HYDROLOGY F14/D19 ONE PLAN

F14/D19

1 Plan

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. F-14 DATE: 4/6/84

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Drainage Improvements For 504 Sanchez RD. NW

ATTENDANCE: WHO	REPRESENTING
Rick Williams	
Billy Goolsby	

FINDINGS: ① Drainage & Grading Plan required prior to release of building permit
② Site is not located in a Flood Hazard area. Discharge to be determined by downstream capacity. 15" Storm sewer located in 5th
③ Address impacts on Public R/W since curb & gutter does not exist in Sanchez Rd.

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 G. Goolsby SIGNED: R W Williams

TITLE: CE/Hydrology TITLE: _____

DATE: 4/6/84 DATE: APR 6 84

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 984-0696

June 7, 1984

Mr. Billy J. Goolsby, P.E.
City of Albuquerque
Design Hydrology Section
123 Central N.W.
Albuquerque, NM 87102

Re: Revised Grading & Drainage
Plan for 504 Sanchez Road N.W.
(F14-D19)
DGA Job No. 738.11

Dear Mr. Goolsby:

This is to inform you that we have suspended work on subject project until further notice.

Very truly yours,

RTWilliams

Richard T. Williams, P.E.

RTW/cbk

RECEIVED
JUN 12 1984
HYDROLOGY SECTION

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

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

June 1, 1984

Mr. Richard Williams
Denny-Gross & Associates, Inc.
2400 Commanche Road, N.E.
Albuquerque, New Mexico 87107

REF: REVISED GRADING & DRAINAGE PLAN FOR 504 SANCHEZ ROAD N.W. (F14-D19) RECEIVED MAY 2, 1984.

Dear Rick,

I have reviewed the above referenced submittal and I am still having a problem with it.

The narrative with this submittal does not justify blocking off-site flows. The owner is responsible for accepting these flows and cannot block them and cause ponding and flooding on adjacent property. Off-site flows have not been addressed.

Please refer back to my letter dated April 20, 1984 with particular attention to items 1, 5, 6, 7, & 8. Also, paved access is required. The dirt entrance will not suffice.

I strongly recommend that you have someone in your company review this plan with the DPM checklist and see if they fully understand what you are trying to show.

Should you have any questions or comments, please contact me at 766-7644.

Sincerely,

Billy J. Goolsby

Billy Goolsby
City/County Flood Plain Admin.

BJG/cl

INFORMATION SHEET

PROJECT TITLE Drainage Improvements 504 Sanchez Road, N.W. TYPE OF SUBMITTAL Drainage Plan

ZONE ATLAS PAGE NO. F-14-Z CITY ADDRESS 504 Sanchez Road, N.W.

LEGAL DESCRIPTION Lot 7 of Nelson's Subdivision of Lots "G" and "H" of the Replat of a Portion of Lots 1, 2, & 3 of the North 4th Street Home Sites Addition.

ENGINEERING FIRM DENNEY-GROSS & ASSOC. CONTACT Richard T. Williams, P.E.

ADDRESS 2400 Comanche Road N.E. PHONE 884-0696

OWNER Dennis Brush CONTACT

ADDRESS 415 Yale S.E. PHONE 247-8339

ARCHITECT CONTACT

ADDRESS PHONE

SURVEYOR DENNEY-GROSS & ASSOCIATES CONTACT Steven L. Youtsey, L.S.

ADDRESS 2400 Comanche Road N.E. PHONE 884-0696

CONTRACTOR TCB Corporation CONTACT Richard Rood

ADDRESS 260 Itasca S.E. Rio Rancho, NM PHONE 892-0261

PRE-DESIGN MEETING:

X YES
___ NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
X OTHER Drainage (SPECIFY)

DATE SUBMITTED: MAY 1, 1984

BY: RTWilliams
Richard T. Williams, P.E.

