

13537 Terragon Drive N.E.  
Albuquerque, New Mexico 87112  
August 29, 1978

Building Committee  
Asbury United Methodist Church  
10090 Candelaria Road, N.E.  
Albuquerque, New Mexico 87112

Gentlemen:

The enclosed report evaluates the impact of the proposed building expansion on the drainage and runoff at Lots 1 through 14, Block 51 of Snow Heights Addition. This evaluation is based on a 100 year, 6 hour storm which has a total rainfall of 2.6 inches. The report shows that a retaining pond of 1327 cubic feet will be required to compensate for increased runoff.

The enclosed map shows the recommended location for the storage pond. Minor site grading will be required to direct runoff to the pond. It is recommended that the pond be grass lined with a grass or rock bottom.

The recommendations contained herein should be incorporated into the plans for the new building addition.

Sincerely,



Clifford E. Anderson  
N.M. P.E. & L.S. #6472

cc: Killingsworth Construction



Scanning & Associates, Inc.  
 8008 PENNSYLVANIA CIRCLE NE  
 ALBUQUERQUE, NM 87110  
 (505) 265-6941

PROJECT Drainage Study - SHEET 1 OF 2  
Paradise Project  
 LOCATION Ashburn Meadows  
 JOB NO. 077 DATE 8/29/78 BY C. Anderson, CHKD

Rainfall for 100 year 6 hour storm = 2.6 in = P

TOTAL AREA NEW BUILDING & WALKS = 9100 SQ.FT.

AREAS OF EXISTING IMPERVIOUS COVER = 3033 SQ.FT.

AREA OF NEW IMPERVIOUS COVER = 6067 SQ.FT.

AREA OF NEW ROOF & WALK DRAINING TO  
 THE NORTHWEST = 11075 SQ.FT.

AREA OF NEW ROOF & WALK DRAINING TO  
 THE SOUTH = 7993 SQ.FT.

AREA OF EXISTING COVER DRAINING TO  
 THE NORTHWEST = 7400 SQ.FT.

FOR SANDY LOAM SOIL - S.C.S. SOIL GROUP 3  
 AND ANTECEDENT MOISTURE CONDITION II

FROM PAGE 2-5 (TABLE 2-2) OF U.S.D.A. SOIL CONSERVATION  
 SERVICE, TECHNICAL RELEASE NO. 55, "URBAN HYDROLOGY  
 FOR SMALL WATERSHEDS", 1975.

FOR LAWNS, PARKS, ETC CN = 61

FOR PARKING LOTS, ROOFS, ETC CN = 98

THE EXISTING CONDITION HAS 33% IMPERVIOUS

FROM P 2-6 (FIGURE 2-2) OF S.C.S. TECH. REL. NO. 55

@ 33% IMPERVIOUS AND PERVIOUS CN = 61

COMPOSITE RUNOFF CN = 73

FROM PAGE 2-3 OF S.C.S. TECH. REL NO. 55

S = "potential abstraction" =  $\frac{1000}{CN} - 10$

Q = DIRECT RUNOFF (IN/SQ.FT) =  $\frac{(P - 0.2S)^2}{P + 0.8S}$

@ CN = 73 S = 3.70 Q = 0.62 IN

@ CN = 98 S = 0.20 Q = 2.37 IN

$\Delta Q = 2.37 - 0.62 = 1.75 \text{ IN} = \text{INCREASE IN RUNOFF}$

PROJECT Drainage Study SHEET 2 OF 2  
Ponding Requirements  
LOCATION Achorn Methodist Church  
JOB NO. 027 DATE 8/29/78 BY A. Anderson CHKD

FOR BUILDING SITE TOTAL RUNOFF INCREASE  
=  $1.75 \text{ IN} \times 9100 \text{ SQFT} / 12 \text{ IN/FT} = 1327 \text{ CU.FT.}$   
FOR 100 YEAR, 6 HR

EXISTING RUNOFF TO NORTHWEST  
=  $7400 \text{ SQFT} \times 0.62 \text{ IN} / 12 \text{ IN/FT} = 382 \text{ CU.FT.}$

NEW RUNOFF TO NORTHWEST  
=  $1107 \text{ SQFT} \times 2.37 \text{ IN} / 12 \text{ IN/FT} = 219 \text{ CU.FT.}$

∴ THERE IS A NET DECREASE TO THE NW.

TOTAL NEW RUNOFF TO THE SOUTH  
=  $7993 \text{ SQFT} \times 2.37 \text{ IN} / 12 \text{ IN/FT} = 1579 \text{ CU.FT.}$

THE SOUTH RUNOFF IS SUFFICIENT  
FOR PONDING COLLECTION.

