DRAINAGE INFORMATION SHEET

PROJECT TITLE: Gonzales Office Building ZONE ATLAS / DRNG FILE: H-19 / D33

LEGAL DESCRIPTION: Lot 4, Block 2, Inez Addition

CITY ADDRESS: 7814 MENAUL

ENGINEERING FIRM: Engineering Associates CONTACT: Tucker Green

ADDRESS: 532 Adams NE 87102 PHONE: 265-6545

OWNER: George Gonzales CONTACT: George Gonzales

ADDRESS: 7009 Prospect NE PHONE: 883-6440

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Boundary: Denney-Gross & Assoc. PHONE: 884-0696
Topo: Engineering Associates PHONE: 265-6545 (see above)

CONTRACTOR: Tony Perea CONTACT: Tony Perea

ADDRESS: _____ PHONE: 895-5166

PREDESIGN MEETING:

_X_YES
___NO
_X_COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
AUG 16 1985
HYDROLOGY SECTION

DRB NO. —
EPC NO. —
PROJ. NO.

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 APPROVAL
_X_BUILDING PERMIT APPROVAL
___CERTIFICATE OF OCCUPANCY
___ROUGH GRADING PERMIT
___GRADING/PAVING PERMIT
___OTHER (SPECIFY)

DATE SUBMITTED: 8/16/85

BY: August Mosiman

AUGUST F. MOSIMAN
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

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

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

August 22, 1985

Mr. August Mosimann
Engineering Associates
532 Adams NE
Albuquerque, NM 87102

REF: GONZALES OFFICE BUILDING (H19-D33) RECEIVED AUGUST 16, 1985

Dear Mr. Mosimann:

A preliminary review of your submittal for Building Permit approval has shown that the following information is lacking for this section to begin the review process:

Information Needed:

1. Given the existing conditions the existing CMU wall capturing the off-site flows and routing them along the wall towards the west. You are improving the situation by routing the development runoff towards Menaul. Therefore, redesign for permissible flows on the rear portion.

2. You are not allowed to pond the off-site flows in the rear yard, just let them continue to their historical pattern.

Plan Drawing:

1. You may want to verify the finish floor elevation on the existing building, seems kind of high compared to the existing contours.

Please provide this information so that we may process your request as expediently as possible.

Cordially,

Carlos A Montoya
City Design/Hydrology Section

BJM:mrk

VISED DRAINAGE INFORMATION SHEET
ATTENTION: BERNIE MONTOYA

PROJECT TITLE: Gonzales Office Building ZONE ATLAS / DRNG FILE: H-19-33

LEGAL DESCRIPTION: Lot 4, Block 2, Ine. Addition

CITY ADDRESS: 7814 Menaul NE

ENGINEERING FIRM: Engineering Associates CONTACT: Tucker Green

ADDRESS: 532 Adams NE 87102 PHONE: 865-6545

OWNER: George Gonzales CONTACT: George Gonzales

ADDRESS: 7009 Prospect NE PHONE: 883-6440

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Boundary: Denney-Gross & Assoc. PHONE: 884-0696
Topo: Engineering Associates PHONE: 265-6545 (see above)

CONTRACTOR: Tony Perea CONTACT: Tony Perea

ADDRESS: _____ PHONE: 895-5166

RECEIVED
AUG 27 1985
HYDROLOGY SECTION

PREDESIGN MEETING:

_X_YES
___NO
_X_COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.
EPC NO.
PROJ. NO.

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_X_DRAINAGE PLAN
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___ENGINEER'S CERTIFICATION

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___SITE DEVELOPMENT PLAN
___FINAL PLAT APPROVAL
_X_BUILDING PERMIT APPROVAL
___CERTIFICATE OF OCCUPANCY
___ROUGH GRADING PERMIT
___GRADING/PAVING PERMIT
___OTHER (SPECIFY)

DATE SUBMITTED: 8/27/85

BY: August Mosiman

AUGUST F. MOSIMAN
STATE OF
NO. 9148
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

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

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

October 2, 1985

Mr. August Mosimann
Engineering Associates
523 Adams NE
Albuquerque, NM 87102

REF: REVISED DRAINAGE PLAN FOR GONZALES OFFICE BUILDING (H19-D33)
ENGINEER'S STAMP DATED 8/27/85

Dear Mr. Mosimann:

Based on the information provided on your August 27, 1985 resubmittal, the above referenced drainage plan is approved.

