HYDROLOGY E20/D16A ONE PLAN

E20/D16A

1 PLAN

ENGINEER'S DRAINAGE REPORT

FOR

CITY OF ALBUQUERQUE

SPECIAL ASSESSMENT DISTRICT NO. 210

ALBUQUERQUE, NEW MEXICO

RECEIVED
JUN 07 1985
HYDROLOGY SECTION

WILSON & COMPANY

ENGINEERS & ARCHITECTS

1321 SAN PEDRO DR., N.E.

ALBUQUERQUE, NM 87110

ROBERT F. SYKES
NEW MEXICO
4591
REGISTERED PROFESSIONAL ENGINEER

MAY 1983

82-502

ENGINEER'S DRAINAGE REPORT
FOR
CITY OF ALBUQUERQUE
SPECIAL ASSESSMENT DISTRICT NO. 210
ALBUQUERQUE, NEW MEXICO

LOCATION: Special Assessment District No. 210 consists of the following street improvements:

Street	From	To
Academy Road NE	Wyoming Blvd.	Layton Ave.
Moon Street NE	Bear Tributary Drain	Academy Rd.
Harper Road NE	Wyoming Blvd.	Layton Ave.

DESIGN CRITERIA: The design criteria for this project is as specified in City of Albuquerque Municipal Development Department, Development Process Manual, Volume 2, Design Criteria.

Academy Road and Harper Road are designated "major arterial streets" and the following criteria controls for inlet spacing. (Chapter 22, Section 3, Paragraph E2c.) "Flow depths in the event of the 10 year discharge may not exceed 0.50 feet in any collector or arterial street and must preserve one lane free of flowing or standing water in each traffic direction."

The minimum size of main storm drain carrier pipe is 24-inch diameter and is otherwise sized to carry the 10 year probable design runoff.

The probable runoff quantities were determined by the Rational Formula.

Q = CiA
Q = Runoff quantity in cubic feet per second
C = Runoff coefficient
i = Rainfall intensity in inches per hour based on time of concentration
A = Drainage area in acres.

DISCUSSION: The drainage areas are labeled and shown on the enclosed aerial photo print.

Academy Road: Academy Road from Wyoming Blvd. to Layton Ave. is located on a ridge between the Arroyo del Pino and the Bear Tributary Drain. Assuming all flow in Academy Road will be diverted at Layton Ave. and the ultimate width of Academy Road will be 3 lanes wide in each direction of travel, no catch basins will be required west of Layton Ave. until Moon Street, where the 10 year flow will be intercepted in storm drain and flow will be transported by pipe to the Bear Tributary Drain. If drainage areas A-6 and A-7 are regraded so the storm water runoff does not enter Academy Road, it will only be necessary to design a structure to carry 10 year flow across Wyoming Blvd. in order to comply with design criteria. It is proposed to construct an inlet near the east end of the southeast return of Academy and Wyoming and discharge the flow into the gutter near the west end of the southwest return. The 10 year flow going west on the north side of Academy Road will turn north on Wyoming.

Moon Street: Moon Street from the Bear Tributary Drain to Academy intercepts four drainage basins. It is proposed to intercept all flow from drainage basins A-3 and A-4, 375 feet east of Moon St. and divert the flow to Bear Tributary Drain before it reaches Moon St. A storm drain will be constructed in Moon St. starting at Academy Road and discharging to the Bear Tributary Drain. The estimated construction cost is $140,400.

Harper Road: Harper Road from Wyoming Blvd. to Layton Ave. presently intercepts 15 drainage basins. It is proposed drainage basins H-3 and H-4 will be graded so the storm water runoff from these basins will not discharge to Harper Road, even so Harper Road will carry a large volume of storm water runoff.

There is a water block on Harper Road at Rosewood Road which diverts the water flowing in Harper Road south to Arroyo del Pino. The diversion ditch is located within a dedicated drainage easement. It is proposed to maintain this diversion as a part of the proposed improvements, therefore, there will be two storm drain systems constructed in Harper Road. The first system would begin at the intersection of Harper Road and Layton Ave. and would discharge to the Rosewood Road diversion. The second system would begin 400 feet west of Rosewood Road and would discharge to the Arroyo del Pino at Wyoming. The storm drain improvements in Wyoming would be constructed as a part of Wyoming Blvd. Arroyo del Piro Crossing Structure project. The estimated construction cost of the storm drain improvements for Harper Road is $550,100.

