HYDROLOGY

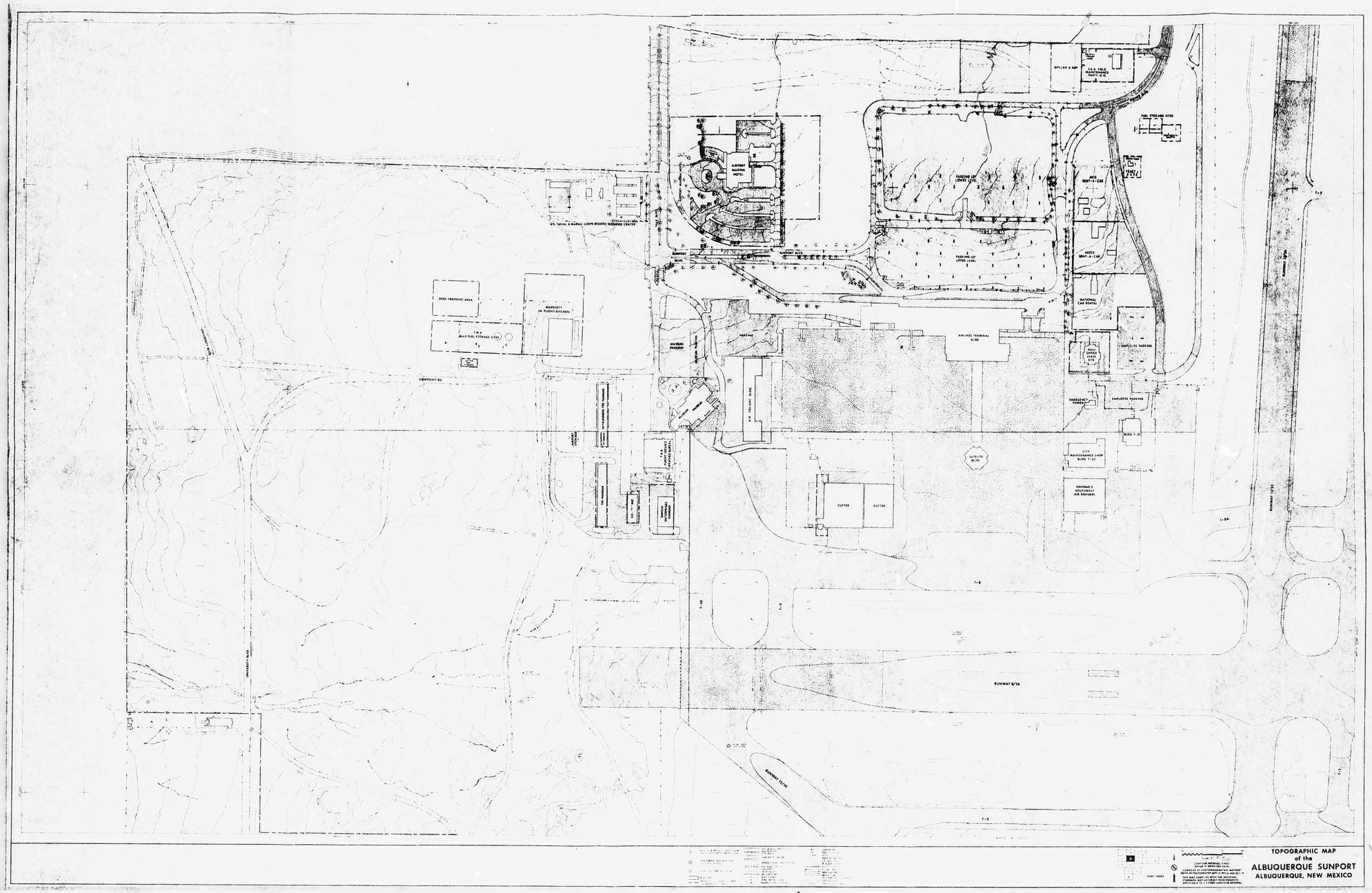
M16/D7

6 PLANS
1 of 2

M116/D7

Le Plans

D 24 C 20 B 16 A 12 CITY OF ALBUQUERQUE C D


AIRPORT HOTEL
AIRPORT BLVD.
PARKING LOT (LOWER LEVEL)
PARKING LOT (UPPER LEVEL)
AVIS RENT-A-CAR
HERTZ RENT-A-CAR
NATIONAL CAR RENTAL
POST OFFICE CASE
EMPLOYEE PARKING
EMERGENCY POWER
BLDG T-33
CITY MAINTENANCE SHOP BLDG T-23
HANGAR 3 SOUTHWEST AIR RANGERS
SATELLITE BLDG
AIRLINES TERMINAL BLDG
CUTTER
CUTTER
FAA FLIGHT STAND
PARKING
VISITOR PARKING
FAA FLIGHT STAND
FAA FLIGHT STAND
FAA FLIGHT STAND

