

## DRAINAGE INFORMATION SHEET

PROJECT TITLE: Charter Hospital Easement Modifications ZONE ATLAS/DRNG. FILE #: K-18 1017

LEGAL DESCRIPTION: Tract 6-A Tijeras Place Improvement

CITY ADDRESS: 5901 Zuni Road SE

ENGINEERING FIRM: The Mann Company, Inc. CONTACT: Tom Mann

ADDRESS: 8200 Mountain Road NE, Suite 102 PHONE: 266-3555

OWNER: Charter Hospital CONTACT: Sal Tortorici

ADDRESS: 5901 Zuni Road NE PHONE: 265-8800

ARCHITECT: Claudio Vigil CONTACT: Claudio Vigil

ADDRESS: 825 Pennsylvania NE PHONE: 265-3000

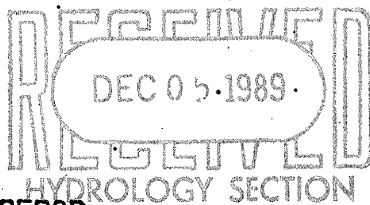
SURVEYOR: The Mann Company, Inc. CONTACT: Tom Mann

ADDRESS: 8200 Mountain Road NE, Suite 102 PHONE: 266-3555

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

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

## PRE-DESIGN MEETING:

☒ YES☐ NO☐ COPY OF CONFERENCE RECAP SHEET PROVIDED

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

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

PRDJ. NO. \_\_\_\_\_

## TYPE OF SUBMITTAL:

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

## CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL☐ PRELIMINARY PLAT APPROVAL☐ SITE DEVELOPMENT PLAN APPROVAL☐ FINAL PLAT APPROVAL☒ BUILDING PERMIT APPROVAL☐ FOUNDATION PERMIT APPROVAL☐ CERTIFICATE OF OCCUPANCY APPROVAL☐ ROUGH GRADING PERMIT APPROVAL☐ GRADING/PAVING PERMIT APPROVAL☐ OTHER \_\_\_\_\_ (SPECIFY)DATE SUBMITTED: December 5, 1989BY: Tom Mann

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 5, 1990

Tom Mann  
The Mann Company  
8200 Mountain Road, NE #102  
Albuquerque, New Mexico 87110

RE: REVISED DRAINAGE PLAN FOR A STORAGE BUILDING AT CHARTER HOSPITAL  
(K-18/D17) REVISION DATED DECEMBER 15, 1989

Dear Mr. Mann:

Based on the information provided on your resubmittal of December 15, 1989, the referenced drainage plan is approved for building permit.

Please be advised that if the building permit has already been issued, it is your responsibility to make sure that the contractor gets a copy of this approved plan.

Also, upon completion of the project, Engineer's Certification per the D.P.M. Engineer's Certification checklist will be required prior to release of Certificate of Occupancy.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.  
Engineering Assistant

BJM/bsj  
(WP+1309)

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 2, 1989

KEN SCHULTZ  
MAYOR

Tom Mann  
The Mann Company  
8200 Mountain Road, NE #102  
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR A STORAGE BUILDING AT CHARTER HOSPITAL  
(K-18/D17) RECEIVED SEPTEMBER 21, 1989

Dear Mr. Mann:

Based on the information provided on your submittal of September 21, 1989, listed are some concerns that will need to be satisfied prior to final approval.

1. On the northeast corner of Charter Hospital, please provide information as far as contours, spot elevations, and where the existing inlet is located. Water must be kept within the easement and not allowed to meander onto private property.
2. You must also analyze the Q going to the inlet, the inlet capacity, and at what point the excess will spill into the easement. Your proposed 2 s.f. opening may be too large or too small. Also, keep in mind that you will need to use a clogging factor for the existing inlet. A lot of debris from the shopping center usually lands in the inlet.
3. Your existing contours indicate that the runoff will not stay within the easement boundaries. Swale may need to be redone so as to assure that the runoff will stay within the easement and be conveyed to your proposed 12" pipe.
4. Once you determine how much runoff will be entering the easement, you will also know if the proposed 12" pipe is adequate.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Bernie J. Montoya, C.E.  
Engineering Assistant

PUBLIC WORKS DEPARTMENT

BJM/bsj  
Walter L. Nickerson, Jr., P.E.  
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



KEN SCHULTZ  
MAYOR

# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

K18/D17

September 19, 1989

Karen Scott  
Charter Hospital of Albuquerque  
5901 Zuni Road, SE  
Albuquerque, New Mexico 87106

RE: 20' SURFACE FLOW & UNDERGROUND STORM DRAINAGE EASEMENT

Dear Ms. Scott:

It has been brought to our attention that a block wall at the northeast corner of your site is blocking off-site flows. The flows are supposed to be accepted through the above referenced easement and carried out onto Valencia, SE.