PEAK RUNOFF TO SOUTH -

FROM SCS. FIELD MANUAL, CHAPTER 2, REVISED  
FOR NEW MEXICO "PEAK RATES OF DISCHARGE  
FOR SMALL WATERSHEDS" FIGURE 2-5

@  $T_c < 0.1 \text{ HOUR} = 6 \text{ MIN} \approx 1.2 \text{ MIN ACTUAL}$

@  $CN = 95$

PEAK FLOW =  $2.5 \text{ CFS/Ac/IN. RUNOFF} \times \frac{7993}{43560} \times 2.37$   
=  $1.09 \text{ CFS @ 100 YEAR}$

FOR GRASS CHANNEL  $n = 0.030$   $S = .02 \text{ FT/FT}$

@  $R = A/P = 1.50 \text{ FT} / 6" = .25'$  FOR PULL SWALE

BY MANNINGS  
EQ.  $V = \frac{1.49}{0.030} (.38^{2/3} 0.02^{1/2}) = 2.7 \text{ FT/SEC}$

$Q = VA = 2.7 \text{ FT/SEC} \times 1.5 \text{ SQFT} = 4.05 \text{ CFS} > 1.09 \text{ CFS}$



THE SWALE WILL HANDLE THE SOUTH  
PEAK FLOW AT THE 100 YR. STORM



13537 Terragon Drive, N.E.  
Albuquerque, New Mexico  
November 29, 1978

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

Dear Mr. Conegliano:

Enclosed are revisions to a drainage report for Lots 1 through 14, Block 51 of Snow Heights Addition. This revision contains analysis and design for ponding required by the future development site in the west portion of the property. The pond recommended will be required at the time the future site and overflow parking area are improved.

Enclosed are two (2) copies of the title sheet and site plan for the remodeling of Asbury Methodist Church. The title sheet contains the grading plan for the entire tract including future development areas. The site plan includes the drainage provisions for the proposed remodeling. One (1) copy of the complete drainage report and revisions is enclosed.

We look forward to receiving your approval of the drainage report and drawings.

Sincerely,



Clifford E. Anderson, P.E.

CEA:lcm  
Enclosures

PROJECT Future Development SHEET 1 OF         
Ponding Requirements  
 LOCATION Ashbury Methodist Church  
 JOB NO. 027 DATE 11/28/78 BY CHANDLER CHKD       

THE WEST 267 FEET OF PROPERTY IS UNDEVELOPED  
 THE NEXT 110 FEET ± IS CURRENT IN USE AS  
 AN OVERFLOW PARKING AREA (DIAT). THIS USE IS  
 PROJECTED TO CONTINUE IN THE NEAR FUTURE  
 WITHOUT CHANGE IN USE OR SURFACE.

THE REMAINING SITE IS FULLY DEVELOPED OR  
 INCLUDED IN THE BUILDING EXPANSION DRAINAGE  
 PLAN. PONDING FOR THIS SITE IS INCLUDED IN PLANS.

PONDING FOR UNDEVELOPED AREA AND OVERFLOW  
 PARKING AREA IS RESERVED UNTIL SUCH TIME AS  
 IMPROVEMENTS ARE MADE OR SURFACE IS CHANGED.  
 THIS STUDY WILL DEVELOPE POND REQUIREMENTS  
 FOR THIS FUTURE IMPROVEMENT.

$$\text{FUTURE AREA} = (267' + 110') \times 142' = 53540 \text{ sqft}$$

EXISTING C FACTOR

$$\text{UNDEVELOPED AREA (DIAT w/10-20\% GRASS)} = .30$$

$$\text{OVERFLOW PARKING (DIAT)} = .60$$

$$\text{AVERAGE C FACTOR} = (.30 \times 267 + .60 \times 110) / 377 = .39$$

$$\text{FUTURE C FACTOR (ASPHALT PARKING)} = .90$$

$$\text{RAINFALL FOR 100 YEAR - 6 HOUR STORM} = 2.6 \text{ in} = P$$

TOTAL RUNOFF INCREASE

$$= (C_{\text{NEW}} - C_{\text{EXIST}}) \times 2.6 \text{ in} / 12 \text{ in/ft} \times \text{AREA} =$$

$$= (.90 - .39) \times 2.6 \text{ in} / 12 \text{ in/ft} \times 53540 \text{ sqft} = 5900 \text{ cuft.}$$

AREA REQUIRED TO DRAIN INTO POND.

$$= 5900 \text{ cuft} \times 12 \text{ in/ft} / (.90 \times 2.6 \text{ in}) = 30260 \text{ sqft}$$

DRAINAGE OF 140 FT X 220 FT IS ADEQUATE

REMAINING AREA CAN DRAIN TO STREETS  
WITHOUT INCREASING RUNOFF.

- SITE IS NOT WITHIN 100 YEAR FLOOD PLAIN.
- RUNOFF FROM SOUTH CANNOT ENTER PROPERTY BECAUSE  
OF EXISTING CONTINUOUS CONCRETE BLOCK WALL.
- FOR 2 FT DEEP POND - AREA MIDDLE CONTOUR = 2950 sqft  
42' X 70 FT IS ADEQUATE

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Building Committee  
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10000 Candelaria Road, N.E.  
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Gentlemen:

The enclosed report evaluates the impact of the proposed building expansion on the drainage and runoff at Lots 1 through 14, Block 51 of Snow Heights Addition. This evaluation is based on a 100 year, 6 hour storm which has a total rainfall of 2.6 inches. The report shows that a retaining pond of 1327 cubic feet will be required to compensate for increased runoff.