RECEIVED
MAY 02 1984
HYDROLOGY SECTION

DENNEY-GROSS & ASSOCIATES, INC.
CONSULTING ENGINEERS
2400 COMANCHE ROAD, N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0696

May 1, 1984

RECEIVED
MAY 02 1984
HYDROLOGY SECTION

Mr. Billy J. Goolsby, P.E.
City of Albuquerque
Design Hydrology Section
P.O. Box 1293
Albuquerque, NM 87103

Re: Grading and Drainage Plan for
504 Sanchez Road N.W. (F14-D19)
DGA Job No. 738.12

Dear Mr. Goolsby:

We have received your comments dated April 20, 1984, regarding subject project. Responses to your comments are as follows.

1. We have clarified portions of the drawing which may have been misleading. Our analysis of drainage facilities in the area indicates that we do not have sufficient downstream capacity to free discharge. Consequently, we propose a pond with controlled discharge. In order to develop the required ponding volume, the sides of the pond must be built up. Thus, we are unable to accept offsite flows.

In order to accept offsite flows, the pond must either be set so low that pumping is required, or the sides must be so low that sufficient ponding volume can not be developed. It is not in the interests of our client to propose a situation where pumping is required, particularly since this will not benefit him but will only serve to accept offsite flows for which our client is not responsible.

We hereby request that the requirement that offsite flows must be accepted be waived.

2. We have shown the outlet pipe and spillway on the plan. We have extended the asphalt concrete paving over the downstream face of the berm in order to provide erosion protection from flows coming through the spillway.

3. We have indicated the entrance to the property.

4. We have corrected our drawing to indicate that the proposed building will not encroach on adjacent property.

5. MSL designation has been supplied for finished floor elevations.

6. The area where the existing building is to be removed will be paved.

7. The site will neither discharge to, nor receive flows from, adjacent properties to the north and east. These areas were inaccessible to the surveyor.

8. You may be sure that ample thought has been given to the drainage associated with this site. Considering the scope of the project, the amount of work that has gone into it is excessive.

Please contact me if you have any questions or require additional information.

Very truly yours,

RTWilliams

Richard T. Williams, P.E.

RTW/cbk

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

READING FILE

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

April 20, 1984

Mr. Rick Williams
Denny-Gross & Associates, Inc.
2400 Comanche Road NE
Albuquerque, New Mexico 87107

RE: GRADING & DRAINAGE PLAN FOR 504 SANCHEZ ROAD NW
(F14-D19) RECEIVED APRIL 12, 1984

Dear Rick,

I have reviewed the above referenced submittal and forward the following comments:

1. I am totally confused about what you are trying to show. The plan indicates a berm but, I cannot determine what it is suppose to look like or where the limits are. Blocking of off-site flows is not allowed.

2. You show an outlet pipe and spillway in detail but, I can't find it on the plan. Also, the downstream face of the berm(?) where the spillway is will also have to have erosion protection, not just the top.

3. Entrance to the property is not indicated. How will the property be accessed?

4. The new building is shown overlapping the property line. How can this be allowed?

5. Finished floor elevations will MSL designation should be given for all building on and off-site.

6. Is the area where the existing building is to be removed to be landscaped or what?

7. How will this site interface with the properties to the north and east?

8. The drainage associated with this site should be given more thought as to how it can be treated such that it will be acceptable to the City.

Should you have any questions or comments, please contact me.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, P.E.
City/County Flood Ordinance Administrator

BJG/ca

DENNEY - GROSS & ASSOCIATES, INC.
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, N.M. 87107
TELEPHONE: (505) 884-0696

LETTER OF TRANSMITTAL

DATE April 12, 1984	F.D. JOB NO. 738.12
ATTENTION Billy Goolsby, P.E.	
REASON	

TO City of Albuquerque
Design Hydrology Section
123 Central N.W.
Albuquerque, New Mexico 87102

F14-D19 WR

GENTLEMEN:

WE ARE SENDING YOU ☐ ATTACHED ☐ UNDER SEPARATE COVER VIA _____ THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☐ PRINTS ☐ PLANS ☐ PROJECT ESTIMATE ☐ SPECIFICATIONS
☐ COPY OF LETTER ☐ CHANGE ORDER ☒ Drainage Improvements/Plans

COPIES	DATE	NO.	DESCRIPTION
2	4-12-84		Drainage Improvements for 504 Sanchez Road N.W.
			prepared for Richard Rood, TCB Corporation

THESE ARE TRANSMITTED as checked below.