ENCHANTMENT ENGINEERING Inc.
1517 EUBANK BLVD. N.E.
ALBUQUERQUE, N.M. Ph. 294-8859

TOPOGRAPHIC SURVEY AND DRAINAGE STUDY

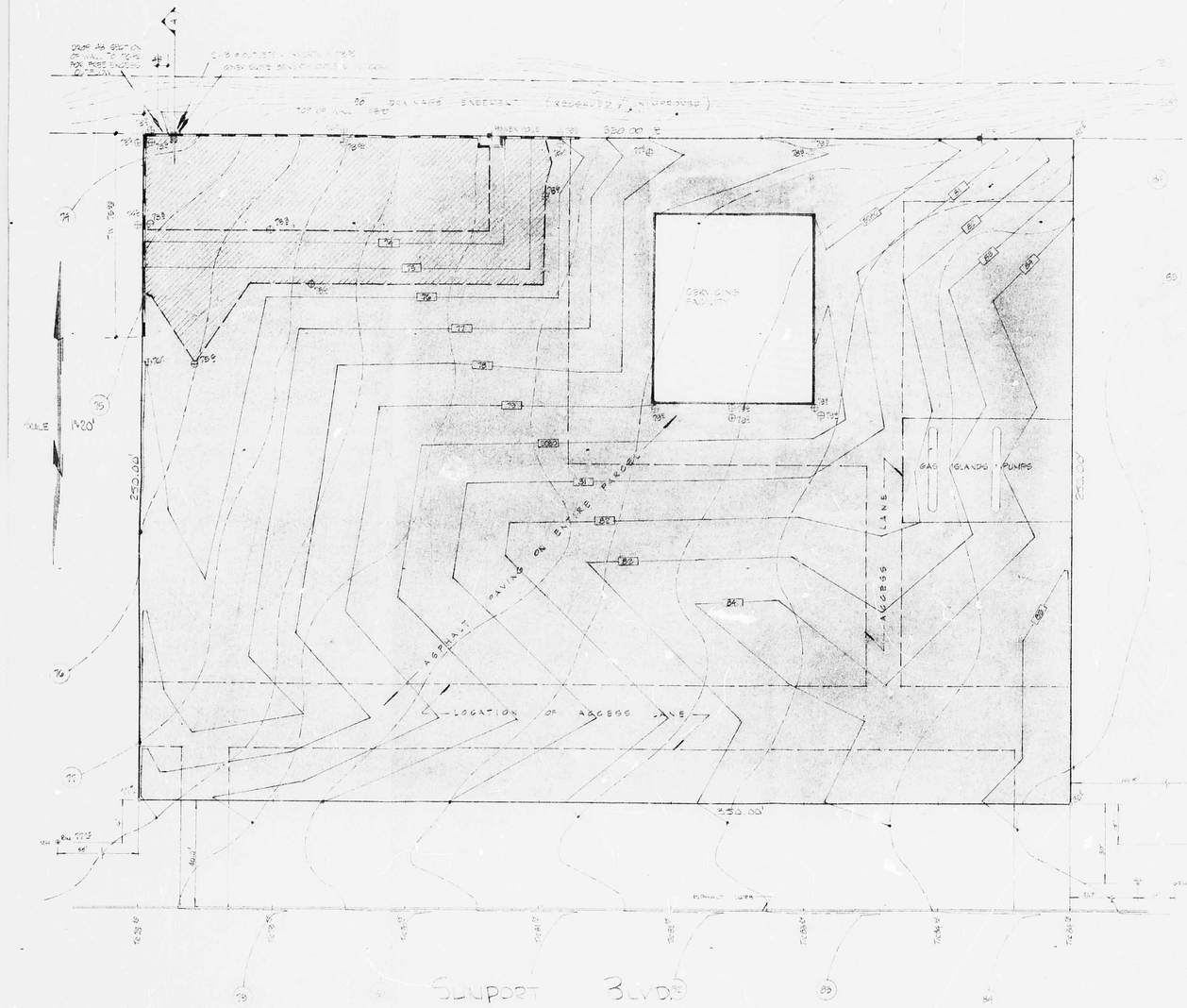
BUDGET RENT-A-CAR SERVICE CENTER

FOR: BURK & BURK ARCHITECTS

DATE: MAY 29, 1980

LEGAL: PORTION OF MUNICIPAL AUDITORIUM, U.S. 9
ALBUQUERQUE, NEW MEXICO

BENCH MARK: FIRE HYDRANT LOCATED ON SOUTH & WEST SIDE OF THE EXISTING AUDITORIUM, STAMPED IN TOP AS F.H. ASSUMED ELEV. 5000



GENERAL DRAINAGE CALCULATIONS

TOTAL AREA OF PARCEL = 87500 SF
OR 2.0 ACRES

EXISTING RUNOFF RATE

$Q_{100} = 2.0 \times \frac{2.2}{12} = 0.367$ CFS

NOTE: 100 YEARS ST. FREQ. PRECIPITATION EXISTING PERVIOUS, FLAT GRADE, NO SITE

DEVELOPED RUNOFF RATE

$Q_{100} = 2.0 \times \frac{3.4}{12} = 0.567$ CFS

