HYDROLOGY

K16/D15

206 STANFORD APTS.

K16/D15

1 PLAN

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. K 16 DATE: 9-21-84

PLANNING DIVISION NO. _____

CONFERENCE RECAP

SUBJECT: 206 Stanford SE Lot 3A of Block 15 of University Heights Addition

	WHO	REPRESENTING
ATTENDANCE:	Carlos A Montoya	City
	August Mosinskim	Engineering Assoc
	David Shields	Shields and Coe

FINDINGS: ① Approved Drainage Plan as per DPM is required prior to issuance of building permit ② Site discharge to be determined by analysis of downstream conditions. There appears to be no downstream flooding from FEMA maps. ③ Require city approved alley grades

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: August L Mosinskim

TITLE: Civil Eng. TITLE: Engineer

DATE: 9-21-84 DATE: 9-21-84

K16/D15

INFORMATION SHEET

PROJECT TITLE 206 Stanford Apartments

TYPE OF SUBMITTAL Grading Plan and Drainage Report

ZONE ATLAS PAGE NO. K-16 CITY ADDRESS 206 Stanford SE

LEGAL DESCRIPTION Lot 3-A, Block 15, University Heights Addn.

ENGINEERING FIRM Engineering Associates, Inc. CONTACT August F. Mosimann,P.E.

ADDRESS 532 Adams N.E. PHONE 265-6545

OWNER Shields and Co. CONTACT David Shields

ADDRESS 504 Richmond SE PHONE 255-7171

ARCHITECT Shields and Co. CONTACT David Shields

ADDRESS 504 Richmond SE PHONE 255-7171

SURVEYOR George Rodriguez CONTACT George Rodriguez

ADDRESS 12800 San Juan NE PHONE 296-5978

CONTRACTOR Shields and Co. CONTACT David Shields

ADDRESS 504 Richmond SE PHONE 255-7171

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

ALBUQUERQUE BLDG. DEPT. NOV 1 9 1984 U.B.C. PLAN CHECK SECTION

RECEIVED NOV 30 1984 DESIGN HYDROLOGY SECTION

NOTE SUBMITTED TO PLAN CHECK Nov 9. 1984

DATE SUBMITTED 11/30/84

BY August F. Mosimann,P. E.
for
Engineering Associates, Inc.

Site Grading and Drainage Plan

for

206 Stanford SE

Albuquerque, New Mexico

PROJECT DESCRIPTION

The roughly 100 ft by 280 ft site is located on flat terrain south of the University of New Mexico and is currently undeveloped. A four-unit apartment building is proposed, with some yard space and some paved parking. As agreed on by the City Hydrology Dept., runoff from the rear of the developed lot will flow to the alley and that from the front of the lot will flow to Stanford Drive.

GENERAL INFORMATION

1. The legal description is: Lot 3-A, Block 15 of the University Heights Addn, a replat of lots 2 & 3 of Block 15, University Heights Addn, filed Feb 15, 1971 (Zone Map K-16 Z)
2. There is no offsite flow.
3. The site is not in a 100-year flood hazard area.
4. Alley grades were furnished by the City of Albuquerque

EXISTING CONDITIONS

1. Existing runoff is as follows:
   The flow area is 27310 sq. ft. or 0.627 acres.
   The flow area is 0 % impervious.
   The soil is group B, type WeB Soil Survey Sheet 31
   The "C" factor is 0.34 (Pl. 22.2 C-1)
   The runoff length L is 250 ft (max)
   The slope S is 1.3 %.
   The concentration time is 0.0078*(L^.77)/(S^.385) = 2.95 min
   (10 minutes minimum)
   The average velocity is 250 / (10x60) = 0.42 ft/sec
   The 100-yr 6-hr precipitation amount is 2.3 in (Pl 22.2 D-1)
   The 100-yr intensity is 2.15 x 2.3 = 4.95 in/hr (Pl22.2 D-2)
   The 100-yr flow rate is CIA=0.34 x 4.95 x 0.627 = 1.06 cfs
   The 100-yr volume is 0.34 x (2.3/12) x 27310 = 1780 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

1. Proposed runoff is as follows:
   The flow area is 27310 sq. ft. or 0.627 acres.
   The flow area is 79.1 % impervious.
   The soil is group B, type Gk, Soil Survey Sheet 31
   The "C" factor is 0.75 (Pl. 22.2 C-1)
   The runoff length L is 110 ft (rear, for Tc max)

