

April 26, 1982

Bohannan-Huston Inc.
H. "Hal" Stelmar
Design Engineer
4125 Carlisle Blvd. NE
Albuquerque, New Mexico 87107

REF: Jeanne Dale Drive Office Building Revised Drainage Report Dated March 1982. (H18-D16)

Dear Mr. Stelmar:

The referenced drainage report is conceptually approved, please include with your construction plan submittal all the required calculations and details to support the approved drainage scheme.

Also, because of some critical grades required to make this project function as designed, this office will require the owner's engineer to certify compliance with the approved drainage report and construction plans at the completion of the project. Please advise the owner of this decision.

If you or the owner have any questions regarding the above, please feel free to call me at 766-7644.

Sincerely,

Fred J. Aguirre, P.E.
Civil Engineer/Hydrology

FJA/el

cc: Drainage File
Reading File

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. H-18/D16 DATE: 7/11/84

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Uptown Metro Building (Previously Jeanndale Office Building)

ATTENDANCE:	WHO	REPRESENTING
	Jerry Paz	
	Billy Goolsby	

FINDINGS: ① Approved Drainage Plan required to show that this development is within close compliance with the previously approved conceptual report for the same site.
② Should the same ~~Scheme~~ Scheme not be chosen the the submittal will need to be addressed as a new development.
③ Site is adjacent to a flood hazard zone ■ FF Elev. to be 2' above flowline in Indian School Rd.

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: Jerry B. Paz
TITLE: CE/Hydrology TITLE: √ Molzen-Corbin
DATE: 7/11/84 DATE: 7-11-84

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Parking Structure for Metro Uptown Plaza ZONE ATLAS/DRNG. FILE #: H-18

LEGAL DESCRIPTION: Tract E - Unit 4 - Dale J. Bellamah's Jeannedale Addition

CITY ADDRESS: 6301 Indian School Road, N.E.

ENGINEERING FIRM: Molzen-Corbin & Associates CONTACT: Jerry Paz

ADDRESS: 2301 Yale Blvd., S.E., Alb., NM PHONE: 242-5700

OWNER: Metro Corporation CONTACT: Dick Johnston

ADDRESS: 1720 Louisiana, #306, Alb., NM PHONE: 255-4800

ARCHITECT: Claudio Antonio Vigil & Associates CONTACT: Janet Lacy

ADDRESS: 2340 Alamo, S.E., #101, Alb., NM PHONE: 247-1000

SURVEYOR: Santiago Romero, Jr. CONTACT: Santiago Romero, Jr.

ADDRESS: 2926 Sierra Vista N.W. PHONE: 345-3977

CONTRACTOR: Page & Wirtz CONTACT:

ADDRESS: 5001 Los Angeles, N.E. PHONE: 823-2940

PRE-DESIGN MEETING:

X YES Entire site

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. H18-D16

RECEIVED
JAN 23 1985
HYDROLOGY SECTION

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X 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

X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 1/23/85

BY: Mark Goodwin

Mark Goodwin, P.E.

MOLZEN-CORBIN & Associates
ENGINEERS/PLANNERS/CONSULTANTS

Craddock Commerce Center
2301 Yale Boulevard Southeast
Post Office Box 3632
Albuquerque, New Mexico 87190
Telephone 505/242-5700

January 21, 1985

City of Albuquerque
Hydrology Department
P. O. Box 1293
Albuquerque, New Mexico 87103

Attention: Billy Goolsby, P.E.

RE: Metro-Uptown Plaza
City File H-18-D-16

Dear Billy:

Once again, the architect on a project for which we provided a drainage and grading plan has changed the site plan after we received your approval for the original plan. Your approval letter was dated 10/15/84.

The change to this site occurs at the parking structure situated on the East half of the lot. The layout changed as well as the elevations; therefore, we are re-grading and re-submitting for approval.

If I can be of further assistance, please call.

Sincerely,

MOLZEN-CORBIN & ASSOCIATES

Mark Goodwin

Mark Goodwin, P.E.

MG:cm

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

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

February 12, 1985

Mr. Jerry Paz
Molzen-Corbin & Associates
2301 Yale Blvd., SE
Albuquerque, New Mexico 87106

RE: DRAINAGE PLAN FOR METRO UPTOWN PLAZA PARKING STRUCTURE
("-18/D16) 6301 INDIAN SCHOOL ROAD, NE

Dear Mr. Paz:

The referenced plan dated January 22, 1985, is approved.

Please attach a copy of this approved along with the appropriately approved "Drainage Facilities Within City Right-of-Way" document to the construction set prior to Hydrology sign-off.

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

Cordially,

Billy J. Goolsby

Billy J. Goolsby, P.E.
Design Hydrology Section

BJG/bsj

METRO/JOHNSTOWN

November 20, 1985

Mr. Rick Duran
Hydrology Department
Municipal Development Department
Code Administration Division
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Paving and Drainage Schedule at Metro Uptown Plaza
6301 Indian School Road N.E.