SITE WILL BE COVERED 100% WITH ROOF OR ASPHALT PAVEMENT

REQUIRED ON SITE RETENTION

AREA × DEPTH = 87500 CF

RETENTION PROVIDED

SURFACE AREA 8500 SF
BOTTOM AREA 4400 SF
DEPTH 1.5 FT

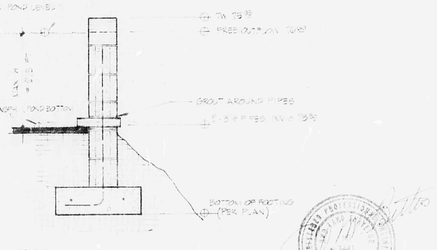
VOLUME $= \frac{8500 + 4400 + \sqrt{8500 \times 4400}}{3} \times 1.5 = 9004$ CF

NATURAL RUNOFF RATE

$Q_{100} = 0.008 \times 5.4 \times 1.00 = 0.17$ CFS
$Q_{10} = 0.008 \times 2.8 \times 1.00 = 0.09$ CFS + DESIGN OUTFLOW (MANNING)

DEVELOPED RUNOFF RATE

$Q_{100} = 0.008 \times 3.4 \times 1.00 = 0.27$ CFS UNCONTROLLED DISCHARGE



MANNING OUTFLOW:

$Q = \frac{1.486}{n} A R^{2/3} S^{1/2}$

WHERE $A = .049$ SF (3 PIPES PER PIPE)
$n = 0.9$ FT MANNING

$\left(\frac{1.486}{.9}\right)\left(\frac{.049}{12}\right)\left(\frac{.0}{12}\right)^{2/3} \times 2 = 24.0150$ CFS MANNING

