PLANS/PLATS ON FILE

FILE DESC: D-19/D004

PLANS/PLATS 4

STEVENS, MALLORY, PEARL & CAMPBELL
ARCHITECTS
115 AMHERST DRIVE, S.E.
ALBUQUERQUE, NEW MEXICO
505 255-8668
87106

December 17, 1979

Mr. Bruno Conegliano
Asst. City Engineer - Hydrology
P. O. Box 1293
Albuquerque, New Mexico 87103

Subject: Mountain Bell
Academy 1AESS Office
Telephone Exchange Building
Albuquerque, New Mexico

Dear Mr. Conegliano:

Enclosed is a copy of the Storm Drainage Study prepared by Boyle Engineering Corporation which was requested for submittal with our site development plan presently under consideration with the Environmental Planning Commission.

Please call us if we can be of further assistance.

Sincerely,

RAMoraga

Robert A. Moraga, Architect

RAM:dd

DONALD P. STEVENS A.I.A.
ROBERT G. MALLORY A.I.A.
GEORGE CLAYTON PEARL A.I.A.
C. ROBERT CAMPBELL A.I.A.

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

March 25, 1980

Theodore C. Hogsett
Boyle Engineering Corp.
3939 San Pedro Drive, NE
Albuquerque, New Mexico 87110

Reference: Mountain Bell - Wyoming Blvd. & Scott Place

Dear Mr. Hogsett:

The following are my comments concerning the above referenced Drainage Report submitted to this office on December 26, 1979:

(1) On the plan sheet the invert of the pipe at the outlet appears to be at or below the bottom level of the rock energy dissipator. Won't this create a backwater effect in the pipe, or a plugged effect and cause the water to pond on Wyoming or bypass the pipe completely? Also, if inlet control is intended to be the design criteria, what is the allowable headwater? Supply the necessary data to verify your design:

(2) Unable to verify the claim that the 7000 sq. ft. of landscaping will contain its own runoff. Show landscaping areas and how it is proposed to contain the runoff:

(3) The asphalt cover proposed over the ponding area does not appear to be adequate, but I'am unable to comment specifically since the typical section is not drawn to scale:

(4) The structure provided at the outfall of the culvert is not clearly explained nor clearly detailed on the plan as to its function. I assume you are intending to cause the offsite flows to sheet flow over the top of the wall so that the offsite flows closely follows the normal drainage pattern:

(5) Do you anticipate any problems from the Church of the Risen Savior in regard to the discharge scheme proposed, since you are altering the drainage pattern?

If you have any questions concerning these comments, please feel free to call on me.

Sincerely,

Fred J Aguirre

Fred J. Aguirre
Civil Engineer

FJA/lc

Boyle Engineering Corporation

Consulting Engineers

Albuquerque, New Mexico 87110 505 / 883-7700

April 7, 1980

Mr. Fred Aguirre
Assistant Hydrology Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RE: Drainage Report for North Towne Office Park
Job Number K-D02-109-51

Dear Mr. Aguirre,

In response to your comments by letter of March 28, 1980, the following information is submitted in order to clarify problem areas noted for the above project:

1. Although t_c's determined from the nomographs do not agree exactly, I submit that they are of sufficient accuracy for design.

2. Attached are calculations which indicate that the outflow from the 3" drains is less than Q_5 undeveloped, thus complying with the "Interim Drainage Guidelines" November 1979.

3. Attached is the revised grading plan with spot elevations shown along the east side of the buildings at the curb line. These spot elevations show that runoff will drain out of parking areas and not pond against the curbs.

4. Combined ponding area 4A and 4C is shown incorrectly. On the attached revised grading plan it is shown correctly. The pond has a sodded sideslope of 3:1 from the property line with no vertical drop as indicated in your comment # 4.

5. Flow through the curb cuts into the ponding areas will not create erosion problems as all ponding areas will be completely sodded.

By this submittal it is anticipated that the referenced drainage report will meet with your approval. Your immediate response to this material will be appreciated.

BOYLE ENGINEERING CORPORATION

John A. Segotta

John A. Segotta
Assistant Civil Engineer

JAS:crm
encl:

Calculations to determine outflow from 3" drains provided from ponding areas

1. According to "Interim Drainage Guidelines" November 1979, the outflow to a street or public storm system shall be at the rate of Q_5 undeveloped.

2. Determination of Concentration Time (t_c) and Intensity (I), from: Figure H - Overland Flow Time and Figure J - Values of I, Rainfall Intensity - Duration - Page 18-01 Data Book For Civil Engineers: Design, by Elwyn Seelye.

3. From Hydrologic Data for City of Albuquerque, the 6-hour rainfall to be expected once in 5 years is 1.25 inches.

DRAINAGE AREA # 1

Area = 1.42 Acres
C = 0.4 (Undeveloped)
t_c = 16.8 minutes (from report)
I = 2.9 in./hr.

Rate of Flow, Q_5 = CIA

$Q_5 = 0.40\ (2.90)\ (1.42) = 1.65$ cfs

Capacity of 3" Drain:

$A = \pi r^2 = \pi (\frac{1.5}{12})^2 = 0.0491\ ft^2$

$S = \frac{98.50 - 96.23}{26} = 0.0873 \quad s^{\frac{1}{2}} = 0.2955$

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

$Q = \frac{1.486}{0.013} (0.0491) (\frac{0.0491}{0.7854})^{2/3} (0.2955)$

$= 1.6585\ (0.1575)$

Q = 0.26 cfs less than 1.65 cfs ok

DRAINAGE AREA # 2

Area = 1.70 Acres
C = 0.4 (Undeveloped)
t_c = 15.0 minutes (from report)
I = 3.2 in./hr.
Q_5 = 0.40 (3.20) (1.70) = 2.18 cfs

Capacity of 3" Drain:

$A = 0.0491 \text{ ft.}^2$

$S = \frac{7.0-6.3}{26} = 0.0269 \qquad S^{\frac{1}{2}} = 0.1640$

$Q = \frac{1.486}{0.013} (0.0491) (0.1575) (0.1640)$

Q = 0.15 cfs less than 2.18 cfs ok

DRAINAGE AREA #3

Area = 0.96 Acres
C = 0.4 (Undeveloped)
t_c = 13.8 minutes (from report)

I = 3.25 in./hr.
$Q_5 = 0.40 (3.25) (0.96) = 1.25$ cfs

Capacity of 3" Drain(Pond 3C):

$A = 0.0491 \text{ ft.}^2$

$S = \frac{9.5-9.3}{10} = 0.0200 \qquad S^{\frac{1}{2}} = 0.1414$

$Q = \frac{1.486}{0.013} (0.0491) (0.1575) (0.1414)$

Q = 0.13 cfs less than 1.25 cfs ok

Capacity of 3" Drain (pond 3D):

$\text{Area} = 0.0491 \text{ ft}^2$

$S = \frac{8.5-8.3}{10} = 0.0200$

Q = 0.13 cfs less than 1.25 cfs ok

DRAINAGE AREA #4

Area = 0.78 Acres
C = 0.4 (Undeveloped)
t_c = 13.3 minutes (from report)
I = 3.35 in./hr.
$Q_5 = 0.40 (3.35) (0.78) = 1.05$ cfs

Capacity of 3" Drain (Pond 4A & C):

$\text{Area} = 0.0491 \text{ ft}^2$

$S = \frac{99.5-98.2}{18} = 0.0722$

$S^{\frac{1}{2}} = 0.2687$

$Q = \frac{1.486}{0.013}$ (0.0491) (0.1575) (0.2687)

Q = 0.24 cfs less than 1.05 cfs ok

Capacity of 3" Drain (Pond 4B):

Area = 0.0491 ft^2

$S = \frac{99.5-98.6}{18} = 0.0500$

$S^{\frac{1}{2}} = 0.2236$

$Q = \frac{1.486}{0.013}$ (0.0491) (0.1575) (0.2236)

Q = 0.20 cfs less than 1.05 cfs ok

<u>DRAINAGE AREA # 5</u>

Area = 1.18 acres
C = 0.4 (Undeveloped)
t_c = 15.0 minutes (from report)
I = 3.2 in./hr.
Q_5 = 0.40 (3.20) (1.18) = 1.51 cfs