Dear Rick:

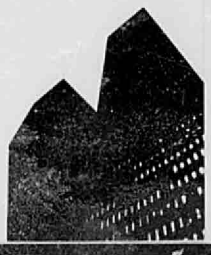
We will start the paving on this project November 26, 1985, and all other items pertaining to drainage will follow accordingly. This schedule has been firmed up with our subcontractors, and there will be no difficulties in meeting your requirements by December 20, 1985.

Sincerely yours,

Loren L. Meeker
Vice-President, Construction
M & J Joint Venture

Frank Scott
Project Manager
Page & Wirtz Construction Company

LLM/jb



SUITE 306
1720 LOUISIANA BOULEVARD, N.E.
ALBUQUERQUE, NM 87110
USA
(505) 255-4800

BOHANNAN-HUSTON INC.

JEANNEDALE DRIVE
OFFICE BUILDING
DRAINAGE REPORT

ZONE ATLAS SHEET H–18
(REVISED MARCH 1982)

FOR

WURSTER, BERNARDI AND EMMONS, INC.
1620 MONTGOMERY STREET
SAN FRANCISCO, CA 94111

PREPARED BY

BOHANNAN–HUSTON, INC.
4125 Carlisle Boulevard, NE
Albuquerque, NM 87107

David M.Y. Milliken, P.E.
N.M.P.E. No. 7547

Job No. 2 010 0

TABLE OF CONTENTS

COMPUTATIONS

FIGURES

PLATES

INTRODUCTION

The purpose of this drainage report is to determine the undeveloped and developed runoff flows generated within the office building site during the 10– and 100–year storms and to outline the proposed treatment of said runoff. The site is surrounded on its boundaries by improved streets and commercial development. The flows generated within the site shall be intercepted by a slotted gutter drain (see Figure II) in the parking lot and grated catch basins (see Figure I) around the building. This runoff will be discharged from the site through an 18" R.C.P. storm sewer to the existing 72" R.C.P. storm sewer in Jeannedale Drive.

LOCATION AND DESCRIPTION

The site is located to the east of the intersection of Jeannedale Drive and Indian School Road. It is located south of Jeannedale Drive and north of Indian School Road (see Plate I, "Vicinity Map").

The existing ground consists of gravelly fine sandy loam of Hydrologic Soil Type "B" (see Plate II, "Soil Survey of Bernalillo County, New Mexico"). It is covered with moderate amounts of native grasses and brush, with a slope of approximately three percent from east to west.

HYDROLOGIC ANALYSIS

Peak flows were computed using the Rational Method utilizing the intensity/duration and frequency curves for 10– and 100–year storms from AMAFCA Resolution 1980–15 (see Plate III).

Times of concentration were calculated with the Kirpitch Equation, with a minimum time of concentration of 10 minutes. The drainage area of the site is relatively small, thus, the time of concentration used was 10 minutes.

The runoff coefficients "C" were based on Ven Te Chow's "Values of Runoff Coefficient C," Table 14–1 of the "Handbook of Applied Hydrology" (see Plate IV). The value of "C" for the undeveloped site was 0.30. For the developed site, the value of "C" was prorated to 0.75, using a value of 0.95 (72% of the site area) for the pavement and building areas and 0.25 (28% of the site area) for the landscaped areas. The reduction of the value of "C" for the developed landscaped areas results from the improved ground cover.

Runoff volume calculations were based on United States Department of Agriculture, Soil Conservation Service, Runoff Curve Numbers (see Plate V). The curve number used for the developed site was 88CN (Industrial Districts). The undeveloped runoff curve number used was 70CN.

The 10– and 100–year rainfall used was 1.6 inches and 2.4 inches respectively, based on the isopluvials for the six hour precipitation from NOAA Atlas 2, dated 1973.

Flows and velocities in the storm sewer were calculated using Manning's Normal Depth Equation, (see Computation Sheet II). This assures that the 18" R.C.P. will have adequate capacity if designed for pressure or non-pressure flow. changed

DRAINAGE BEFORE DEVELOPMENT

Upland Runoff – Upland flows from the property to the east are contained within the parking area. These flows travel to the north within the parking area and are discharged onto Jeannedale Drive (see Plate VII). The existing upland runoff is intercepted by Indian School Road, Jeannedale Drive and by a 72" RCP storm sewer within the right-of-way for Jeannedale Drive. These flows have been analyzed as a part of the Albuquerque Master Drainage Study (AMDS) dated January 1981, and the resulting hydrographs have been plotted (see Plates VI and Computation Sheet I). Runoff

from the intersection of Jeannedale and Indian School flows to the west in a concrete lined drainageway. These flows are then discharged into the North Diversion Channel west of San Pedro.

Site Runoff – The existing site runoff flows in a southwesterly direction onto Indian School Road (see Computation Sheet I).

DRAINAGE AFTER DEVELOPMENT

The drainage criteria for developed conditions will meet or exceed the criteria set forth in AMAFCA Resolution 1980–15, paragraphs 4A and 4B.

