

**CITY OF ALBUQUERQUE**  
**PUBLIC WORKS DEPARTMENT**

June 11, 1997

INTER-OFFICE CORRESPONDENCE

HYDROLOGY DIVISION

TO: Desiderio Salas, Street Maintenance Division

FROM: Carlos A. Montoya, Project Manager, PWD *CAM*

SUBJECT: **PRIVATE DRAINAGE FACILITIES WITHIN PUBLIC  
RIGHTS-OF-WAY/EASEMENT**

\_\_\_\_\_  
(J13-D68)

Transmitted herewith, is a copy of the approved drainage plan for the referenced project incorporating the S.O. #19 design.

In accordance with the new process, this plan is being submitted to you for permitting and inspection. Please provide this section with a signed-off copy per the signature block upon construction and acceptance by your office.

As you are aware, the signed-off S.O. #19 is required by this office for Certificate of Occupancy release; hence your expeditious processing of this plan would be greatly appreciated and would avoid any unnecessary delay in the release of the Certificate of Occupancy.

Thank you for your cooperation and if you should have any questions and/or comments regarding the process, please feel free to call me at 924-3984.

Attachment

## DRAINAGE INFORMATION

PROJECT TITLE: San Felipe School

ZONE ATLAS/DRNG. FILE #: J-13-Z / 1068

DRB#: \_\_\_\_\_ EPC #: \_\_\_\_\_

WORK ORDER #: \_\_\_\_\_

LEGAL DESCRIPTION: A parcel of land located in Sec. 18, T8 N, R3 E, NMPM designated as the lands of San Felipe School

CITY ADDRESS: 2000 Lomas Blvd. NW, Albuquerque, NM 87104

ENGINEERING FIRM: Chavez-Grieves

CONTACT: Joseph L. DeFronzo, P.E.

ADDRESS: 5639 Jefferson NE

PHONE: 344-4080

OWNER: San Felipe School

CONTACT: Sister Carmel Purcell

ADDRESS: 2000 Lomas Blvd. NW Alb. NM 87104

PHONE: 242-2411

ARCHITECT: \_\_\_\_\_

CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_

SURVEYOR: Chavez-Grieves

CONTACT: Ernie Salazar, L.S.I.T.

ADDRESS: 5639 Jefferson NE

PHONE: 344-4080

CONTRACTOR: \_\_\_\_\_

CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_

### TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

### PRE-DESIGN MEETING:

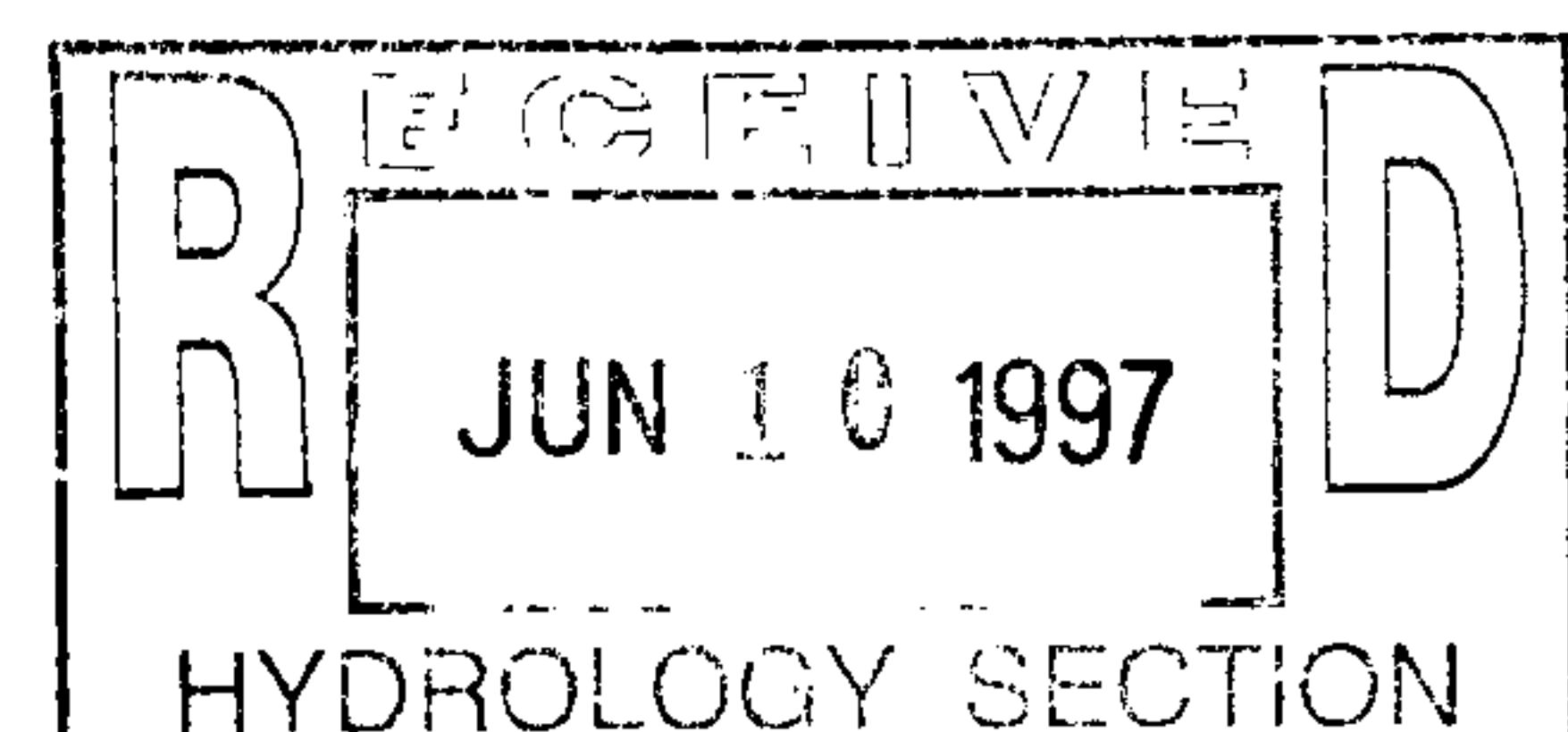
- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED

### CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☒ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☒ OTHER (SPECIFY) S.O. 19 Approval

DATE SUBMITTED: June 9, 1997

BY: Joseph L. DeFronzo, P.E.





5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

June 9, 1997

Mr. Carlos Montoya, P.E.  
City of Albuquerque Public Works Department  
P.O. Box 1293  
Albuquerque, NM 87103

**RE: Drainage Plan for San Felipe School (J13-D68)**  
**Albuquerque, New Mexico**

Dear Mr. Montoya:

Transmitted herewith for approval is the drainage plan revised per your comments dated June 2, 1997. Your comments are addressed as follows:

*Comment 1: The approval sought on the Drainage Information Sheet was not checked, however, I assume you are requesting Building Permit Approval. Please correct me if you are requesting a different approval.*

We are requesting S.O. 19 approval.

*Comment 2: Are there any off site flows into your site?*

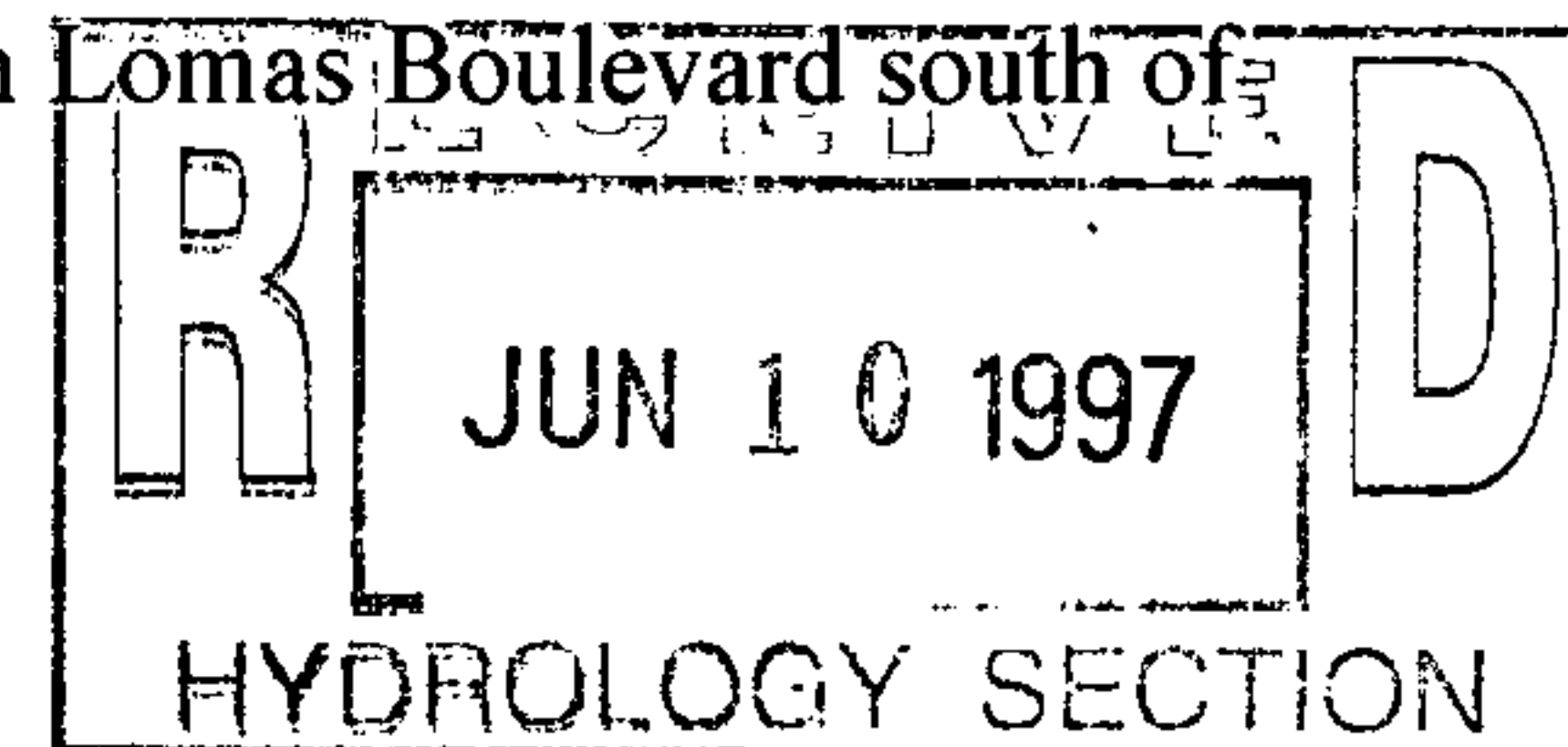
We did not collect survey data on the private property beyond the north property line adjacent to the existing building and the private property west of the existing classrooms/administration building and south of the play area. It is possible that there may be some off site flows from these areas into this site. However, if this is the case they will continue to do so and it is our opinion that they are negligible in terms of what has occurred historically.