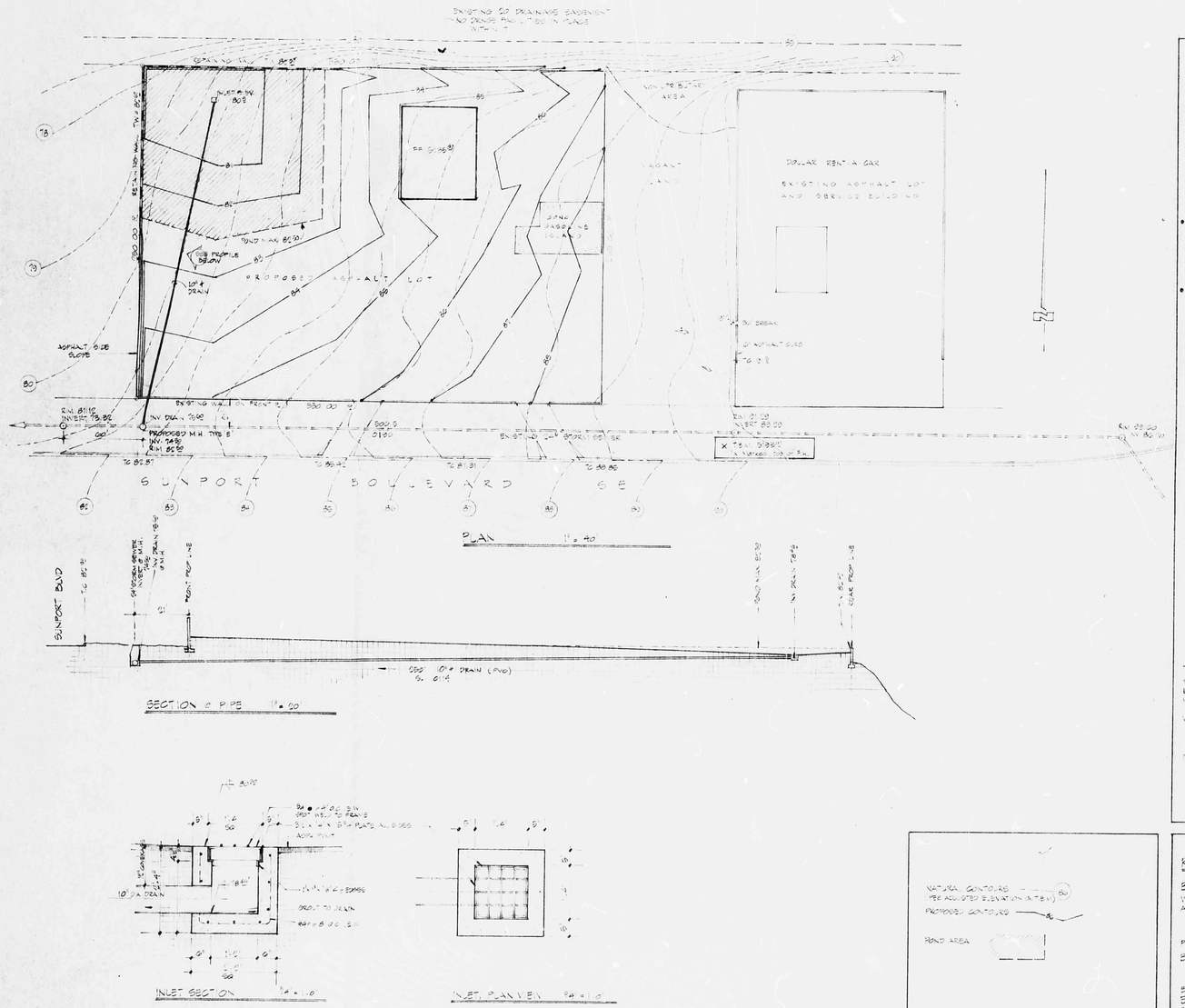
THIS PLAN SHOT TWICE
ONCE ON LIGHT AND
ONCE ON DARK.

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

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D



UPLAND ZONE

DOLLAR RENT A CAR LOT IS 60% COVERED WITH BUILDING BUILDINGS.

Q = 230 X 60 X 5.4 / 43560 = 4.90 CFS SITE NO CURB BREAK I FRONT

NOTE A SMALL TERRACE BETWEEN BUILDING & DOLLAR LOT TO SLOPE SITE OR THE BUILDING IT IS NOT CONSIDERED IN THE CALCULATIONS

VACANT LAND

Q = 51900 X 5.4 X .20 / 43560 = 13.20 CFS

RUNOFF COEFFICIENT PER PREVIOUS PLAN (MAY 29, 1981)

• Q ENTERING EAST SIDE = 8.3 CFS NON-CONCENTRATED

BUDGET RENT-A-CAR LOT

NATURAL RUNOFF RATE

• 350 X 250 X 5.4 X .20 / 43560 = 2.1 CFS

PROPOSED RUNOFF RATE (100% CONCRETE)

350 X 250 X 5.4 X 1.00 / 43560 = 10.44 CFS

ALLOWABLE DISCHARGE = 2.1 - 5.3 = 7.50 CFS

PROPOSED DRAIN 10" DIAMETER
MAXIMUM FLOW = 8.5 - 4.0 = 0.34

NATURAL VOLUME GENERATED

350 X 250 X 5.3 X .20 / 2 = 3,440 CUFT

DEVELOPED VOLUME

350 X 250 X 5.3 X 1.00 / 2 = 6,440 CUFT

REQUIRED ON SITE RETENTION

10,000 CU.FT. = 1,458 CU.FT.

