HYDROLOGY G21/D19A APARTMENTS ON COMANCHE

G21 / D19A

APARTMENTS
ON COMANCHE

1 PLAN

WILSON
& COMPANY
ENGINEERS
ARCHITECTS

505 262-2116

Office Location... 1921 SAN PEDRO N.E. ■ ALBUQUERQUE, NEW MEXICO 87110

Mailing Address... P.O. BOX 3548 ■ ALBUQUERQUE, NEW MEXICO 87190

ENGINEERS
ARCHITECTS
PLANNERS

An Equal Opportunity Employer

December 14, 1982

Mr. Richard S. Heller
City Engineer
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Apartment Complex on Comanche near Juan Tabo
Drainage Facilities
WCEA File: 81-502

Dear Mr. Heller:

As a part of the approved drainage report for the proposed apartment complex on Tract L-1, La Reina de Los Altos, Unit 2, it is necessary to install an 18-inch RCP in the right-of-way of the Embudito Arroyo. The developer, Cauwels & Davis, are requesting this pipe be installed as a part of the East Side Arroyo Protection System Phase V., which is presently under contract to KNC.

Cauwels and Davis are willing to pay the cost for installing the pipe at this time.

Please give me a call if you have any questions or need further information.

Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

xc: Cauwels & Davis
Bohannon Houston

-sap

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

November 29, 1982

Mr. Robert F. Sykes
1321 San Pedro NE
Albuquerque, New Mexico 87110

Ref: Tract L-1, La Reina de Los Altos, Unit 2
(File No. G21-D19A)

Dear Mr. Sykes:

The Hydrology Department of the City Engineers Office has reviewed your grading and drainage plan and do hereby approve the plans and will process the building permit with the following conditions:

1. Construction in public right-of-way forms approved by the Design Section for the private storm drainage in the AMAFCA R.O.W. (a.k.a. "Special Order 19"). This plan should consider the final grades of the Embudo Arroyo (Eastside Arroyo Phase V Project).

2. Enclusion of the grading and drainage plan in the building sets submitted to Code Enforcement.

Contact me, if you have any questions.

Sincerely,

Andre Houle, PE
Civil Engineer/Hydrology

AH/el

cc: Drainage File
✓Reading File
Bob Kielich, City Engrs.

BRIAN B

WILSON & COMPANY
ENGINEERS & ARCHITECTS

505 262-2116

ENGINEERS
ARCHITECTS
PLANNERS

Office Location... 1921 SAN PEDRO N.E. ■ ALBUQUERQUE, NEW MEXICO 87110 ■ An Equal Opportunity Employer

Mailing Address... P.O. BOX 3548 ■ ALBUQUERQUE, NEW MEXICO 87190

RECEIVED
NOV 12 1982
ENGINEERING

RECEIVED
NOV 12 1982
CITY ENGINEER

November 11, 1982

Mr. Charles M. Easterling
Principal Assistant City Engineer/Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Apartments Near Juan Tabo on Comanche Rd.
WCEA File: 81-502

G21-D190

Dear Mr. Easterling:

We have delivered to your office 4 copies of the revised drainage report for an apartment complex on Comanche Road near Juan Tabo. The report has been revised to conform with criteria in the Development Process Manual and is being resubmitted since the first report was submitted more than a year ago.

The City and KNC, Inc. are now beginning to improve the Embudito Arroyo from Comanche Road south. The developer for this project is Rick Davis of Cauwels & Davis Associates and they would be glad to cooperate with the City in obtaining an 18-inch discharge pipe at the proper location, when the drainage report is approved.

Please give me a call if you have any questions.

Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

xc: Rick Davis
Cauwels & Davis Associates

-sap

Sheet 8 of 53
East Side Arroyo Protection System
Phase V

DETAIL "A"

AS-BUILT INFORMATION	
CONTRACTOR	
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE

BENCH MARKS	
TBM #9	Elev 559.579
"□" Cut on top of block wall west of Embudito Arroyo, 454' ± north of Candelaria Rd.	

VFORMATION	
BY	DATE

WILSON & COMPANY
ENGINEERS & ARCHITECTS

505 262-2116

Office Location... 1321 SAN PEDRO N.E. ▪ ALBUQUERQUE, NEW MEXICO 87110

Mailing Address...P.O. BOX 3548 ▪ ALBUQUERQUE, NEW MEXICO 87190

ENGINEERS
ARCHITECTS
PLANNERS

An Equal Opportunity Employer

RECEIVED
JAN 2 1 1983
CITY ENGINEER

January 21, 1982

Mr. William L. Vreeke, P.E.
Bohannon-Huston, Inc.
4125 Carlisle Blvd., N.E.
Albuquerque, NM 87107

Re: East Side Arroyos Protection System - Phase V
Cauwels & Davis Apartments on Comanche near Juan Tabo
WCEA File: 81-502

Dear Mr. Vreeke:

Enclosed is a print of the approved drawing showing the installation of an 18" RCP at Sta. 84+02, East Side Arroyo Protection System - Phase V project.