*Comment 3: Please submit a plat or show on the drawing the lot lines for the site.*

We have shown the approximate location of the lot lines that separate the school site from the private property to the north and to the west of the existing buildings. The area to the south of the existing concrete wall in front of the classrooms/administration building is a portion of the school site. However, this area is an existing dirt playground that is relatively flat and is not a part of this drainage plan.

*Comment 4: You are draining to San Pasquale Road and San Felipe Road. Please submit information showing the capacity of these roads. Also, indicate where the flows enter the storm drain system. In other words is there a problem with the down stream capacity.*

There is no change in the amount of "historic" runoff from this site. The purpose of this "drainage plan" is to show the proposed on-site drainage improvements, as well as the sidewalk culverts on both San Pasquale Road and San Felipe Road. The only difference between the existing and proposed conditions is that the roof runoff, as well as the runoff collected by the proposed area drains will be routed directly to both streets via the proposed drain pipes and sidewalk culverts. Therefore, we feel that it is beyond the scope of this project to determine the down stream capacity since the "historic" flows will enter the storm drain system in Lomas Boulevard south of the site as they always have.



*Comment 5: Please show proposed grades around the buildings and enough information to show how the site will drain.*

The proposed grades around the buildings are not changing. However, we have added the existing spot elevations from the survey data to show how the site will drain.

*Comment 6: Please show the roof drains for building B-4.*

The existing roof drains for the classrooms/administration building on the south portion of the site are shown. B-4 indicates the existing and proposed drainage basin for this portion of the site.

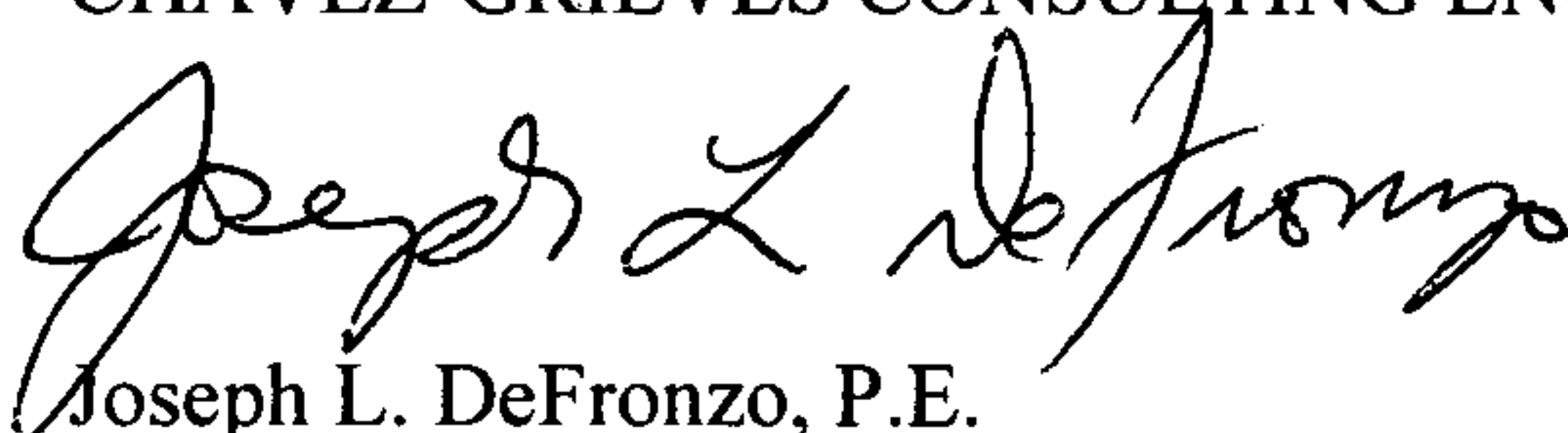
*Comment 7: Is asphalt going to be used on the site?*

We are not using any "new" asphalt on the site other than pavement patching for the trenching in the "existing" paved areas.

If you have any questions or wish to discuss this in more detail, please call me.

Sincerely,

CHAVEZ-GRIEVES CONSULTING ENGINEERS, INC.



Joseph L. DeFronzo, P.E.  
Senior Engineer

xc: Project File



CITY OF  
**Albuquerque**  
Public Works Department  
June 11, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Joseph L. DeFronzo  
Chavez-Grieves  
5639 Jefferson NE  
Albuquerque, New Mexico 87109

**RE: Drainage Plan for San Felipe School (J13-D68) Received June 10, 1997**


Dear Mr DeFronzo:

The above referenced plan dated June 6, 1997 is approved for Drainage Facilities Within City Right-of Way (SO #19) for the sidewalk culverts.

A separate permit is required for construction within City Right-of Way. A copy of the approval letter must be on hand when applying for the excavation Permit.

If you have any questions please call me at 924-3984.