Capacity of 3" Drain

A = 0.0491 ft^2

$S = \frac{5400.5-5400.0}{25} = 0.0200$

$S^{\frac{1}{2}} = 0.1414$

$Q = \frac{1.486}{0.013}$ (0.0491) (0.1575) (0.1414)

Q = 0.13 cfs less than 1.51 cfs ok

STEVENS, MALLORY, P RL & CAMPBELL
ARCHITECTS
115 AMHERST DRIVE, S.E.
ALBUQUERQUE, NEW MEXICO
505 255-8668
87106

April 11, 1980

Planning Director
City of Albuquerque
Municipal Planning Department
P. O. Box 1293
Albuquerque, New Mexico 87103

RECEIVED
APR 15 1980
CITY ENGINEER

Subject: File Z-73-22-1
Mountain Bell
Academy Office - Tract A
No. 1 ESS Building Addition
7621 Wyoming Boulevard, N.E.
Albuquerque, New Mexico

Gentlemen:

Enclosed with this transmittal is Development Drawing 5A202-AC-SPI dated 11-2-79, Revision 1 dated 12-17-79 for the subject project and our request for approval of same.

On December 20, 1979 the Environmental Planning Commission took action on our request and resolved that Z-73-22-1 (Development) be approved subject to full compliance with their findings. Development Plan SP-1 revision 1, dated 12-27-79 responds to E.P.C. findings listed below.

A. Item 3: "Sidewalks shall be installed in accord with the City's Sidewalk Ordinance."

Item 4: "The west and north sides of the property shall be screened with an appropriate masonry wall."

Item 5: "The eastern facade of the structure shall be softened with trees in front of the building but not at the corner in such a manner to obstruct traffic." We shall detail the steps we propose to follow in implementing these findings later in this letter.

B. Item 7: "Access to Scott Place must be secured prior to final plan approval", we enclose one copy of Replat of Lester Tract B-2 Michaels Manor North (filed February 22, 1980) prepared by A. Dwain Weaver NMPLS No. 6544 as evidence that the "spite strip" on the south property line of the subject property has been resolved by the Telephone Company."

DONALD F. STEVENS A.I.A.
ROBERT G. MALLORY A.I.A.
GEORGE CLAYTON PEARL A.I.A.
C. ROBERT CAMPBELL A.I.A.

If necessary a Warranty Deed for the tract of land being Tract B-2A of Replat of Lester Tract B-2, Michaels Manor North granted to Mountain States Telephone and Telegraph Company can be provided but is not included with this request.

C. Item 5: "A drainage plan is required". Our storm drainage report for the subject project was submitted to Mr. Bruno Conegliano, Assistant City Engineer - Hydrology on December 17, 1979.

"Revised Site Development Plan" as previously stated, the revised development plan is included herein.

"Landscaping Plan". A general landscaping plan is included on the development plan SP-1. Contract landscaping plans will be submitted to the City Building Department with our request for a construction permit.

D. Development Plan SP-1 as submitted presents the ultimate development scheme for this telephone switching complex. Therefore, enclosed with this letter are plans describing three phases of construction required to meet the ultimate plan as follows:

Phase I: Construction of a 10,844 square foot building on the southeast portion of the property. Install a temporary storm drainage culvert along the south property line. Provide general grading along east and south property lines and a portion of paved surfacing at the southwest corner of the property. Upon completion of the general contract the Telephone Company will commence installation of electronic switching equipment to be completed and operational by fall of 1981.

Phase 2: Telephone service in the existing building will be terminated, equipment disconnected, and the building (portable modular buildings) will be removed from the site.

Phase 3: At this time completion of site grading and paving will begin along the west and north areas of the property together with construction of exterior masonry walls on east, north and south property lines or as shown. Construction of a water retention pond, add sidewalks on Scott Place & Wyoming Boulevard and installation of final grading with landscaping on the east and south setback areas of the complex will complete the last phase.

It should be noted that completion of Phase 3 along Wyoming Boulevard is contingent upon the commencement of major revisions to Wyoming by the Public Works Department. To our knowledge, no date has been established for this work and our "temporary" drainage system would have to remain for the duration and would preclude completion of final grading, sidewalks, curbs and gutters and landscaping along this street frontage.

Sincerely,

Robert A. Moraga
Architect

RAM:dd

Enclosures

xc: City Traffic Engineer
City Engineer
AMACA

Boyle Engineering Corporation

Suite D
3939 San Pedro N.E.
Albuquerque, New Mexico 87110

consulting engineers
505 / 883-7700

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

May 2, 1980

Attention: Mr. Fred Aguirre

RE: ACADEMY IA-ESS EXCHANGE

Dear Fred:

As we discussed today I believe that filter cloth on the side of the pecolation pit is not necessary.

Sincerely,

Peter Jacobsen

BOYLE ENGINEERING CORPORATION
Peter Jacobsen
Assistant Civil Engineer

PJ/cc

STEVENS, MALLORY, PEARL & CAMPBELL
ARCHITECTS
115 AMHERST DRIVE, S.E.
ALBUQUERQUE, NEW MEXICO
505 255-8668
87106

May 13, 1980

Mr. Fred Aguirre
Building Inspection
City of Albuquerque
Drainage Department
P. O. Box 1293
Albuquerque, New Mexico 87103

Subject: Mountain Bell
Academy No. 1 ESS Office
7621 Wyoming Blvd., N.E.
Albuquerque, New Mexico

Dear Mr. Aguirre:

This letter will document our meeting this date in your office regarding the implementation of three phases of work at the subject project. As discussed Certificate of Occupancy is subject to completion of three Phases.

1. Under the present contract Phase I will include construction of temporary drainage culvert on the south property line, construction of a 10,844 square foot building for a switching station and construction of a minor traffic parking area on the west side of the property. Completion of this contract is scheduled for November 14, 1980.

2. Phase II work will only concern itself with removal of "Existing Telephone Modules". Removal will begin about August 1, 1981.

3. Phase III work will complete development of the project as defined in Approved Development Plan for Z-73-22-1. The work will include completion of site development i.e. parking, landscaping exterior masonry walls, drainage pond.

Also enclosed is one (1) copy of Sheet A01.

Sincerely,

RAMoraga

Robert A. Moraga
Architect

RAM:dd

Encl.

cc: Larry Railey, MB

DONALD P. STEVENS A.I.A.
ROBERT C. MALLORY A.I.A.
GEORGE CLAYTON PEARL A.I.A.
C. ROBERT CAMPBELL A.I.A.

Boyle Engineering Corporation

Suite O
3939 San Pedro N.E.
Albuquerque, New Mexico 87110

consulting engineers

505 / 883-7700

August 18, 1982

CITY OF ALBUQUERQUE
Attn: Fred J. Aguirre
Civil Engineer/Hydrology
P. O. Box 1293
Albuquerque, New Mexico 87103

RE: REVISIONS TO DECEMBER 1979 DRAINAGE STUDY, MOUNTAIN BELL ACADEMY NO. 1 ESS OFFICE, 1721 WYOMING BLVD., NE

Dear Mr. Aguirre:

Reference is made to the subject report which you received on December 26, 1979, and reviewed on March 25, 1980. A revision was issued in April, 1980.

The proposed development of this telephone exchange facility called for construction to take place in three phases as noted in the attached letter dated April 11, 1980, from Robert A. Moraga, Architect for Stevens, Mallory, Pearl and Campbell, to the City Planning Director. Phase III, which involved final site grading, paving and construction of CMU retaining walls, could not be undertaken until the adjoining construction within the west R.O.W. of Wyoming Boulevard was substantially completed as part of SAD 195.

The subject report, therefore, presented the following interim solutions for on-site runoff and for the calculated 35 cfs flow entering our site from the east:

A. Pipe the off-site flow through the property in an appropriate CMP culvert and an energy dissipator,

B. Provide site grading such that all runoff from parking and building areas will flow to a drain pit measuring 35 ft. x 80 ft. x 8 ft. deep,

C. Grade all planter areas to retain remaining direct rainfall.

Phase I and II construction was completed in 1981 to implement recommendation A. Phase III will implement recommendations B and C.

