HYDROLOGY F16/D1 TWO PLAN

F 16 - D1

2 PLANS

DRAINAGE

FIRST CHURCH OF GOD

JUNE 8, 1973

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR
NO. 3441
NEW MEXICO
JOHN W. BETTIS

ENCHANTMENT ENGINEERING INC

Description of Area

The First Church of God is located on the northwest corner of Montgomery and Carlisle designated as Tract G-1 of the Montgomery complex. Tract G-1 encompasses Tract G-2 of the Montgomery complex. Presently Tract G-2 is surrounded by a concrete block wall which retains all the storm water runoff on this tract. At some time in the future Tract G-2 will be cleared and developed as a sports field. Therefore it can be assumed that at the present Tract G-2 does not contribute any drainage, however at some time in the future Tract G-2 will add to the drainage.

Outside drainage that might enter Tract G-1 is non-existent due to elevation differences to the west and curbed roads on the north, east and south.

Present drainage flows west into an existing earthen channel on the west side of Tract G-1 and transfers it to the North Diversion Channel.

NATURAL RUNOFF FROM PROPERTY

THE FOLLOWING CALCULATIONS ARE FOR TRACT G-1

A = 3.91 ACRES
C = 0.283
I = 4.4 in/hr

Q = CIA = 4.87 CFS

PRESENTLY THIS DRAINAGE FLOWS WEST AND ENTERS AN EXIST EARTHEN CHANNEL ON THE WEST SIDE OF TRACT G-1.

DEVELOPED RUNOFF

PAVED AREAS
(INCLUDES WALKS & FUTURE PARKING)

A = 1.49 ACRES
C = 0.92
I = 5.25 in/hr

Q = CIA = 7.2 CFS

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ROOFED AREAS
(INCLUDES FUTURE EXPANSION)

A = 0.47 ACRES
C = 0.92
I = 5.25 in/hr

Q = CIA = 2.27 CFS

GRASSED AREAS
(INCLUDES TRACT G-2)

A = 1.96 ACRES
C = 0.22
I = 5.25 in/hr

Q = CIA = 2.26 CFS.

TOTAL DEVELOPED RUNOFF = 11.73 CFS

INCREASED RUNOFF = 6.86 CFS.

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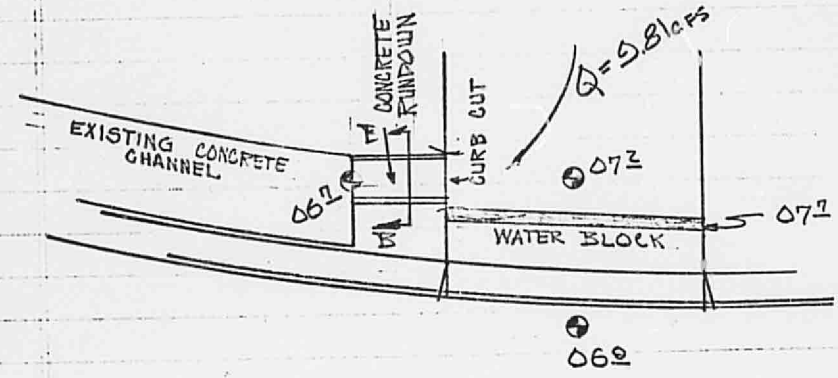
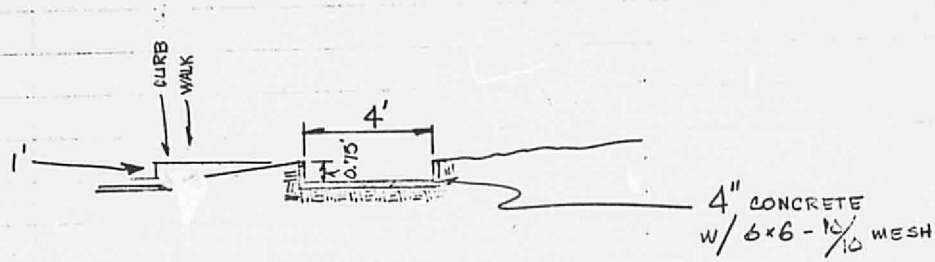
DRAINAGE AFTER DEVELOPMENT

DRAINAGE AFTER DEVELOPMENT IS SIMILIAR TO THAT SHOWN ON THE DEVELOPMENT PLAT. The PAVED AREAS TO THE EAST OF TRACT G-2 will drain through THE PARKING AREAS AND ACCUMULATE AT THE POINT SHOWN ON THE DEVELOPMENT PLAT. From there THE DRAINAGE will flow through A curb cut AND down A PAVED RUNDOWN AND EMPTY INTO AN EXISTING CONCRETE CHANNEL with A quantity OF 5.81 CFS.

