HYDROLOGY E21/D24 SPRING PARK APARTMENTS

E21/D24

SPRING PARK
APARTMENTS

3 PLANS

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. E21 DATE: 10/7/83

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Tract 7, Academy Hills

ATTENDANCE:	WHO	REPRESENTING
	Bob Sykes	Tierra Partners & WCEA
	FS Engineers	

FINDINGS:

1. Free discharge into arroyo
2. Peak protection may be required - further investigation ~~required~~ needed
3. Drainage Report required per the DPM

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: _____ SIGNED: _____

TITLE: _____ TITLE: _____

DATE: 10/7/83 DATE: 10/7/83

cc: C.D. Sheppard
2/13/84 Greg Olson

January 20,1983

John B. Case,P.E.
9620 Admiral Dewey,NE
Albuquerque, New Mexico
87111

Mr. F. Aquirre
123 Central,N.W.
Albuquerque,New Mexico
87103

Dear Sir:

I'm writing in reference to the Engineers' Drainage Report, Case No. Z-75-71-1, a proposed devlopment of 300 apartment units in the Northeast Heights. The proposed project is currently planned to be developed on 13.23 acre parcel(Zone Map E21) of Tract 7 of the Academy Hills Subdivision. The land is bordered by the Bear Canyon Tributary Arroyo(Developed Channel) on the northwest, Eubank Ave. on the east, and Layton Ave. on the south.

I'm interesting in obtaining any comments that you or your engineering staff have in reference to the proposed development and Engineers Drainage Report, or revisions that been made to the since the Dec. 13,1983 initial submittal.

Yours Very Truly,

John B. Case

John B. Case,P.E.

RECEIVED
JAN 26 1984
ENGINEERING

Tom Peterson

E21-D24

December 27,1983

John B. Case,P.E.
9620 Admiral Dewey,NE
Albuquerque, New Mexico
87111

Mr. F. Aquirre
123 Central,N.W.
Albuquerque,New Mexico
87103

Dear Sir:

I'm writing in reference to the Engineers' Drainage Report, Case No. Z-75-71-1, a proposed devlopment of 300 apartment units in the Northeast Heights. The proposed project is currently planned to be developed on 13.23 acre parcel(Zone Map E21) of Tract 7 of the Academy Hills Subdivision. The land is bordered by the Bear Canyon Tributary Arroyo(Developed Channel) on the northwest, Eubank Ave. on the east, and Layton Ave. on the south. In the current plan, surface waters are conducted to the Bear Canyon Tributary Arroyo and Eubank Ave. in the northern section of the property, and to Layton Ave. on the southern section of the property. Surface waters conducted to Layton Ave. are conducted to the intersection of Layton Ave. and the arroyo just offsite.

On October 7, 1983, a meeting was held between you, and a representative of Wilson and Company Engineers and Architects who have been retained by Pacific Realty Corporation. In this meeting, it was decided that there should be free drainage to the arroyo if sufficient downstream capacity exists. In addition a concern was raised regarding bank protection, and the need for further evaluation of such protection.

On December 13,1983, the Engineers' Drainage Report was filed with the City for the proposed project. The report consisted of one page and two full size drawings (one depicting the project, and the other depicting surface water hydrology and the surface water drainage system). The report concluded "that there is no off site drainage areas contributing flows onto the project site since flows are intercepted by Eubank Ave. on the east and the Bear Canyon Tributary Arroyo on the north and west". The report utilized the Rational Formula(Clark and Viessman,1970) for calculating onsite surface water runoff for three drainage areas, and in the case of drainage to Layton Ave.,compared runoff to street capacity flow.

It is respectively requested that the you consider the following aspects of the project:

- o <u>Flood Control</u>- It is requested that the drainage plan refer to documentation that

supports the contention that the proposed project is outside the design flood plain. Such documentation should include calculations (flood hydrograph analysis, or evaluation of existing channel crossections to substantiate the, at present, unsupported conclusion regarding off site surface runoff and downstream capacity presented in the drainage report.

o Sediment Control - The plan should provide for onsite storage of surface water runoff, and sediment control by construction of several surface water retention ponds. Such ponds should provide onsite erosion control, and avoid offsite damage to adjacent walkways or streets.

These issues are fundamentally very important in site planning and selection. As stated in Section 2.11 of Site Planning Standards (Dechira and Koppelman,1978) a development plan should demonstrate "Freedom from Surface Floods, and Suitability for Siting of Projected Buildings." Provision should be made for the best availiable routing or retention of runoff water to assure that buildings or other important facilities will not be endangered by a major emergency flood runoff that would become active if the capacity of the storm drainage system were exceeded. Drainage swales should not carry runoff or sediment across walks into streets in quantities that will make them undesirable to use. It has been my personal observation that there already exists a problem with sedimentation where Layton Ave. intersects the the Bear Canyon Tributary Arroyo.

Yours Very Truly,

John B. Case

John B. Case,P.E.

WILSON
& COMPANY
ENGINEERS &
ARCHITECTS

505 262-2116

ENGINEERS
ARCHITECTS
PLANNERS

Office Location... 1321 SAN PEDRO N.E. ▪ ALBUQUERQUE, NEW MEXICO 87110 ▪ An Equal Opportunity Employer

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

E21-D24

December 13, 1983

Mr. Fred Aquirre
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Spring Park Apartments
Drainage Plan Tract 7 Academy Hills
WCEA File: 83-518

Dear Mr. Aquirre:

Enclosed is a copy of the drainage plan for Spring Park Apartments to be constructed at the NE corner of Layton & Eubank.

Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

RECEIVED
DEC 13 1983
ENGINEERING

Enclosure

xc: Ian Ekholm
Pacific Realty Corp.
Suite 300
14180 Dallas Parkway
Dallas, Texas 75240

-sap

INFORMATION SHEET

PROJECT TITLE Spring Park Apartments TYPE OF SUBMITTAL Drainage Plan & Report

ZONE ATLAS PAGE NO. E-21 CITY ADDRESS NE Cor Eubank & Clayton

LEGAL DESCRIPTION Tract 7

ENGINEERING FIRM Wilson & Co Engineers & Arch CONTACT Bob Sykes

ADDRESS PO Box 3548 Alb. NM 87190 PHONE 505-262-2116

OWNER Pacific Realty Corp CONTACT Ian C Ekholm

ADDRESS 14180 Dallas Parkway Dallas Tx 75240 PHONE 214-991-3333

ARCHITECT Wilson & Co Engineers & Arch CONTACT Howard Kaplan

ADDRESS PO Box 3548 Alb NM 87190 PHONE 505-262-2116

SURVEYOR Wilson & Co. CONTACT Bob Sykes

ADDRESS Same As Above PHONE 262-2116

CONTRACTOR N/A CONTACT

ADDRESS PHONE

SAMPLE

DATE SUBMITTED 15 Dec 1983

BY

Use this Information Sheet when submitting the following:

Drainage report or plan, conceptual grading and drainage plan, engineer's certification plan, erosion plan and grading plan. Provide the information applicable to your submittal.

RECEIVED

DEC 13 1983

ENGINEERING

83-518

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. _____ DATE: 10/7/83

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Tract 7, Academy Hills

ATTENDANCE: WHO	REPRESENTING
Bob Sykes	Pacific Realty & WCEA
FJ Aguirre	

FINDINGS:

1. FREE DISCHARGE into ARROYO appropriate IF DOWNSTREAM CAPACITY EXISTS
2. BANK PROTECTION MAY BE REQUIRED - FURTHER INVESTIGATION ~~REQUIRED~~ NEEDED
3. DRAINAGE Report Required per the DPM

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: [signature] SIGNED: [signature]

TITLE: _____ TITLE: _____

DATE: 10/7/83 DATE: 10/7/83

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

E COPY

January 10, 1984

Mr. Robert Sykes
Wilson & Company Engineers & Architects
1321 San Pedro Drive
Albuquerque, New Mexico 87110

RE: DRAINAGE REPORT FOR SPRING PARK APARTMENTS (E21-D24)
RECEIVED DECEMBER 13, 1983

Dear Bob:

First off, I would like to appologize for not responding sooner. There has been a large influx of reports and pre-design conferences over the holidays and I am running behind in the reviews. I am giving it my best effort to get back on schedule. I sincerely hope that this has not caused you any problems.

With regard to the report I hereby forward these comments:

1. The proposed site is encroaching on a floodplain as per the Flood Insurance Rate Maps approved September 15, 1983. This topic has not been addressed in your report. How is it proposed to protect this site from flooding of the Bear Tributary Arroyo since the channel is not designed to contain the flows?

2. The proposed discharge and structure will need to be coordinated with the Parks Department since the channel in this area is a dedicated park. Erosion protection will be required.

3. What is the easement width for the arroyo? Can it contain the ponded water due to the inadequate low-water crossing at Layton such that the site will not be damaged by this condition?

4. Flood proofing will be required for the incroachment of this site into the floodplain.

Should you have any questions or comments, please contact me.

Yours truly,

Billy J. Goolsby

Billy Goolsby, PE
City/County Flood Ordinance
Administrator

BG/ca

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

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January 24, 1984

Mr. Billy Goolsby
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Drainage Report for Spring Park Apartments (E21-D24)
Response to Comments dated January 10, 1984

Dear Mr. Goolsby:

In response to your letter dated January 10, 1984. We have taken the following action:

1. The northern portion of the project encroaches on the floodplain.

a. We cross section the channel and found for a depth of flow of 2.0 ft. the capacity of channel varies from 1488 cfs to 2216 cfs. According to Mr. Fink the design flow at Eubank is 1200 cfs. The highest water surface elevation is at the north end of building is 5669.8 and the lowest finish floor is elevation 5672. The attached plan and cross sections show building locations and elevations and where cross sections were taken.

2. We will obtain approval from Parks Department for construction of rundown.

3. The easement width of the arroyo from Eubank to Layton is 200 ft. minimum. I believe this is ample right-of-way to accommodate the 1200 cfs design flow.

4. I do not believe the 100 year design flow will encroach project site.

I will be glad to answer any further questions you might have.

Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

RECEIVED
JAN 25 1984
HYDROLOGY SECTION

RESUBMITTAL

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE February 17, 1984 REF. NO._____

TO: Don Peterson, Senior Policy Analyst

FROM: Billy Goolsby, City/County Flood plain Administrator

SUBJECT: SPRING PARK APARTMENTS DRAINAGE PLAN & SITE DEVELOPMENT AC-83-24

With regard to the above referenced subject, this department is charged with the responsibility to enforce the Storm Drainage, Flood and Erosion Control Ordinance, Enactment No. 63-1982; whereby, grading and drainage plans are submitted for review and approval. The above referenced subject is one such submittal. To this date, this particular plan has not been approved.

The first time the plan was submitted, the review revealed some questions and concerns that needed to be addressed. Of particular concern was the fact that the most northern two (2) apartment structures were located in the floodway for the Bear Canyon Tributary Arroyo as shown on the Flood Insurance Rate Maps (FIRM), adopted September 15, 1983. Consequently, the plan was not approved at that time. I have attached a copy of my letter to Mr. Robert Sykes identifying comments regarding the submittal.

Since the time I wrote the letter, Mr. Sykes has resubmitted addressing the flood plain issue. This submittal has not been reviewed as of yet. But a quick review of what has been submitted indicates that there may still be some questions to be answered.

It is general practice, and the Development Process Manual (DPM) criteria, to direct runoff from a development into an established drainage way i.e., arroyos, storm sewers, channels, streets, public and private easements, etc. as long as it can be demonstrated that there is sufficient capacity in the facility to accept these flows. If the capacity does not exist, then the runoff must be controlled by means of ponds, grading and routing through landscaped areas or other feasible methods such that the runoff will not create any adverse impacts to the downstream or adjacent properties. These aspects have been addressed in Mr. Sykes report with respect to the capacity of Bear Canyon Tributary Arroyo and Layton Avenue (the street to the south of the site). The question still remains as to the arroyo floodplain and how it is proposed to protect the development from flooding by this arroyo.

