HYDROLOGY

E19/D20

FARMERS INSURANCE

GROUP CLAIMS OFFICE

E19-D20

1 PLAN

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

December 6, 1982

Mr. James A. Innis
Engineering Assoc., Inc.
1801 Lomas Blvd. NW
Albuquerque, New Mexico 87104

Re: Farmers Insurance Group Claims Office File No. E19-D20

Dear Mr. Innis:

The Hydrology Section needs the following information to continue review of the proposed grading and drainage plan:

1. Completed Information Sheet.
2. Vicinity maps
3. Legal description
   A. Current plat
4. Professional engineer's stamp and signature
5. Soil types
6. Delineation of off-site watersheds if any
7. Quantifications and locations of off-site flow for the 10 year and 100 year storms
8. Proposed treatment of off-site flows
9. Verification of adequacy of downstream systems
10. Right-of-way and easements to accomodate item 8
11. Flow rate calculations and volume calculations for on-site developed and undeveloped conditions and depth of flows for the 10 year and 100 year flow rates.
    Verification of adequate downstream facilities
12. Provision for nuisance waters on-site

Please address the aforementioned items and resubmit your drainage and grading plan for further review.

Sincerely,

Andre Houle

Andre Houle, PE
Civil Engineer/Hydrology

AH/el

cc: ✓ Drainage File
Reading File

James Innis
August F. Mosimann

engineering associates, inc.

December 17, 1982

1801
Lomas Boulevard, NW
Albuquerque, N. M.
87104
(505) 242-7522

Andre Houle, PE
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Farmers Insurance Group Claims Office

Dear Andre'

This letter is a reply to your comments on the above referenced project made to Mr. James Innis in your letter dated Dec. 6, 1982.

Item 1: A completed information sheet is included with this letter.

Item 2: A vicinity map is included with this letter.

Item 3: A copy of the current survey is included with this letter.

Item 4: The drawings which were submitted to the building department have been stamped and signed.

Items 5,6,7,8,10 & 11: have been addressed in the drainage summary attached to this letter.

Items 9 and 12: Runoff from the site flows into Cubero Drive in which it is conveyed to Academy Road which carries it west to a location between McKinney St. and Burlison Dr. where it is routed south into a 100 year drainage channel.

None of the currently available information, including the City of Albuquerque's Ortho-Topo Maps, Master Drainage Study Maps, Flood Hazard Maps, Flood plain Maps, or Flood Hazard Boundary Maps, indicates any flood danger in any of these facilities. The contribution to runoff from the Farmers Insurance Site is miniscule in comparison to the overall water shed conveyed in these facilities. I therefore am certain that they are capable of carrying the increased runoff.

Item 13: There are no nuisance waters on the site. All runoff is discharged into Cubero.

In addition to the above I would like to point out that the Farmer's Insurance Site is part of a Master Drainage Study entitled "Storm Drainage Study
Relative to Development of Tr. A.
and a portion of Tr. B
Bear Canyon Village for the
North Towne Shopping Center."
This report is on file in your office. In prepairing the plans we reviewed the report

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

and complied fully with its recommendations which called for free discharge into Cubero. In fact, the entire shopping center was built according to the guidelines of the report. I therefore know of no reason the project cannot be built exactly as drawn.

Sincerely,

August F. Mosimann

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

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

January 5, 1983

Mr. August F. Mosimann
Engineering Associates
1801 Lomas Blvd.
Albuquerque, New Mexico 87104

Ref: Farmers Insurance Group
Claims Office (E19-F15)

Dear Mr. Mosimann:

I have reviewed your December 17, 1982 submittal and the approved 1977 drainage report. As stated in your letter this site is allowed free discharge to Culera Street.

Please review your grading plan and revise the flow arrows indicating Wyoming Blvd. runoff being diverted through the site. Please note also that all flow must exit through the drive pad and cannot be run across sidewalks and parkways.

I remain at your service to finalize this project.

Sincerely,

Andre Houle, PE
Civil Engineer/Hydrology

AH/el

cc: Drainage File
Reading File

INFORMATION SHEET

PROJECT TITLE Farmers Insurance Claims Office TYPE OF SUBMITTAL Grading Plan

ZONE ATLAS PAGE NO. E-19 CITY ADDRESS 5925 Wyoming N. E.