The purpose of this letter and its accompanying calculations (Appendix) is to revise the 1979 analysis in view of minor changes in the site grading and parking lot dimensions.

In as much as the grade of Wyoming East Boulevard is being raised to divert the 35 cfs away from our site into the ~~west~~ R.O.W. of Wyoming, the existing CMP culvert paralleling our south property line will be plugged and abandoned in place as noted on Herkenhoff's sheet 37 (STA 0 to 14) of the SAD 195 contract drawings and on SMPC Drawing 5A202-AC-SKA01. No other flow will enter the property, so that the 1979 concept will remain unchanged: all on-site rainfall will be retained on site in the proposed drain pit and the regraded planter areas.

We trust that your approval of the SMPC Site Development Plans can, therefore, be gained forthwith as there are no changes in the approved drainage concept of 1979 and only minor changes in detail dimensions. Should you have any questions, feel free to call me.

Sincerely,

BOYLE ENGINEERING CORPORATION

Thornton D. Schwenk

Thornton D. Schwenk, P.E.
Senior Civil Engineer

Enclosures

cc: Jim Thompson, SMPC

TDS/bg

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

D19 - D4

September 8, 1982

Mr. Thornton Schwenk
Boyle Engineering
3939 San Pedro Dr. N.E.
Albuquerque, N.M. 87110

RE: MOUNTAIN BELL EXCHANGE FACILITY DRAINAGE REPORT PLAN

Dear Thornton:

The referenced drainage plan (dated 7/19/82) is approved. Per our earlier conversation, it is my understanding that you will provide this office and the contractor a detail of the gravel pond and street paving section.

Please call if you have any questions.

Very truly yours,

Brian G. Burnett

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tsl

D19-D1

Law Dept. File 041-850309

Phoenix, Arizona
October 5, 1982

Mr. Chuck Lucas 765-8762
Station 531
Plaza Campana
Albuquerque, N.M.

RECEIVED
OCT 13 1982
RECEIVED

Re: Company File No. BN-4734
Drainage Covenant with City of Albuquerque

Dear Mr. Lucas:

I am returning herewith the entire package you sent to me. I think that the indemnification provision is outrageous and you are authorized to send a copy of this letter to the City for their review.

I am enclosing a green lined copy of the covenant indicating the changes we have made.

The first change is to make clear that the Company ("Owner" in the covenant) will install the drainage facilities in accordance with the plans of the City and will maintain it in accordance with those plans, but that any new installations due to changed ordinances or changed standards will not require the Company to redesign or reconstruct the drainage pit.

The indemnification clause has been revised to make it clear that the Company is obligated to construct the drainage facility in accordance with approved plans and specifications. In my judgment it is unconscionable to even suggest that the Company would indemnify the City for claims made due to the existence of the drainage pit so long as the Company has constructed the pit in accordance with the mandate of the City and is maintaining it in accordance with the mandate of the City.

If the City is unwilling to accept the changes I would appreciate if someone from the City Attorney's office would contact me in order to explain why they are insisting on this clause.

Very truly yours,

Tim Fyke

Tim R. Fyke
Attorney
602-235-3445

TRF:atc
Encls.

DRAINAGE COVENANT

1982 THIS COVENANT made this 9th day of September, ~~1981~~, by and between the City of Albuquerque, a municipal corporation, (City) and THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH COMPANY (Owner, which term includes successors and assigns.)

RECITAL

The Owner is owner of certain real property located at 7621 Wyoming Blvd. N.E. in Albuquerque, New Mexico, (the Property) and more particularly described as follows:

SEE ATTACHED "EXHIBIT A"

RECEIVED
OCT 13 1982
RECEIVED

That pursuant to City ordinances, regulations, and other applicable laws, the Owner is required to install and/or maintain certain drainage facilities on the Property, and the parties wish to provide for an agreement as to the obligations and responsibilities for same.

DESCRIPTION OF FACILITIES

The following facilities are to be constructed and/or maintained by the owner:

A drain pit approximately 80' x 35' x 8' deep containing uniformly graded dumped rock (1 1/2" minimum diameter) for ponding surface runoff from the site.

CONSTRUCTION OF DRAINAGE FACILITIES

The Owner shall construct the drainage facilities in accordance with standards, plans, and specifications prescribed and approved by the City.

MAINTENANCE OF FACILITIES

The Owner shall, at his cost in accordance with the standards, plans, and specifications prescribed by the City, maintain said drainage facility. The City shall have the right to enter ~~periodically upon the Property to inspect the drainage facility.~~ Nothing contained herein shall require the Owner to redesign or reconstruct the drainage facility, once installed.

FAILURE TO COMPLY AND LIEN

In the event that the Owner shall fail to construct the drainage facility in accordance with standards, plans, and specifications prescribed and approved by the City or fail to adequately maintain said facilities, the City shall give the Owner notice in writing to construct, correct, or maintain said

facilities, and if the Owner fails to comply therewith within 90 days, the City may enter upon said property to perform the necessary construction or maintenance. The cost of the City's performing such construction or maintenance shall be paid by the Owner. In the event the Owner fails to pay said cost within thirty (30) days after being billed for same, the City may file a lien against the Property.

LIABILITY

The City shall not be liable for any damages to the Owner resulting from its construction, modification, or maintenance of said facilities, except to the extent that such damages are due to the negligence of the City, its agents or employees.

NOTICE

The written notice provided for herein shall be accomplished by mailing same to:

~~Mountain Bell~~ The Mountain States Telephone and Telegraph Company
P.O. Box 400, Station 531
Albuquerque, New Mexico 87103
Attn: Manager-Real Estate

The Owner may change said address by giving written notice, certified mail, return receipt requested, to the City Engineer, City Hall, at 505 Marquette Street, Albuquerque, New Mexico, 87103.

INDEMNIFICATION AND HOLD HARMLESS

The Owner agrees to defend, indemnify, and hold harmless, the City, its officials, agents and employees from and against any and all claims, actions, suits, or proceedings of any kind brought against said parties for or on account of ~~any matter arising from the drainage facility provided for herein or the Owner's failure to construct, maintain, or modify the drainage facility under this Covenant~~ the Owner's failure to construct or maintain the drainage facility in accordance with this covenant.

~~COVENANT RUNNING WITH THE PROPERTY~~

The obligation of the Owner set forth herein shall be binding upon the Owner, his heirs, and assigns, and the property of the Owner as described herein and will run with said property until released by the City.

OWNER THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH COMPANY

By: _____

Title: General Manager-Real Estate

REVIEWED BY THE LEGAL DEPARTMENT:

_____
Assistant City Attorney

CITY OF ALBUQUERQUE

_____
Chief Administrative Officer

ACKNOWLEDGEMENTS

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this _____day of _____, 1981, by _____, _____
(Name of Officer) (Title)
_____, a _____
(Name of Corporation) (State of Incorporation)
corporation, on behalf of said corporation.

_____
Notary Public

My Commission Expires:
_____

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this _____day of _____, 1981, by _____
(Name of Acknowledging Partner or Partners)
on behalf of _____,
(Name of Partnership)
a partnership.

_____
Notary Public

My Commission Expires:
_____

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me by _____, on this _____day of _____, 1981.

_____
Notary Public

My Commission Expires:
_____

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this _____day of _____, 1981, by _____ Chief Administrative Officer of the City of Albuquerque, municipal corporation, on behalf of said corporation.