Upland Runoff – The development of this site will not affect the characteristics of the upland runoff.

Site Runoff – The runoff from the parking lot shall be directed to the slotted gutter drain along the westerly edge of the parking lot (see Figure II). Runoff generated around the office building will be collected by grate drains set flush with the pedestrian walkways (see Figure I). Runoff from this area and the parking lots shall be conveyed in a 12" P.V.C. storm sewers to a junction box at the location shown on Plate VIII. An 18" R.C.P. shall be extended to the existing 72" R.C.P. storm sewer in Jeannedale Drive. The Albuquerque Master Drainage Study of the area shows that the 72" RCP storm sewer reaches full capacity 0.2 hours (12 minutes) after the 100–year storm begins. At that point in time, the peak flow from the site has already occurred. The flows from the site at 0.2 hours does not affect the overall capacity of the existing system (see Computation Sheet I).

FLOOD HAZARD AREA

The Albuquerque Master Drainage Study (Vol. III, Appendix A, Plate H-18) indicates that a 100–year flood hazard area exists within the right-of-way of Indian

School Road along the southerly boundary of the site (see Plate VI). However, the flooded area can be confined to the right-of-way provided the site is graded to provide a minimum height of 1.0 feet above the top of curb elevations on Indian School Road (see Plate VIII).

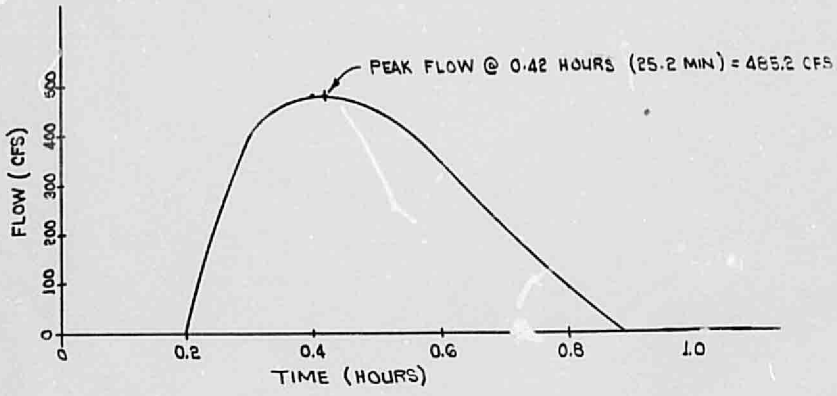
SUMMARY

Adequate capacity exists downstream since the peak runoff from the site passes through the 72" R.C.P. prior to its reaching capacity. The runoff discharged from the site at the time of the peak in the storm sewer (0.2 hours) is negligible. Therefore, uncontrolled discharge from the site has minimal impact on the peak flow rate in the 72" R.C.P. in Jeannedale Drive and should be allowed.

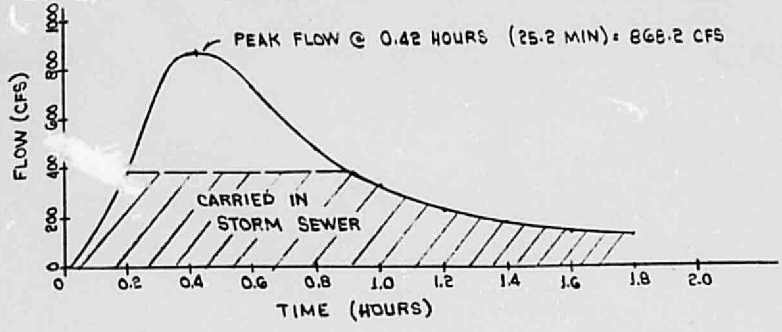
JEANNEDALE DRIVE OFFICE BUILDING — J#1106.0
COMPUTATION SHEET I — AUGUST 1981

I. HYDROGRAPHS OF EXISTING FLOWS (DATA FROM AMDS, APP. "A", PLATE NUMBER H-18)

A. 100-YEAR HYDROGRAPH OF SURFACE RUNOFF
INDIAN SCHOOL RD. @ JEANNEDALE DR.



B. 100-YEAR HYDROGRAPH OF TOTAL FLOW (AP 1004, AMDS PT. H-15)



II. EXISTING FLOW CONDITIONS (ON-SITE)

A. SITE AREA = 1.8 ACRES
SLOPE OF SITE = 2%
LENGTH = 400 FT
RUNOFF COEFFICIENT = 0.3

$T_c = 0.00013 \frac{(L)^{.77}}{(S)^{.385}}$ = 0.06 HOURS
= 3.6 MINUTES
USE 10 MINUTES

I_{10} = 3.8 IN/HR
Q_{10} = 2.1 CFS

I_{100} = 6.0 IN/HR
Q_{100} = 3.2 CFS

JEANNEDALE DRIVE OFFICE BUILDING
COMPUTATION SHEET II

J# 2 010 0
MARCH 1982
H.S.