MAXIMUM RETENTION PROVIDED

SURFACE AREA 19,355 SQ.FT.
BOTTOM AREA 4,840 SQ.FT. @ 8% CONTOUR
NOMINAL DEPTH 1.5 FT

VOL. = 1.5/3 (9,355 + 54.10 + 9,355 54.10) = 14,800 CU.FT.

NOTE

ELEVATIONS SHOWN HEREON ARE 2.0 FT HIGHER THAN PREVIOUS PLAN (MAY OF 1981)
TOP OF TOP OF FIRE HYDRANT 2.00 FT
(PER PREVIOUS PLAN 5.80)

NATURAL CONTOURS (PER ADJUSTED ELEVATION ATBM) 80
PROPOSED CONTOURS 84
POND AREA

REVISED DRAINAGE PLAN

BUDGET RENT A CAR
WITHIN MUNICIPAL ADDITION NO 9
ALBUQUERQUE, NEW MEXICO

PREPARED FOR
BURK & BURK ARCHITECTS

BY
ENCHANTMENT ENGINEERING
9810 INDIAN SCHOOL ROAD NE
294-8883

REVISED MAY 5, 1981

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

2501 SUNPORT BLVD.

D 24 C 20 B 16 A 12 | CITY OF ALBUQUERQUE C D

HYDROLOGY

M16/D7

6 PLANS
2 of 2

ENCHANTMENT ENGINEERING Inc.
1517 EUBANK BLVD. N.E.
ALBUQUERQUE, N.M. Ph.294-8859

TOPOGRAPHIC SURVEY AND DRAINAGE STUDY

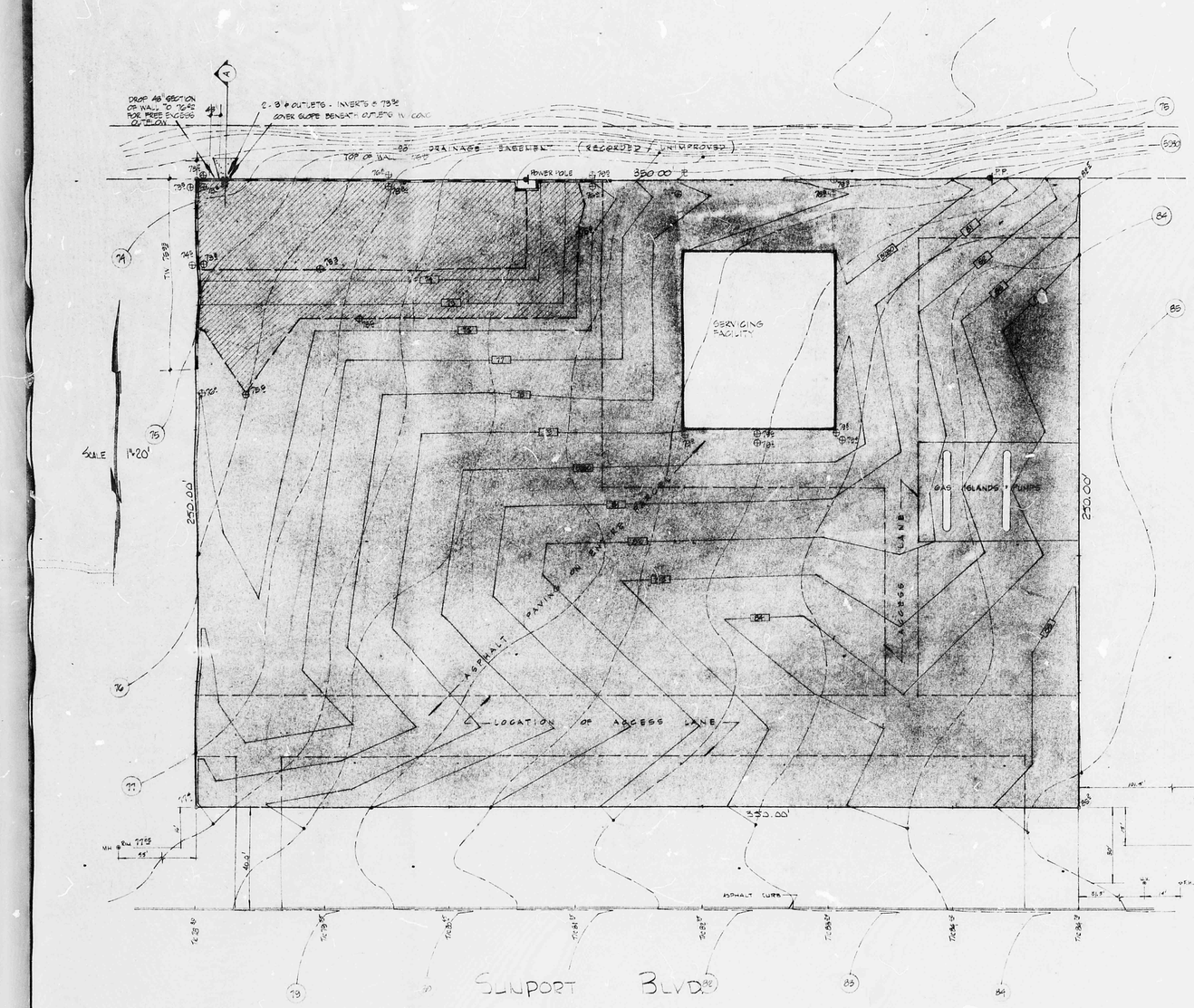
BUDGET RENT-A-CAR SERVICE CENTER

FOR: BURK & BURK ARCHITECTS

SCALE: 1"=20' MAY 29, 1980

LEGAL: PORTION OF MUNICIPAL ADDITION No. 9
ALBUQUERQUE, NEW MEXICO

BENCH MARK: FIRE HYDRANT LOCATED 30' SOUTH & 925' EAST OF S.E. CORNER OF PROPERTY, "X" STA 1980 ON TOP OF F.H. ASSUMED ELEV. 5183