Please attach a copy of this approved drainage plan along with the appropriately approved copy of the "Drainage Facilities Within City R/W" document to the construction sets before Hydrology will sign-off.

If I can be of further assistance, please feel free to contact me at 766-7644.

Sincerely,

Carlos A. Montoya
City/County Flood Plain Admin.

BJM/CAM/cl

REVISED DRAINAGE INFORMATION SHEET

PROJECT TITLE: Gonzales Office Building — ZONE ATLAS/DRNG FILE: ~~H10~~ H19 D33

LEGAL DESCRIPTION: Lot 4, Block 2, Inez Addition

CITY ADDRESS: 7814 Menaul NE

ENGINEERING FIRM: Engineering Associates — CONTACT: Tucker Green

ADDRESS: 532 Adams NE 87102 — PHONE: 865-6545

OWNER: George Gonzales — CONTACT: George Gonzales

ADDRESS: 7009 Prospect NE — PHONE: 883-6440

ARCHITECT: _____ — CONTACT: _____

ADDRESS: _____ — PHONE: _____

SURVEYOR: Boundary: Denney-Gross & Assoc. — PHONE: 884-0696
Topo: Engineering Associates — PHONE: 265-6545 (see above)

CONTRACTOR: Tony Perea — CONTACT: Tony Perea

ADDRESS: _____ — PHONE: 895-5166

RECEIVED
OCT 21 1985
HYDROLOGY SECTION

PREDESIGN MEETING:

_X_YES
___NO
_X_COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.
EPC NO.
PROJ. NO.

TYPE OF SUBMITTAL:
___DRAINAGE REPORT
_X_DRAINAGE PLAN
___CONCEPTUAL GRADING & DRAINAGE PLAN
_X_GRADING PLAN
___EROSION CONTROL PLAN
___ENGINEER'S CERTIFICATION

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___SITE DEVELOPMENT PLAN
___FINAL PLAT APPROVAL
_X_BUILDING PERMIT APPROVAL
___CERTIFICATE OF OCCUPANCY
___ROUGH GRADING PERMIT
___GRADING/PAVING PERMIT
___OTHER (SPECIFY)

NOTE: In all major respects the drainage remains unchanged from the plan approved 10/2/85. However, in order to satisfy zoning requirements, it was necessary to move the building 5 feet closer to the street. This in turn required redesigning the landscaping near the building, so we enclose a landscape plan for your information. We hope that the minor nature of the changes will permit prompt approval.

DATE RESUBMITTED: 10/21/85

BY: August Mosimann

August L Mosimann

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

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

October 23, 1985

Mr. August Mosimann
Engineering Associates
523 Adams NE
Albuquerque, NM 87102

REF: REVISED DRAINAGE PLAN FOR GONZALES OFFICE BUILDING (H19-D33)
REVISION DATE 10/21/85

Dear Mr. Mosimann:

Based on the information provided on your October 21, 1985 resubmittal, revisions as indicated are approved.

Please be advised that no alternations of the existing terrain on the southside of the building are allowed. The off-site flows must remain in their original state.

If I can be of further assistance, feel free to call me at 766-7644.

Sincerely,

Carlos A. Montoya
City/County Flood Plain Admin.

CAM/BJM/cl

REVISED DRAINAGE INFORMATION SHEET

H-19

PROJECT TITLE: Gonzales Office Building ZONE ATLAS/DRNG FILE: ~~H18~~ D33

LEGAL DESCRIPTION: Lot 4, Block 2, Inez Addition

CITY ADDRESS: 7814 Menaul NE

RECEIVED
NOV 22 1985
HYDROLOGY SECTION

ENGINEERING FIRM: Engineering Associates CONTACT: Tushar Green

ADDRESS: 532 Adams NE 87102 PHONE: 265-6545

OWNER: George Gonzales CONTACT: George Gonzales

ADDRESS: 7009 Prospect NE PHONE: 883-6440

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Boundary: Denney-Gross & Assoc. PHONE: 884-0696
Topo: Engineering Associates PHONE: 265-6545 (see above)

CONTRACTOR: Tony Perea CONTACT: Tony Perea

ADDRESS: _____ PHONE: 895-5166

PREDESIGN MEETING: NO DRB

_X_YES
___NO
_X_COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.
EPC NO.
PROJ. NO.