III. DEVELOPED SITE FLOW CONDITIONS:

A. RUNOFF TABULATION (SEE PLATE VIII):

BASIN:	AREA: (ACRES)	"C" VALUE:	I_{10}	Q_{10} (CFS)	I_{100}	Q_{100} (CFS)
A-1	0.62	.95	3.8	2.24	6.0	3.53
A-2	0.74	.95	↑	2.67	↑	4.22
B-1	0.03	.95	|	0.11	|	0.17
B-2	0.02	.95	|	0.07	|	0.11
B-3	0.02	.95	|	0.07	|	0.11
B-4	0.02	.25	|	0.02	|	0.03
B-5	0.03	.95	|	0.11	|	0.17
B-6	0.01	.95	|	0.04	|	0.06
B-7	0.02	.95	↓	0.07	↓	0.11
C-1	0.15	.95	3.8	0.54	6.0	0.86
TOTAL	1.66 ✓	–	–	5.93	–	9.70

B. CAPACITY OF GRATE INLETS (SEE FIGURE I):

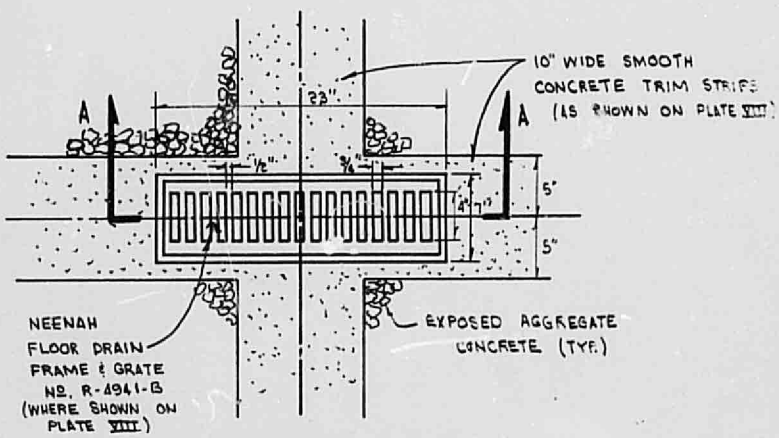
1. AREA OF GRATE = 0.35 FT^2
2. ASSUMING ORFICE FLOW C = 0.60
3. ASSUMING WATER WITH A DEPTH OF 0.1'

$$Q = CA\sqrt{2gh} = (.6)(.35)\sqrt{2(32.2)\,0.1'} = 0.53 \text{ CFS}$$

C. MINIMUM SLOPE OF 18" R.C.P.:

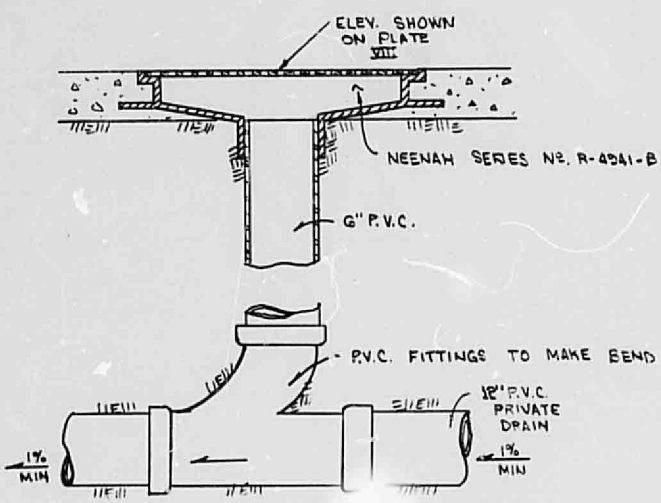
1. $S = \dfrac{Q^2 n^2}{(1.486)^2 A^2 R^{4/3}} = \dfrac{(9.7)^2 (.015)^2}{(1.486)^2 (1.77)^2 (.38)^{4/3}} = 0.0111 \text{ FT/FT}$

PROJECT NAME
PROJECT NO
SUBJECT
SHEET
BY
CHK
OF
DATE
DATE



PLAN VIEW - GRATE INLET

NO SCALE

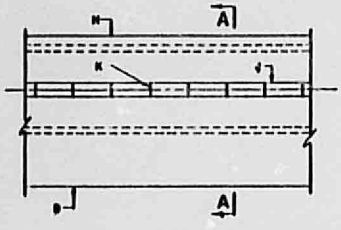


SECTION "A-A"