GENERAL DRAINAGE CALCULATIONS

TOTAL AREA OF PARCEL 87500 FT²
COVERAGE COEF. .25 %

EXISTING RUNOFF VOLUME

$87500 \times .00 \times \frac{0.5}{12} = \underline{3646 \text{ FT}^3}$

NOTE: .00 COEFFICIENT USED BECAUSE SLOPE ENGT NO PERMEABILITY OF SOIL ON SITE.

DEVELOPED RUNOFF VOLUME

$87500 \times 1.00 \times \frac{2.0}{12} = \underline{18200 \text{ FT}^3}$

SITE WILL BE COVERED 100% WITH ROOF OR ASPHALT PAVEMENT

REQUIRED ON SITE RETENTION

18200 - 3646 = 14600 FT³

RETENTION PROVIDED:

SURFACE AREA 8000 FT²
BOTTOM AREA 4400 FT²
DEPTH 2.8 FT

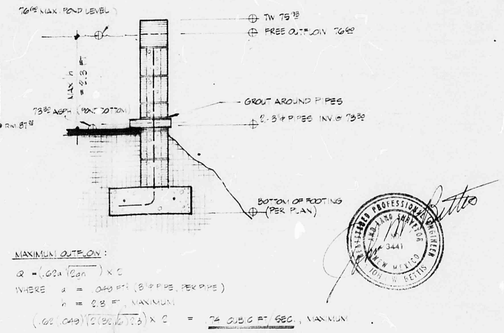
VOLUME $\left[8000 + 4400 + \sqrt{8000 \times 4400}\right] \frac{2.8}{3} = \underline{14604 \text{ FT}^3}$

NATURAL RUNOFF RATE

Q 10 = 2.008 × 5.4 × .20 = 2.17 CFS
Q 5 = 2.008 × 2.8 × .20 = 1.12 CFS = DESIGN OUTFLOW MAXIMUM

DEVELOPED RUNOFF RATE

Q 100 = 2.008 × 5.4 × 1.00 = 10.84 CFS UNCONTROLLED DISCHARGE



MAXIMUM OUTFLOW:

$Q = .62A\sqrt{2gh} \times C$

WHERE A = .049 FT² (3 2" PIPES PER PIPE)
h = 2.8 FT. MAXIMUM

$(.62 \times .049)\sqrt{(2 \times 32.2 \times 2.8)} \times 2 = \underline{7.4 \text{ CFS}}$ FT SEC, MAXIMUM