☐ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RETURN ____ COPIES FOR DISTRIBUTION
☐ FOR YOUR USE ☐ APPROVED AS NOTED ☐ RETURN ____ SIGNED ORIGINALS
☐ AS REQUESTED
☒ FOR REVIEW AND COMMENT ☐ _____
☐ FOR BIDS DUE _____ 19____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS

If you have any questions, please call our office at your convenience.

RECEIVED
APR 12 1984
HYDROLOGY SECTION

COPY TO _____

SIGNED: RTWilliams
Richard T. Williams, P.E.

RTW/cbk

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE

DRAINAGE IMPROVEMENTS

504 SANCHEZ ROAD N.W.

Prepared For:

Richard Rood
TCB Corporation

April 1984

DGA JOB No. 738.12

Prepared By:

DENNEY-GROSS & ASSOCIATES, INC.
Consulting Engineers
2400 Comanche Road N.E.
Albuquerque, New Mexico 87107

RECEIVED
APR 2 1984
HYDROLOGY SECTION

DRAINAGE IMPROVEMENTS

504 SANCHEZ ROAD N.W.

Prepared For:

Richard Rood
TCB Corporation

April 1984

DGA JOB No. 738.12

Prepared By:

DENNEY-GROSS & ASSOCIATES, INC.
Consulting Engineers
2400 Comanche Road, N.E.
Albuquerque, New Mexico 87107

INFORMATION SHEET

PROJECT TITLE Drainage Improvements 504 Sanchez Road, N.W. TYPE OF SUBMITTAL Drainage Plan

ZONE ATLAS PAGE NO. F-14-Z CITY ADDRESS 504 Sanchez Road, N.W.

LEGAL DESCRIPTION Lot 7 of Nelson's Subdivision of Lots "G" and "H" of the Replat of a Portion of Lots 1, 2, & 3 of the North 4th Street Home Sites Addition.

ENGINEERING FIRM DENNEY-GROSS & ASSOC. CONTACT Richard T. Williams, P.E.

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OWNER Dennis Brush CONTACT

ADDRESS 415 Yale S.E. PHONE 247-8339

ARCHITECT CONTACT

ADDRESS PHONE

SURVEYOR DENNEY-GROSS & ASSOCIATES CONTACT Steven L. Youtsey, P.E.

ADDRESS 2400 Comanche Road N.E. PHONE 884-0696

CONTRACTOR TCB Corporation CONTACT Richard Rood

ADDRESS 260 Itasca S.E. Rio Rancho, NM PHONE 892-0261

PRE-DESIGN MEETING:

X YES
__ NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

__ SKETCH PLAT APPROVAL
__ PRELIMINARY PLAT APPROVAL
__ SITE DEVELOPMENT PLAN APPROVAL
__ FINAL PLAT APPROVAL
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__ CERTIFICATE OF OCCUPANCY APPROVAL
__ ROUGH GRADING PERMIT APPROVAL
__ GRADING/PAVING PERMIT APPROVAL
XX OTHER Drainage (SPECIFY)

DATE SUBMITTED: 4-12-84

BY: RTWilliams
Richard T. Williams, P.E.

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. F-14 DATE: 4/6/84

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Drainage Improvements For 504 Sanchez RD. NW

WHO	REPRESENTING
ATTENDANCE: Rick Williams	
Billy Goolsby	

FINDINGS: ① Drainage & Grading Plan required prior to release of building permit
② Site is not located in a Flood Hazard area. Discharge to be determined by downstream capacity. 15" Storm sewer located in 5th
③ Address impacts on Public R/W since curb & gutter does not exist in Sanchez Rd.

copy of recap

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 G. Goolsby SIGNED: RW Williams

TITLE: CE/Hydrology TITLE: _____

DATE: 4/6/84 DATE: APR 6, 84

I, Richard T. Williams, hereby certify that the enclosed documents and drawings were prepared under my supervision and are true and correct to the best of my knowledge and belief.