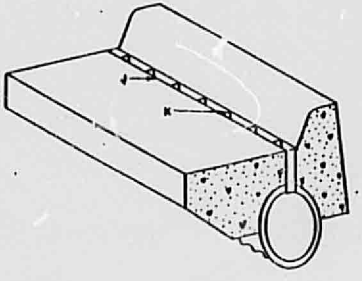
SCALE

FIGURE I

PRIVATE GRATE INLETS



PLAN
12", 15" OR 18" SLOTTED DRAINS



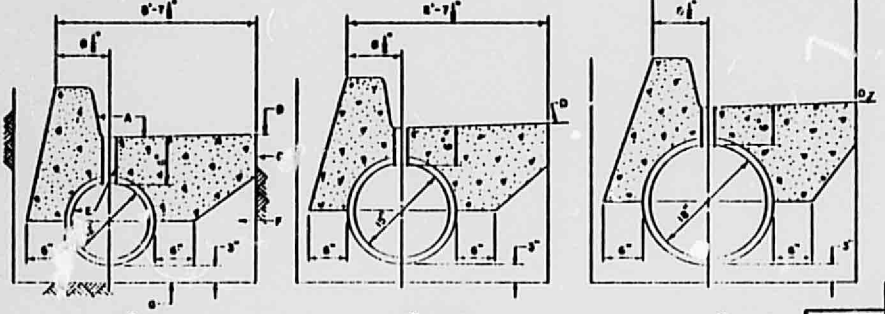
ISOMETRIC

GENERAL NOTES:

1. ALL FITTINGS TO BE COMPATIBLE WITH C.M.P.
2. SPECIAL END CAPS AS (MANUFACTURED BY ARMCO CORP. OR APPROVED EQUAL.) TO BE INSTALLED AT UPSTREAM ENDS OF DRAIN PIPE.
3. GRATE OPENING TO BE BLOCKED DURING CONSTRUCTION TO PREVENT DEBRIS FROM ENTERING DRAIN.

CONSTRUCTION NOTES:

A. SURFACE CONFIGURATION TO CONFORM WITH STANDARD CURB & GUTTER.
B. TOE OF GUTTER.
C. STANDARD CITY CURB & GUTTER AS SPECIFIED ON PLANS.
D. PAVEMENT.
E. SLOTTED DRAIN AS MANUFACTURED BY ARMCO CORP. OR APPROVED EQUAL.
F. SUB BASE MATERIAL COMPACTED TO 95% MODIFIED PROCTOR.
G. UNDISTURBED EARTH.
H. BACK OF CURB.
J. GRATE AT FLOW LINE.
K. SOLID WLD SPACERS AT 6" D.C.



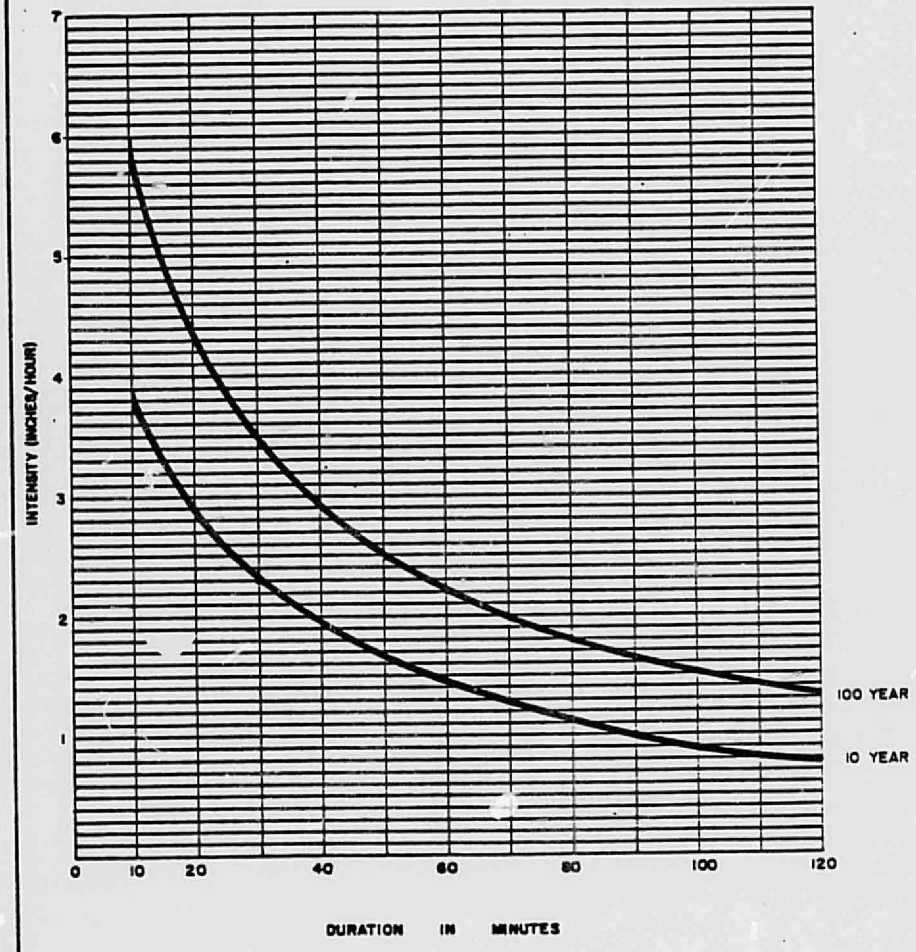
12" PIPE 15" PIPE 18" PIPE

SECTIONS A-A

FIGURE II - SLOTTED DRAIN

F1

CITY OF ALBUQUERQUE	
DRAINAGE	
SLOTTED DRAIN	
DWG. D-14-1	REVISIONS 1-26-81



NOTE:
CURVE IS BASED ON DATA CONTAINED IN NOAA ATLAS 2, DATED 1973.