The enclosed map shows the recommended location for the storage pond. Minor site grading will be required to direct runoff to the pond. It is recommended that the pond be grass lined with a grass or rock bottom.

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Sincerely,



Clifford E. Anderson  
N.M. P.E. & L.S. #6472

cc: Killingsworth Construction

PROJECT Drainage Study - SHEET 1 OF 2  
Ordinary Penetration  
 LOCATION Ashburn Methodist Church  
 JOB NO. 027 DATE 8/29/78 BY Chavez CHKD

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AREA OF NEW ROOF & WALK DRAINING TO THE SOUTH = 7993 SQ.FT.

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FOR SANDY LOAM SOIL - S.C.S. SOIL GROUP B  
AND ANTECEDENT MOISTURE CONDITION II

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Scannon & Associates, Inc.  
 8008 PENNSYLVANIA CIRCLE NE  
 ALBUQUERQUE, NM 87110  
 (505) 265-8841

PROJECT Drainage Study SHEET 2 OF 2  
Ponding Requirements  
 LOCATION Arburi Methodist Church  
 JOB NO. 027 DATE 8/29/79 BY C. Andros CHKD

FOR BUILDING SITE TOTAL RUNOFF INCREASE  
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$\therefore$  THERE IS A NET DECREASE TO THE NW.

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@  $T_c < 0.1 \text{ HOUR} = 6 \text{ MIN} \approx 1.2 \text{ MIN ACTUAL}$

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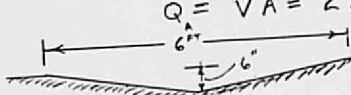
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 THE SWALE WILL HANDLE THE SOUTH  
 PEAK FLOW AT THE 100 YR. STORM







## **City of Albuquerque**

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 4, 1978

Mr. Clifford E. Anderson, P.E.  
Scanlon & Associates, Inc.  
8008 Pennsylvania Circle N.E.  
Albuquerque, New Mexico 87110

Re: Asbury Methodist Church

Dear Mr. Anderson:

This letter is to notify the approval of the revised drainage plan for the Asbury Methodist Church.

Very truly yours,

Bruno Conegliano  
Assistant City Engineer - Hydrology

BC/fs

cc - Drainage File

Rec. 11/3/78

INTERIM DRAINAGE PERMIT  
FOR  
SINGLE PARCELS UNDER  
20,000 SQUARE FEET

Date received \_\_\_\_\_

Applicant's Name: Asbury United Methodist Church

Address: 10000 Candelaria Road, N.E.

Albuquerque, N.M. 87112

Telephone No.: 505-299-0643

Killingsworth Construction Co., Inc. #6157

Signature of Applicant: \_\_\_\_\_

LOCATION OF PARCEL TO BE DEVELOPED

Lot 1 thru 14 Block 51

Subdivision Snow Heights Addition

Street address 10000 Candelaria Road N.E.

Current zoning classification \_\_\_\_\_

CALCULATIONS FOR SIZING OF RETENTION POND

Area of parcel 9100 square feet

Volume of retention pond storage =  $0.1 \times \text{Area} - 0.1 \times$  \_\_\_\_\_ = 1327 cub.ft.

ATTACHMENTS

1. Copy of page \_\_\_\_\_ of zoning atlas (color in parcel).
2. Print of drainage plan (show bench marks referenced to mean sea level, existing contours and proposed contours, spot elevations and dimensions to verify adequacy of ponds and swales, and to insure site storm drainage is properly conveyed to the retention area, proposed improvements, and nearest storm drainage facilities.)
3. Does any storm water from adjacent properties now or in the future enter this parcel?  
\_\_\_\_\_ yes ☒ no If answer is "yes" attach an explanation of how off site flows will be handled.



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Very truly yours,

Bruno Conegliano  
Assistant City Engineer - Hydrology

BC/fs

cc - Drainage File

KELLINGSWORTH Const  
299-0643



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

November 9, 1978

*Ashbury Baptist ch*

Mr. Clifford E. Anderson  
13537 Terragon Drive N.E.  
Albuquerque, New Mexico 87112

Dear Mr. Anderson:

I have reviewed the drainage report for the parcel in block 51 of Snow Heights Addition. This parcel includes all the lots 1 through 14, and it indicates that approximately 1/3 of the area is going to be dedicated to parking. Yet, the drainage report indicates no provisions for the future parking site. I cannot approve the drainage report since no provisions are made for increased imperviousness that will be generated. Please revise the drainage report and include two copies of the site grading plan and of the first page of the construction plans.

Very truly yours,

*B. Conegliano*

Bruno Conegliano  
Asst. City Engineer-Hydrology

BC/gv

cc: Dick Heller, City Engineer  
Richard Leonard, AMAFCA  
/ Drainage File