Sincerely,

  
Carlos A. Montoya  
Project Manager

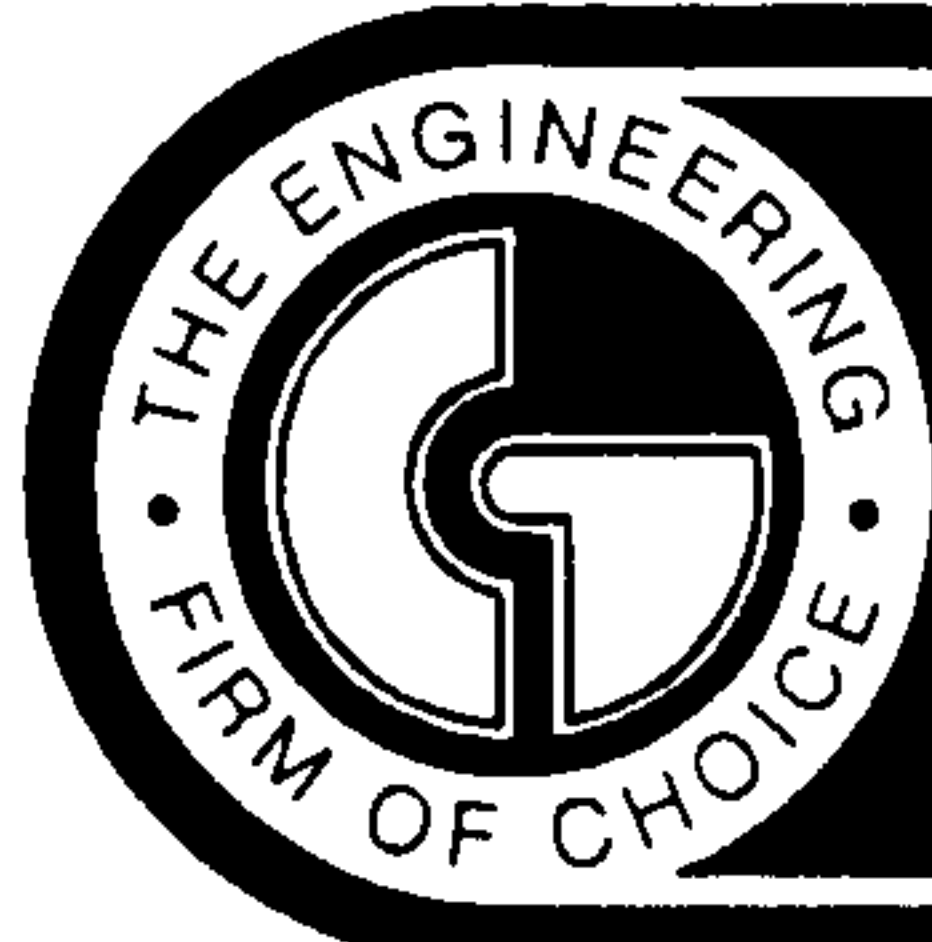
c: Andrew Garcia  
File

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103







**CHAVEZ • GRIEVES**  
**CONSULTING ENGINEERS, INC.**

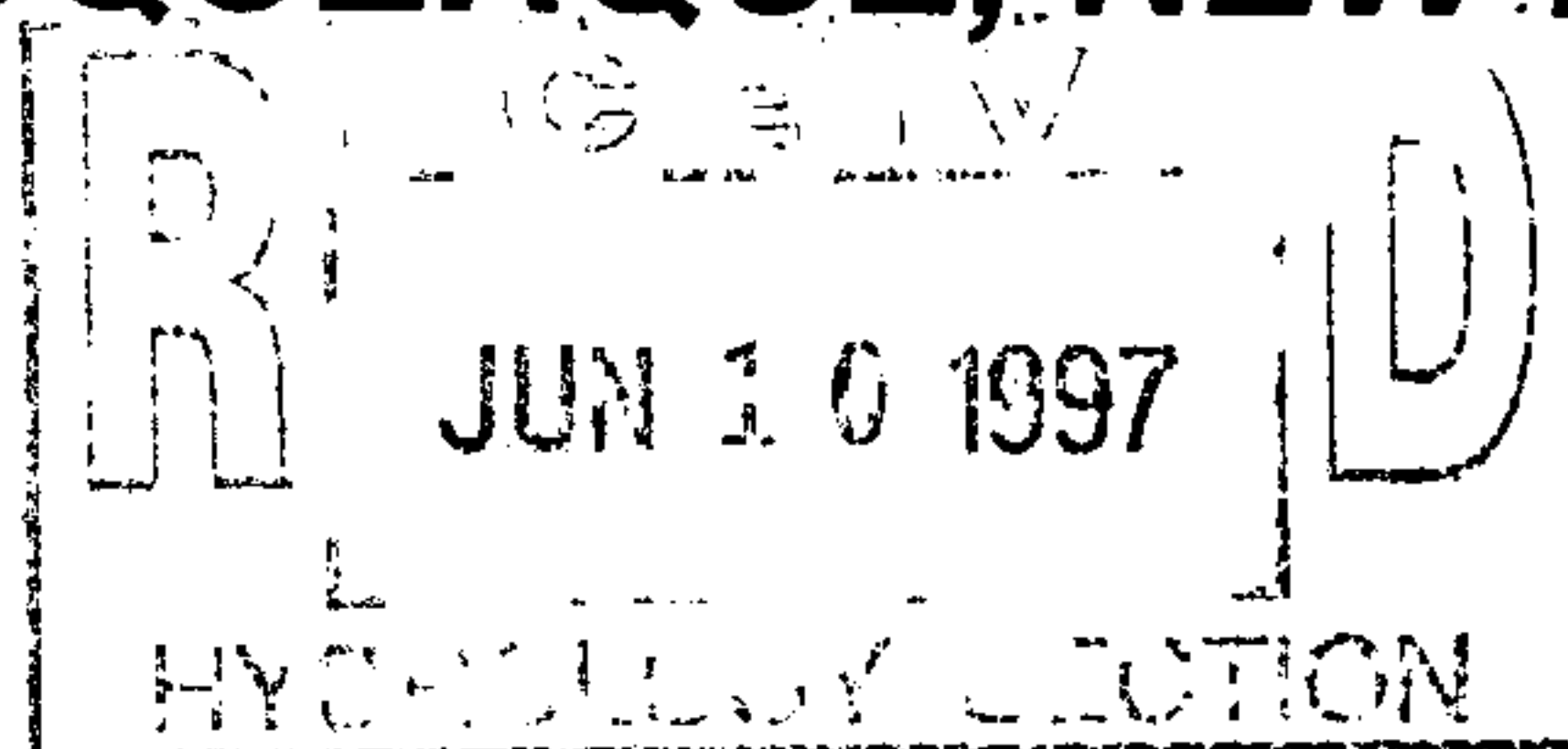
5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

# **DRAINAGE PLAN**

**FOR**

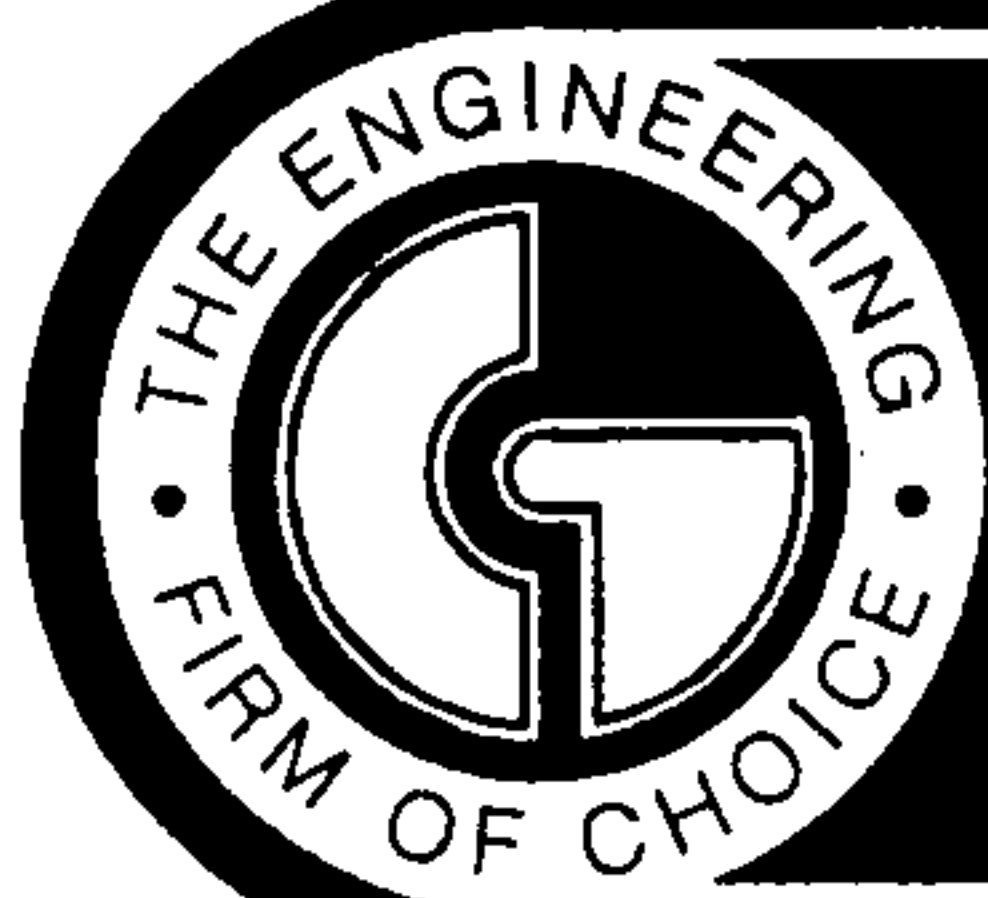
**SAN FELIPE SCHOOL**

***ALBUQUERQUE, NEW MEXICO***



**JUNE, 1997**

**CG PROJECT NO. S62-100-5197**



# CHAVEZ • GRIEVES

## CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

### DRAINAGE PLAN

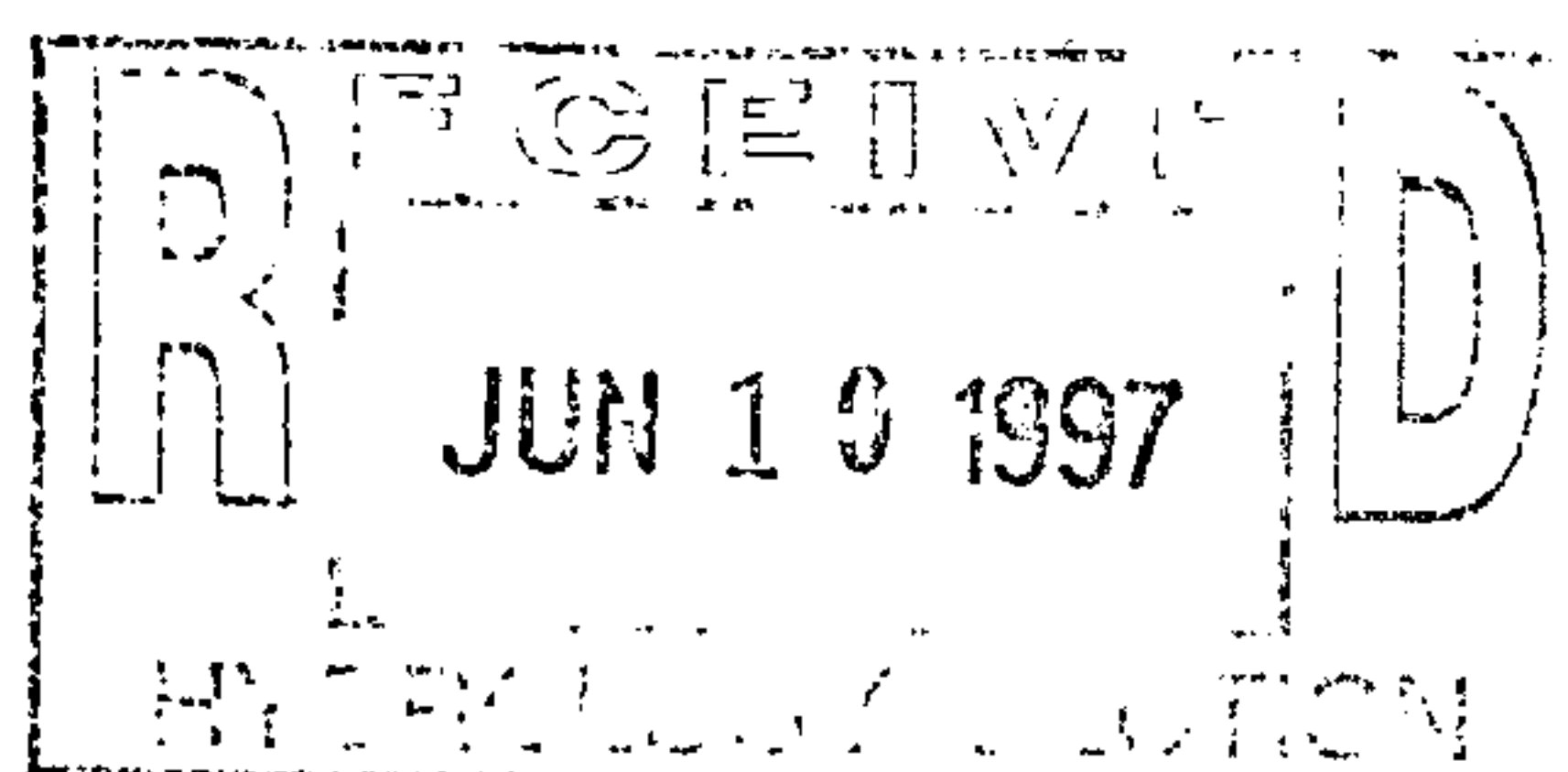
### FOR

### SAN FELIPE SCHOOL



*Joseph L. DeFrongo*  
6-9-97

**ALBUQUERQUE, NEW MEXICO**



**June, 1997**

## **LOCATION AND SURROUNDING AREA**

San Felipe School is located in Old Town just south of Old Town Road between San Pasquale Road and San Felipe Road. The area surrounding the school is fully developed and consists of both residential and commercial development.