LEGAL DESCRIPTION Tract C, North Town Plaza

ENGINEERING FIRM Engineering Associates, Inc. CONTACT James A. Innis, P. E.

ADDRESS 1801 Lomas Blvd N. W. PHONE 242-7522

OWNER Farmers Insurance Group CONTACT

ADDRESS 4680 Wilshire Blvd, L. A. California PHONE

ARCHITECT O. G. Anderson/Drake E. Joslin CONTACT Orville Anderson

ADDRESS 1425 Brentwood St., Lakewood, Colo. PHONE 1-303-233-5220

SURVEYOR N/A CONTACT

ADDRESS PHONE

CONTRACTOR Buckner Construction Inc CONTACT Rudy Buckner

ADDRESS 629 San Mateo S. E. Albuq PHONE 265-7749

DATE SUBMITTED Dec 17, 1982

BY August F. Mosimann
for
Engineering Assoc Inc.

FARMERS INSURANCE CLAIMS OFFICE

The site is located at the southwest corner of Wyoming and Cubero, Northeast. It consists of a 35434 Sq. Ft. lot which is approximatesy 40% impervious. Runoff is from the southeast toward the northwest.

UNDEVELOPED SITE FLOWS

The area is 35434 Sq. Ft.(.813 Acres)
The impervious portion is 40%
The soil classification is "B", EtC
(Soil Survey Sheet 21)
The "C" factor is .52
(Plate 22.2 C-1)
The runoff length is 240 ft.
The slope is 3.8%
The Concentration time is .0078x(240^.77)/(.038^.385)=1.87 min
(10 min minimum)
The average velocity is 240/(10x60)=.4 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.52x5.16x0.813=2.18 cfs
The 10 year flow rate is Q=CxIxA=.52x3.4x.813=1.44 cfs.
The 100 year volume is V=CxPxA=.52x2.4x35434/12=3685 cu. ft.
The 10 year volume is V=CxPxA=.52x1.58x35434/12=2426 cu ft.

ON-SITE FLOWS

The project includes a 6910 Sq. Ft. building, 11029 Sq. Ft. of landscaping, and 17495 Sq. Ft. of paving. The total area is 35434 Sq. Ft. of which 24405 Sq. Ft. is impervious.

The area is 35434 Sq. Ft.(.813 Acres)
The impervious portion is 69%
The soil classification is "B", EtC
(Soil Survey Sheet 21)
The "C" factor is .68
(Plate 22.2 C-1)
The runoff length is 240 ft.
The slope is 3.8%
The Concentration time is .0078x(240^.77)/(.038^.385)=1.87 min
(10 min minimum)
The average velocity is 240/(10x60)=.4 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.68x5.16x0.813=2.85 cfs
The 10 year flow rate is Q=CxIxA=.68x3.4x.813=1.88 cfs.
The 100 year volume is V=CxPxA=.68x2.4x35434/12=4819 cu. ft.
The 10 year volume is V=CxPxA=.68x1.58x35434/12=3173 cu ft.