_____
Notary Public

My Commission Expires:
_____

EXHIBIT A

A tract of land located in the Northwest Quarter of Section 19 in Township 11 North, Range 4 East, N.M.P.M., and being more particularly described as follows:

Commencing at the Quarter Corner of Section 19 which Quarter Corner is common to the Southeast and Southwest Quarters of Section 18 and the Northeast and Northwest Quarters of Section 19 and running thence Southerly along the East line of the Northwest Quarter of Section 19, South 0°03'East, 2,342.18 feet to the Southeast corner of the tract hereby conveyed and described; THENCE NORTH 89°49'West and parallel to the South line of said Northwest Quarter of Section 19, 238 feet to the Southwest corner of the tract hereby described; THENCE NORTH 0° 03'West 208 feet to the Northwest corner of the tract hereby described; THENCE SOUTH 89°49'East 238 feet to the Northeast corner of the tract hereby described; THENCE SOUTH 0°03'East 208 feet to the Southeast corner and Point of Beginning for the tract hereby described. Containing 1.1432 acres, more or less and includes the West one-half of Wyoming Street, N.E., 200 foot frontage.

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE

November 2, 1982

RE . NO._____

TO: Malcolm deVesty, City Attorney, Legal Department

FROM: Fred J. Aguirre, Civil Engineer/Hydrology FJA

SUBJECT: MOUNTAIN BELL's COVENANT - PREPARED BY MOUNTAIN BELL'S ATTORNEYS (D19-D4)

Submitted herewith is a copy of a modified drainage covenant prepared by Mountain Bell's attorneys. This submittal is Mountain Bell's attempt to satisfy a drainage covenant requirement by this office for a recent development.

Please advise this office of any comments you may have regarding the proposed covenant by Mountain Bell.

FJA/el

cc: Drainage File
Reading File

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE November 4, 1982 REF. NO._____

TO: Fred J. Aguirre, Civil Engineer-Hydrology

FROM: Malcolm W. deVesty, Assistant City Attorney Mac

SUBJECT: Mountain Bell's Covenant - Prepared by Mountain Bell's Attorneys (D19-D4)

There was no enclosure submitted with the attached memorandum.

MWdV:mab

Attachment

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE November 8, 1982 REF. NO._____

TO: Malcolm deVesty, City Attorney, Legal Department

FROM: Fred J. Aguirre, Civil Engineer/Hydrologist FJA

SUBJECT: MOUNTAIN BELL'S COVENANT - PREPARED BY MOUNTAIN BELL'S ATTORNEYS (D19-D4)

Submitted herewith is a copy of a modified drainage covenant prepared by Mountain Bell's attorneys. This submittal is Mountain Bell's attempt to satisfy a drainage covenant requirement by this office for a recent development (Sorry for any inconvenience we may have caused you by not including the attachment in my first transmittal).

Please advise this office of any comments you may have regarding the proposed covenant by Mountain Bell.

FJA/el

cc: ✓Drainage File
Reading File

Attachment

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE December 2, 1982 REF. NO._____

TO: Fred J. Aguirre, Civil Engineer, Hydrology

FROM: Malcolm W. deVesty, Assistant City Attorney M.c

SUBJECT: Mountain Bell Drainage Covenant

I have reviewed the drainage covenant that has been amended by the attorney for Mountain Bell and will agree to all modifications except the one under Maintenance of Facilities. I do not believe the clause added is appropriate to that section nor can we waive our right to require reconstruction should it be necessary to do so.

Insofar as the sign off is concerned, I do not know whether the general manager has the authority to execute this document and we will have to have some proof that he has such authority.

D19-D4

copy given to C.D. Lucas Mtn Bell 1-3-83

MWdV:mab

Mountain Bell

400 Tijeras Avenue, N.W.
Albuquerque, New Mexico
April 6, 1983

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

Attention: Fred Aguire, P.E.
Civil Engineer - Hydrology

Enclosed are two(2) copies of the drainage convenant for our Albuquerque Academy Office, 7621 Wyoming Blvd., N.E., Albuquerque, New Mexico executed by J. E. Killorin, Vice President-Support Services and approved by our Law Department.

We would appreciate you securing the necessary approvals for the attached documents.

Please return one(1) copy after execution to:

Mountain Bell
P.O. Box 400, Station 531
Plaza Campana
Albuquerque, New Mexico 87103-0400
Attention: C. A. Lucas

Should you have further questions please contact me on 765-8762.

C. A. Lucas
Assistant Manager
Real Estate/Construction

Attachments

daa

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

June 8, 1983

C.A. Lucas
400 Tijeras Avenue, NW
Albuquerque, NM 87102

REF: Albuquerque Academy Office, 7621 Wyoming Boulevard

Dear Mr. Lucas:

Your convenant is being returned since the City no longer requires maintenance agreements for ponds in view of the recently adopted Drainage Ordinance which identifies maintenance responsibilities.

If you have any questions, please call me at my office.

Sincerely,

Fred J. Aguirre
Civil Engineer/Hydrology

FJA:mrk

STORM DRAINAGE STUDY
RELATIVE TO DEVELOPMENT OF
ACADEMY 2A-ESS
TELEPHONE EXCHANGE FACILITIES
MOUNTAIN BELL
ALBUQUERQUE, NEW MEXICO

APRIL 1973

MAC CORNACK AND BURNS
Consulting Engineers, Inc.
Albuquerque, New Mexico

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STORM DRAINAGE STUDY

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APPENDIX

MacCORNACK & BURNS
CONSULTING ENGINEERS, INC.
1517 GIRARD BLVD., N.E. — SUITE D
ALBUQUERQUE, NEW MEXICO 87106

JAMES A. MacCORNACK, P.E.
FRED BURNS, P.E.

(505) 266-7789

April 12, 1973

Stevens, Mallory, Pearl & Campbell
Architects
115 Amherst Drive, S.E.
Albuquerque, New Mexico 87106

Gentlemen:

Transmitted herewith is the "Storm Drainage Study Relative to Development of Academy 2A-ESS Telephone Exchange Facility, Mountain Bell." This study comprises a comprehensive analysis in accordance with the requirements of Resolution No. 1972-2, Albuquerque Metropolitan Arroyo Flood Control Authority, and of the City of Albuquerque.

Thank you for the opportunity of participating in your project.

Respectfully submitted,

MacCORNACK & BURNS
Consulting Engineers, Inc.

Fred Burns

Fred Burns, P.E.
New Mexico Registration No. 4000

JFB:mt

STORM DRAINAGE STUDY
RELATIVE TO DEVELOPMENT OF
ACADEMY 2A-ESS
TELEPHONE EXCHANGE FACILITIES
MOUNTAIN BELL
ALBUQUERQUE, NEW MEXICO

1. PURPOSE: This report is to present those data relative to estimation of quantity and proposed means of proper handling of storm runoff drainage as it is related to development of Academy 2A-ESS, telephone exchange facilities for Mountain Bell, Albuquerque, New Mexico.

2. SCOPE: This report is to establish criteria and means of construction such that the development of the proposed facility will be protected from storm runoff and, further, will not create increased flooding potential for contiguous properties.

3. LOCATION: The land area under study of this report is a parcel located on the Elena Gallegos Grant in the NW 1/4, Section 19, T11N, R4E, N.M.P.M. bounded on the east by Wyoming Boulevard NE right of way, on the quarter section line, extending westward a distance of 238 feet. The north boundary is south of the north section line a distance of 2134.14 feet. The property extends southward a distance of 208 feet. The land area of this tract being approximately 49,505 square feet.

4. EXISTING DRAINAGE CONDITIONS:

A. General: The tract under consideration is presently undeveloped. The area lies upstream of the confluence of two well defined arroyos, the northerly one of which lies just north of the north boundary and the southerly one of which is on the property parallel to the south boundary just within the boundary. The areas upslope (watershed) of the site are presently undeveloped.

B. Topography: The tract is located on the alluvial clinoplain of the Sandia Mountains approximately midway between foothills and valley floor. The elevation of the land at the high point is approximately 5384.50 MSL. The tract slopes downward to the west at a uniform slope of approximately 3.6 percent. The area is covered with sparse grass vegetation. The surface soil is mostly decomposed granite with traces of clay and caliche. There are no notable geologic features unusual to the general area.

C. Drainage Areas: The property under consideration is located within the watershed of the Arroyo de Domingo Baca. The upslope watershed is sparsely grassed mesa lands crossed by a multitude of westward flowing parallel arroyos which pirate watersheds back and forth as they meander. The two arroyos which cross the report area are such arroyos, and because of this tendency to change watersheds, it is difficult to assign a fixed drainage area. The general watershed area pinches out at a distance of one mile east of the property. This "pinch out" is created by the Arroyo de Domingo Baca flowing close to the watershed boundary thereby intercepting runoff from areas more remote to the east.