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NOV 30 1984
DESIGN HYDROLOGY
SECTION

The slope S is 0.4 %.
The concentration time is 0.0078*(L^.77)/(S^.385) = 2.38 min
(10 minutes minimum)
The average velocity is 110 / (10x60) = 0.17 ft/sec
The average velocity is 0.85 fps by P1 22.2 B-1 for pavement, d=0.05'
The 100-yr 6-hr precipitation amount is 2.3 in (P1 22.2 D-1)
The 100-yr intensity is 2.15 x 2.3 = 4.95 in/hr (P122.2 D-2)
The 100-yr flow rate is CIA = 0.75 x 4.95 x 0.627 = 2.33 cfs
The 100-yr volume is 0.75 x (2.3/12) x 27310 = 3926 cu ft
The 10-yr values are 65.7% of the 100-yr values
for amount, intensity, rate, and volume (P1 22.2 D-1)

FLOOD CONTROL

1. Runoff is controlled as shown on the plans and is in accord with agreement with the City Hydrology Dept.

2. The major features are:
   A. Roof flow will be directed by gutters to the front and rear paving and thence to the street and alley.
   B. Sidewalk and yard rainfall will be retained
   C. At the southeast corner, a low asphalt roll curb protects adjacent property from any possible runoff.
   D. The east end of the building is 1" below finished grade. A wider footing and one course of CMU 6" above grade protect the wood-frame wall.

3. The building is not located in a flood hazard area; therefore flood proofing is not required.

4. The only earthwork necessary is be minor grading and footing excavation. As indicated above, flow velocities are approximately 0.42 ft/sec for undeveloped conditions and approximately 0.85 for paved conditions. Erosion is not a problem.

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

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

January 8, 1985

August Mosimann
Engineering Associates, Inc.
532 Adams Street, NE
Albuquerque, New Mexico 87108

RE: GRADING & DRAINAGE PLAN FOR 206 STANFORD APARTMENTS
(K-16/D15) RECEIVED NOVEMBER 30, 1984

Dear Mr. Mosimann:

I have reviewed the referenced submittal and forward these comments based on the D.P.M. Checklist:

1. Downstream capacity has not been addressed as per the pre-design recap identified.
2. Vicinity Map is not shown on the plan.
3. Legal Description is not on the plan.
4. Bench Mark and TBM information is not provided.
5. Elevations with MSL designation is not provided for the structures on or within 25 feet of the property line.
6. Existing contours are to be extended a minimum of 25 feet beyond the property line.
7. Existing easements and right-of-way on or adjacent to the site with dimensions and purpose shown are not indicated.
8. If the City provided the alley grades, then show the project number. Compliance with matching the grades is also required.
9. Internal contributory areas and quantities should be defined.
10. Notes to define property line, asphalt, sidewalks, etc., should also be provided.
11. Finish floor elevation with complete MSL designation should be provided.
12. Elevations of the property line at least 0.33 feet above adjacent City top of curb needs to be shown.

13. Standard City drivepad spot elevations are not shown.
14. An erosion control plan for the period of construction will need to be provided.

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

Cordially,

Billy J. Goolsby

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

BJG/bsj

Engineering Associates
532 Adams N.E. 87108
January 15, 1985

Billy Goolsby
Design Hydrology Section
City of Albuquerque
123 Central Ave. N.W.

RECEIVED
JAN 17 1985
HYDROLOGY SECTION

RE: GRADING AND DRAINAGE PLAN FOR 206 STANFORD APARTMENTS
LOT 3-A BLOCK 15 UNIVERSITY HEIGHTS ADDN MA

Dear Mr. Goolsby:

Thank you for your comments on this project. We have revised the drainage plan and the report. Our responses to your specific remarks follow your numbering.

1. Downstream capacity is approximately adequate, as is dicussed in the revised drainage report. Drainage master plan map K-16 does show a small 100 -year flooding problem on Lead near Yale, where runoff from the front portion of 206 Stanford enters a drop inlet. There is no problem from the 10-yr storm. Before development runoff from 206 to this area amounts to 0.26 cfs. After proposed development this increases 0.05 cfs to 0.31 cfs, a minimal amount. Runoff from the rear portion of the lot (0.29 cfs) flows to a drop inlet on Silver at Stanford, where there is no 100-yr problem. The drainage master plan indicates that the 100-yr problem on Lead is to be alleviated in the future by the addition of a 21 inch line in Coal Ave. (System 212 02B).