RUNDOWN DETAIL





SECTION B-B

CAPACITY OF RUNDOWN

$$Q = \frac{1.49}{n} R^{2/3} S^{1/2} A$$

$A = 3 FT^2$
$S = 3.3\%$
$S^{1/2} = .182$
$P = 5.5$ FT
$R = A/P = .545$
$R^{2/3} = .667$
$n = 0.013$

$Q = 41$ CFS

THEREFORE RUNDOWN WILL CONTAIN RUNOFF.

All OTHER AREAS will DRAIN WEST, INCLUDING TRACT G-2, AND ENTER AN EXISTING EARTH CHANNEL. The DISCHARGE OF THIS AREA is 2.5 CFS.

BIBLIOGRAPHY

1. Data Book for Civil Engineers, Design Vol. 1; Seelye, Elwyn E. 1948 p 5-00, 5-25

2. 1963 Master Plan of Drainage for City of Albuquerque and its Environs; Herkenhoff and Associates, Gorden. 1963

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AMENDMENT

TO

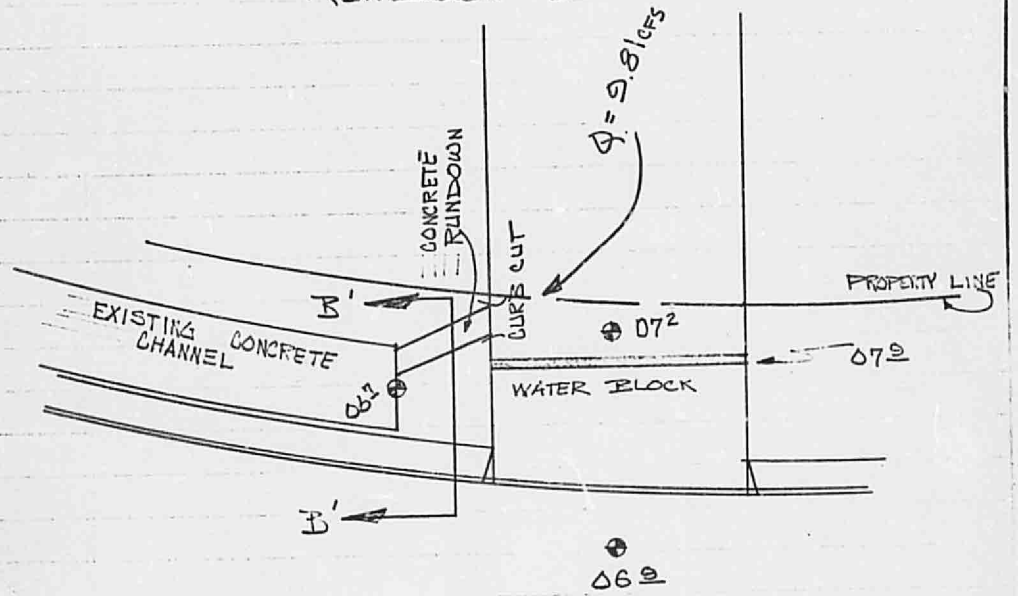
DRAINAGE

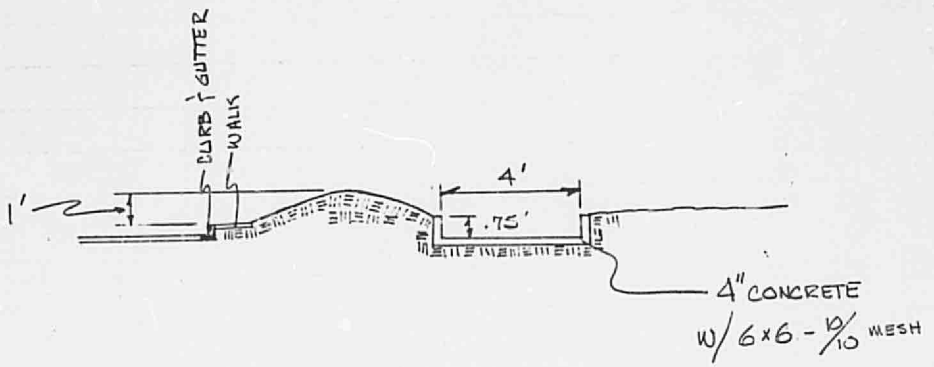
FIRST CHURCH OF GOD

ENCHANTMENT ENGINEERING INC

THE CONCRETE RUNDOWN DETAILED IN THE MAIN REPORT IS TO BE CHANGED TO THAT SHOWN BELOW.

RUNDOWN DETAIL





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