Cauwels & Davis will be glad to pay KNC, Inc. directly for this item of work.

I appreciate your cooperation in this item of work. Please feel free to call on me any time I might be of assistance to you on any matter.

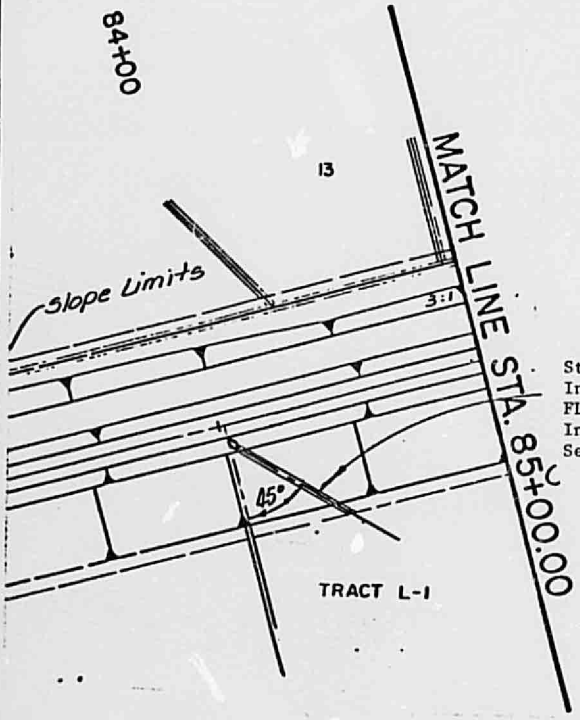
Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

xc: Tom Kryfko - KNC, Inc.
Phil Fisher - Engineering Division, City
Rick Davis - Cauwels & Davis
Fred Aguirre - Hydrology Plan Check Unit, City

Enclosure

-sap



Sta. 84+02 Rt.
Install 18" x 56' RCP
FL West = 5638.31 FL East = 5642.16
Install temporary plug East end of pipe
See Sheet 26 for tie in detail.

The pipe at Sta. 84+02 is to be installed as a part of and under the terms of the Construction Contract for East Side Arroyo Protection System Phase V.

Engineer - Bohannan-Huston
Contractor - KNC, Inc.

The installation of 18" x 56' RCP to be paid for by Cauwels & Davis, 1116 Pennsylvania St., N.E., Albuquerque, NM 87110.

Wilson & Company is the Engineer for the Developer.

REFERENCES: Sheet 8 and Sheet 26 of Project Construction Plans.

CITY OF ALBUQUERQUE

APPROVALS	ENGINEER	DATE	TITLE: CAUWELS & DAVIS APARTMENTS ON COMANCHE NEAR JUAN TABO	
A.C.E./DESIGN	[illegible]	20 Jan 83		
INSPECTOR			PROJECT NO. 1501	MAP NO. G-21
A.C.E./FIELD		-		

ENGINEER'S DRAINAGE REPORT

FOR

APARTMENTS NEAR JUAN TABO BLVD.

ON COMANCHE ROAD

MAP G-21

WILSON & COMPANY

ENGINEERS & ARCHITECTS

1321 SAN PEDRO DRIVE N.E.

ALBUQUERQUE, NEW MEXICO 87110

JULY 1981

(81-502)

Revised November 1982

RECEIVED

NOV 12 1982

ENGINEERING

WILSON & COMPANY ENGINEERS ARCHITECTS

ENGINEER'S DRAINAGE REPORT

For

APARTMENTS NEAR JUAN TABO

On

COMANCHE ROAD

LOCATION: The proposed apartments are located on Tract L-1 of La Reina De Los Altos, Unit 2, which fronts on Comanche Road N.E., and is bounded on the west by the Embudito Arroyo. The exact location is shown on the attached copy of Zone Atlas Map G-21.

DESIGN CRITERIA: The rate of runoff is determined by the Rational Method using the following formula:

$$Q = CiA$$

Q = Rate of runoff in cubic feet per second
i = Rainfall intensity
A = Drainage area in acres
C = Runoff coefficient

Chapter 22, Volume 2 of Albuquerque Development Process Manual was used to determine values for C and i.