2. & 3. A vicinity map and the legal description have been added to the plan. The plan is noted as revised 1/15/85

4. Benchmark and temporary benchmark information have been added to the plan.

5. The finished floor elevation of the proposed building has been expanded to include the first two digits of the full mean sea level elevation. For convenience, the other elevations are still given minus the first two digits.

There are five small structures within twenty-five feet of this lot, including two adjacent to the alley on the Stanford side and one across the alley; currently we do not have finished floor elevations for any of them. However, runoff from 206 Stanford will be controlled so that it will not impact any of these structures. In this context note that the flow from 206 toward the alley is very small (Qp 100=0.3 cfs) and that the alley high point is opposite 206; thus there is only minor flow past these structures adjacent to the alley.

6. Contour lines have been ammended to extend 25 feet beyond the property lines.

7. Except for the road right of way, which abuts the west end of the lot, and the public alley, which abuts the east end,

there are no rights of way or easements to show. Inspection, on 1/14/85, of the plat filed with Bernalillo County confirmed this.

8. The city did indeed provide the alley grades; see drawing no. P-151-78. For your convenience I enclose a table of grades taken from that drawing so you can see that our proposed grades are in compliance.

9. The drainage report has been revised to consider the lot as three separate areas under developed conditions: flow to the west, flow to the alley on the east, and no flow (retained rain) in the yards. During revision an error in scaling was noticed; the revised flows are correct.

10. Notes have been added to further clarify property lines, sidewalks, etc.

11. Finished floor elevations. See item 5.

12. Elevating the orperty line 0.33 feet (4 inches) above adjacent City top of curb does not seem proper in this instance, since the grade at the property line will match the elevation of the existing continuous sidewalk in this established neighborhood. Note that the driveway length, from curb flow line to front of sidewalk, is approximately 12 feet, well over the 6.5 foot minimum. City Standard drawing for drivepads (P-11-3), which refers to the 0.33 ft, notes that there may be conflicts and that approval is appropriate in some instances. This seems an suitable situation.

13. Spot elevations have been added for the drivepad.

14. The lot is much less than an acre in size, earthwork will be well under 500 cubic yards, and flow velocities on unpaved portions of this relatively flat lot will be low. (See drainage report.) Therefore an erosion control plan is not needed.

Should you have any questions or comments regarding this letter or the revised drainage plan, please call me <u>promptly</u> at 265 6545; our client is anxious to proceed.

Cordially,

Tucker Green

Tucker Green

ALLEY GRADES 206 STANFORD S.E.

DIST S. FROM NORTH SIDE OF LOT	℄ ELEV EXISTING	℄ ELEV PROPOSED	WEST ELEV EXISTING	WEST ELEV PROPOSED
- 21 (21' N)	74.68	74.53	75.0	74.78
0	74.9	74.83	75.1	75.08
36 (GRADE BREAK)	75.38	75.30	75.66	75.55
49 (S. END)	75.3	75.21	74.95	75.46

GRADES FROM DWG P-151-78
UNIVERSITY HEIGHTS MAP K-16
ALLEY EAST OF STANFORD & SOUTH OF SILVER

RECEIVED
JAN 17 1985
HYDROLOGY SECTION

Site Grading and Drainage Plan

for

206 Stanford SE
Albuquerque, New Mexico

RECEIVED
JAN 17 1985
HYDROLOGY SECTION

PROJECT DESCRIPTION

The roughly 50 ft by 140 ft site is located on flat terrain south of the University of New Mexico and is currently undeveloped. This residential area has long been almost completely developed, with only a few isolated lots still vacant.

A four-unit apartment building is proposed, with some yard space and some paved parking. As agreed with by the City Hydrology Dept., runoff from the rear of the developed lot will flow to the alley and that from the front of the lot will flow to Stanford Drive.

GENERAL INFORMATION

1. The legal description is: Lot 3-A, Block 15 of the University Heights Addn, a replat of lots 2 & 3 of Block 15, University Heights Addn, filed Feb 15, 1971 (Zone Map K 16 Z)
2. There is no offsite flow.
3. Alley grades were furnished by the City of Albuquerque Drawing P-151-78
4. The site is not in a 100-year flood hazard area.
5. There is a small 100-yr flood hazard area at downstream at Lead and Yale, but no 10-yr flood hazard. Master Drainage Map K-16. See discussion of flood control.