INTENSITY/ DURATION
FREQUENCY CURVE
ALBUQUERQUE, N.M.

APPENDIX "A"

PLATE III

FROM "HANDBOOK OF APPLIED HYDROLOGY"

Table 14-1. Values of Runoff Coefficient C

Type of drainage area	Runoff coefficient, C
Lawns	
Sandy soil, flat, 2%	0.05–0.10
Sandy soil, average, 2–7%	0.10–0.15
Sandy soil, steep, 7%	0.15–0.20
Heavy soil, flat, 2%	0.13–0.17
Heavy soil, average, 2–7%	0.18–0.22
Heavy soil, steep, 7%	0.25–0.35
Business	
Downtown areas	0.70–0.95
Neighborhood areas	0.50–0.70
Residential	
Single-family areas	0.30–0.50
Multi-units, detached	0.40–0.60
Multi-units, attached	0.60–0.75
Suburban	0.25–0.40
Apartment dwelling areas	0.50–0.70
Industrial	
Light areas	0.50–0.80
Heavy areas	0.60–0.90
Parks, cemeteries	0.10–0.25
Playgrounds	0.20–0.35
Railroad yard areas	0.20–0.40
Unimproved areas	0.10–0.30
Streets	
Asphaltic	0.70–0.95
Concrete	0.80–0.95
Brick	0.70–0.85
Drives and walks	0.75–0.85
Roofs	0.75–0.95

PLATE IV

S.C.S. Runoff Curve Numbers

LAND USE DESCRIPTION	Hydrologic Soil Group			
	A	B	C	D
Cultivated land[1/] without conservation treatment	72	81	88	91
with conservation treatment	62	71	78	81
Pasture or range land poor condition	68	79	86	89
fair condition	49	69	79	84
good condition[2/]	39	61	74	80
Meadow good condition	30	58	71	78
Wood or Forest land thin stand, poor cover, no mulch	45	66	77	83
good cover[2/]	25	55	70	77
Open Spaces lawns, parks, golf courses cemeteries, etc				
good condition grass cover on 75% or more of the area	39	61	74	80
fair condition grass cover on 50% to 75% of the area	49	69	79	84
Commercial and business areas (85% impervious)	89	92	94	95
Industrial districts (72% impervious)	81	88	91	93
Residential[3/]				
Average lot size Average % impervious[4/]				
1/8 acre or less 65	77	85	90	92
1/4 acre 38	61	75	83	87
1/3 acre 30	57	72	81	86
1/2 acre 25	54	70	80	85
1 acre 20	51	68	79	84
Paved parking lots, roofs, driveways, etc.[5/]	98	98	98	98
Streets and roads				
paved with curbs and storm sewers[5/]	98	98	98	98
gravel	76	85	89	91
dirt	72	82	87	89

1/ For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Section 4, Hydrology, Chapter 9, August 1972.

2/ Good cover is protected from grazing and litter and brush adequately covers soil.

3/ Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of roof water directed to lawns where additional infiltration could occur.

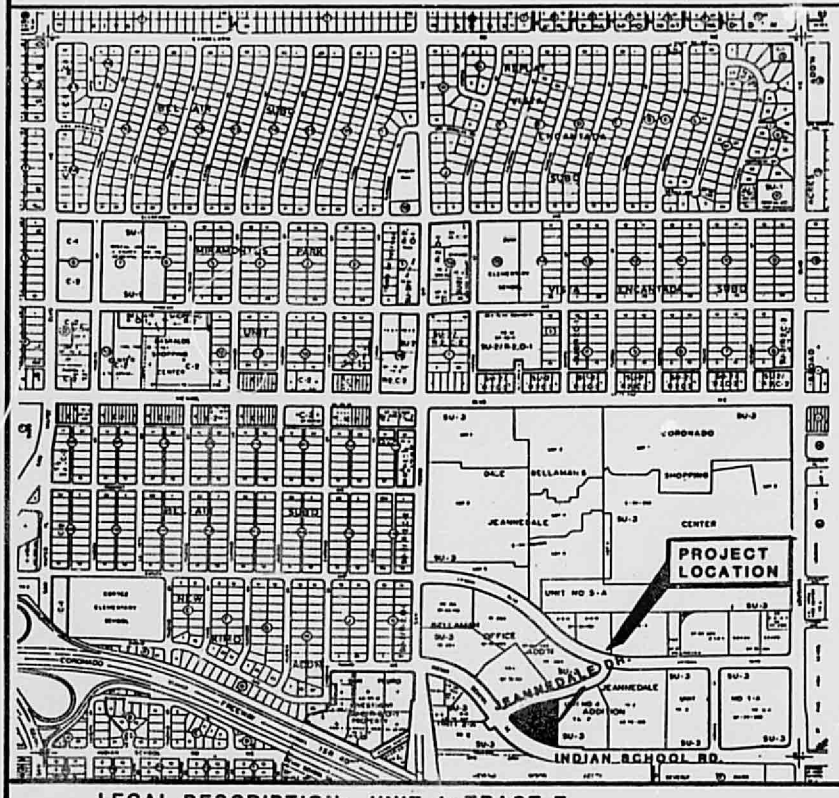
4/ The remaining pervious areas (lawns) are considered to be in good pasture condition for these curve numbers.