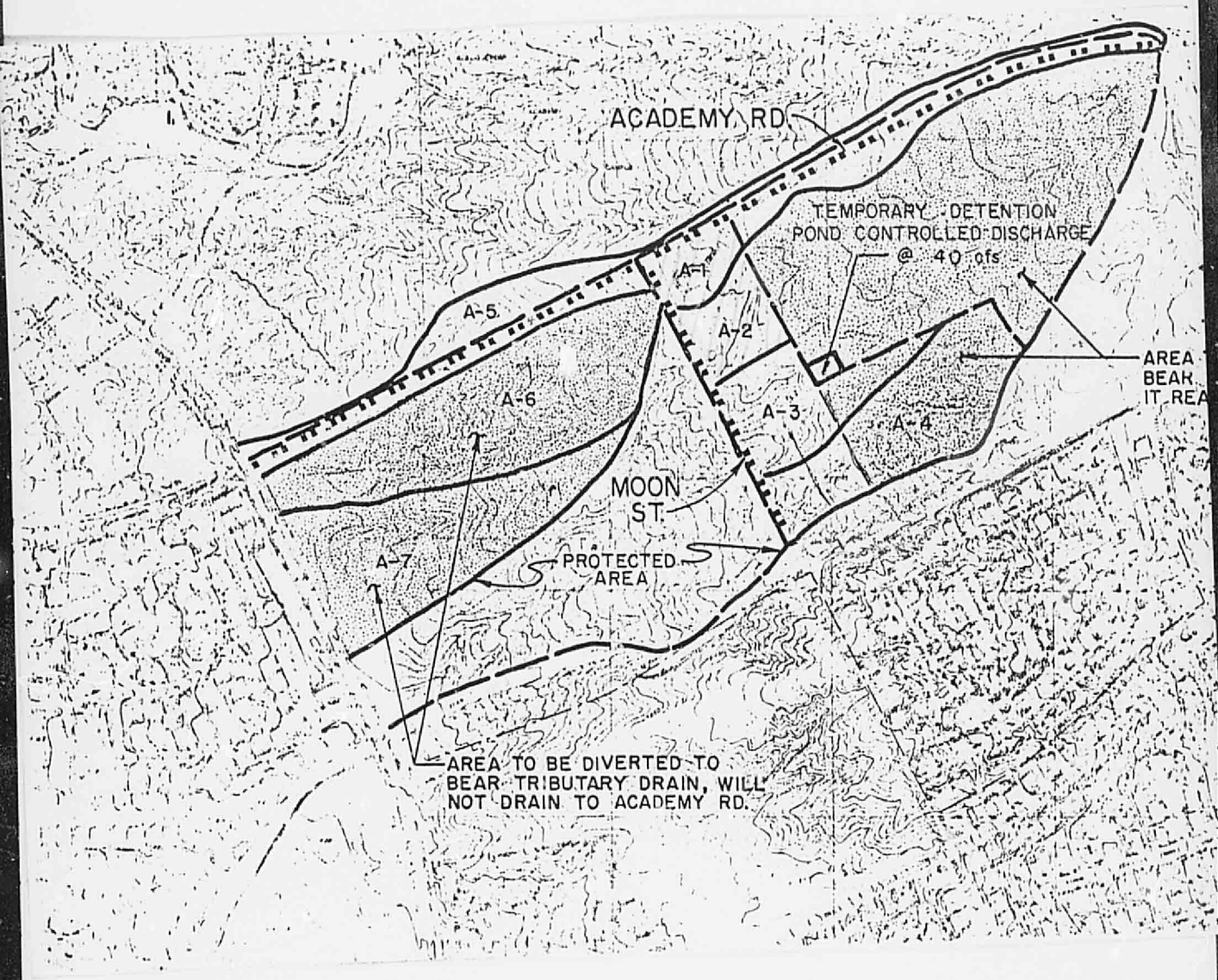
BASIS OF BENEFIT: It is proposed the project cost of the storm drainage improvements be assessed to the property benefited. It has been determined the benefits be allotted on an area basis. The following factors will be considered in the determination of benefits:

Contribution: The area upstream of the proposed improvements and contribute storm water runoff to the proposed improvement.

Protection: The area downstream of the proposed improvements and is protected from flooding by construction of the proposed improvements.

Access: With construction of the proposed improvements, access to the benefited property is not denied due to excessive depth of flow or velocity of flow when a major storm occurs.

CALCULATIONS: The attached calculations were used to determine the size and location of the proposed storm drainage improvements.


ACADEMY RD
TEMPORARY DETENTION
POND CONTROLLED DISCHARGE
@ 40 cfs
A-1
A-2
A-3
A-4
A-5
A-6
A-7
AREA
BEAR
IT REA
MOON
ST.
PROTECTED
AREA
AREA TO BE DIVERTED TO
BEAR TRIBUTARY DRAIN, WILL
NOT DRAIN TO ACADEMY RD.