TYPE OF SUBMITTAL:
___DRAINAGE REPORT
_X_DRAINAGE PLAN
___CONCEPTUAL GRADING & DRAINAGE PLAN
_X_GRADING PLAN
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___FINAL PLAT APPROVAL
_X_BUILDING PERMIT APPROVAL
___CERTIFICATE OF OCCUPANCY
___ROUGH GRADING PERMIT
___GRADING/PAVING PERMIT
___OTHER (SPECIFY)

NOTE: In all major respects the drainage remains unchanged from the plan approved October 2, 1985. In the first revision after that, Zoning had us move the building 5 feet farther from the rear property line; I understand that revision was approved. This time traffic insists on perpendicular parking. The resulting changes do not affect the amount or the rate of runoff from the area affected. The swale leading to the approved sidewalk drain is changed slightly at its perimeter. We hope the minor nature of the changes will permit prompt approval.

DATE RESUBMITTED: 11/20/85

BY: August Mosimann

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

December 4, 1985

August Mosimann
Engineering Associates
523 Adams, NE
Albuquerque, New Mexico 87108

RE: REVISED DRAINAGE PLAN FOR GONZALES OFFICE BUILDING
RECEIVED NOVEMBER 22, 1985 (H-19/D33)

Dear Mr. Mosimann:

The referenced plan dated November 20, 1985, is approved for Building Permit sign-off by the Design Hydrology Section.

Please be advised that no alterations of the existing terrain on the south side of the building is allowed. The off-site flows must remain in their original state.

If you have any questions regarding this project, please call me at 766-7644.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

BJM:CAM/bsj

REVISED DRAINAGE REPORT
for
GONZALES OFFICE BUILDING

Lot 4, Block 2, Inez Addition Zone Map H-19
7814 Menaul Blvd. NE

PROJECT DESCRIPTION

The project is a 55 x 40 foot office building on an 0.188 acre site on the south side of Menaul near Hoffmantown. It will contain 3 offices, one in a half-basement at the rear.

There are 11 lots on the south side of this block, each 70 wide by 117 deep. They are unusual in that the front 60 feet is zoned for parking only and that swaled paving has been in place for roughly 15 years even on the four undeveloped lots at the east end of the block. The edge of paving away from Menaul is typically a ridge line for these lots, with a two to three foot drop to the rear. The swale in the parking area is lower than the edge of the sidewalk and runoff flows westward to a storm sewer in Rhode Island Ave. This ir turn leads to a large storm sewer system near Indian School Road and Coronado Center.

The seven western lots are developed, the four eastern are not. The project site is the one adjoining the developed lots, and thus is downstream of runoff from the other undeveloped sites.

Per telephone conversation with the City Engineer's office, the site is not in a flood hazard area.

PRE-DESIGN DISCUSSION

In the pre-design conference the the Hydrology Dept. required either that runoff from the site, even from the already paved portion, not drain in the established pattern in the existing paved swale OR that the owner obtain drainage easements or coveneants from each of the downstream property owners. It also required that the site accept offsite flows through the property. Finally it found that free discharge to Menaul would be acceptable.

At the time of the orginal submittal, we at Engineering Associates thought that the combination of pre-design conditions and existing topography required construction of storage and pumping facilities for handling offsite flow at the rear of the lot. Since then we have learned that this will not be a requirement, in part because the project represents an improvement on existing conditions. The difference in interpretation is the basis of this resubmittal. The plans have been ammended to reflect the appropriate changes, rather than being completely redrawn.

