PUBLIC WORKS/HYDROLOGY

F18/D12

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F18/012

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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

March 11, 1986

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: REVISED DRAINAGE PLAN FOR EMERALD SQUARE SHOPPING CENTER
RECEIVED FEBRUARY 19, 1986 (F-18/D12)

Dear Fred:

The referenced plan, revision date February 14, 1986, is approved.

If the building permit has already been issued, it is your responsibility to see that the contractor gets a copy of the revised plan. Also, prior to Certificate of Occupancy release, site must be replatted to move lot lines, or all tracts must be covered with drainage easements.

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

Cordially,

Carlos A. Montoya

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

cc: Westcor Development
505 Marquette, NW

BJM:CAM/bsj

0000 0000 1592

DRAINAGE INFORMATION SHEET

PROJECT TITLE: EMERALD SQUARE SHOPPING CENTER ZONE ATLAS/DRAINAGE FILE #: F-18/D12

LEGAL DESCRIPTION: TRACTS A-1 & B-1 CAMPTOWN ADDITION

CITY ADDRESS: 5204 SAN MATEO NE

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: FRED ARFMAN

ADDRESS: 128 MONROE, ALBUQ PHONE: 268-8828

OWNER: WESTCOR DEVELOPMENT CONTACT: ED BECVARIK

ADDRESS: 505 MARQUETTE NW, ALBUQ PHONE: 243 - 1031

ARCHITECT: DEKKER & ASSOCIATES CONTACT: DALE DEKKER

ADDRESS: 600 1ST NW, ALBUQ PHONE: 247 - 2888

SURVEYOR: FRANKLIN E. WILSON SURVEYING COMPANY CONTACT: FRANK WILSON

ADDRESS: 333 LOMAS, NE ALBUQ PHONE: 247- 4444

CONTRACTOR: UNKN CONTACT: —

ADDRESS: — PHONE: —

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
FEB 19 1986
HYDROLOGY SECTION

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT (EXHIBIT ONLY)

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

X SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL (APPROVED 12-16-85)

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

X OTHER REVISED PLANS (SPECIFY)

DATE SUBMITTED: FEB. 19, 1986

BY: Fred C. Arfman

REV. 6/85

25 x 10

0000 0000 1543

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

December 16, 1985

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINGE REPORT FOR EMERALD SQUARE SHOPPING CENTER
SUBMITTED NOVEMBER 19, 1985 FOR SITE DEVELOPMENT PLAN
AND DECEMBER 4, 1985 FOR BUILDING PERMIT APPROVAL
(F-18/D12)

Dear Fred:

The referenced submittal dated December 2, 1985, is approved for Site Development Plan and Building Permit. Prior to Certificate of Occupancy approval, site must be replatted to remove lot lines, or all tracts covered with a drainage easement.

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

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Design Hydrology

cc: Westcor Development
505 Marquette, NW

RAG/bsj

25×10

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Emerald Square Shopping Center ZONE ATLAS/DRAINAGE FILE # F-18/D12

LEGAL DESCRIPTION: Tracts A-1 & B-1 Camptown Addition

CITY ADDRESS: 5204 San Mateo N.E.

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Fred Arfman

ADDRESS: 128 Monroe, Albuquerque, N.M. PHONE: 268-8828

OWNER: Westcor Development CONTACT: Ed Becvarik

ADDRESS: 505 Marquette N.W. Albuquerque, N.M. PHONE: 243-1031

ARCHITECT: Dekker & Associates CONTACT: Dale Dekker

ADDRESS: 600 1st N.W. Albuquerque, N.M. PHONE: 247-2888

SURVEYOR: Southwest Surveying Company CONTACT: Frank Wilson

ADDRESS: 333 Lomas N.E., Albuquerque, N.M. PHONE: 247-4444

CONTRACTOR: UNKN CONTACT: -

ADDRESS: - PHONE: -

PRE-DESIGN MEETING:

RECEIVED
DEC 04 1985
HYDROLOGY SECTION

_X_ YES

___ NO

_X_ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

_X_ DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ 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: Dec. 4, 1985