A safety factor of 2 was used to determine the capacity of the proposed catch basin.

OFFSITE DRAINAGE:

The office building immediately east of the project site has an onsite storm drain system that appears to discharge to the storm drain in Comanche Road. The plans for this office building were approved January 17, 1980. The address is 10820 Comanche Road.

The apartment complex, which faces Juan Tabo and abuts the southeast corner of the project, drains all its runoff to the southeast corner of their complex and it is then discharged to the Embudito Arroyo by way of a small earth ditch. This ditch is parallel to and approximately 300 feet south of the south property line of this project.

The property south of the project is undeveloped and drains west.

SITE DRAINAGE: The project is adjacent to the Embudito Arroyo and has an area of 3.252 acres. In consultation with the City of Albuquerque, it has been determined it would be in the City's best interest to directly discharge all runoff to the Embudito Arroyo without detention.

It is proposed to discharge to the Embudito Arroyo at the southwest corner of the project site with a double grate, Type C, catch basin and an 18-inch diameter pipe. The maximum rate of runoff for 100 year design storm is 14.7 c.f.s. and the capacity of a Double "C" catch basin is 22.3 c.f.s.

EROSIN CONTROL: During construction the contractor should construct a dike along the east bank of the Embudito Arroyo to prevent sediment from the project being deposited in the arroyo.

The contractor will use grass sod for landscaping and there should only be a minimal amount of silt carried to the catch basin and then to Embudito Arroyo.

ATTACHMENTS: The following material has been provided as a part of this report:

1. Location Map
2. Engineer's Computations
3. Catch Basin Capacity Graphs
4. Site Grading Plan & Details.

COMP. RF Sykes
CK.
DATE 11 Nov. 1982

WILSON & COMPANY
ENGINEERS
ARCHITECTS

LOC Albuquerque NM FILE
PROJ Apts @ Commanche SHEET 1
SUBJ Drainage Rept. OF

Maximum Inflow Rate To Catch Basin

$Q = CiA$

$A = 3.252$ Acres

Runoff Factor C

Grass = .699 Ac

Paving & Roofs = 2.553 Ac

$C = (.699/3.252)(.45) + (2.553/3.252)(.95)$

$C = (.09) + (.75) = .84$

$i =$ From Process Manual Plate D-1 i_{100} 6 Hr = 2.5"

Plate D-2

$t_c = 10$ min

$i_{100} = 2.5 \times 2.15 = 5.38$

$Q_{100} = CiA$

$= (.84)(5.38)(3.252)$

$Q_{100} = \underline{14.7 \text{ cfs.}}$

Capacity Double C Catch Basin (City Std K-5-2)

ASSUME CURB FULL

∴ Catch Basin @ Low Point (Sump)

PER Attached Fig 7. (Curb Openning)

$h = 6"$, $H = 10.75"$; $H/h = 10.75/6 = 1.79$

Capacity Per Ft of Curb Openning = 2.1 cfs.

$L = 6.5'$

$Q_{CURB\ OPEN} = 2.1 \times 6.5 = 13.6$ cfs.

PER Attached Fig 8 (Grate)

PERIMETER = $(6.5 + 2.1)(2) = 17.2'$

HEAD = 0.67'