EXISTING CONDITIONS

The flow area is 8190 sq. ft. or 0.188 acres.
The flow area is 51 % impervious
The soil is Group B, Type EtC (SCS Soil Survey Sheet 31)
The "C" factor is 0.58 (DPM Pl. 22.2 C-1)
The runoff Length L is 80 ft.
The slope S is 2.2 %
The time of concentration Tc is 0.0078*(L^.77)/(S^.385) = 1.0 min
(Use 10 minutes minimum to calculate I)
The average velocity is L / (Tc x 60) = 1.33 ft/sec. (over paving)
The 100-yr 6-hr precipitation amount AMT is 2.3 in (Pl 22.2 D_1)
The 100-yr intensity I is 2.114 x 2.3 = 4.86 in/hr (Pl 22.2 D-2)
The 100-yr flow rate is CIAc = 0.58 x 4.86 x 0.188 = 0.530 cfs.
The 100-yr volume is 0.58 x 0.192 x 8190 = 912 cu. ft.
The 10-yr values are 65.7 % of the 100-yr values
for amount, intensity, rate, and volume. (Pl 22.2 D-1)

These calculations are slighly misleading, for they deal with the site as a whole, whereas it is actually in two parts, paved in front and 100 % pervious in back. The size of the site does not seem to warrant such refinement, and of course these conditions will be changed by this project.

OFFSITE FLOW

Offsite flow is also divided on the basis of origin - front and paved, or back and pervious. It is worth considering these separately since they will flow to diferent places. All the flow comes from three sites identical to the project site.

OFFSITE - FRONT & PAVED

The flow area is 3 x 70 x 60 = 12600 sq. ft. or 0.289 acres.
The flow area is 100 % impervious
The "C" factor is 0.95
The runoff Length L is 210 ft.
The slope S is 2 % approx
The time of concentration Tc is 0.0078*(L^.77)/(S^.385) = 2.16 min
(Use 10 minutes minimum to calculate I)
The average velocity is L / (Tc x 60) = 1.62 ft/sec. (over paving)
The 100-yr 6-hr precipitation amount AMT is 2.3 in (Pl 22.2 D_1)
The 100-yr intensity I is 2.114 x 2.3 = 4.86 in/hr (Pl 22.2 D-2)
The 100-yr flow rate is CIAc = 0.95 x 4.86 x 0.289 = 1.33 cfs.
The 100-yr volume is 0.95 x 0.192 x 12600 = 2298 cu. ft.
The 10-yr values are 65.7 % of the 100-yr values
for amount, intensity, rate, and volume. (Pl 22.2 D-1)

OFFSITE - REAR & UNPAVED

The flow area is 3 x 70 x 57 = 11970 sq. ft. or 0.275 acres.
The flow area is 0 % impervious
The "C" factor is 0.34 (DPM Pl. 22.2 C-1)
The runoff Length L is 210 ft.
The slope S is 2 % approx
The time of concentration Tc is 0.0078*(L^.77)/(S^.385) = 2.16 min
(Use 10 minutes minimum to calculate I)
The average velocity is L / (Tc x 60) = 1.62 ft/sec
The 100-yr 6-hr precipitation amount AMT is 2.3 in (Pl 22.2 D_1)
The 100-yr intensity I is 2.114 x 2.3 = 4.86 in/hr (Pl 22.2 D-2)
The 100-yr flow rate is CIAc = 0.34 x 4.86 x 0.275 = 0.45 cfs.
The 100-yr volume is 0.34 x 0.192 x 11970 = 781 cu. ft.
The 10-yr values are 65.7 % of the 100-yr values
for amount, intensity, rate, and volume. (Pl 22.2 D-1)

PROPOSED CONDITIONS

Under proposed conditions the building and a paved area on the east side will flow to the front. A stairwell area on the west will have its rainfall pumped to the front. Rain falling on 700 sq ft of pervious easement at the rear of the site does not join the other flow and is not included in the calculations below.