With respect to sedimentation control, once a site is developed the area is generally covered by asphalt, buildings and landscaping which prevents any sediments leaving the site. Granted there will be some sediments due to wind blown sand and dirt collecting on asphalt surfaces and sometimes mud may fall from a vehicle but this is considered a minor amount and occurs everywhere in the City and generally is not of concern.

One additional requirement for the approval and sign-off of the construction plans for a site is the inclusion of an Erosion Control Plan in the construction set. This plan establishes the method by which sediments and disturbed soils are contained on-site during the period of construction. Some methods of controlling the possible erosion and sediment transportation created by the site development include, but are not limited to, sediment ponds, berms, silt fences, watering, hay bales and etc. Once the development is completed and the improvements are established (paving and landscaping) then the interim measures are no longer needed. Erosion or sedimentation protection with respect to the runoff from the site to off-site areas is called for in the plan approval.

Please let me know if additional information is required to clarify this department's policies or the Ordinances to be enforced.

BG:mrk

Attachment

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

...E COPY

January 10, 1984

Mr. Robert Sykes
Wilson & Company Engineers & Architects
1321 San Pedro Drive
Albuquerque, New Mexico 87110

RE: DRAINAGE REPORT FOR SPRING PARK APARTMENTS (E21-D24)
RECEIVED DECEMBER 13, 1983

Dear Bob:

First off, I would like to appologize for not responding sooner. There has been a large influx of reports and pre-design conferences over the holidays and I am running behind in the reviews. I am giving it my best effort to get back on schedule. I sincerely hope that this has not caused you any problems.

With regard to the report I hereby forward these comments:

1. The proposed site is encroaching on a floodplain as per the Flood Insurance Rate Maps approved September 15, 1983. This topic has not been addressed in your report. How is it proposed to protect this site from flooding of the Bear Tributary Arroyo since the channel is not designed to contain the flows?

2. The proposed discharge and structure will need to be coordinated with the Parks Department since the channel in this area is a dedicated park. Erosion protection will be required.

3. What is the easement width for the arroyo? Can it contain the ponded water due to the inadequate low-water crossing at Layton such that the site will not be damaged by this condition?

4. Flood proofing will be required for the incroachment of this site into the floodplain.

Should you have any questions or comments, please contact me.

Yours truly,

Billy J. Goolsby

Billy Goolsby, PE
City/County Flood Ordinance
Administrator

BG/ca

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

February 20, 1984

Mr. Robert Sykes
Wilson & Company Engineers & Architects
1321 San Pedro Drive NE
Albuquerque, NM 87110

REF: SUPPLEMENTAL FOR SPRING PARK APARTMENTS DRAINAGE PLAN (E21-D24)
RECEIVED JANUARY 25, 1984

Dear Mr. Sykes:

The information provided does indicate that the structures may not be encroaching in the flood plain as indicated on the FIRM dated September 15, 1983. Because of your information, a map amendment may be in order.

However, in order to request a map amendment, substantially more information would be required. A complete hydraulic analysis of the reach between Eubank Boulevard and Layton Avenue would need to be provided.

The next question is, what will keep the arroyo from meandering? The flow of 1200 cfs and velocities of 9+ fps, as you determined, is more than grass lining can sustain which in my opinion will jeopardize the interface between the arroyo and the proposed development. Also, the concrete rundown as is proposed may not have sufficient protection for the same reason. I also understand that an energy dissipator is proposed at the downstream end of the SAD 205 project terminating at Eubank Boulevard. How will this impact the reach of the arroyo adjacent to this site?

Should you have any questions or comments, please contact me at 766-7644.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, PE
City/County Flood Plain Admin.

BJG:mrk

WILSON
& COMPANY
ENGINEERS &
ARCHITECTS

505 262-2116

ENGINEERS
ARCHITECTS
PLANNERS

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

July 3, 1984

Mr. Billy Goolsby
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

RECEIVED
JUL 05 1984
CITY ENGINEER

Re: Drainage Report for Spring Park Apartments
Report E21 - D24
WCEA File: 83-518

Dear Mr. Goolsby:

The developer of Tract 7, Academy Hills has appealed the City Council action denying the development as approved by EPC. The court has heard the case and a decision should be forthcoming.

The developer has a limited time after the courts decision to begin construction without suffering a financial penalty; therefore we are requesting the City complete the review of the drainage report.

I would be glad to meet with you to discuss this matter at any time.

Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

-sap

RECEIVED
JUL 09 1984
HYDROLOGY SECTION

RECEIVED
JUL 09 1984
HYDROLOGY SECTION

INFORMATION SHEET

PROJECT TITLE Spring Park Apartments TYPE OF SUBMITTAL Final Approval

ZONE ATLAS PAGE NO. E-21 CITY ADDRESS NW Cor Eubank & Layton

LEGAL DESCRIPTION Tract 7, Academy Hills

ENGINEERING FIRM Wilson & Co CONTACT R.F Sykes

ADDRESS PO Box 3548 Alb 87190 PHONE 262-2116

OWNER Pacific Reality CONTACT Ian Ekholm

ADDRESS Suit 300 14180 Dallas Parkway Dallas Tx. 75240 PHONE 214-991-3333

ARCHITECT Wilson & Co CONTACT Howard Kaplan

ADDRESS PHONE 262-2116

SURVEYOR Wilson & Co CONTACT R.F Sykes

ADDRESS PHONE 262-2116

CONTRACTOR N/A CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

X YES
___ NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
X OTHER Final Drainage Plan (SPECIFY)

RECEIVED JUL 09 1984 HYDROLOGY SECTION

RECEIVED JUL 09 1984 HYDROLOGY SECTION

DATE SUBMITTED: 3 July 1984

BY: R.F Sykes

Request completion of review of (E21-D24) which was suspended by City Council Action.

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

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

July 29, 1984

Mr. Robert Sykes
Wilson & Company
P.O. Box 3548
Albuquerque, NM 87190

REF: DRAINAGE REPORT FOR SPRING PARK APARTMENTS (E21-D24) RECEIVED JULY 9, 1984

Dear Bob:

I have reviewed the above mentioned report and request the following information prior to final approval:

1. Please provide analysis of the interfacing between the proposed development and the floodplain of the Bear Tributary Arroyo with regard to stability.