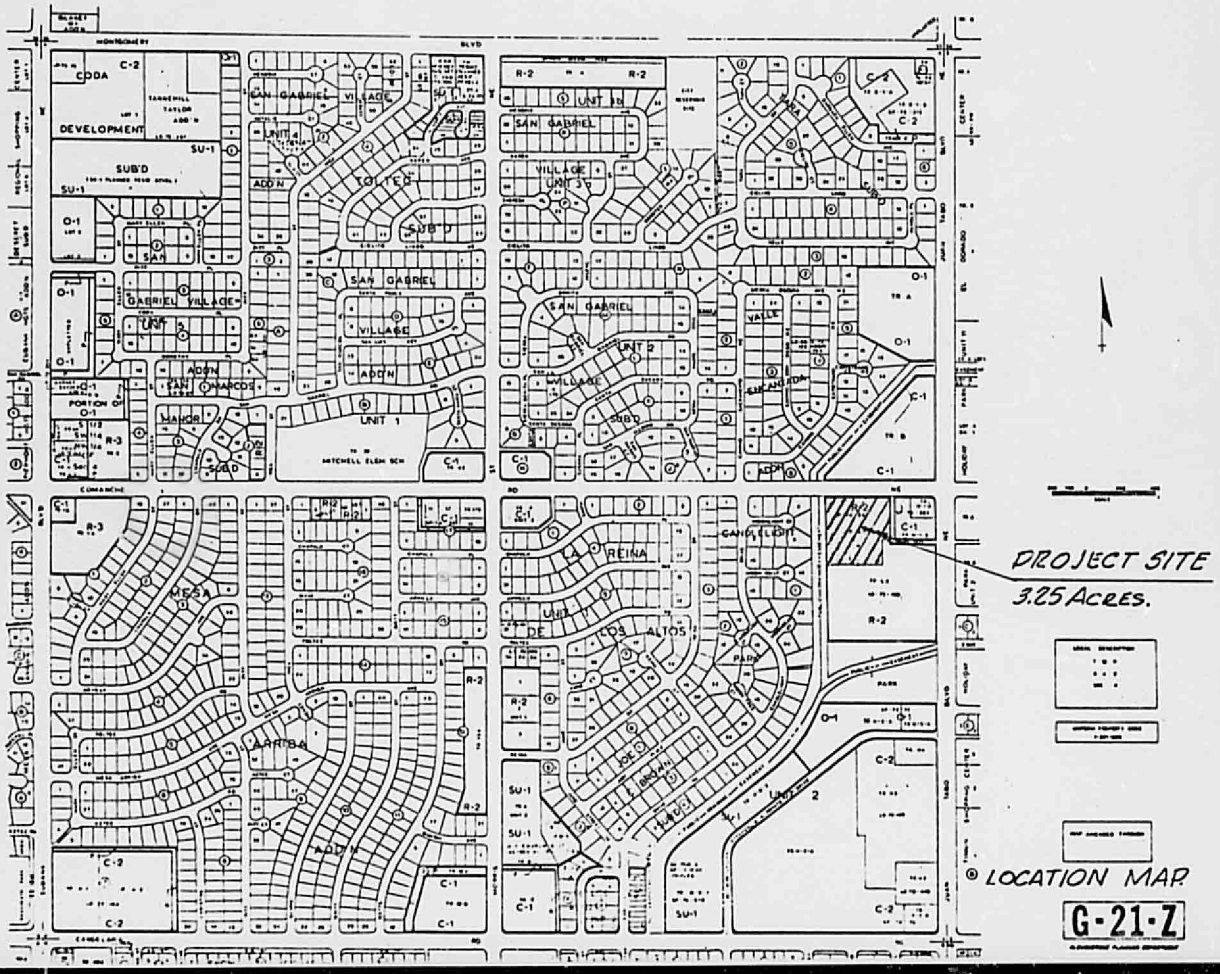
Q/FT PERIMETER = 1.8 cfs

$Q_{GRATE} = 1.8 \times 17.2 = 31$ cfs

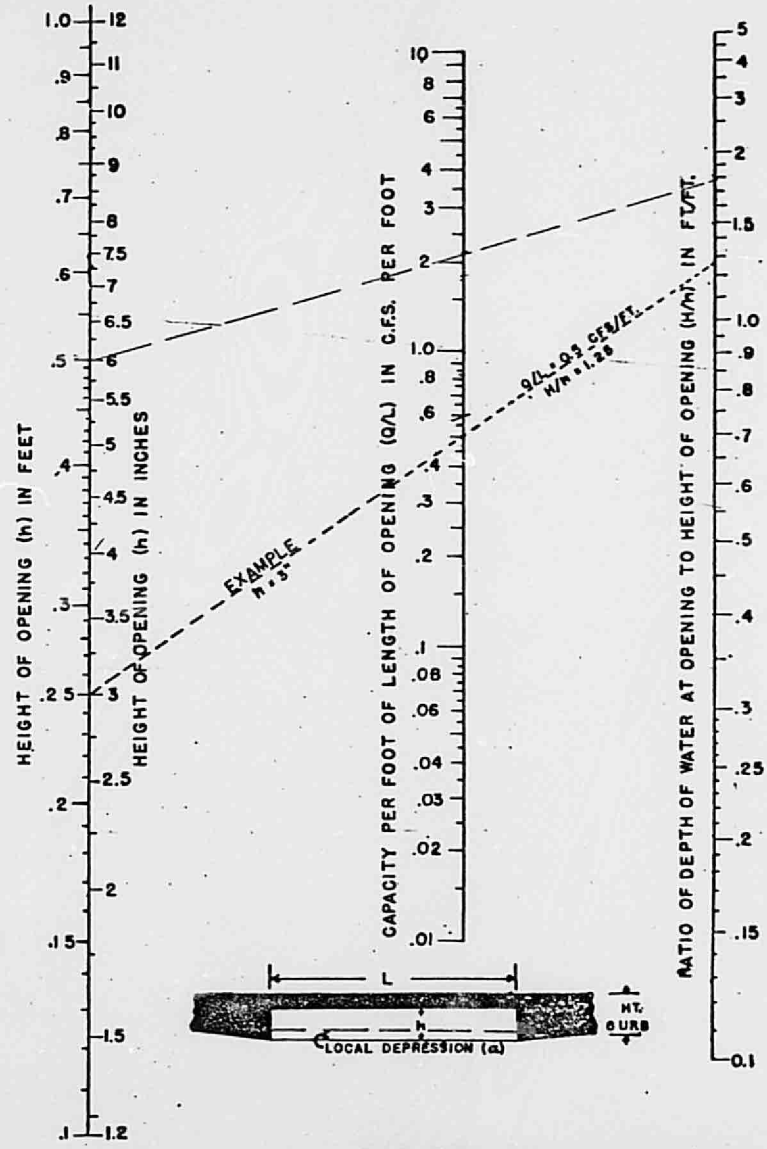
$Q_{CAP} = 13.6 + 31 = 44.6$ cfs

SAFETY FACTOR 2 = $Q = \frac{44.6}{2} = \underline{22.3 \text{ cfs}}$