The flow area is 7490 sq ft or 0.172 acres.
The flow area is 94 % impervious
The soil is Group B, Type EtC (SCS Soil Survey Sheet 3)
The "C" factor is 0..93 (DPM Pl. 22.2 C-1)
The runoff Length L is 120 ft.
The slope S is 2.2 %
The time of concentration Tc is 0.0078*(L^.77)/(S^.385) = 1.35 min
(Use 10 minutes minimum to calculate I)
The average velocity is L / (Tc x 60) = 1.48 ft/sec. (over paving)
The 100-yr 6-hr precipitation amount AMT is 2.3 in (Pl 22.2 D_1)
The 100-yr intensity I is 2.114 x 2.3 = 4.86 in/hr (Pl 22.2 D-2)
The 100-yr flow rate is CIAc = 0.93 x 4.86 x 0.172 = 0.777 cfs.
The 100-yr volume is 0.93 x 0.192 x 7490 = 1337 cu. ft.
The 10-yr values are 65.7 % of the 100-yr values
for amount, intensity, rate, and volume. (Pl 22.2 D-1)

RUNOFF CONTROL

Most of the site drains to the parking lot and thence to the curb and gutter in Menaul, as shown on the plans. This includes all roof flow and flow from the paved area at the east of the building. The easement at the rear of the site will be graded slightly to ensure that rain not pond against the building and that the passage of offsite flow not be blocked. The result is typically a fairly flat area a few feet away from the building and then a slight slope to match existing contours at the south and west property lines.

Rain falling on approximately 45 feet of sidewalk and stairwell at the west end of the building will be collected in a wet well and then pumped to the parking area. The well in which the pump sits can retain the expected 100-yr flow in the event of pump failure, and the pump specified has the capcity to empty that volume in less than 1 hour. The retaining wall at the end of the well is low enough to act as an overflow weir from the easement area in the event of the 100 year storm's being exceeded. All concrete joints in the wet well will be made with water stop and all surfaces exposed to possible standing water will be waterproofed with as asphaltic membrane. These measures will protect both the site and adjacent property.

The parking area will be regraded at the downstream end to divert a portion of the runoff out of the existing pavement swale into a side swale and thence to Menaul via a channel under the sidewalk. At its upstream end, with no spillover downstrean, the sideswale will be adequate for 100-year flows generated on site, which is all that is required. Although grading for the side swale raises the flow line elevation just upstream of the west property line, and thereby reduces the flow section, there is still capacity for passing offite flows through without running over the sidewalk. See calculations in the appendix.

Just before entering the steeper slope under the sidewalk the swale capacity is adequate for combined offsite and onsite flows. To get that flow rate the water surface is almost as high as the elevation at the lowest corner of the lot, near the sidewalk at Menaul. At the same water surface elevation the flow in the modified main swale is is itself greater than the combined flow from on and off-site; clearly the balanced depth is somewhat less.

EROSION CONTROL

The plans direct the contractor to control erosion onto other property by careful stockpiling of dirt . Also he is to construct a termporary berm along the west property line approximately 20 feet. The top of berm shall be 1 foot above the existing grade at the southwest corner of the site.

The plans also direct him to control dust by watering exposed earth sufficiently, or by covering exposed earth, or by other approved and effective means.

END OF REPORT

APPENDIX

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

PRE-DESIGN CONFERENCE RECAP

HYDROLOGY SECTION PROJECT NO.: H19 DATE: 6-11-95

PLANNING DIVISION NOS. EPC: _____ DRB: _____

SUBJECT: Office Building Gonzales

LEGAL DESCRIP.: Lot 4 Blk 2 INEZ ADD

APPROVAL REQUESTED

_____ PRELIMINARY PLAT _____ FINAL PLAT

_____ SITE DEVELOPMENT PLAN X BUILDING PERMIT

_____ ROUGH GRADING

	WHO:	REPRESENTING:
ATTENDANCE:	Tucker Gleason	
	Carlos A Montoya	

_____ Conceptual Drainage Plan/Report required for Preliminary Plat and/or Site Development Plan sign-off.

X Approved Drainage Plan/Report required for Final Plat and/or Building Permit sign-off.

_____ Subdivision Improvements Agreement or Financial Security required.

FINDINGS: ① DRAINAGE PLAN PER DPM ② SITE CANNOT DRAIN ACROSS DOWNSTREAM LOTS WITHOUT EASEMENT ③ or covenant ③ CANNOT Block off-site flows must accept historic property. ④ Free discharge to ~~Arroyo~~ acceptable.