2. Please provide documentation of approval from the Parks Department for the proposed rundown.

3. A detailed grading plan and an erosion control plan per the DPM will be required for final approval.

Should you have any questions or comments, please contact me at 766-7644.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, PE
City/County Flood Plain Admin.

BJG:mrk

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

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December 6, 1984

Mr. Billy J. Goolsby
Design Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Drainage Report for Spring Park Apartments
Report E21-D24
WCEA File: 83-518

Dear Mr. Goolsby:

The Spring Park Apartment project is now proceeding towards construction plans, based on court decision in favor of the developer. The site plan is to be reviewed at DRB on December 11, 1984.

The building layout has changed slightly and the rundown from the property to the drain in the park may be eliminated. This would increase the peak flow discharge to Layton to 43 cfs. The developer will place a fabric beneath the grass to protect the bank along the west side of the property.

I believe the other issues will be resolved when we submit our final grading and drainage plan.

Please give me a call if you have any questions.

Very truly yours,
WILSON & COMPANY

Robert F. Sykes, P.E.

-sap

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Spring Park Apartments ZONE ATLAS/DRNG. FILE #: E21/D24

LEGAL DESCRIPTION: Tract 7 Academy Hills Subd.

CITY ADDRESS:

ENGINEERING FIRM: Wilson & Company CONTACT: R.F. Sykes

ADDRESS: PO Box 3548 ABQ 87190 PHONE: 345-5345

OWNER: Pacific Realty CONTACT:

ADDRESS: Dallas, Texas PHONE:

ARCHITECT: CONTACT:

ADDRESS: PHONE:

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

+ This report supplement report for file E21-D24

RECEIVED MAR 22 1985 HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED (with report)

DRB NO. 84-850 12/11/84

EPC NO. 275-71-1 12/15/83

PROJ. NO. ___

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

C.M. X 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

C.M. X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

X Site Development plan C.M.

DATE SUBMITTED: 22 March 1985

BY: Robert F. Sykes

WILSON & COMPANY
ENGINEERS & ARCHITECTS

505 345-5345

ENGINEERS
ARCHITECTS
PLANNERS

Office Location... 6611 GULTON CT., N.E. ■ ALBUQUERQUE, NEW MEXICO 87109 ■ An Equal Opportunity Employer

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

22 March 1985

Mr. Fred Aquirre
Design Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

RECEIVED
MAR 22 1985
HYDROLOGY SECTION

Re: Spring Park Apartments
Drainage Plan
E21-D24
WCEA File: 83-518

Dear Mr. Aquirre:

Enclosed is a copy of the revised drainage report for Tract 7, Academy Hills Subdivision. This report was first reviewed by Billy Goolsby on 7 January 1984, after which time there was a controversy over the density of the development. The Court has ruled the project may proceed.

We would appreciate your prompt response and I would be glad to answer any questions you may have.

WILSON & COMPANY

Robert F. Sykes, P.E.
Partner

Enc.

-nab

~~Please rough draft and give to Billy~~

Responded in person 4/29/85

Mr. R. F. Sykes
Wilson & Co.
P.O. Box 3548
87180

RE: DRAINAGE REPORT FOR SPRING PARK APARTMENT (E21-D24) RECEIVED March 22, 1985 - Approval sought SITE DEVELOPMENT PLAN.

Dear Mr. Sykes

I have reviewed the above referenced report and submit the following comments:

1. Please indicate the basins on the drainage plan

2. Indicate with spot elevations or contours on how the flows will exit all the court yards. Please show how the court yard flows will be directed to the parking lot swales.

3. Require concurrence from Parks & Rec for the improvements adjoining ~~near~~ the Bear Canyon Tributary.

4. Please show spot elevations or contours of the proposed elevations next to the apartments that are adjacent to the Bear Canyon Tributary.

~~5. Show cross-sections and more detail of the proposed catch basin and RCP. Will require coordination with Greg Olsen of the Design Section. An approved "Drainage Facilities Within City R/W/Easement" document will be required for building permit signoff.~~

6. Please give more spot elevations to show where the flows will be directed at both exits to Eubank Boulevard.

7. The northeast corner of the development does not have ~~enough~~ enough ~~detail of~~ flow line elevations and swales to determine flow direction.

8. Erosion control plan

Paulson

WILSON & COMPANY
ENGINEERS & ARCHITECTS

505 345-5345

ENGINEERS
ARCHITECTS
PLANNERS

Office Location... 6611 GULTON CT., N.E. ■ ALBUQUERQUE, NEW MEXICO 87109 ■ An Equal Opportunity Employer

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

1 May 1985

Mr. Pilly Goolsby
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Spring Park Apartments
Drainage and Grading Plan E21-D24
WCEA File: 83-518

Dear Mr. Goolsby:

Pacific Realty does not plan to construct a fence along their property abutting the Bear Tributary Arroyo. Pacific Realty will be responsible for making their landscaping contiguous with the existing landscaping in the park and will be responsible for repair of any damage to the park property caused by runoff from their property.

WILSON & COMPANY

Robert F. Sykes, P.E.
Partner

cc: Pacific Realty

-nab

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

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

May 2, 1985

Robert F. Sykes
Wilson & Company
Post Office Box 3548
Albuquerque, New Mexico 87190

RE: REVISED DRAINAGE REPORT FOR SPRING PARK APARTMENTS
(E-21/D24) RECEIVED APRIL 30, 1985

Dear Mr. Sykes:

This letter is official notification that Hydrology has signed-off on the Site Development Plan and the Building Permit for the referenced submittal.

Please be advised that all future submittals will be reviewed in strict accordance with the D.P.M. These same submittals, whether new or update, will be added to the current outstanding list and will be reviewed in the order that they appear.

I appologize for any inconvenience. However, this section's workload and personnel status just cannot provide the response desired by the private sector. Until conditions change, I request your indulgence with us to try and accomodate to the best of our ability.