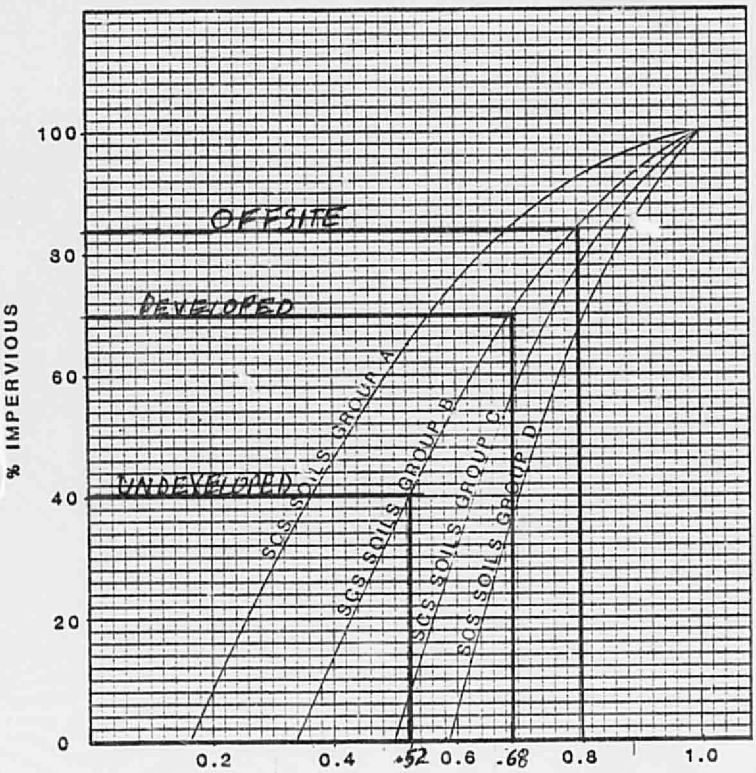
OFFSITE FLOWS

Offsite flows originate from the drive up bank building to the south of the site.The total area is 9927 Sq. Ft. of which 8372 Sq. Ft. is impervious. The remainder is grass.

The area is 9927 sq. ft.(0.288 Acres)
The impervious portion is 84%
The soil classification is "B", EtC
(Soil Survey Sheet 21)
The "C" facto.r is .8
(Plate 22.2 C-1)
The runoff length is 110 ft.
The slope is 1%
The Concentration time is .0078x(110^.77)/(.01^.385)=1.71 min
(10 min minimum)
The average velocity is 110/(10x60)=.2 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.8x5.16x0.228=0.94 cfs
The 10 year flow rate is Q=CxIxA=.8x3.4x.228=.62 cfs.
The 100 year volume is V=CxPxA=.8x2.4x9927/12=1588 cu. ft.
The 10 year volume is V=CxPxA=.8x1.58x9927/12=1046 cu ft.

DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR



HYDROLOGY

E19/D20

FARMERS INSURANCE

GROUP CLAIMS OFFICE

E19-D20

1 PLAN

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

December 6, 1982

Mr. James A. Innis
Engineering Assoc., Inc.
1801 Lomas Blvd. NW
Albuquerque, New Mexico 87104

Re: Farmers Insurance Group Claims Office File No. E19-D20

Dear Mr. Innis:

The Hydrology Section needs the following information to continue review of the proposed grading and drainage pl

1. Completed Information Sheet.
2. Vicinity maps
3. Legal description
   A. Current plat
4. Professional engineer's stamp and signature
5. Soil types
6. Delineation of off-site watersheds if any
7. Quantifications and locations of off-site flow for the 10 year and 100 year storms
8. Proposed treatment of off-site flows
9. Verification of adequacy of downstream systems
10. Right-of-way and easements to accomodate item 8
11. Flow rate calculations and volume calculations for on-site developed and undeveloped conditions and depth of flows for the 10 year and 100 year flow rates.
12. Verification of adequate downstream facilities
13. Provision for nuisance waters on-site

Please address the aforementioned items and resubmit your drainage and grading plan for further review.

Sincerely,

Andre Houle

Andre Houle, PE
Civil Engineer/Hydrology

AH/el

cc: ✓Drainage File
Reading File

James Innis
August F. Mosimann

engineering associates, inc.

December 17, 1982

1801
Lomas Boulevard, NW
Albuquerque, N. M.
87104
(505) 242-7522

Andre Houle, PE
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Farmers Insurance Group Claims Office

Dear Andre'

This letter is a reply to your comments on the above referenced project made to Mr. James Innis in your letter dated Dec. 6, 1982.

Item 1: A completed information sheet is included with this letter.

Item 2: A vicinity map is included with this letter.

Item 3: A copy of the current survey is included with this letter.

Item 4: The drawings which were submitted to the building department have been stamped and signed.

Items 5,6,7,8,10 & 11: have been addressed in the drainage summary attached to this letter.

Items 9 and 12: Runoff from the site flows into Cubero Drive in which it is conveyed to Academy Road which carries it west to a location between McKinney St. and Burlison Dr. where it is routed south into a 100 year drainage channel.

None of the currently available information, including the City of Albuquerque's Ortho-Topo Maps, Master Drainage Study Maps, Flood Hazard Maps, Flood plain Maps, or Flood Hazard Boundary Maps, indicates any flood danger in any of these facilities. The contribution to runoff from the Farmers Insurance Site is miniscule in comparison to the overall water shed conveyed in these facilities. I therefore am certain that they are capable of carrying the increased runoff.