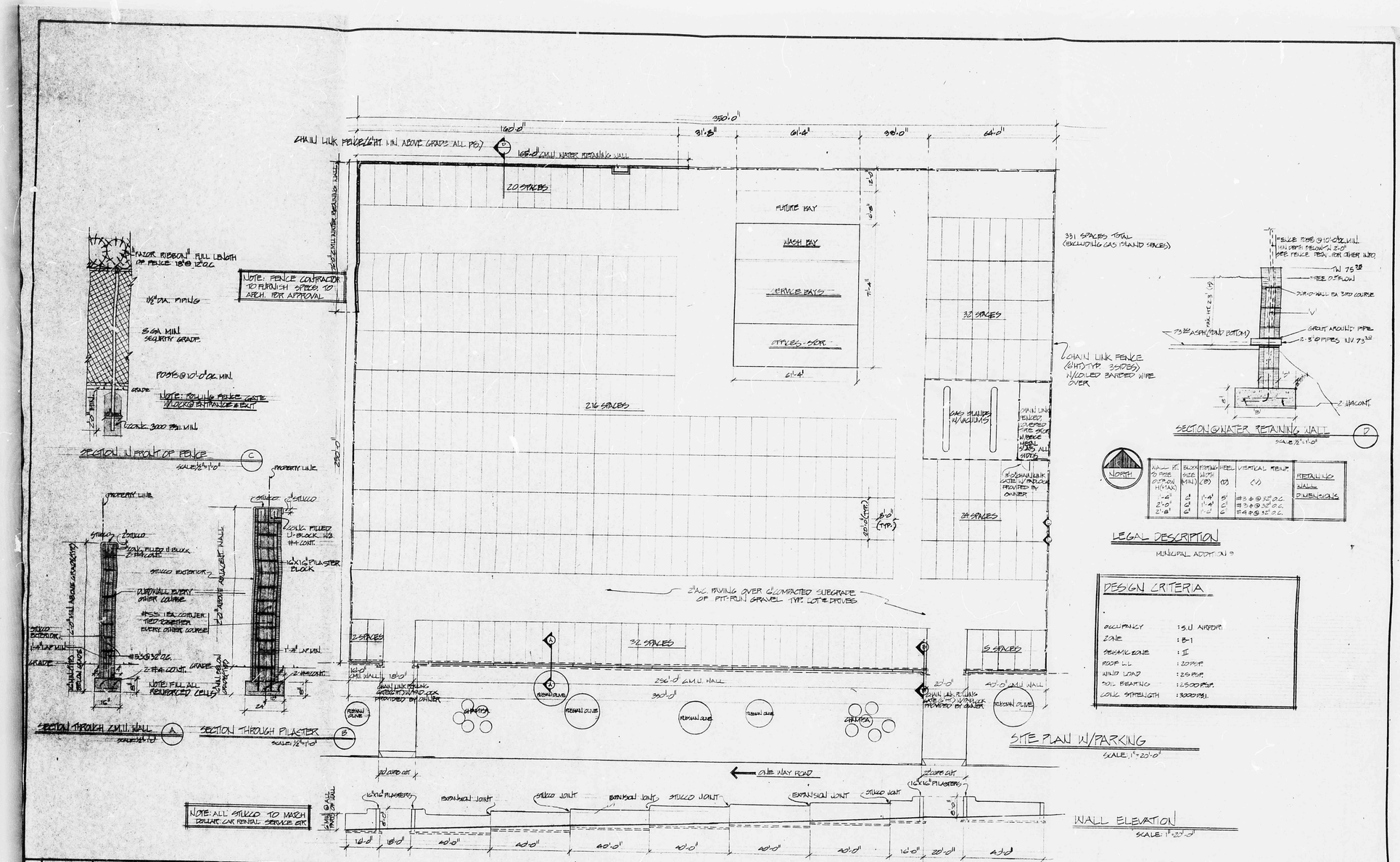
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

THIS PLAN SHOT TWICE
ONCE ON LIGHT AND
ONCE ON DARK.

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D



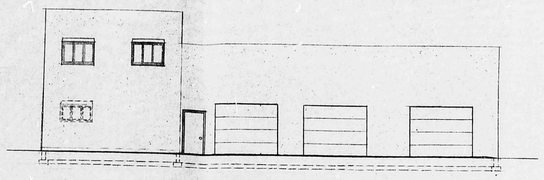
CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT

THIS PLAN SHOT TWICE ONCE ON LIGHT AND ONCE ON DARK.