Future development on the watershed area will alter the natural drainage patterns now existing. Data now available on such proposed development is considered by this report.

5. PROPOSED DRAINAGE PLANS:

A. Criteria:

(1) General: Resolution No. 1972-2, Albuquerque Metropolitan Arroyo Flood Control Authority.

(2) Project Storm: 100-year intensity; frequency-duration as shown on the curve of Chart 1, "1963 Master Plan of Drainage for the City of Albuquerque and Environs," as prepared by the Gordon Herkenhoff and Associates, Inc., Consulting Engineers.

(3) Areal Data: "Flood Plain Information Albuquerque Arroyos - Part I" by Corps of Engineers, U. S. Army, Albuquerque District, June 1970.

(4) Other Studies: "Preliminary Drainage Study Relative to the Development of Loma del Norte, Unit 4," as prepared by Campbell Associates, Inc., Albuquerque, New Mexico.

B. Flood Protection: Subsequent development of the upslope properties will alter the drainage patterns now existent; therefore, two drainage configurations are considered such that facilities are designed to meet the most critical of the two.

(1) Existing Conditions: The drainage areas of the two arroyos are determined to be:

North Arroyo:	Area	-	79 acres
	Length	-	4700 feet
	Slope	-	3.1 percent
	Character	-	Sparse Grass - Bare
South Arroyo:	Area	-	28 acres
	Length	-	3500 feet
	Slope	-	3.1 percent
	Character	-	Sparse Grass - Bare

The project storm is applied to these arroyo drainage areas to obtain the flow quantity at the proposed site. The required channelization and site grading are determined to provide protection of the proposed facilities.

(2) Future Conditions: The upslope drainage areas are analyzed for possible development which would alter the drainage pattern. These effects would be greatly influenced by the development of Wyoming Boulevard NE contiguous to the property under consideration. Proposed drainage structure and street profiles are indicated.

C. Site Drainage: The proposed development includes construction of building and parking lot which will increase site runoff. To comply with AMAFCA Resolution No. 1972-2, the calculated increase in site runoff will be retained on the site for percolation into the subsurface.

6. CONCLUSIONS AND RECOMMENDATIONS: On the basis of the study of this report, the following recommendations are proposed.

A. Channelize the south arroyo in the reach through the property under study. See Appendix, Exhibit A and Exhibit E.

B. Realign the north arroyo where it crosses the northwest corner of the property under study.

C. Provide site grading such that runoff from parking and building areas will flow to a drain pit to provide percolation for increased runoff. See Appendix, Exhibit C.

D. Provide site grading to match the future requirements of the required grades of Wyoming Boulevard NE in the reach of the property.

Provided that the above-listed recommendations are implemented prior to or concurrent with the development of the tract for the Academy 2A-ESS Telephone Exchange Facility, it is concluded such development will not create flood hazard to surrounding properties nor will the property itself be in danger of flooding.

Respectfully submitted,

MAC CORNACK AND BURNS
Consulting Engineers, Inc.

Fred Burns

Fred Burns, P. E.
New Mexico Registration No. 4000

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

Job: ACADEMY 2A-ESS
Subject: DRAINAGE ARROYO
Client: Spencer [illegible] Paul A Campbell
Sheet No. 1 of
Job No.
By Ayres Date 4/14/78

MAC CORNACK & DUESS Consulting Engineers, Inc., Albuquerque, NM

EXHIBIT A

South Arroyo Flow - Existing

Area - 28 ac.
Length = 3500 ft.
Slope = 3.1%
Character - Sparse grass - bare. C = 0.4

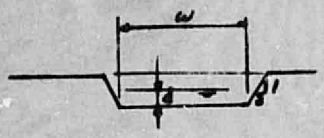
Time of concentration = 19 x 3.5 = 66.5 min.
i = 2.1 in/hr.

Q = CiA
Q = 0.4 x 2.1 x 28 = 23.5 cfs

Runoff w/ Future Residential Development.
C = 0.65
Q = 0.65 x 2.1 x 28 = 38.2 cfs

Channel Reqd for existing Conditions
Flow to be diverted to North Arroyo on future development by street flow along Wyoming.

Q = 23.5
W = 15'



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

$a = wd + 2(\frac{3d^2}{2})$

n = .025
s = 3.1% = .031

d = 0.4 a = 6.48 p = 17.52
R = 0.36986

Q = 6.48 x 59.44 x .176 x .516 = 35 cfs > 23.5

USE

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

Job: ACADEMY 2A-B65 | Sheet No. 2 of ___
Subject: DRAINAGE STUDY | Job No. ___
Client: Stevens, Mattox, Pearl & Campbell | By Burns | Date [illegible]
MAC CORNACK & [illegible] Consulting Engineers, Inc., Albuquerque, NM

EXHIBIT B

North Arroyo Flow - Existing

Area = 79 acres.
Length = 9700 ft.
Slope = 3.1 %
Character - Sparse Grass - Bare.
C = 0.4

Time of Concentration = 4.7 x 19 = 89.3 min

i = 1.65 in/hr.

Q = 0.4 x 1.65 x 79 = 52.14 cfs

Runoff w/ Future Residential Development
C = 0.65

Q = 0.65 x 1.65 x 79 = 85 cfs.

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Job: ACADEMY SA-ESS
Subject: DRAINAGE STUDY
Client: Stevens, Mullen, Paul & Campbell
Sheet No. 3 of
Job No.
By [illegible] Date 9/8/92
MAC CORNACK & SUBER Consulting Engineers, Inc., Albuquerque, NM

EXHIBIT C

Site Runoff

Existing Contributing Runoff.

A = 1.0 ac.

L = 208'

S = .03

Time of Concentration: = 12 min

i = 5.1 in/hr

Q = 0.4 x 5.1 x 1 = 2.04 cfs

w/ development as proposed 1/4 acres hardsurface

increase Q = (0.95-0.4)(5.1)(.25) = 0.70 cfs.

On site storage/percolation reqd

0.7 x 12 x 60 = 504 cubic feet

Utilizing Rock fill Pit

Void Vol = 1.0 - 120/165 = 0.27

Total Rock filled Pit Reqd

V = 504/0.27 = 1867 cubic feet

Use Pit 8' wide x 9' deep x 60' Length

PLAN/PLATS

ON

FILE

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

REVISED
STORM DRAINAGE STUDY
RELATIVE TO DEVELOPMENT OF
ACADEMY 1A-ESS TELEPHONE
EXCHANGE FACILITIES
MOUNTAIN BELL
ALBUQUERQUE, NEW MEXICO

APRIL 1980

STORM DRAINAGE STUDY
RELATIVE TO DEVELOPMENT OF
ACADEMY 2A-ESS
TELEPHONE EXCHANGE FACILITIES
MOUNTAIN BELL
ALBUQUERQUE, NEW MEXICO

1. PURPOSE: This report is to present those data relative to estimation of quantity and proposed means of proper handling of offsite runoff drainage as it is related to expansion of Academy 1A-ESS, telephone exchange facilities for Mountain Bell, Albuquerque, New Mexico. Due to the size of the property (less than one acre), the onsite runoff does not require ponding, as specified in the "Interim Drainage Guidelines - November, 1979".

2. SCOPE: This report is to establish criteria and means of construction such that the development of the proposed facility will be protected from offsite storm runoff and, further, will not create increased flooding potential for contiguous properties.

3. LOCATION: The land area under study of this report is a parcel located on the Elena Gallegos Grant in the NW 1/4, Section 19, T11N, R4E, NMPM bounded on the east by Wyoming Boulevard NE right-of-way, extending westward a distance of 185 feet. The north boundary is south of the north section line a distance of 2134.14 feet. The property extends southward a distance of 208 feet. The land area of this tract being approximately 38,480 square feet.