## **LEGAL DESCRIPTION**

A parcel of land located in Sec. 18, T8 N, R3 E, NMPM designated as the Lands of San Felipe School.

## **FLOOD HAZARD ZONES**

As shown by Community - Panel Number 350020028C of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, the entire site is in a designated flood hazard zone B. Zone B designates "areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood."

## **EXISTING AND PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN**

The proposed site conditions are identical to the existing site conditions because there are no site improvements planned except for on-site area drains and drain pipes. The proposed drainage patterns are also identical to the existing drainage patterns. However, some of the roof drains and the new area drains will have outlet pipes that drain directly to San Pasquale Road and San Felipe Road via sidewalk culverts. The outlet pipes will have water-tight connections to the down spouts and they will be PVC SDR 26 pipe which will sustain any potential traffic loads.

## **HYDROLOGY/HYDRAULICS**

The runoff calculations and design are in accordance with Volume 2, Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993. The total runoff was computed using equation a-10 and the total volume of runoff was computed using equations a-5 and a-6 of Section 22.2.



# **APPENDIX A**

## **HYDROLOGIC COMPUTATIONS**

# CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109

Phone (505) 344-4080 - Fax (505) 343-8759

## RUNOFF CALCULATIONS - SIMPLIFIED PROCEDURE

By: J. DeFronzo

Date: 4-30-97

**Project: San Felipe School**

Zone Atlas: J-13-Z

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, "Hydrology", peak discharge rate for small watersheds less than forty acres in size.

### Precipitation Zone from Figure A-1:2

Land treatment descriptions are in Table A-4.

## 1. RUNOFF RATE COMPUTATION

Use Equation a-10:  $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$

Values of  $Q_{pi}$  are from Table A-9, and are in CFS/acre. Area values are in acres.

[illegible]

## 2. RUNOFF VOLUME COMPUTATION

Use Equation a-5 to compute weighted excess precipitation:

$$\text{Weighted E} = \text{"E"} = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / (A_A + A_B + A_C + A_D) \\ (A_A + A_B + A_C + A_D) = \sum A_i$$

Use Equation a-6 to compute the volume:

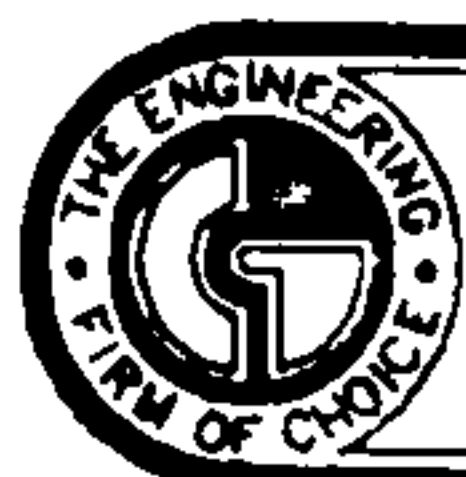
$$V_{360} = "E" \times (A_A + A_B + A_C + A_D) \times 3630 \text{ feet}^3/\text{acre} \cdot \text{inch}$$

Values of  $E_i$  are from Table A-8, and are in inches. Area values are in acres.

[illegible]

## **APPENDIX B**

# **HYDRAULIC COMPUTATIONS**



# CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109  
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. 1 OF 1  
JOB SAN FELIPE SCHOOL  
SUBJECT OUTLET PIPE CALCULATIONS  
CLIENT \_\_\_\_\_ JOB NO. 562-100-5197  
BY JLD DATE 4-30-97  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

## AREA DRAIN FOR BASIN A-3

APPROXIMATELY  $1/2$  OF BASIN A-3 WILL BE  
DRAINED VIA THE AREA DRAIN & SIDEWALK  
CULVERT TO SAN FELIPE RD.

$$\therefore Q_p = 1.52 / 2 = 0.76 \text{ CFS}$$

ASSUMING A MIN. OF 1 FT. OF HEAD

$$Q_p = 0.5 A \sqrt{2gh}$$

$$0.76 = 0.5 A \sqrt{2(32.2)(1)}$$

$$A = 0.189 \text{ FT}^2$$

$$0.189 = \pi r^2 \Rightarrow r = 0.25 \text{ FT} = 3''$$

$\therefore$  USE A 4" PIPE PER EXIST. FLOWLINE  
ELEVATION ON SAN FELIPE RD.

## AREA DRAINS FOR BASIN B-3

$$Q_p = 0.47 \text{ CFS}$$

ASSUMING A MIN. OF 1 FT OF HEAD

$$Q_p = 0.5 A \sqrt{2gh}$$

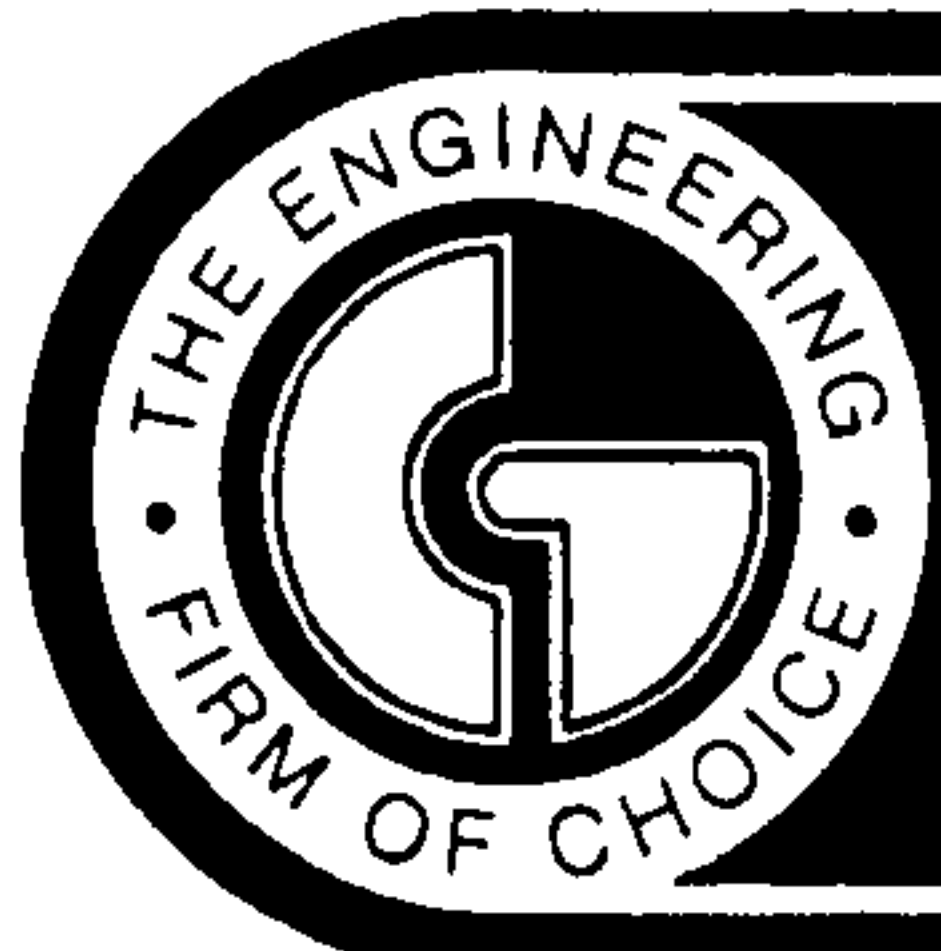
$$0.47 = 0.5 A \sqrt{2(32.2)(1)}$$

$$A = 0.117 \text{ FT}^2$$

$$0.117 = \pi r^2 \Rightarrow r = 0.19 \text{ FT} = 2.5''$$

$\therefore$  USE A 6" PIPE PER EXIST. FLOWLINE  
ELEVATION ON SAN PASQUALE RD.