RTWilliams

New Mexico Professional Engineer No. 7309

RICHARD T. WILLIAMS
NEW MEXICO
7309
REGISTERED PROFESSIONAL ENGINEER

I N D E X

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DRAINAGE IMPROVEMENTS

504 SANCHEZ ROAD, N.W.

I. PURPOSE:

The purpose of this Drainage Plan is to analyze and manage the existing and proposed runoff flows resulting from the 6 hour - 100 year runoff event according to methodology presented in the City of Albuquerque Development Process Manual.

II. EXISTING CONDITIONS:

The subject property is located on the north side of Sanchez Road, N.W. just west of 5th Street N.W. as shown on the Vicinity Map on Plate 1. The site has an area of 0.17 acres and is essentially level.

There is no existing curb and gutter in front of the property. There is estate-type curb and gutter on the south side of Sanchez Road and further west on the north side of the street.

There is a type "D" catch basin in the intersection of Sanchez Road and 5th Street which feeds into a 15-inch RCP of slope 0.0010. Analysis indicates that the capacity of this line is only on the order of two CFS. Therefore, discharge of storm flows generated on-site will be controlled by means of a ponding area.

The site is partially paved. There are three existing structures on the site. One of the structures encroaches on the lot behind subject property. The site is not located within a 100 - year flood hazard area according to the National Flood Insurance Program Flood Boundary and Floodway Map, City of Albuquerque, panel 15.

III. PROPOSED SOLUTION:

The two buildings in the northeast corner of the site will be removed. A two-story building with an approximate roof area of 920 SF will be constructed adjacent to the rear of the existing building. A pond of 1241 CF will be constructed on the easterly portion of subject property. The pond will drain into the right-of-way of Sanchez Road through a 2-inch PVC drain line. The discharge rate will be 0.085 CFS, which is 1/2 CFS per acre. A four-foot by three-foot gravel blanket one-foot deep will be constructed in the right-of-way below the outlet of the drain in order to protect the right-of-way from erosion. The pond will be protected by a concrete overflow spillway.

Because the sides of the ponding area must be built up in order to develop the required storage volume, no off-site flows will be accepted. The remaining existing structure has a pitched roof. Half of the roof drains to the west and half drains to the east. Because this is an existing drainage pattern, no change is proposed. The new structure will drain to the east and south and into the pond. The entire site, with the exception of the area covered by structure, will be paved.

IV. CONCLUSION:

The material contained herein demonstrates a storm water management scheme which will provide the development with a practical and effective plan for handling storm water runoff during times of precipitation.

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
(505) 884-0695

LOCATION DRAINAGE IMPROVEMENTS 504 SANCHEZ RD. NW
PROJ. NO. 738.12
DATE APR 6, 1984
DESIGNER RTW
PAGE 1

EXISTING CONDITIONS

A = 97.50 x 74.25 = 7239 SF = 0.17 AC

IMPERVIOUS AREA = 19.6 (29.7) + 5(5) + 24.2 (48.3) + 18.9 (30.7) + 12.2 (10.2) = 2481 SF

% IMPERVIOUS = $\frac{2481}{7239}$ = 0.34

SOIL SERIES - Gb (GILA LOAM. THIS LEVEL SOIL IS IN THE IRRIGATED RIO GRANDE VALLEY. SLOPES ARE ZERO TO ONE PERCENT. RUNOFF IS SLOW, AND THE HAZARD of WATER EROSION IS SLIGHT. THIS SOIL IS USED for IRRIGATED ALFALFA, ROW CROPS, AND PASTURE. IT IS ALSO USED FOR WILDLIFE HABITAT AND COMMUNITY DEVELOPMENT.) (SCS - SOIL SURVEY of BERNALILLO COUNTY, NM, MAP 20 & p. 19).

