

4" drains to Girard Blvd.

**INPUT INFORMATION**

This is a Round Culvert

Pipe diameter = 0.33 ft

**Entrance Shape:**

Sharp Flush

Culvert Length = 30.00 ft

Culvert Slope = 0.0100 ft/ft

Roughness Coef. = 0.0100

Orifice Coef. of Discharge = 0.700

Entry Loss Coef. 'Ke' = 0.500

Water Head above bottom of Culv. at entrance = 0.50 ft

**Output:**

Flow Capacity 'Q' = 0.24 cfs  $\times 2 = 0.48 \text{ cfs}$

Flow Velocity 'V' = 2.78 fps

Under Pressure

6" diameter storm drain

**INPUT INFORMATION**

This is a Round Culvert

Pipe diameter = 0.50 ft

**Entrance Shape:**

Sharp Flush

Culvert Length = 94.00 ft

Culvert Slope = 0.0100 ft/ft

Roughness Coef. = 0.0100

Orifice Coef. of Discharge = 0.700

Entry Loss Coef. 'Ke' = 0.500

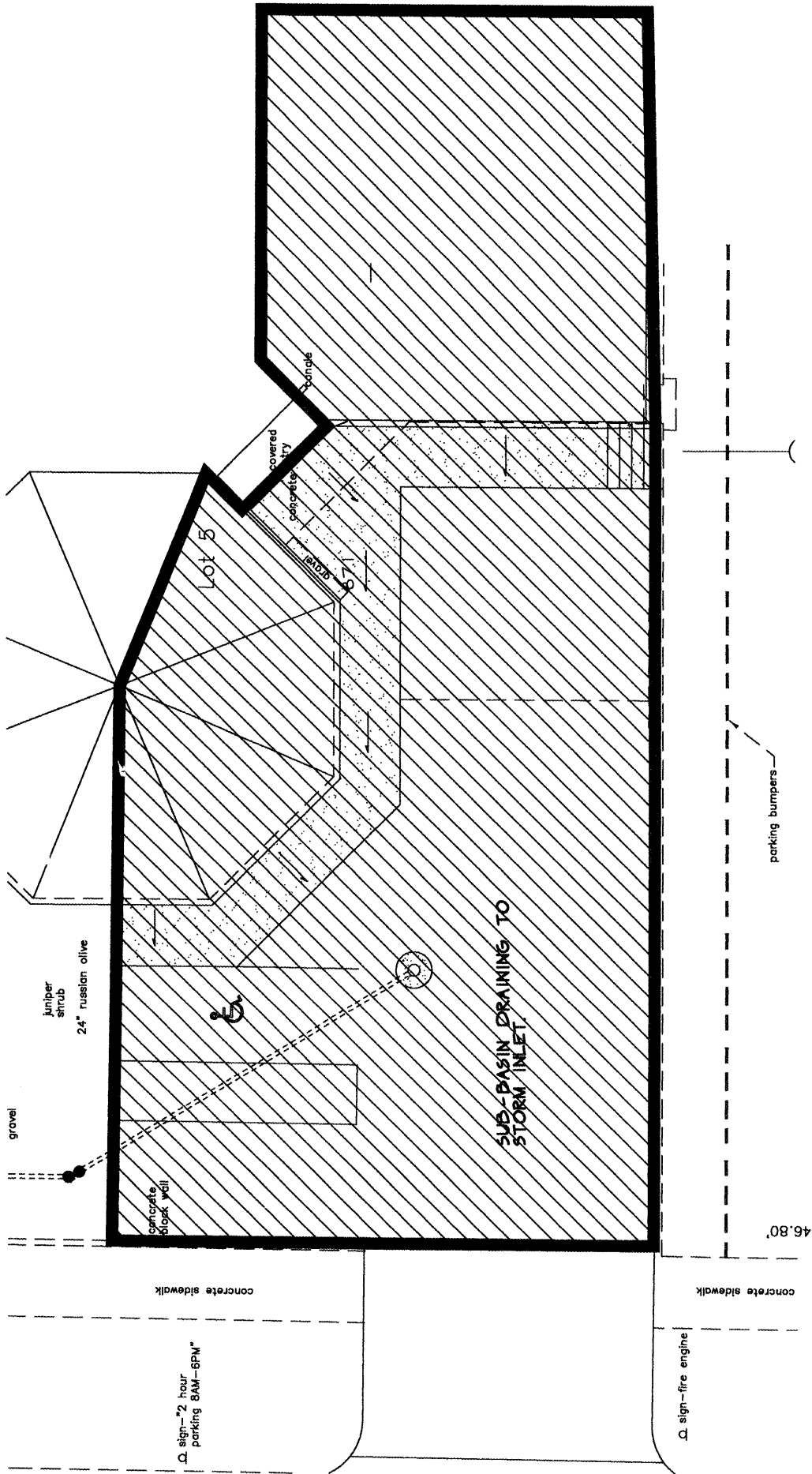
Water Head above bottom of Culv. at entrance = 1.00 ft