5/ In some warmer climates of the country a curve number of 95 may be used.

PLATE V

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



LOCATION MAP

LEGAL DESCRIPTION: UNIT 4--TRACT E,
DALE J. BELLAMAH'S JEANNEDALE ADDITION

ADDRESS: 6301 INDIAN SCHOOL RD. N.E.

RECEIVED
NOV 20 1985
HYDROLOGY SECTION

MARK GOODWIN
NEW MEXICO
8948
REGISTERED PROFESSIONAL ENGINEER
10/12/84

NOTICE TO CONTRACTOR

1. An excatation/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 "Contract Documents for Public Works Contract No. 84-3."
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 constructions. 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 arterial street use.
6. The Contractor must submit a traffic control plan and receive a barricading permit prior to construction within City right-of-way. All construction work within City right-of-way shall be confined to the hours between 9:00 a.m. to 4:00 p.m.

NMC CONSTRUCTION CO.

H18-016

D-161

APPROVALS	NAME	DATE
A.C.E. DESIGN		10/29
INSPECTOR	F. B.	10/29/85
A.C.E. FIELD		11/13/85

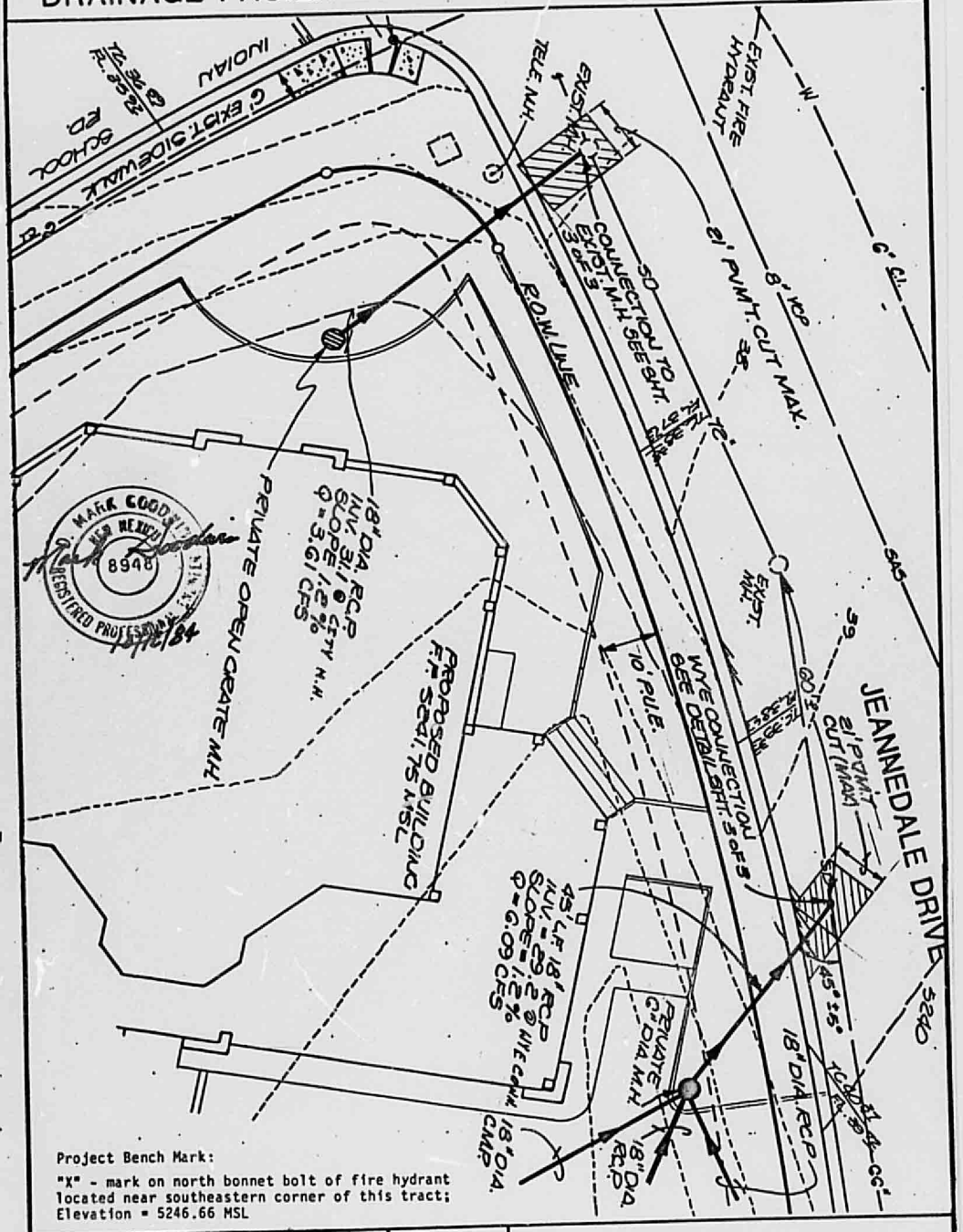
TITLE: METRO UPTOWN PLAZA
6301 INDIAN SCHOOL RD. N.E.