HYDROLOGIC SOIL GROUP - B (op. cit., pp. 76-77)

C = 0.50 (DPM VOL 2, fig 22.2 C-1)

I = 4.65 (from p. 2)

Q_{100} = 0.50 (4.65)(0.17) = 0.40 cfs

V_{100} = 0.50 $\left(\frac{2.2}{12}\right)$(7239) = 664 CF

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DATE
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PROPOSED

$A = 97.50 \times 74.25 = 7239$ SF $= 0.17$ AC

ALL IMPERVIOUS $\Rightarrow C = 1.00$

R (6 HR - 100 YR) = 2.2" (DPM VOL 2, # 22.2 D-1)

ASSUME t_c = 10 MIN

$I = 2.2 (6.84)(10)^{-0.51} = 4.65$

$Q_{100} = 1.00 (4.65)(0.17) = 0.79$ cfs

15" CONCRETE SEWER IN 5th STREET - S = .0010 (from CITY MAPS)

$A = \frac{\pi d^2}{4} = \frac{\pi (1.25)^2}{4} = 1.23$ SF

$WP = \pi d = 1.25 \pi = 3.93$ FT

$r = \frac{1.23}{3.93} = 0.313$

$Q_{CAP} = \frac{1.486}{0.013} (1.23)(0.313)^{\frac{2}{3}}(0.0010)^{\frac{1}{2}} = 2.05$ CFS

DRAINAGE AREA TYPE "D" CB 5TH ST. & SANCHEZ ROAD

$A = 700(950) - 200(900) = 625{,}000$ SF $= 14.35$ AC

ASSUME 30% IMPERVIOUS, TYPE "B" SOIL

$C = 0.48$ (DPM VOL 2, # 22.2 C-1)

$I = 4.65$

$Q_{100} = 0.48 (4.65)(14.35) = 32.0$ CFS > 2.05 CFS

CAN NOT DEMONSTRATE DOWNSTREAM CAPACITY. MUST POND.

DISCHARGE RATE for POND = 0.17 AC × 0.5 CFS/AC = 0.085 CFS

DENNEY - GROSS & ASSOCIATES, INC.
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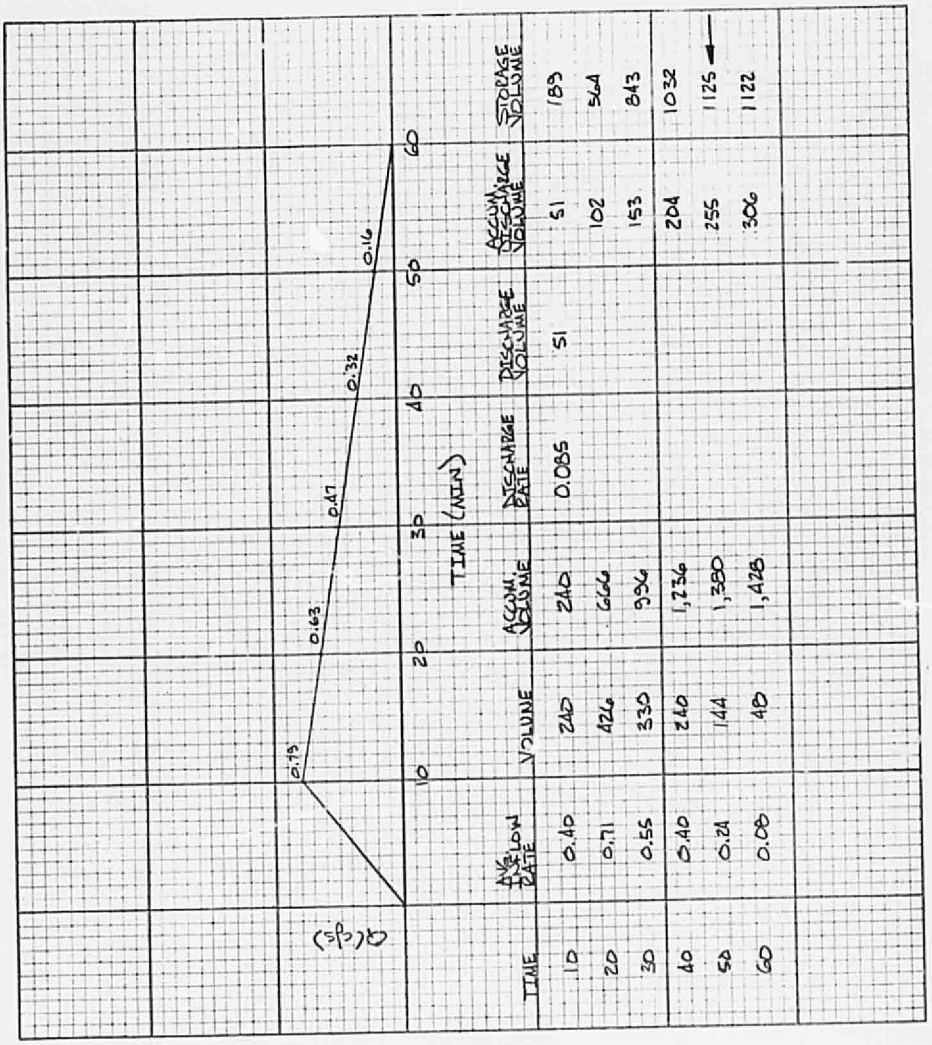