Enclosed are copies of information pertaining to the easement and also a portion of the drainage report which indicates the amount of off-site flows that must be accepted.

It is critical that the off-site flows be accepted so as not to cause any damage to the adjacent properties.

Please advise as soon as possible as to what type of corrective steps will be initiated to correct this problem.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

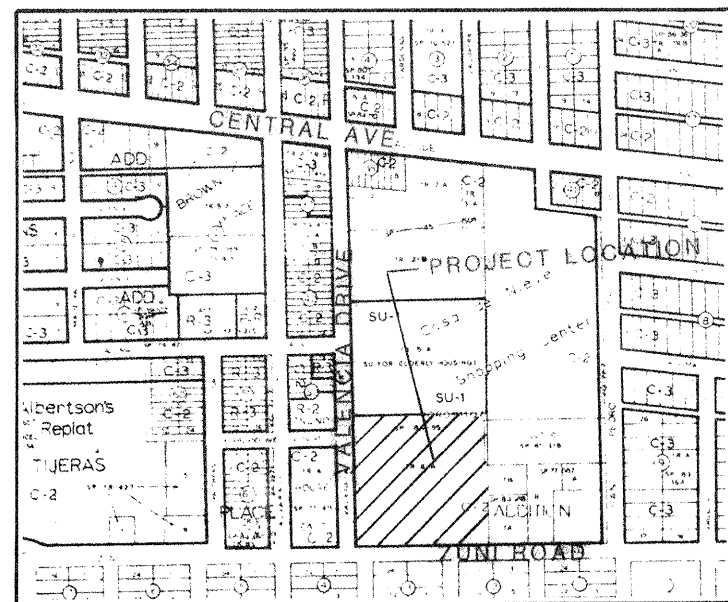
Bernie J. Montoya, C.E.  
Engineering Assistant

Enclosures

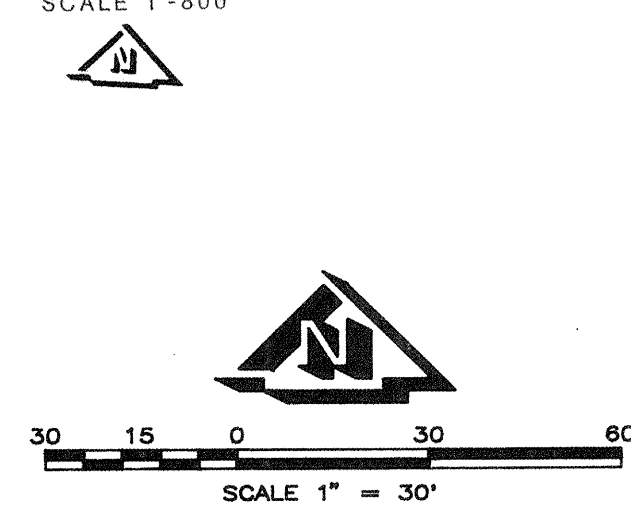
xc: Tom Mann, P.E.

BJM/bsj  
(WP+576)

PUBLIC WORKS DEPARTMENT



VICINITY MAP K-18  
SCALE 1" = 30'



#### LEGAL DESCRIPTION

Tract 6-A, Tijeras Place Improvement

#### ADDRESS

5901 Zuni Road S.E.

#### BENCHMARK

City of Albuquerque Monument 5-K18B located in turnbay nose west of the intersection of San Pedro Drive and Central Avenue. Elevation = 5290.33 feet.

#### LEGEND

EXISTING	NEW	DESCRIPTION
		CURB & GUTTER
		CURB
		SPOT ELEVATION
		CONTOUR
		BUILDING
		DRAINAGE PIPE
		PROPERTY LINE
		BASIN DIVISION LINE
		ROOF DRAINS
		RUNDOWN