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Heights Presbyterian Church Parking Lot Expansion ZONE ATLAS/DRNG.FILE #: E-20/D16A

LEGAL DESCRIPTION: Tract C, Academy Estates

CITY ADDRESS: 8600 Academy

ENGINEERING FIRM: Chavez-Grieves Consulting Engineers CONTACT: Victor J. Chavez

ADDRESS: 1520 Montgomery NE #3 PHONE: (505) 881-7376

OWNER: Heights Cumberland Presbyterian Church CONTACT: Ed Whitworth

ADDRESS: 8600 Academy NE PHONE: (505) 821-1993

ARCHITECT: Pat McMurray CONTACT: Pat McMurray

ADDRESS: 3901 Georgia, NE #1 PHONE: (505) 883-3906

SURVEYOR: Wilson & Company CONTACT: William Brewster

ADDRESS: 6611 Gulton Ct. NE PHONE: (505) 345-5345

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED JUN 07 1985 HYDROLOGY SECTION

DRB NO.

EPC NO.

PROJ. NO.

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

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

X GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 6/5/85

BY: Victor J. Chavez

CHAVEZ GRIEVES / CONSULTING ENGINEERS, INC.
4520 MONTGOMERY BLVD., SUITE 3
ALBUQUERQUE, N.M. 87109
(505) 881-7376

June 20, 1985

Mr. Carlos A. Montoya
City/County Flood Plain Admin.
Design Hydrology Section
123 Central N.W.
Albuquerque, N.M. 87102

RE: DRAINAGE AND GRADING PLAN FOR HEIGHTS PRESBYTERIAN CHURCH PARKING LOT EXPANSION (E 20-D16A)

Dear Carlos:

In response to your letter dated June 14, 1985, I offer the following revisions and comments:

1. New information sheet has been provided.
2. Engineer's stamp with signature and revision date has been provided.
3. Erosion control statement has been provided.
4. Capacity of 1'-0" wide sidewalk culvert:
   $Q = 1.486\ A^{5/3}\ S^{1/2}\ /\ NP^{2/3}$
   $A = 0.5\ ft^2$
   $S = 0.045$
   $N = 0.013$
   $P = 2.0\ ft$
   $Q = 4.81\ cfs$
5. Bench Marks have been provided.
6. A note has been added stating that a topsoil disturbance permit will be required from Environmental Health Department.

RECEIVED JUN 20 1985 HYDROLOGY SECTION

Your timely assistance in this matter is appreciated.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.

Jacki S. McDowell for

Victor J. Chavez, P.E.

JSM:mf

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

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

June 14, 1985

Mr. Victor Chavez
Chavez-Grieves Consulting Engineers
4520 Montgomery NE #3
Albuquerque, NM 87109

REF: DRAINAGE AND GRADING PLAN FOR HEIGHTS PRESBYTERIAN CHURCH PARKING LOT EXPANSION (E20-D16A) RECEIVED JUNE 7, 1985

Dear Mr. Chavez:

Based on the information provided on your June 7, 1985 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. Erosion control statement (it will be the contractor's responsibility to eliminate any sediment that may be deposited during construction, it is not a recommendation but a requirement).

4. Please provide the hydraulics for the 1'-0' wide sidewalk culvert (S.O.19 will need to be submitted to City Engineer's Department for review).

5. Bench marks - location, description and elevation of the:

   a. Albuquerque Control Survey Vertical Datum.
   b. Temporary bench mark on-site.

6. A topsoil disturbance permit will be required from Environmental Health Department

If you have any questions or comments, please feel free to contact me at 766-7644.

Sincerely,

Carlos A. Montoya

Carlos A. Montoya, PE
City/County Flood Plain Admin.

CAM:BJM:mrk

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

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

July 5, 1985

Mr. Victor Chavez
Chavez-Grieves Consulting Engineers
4520 Montgomery NE #3
Albuquerque, NM 87109

RE: DRAINAGE & GRADING PLAN FOR HEIGHTS PRESBYTERIAN CHURCH PARKING LOT EXPANSION (E20/D16A) RECEIVED JUNE 20, 1985

Dear Mr. Chavez:

The above reference submittal is approved, however, prior to Hydrology sign-off of the building permit the following items must be completed.

1. Please transfer the changes that were done in pen to the original mylar.
2. Attach to the construction set, and approved "Drainage Facilities Within City Right-of-Way" document.

If you have any questions, please contact this office at 766-7644.