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

Cordially,

Billy J. Goolsby

Billy J. Goolsby, P.E.
C.E., Design Hydrology

BJG/bsj

WILSON & COMPANY
ENGINEERS & ARCHITECTS

505 345-5345

Office Location... 8611 GULTON CT., N.E. ■ ALBUQUERQUE, NEW MEXICO 87109

ENGINEERS
ARCHITECTS
PLANNERS

An Equal Opportunity Employer

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

22 October 1985

Mr. Bernie J. Montoya
Design Hydrology Section
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Spring Park Apartments
NE Corner Eubank and Layton
Drainage Report E21-D24
WCEA File: 83-518

Dear Mr. Montoya:

Pacific Realty has engaged Wilson & Company to survey, prepare and submit to the City an Engineer's Certification of Completion. The certification will be delivered to the City when the paving and landscape work has been completed.

Pacific Realty will be requesting Temporary Certificates of Occupancy when they have completed work on several units.

WILSON & COMPANY

Robert F. Sykes, P.E.
Partner

cc: Mike Wilson
Pacific Guarantee Development Corp.

kl

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Spring Park Apartments ZONE ATLAS/DRNG. FILE #: E-21/D24

LEGAL DESCRIPTION: Tract 7, Academy Hills Subdivision

CITY ADDRESS: 5801 Eubank NE 87111

ENGINEERING FIRM: Wilson & Company CONTACT: Bob Sykes

ADDRESS: 6611 Gulton Ct. NE PHONE: 345-5345

OWNER: Pacific Realty Corp. CONTACT: Paul Chavez

ADDRESS: 14180 Dallas Pkwy. Dallas TX 75240 PHONE: 821-2224

ARCHITECT: Wilson & Co. CONTACT:

ADDRESS: PHONE:

SURVEYOR: Wilson & Co. CONTACT:

ADDRESS: PHONE:

CONTRACTOR: Oak Tree Const. Corp. CONTACT: Paul Chavez

ADDRESS: 5801 Eubank NE PHONE: 821-2224

RECEIVED MAY 07 1986 HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 83-659

EPC NO. Z-75-71-1

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

X 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

X CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 7 May 1986

BY: Wilson & Company

WILSON
& COMPANY
ENGINEERS &
ARCHITECTS

505 345-5345

ENGINEERS
ARCHITECTS
PLANNERS

Office Location... 6611 GULTON CT., N.E. ▪ ALBUQUERQUE, NEW MEXICO 87109 ▪ An Equal Opportunity Employer

Mailing Address... P.O. BOX 3546 ▪ ALBUQUERQUE, NEW MEXICO 87190

7 May 1986

RECEIVED
MAY 07 1986
HYDROLOGY SECTION

Mr. Fred Aguirre
Hydrology Section
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: As-Built Drainage Report
Spring Park Apartments
WCEA File: 83-518

Dear Mr. Aguirre:

Enclosed is a print of the Spring Park Apartments complex showing as-constructed elevations. The project was constructed in substantial compliance with the approved drainage report (E21/D24).

I will be glad to answer any questions you may have about this project.

WILSON & COMPANY

Robert F. Sykes

Robert F. Sykes, P.E.
Partner

enc.

kl

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

May 9, 1986

Robert Sykes
Wilson & Company
6611 Gulton Court, NE
Albuquerque, New Mexico 87109

RE: CERTIFICATION FOR SPRING PARK APARTMENTS (E-21/D24)
ENGINEER'S CERTIFICATION STATEMENT DATE MAY 8, 1986

Dear Mr. Sykes:

Based on the information provided on your May 7, 1986 submittal, certification for the above referenced drainage plan is acceptable. In future certification submittals, would you please include the proposed and as-built elevations within your plan drawings. The reason for this request is that it is time consuming to have to refer back to the original approved plan so as to compare the spot and finish floor elevations.

Please advise your client that they will need to contact Rick Duran, Hydrology Inspector, to arrange for the Certificate of Occupancy release.

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

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

cc: Rick Duran

BJM/bsj

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE February 13, 1984 REF. NO._____

TO: Thomas W. Hoover, President, City Council

FROM: Harry E. Kinney, Mayor Harry E. Kinney

SUBJECT: SUSPENSION OF ENFORCEMENT: ZONE CODE SOLAR PROVISIONS

The City Administration has recently been receiving wide-spread statements of concern about solar access requirements from the homebuilding and land development sectors. After reviewing the concerns (see attached memorandum: Carl Rodolph to Frank Kleinhenz), I am convinced that it is in the overall best public interest to initiate additional study and analysis prior to again implementing the zone code solar provisions. I have therefore approved the attached request for suspension of enforcement for a six month period and for initiation of a task force to develop recommended improvements to the City's approach. This communication is provided to inform the Council of these actions and to allow the Council to respond as it deems appropriate.

Attachment

HEK:mg

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE February 13, 1984 REF. NO._____

TO: Frank A. Kleinhenz, Chief Administrative Officer

FROM: Carl P. Rodolph, Director, Municipal Development Department (MDD)

SUBJECT: SOLAR REQUIREMENTS ENFORCEMENT

Compliance with solar regulations contained within the zoning code now poses serious enforcement and economic problems. However, the objective of the regulation, energy conservation, is socially and economically desirable. A summary of key concerns, possible improvements, and recommendations for immediate actions follows:

Key concerns:

As written, our solar regulations adversely impact housing costs by increasing setbacks, lot sizes, or reducing buildable areas in order to obtain compliance under various circumstances. Often it may not be desirable to plat to avoid such impacts if storm drainage designs force lot orientations toward north-south streets.

In order to define buildable areas on affected lots, a lot-by-lot review of pad elevations must be conducted and permissible building height areas identified. Oftentimes such restrictions, once identified, end up forcing a housing design not desired by the builder. At the same time, the desired designs which are prohibited may be every bit as effective in accommodating energy-reducing features. (This is particularly true where clerestory windows are designed for solar access--a quite popular approach.) The regulations thus interfere significantly with private design options while, at the same time, they do nothing to insure that energy reducing features are in fact designed into the unit which is actually built on the lot.