Item 13: There are no nuisance waters on the site. All runoff is discharged into Cubero.

In addition to the above I would like to point out that the Farmer's Insurance Site is part of a Master Drainage Study entitled "Storm Drainage Study
Relative to Development of Tr. A.
and a portion of Tr. B
Bear Canyon Village for the
North Towne Shopping Center."

This report is on file in your office. In prepairing the plans we reviewed the report

Architectural Structural
Civil Structural
Site Analysis
Drainage Studies
Computer Applications

and complied fully with its recommendations which called for free discharge into Cubero. In fact, the entire shopping center was built according to the guidelines of the report. I therefore know of no reason the project cannot be built exactly as drawn.

Sincerely,

August F. Mosimann

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

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

January 5, 1983

Mr. August F. Mosimann
Engineering Associates
1801 Lomas Blvd.
Albuquerque, New Mexico 87104

Ref: Farmers Insurance Group
Claims Office (E19-F15)

Dear Mr. Mosimann:

I have reviewed your December 17, 1982 submittal and the approved 1977 drainage report. As stated in your letter this site is allowed free discharge to Culera Street.

Please review your grading plan and revise the flow arrows indicating Wyoming Blvd. runoff being diverted through the site. Please note also that all flow must exit through the drive pad and cannot be run across sidewalks and parkways.

I remain at your service to finalize this project.

Sincerely,

Andre Houle, PE
Civil Engineer/Hydrology

AH/el

cc: Drainage File
Reading File

INFORMATION SHEET

PROJECT TITLE Farmers Insurance Claims Office TYPE OF SUBMITTAL Grading Plan

ZONE ATLAS PAGE NO. E-19 CITY ADDRESS 5925 Wyoming N. E.

LEGAL DESCRIPTION Tract C, North Town Plaza

ENGINEERING FIRM Engineering Associates, Inc. CONTACT James A. Innis, P. E.

ADDRESS 1801 Lomas Blvd N. W. PHONE 242-7522

OWNER Farmers Insurance Group CONTACT

ADDRESS 4680 Wilshire Blvd, L. A. California PHONE

ARCHITECT O. G. Anderson/Drake E. Joslin CONTACT Orville Anderson

ADDRESS 1425 Brentwood St., Lakewood, Colo. PHONE 1-303-233-5220

SURVEYOR N/A CONTACT

ADDRESS PHONE

CONTRACTOR Buckner Construction Inc CONTACT Rudy Buckner

ADDRESS 629 San Mateo S. E. Albuq PHONE 265-7749

DATE SUBMITTED Dec 17, 1982

BY August F. Mosimann
for
Engineering Assoc Inc.

FARMERS INSURANCE CLAIMS OFFICE

The site is located at the southwest corner of Wyoming and Cubero, Northeast. It consists of a 35434 Sq. Ft. lot which is approximatesy 40% impervious. Runoff is from the southeast toward the northwest.

UNDEVELOPED SITE FLOWS

The area is 35434 Sq. Ft.(.813 Acres)
The impervious portion is 40%
The soil classification is "B", EtC
(Soil Survey Sheet 21)
The "C" factor is .52
(Plate 22.2 C-1)
The runoff length is 240 ft.
The slope is 3.8%
The Concentration time is .0078x(240^.77)/(.038^.385)=1.87 min
(10 min minimum)
The average velocity is 240/(10x60)=.4 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.52x5.16x0.813=2.18 cfs
The 10 year flow rate is Q=CxIxA=.52x3.4x.813=1.44 cfs.
The 100 year volume is V=CxPxA=.52x2.4x35434/12=3685 cu. ft.
The 10 year volume is V=CxPxA=.52x1.58x35434/12=2426 cu ft.