EXISTING CONDITIONS

Under existing conditions, virtually the entire 100-yr runoff (0.26 cfs) flows south along Stanford to Lead and then west to a series of drop inlets between Harvard and Yale.

Existing runoff is as follows:

The flow area is 6815 sq. ft. or 0.156 acres.
The flow area is 0 % impervious.
The soil is group B, type WeB, Soil Survey Sheet 31
The "C" factor is 0.34 (Pl. 22.2 C-1)
The runoff length L is 125 ft (max)
The slope S is 2.6 %.
The concentration time is 0.0078*(L^.77)/(S^.385) = 1.31 min (10 minutes minimum)
The average velocity is 125 / (10x60) = 0.21 ft/sec
The 100-yr 6-hr precipitation amount is 2.3 in (Pl 22.2 D-1)
The 100-yr intensity is 2.15 x 2.3 = 4.95 in/hr (Pl 22.2 D-2)
The 100-yr flow rate is CIA=0.34 x 4.95 x 0.156 = 0.26 cfs
The 100-yr volume is 0.34 x (2.3/12) x 6815 = 444 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

Retained rain - no flow (front yards and sidewalks, rear yards)
The combined area is 1466 sq ft or 0.034 acre.
The yards are flat and contained; there is no slope or runoff.
The 100-yr 6-hr rainfall is 2.3 inches
The 100-yr rainfall volume is 2.3/12 * 1466 sq ft = 281 cu ft
Assuming impervious portion as 33%, C=0.5, and 0.5 * 2.3 = 1.15 inches infiltrate during the design rain, the other 1.15 inches later.
The 10-yr values are 65.7 % of the 100-yr values (Pl 22.2 D-1)

West flow - center of roof west to street, except yards
The flow area is 2782 sq. ft. or 0.064 acres.
The flow area is 90.9 % impervious.
The soil is group B, type WeB, Soil Survey Sheet 31
The "C" factor is 0.94 (Pl. 22.2 C-1)
The runoff length L is 50 ft (excluding the roof)
The slope S is 4.5 % (excluding the roof)
The concentration time is 0.0078*(L^.77)/(S^.385) = 1.29 min
(10 minutes minimum)
The average velocity is approx 2.85 ft/sec paved (Pl 22.2 B-1)
The 100-yr 6-hr precipitation amount is 2.3 in (Pl 22.2 D-1)
The 100-yr intensity is 2.15 x 2.3 = 4.95 in/hr (Pl22.2 D-2)
The 100-yr flow rate is CIA=0.94 x 4.95 x 0.064 = 0.30 cfs
The 100-yr volume is 0.94 x (2.3/12) x 2782 = 501 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)

East flow - center of roof east to alley
The flow area is 2567 sq. ft. or 0.059 acres.
The flow area is 100 % impervious.
The soil is group B, type WeB, Soil Survey Sheet 31
The "C" factor is 1.0094 (Pl. 22.2 C-1)
The runoff length L is 50 ft (excluding the roof)
The slope S is 1.05 % (excluding the roof)
The concentration time is 0.0078*(L^.77)/(S^.385) = 0.93 min
(10 minutes minimum)
The average velocity is approx 1.35 ft/sec paved (Pl 22.2 B-1)
The 100-yr 6-hr precipitation amount is 2.3 in (Pl 22.2 D-1)
The 100-yr intensity is 2.15 x 2.3 = 4.95 in/hr (Pl22.2 D-2)
The 100-yr flow rate is CIA = 1.00 x 4.95 x 0.059 = 0.29 cfs
The 100-yr volume is 1.00 x (2.3/12) x 2567 = 492 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)

Total flow = east + west
The 100-yr flow rate is .30 + .29 = .59 cfs
The 100-yr flow volume is 501 + 492 = 993 cu ft

FLOOD CONTROL

1. Runoff is controlled as shown on the plans.

2. The major features are:

A. Roof flow will be directed by gutters to the front and rear paving and thence to the street and alley. Almost all the rear (east) runoff flows north along the alley to Silver, then west to a drop inlet at Silver and Stanford. The remainder (4.4% * 0.29 cfs =

.013 cfs) flows south along the alley to Lead, and thence to a series of 3 drop inlets on Lead between Harvard and Yale. Runoff from the front of the lot flows south on Stanford to those same drop inlets.

