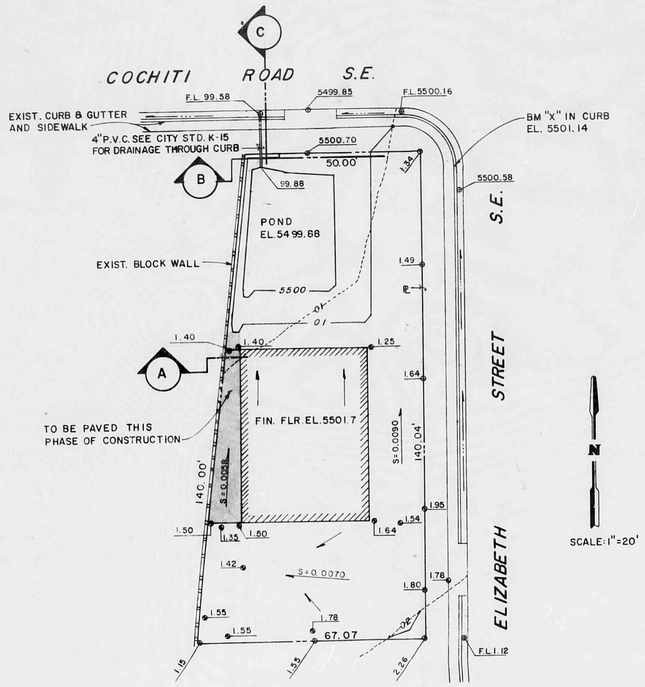
HYDROLOGY

L21/D12
ONE PLAN

L21/D12

1 PLAN



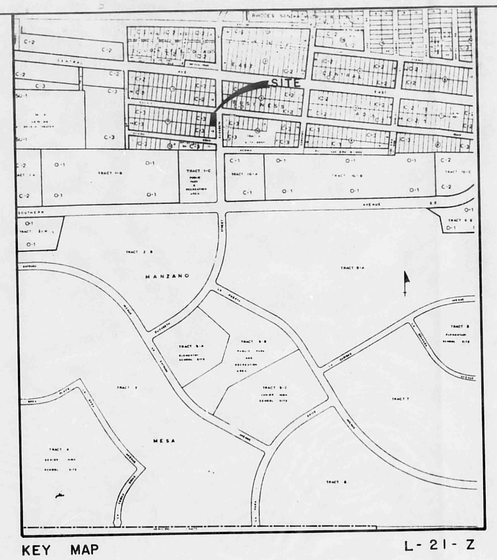
GRADING PLAN

LEGEND

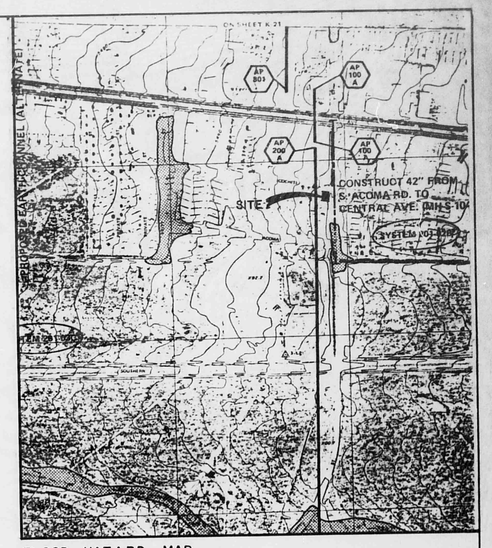
- EXIST. CURB, GUTTER & SIDEWALK
- EXIST. BLOCK WALL
- NEW BUILDING
- 1.40 NEW SPOT ELEVATION
- 1.49 EXIST. SPOT ELEVATION
- EXIST. CONTOUR
- NEW CONTOUR

N

SCALE: 1"=20'



KEY MAP L-21-Z



FLOOD HAZARD MAP

LEGAL DISCRIPTION:

Lot No. 18, Block No. 11, Plat of Blocks 8 to 22, inclusive. East Central Business Addition. A subdivision of Tract in school district 13, Bernalillo County, New Mexico. Filed with County Clerk of Bernalillo County on July 15, 1946.

The proposed site development is located on the southwest corner of the intersection of Elizabeth Street and Cochiti Road S.E. and contains approximately 0.19 acres. The site is not located in the Flood Hazard Zone as shown on the plan.

Existing site is undeveloped with an approximate slope of 1.16 from southeast to northwest. An existing block wall is located west of the property, which prevents flow from entering in from this direction. Flows south of the property are transported south by existing grades. Existing flows from Elizabeth Street and Cochiti Road are transported by existing curb and gutter to the downstream direction.