ON-SITE FLOWS

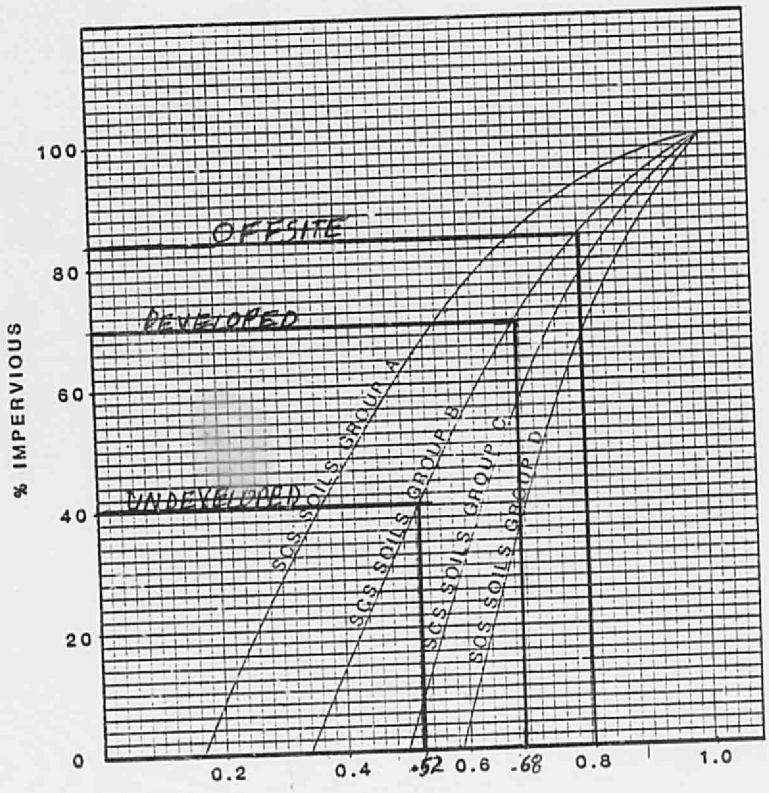
The project includes a 6910 Sq. Ft. building, 11029 Sq. Ft. of landscaping, and 17495 Sq. Ft. of paving. The total area is 35434 Sq. Ft. of which 24405 Sq. Ft. is impervious.

The area is 35434 Sq. Ft.(.813 Acres)
The impervious portion is 69%
The soil classification is "B", EtC
(Soil Survey Sheet 21)
The "C" factor is .68
(Plate 22.2 C-1)
The runoff length is 240 ft.
The slope is 3.8%
The Concentration time is .0078x(240^.77)/(.038^.385)=1.87 min
(10 min minimum)
The average velocity is 240/(10x60)=.4 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.68x5.16x0.813=2.85 cfs
The 10 year flow rate is Q=CxIxA=.68x3.4x.813=1.88 cfs.
The 100 year volume is V=CxPxA=.68x2.4x35434/12=4819 cu. ft.
The 10 year volume is V=CxPxA=.68x1.58x35434/12=3173 cu ft.

OFFSITE FLOWS

Offsite flows originate from the drive up bank building to the south of the site.The total area is 9927 Sq. Ft. of which 8372 Sq. Ft. is impervious. The remainder is grass.

The area is 9927 sq. ft.(0.288 Acres)
The impervious portion is 84%
The soil classification is "B", EtC
(Soil Survey Sheet 21)
The "C" facto.r is .8
(Plate 22.2 C-1)
The runoff length is 110 ft.
The slope is 1%
The Concentration time is .0078x(110^.77)/(.01^.385)=1.71 min
(10 min minimum)
The average velocity is 110/(10x60)=.2 ft/sec
The 100 year-6 hour precipitation amount is 2.4 in.
(Plate 22.2 D-1)
The 10 year-6 hour precipitation amount is 2.4x0.657=1.58 in.
(Plate 22.2 D-1)
The 100 year intensity is 2.15x2.4=5.16 in/hr.
The 10 year intensity is 2.15x1.58=3.40 in/hr.
The 100 year flow rate is Q=CxIxA=.8x5.16x0.228=0.94 cfs
The 10 year flow rate is Q=CxIxA=.8x3.4x.228=.62 cfs.
The 100 year volume is V=CxPxA=.8x2.4x9927/12=1588 cu. ft.
The 10 year volume is V=CxPxA=.8x1.58x9927/12=1046 cu ft.

DRAINAGE CRITERIA

DETERMINATION OF RATIONAL FORMULA 'C' FACTOR