4. EXISTING DRAINAGE CONDITIONS:

A. General: The tract under consideration is presently developed. The area lies upstream of the confluence of two well defined arroyos, the northerly one of which lies just north of the north boundary and the southerly one of which is on the property parallel to the south boundary just within the boundary. Both of these arroyos will not carry storm

water under City Drainage Plans. The northerly one does not carry storm drainage now. The southerly one does carry storm drainage presently. The areas upslope (watershed) of the site are presently developed or in the process of being developed.

B. Topography: The tract is located on the alluvial clinoplain of the Sandia Mountains approximately midway between foothills and valley floor. The elevation of the land at the high point is approximately 5384.50 MSL. The tract slopes downward to the west at a uniform slope of approximately 3.6 percent. The area is covered with sparse grass vegetation. The surface soil is mostly decomposed granite with traces of clay and caliche. There are no notable geologic features unusual to the general area.

5. PROPOSED DRAINAGE PLANS:

A. Criteria:

1. General: Standards and Policies being practiced by the City of Albuquerque. The "Interim Drainage Guidelines - November, 1979".

2. Project Storm: 100-year intensity; frequency-duration as shown on the curve of Chart 1, "1963 Master Plan of Drainage for the City of Albuquerque and Environs," as prepared by Gordon Herkenhoff and Associates, Inc., Consulting Engineers.

B. Flood Protection:

1. Existing Condition: Flow from contiguous properties is considerable. The direction of water flow in the upstream developed areas is well defined. As a result of this, the drainage areas can be accurately established and the flow can be quantified. (See attached Plan.)

2. Future Condition: The City of Albuquerque has proposed raising

the grade on Wyoming. This will divert the stormwater from this site to establish drainage channels. Until this grade is reached, there will be flow through this site. To allow this flow to continue across the site without interfering with the plans for development, we propose installing a 3-foot pipe on the southern boundary of the property.

C. Site Drainage: The proposed development includes construction of a building and a parking lot which will increase site runoff. Due to the size of the property (less than one acre), the onsite runoff does not require ponding, as specified in the "Interim Drainage Guidelines - November, 1979". However, to reduce the flow in Scott Place, we will pond all the offsite drainage for percolation into the subsurface.

6. CONCLUSIONS AND RECOMMENDATIONS: On the basis of the Study of this report, the following recommendations are proposed:

A. Pipe the arroyo flow through this property. (See Appendix.)

B. Provide site grading such that runoff from parking and building areas will flow to a drain pit to provide percolation for all the runoff.

C. Grade all planter areas to hold and retain all direct rainfall falling on them.

Provided the above-listed recommendations are implemented prior to or concurrent with the development of the property, it is concluded that the proposed development will not create a flood hazard in the surrounding properties, nor will the property itself be in danger of flooding.

Respectfully submitted,

BOYLE ENGINEERING CORPORATION

Theodore C. Hogsett

Theodore C. Hogsett, PE
Senior Civil Engineer

R E V I S E D

STORM DRAINAGE STUDY
RELATIVE TO DEVELOPMENT OF
ACADEMY 1A-ESS TELEPHONE
EXCHANGE FACILITIES

MOUNTAIN BELL
ALBUQUERQUE, NEW MEXICO

A P P E N D I X

(Revised 7-28-82)

REGISTERED PROFESSIONAL ENGINEER
STATE OF
No. 4739
NEW MEXICO
THORNTON D. SCHWENK

ONSITE RAINFALL

LENGTH = 185'
0.88 Acres 38,480 square feet

AVERAGE SLOPE = $\frac{5382 - 5378}{185}$ = 0.0216

I. EXISTING CONDITIONS:

A. Determination of Concentrating Time, t_c

Undeveloped ground - Poor grass and bare ground

From: Figure H - Overland Flow Time, Page 18-01,
Data Book for Civil Engineers - Design, by Elwyn Seelye

t_c = 12.5 minutes

B. Determination of Intensity

For 100-year Storm - From Master Plan of Drainage - City of Albuquerque - 1963 - Chart I by Herkenhoff and Associates

Intensity, I = $\frac{189}{12.5 + 25}$ = 5.04 inches per hour

C. Determination of Runoff

For 100-year Storm
Rate of Flow, Q_{100} = cIA

c= Coefficient of runoff
A= Area in Acres
I= Intensity $\frac{in.}{hr.}$

Q_{100} = .4 (5.04) (.88) = 1.77 cfs

Volume of Runoff

V_{100} = (A sq. ft.) (c) (inches rainfall)
= (38,480) (.4) $(\frac{2.4}{12})$ = 3,078 Cu. Feet.

II. CONDITION AFTER PHASE III DEVELOPMENT (Revised 7-28-82)

A. Average Coefficient of Runoff

Designation	Description	Area (sq.ft)	C	CA
I	Roof	10,945	0.9	9,851
II	Paving, misc. Conc. pads	11,848	0.9	10,663
III	Open, draining to 8-ft. rock pit	9,281	0.4	3,712
IV	Landscaped, self-contained	6,406	0.4	2,562
		38,480		26,788

$$C_{avg} = \frac{26,788}{38,480} = 0.70 \qquad = 0.88 \text{ Ac}$$

B. Total Site Runoff

P = 6-hr. precipitation for 100-yr. storm
= 2.4 in (plate 22.2 D-1, DPM)

i = dimensionless rainfall intensity

$$= \frac{6.84}{(t_c)^{0.51}} = \frac{6.84}{(10)^{0.51}} = 2.11 \quad \text{(plate 22.2 D-2, DPM)}$$

I_{100} = actual 100-yr., 6-hour intensity
= 2.4 (2.11) = 5.07 in/hr.

$Q_{100} = C_{avg}\ IA$

= 0.70 (5.07)(0.88) = 3.12 cfs

$V_{100} = C\ P\ A$

$= 0.70 \frac{(2.4)}{12} (38,480) = 5,387$ cu. ft.

ΔV = Proposed - Existing (undeveloped site)
= 5,387 - 3,078 = 2,309 cu.ft.

III. AREAS CONTRIBUTING TO DRAIN PIT

Designation	Area	C	V
I	10,945	0.9	1,970
II	11,848	0.9	2,133
III	9,281	0.4	742
			4,845 cu.ft.

Void Ratio $= 1.0 - \frac{120}{165} = 0.27$

Required volume of rock-filled drain pit

$= \frac{4,845}{0.27} = 17,950$ cu.ft.

Use pit 35' X 80' X 6.5' deep = 18,200 cu.ft.

A portion of this pit will be under the parking lot. The landscaped areas will be graded to retain all rain falling on them.

On Site Storage/Percolation Required 5171 Cubic Feet

Utilizing Rock Fill Pit

$$\text{Void Vol} = 1.0 - \frac{120}{165} = 0.27$$

Total Rock Filled Pit Required

$$V = \frac{5171}{.27} = 19{,}150 \text{ cubic feet}$$

Use at <u>35' Wide X 80' Long X 6.8' Deep</u>

A portion of this will be under the parking lot.

The Planter Areas will be graded to hold and retain all rainfall falling on them.

FLOW FROM CONTIGUOUS PROPERTIES

A. Determination of Concentration time, t_c

Developed ground - paved
Slope = 3%
Length = 600'
t_c = 7.5 minutes

Undeveloped ground - poor grass and bare ground
Slope = 3%
Length = 800'
t_c = 19 minutes

Total t_c = 26.5 minutes

From: Figure H - Overland flow time, Page 18-01,
Data Book for Civil Engineers - Design, by Elwyn Seelye.

B. Determination of Intensity: for 100-year storm from Master Plan

Plan of Drainage - City of Albuquerque - 1963 - Chart I by

Gordon Herkenhoff and Associates.

Intensity, $I = \frac{189}{26.5+25} = 3.67$ inches per hour

C. Determination of Runoff

for 100-year sotrm

Rate of Flow, $Q_{100} = cIA$

$Q_{100} = .5(3.67)(19.05) = 35.0$ cfs

c = Coefficient of Runoff
A = Area in acres
I = Intensity in

D. Handling the Offsite Drainage

Slope = $\frac{79.5 - 77.85}{165} = .010$ Q = 35 cfs

Corrugated Metal Pipe n = 0.22 Length 165'

Using Mannings Nomograph, a 29" X 42" pipe-arch will suffice. The pipe will have a lowered inlet so that sufficient headwater depth can be obtained without water flooding the adjacent property. Where the Water exits from the property it will be at the same location and the velocity will be less than or equal to the current velocity. This is a temporary solution until Wyoming is raised to divert the water from this property.