The homebuilders at present are experiencing very little buyer demand for solar heating. Virtually all subdivisions have more than enough properly oriented lots to meet present buyer demand levels several times over. Thus, the principal impact of current regulations is to maintain the possibility for future solar retrofit for housing on interior lots fronting north-south streets. Yet, the regulations do nothing to control the height or placement of landscaping which may also block further solar access. They also assume that it is desirable to maintain the retrofit option to the extent of preserving solar access from 9:00 a.m. to 3:00 p.m. on December 22 (when the sun is lowest, not when average heating demands are highest--January 20), and that direct sunlight should be able to strike the building within two feet of the ground. The present regulations clearly do not relate to seasonal analysis of the capture of sunlight (the percent of seasonal available sunlight accessed), economic benefit, or the effectiveness of other technologies for retrofit purposes (rooftop collectors, clerestory windows, etc.). Rather, they rigidly seek to maintain solar access for side-yard greenhouse, trombe wall, or other direct gain systems as interior lot retrofit options.

The regulations further ignore the extent of building surface exposed to direct sunlight as a consideration, or alternatives such as staggered setbacks on narrower lots to insure solar access at potentially much less additional cost to the buyer. Nor is there any provision whereby an owner that may not desire such solar access can waive rights. Virtually all interior lots must be equally treated--even where sunlight may only strike a garage wall. Some housing designs may rely upon beefed up shell insulation to achieve overall energy reduction (and to avoid cooling problems which sometimes accompany direct gain solar heating systems). Certainly this represents a socially desirable approach to energy conservation (hence the tax credits, etc.). Yet we force the neighboring lots to make provision for direct solar access. Clearly, in such instances, our good intents are costly and counterproductive.

Possible Improvements:
The foregoing discussion points toward a number of areas where benefits could be obtained if modifications to the City's present approach are made. Such areas for investigation are:

1. Consideration of waivers based upon achievement of energy-reductions in housing design which do not rely upon the kind of direct solar access being preserved under zoning. Analysis is needed to establish such performance standards. Also, there is a need to insure that the energy analysis now required on buildings can reinforce such waivers via proper certifications, etc. at the time of building permit issuance.

2. Review of the annual economic benefit/cost of present regulations versus alternative standards is needed. This may result in modifications to current standards.

3. Design alternates (varying front setbacks, etc.) should be considered as a basis for waiver of present requirements if they can be shown to be equivalent in potential energy savings. Study should be made to develop standards for such alternatives so that a custom analysis is not required for every affected subdivision. Such performance standards should perhaps be included within the Development Process Manual and the ordinances appropriately amended to permit the approach. There should also be consideration of other bases for exemptions if study shows them to be of equivalent effectiveness.

Recommendations:
The following steps are recommended:

1. Suspend enforcement of all solar-access related provisions of the zoning code for a period not to exceed six months. (Maintain those of the subdivision ordinance and the provisions for establishing separate solar access easement to protect existing collectors.)

2. Immediately appoint a public/private sector task group to review this memorandum, prepare appropriate analyses, and recommend appropriate language for changes to the zoning code, subdivision ordinance, and Development Process Manual. The Task Force shall report back within three months of its appointment.

3. Suggested membership for the task force is:

City Staff:
- Mike Minturn
- Warren Ames
- Bob Romero
- Bob Cole
- Joe Dellalonga

Private Sector:
- AHBA representative (Ron Brown)
- AUAC representative (Cliff Spirock)
- PNM representative
- * UNM School of Architecture representative (Steven Dent)
- Outside Solar Consultant (Zomeworks, Steve Baer)

*Suggested Chairman

CPR:mg

Approved:

Frank A. Kleinhenz
Chief Administrative Officer

Approved:

Harry E. Kinney, Mayor

WILSON & COMPANY
ENGINEERS & ARCHITECTS

505 345-5345

Office Location... 6611 GULTON CT., N.E. ■ ALBUQUERQUE, NEW MEXICO 87109

ENGINEERS
ARCHITECTS
PLANNERS

An Equal Opportunity Employer ■

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

30 April 1985

Mr. Billy Goolsby
Hydrology Section
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Spring Park Apartment
2nd Revised Drainage Plan E21-D24
WCEA File: 83-518

Dear Mr. Goolsby:

Enclosed are the revised grading plan and calculations for the Spring Park Apartment project at the northwest corner of Eubank and Layton.

We have eliminated the discharge from the property directly to Bear Tributary.

We have added a note for erosion control during construction.

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

WILSON & COMPANY

Robert F. Sykes, P.E.
Partner

RECEIVED
APR 30 1985
HYDROLOGY SECTION

Enc.

-nab

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Spring Park Apart. ZONE ATLAS/DRNG. FILE #: E-21

LEGAL DESCRIPTION: Tract 7 Academy Hills

CITY ADDRESS:

ENGINEERING FIRM: Wilson & Co CONTACT: R.F Sykes

ADDRESS: PO Box 3548 Abq 87190 PHONE: 345-5345

OWNER: Pacific Reality CONTACT: Gordon Ip

ADDRESS: 14180 Dallas Parkway Dallas, Texas 75240 PHONE: 214-991-3333

ARCHITECT: Wilson & Co CONTACT: Howard Kaplan

ADDRESS: PHONE:

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. ___

EPC NO. ___

PROJ. NO. ___

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAINAGE PLAN

X GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

Revised 2nd Time
30 April 1985
Report E-21-D24

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

X SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER ___ (SPECIFY)

DATE SUBMITTED: ___

BY: ___

83-518

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. _____ DATE: 10/7/83

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: Tract 7, Academy Hills

	WHO	REPRESENTING
ATTENDANCE:	Bob Sykes	Pacific Realty & WCEA
	FJ Aguilar	

FINDINGS:

1. FREE DISCHARGE into ARROYO APPROPRIATE IF DOWNSTREAM CAPACITY EXISTS
2. BANK PROTECTION MAY BE REQUIRED - FURTHER INVESTIGATION ~~REQUIRED~~ NEEDED
3. DRAINAGE Report Required per the DPM

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: [signature]	SIGNED: [signature]
TITLE:	TITLE:
DATE: 10/7/83	DATE: 10/7/83

REVISED
ENGINEER'S DRAINAGE REPORT
SPRING PARK APARTMENTS
TRACT 7 ACADEMY HILLS
ZONE MAP E-21

PURPOSE AND SCOPE

Pacific Realty is planning to develop the 13.23 acre site for 300 unit two-story apartments.