There is a 100-yr flood hazard area at the location of these latter drop inlets. However, the impact of this project is minimal: from 0.26 cfs prior to development the flow rate increases to 0.30 + 0.01(3) =0.31 cfs, a difference of 0.05 cfs. Furthermore, the Drainage Master Study indicates that the 100-yr flooding problem is to be alleviated by System 212 02B, a parallel 21" R.C.P line for Coal Avenue, although this is not highest priority. For these reasons, and because there is no ponding required nearby, free discharge is proposed.

B. Sidewalk and yard rainfall will be retained in individual yards.

C. At the north and south edges of the east paving, a low asphalt roll curb protects adjacent property from any possible runoff.

D. The east end of the building is 1" below finished grade. A wider footing and one course of CMU 6" above grade protect the wood-frame wall.

3. The building is not located in a flood hazard area; therefore flood proofing is not required.

4. The only earthwork necessary will be minor grading and footing excavation. As indicated above, flow velocities are approximately 0.21 ft/sec for undeveloped conditions. Under developed conditions the unpaved portions of the lot (the yards) will be flat. Erosion will not be a problem and an erosion control plan is not required for this small lot.

END OF REPORT

EDGAR F. HARRISON
NO. 5145
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

1/16/85

revised 1/16/85 THG

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

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

January 22, 1985

Mr. August Mosimann
Engineering Associates, Inc.
532 Adams Street NE
Albuquerque, NM 87108

REF: GRADING AND DRAINAGE PLAN FOR 206 STANFORD APARTMENTS (K16-D15)

Dear Mr. Mosimann:

Based on the information provided on your January 17, 1985 resubmittal, listed you will find certain concerns that will need to be addressed before final approval is granted:

1. New information sheet with resubmittal designation.
2. Engineer's stamp with signature and revision date.
3. Erosion control statement within the plan advising contractor that no sediment is allowed to be deposited within City Right-of-Way during construction.
4. If alley is unimproved, adequate steps for erosion control must be addressed for east flows being generated from the roof and paved area.
5. In future submittals, please address Sections 23 C & D of the DPM.

If you have any questions or comments, please call me at 766-7644.

Sincerely yours,

Billy J. Goolsby

Billy J. Goolsby, PE
Civil Engineer/Hydrology

BJG:BJM:mrk

RESUBMITTAL 1/24/85

INFORMATION SHEET

PROJECT TITLE 206 Stanford Apartments

TYPE OF SUBMITTAL Grading Plan and Drainage Report

ZONE ATLAS PAGE NO. K-16 CITY ADDRESS 206 Stanford SE

LEGAL DESCRIPTION Lot 3-A, Block 15, University Heights Addn.

ENGINEERING FIRM Engineering Associates, Inc. CONTACT August F. Mosimann,P.E.

ADDRESS 532 Adams N.E. PHONE 265-6545

OWNER Shields and Co. CONTACT David Shields

ADDRESS 504 Richmond SE PHONE 255-7171

ARCHITECT Shields and Co. CONTACT David Shields

ADDRESS 504 Richmond SE PHONE 255-7171

SURVEYOR George Rodriguez CONTACT George Rodriguez

ADDRESS 12800 San Juan NE PHONE 296-5978

CONTRACTOR Shields and Co. CONTACT David Shields

ADDRESS 504 Richmond SE PHONE 255-7171

RECEIVED JAN 24 1985 HYDROLOGY SECTION

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

DATE ~~SUBMITTED~~ RESUBMITTED 1/24/85

BY August F. Mosimann,P. E.
for
Engineering Associates, Inc.

AUGUST F. MOSIMANN STATE OF NEW MEXICO NO. 6148 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

January 30, 1985

August Mosimann
Engineering Associates, Inc.
532 Adams Street, NE
Albuquerque, New Mexico 87108

RE: REVISED GRADING & DRAINAGE PLAN FOR 206 STANFORD APARTMENTS (K-16/D15) ENGINEER'S STAMP DATED JANUARY 24, 1985

Dear Mr. Mosimann:

Based on the information provided on your January 24, 1985 resubmittal, the referenced drainage plan is approved.

Please include a copy of this approved plan along with the appropriately approved drawing (P-151-78) for the alley paving within the construction sets before Hydrology will sign-off.

If you have any questions or comments, please feel free to call me at 766-7644.

Cordially,

Billy J. Goolsby

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

BJG:BJM/bsj