**Output:**

Flow Capacity 'Q' = 0.78 cfs

Flow Velocity 'V' = 3.98 fps

Under Pressure



**C.L. WEISS ENGINEERING, INC.**

POST OFFICE BOX 97 • SANDIA PARK, N.M. • 87047 • (505) 281-8000  
 1100 ALVARADO DR. NE • ALBUQUERQUE, N.M. • 87110 • (505) 266-3444

# SUB-BASIN TO INLET

dg2.dwg 08/19/98 10:34:06 N.T.S.

**DRAINAGE INFORMATION SHEET - (K16-D6)**

PROJECT TITLE: Christian Student Center (K16-D6) ZONE ATLAS / DRNG. FILE #: K-16-Z 96

LEGAL DESCRIPTION: Lots 4, 5 and 6, Block 12 Monte Vista Addition, Albuquerque, New Mexico

CITY ADDRESS: N/A

ENGINEERING FIRM: C.L. Weiss Engineering CONTACT: Chris Weiss

ADDRESS: P.O. Box 97, Sandia Park NM, 87047 PHONE: 281-1800

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

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

ARCHITECT: N/A CONTACT: \_\_\_\_\_

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

SURVEYOR: Forstbauer Surveying Co. CONTACT: Ron Forstbauer

ADDRESS: 1100 Alvarado Dr. NE - 87110 PHONE: 268-2112

CONTRACTOR FIRM: N/A CONTACT: \_\_\_\_\_

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

**PRE-DESIGN MEETING:**

\_\_\_\_ YES

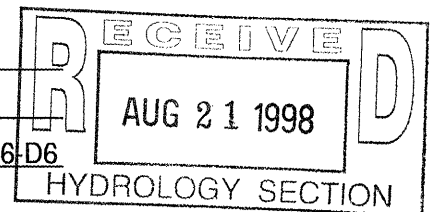
\_\_\_\_ NO

\_\_\_\_ COPY OF CONFERENCE RECAP  
SHEET PROVIDED

DRB NO. \_\_\_\_\_

EPC NO. \_\_\_\_\_

PROJ. NO. K16-D6



**TYPE OF SUBMITTAL:**

\_\_\_\_ DRAINAGE REPORT

X DRAINAGE PLAN

\_\_\_\_ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

\_\_\_\_ EROSION CONTROL PLAN

\_\_\_\_ ENGINEER'S CERTIFICATION

**CHECK TYPE OF APPROVAL SOUGHT:**

\_\_\_\_ SKETCH PLAT

\_\_\_\_ PRELIMINARY PLAT

\_\_\_\_ SITE DEVELOPMENT PLAN

\_\_\_\_ FINAL PLAT

X BUILDING PERMIT

\_\_\_\_ FOUNDATION PERMIT

\_\_\_\_ CERT. OF OCCUPANCY

\_\_\_\_ ROUGH GRADING PERMIT

\_\_\_\_ GRADING / PAVING PERMIT

\_\_\_\_ OTHER \_\_\_\_\_

DATE SUBMITTED: August 19, 1998 - RESUBMITTAL

BY: C.L. Weiss Engineering, Inc.