SITE LOCATION AND TOPOGRAPHY

The site is Tract 7, Academy Hills Subdivision located at the northwest corner of Eubank Boulevard and Layton Avenue and is bounded on the west and north by the Bear Canyon Tributary Arroyo.

The site slopes from northeast to southwest. The soil is classified Embudo and Tijeras and is hydrological Group B.

DESIGN CRITERIA

The Rationale Method is used to compute the design flows using the criteria set forth in Volume 2, City of Albuquerque Devlopment Procedures Manual. The runoff coefficient is based on land use shown on the attached site development plan. The undeveloped and developed 100-year runoff computations are attached.

ON-SITE DRAINAGE

The attached grading plan depicts the on-site drainage areas and their points of discharge.

Area 1 discharges to the Bear Canyon Tributary Arroyo with a maximum 100-year discharge rate of 3.0 c.f.s. Area 2 also discharges to the Bear Canyon Tributary Arroyo with a maximum 100-year discharge rate of 3.87 c.f.s. The discharge to the concrete pilot channel in the Bear Canyon Tributary Arroyo is via a curb inlet and 15-inch diameter R.C. pipe with an end section.

Area 3 discharges to Layton Avenue near the existing low water crossing of Layton Avenue across the Bear Canyon Tributary. The maximum 100-year discharge rate is 28.33 c.f.s.

Area 4 discharges to Eubank Boulevard. The maximum 100-year discharge rate is 5.44 c.f.s.

It is proposed not to detain any storm water runoff on site, since the project is adjacent to the Bear Canyon Tributary Arroyo and will not have any adverse affect on downstream properties.

BEAR CANYON TRIBUTARY ARROYO

The Bear Canyon Tributary Arroyo is improved along the northwest side of the property. These improvements consist of a concrete low flow pilot channel and a grassed waterway which also serves as City park improvements.

The 100-year design flow for Bear Canyon Tributary Arroyo through the park has been established at 813 c.f.s. Based on field cross sections and using a Manning's "n" factor of 0.25, the average depth of flow is 1.70 feet at a velocity of 7.7 feet per second. The USDA Soil Conservation Service publication TR-60 states the following:

Grass Species	Soil Type	Recommended Maximum Velocity 10-Year Flood	Recommended Maximum Velocity 100-Year Flood
Bermuda Grass	PI>10	8 fps	10.00 fps
	PI<10	6 fps	7.50 fps
Blue Grass	PI>10	7 fps	8.75 fps
	PI<10	5 fps	6.25 fps

These recommended maximum velocities are based on saturated soil conditions. The soil in the channel has a PI of less than ten and the grass type is a blend of various types of fescues and blue grass. I do not believe a velocity of 7.6 feet per second for a short period of time in a normally dry channel would cause severe damage. The existing grass extends 25 to 30 feet east of the concrete pilot channel and is at least to the elevation of a 100-year flow. The developer will make his landscaping contiguous with the park improvements.

The Bear Canyon Tributary Arroyo channel is being paved with concrete from Layton Avenue west to Wyoming Boulevard.

100-YEAR FLOOD FLOODPLAIN

The northern portion of the project is shown to be in the 100-year floodplain. The depth of flood flow is shown to be 2.0 feet. At this point the flow line elevation of the channel is 5,666.4 feet and the finished floor elevation is 5,672.0 feet and the flow will be at least 15 feet from the building.

ATTACHMENTS

The following materials are attached:

1. Calculations
2. Site Grading Plan
3. Cross Section and Hydraulic Calculations for Existing Bear Canyon Tributary Channel

COMP. RFS

CK.

DATE 30 April 1985

WILSON & COMPANY
ENGINEERS & ARCHITECTS

LOC. Albuquerque FILE 83-518

PROJ. Spring Park SHEET 1

SUBJ. 2nd Rev Dr. Report OF

Undeveloped Flow Condition

6 hr - 100yr rainfall = 2.5 in

Area = 13.23 Ac

C = 0.40

t_c = 10 min

i_{100} = 2.5 x 2.2 = 5.50

Q = CiA = 0.40 x 5.50 x 13.23 = 29.11 cfs

6hr Volume = $\frac{2.5}{12}$ x 13.23 x 43,560 x .40 = 48,025 c.f.

Developed Conditions

% Imper. = $\frac{286,420}{576,300}$ = 49.7%

Hydrologic Soil Type = B

From Plate 22.2 C-1 C = 0.58

Area 1 Discharge to Eubank

Area = 1.15 Ac. C = 0.86 (90% Impervious)

i = 5.50

Q_{100} = CiA = 0.86 x 5.50 x 1.15 = 5.44 cfs

Area 2 Discharge to Layton

Area = 10.62

C = 0.58

i = 5.50

Q_{100} = CiA = 0.58 x 5.50 x 10.62 = 33.9 cfs.

Capacity Layton

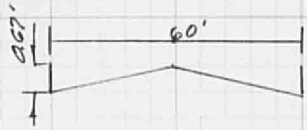
@ Street = Top Curb

Area = 60 x .67 x .5 = 20.10 ft²

WP = 61.33 ft

R = Hyd Rad = A/WP = 20.1/61.33 = .3277

Slope = 4.12% n = 0.017



Qcap (Curb Full) = Av = $A \frac{1.486}{n} R^{2/3} S^{1/2}$

= 20.1 x 87.91 x .0753 x .2030

Q = 169.5 cfs

Max rate from project = 33.9 cfs < 169.5 cfs

COMP. RFS
CK.
DATE 17 Mar 85

WILSON & COMPANY
ENGINEERS ARCHITECTS

LOC. Albuquerque FILE 83-518
PROJ. Spring Park SHEET 1
SUBJ. Rev. Dr. Plan. OF

Undeveloped Flow Conditions
6 hr - 100yr rainfall = 2.5in
Area = 13.23Ac
C = 0.40
t_c = 10min
i_{100} = 2.5 x 2.2 = 5.50
Q = CiA = 0.40 x 5.50 x 13.23 = 29.11 cfs