TIME	AVG. INFLOW RATE	VOLUME	ACCUM. VOLUME	DISCHARGE RATE	DISCHARGE VOLUME	ACCUM. DISCHARGE VOLUME	STORAGE VOLUME
10	0.40	240	240	0.085	51	51	189
20	0.71	426	666			102	564
30	0.55	330	996			153	843
40	0.40	240	1,236			204	1032
50	0.24	144	1,380			255	1125
60	0.08	48	1,428			306	1122

APPENDIX A

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
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PAGE 4

TRY 2" PVC DRAIN PIPE – $n = 0.009$

$A = \frac{\pi d^2}{4} = \frac{\pi \left(\frac{2}{12}\right)^2}{4} = 0.0218$

$WP = \pi d = \frac{2\pi}{12} = 0.5236$

$r = \frac{0.0218}{0.5236} = 0.0416$

$Q = \frac{1.486}{0.009}(0.0218)(0.0416)^{\frac{2}{3}} S^{\frac{1}{2}} = 0.4321\, S^{\frac{1}{2}} = 0.085$

$S = 0.0387$ USE $S = 0.0400$

AREA of POND

AREA 71^1 CONTOUR $= \frac{4(4)}{2} = 8$ SF

71^2 CONTOUR $= \frac{24(24)}{2} = 288$

71^3 CONTOUR $= 13(37) = \frac{31(37)}{2} = 1054.5$

71^4 CONTOUR $= 44(37) = \frac{70(37)}{2} = 1998$

71^5 CONTOUR $= 70(37) = 2590$

71^6 CONTOUR $= 2590$

VOLUME of POND

$V_{.08-.10}$	$= \frac{0+8}{2}(.02) =$	0.08
$V_{.10-.20}$	$= \frac{8+288}{2}(.10) =$	14.80
$V_{.20-.30}$	$= \frac{288+1054.5}{2}(.10) =$	67.13
$V_{.30-.40}$	$= \frac{1054.5+1998}{2}(.10) =$	152.62
$V_{.40-.50}$	$= \frac{1998+2590}{2}(.10) =$	229.40
$V_{.50-.60}$	$= 2590(.10) =$	259.00
$V_{.60-.70}$	$=$	259.00
$V_{.70-.80}$	$=$	259.00
TOTAL VOLUME		1241 CF > 11.25 OK

APPENDIX A

DENNEY - GROSS & ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2400 COMANCHE ROAD N.E.
ALBUQUERQUE, NEW MEXICO 87107
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OVERFLOW SPILLWAY

$Q = CLH^{\frac{3}{2}}$, $C = 2.6$, $L = 16$, $Q = 0.73$

$H^{\frac{3}{2}} = \frac{Q}{CL} = \frac{0.73}{2.6(16)} = 0.0180$

$H = 0.07$ USE 0.10

FLOOD MAP

GRECIAN
SITE

SOILS MAP

AND VALENCIA COUNTIES, NEW MEXICO — SHEET NUMBER 20