C.L. Weiss Engineering, Inc  
Post Office Box 97  
Sandia Park, N.M. 87047

Phone / Fax (505) 281-1800  
Alvarado Office (505) 266-3444

August 19, 1998

Mr. John P. Murray, P.E.  
C.O.A. Hydrology

RE: CHRISTIAN STUDENT CENTER (K16-D6)

Dear Mr. Murray,

Enclosed with this letter is a copy of the revised Drainage and Grading Plan for the above referenced project. Revisions made are in response to your comments dated July 24, 1998 and are as follows:

1. Because this site is zoned for Special Use, the architect is currently following the Site Development Process.
2. We understand that because this is an infill site, the need for a detention pond in the parking lot is not required. In order to eliminate the proposed detention pond calculated in our previous submittal, the four inch discharge pipe has been increased to a 6" pipe which is split into two 4" pipes for release into Girard Blvd. as shown. See calculations for additional information.
3. Based on site inspection, the pavement in the alley east of the site ends at the north end of the site. Due to the limited funds available for this project, the client has elected to redirect all roof flows to the storm drain / Girard Blvd. thus eliminating any increase in flows through the alley.

Please don't hesitate to call me at 266-3444 or Chris Weiss at 281-1800 with any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bryan J. Hedrick', with a stylized flourish at the end.

Bryan J. Hedrick  
C. L. Weiss Engineering, Inc.

**CALCULATIONS:**

Calculations are based on the Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

**ON-SITE****Note: These calculations include the total area of the Christian Student Center - Lots 4, 5 and 6 - Block 12****AREA OF SITE:**

|       |
|-------|
| 17550 |
|-------|

 SF = 

|       |
|-------|
| 0.403 |
|-------|

 Ac.**HISTORIC FLOWS:**

On-Site Historic Land Condition

|            |   |       |    |
|------------|---|-------|----|
| Area a     | = | 0     | SF |
| Area b     | = | 5100  | SF |
| Area c     | = | 0     | SF |
| Area d     | = | 12450 | SF |
| Total Area | = | 17550 | SF |

**DEVELOPED FLOWS:**

On-Site Developed Land Condition

|            |   |       |    |
|------------|---|-------|----|
| Area a     | = | 0     | SF |
| Area b     | = | 2373  | SF |
| Area c     | = | 0     | SF |
| Area d     | = | 15177 | SF |
| Total Area | = | 17550 | SF |

**EXCESS PRECIPITATION:**

Precip. Zone

|   |
|---|
| 2 |
|---|

Ea = 0.53  
Eb = 0.78  
Ec = 1.13  
Ed = 2.12

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{EaAa + EbAb + EcAc + EdAd}{Aa + Ab + Ac + Ad}$$

|            |   |          |             |   |          |
|------------|---|----------|-------------|---|----------|
| Historic E | = | 1.73 in. | Developed E | = | 1.94 in. |
|------------|---|----------|-------------|---|----------|

On-Site Volume of Runoff:  $V_{360} = E \cdot A / 12$ 

|                    |   |         |                     |   |         |
|--------------------|---|---------|---------------------|---|---------|
| Historic $V_{360}$ | = | 2531 CF | Developed $V_{360}$ | = | 2836 CF |
|--------------------|---|---------|---------------------|---|---------|

On-Site Peak Discharge Rate:  $Q_p = Q_{pa}Aa + Q_{pb}Ab + Q_{pc}Ac + Q_{pd}Ad / 43,560$ 

For Precipitation Zone 2

|          |   |      |          |   |      |
|----------|---|------|----------|---|------|
| $Q_{pa}$ | = | 1.56 | $Q_{pc}$ | = | 3.14 |
| $Q_{pb}$ | = | 2.28 | $Q_{pd}$ | = | 4.70 |

|                |   |         |                 |   |         |
|----------------|---|---------|-----------------|---|---------|
| Historic $Q_p$ | = | 1.6 CFS | Developed $Q_p$ | = | 1.8 CFS |
|----------------|---|---------|-----------------|---|---------|

The total increase in the flowrate of 0.2 cfs will outlet to Girard Blvd. NE through the proposed on-site storm drain. These flows will have no significant effect on the downstream conditions. No increase in flows will be directed to the east alley.