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:	Carlos A Montoya	SIGNED:	
TITLE:		TITLE:	CE ENG ASSOC
DATE:	6-11-95	DATE:	6-11-95

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

BY THE DATE
CHKD BY DATE
SUBJECT WET WELLS
CLIENT PEREA
SHEET NO 1 OF 2
JOB NO

engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87108 • (505) 265-6545

STAIRWAY @ WEST SIDE OF BLDG

CAPACITY SUPPLIED

$\frac{14}{12} \times 3.33 \times 9.33 = 36.25$ cu ft

CAPACITY REQUIRED

LENGTH = 40 + 5

WIDTH = 3.33' + .67' = 4' WHERE RETAINING WALL
SAY 4' ALL OVER

RAIN 2.3"/sq ft @ 100yr 6HR

$\frac{2.3}{12} \times 45 \times 4 = .192 \times 180 = 34.56$ cuft < 36.25 OK

STATIC HEAD

535.2 - 46.67 = 8.53'

ASSUME TOTAL RESISTING HEAD INC STATIC & FRICTION = 15'

PUMP = HYDROMATIC PUMP OSP33 SUBMERSIBLE AUTOMATIC

CAPACITY @ 20' HEAD = 30 GPM

36.25 cuft x 7.48 = 271.15 GAL

271.15/30 = 9.04 min.

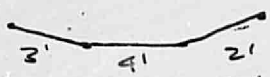
∴ <10 MIN TO DRAIN ENTIRE WELL

DATE _____ CLIENT _____ JOB NO. 02

engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87108 • (505) 265-6545

SIDE SWALE CAPACITY $S = (4.24 - 4.10')/28' = .005$

(1) UPSTREAM END $n = .017$ per DPM



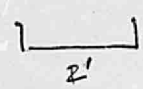
4.37 > 4.13
4.24

$y_2 = .13$ $m_1 = 3/.13 = 23.0$ $m_2 = 15.4$

$Q_{max} = 1.08$ cfs

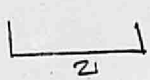
$Q_{ONSITE,100} = 0.72$ cfs

(2) DOWNSTREAM JUST PRIOR TO SIDEWALK CHANGE (CONCRETE) $n = 0.013$ $S = .005$



4.37
4.10 > .27 $Q_{max} = 1.56$ cfs

(3) ASSUME FLOW SURFACE = 4.46 = MAX @ NW 12 (DOWNSTREAM END)



4.46 > .36
4.10

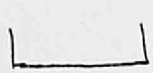
$n = .013$ $S = .005$
$Q_{max} = 2.40$

$Q_{OFF} + Q_{ON} = 1.33 + 0.78 = 2.11$
$2.11 < 2.40$

(4) AS ABOVE, BUT DEPTH = 0.33'

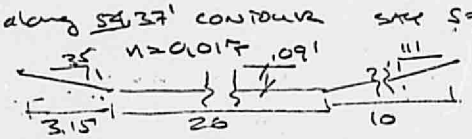
$Q_{max} = 2.11$ cfs $= Q_{OFF} + Q_{ON}$
$V = 3.20$ fps
Froude $= V/\sqrt{gy} = 0.98$
So Flow approx critical

(5)