REFERENCES

City of Albuquerque, "Interim Drainage Guidelines - November, 1979"

Gordon Herkenhoff and Associates, Master Plan of Drainage: City of Albuquerque, New Mexico and Environs, 1963

Seelye, Elwyn, Design: Data Book for Civil Engineers, 1960

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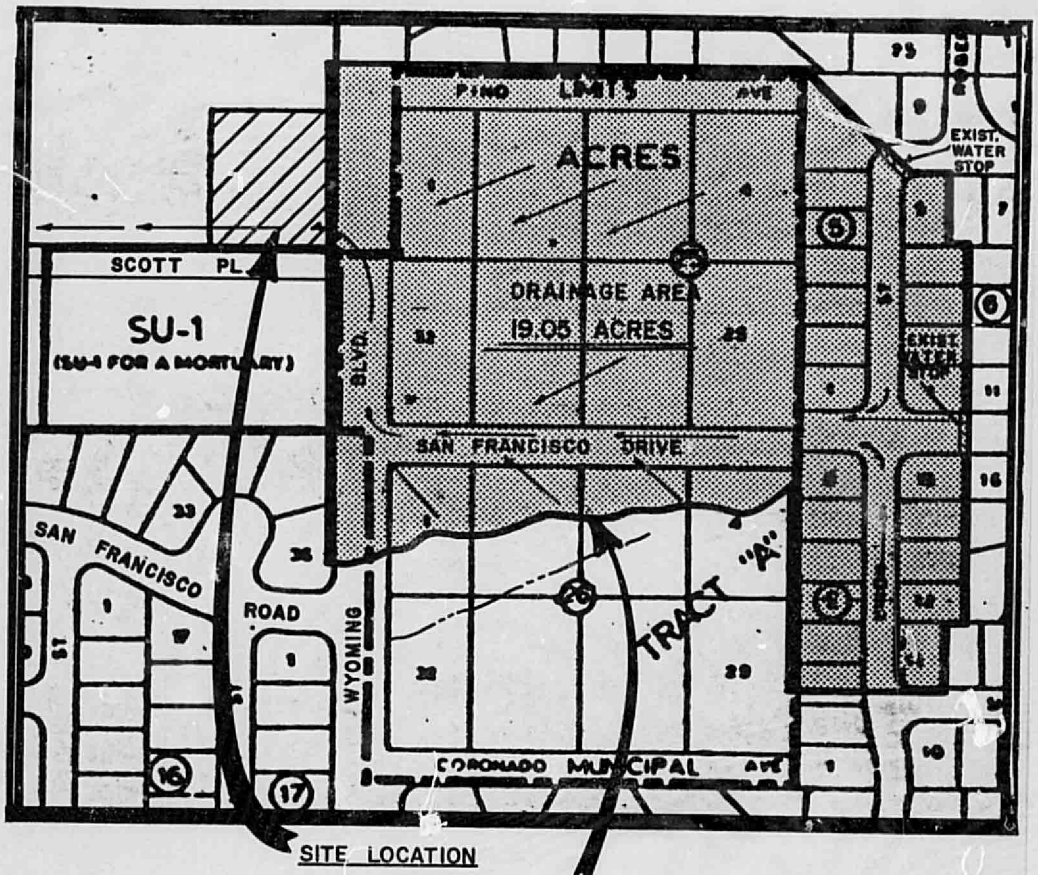


SITE LOCATION

BOUNDARY OF AREA CONTRIBUTING TO FLOW THROUGH MOUNTAIN BELL SITE

DRAINAGE BASIN LOCATION MAP

SCALE: 1" = 200'

(INDICATES SURFACE WATER FLOW)

Boyle Engineering Corporation

BY _____ DATE _____ SUBJECT ACADEMY IATESS SHEET NO. ____ OF ____
CHKD. BY _____ DATE _____ JOB NO. _____

DESIGN CULVERT

ALLOWABLE HEAD WATER HEIGHT IS 82.3

INSTALL 42"x29" PIPE-ARCH (C.M)
Q_{100} = 35 cfs

FIGURE 30, TEXAS HIGHWAY DEPT. "HYDRALIC MANUAL
GIVES H_w/D = 1.15

HENCE SET INLET AT 79.5 (APPROX 2' below nat. grade)

Slope is $\frac{79.5-78.5}{165}$ = .0063

THIS SLOPE IS NOT ADEQUATE

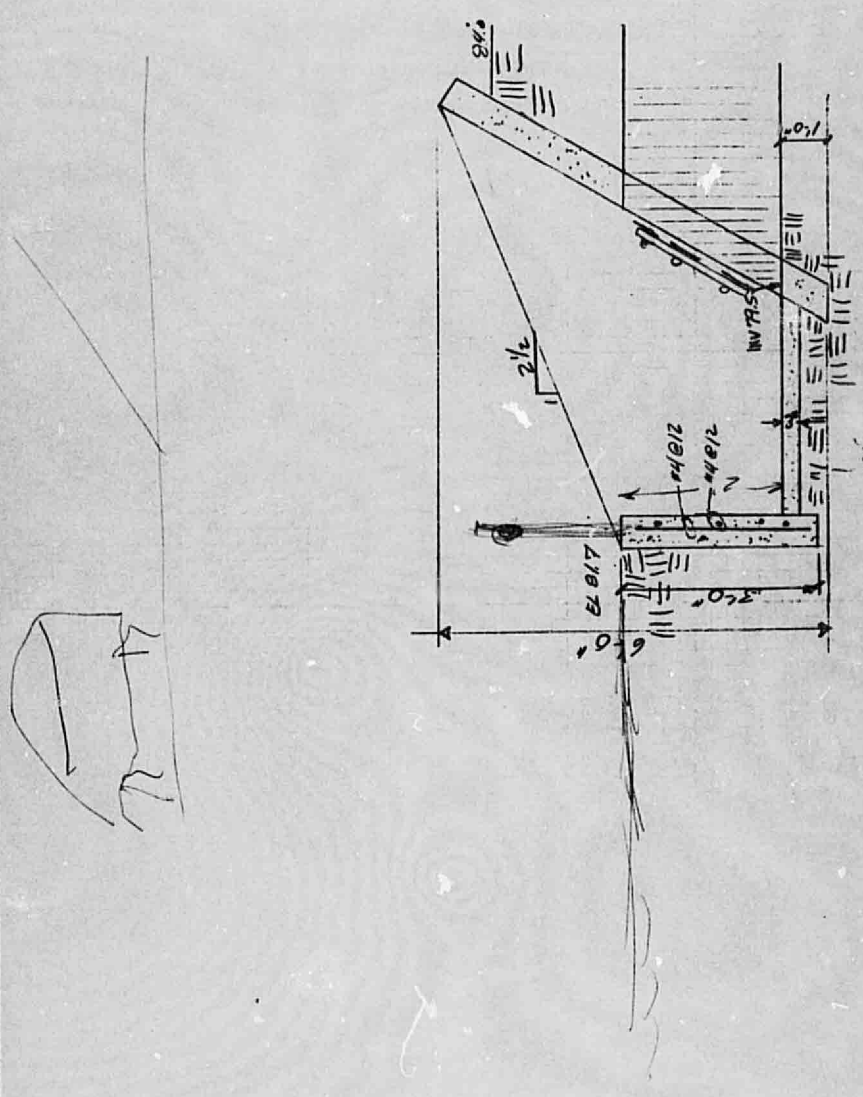
SLOPE REQ'D IS 0.01 or 1.65'/165'

THIS REQUIRES LOWERING THE OUTLET INVERT TO
79.5-1.65 = 77.85'