**CHAVEZ • GRIEVES**  
**CONSULTING ENGINEERS, INC.**

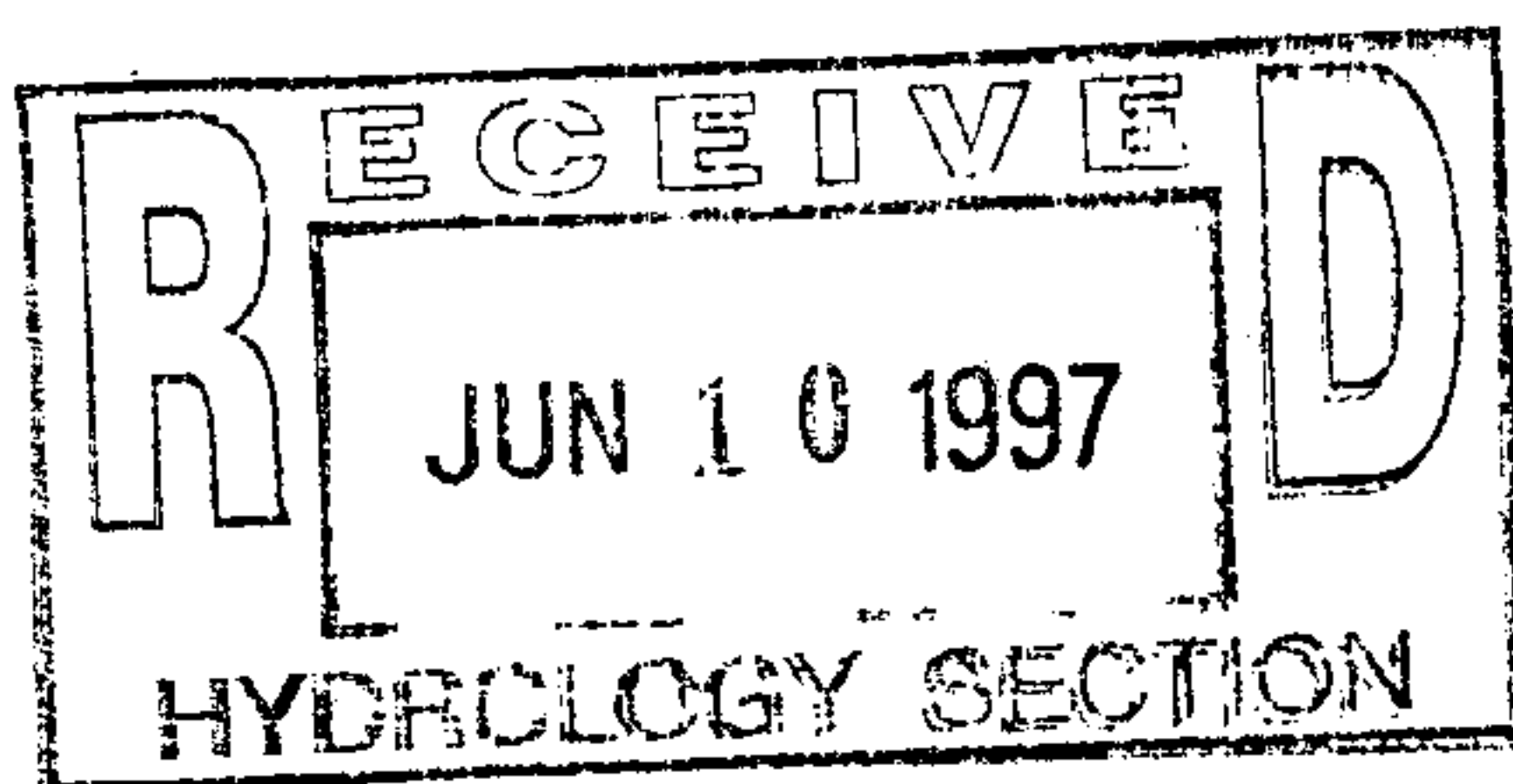
5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

# **DRAINAGE PLAN**

## **FOR**

### **SAN FELIPE SCHOOL**

***ALBUQUERQUE, NEW MEXICO***



**JUNE, 1997**

**CG PROJECT NO. S62-100-5197**



5639 JEFFERSON STREET NE · ALBUQUERQUE, NEW MEXICO 87109 · PHONE (505) 344-4080 · FAX (505) 343-8759

**DRAINAGE PLAN**

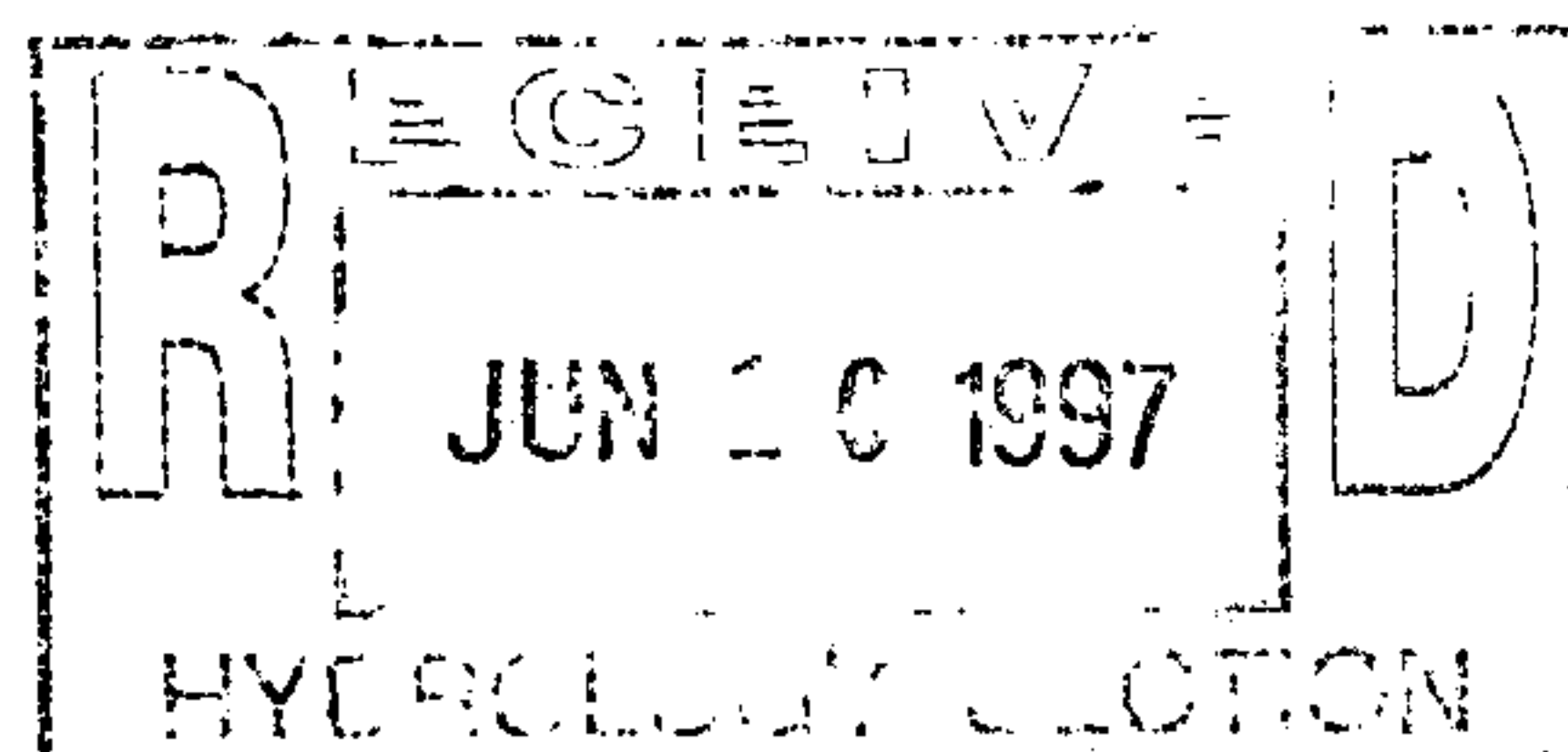
**FOR**

**SAN FELIPE SCHOOL**



*Joseph L. DeFRONZO*  
6-9-97

**ALBUQUERQUE, NEW MEXICO**



**June, 1997**

## **LOCATION AND SURROUNDING AREA**

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## **LEGAL DESCRIPTION**

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## **EXISTING AND PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN**

The proposed site conditions are identical to the existing site conditions because there are no site improvements planned except for on-site area drains and drain pipes. The proposed drainage patterns are also identical to the existing drainage patterns. However, some of the roof drains and the new area drains will have outlet pipes that drain directly to San Pasquale Road and San Felipe Road via sidewalk culverts. The outlet pipes will have water-tight connections to the down spouts and they will be PVC SDR 26 pipe which will sustain any potential traffic loads.

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The runoff calculations and design are in accordance with Volume 2, Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993. The total runoff was computed using equation a-10 and the total volume of runoff was computed using equations a-5 and a-6 of Section 22.2.

**APPENDIX A**

**HYDROLOGIC COMPUTATIONS**

# CHAVEZ - GRIEVES / CONSULTING ENGINEERS, Inc.

5639 Jefferson Street NE, Albuquerque, New Mexico 87109

Phone (505) 344-4080 - Fax (505) 343-8759

## RUNOFF CALCULATIONS - SIMPLIFIED PROCEDURE

By: J. DeFronzo  
Project: San Felipe School

Date: 4-30-97  
Zone Atlas: J-13-Z

This procedure is in accordance with the City of Albuquerque Development Process Manual, Volume 2, Section 22.2, “Hydrology”, peak discharge rate for small watersheds less than forty acres in size.

Precipitation Zone from Figure A-1: 2  
Land treatment descriptions are in Table A-4.

## 1. RUNOFF RATE COMPUTATION

Use Equation a-10:  $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$

Values of  $Q_{pi}$  are from Table A-9, and are in CFS/acre. Area values are in acres.