PERMIT NO. 23246
SHEET 1 OF 3

MAP NO. H-18

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



Project Bench Mark:

"X" - mark on north bonnet bolt of fire hydrant located near southeastern corner of this tract; Elevation = 5246.66 MSL

APPROVALS	NAME	DATE
A.C.E. DESIGN		11-1-84
INSPECTOR	T.B.	10/29/85
A.C.E. FIELD		11/12/85

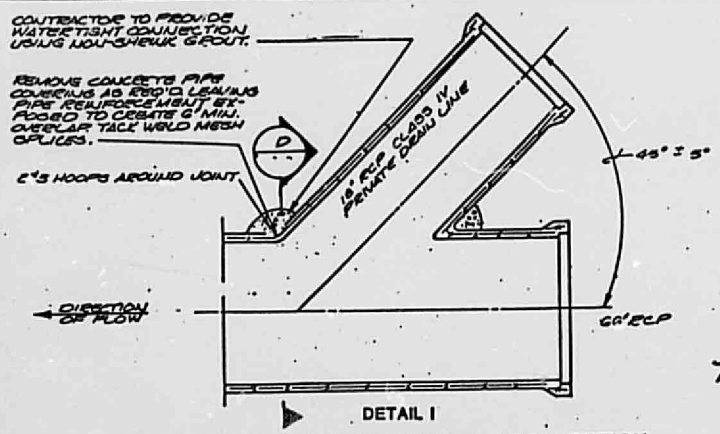
TITLE: METRO UPTOWN PLAZA
6301 INDIAN SCHOOL RD. N.E.

PERMIT NO. 23246
SHEET 2 OF 3

MAP NO. H-18

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



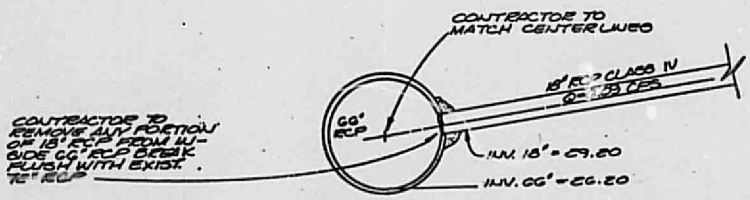
DETAIL I

REINFORCED CONCRETE PIPE WYE CONNECTION

NTS.

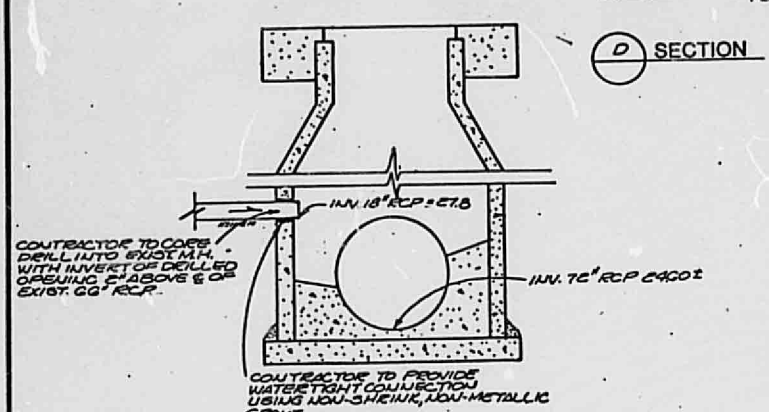
D. MARK GOODWIN NEW MEXICO 8948 REGISTERED PROFESSIONAL ENGINEER

10/12/84



NOTES:

1. CONTRACTOR TO VERIFY ADEQUACY OF CLOSEST RCP FOR TAP PRIOR TO CONSTRUCTION.
2. WHERE TRENCH CUT IS MADE, CONTRACTOR TO REMOVE AND REPLACE EXIST. ASPH. PAVMT. WITH CITY OF ALBUQ. STANDARD DWG. NO. P-72. FOR ARTERIAL USE



DETAIL II

CONNECTION TO EXISTING M.H.

D-161

N.M.C. CONST. CO.

APPROVALS	NAME	DATE
A.C.E. DESIGN		11.11.84
INSPECTOR	F. B.	11/26/85
A.C.E. FIELD		11/13/85

TITLE METRO UPTOWN PLAZA
6301 INDIAN SCHOOL RD. N.E.

PERMIT NO. 23246
SHEET 3 OF 3

MAP NO. H-18