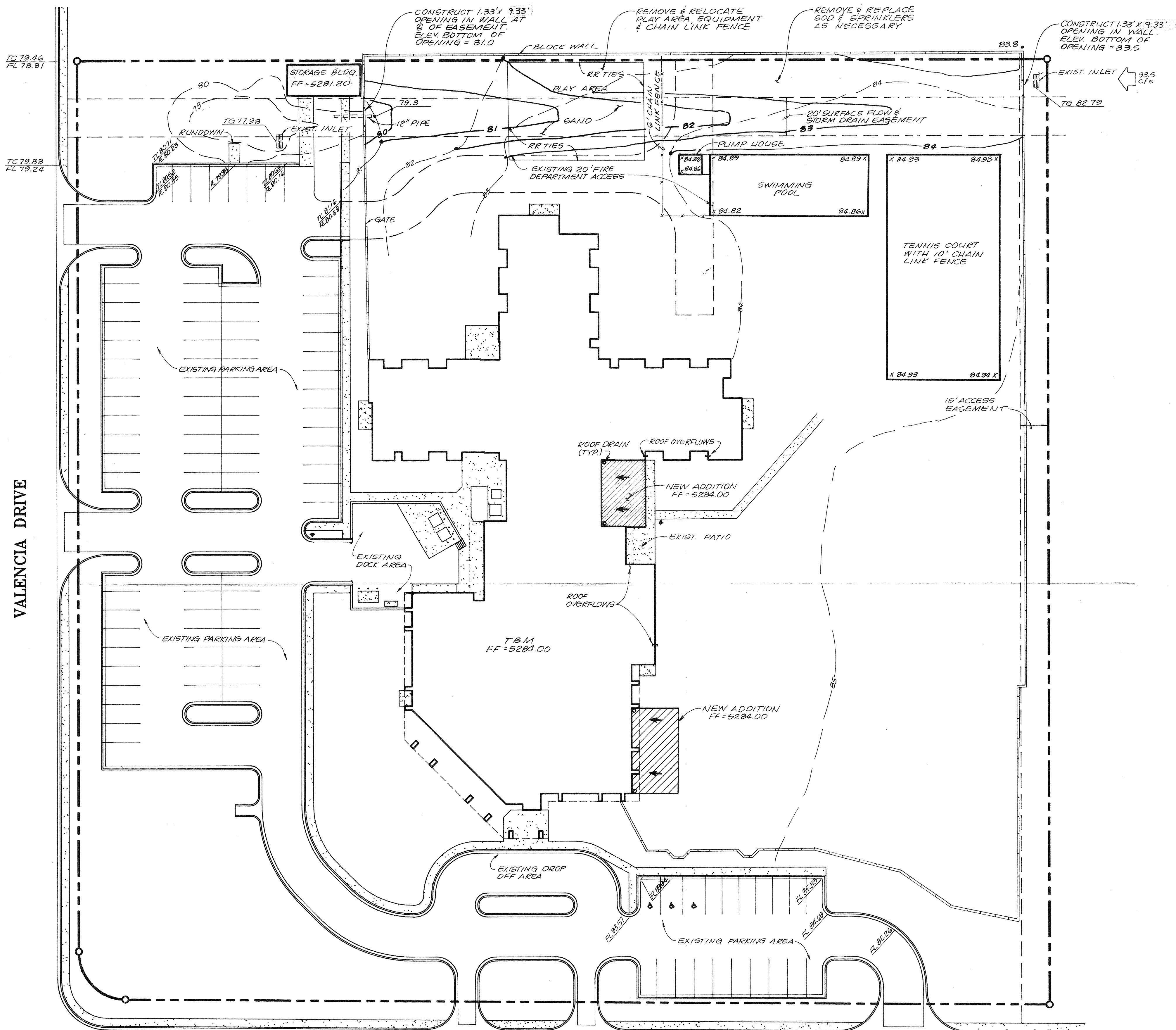
#### EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE A "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

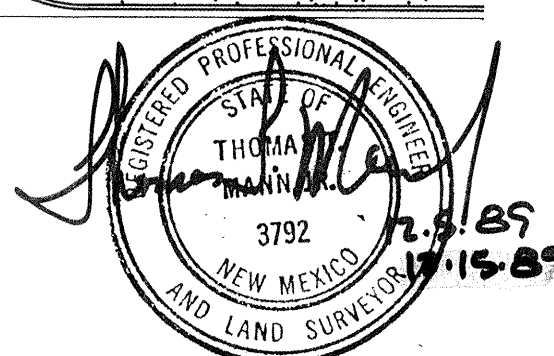
#### CONSTRUCTION NOTES

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT LINE LOCATING SERVICE 765-1234, FOR THE LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

VALENCIA DRIVE



ZUNI ROAD



#### DRAINAGE PLAN

The following items concerning the Charter Hospital building additions and drainage channel are shown hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The project site, as shown by the Vicinity Map, is located at the northeast corner of the intersection of Zuni Road and Valencia Drive. The site is developed as a hospital with associated parking and landscaping. Most of the adjacent sites are developed.

Originally, this plan was to indicate the modifications necessary to keep storm waters within the 20 foot drainage easement at the north end of the property. Two building additions have been added to the project. The drainage easement has been obscured by development within the easement. This plan indicates the removal and relocation of a play area, plus the construction of a grass-lined channel within the easement.

The drainage report prepared by Thomas Isaacson in April 1985, indicates that 93.5 cfs of flow is generated by the shopping center to the east. Inlet calculations indicate that approximately 50 cfs of that flow can be introduced into the storm drain. Thereby, approximately 43.5 cfs of flow will enter the site. Calculations indicate that the grass-lined channel will convey flows in excess of 43.5 cfs.