Sincerely,

Carlos A. Montoya
City/County Flood Plain Admin.

CAM/cl

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Heights Presbyterian Church Parking Lot Expansion ZONE ATLAS/DRNG.FILE #: E-20/D16A

LEGAL DESCRIPTION: Tract C, Academy Estates

CITY ADDRESS: 8600 Academy

ENGINEERING FIRM: Chavez-Grieves Consulting Engineers CONTACT: Victor J. Chavez

ADDRESS: 4520 Montgomery NE #3 PHONE: (505) 881-7376

OWNER: Heights Cumberland Presbyterian Church CONTACT: Ed Whitworth

ADDRESS: 8600 Academy NE PHONE: (505) 821-1993

ARCHITECT: Pat McMurray CONTACT: Pat McMurray

ADDRESS: 3901 Georgia, NE #1 PHONE: (505) 883-3906

SURVEYOR: Wilson & Company CONTACT: William Brewster

ADDRESS: 6611 Gulton Ct. NE PHONE: (505) 345-5345

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

RECEIVED JUN 20 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN (Resubmittal)

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

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___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

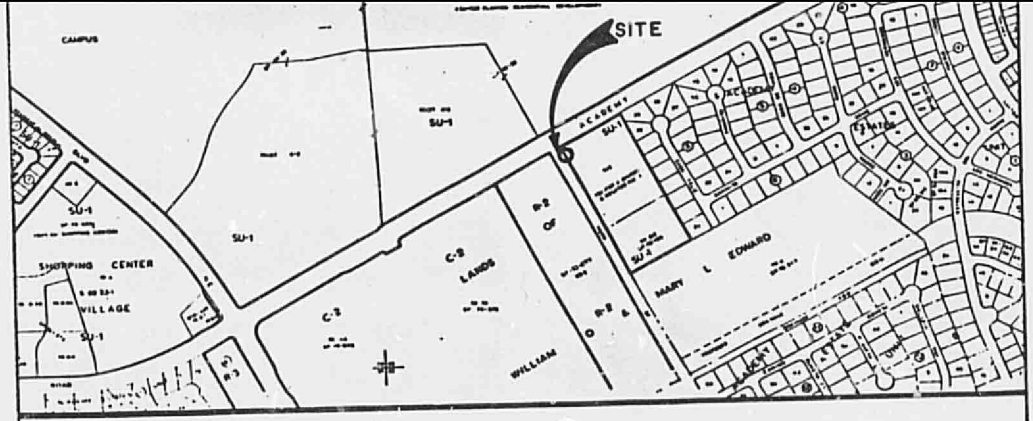
___ ROUGH GRADING PERMIT APPROVAL

X GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 6/20/85

BY: Victor J. Chavez



OWNER: HEIGHTS CUMBERLAND PRESBYTERIAN CHURCH
PRESBYTERIAN CHURCH
8600 ACADEMY RD. N.E.
ALBUQUERQUE, NEW MEXICO

LEGAL: TRACT "C" ACADEMY ESTATES

BENCH MARK: ACS BM 1-E20 STA. IS LOCATED APPROX. 700' S.E. OF INTERSECTION OF ACADEMY RD. & WYOMING BLVD. & ABOUT 650' DUE EAST OF THE ACADEMY APTS. ELEVATION = 5464.129.

VICTOR J CHAVEZ
STATE OF NEW MEXICO
NO. 5713
REGISTERED PROFESSIONAL ENGINEER
10/28/85

RECEIVED
NOV 20 1985
HYDROLOGY SECTION

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 the City of Albuquerque Interim Standard 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.