[illegible]



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 二、  
 三、  
 四、

$$\text{Weighted E} = \text{“E”} = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / (A_A + A_B + A_C + A_D)$$

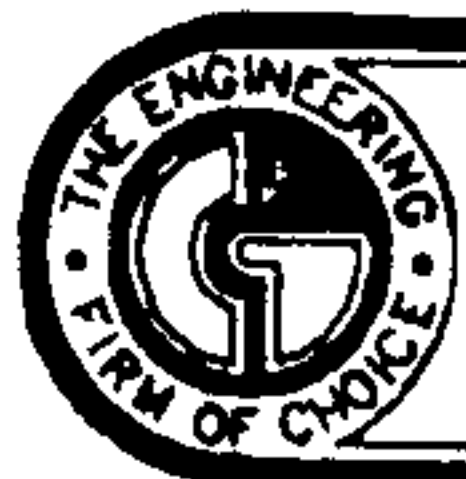
$$(A_A + A_B + A_C + A_D) = \sum A_i$$
$$V_{360} = "E" \times (A_A + A_B + A_C + A_D) \times 3630 \text{ feet}^3/\text{acre-inch}$$

Values of  $E_i$  are from Table A-8, and are in inches. Area values are in acres.

[illegible]

## **APPENDIX B**

# **HYDRAULIC COMPUTATIONS**



# CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109  
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. 1 OF 1  
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BY JLD DATE 4-30-97  
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## AREA DRAIN FOR BASIN A-3

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$$\therefore Q_p = 1.52 / 2 = 0.76 \text{ CFS}$$

ASSUMING A MIN. OF 1 FT. OF HEAD

$$Q_p = 0.5 A \sqrt{2gh}$$

$$0.76 = 0.5 A \sqrt{2(32.2)(1)}$$

$$A = 0.189 \text{ FT}^2$$

$$0.189 = \pi r^2 \Rightarrow r = 0.25 \text{ FT} = 3''$$

$\therefore$  USE A 4" PIPE PER EXIST. FLOWLINE  
ELEVATION ON SAN FELIPE RD.

## AREA DRAINS FOR BASIN B-3

$$Q_p = 0.47 \text{ CFS}$$

ASSUMING A MIN. OF 1 FT OF HEAD

$$Q_p = 0.5 A \sqrt{2gh}$$

$$0.47 = 0.5 A \sqrt{2(32.2)(1)}$$

$$A = 0.117 \text{ FT}^2$$

$$0.117 = \pi r^2 \Rightarrow r = 0.19 \text{ FT} = 2.5''$$

$\therefore$  USE A 6" PIPE PER EXIST. FLOWLINE  
ELEVATION ON SAN PASQUALE RD.

## DRAINAGE INFORMATION

PROJECT TITLE: San Felipe School ZONE ATLAS/DRNG. FILE #: J-13-Z / D68

DRB#: \_\_\_\_\_ EPC #: \_\_\_\_\_ WORK ORDER #: \_\_\_\_\_

LEGAL DESCRIPTION: A parcel of land located in Sec. 18, T8 N, R3 E, NMPM designated as the lands of San Felipe School

CITY ADDRESS: 2000 Lomas Blvd. NW, Albuquerque, NM 87104

ENGINEERING FIRM: Chavez-Grieves CONTACT: Joseph L. DeFronzo, P.E.

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

OWNER: San Felipe School CONTACT: Sister Carmel Purcell

ADDRESS: 2000 Lomas Blvd. NW Alb. NM 87104 PHONE: 242-2411

ARCHITECT: \_\_\_\_\_ CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

SURVEYOR: Chavez-Grieves CONTACT: Ernie Salazar, L.S.I.T.

ADDRESS: 5639 Jefferson NE PHONE: 344-4080

CONTRACTOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

### TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
- ☒ DRAINAGE PLAN
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☒ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

### PRE-DESIGN MEETING:

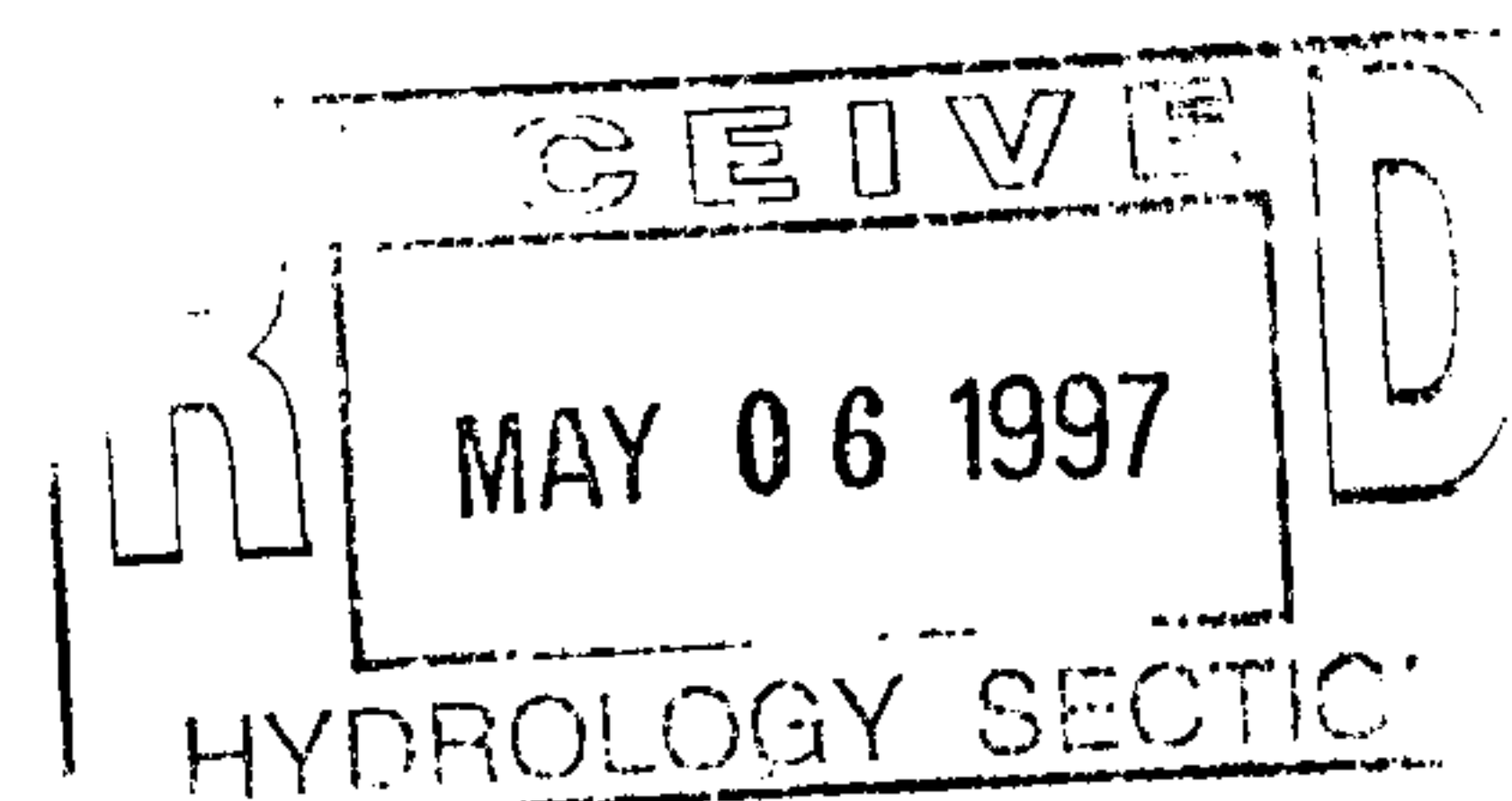
- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

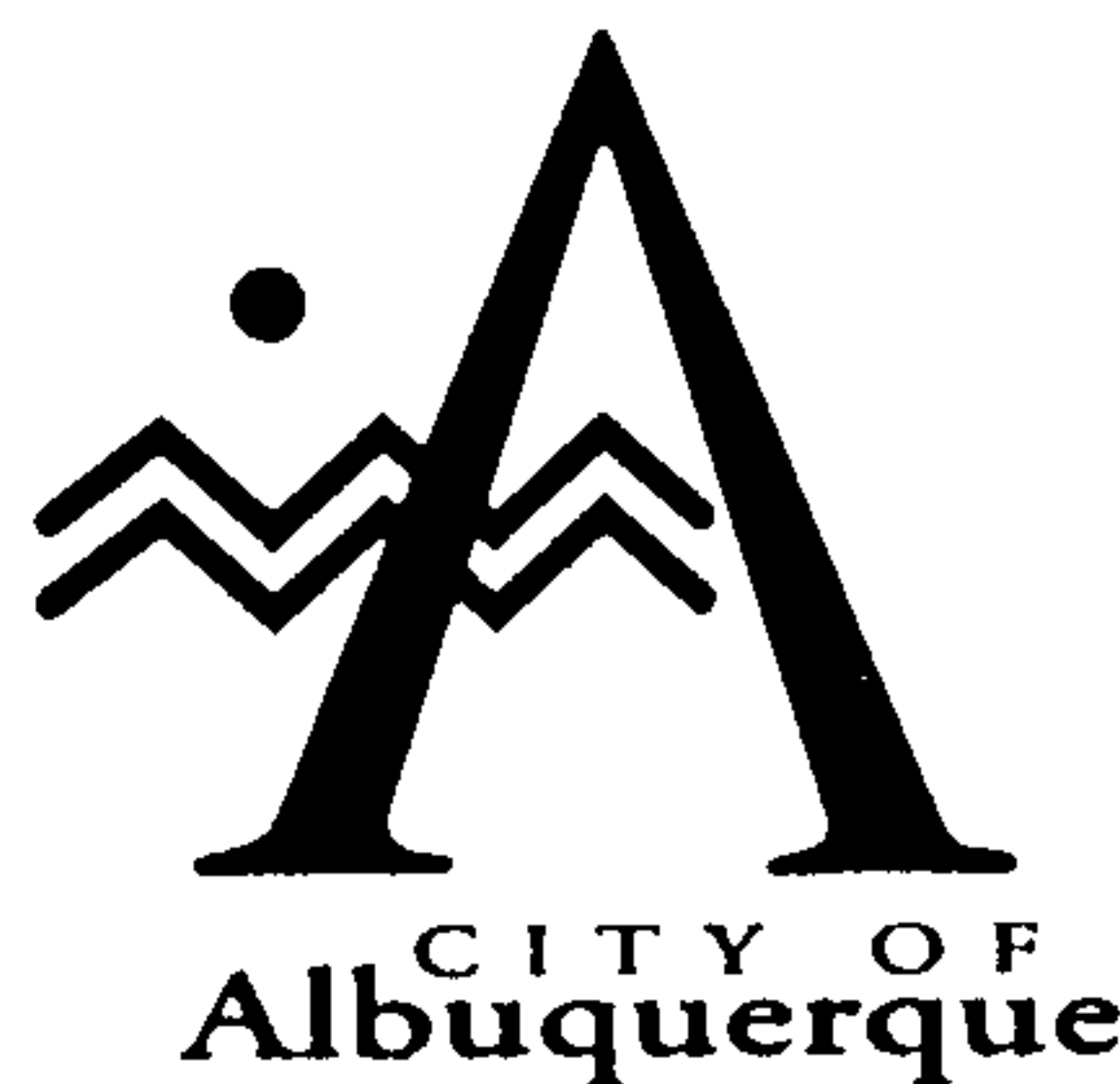
### CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
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- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
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- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☒ OTHER (SPECIFY)(LOMR REQUEST)