Developed conditions include a 36' x 50 ' building area. The entire site will be paved in the future. A pond is proposed on the northwest side of the property. Grading of the site is generally from southeast to northwest. A 4' P.V.C. Pipe will be constructed to drain the flow to adjacent street with an approximate discharge rate of 0.27 c.f.s.. An emergency spill-way will be provided by utilizing the existing driveway on the north side of the property.

The grading plan shows; existing and proposed finished grades indicated by contours at 1'-0" intervals and selected spot elevations. It also shows continuity between proposed and existing elevations.

If developed as shown, the site will not be susceptable to flooding nor will it increase the threat of flooding to down-stream areas.

EXISTING CONDITION:

Area = A = 142' x 60' = 8520 sq. ft. = 0.196 Acres

L = 160' Slope = $\frac{2.26 - 0.40}{160} = 0.0116$

$T_c = 0.0078 \times \frac{(160)^{0.77}}{(0.0116)^{0.385}} = 2.15$ min. (Use 10 min.)

$C_u = 0.45$

$Q_{100} = 0.45 \times 0.196 \times 2.2 \times 2.5 = 0.485$ c.f.s.

Vol. = $0.45 \times \frac{2.5}{12} \times 0.196 \times 43560 = 800.40$ cu. ft.

DEVELOPED CONDITION: (Assuming Fully Developed)

$C = 0.95$

$Q_{100} = 0.95 \times 2.2 \times 2.5 \times 0.196 = 1.00$ c.f.s.

Vol. = $\frac{2.5}{12} \times 0.196 \times 43560 = 1724$ cu. ft.

$T = \frac{2 \times 1724}{1.00} = 3448$ seconds

Out Flow Through 4" P.V.C. Pipe:

$K = 35.6 \times \left(\frac{4}{12}\right)^{2.667} = 1.90$

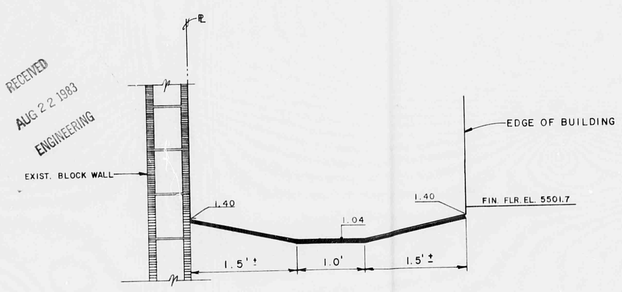
$Q = K S^{\frac{1}{2}}$

$= 1.90 \times \left(\frac{99.88 - 99.58}{15}\right)^{\frac{1}{2}} = 0.27$ c.f.s.

$Vol._{out} = 0.27 \times 3448 = 930$ cu. ft.

Pond Volume Required = 1724 - 930 = 794 cu. ft.

Pond Volume Provided = 1030 cu. ft.



$Q_{100} = 0.31$ cfs

Side Slope = $\frac{0.36}{1.5} = 0.240$

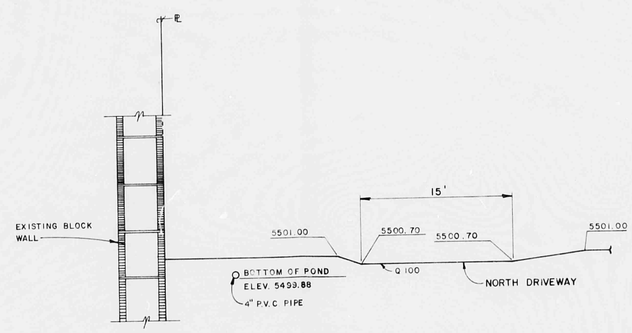
Channel Slope = 0.0058

N = 0.015

Flow Depth = 0.16 ft.

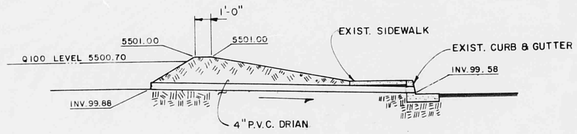
SECTION A

NTS



SECTION B

NTS



SECTION C

DRAINAGE PLAN
FOR
DWIGHT R. LANGWELL

ARCHITECT: GORDON BOSL

CHAVEZ GRIEVES / CONSULTING ENGINEERS, INC.
6121 INDIAN SCHOOL RD. N.E.
SUITE 320
ALBUQUERQUE, N.M. 87110
PH. 505 881-7376

VICTOR J. CHAVEZ
STATE OF NEW MEXICO
NO. 5713
REGISTERED PROFESSIONAL ENGINEER

RECEIVED
AUG 22 1983
ENGINEERING

APPROVED FOR DRAINAGE
8/30/83
DATE
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED

L21/D12