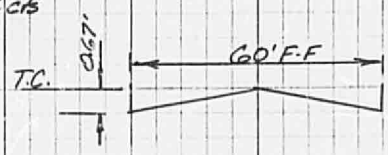
6 hr Volume $\frac{2.5}{12}$ x 13.23 x 43,560 x .40 = 48,025 cf

Developed Condition
% Imper $\frac{286,420}{576,300}$ = 49.7%
From Plate 22.2C1 C = 0.58

Area 1
Area = 0.72 Ac t_c = < 10min i_{100} = 5.50 C = 0.76 (80% Imper)
Q_{100} = CiA = 0.76 x 5.50 x 0.72 = 3.0 cfs.
Use Single C Inlet w/ 18" Outlet pipe

Area 2
Area = 1.02 Ac t_c = < 10min i_{100} = 5.50 C = 0.69 (70% Imper)
Q_{100} = CiA = 0.69 x 5.50 x 1.02 = 3.87 cfs
Use Single C Inlet w/ 18" Outlet pipe

Area 3
Area = 8.88 Ac t_c = < 10min i_{100} = 5.50 C = 0.58 (50% Imper)
Q_{100} = CiA = 0.58 x 5.50 x 8.88 = 28.33 cfs
Discharges to Layton Ave



Capacity Layton Ave
Street width = 60'
℄ St Elev = Top. Curb Elev
A = $\frac{30 \times .67}{2}$ x 2 = 20.10 sq ft

COMP. CK. DATE

WILSON & COMPANY
ENGINEERS ARCHITECTS

LOC. PROJ. SUBJ.

FILE 2 SHEET OF

Assume
℄ St elev = Top curb elev.

Area $\frac{30 \times .67}{2} \times 2 = 20.10$ Sq. Ft.
Wet. Per. = 61.33 ft
Hyd Rad = A/WP = 20.10/61.33 = .3277

Slope = 4.12% n = 0.017

$Q_{cap} = Av = A \frac{1.486}{n} \times R^{2/3} \times S^{1/2}$

$= 20.01 \times \frac{1.486}{.017} \times .3277^{2/3} \times .0412^{1/2}$

$= 20.01 \times 87.41 \times .4753 \times .2030$

$Q_{cap} = 168.7$ cfs

Vel = 8.43 ft/sec

Vel x depth = 8.43 x 0.67 = 5.65 < 6.5 max allowed

The max rate of discharge from Area 3 is 28.33 cfs & capacity of Layton Ave is 168.7 cfs.

Area 4 discharges to Eubank Blvd
A = 1.15 Ac C = 0.86 (90% Impervious)
L 5.50
$Q_{100} = CiA = 0.86 \times 5.50 \times 1.15 = 5.44$ cfs.

Drainage and Sedimentation Control

The proposed project is currently planned to be developed on a 13.23 acre parcel(Zone Map E21) of Tract 7 of the Academy Hills Subdivision. The land is bordered by the Bear Canyon Tributary Arroyo(Developed Channel) on the northwest, Eubank Ave. on the east and Layton Ave. on the south. In the current plan, surface waters are conducted to the Bear Canyon Tributary Arroyo and Eubank Ave. in the northern section of the property, and to Layton Ave. on the southern section of the property. Surface waters conducted to Layton Ave. are conducted to the intersection of Layton Ave. and the arroyo just offsite.

On October 7, 1983, a meeting was held between the chief municipal hydrologist, Mr. F. Aquirre, and a representative of Wilson and Company Engineers and Architects who have been retained by Pacific Realty Corporation. In this meeting, it was decided that there should be free drainage to the arroyo if sufficient downstream capacity exists. In addition, a concern was raised regarding bank protection, and the need for further evaluation of such protection.

On December 13,1983, the Engineers Drainage Report was filed with the City for the proposed project. The report consisted of one page and two full size drawings (one depicting the project, and the other depicting surface water hydrology and the surface water drainage system). The report concluded "that there are no off site drainage areas contributing flows onto the project site since flows are intercepted by Eubank Ave. on the east and the Bear Canyon Tributary Arroyo on the north and west. The report utilized the Rational Formula(Clark and Viessman,1970) for calculating surface water runoff for three drainage areas, and in the case of Layton Ave. compared runoff to street capacity flow.

On December 15, 1983, the environmental planning commission held a meeting on the proposed Spring Hill Apartment Project(Case# Z-75-71-1) and approved the project for 300 separate units. This approval was granted prior to approval by the Chief Design Hydrologist, Mr. F. A. Aquirre who I understand has set a date of December 28, 1983 for final approval of the drainage report, and in the face of issues raised on certain hydrological aspects of the project. Mr. John B. Case, a resident in the Academy Hills subdivision, and a professional engineer (NM No. 8049) had sent a letter to members of the commission stating a concern that the proposed project plan does not address flood control issues with regard to the adjacent Bear Canyon Tributary Arroyo nor potential erosion and sedimentation problems that might be created on and off site.

It is respectively requested that the city council considers the following aspects of the project:

o Flood Control- It is requested that the drainage plan refer to documentation that supports the contention that the proposed project is outside the design flood plain. Such documentation should include calculations (flood hydrograph analysis, or evaluation of existing channel crossections) to substantiate the, at present, unsupported conclusion regarding off site surface runoff and downstream capacity presented in the drainage report.

o Sediment Control - The plan should provide for onsite storage of surface water runoff, and sediment retention by construction of several surface water retention ponds. Such ponds should provide onsite erosion control, and avoid offsite damage to adjacent streets or walkways.

These issues are fundamentally important in site planning and selection. As stated in Section 2.11 of Site Planning Standards (Dechira and Koppelman,1978) a development plan should demonstrate "Freedom from Surface Floods, and Suitability for Siting of Projected Buildings." Provision should be made for the best availiable routing of runoff water to assure that buildings or other important facilities will not be endangered by a major emergency flood runoff that would become active if the capacity of the storm drainage system were exceeded. Drainage swales should not carry runoff or sediment across walks or streets in quantities that will make them undesirable to use.