The two building additions are on the east side of the existing building. One addition is being constructed over an existing patio so that runoff is not affected. The second addition will generate additional runoff. Both additions will have internal roof drains that connect to the existing roof drain system. That system ultimately connects the storm drain along the north end of the property. Therefore, surface flows will decrease.

The Calculations, which appear below, analyze both the existing and developed conditions for the 100 year, 6 hour rainfall event. The Rational and SCS Methods have been used for the analysis, in accordance with the City of Albuquerque Development Process Manual, Volume II. As shown by the calculations, there is no increase in the runoff, but the calculations do not reflect the increase. The runoff rate and volumes are in accordance with previously established criteria.

#### CALCULATIONS

##### Ground Cover Information

From SCS Bernalillo County Soil Survey,  
Plate: 31 Tijeras TgB  
Hydrologic Soil Group: B  
Existing Pervious CN = 61 (DPM Plate 22.2 C-2 Pasture  
or Range Land: Good condition)  
Developed Pervious CN = 69 (DPM Plate 22.2 C-2)

##### Time of Concentration/Time to Peak

$$T_c = 0.0078 L^{0.77} / S^{0.385} \text{ (Kirpich Equation)}$$

$$T_p = T_c = 10 \text{ min.}$$

##### Point Rainfall

$$P_6 = 2.3 \text{ in. (DPM Plate 22.2 D-1)}$$

##### Rational Method

$$\text{Discharge: } Q = CiA$$

$$\begin{aligned} \text{where } C \text{ varies} \\ i = P_6 (6.84) T_p^{-0.51} = 4.86 \text{ in/hr} \\ P_6 = 2.3 \text{ in (DPM Plate 22.2 D-1)} \\ T_p = 10 \text{ min (minimum)} \\ A = \text{area, acres} \end{aligned}$$

##### SCS Method

$$\text{Volume: } V = 3630 (\text{DRO}) A$$

$$\text{Where DRO} = \text{Direct runoff in inches} \\ A = \text{area, acres}$$

##### Existing Condition

A <sub>total</sub> =	260,490	sf = 5.98	ac
Roof area =	27,450	sf = 0.63	ac
Paved area =	106,040	sf = 2.43	ac
Landscaped area =	127,000	sf = 2.92	ac
C =	0.60	(Weighted average per Emergency Rule, 01/14/86)	

$$\begin{aligned} Q_{100} &= CiA = 0.60(4.86)5.98 = 17.4 \text{ cfs} \\ A_{100} &= 134,590 \text{ sf; } \% \text{ impervious} = 51 \% \\ \text{Composite CN} &= 79 \text{ (DPM Plate 22.2 C-3)} \\ \text{DRO} &= 0.8 \text{ in (DPM Plate 22.2 C-4)} \\ V_{100} &= 3630 (\text{DRO}) A = 17,366 \text{ cf} \end{aligned}$$

##### Developed Condition

A <sub>total</sub> =	260,490	sf = 5.98	ac
Roof area =	28,550	sf = 0.66	ac
Paved area =	106,040	sf = 2.43	ac
Landscaped area =	125,900	sf = 2.89	ac
C =	0.60	(Weighted average per Emergency Rule, 01/14/86)	

$$\begin{aligned} Q_{100} &= CiA = 0.60(4.86)5.98 = 17.4 \text{ cfs} \\ A_{100} &= 134,590 \text{ sf; } \% \text{ impervious} = 52 \% \\ \text{Composite CN} &= 79 \text{ (DPM Plate 22.2 C-3)} \\ \text{DRO} &= 0.8 \text{ in (DPM Plate 22.2 C-4)} \\ V_{100} &= 3630 (\text{DRO}) A = 17,366 \text{ cf} \end{aligned}$$

##### Comparison

$$\begin{aligned} Q_{100} &= 17.4 - 17.4 = 0 \\ V_{100} &= 17,366 - 17,366 = 0 \end{aligned}$$

##### Channel Capacity

$$A = ((20 + 10)/21) = 15 \text{ s.f.}$$

$$R^{2/3} = (15/20.5)^{2/3} = 0.81$$

$$S^{1/2} = (1/90)^{1/2} = 0.105$$

$$Q = (1.49/n)AR^{2/3}S^{1/2}$$

$$Q = (1.49/0.025)(15)(0.81)(0.105) = 76 \text{ cfs}$$

##### Wall Opening - Weir

$$Q = 3.33H^{3/2}$$

$$Q = (3.33)(9.33)(1.33)^{3/2} = 47.7 \text{ cfs}$$

GRADING AND DRAINAGE PLAN  
CHARTER HOSPITAL ADDITIONS  
AND DRAINAGE CHANNEL

THE MANN COMPANY