<u>No major ponding required - Max Inflow = 14.7 cfs & Cap. C.B 22.3 cfs.</u>

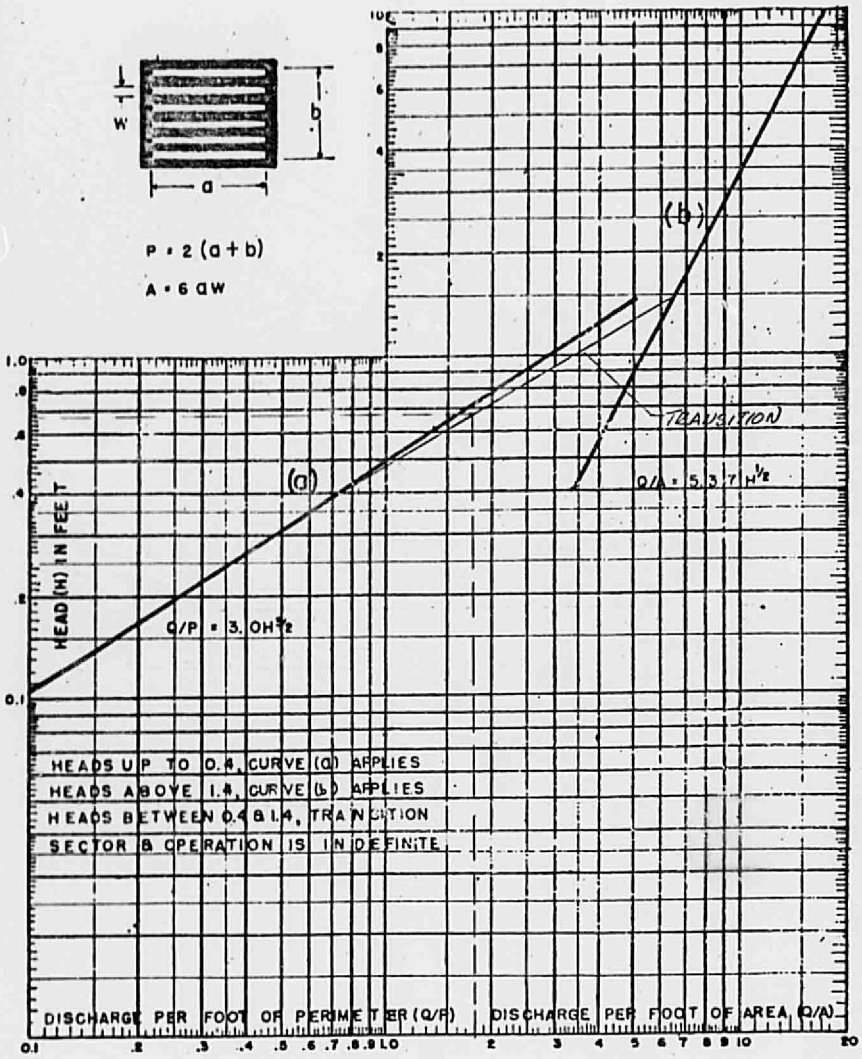


THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.



NOMOGRAPH FOR CAPACITY OF CURB OPENING INLETS AT LOW POINTS

Fig. 7



CAPACITY OF GRATE INLET IN SUMP
WATER PONDED ON GRATE

Fig. 8