DATE SUBMITTED: April 30, 1997

BY: Joseph L. DeFronzo, P.E.





Public Works Department  
June 2, 1997

Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Joseph L. DeFronzo  
Chavez-Grieves  
5639 Jefferson NE  
Albuquerque, New Mexico 87109

**RE: Drainage Plan for San Felipe School (J13-D68) Received May 6, 1997**

Dear Mr DeFronzo:

I have reviewed the referenced plan dated May 5, 1997 and forward the following comments.

1. The approval sought on the Drainage Information Sheet was not checked, however, I assume you are requesting Building Permit Approval. Please correct me if you are requesting a different approval.
2. Are there any off site flows into your site?
3. Please submit a plat or show on the drawing the lot lines for the site.
4. You are draining to San Pasquale Road and San Felipe Road. Please submit information showing the capacity of these two roads. Also, indicate where the flows enter the storm drain system. In other words is there a problem with the down stream capacity.
5. Please show proposed grades around the buildings and enough information to show how the site will drain.
6. Please show the roof drains for building B-4.

Good for You, Albuquerque!

P.O. Box 1293, Albuquerque, New Mexico 87103

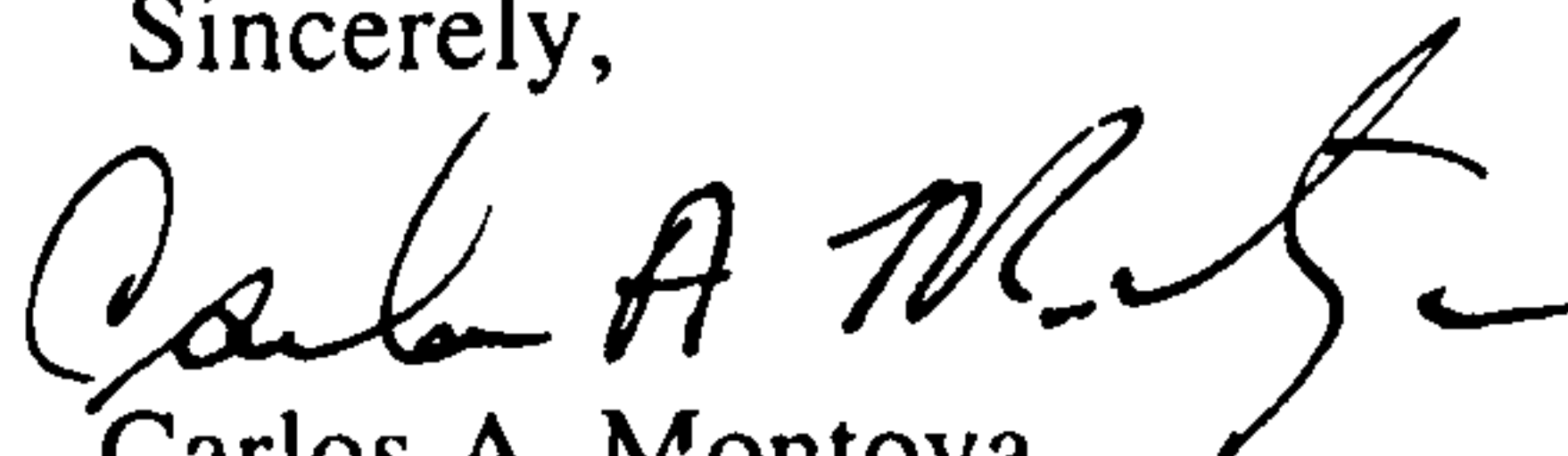




7. Is asphalt going to be used on the site?

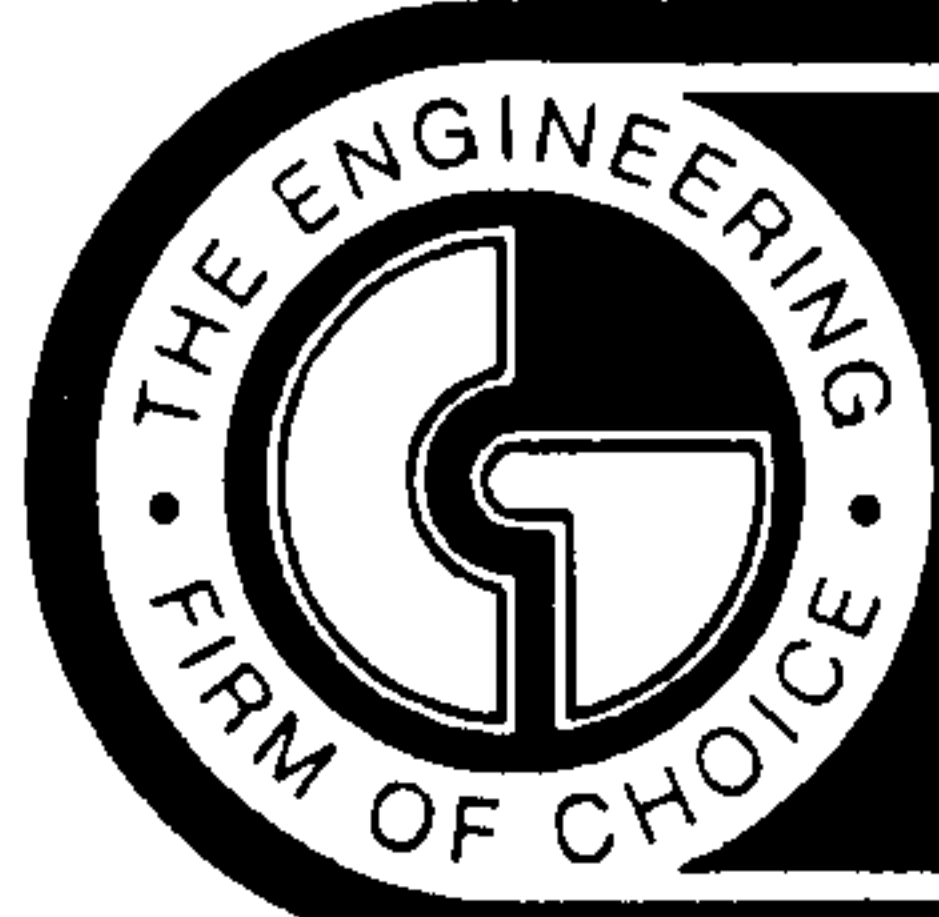
If you have any questions please call me at 924-3984.

Sincerely,

A handwritten signature in black ink, appearing to read "Carlos A. Montoya". The signature is fluid and cursive, with a long horizontal stroke at the end.