**FLOWS TO BE DIRECTED TO STORM DRAIN INLET**

|                         |   |         |   |         |              |   |
|-------------------------|---|---------|---|---------|--------------|---|
| Area of sub-basin flows | = | 3965 SF | = | 0.1 Ac. | Precip. Zone | 2 |
|-------------------------|---|---------|---|---------|--------------|---|

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

|            |   |          |
|------------|---|----------|
| Weighted E | = | 2.12 in. |
|------------|---|----------|

Sub-basin Volume of Runoff (see formula above)

|           |   |        |
|-----------|---|--------|
| $V_{360}$ | = | 700 CF |
|-----------|---|--------|

Sub-basin Peak Discharge Rate: (see formula above)

|       |   |          |
|-------|---|----------|
| $Q_p$ | = | 0.43 cfs |
|-------|---|----------|

| TREATMENT |      |
|-----------|------|
| A =       | 0%   |
| B =       | 0%   |
| C =       | 0%   |
| D =       | 100% |

to be routed through the proposed storm drain system to Girard Blvd. NE. Note: Based on analysis (included with supplemental information packet), the single 6" pvc drain has a maximum capacity of 0.78 cfs which is greater than the required 0.43 cfs. In addition, based on analysis, each of the two 4" storm drains which branch from the single 6" storm drain will handle 0.24 cfs for a total discharge capability of 0.48 cfs which exceeds the calculated flowrate of 0.43 cfs. Therefore, under normal operating conditions, no ponding will occur on-site. See keyed note #11 for additional information.



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

April 13, 2000

Chris Weiss, P.E.  
C. L. Weiss Engineering, Inc.  
P.O. Box 97  
Sandia Park, NM 87047

RE: ENGINEER'S CERTIFICATION FOR CHRISTIAN STUDENT CENTER, (K-16/D06), ENGINEER'S STAMP DATED AUGUST 19, 1998,  
CERTIFICATION DATED 4/7/00.

Dear Mr. Weiss,

Based upon the information provided in your submittal dated April 7, 2000, the Engineering Certification for Certificate of Occupancy for the project referred to above is approved.

If you have any questions, please call me at 924-3988.

Sincerely,

*Stuart Reeder, P.E.*

Stuart Reeder, P.E.  
Hydrology Division

xc: Whitney Reiersen  
✓File

## DRAINAGE INFORMATION SHEET

PROJECT TITLE: Christian Student Center ZONE ATLAS / DRNG. FILE #: K16/D6  
LEGAL DESCRIPTION: Lots 4, 5 and 6, Block 12, Monte Vista Addition, Albuquerque, New Mexico  
CITY ADDRESS: N/A

ENGINEERING FIRM: C.L. Weiss Engineering CONTACT: Chris Weiss  
ADDRESS: P.O. Box 97, Sandia Park NM, 87047 PHONE: 281-1800

OWNER: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

ARCHITECT: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

SURVEYOR: Forstbauer Surveying Inc. CONTACT: Ron Forstbauer  
ADDRESS: 1100 Alvarado Dr. NE 87110 PHONE: 266-8560

CONTRACTOR FIRM: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

### PRE-DESIGN MEETING:

\_\_\_\_ YES DRB NO. \_\_\_\_\_  
\_\_\_\_ NO EPC NO. \_\_\_\_\_  
\_\_\_\_ COPY OF CONFERENCE RECAP SHEET PROVIDED PROJ. NO. \_\_\_\_\_

### TYPE OF SUBMITTAL:

\_\_\_\_ DRAINAGE REPORT  
\_\_\_\_ DRAINAGE PLAN  
\_\_\_\_ CONCEPTUAL GRADING & DRAINAGE PLAN  
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☒ CERT. OF OCCUPANCY  
\_\_\_\_ ROUGH GRADING PERMIT  
\_\_\_\_ GRADING / PAVING PERMIT  
\_\_\_\_ OTHER \_\_\_\_\_

DATE SUBMITTED: 4.7.00

BY: C.L. Weiss Engineering, Inc.