D 24 C 20 B 16 A 12

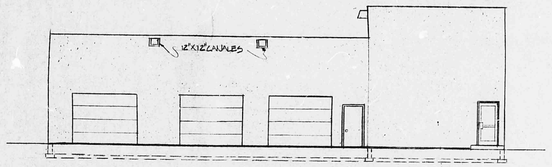
CITY OF ALBUQUERQUE

C D



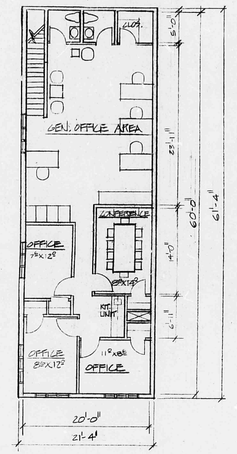
EAST ELEVATION

SCALE: 1/8"=1'-0"



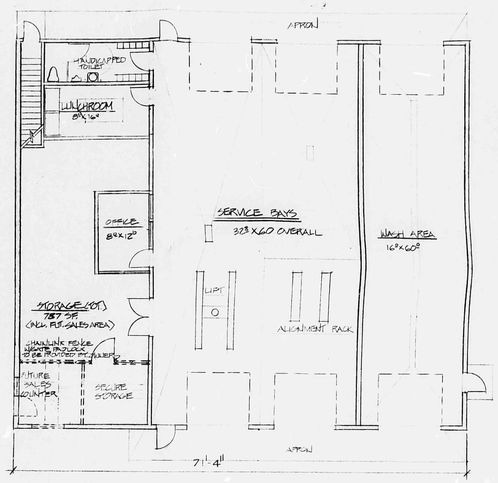
WEST ELEVATION

SCALE: 1/8"=1'-0"



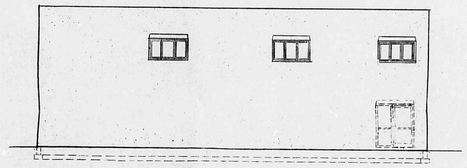
SECOND FLOORPLAN

SCALE: 1/8"=1'-0"



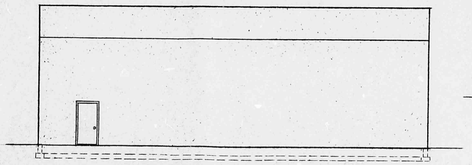
FIRST FLOORPLAN

SCALE: 1/8"=1'-0"



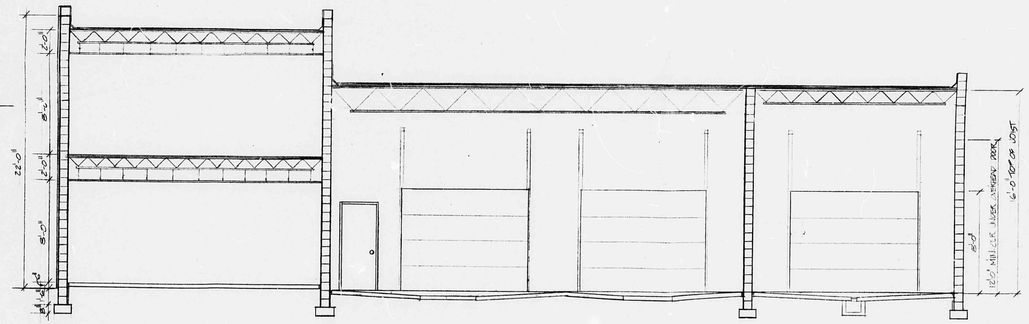
SOUTH ELEVATION

SCALE: 1/8"=1'-0"



NORTH ELEVATION

SCALE: 1/8"=1'-0"



BUILDING SECTION

SCALE: 1/4"=1'-0"

NO	DATE	REVISIONS TO DRAWINGS	NO	DATE	REVISIONS TO DRAWINGS

CIVIL | ELECTRICAL | MECHANICAL | STRUCTURAL | ARCHITECT | OWNER'S APP.

1027 SAN MATEO, S.E.
BOX 4506 87196
(505) 255-7537

DATE JUNE 18, 1980
DWG. BY FSK
CHECKED BY
APP. BY

BURK & BURK-ARCHITECTS A.I.A. **BB**
ALBUQUERQUE, NEW MEXICO

JOB NO 1693

PLANS, ELEVATIONS, SECTION

SERVICE CENTER FOR BUDGET-RENT-A-CAR
ALBUQUERQUE INTERNATIONAL AIRPORT

SHT NO 1 OF

D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D