Carlos A. Montoya  
Project Manager

c: Andrew Garcia  
File



**CHAVEZ • GRIEVES**  
**CONSULTING ENGINEERS, INC.**

5639 JEFFERSON STREET NE • ALBUQUERQUE, NEW MEXICO 87109 • PHONE (505) 344-4080 • FAX (505) 343-8759

# **GRADING AND DRAINAGE PLAN**

**FOR**

**SAN FELIPE SCHOOL**

***ALBUQUERQUE, NEW MEXICO***

**APRIL, 1997**

**CG PROJECT NO. S62-100-5197**

# GRADING AND DRAINAGE PLAN

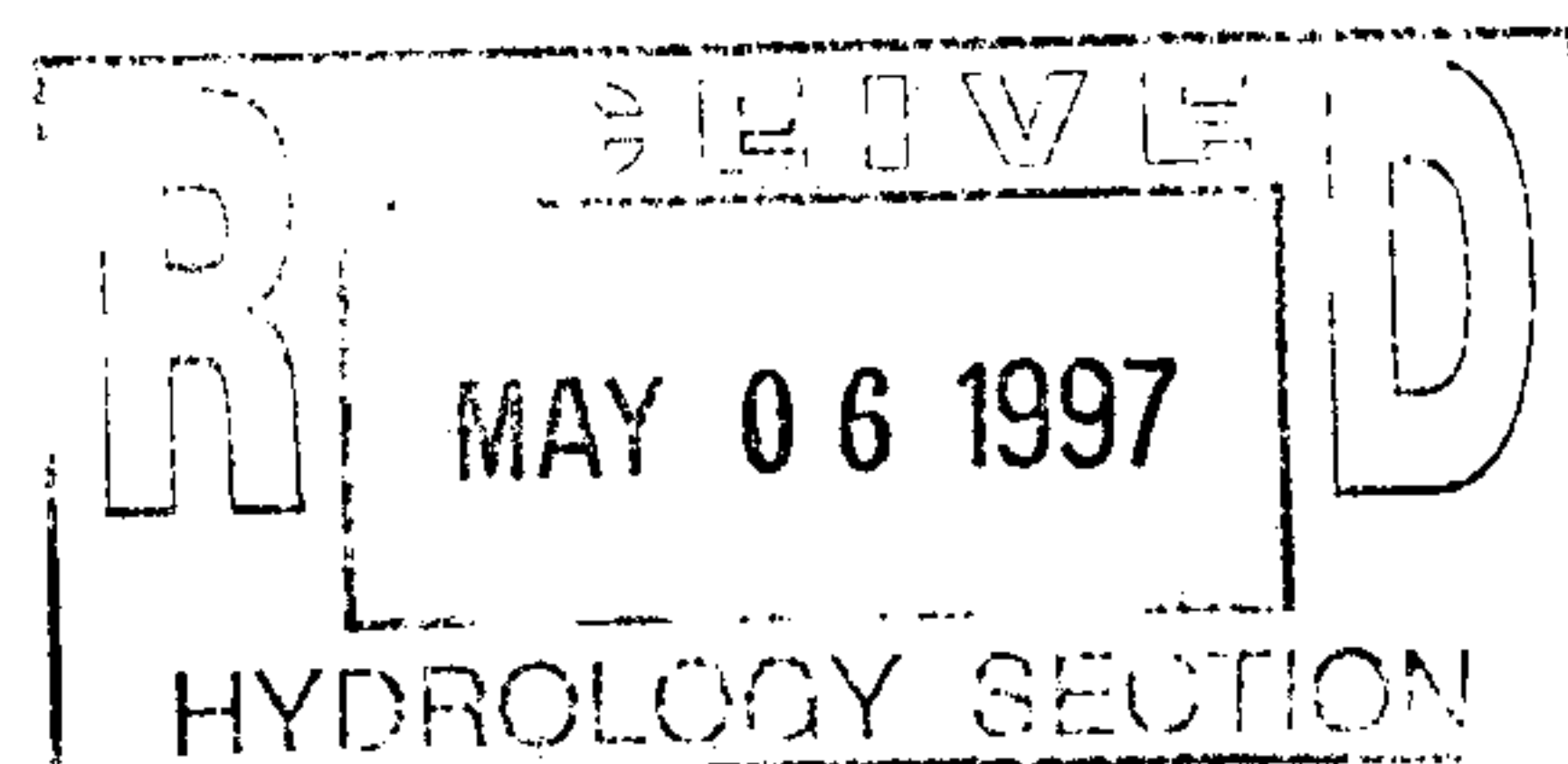
## SAN FELIPE SCHOOL



*Joseph L. DeFRONZO*  
4-30-97

ALBUQUERQUE, NEW MEXICO

April, 1997



## LOCATION AND SURROUNDING AREA

San Felipe School is located in Old Town just south of Old Town Road between San Pasquale Road and San Felipe Road. The area surrounding the school is fully developed and consists of both residential and commercial development.

## LEGAL DESCRIPTION

A parcel of land located in Sec. 18, T8 N, R3 E, NMPM designated as the Lands of San Felipe School.

## FLOOD HAZARD ZONES

As shown by Community - Panel Number 350020028C of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, the entire site is in a designated flood hazard zone B. Zone B designates "areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood."

*1996 map available*

## EXISTING AND PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN

The proposed site conditions are identical to the existing site conditions because there are no site improvements planned except for on-site area drains and drain pipes. The proposed drainage patterns are also identical to the existing drainage patterns. However, some of the roof drains and the new area drains will have outlet pipes that drain directly to San Pasquale Road and San Felipe Road via sidewalk culverts. The outlet pipes will have water-tight connections to the down spouts and they will be PVC SDR 26 pipe which will sustain any potential traffic loads.

## HYDROLOGY/HYDRAULICS

The runoff calculations and design are in accordance with Volume 2, Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993. The total runoff was computed using equation a-10 and the total volume of runoff was computed using equations a-5 and a-6 of Section 22.2.

**APPENDIX A**

**HYDROLOGIC COMPUTATIONS**



5639 Jefferson Street NE, Albuquerque, New Mexico 87109

Phone (505) 344-4080 - Fax (505) 343-8759

By: J. DeFronzo

Date: 4-30-97

**Project: San Felipe School**

Zone Atlas: J-13-Z

### Precipitation Zone from Figure A-1: 2

## 1. RUNOFF RATE COMPUTATION

Use Equation a-10:  $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$

Values of  $Q_{pi}$  are from Table A-9, and are in CFS/acre. Area values are in acres.

[illegible]

Use Equation a-5 to compute weighted excess precipitation:

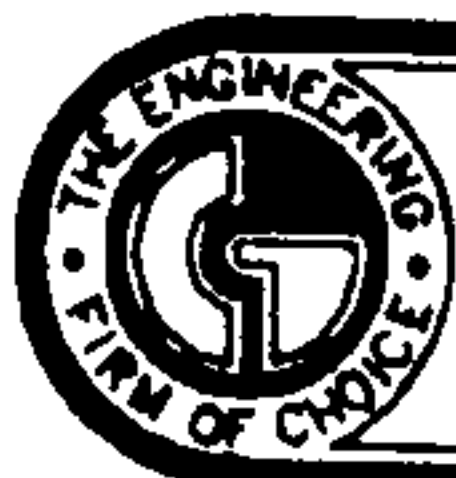
Use Equation a-6 to compute the volume:

Values of  $E_i$  are from Table A-8, and are in inches. Area values are in acres.

BASIN	E <sub>A</sub>	A <sub>A</sub>	E <sub>B</sub>	A <sub>B</sub>	E <sub>C</sub>	A <sub>C</sub>	E <sub>D</sub>	A <sub>D</sub>	ΣA <sub>i</sub>	"E"	V <sub>360</sub>
<b>EXISTING &amp; DEVELOPED BASIN VOLUME OF RUNOFF (CUBIC FEET)</b>											
<b>A-1</b>	0.53	0	0.78	0	1.13	0	2.12	0.12	0.12	2.12	923
<b>A-2</b>	0.53	0	0.78	0	1.13	0	2.12	0.16	0.16	2.12	1231
<b>A-3</b>	0.53	0	0.78	0	1.13	0.05	2.12	0.29	0.34	1.97	2437
<b>TOTAL VOLUME OF RUNOFF TO SAN FELIPE RD.</b>											4592
<b>B-1</b>	0.53	0	0.78	0	1.13	0	2.12	0.18	0.22	1.94	1549
<b>B-2</b>	0.53	0	0.78	0	1.13	0	2.12	0	0.06	1.46	318
<b>B-3</b>	0.53	0	0.78	0	1.13	0.12	2.12	0.02	0.14	1.27	646
<b>B-4</b>	0.53	0	0.78	0	1.13	0.07	2.12	0.21	0.28	1.87	1903
<b>B-5</b>	0.53	0	0.78	0	1.13	0.06	2.12	0.02	0.08	1.38	400
<b>TOTAL VOLUME OF RUNOFF TO SAN PASQUALE RD.</b>											4817

## **APPENDIX B**

# **HYDRAULIC COMPUTATIONS**



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SHEET NO. 1 OF 1  
JOB SAN FELIPE SCHOOL  
SUBJECT OUTLET PIPE CALCULATIONS  
CLIENT \_\_\_\_\_ JOB NO. 562-100-5197  
BY JLD DATE 4-30-97  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

## AREA DRAIN FOR BASIN A-3

APPROXIMATELY  $1/2$  OF BASIN A-3 WILL BE  
DRAINED VIA THE AREA DRAIN & SIDEWALK  
CULVERT TO SAN FELIPE RD.

$$\therefore Q_p = 1.52 / 2 = 0.76 \text{ CFS}$$

ASSUMING A MIN. OF 1 FT. OF HEAD

$$Q_p = 0.5 A \sqrt{2gh}$$

$$0.76 = 0.5 A \sqrt{2(32.2)(1)}$$

$$A = 0.189 \text{ FT}^2$$

$$0.189 = \pi r^2 \Rightarrow r = 0.25 \text{ FT} = 3''$$

$\therefore$  USE A 4" PIPE PER EXIST. FLOWLINE  
ELEVATION ON SAN FELIPE RD.

## AREA DRAINS FOR BASIN B-3

$$Q_p = 0.47 \text{ CFS}$$

ASSUMING A MIN. OF 1 FT. OF HEAD

$$Q_p = 0.5 A \sqrt{2gh}$$

$$0.47 = 0.5 A \sqrt{2(32.2)(1)}$$

$$A = 0.117 \text{ FT}^2$$

$$0.117 = \pi r^2 \Rightarrow r = 0.19 \text{ FT} = 2.5''$$

$\therefore$  USE A 6" PIPE PER EXIST. FLOWLINE  
ELEVATION ON SAN PASQUALE RD.