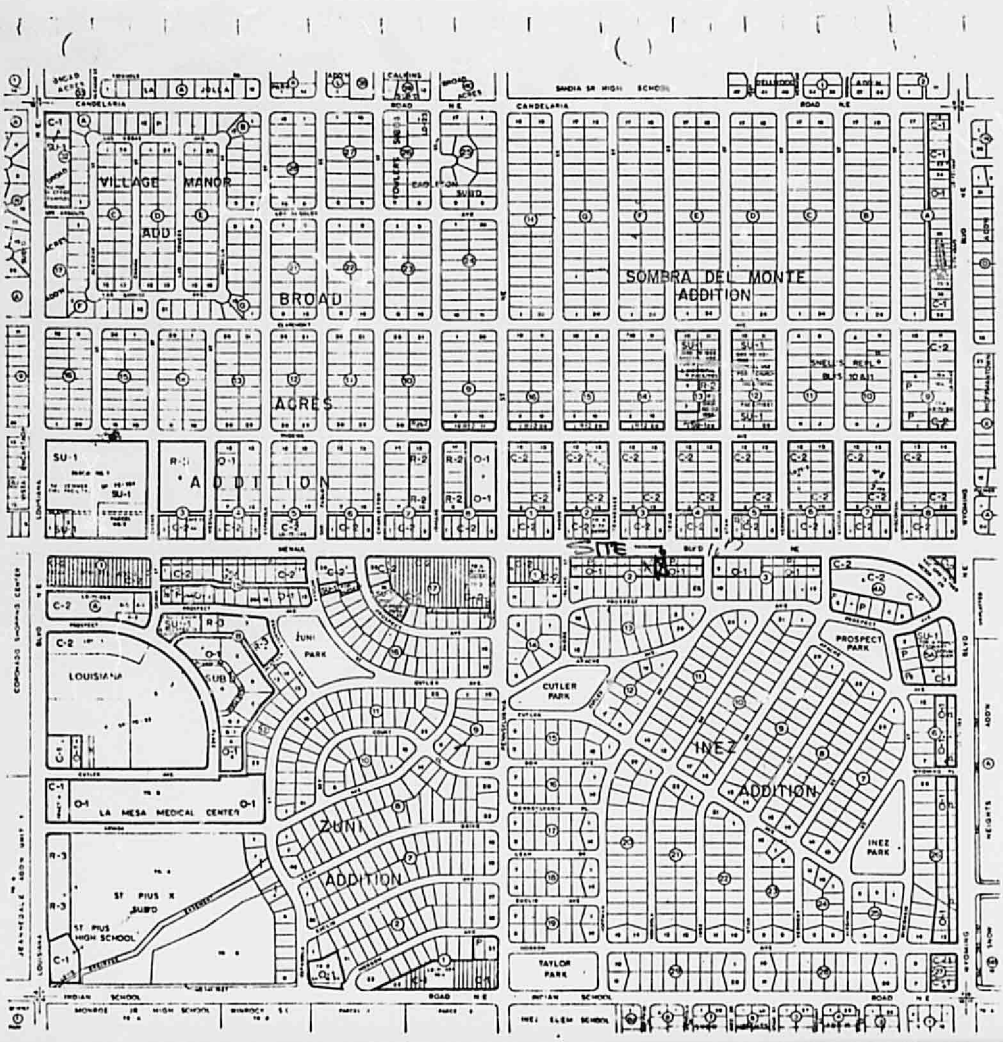


SIDEWALK SLOPE = 0.02 ft/ft
$y = 0.21'$ $Q_{max} = 2.118$
$V = 5.09$
$F = 1.94$

(6) along 5437' CONTOUR SAY $S = 0.018$ (EXISTING SWALE) (CONSERVATIVE)



$Q_{max} = 6.12$ cfs @ .09'
$Q_{max} = 1.99$ cfs @ .04'
$Q_{max} =$ @ 0.06'


VILLAGE MANOR ADD
BROAD ACRES ADDITION
SOMBRA DEL MONTE ADDITION
LOUISIANA
LA MESA MEDICAL CENTER
ZUNI ADDITION
ZUNI PARK
ST PIUS X SUBD
ST PIUS HIGH SCHOOL
CUTLER PARK
PROSPECT PARK
INEZ ADDITION
INEZ PARK
TAYLOR PARK
CANDELARIA
MENAUL BLVD NE
INDIAN SCHOOL ROAD NE

H-19-

BY_____ DATE_____ SUBJECT OFF SITE FLOW SHEET NO 5 OF_____

CHKD. BY_____ DATE_____ CLIENT PETCEA JOB NO_____

engineering associates, inc. • 532 Adams Street, NE • Albuquerque, NM 87108 • (505) 265-6545

EXISTING CONDITIONS

PROJECT SITE IS ADJACENT TO BUILDING SHOWN