E20-D60 E-127

BROCE CONSTRUCTION

APPROVALS	NAME	DATE
A.C.E./DESIGN		11/04/85
INSPECTOR	L. P.	11/13/85

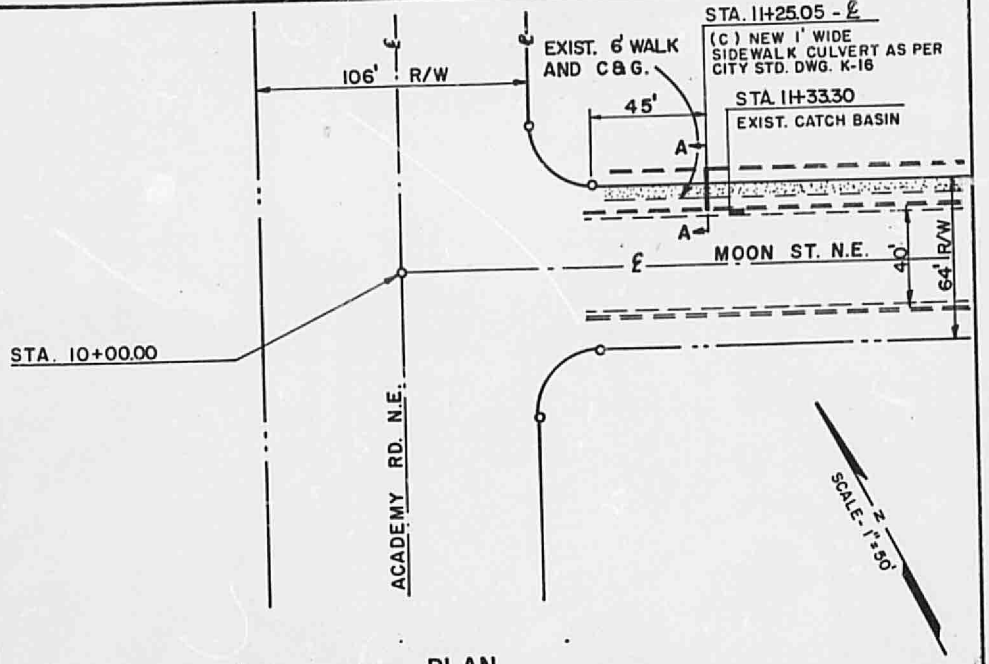
TITLE: SIDEWALK CULVERT
8600 ACADEMY ROAD N.E.

PERMIT NO. 24002
SHEET 1 OF 2

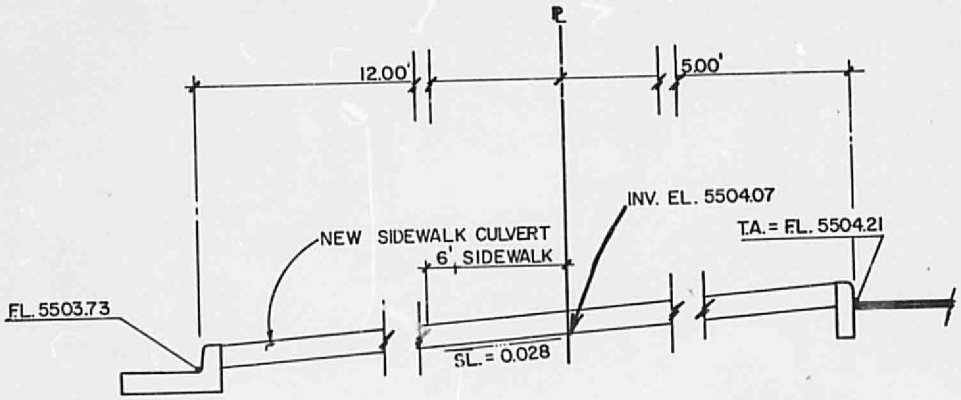
MAP E-20-Z

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



PLAN



SECTION A-A
N.T.S.

VICTOR J CHAVEZ
STATE OF NEW MEXICO
NO. 5113
REGISTERED PROFESSIONAL ENGINEER

E-127 10/28/85

BROCE CONSTRUCTION

APPROVALS	NAME	DATE	TITLE: SIDEWALK CULVERT 8600 ACADEMY ROAD N.E.
A.C.E./DESIGN		11/04/85	
INSPECTOR			PERMIT NO. 24002 SHEET 2 OF 2
A.C.E./FIELD			MAP NO. E-20-Z

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

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: E-20 DATE: 5/10/85

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: Heights Pres. Church

LEGAL DESCRIP.: Tract C Academy Estates

APPROVAL REQUESTED

_____ PRELIMINARY PLAT _____ FINAL PLAT

_____ SITE DEVELOPMENT PLAN _____ BUILDING PERMIT

X Paving Permit _____ ROUGH GRADING

ATTENDANCE:	WHO:	REPRESENTING:
	Jackie McDowell	Chavez-Grieves
	Billy Goolsby	City

_____ Conceptual Drainage Plan/Report required for Preliminary Plat and/or Site Development Plan sign-off.

_____ Approved Drainage Plan/Report required for Final Plat and/or Building Permit sign-off.

_____ Subdivision Improvements Agreement or Financial Security required.

X Approved Drainage Plan required for Paving Permit sign-off

FINDINGS: ① Discharge to be determined by analysis of downstream capacity. ② Erosion control plan for the period of construction will be required

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:	Jackie McDowell
TITLE:	CE/Design Hydrology	TITLE:	Engr. Tech. II
DATE:	5/10/85	DATE:	5/10/85

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