Job ACADEMY 1A-ESS
Subject DRAIN CULVERT INLET - SITE PLAN
Client SMPC

Sheet No. ____ of ____
Job No. ____
By PJ Date 4/14/80

Boyle Engineering Corporation
Albuquerque, NM



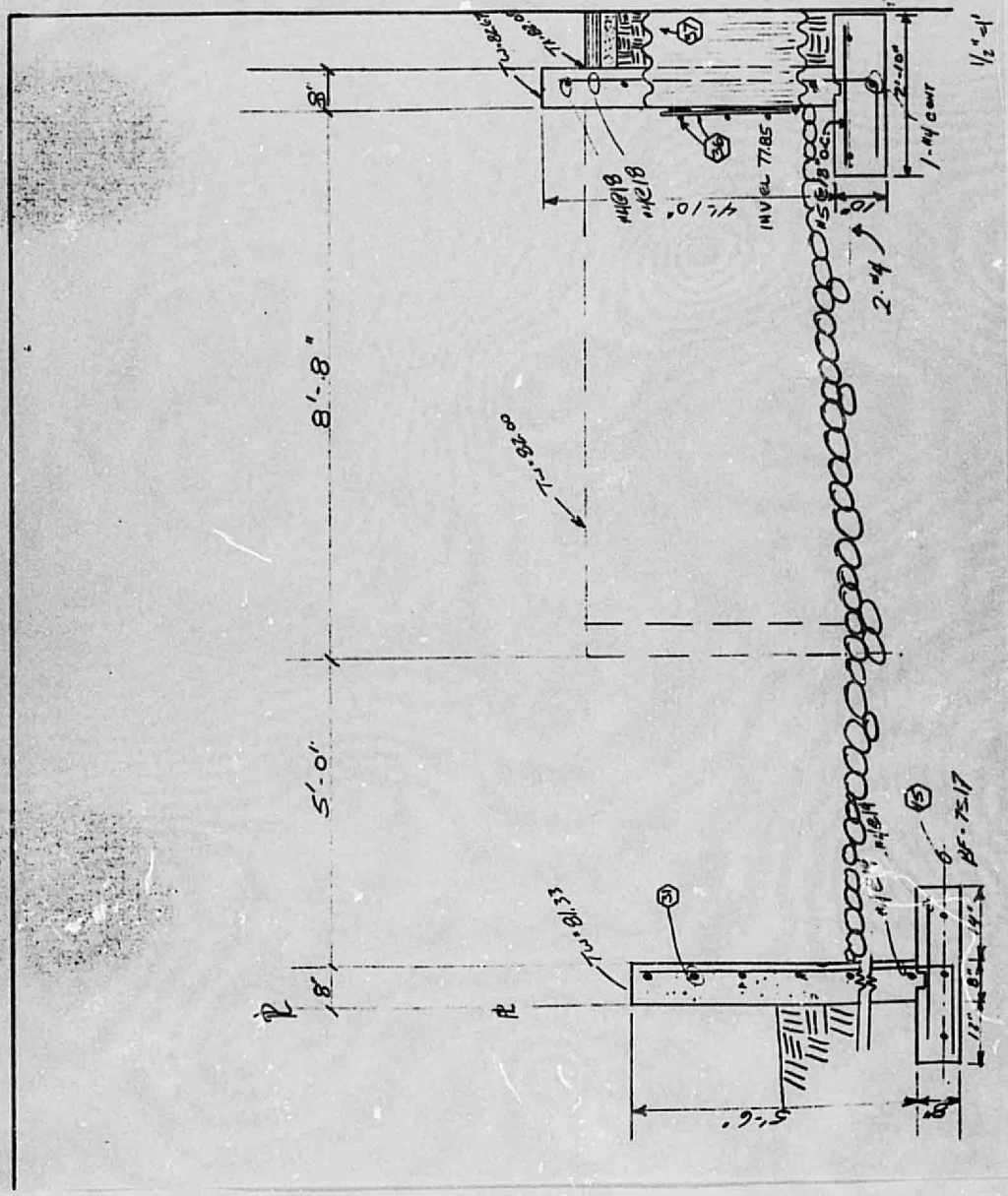
(5) SECTION

Job _____ Sheet No. ____ of ____

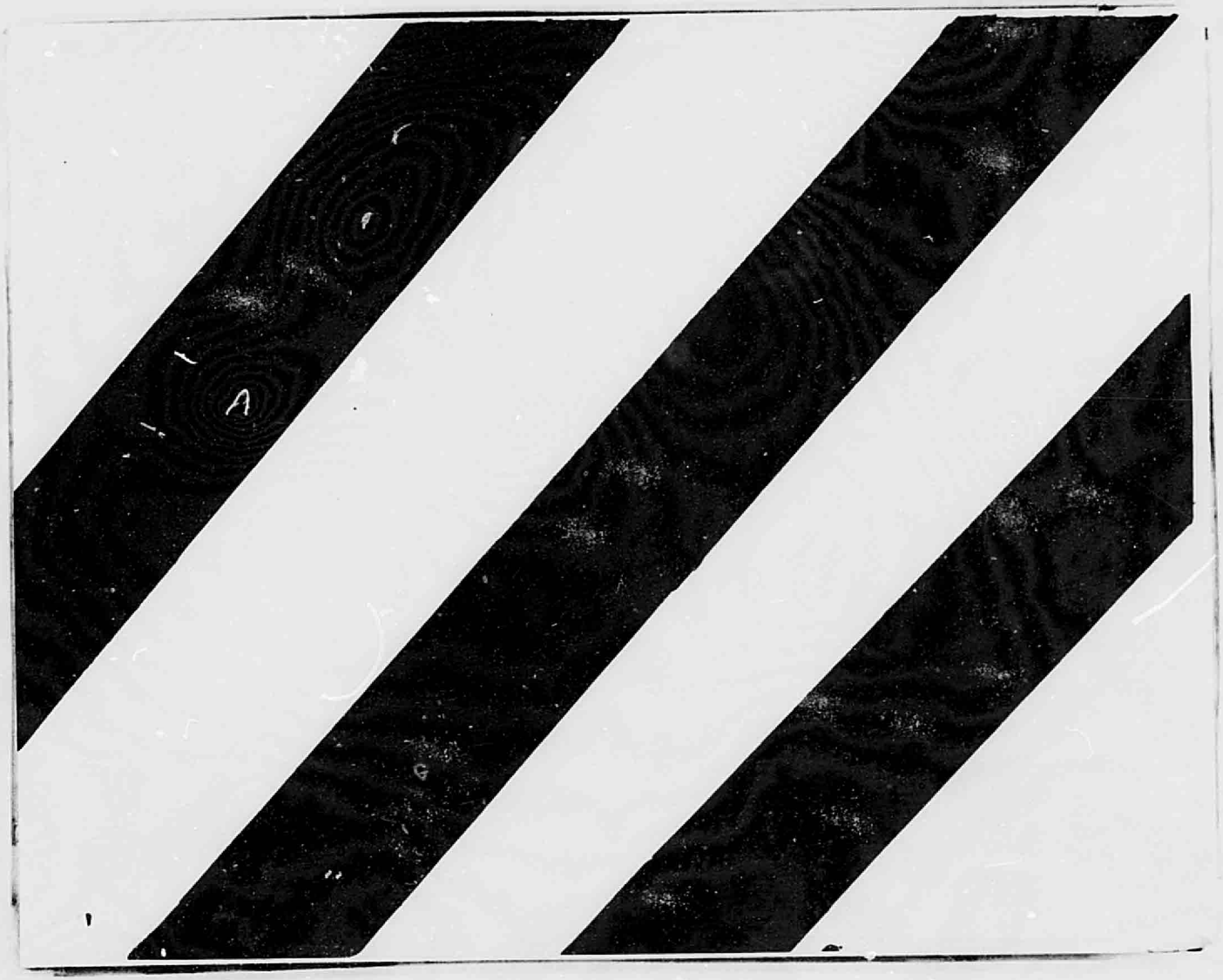
Subject SECTION THROUGH PIPE OUTLET Job No. _____

Client _____ By _____ Date _____

Boyle Engineering Corporation Albuquerque, NM



PLAN/PLATS

ON

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