BY: Scott M McGee

REV. 6/85

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: EMERALD SQUARE SHOPPING CENTER ZONE ATLAS/DRAINAGE FILE # F-18/D12

LEGAL DESCRIPTION: TRACTS A-1 & B-1 CAMPTOWN ADDITION

CITY ADDRESS: 5204 SAN MATEO NE

ENGINEERING FIRM: ISAACSON & AREMAN, PA CONTACT: FRED AREMAN

ADDRESS: 128 MONROE, ALBUQ PHONE: 268-8828

OWNER: WESTCOR DEVELOPMENT CONTACT: ED BECVARIK

ADDRESS: 505 MARQUETTE NW, ALBUQ PHONE: 243 - 1031

ARCHITECT: DEKKER & ASSOCIATES CONTACT: DALE DEKKER

ADDRESS: 600 1ST NW, ALBUQ PHONE: 247 - 2888

SURVEYOR: FRANKLIN E. WILSON CONTACT: FRANK WILSON

ADDRESS: 333 LOMAS, NE ALBUQ PHONE: 247-4444

CONTRACTOR: UNKN CONTACT: —

ADDRESS: — PHONE: —

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
NOV 19 1985
HYDROLOGY SECTION

DRB NO. 85-695 10/15/85

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

X SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: Nov 19, 1985

BY: Scott M McGee

REV. 6/85

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: E-18 DATE: 10/10/85

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Emerald Plaza Commercial Center

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: Tracts A-1, B-1 Camptown Addn.

APPROVAL REQUESTED:

____ PRELIMINARY PLAT	_X_ FINAL PLAT
_X_ SITE DEVELOPMENT PLAN	____ BUILDING PERMIT
____ OTHER	____ ROUGH GRADING

ATTENDANCE:	WHO	REPRESENTING
	Fred Artman	Isaacson & Artman P.A.
	Billy Goolsby	City / Design Hydrology

FINDINGS:

① Minimum requirement shall be a conceptual drainage plan for Site Development Plan approval. Plan shall be of sufficient detail to show adequate drainage scheme and approximate size of any necessary drainage facilities.

② Site previously developed. Therefore, discharge shall remain the same or less than existing unless it is demonstrated that sufficient downstream capacity is available for increased runoff.

~~③ An erosion control~~

③ A detailed drainage plan for building permit purposes will be required prior to Hydrology sign-off.

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:	Billy Goolsby	SIGNED:	Fred C. Artman
TITLE:	CE/Design Hydrology	TITLE:	E.
DATE:	10/10/85	DATE:	10/10/85

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

25 x 10

0000 0000 1541

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

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

March 11, 1986

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: REVISED DRAINAGE PLAN FOR EMERALD SQUARE SHOPPING CENTER
RECEIVED FEBRUARY 19, 1986 (F-18/D12)

Dear Fred:

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

Cordially,

Carlos A. Montoya

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

cc: Westcor Development
505 Marquette, NW

BJM:CAM/bsj

25×10

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

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

December 16, 1985

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINGE REPORT FOR EMERALD SQUARE SHOPPING CENTER
SUBMITTED NOVEMBER 19, 1985 FOR SITE DEVELOPMENT PLAN
AND DECEMBER 4, 1985 FOR BUILDING PERMIT APPROVAL
(F-18/D12)

Dear Fred:

The referenced submittal dated December 2, 1985, is approved for Site Development Plan and Building Permit. Prior to Certificate of Occupancy approval, site must be replatted to remove lot lines, or all tracts covered with a drainage easement.

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

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Design Hydrology

cc: Westcor Development
505 Marquette, NW

RAG/bsj

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FOLLOWING DOCUMENT(S)

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ALWAYS REPRODUCE WELL.

THIS RESULTS IN

A POOR FILM IMAGE.

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DRAINAGE REPORT

FOR

EMERALD SQUARE COMMERCIAL CENTER

5204 SAN MATEO NE

ALBUQUERQUE NEW MEXICO

NOVEMBER 1985

DRAINAGE REPORT

FOR

EMERALD SQUARE COMMERCIAL CENTER

5204 SAN MATEO NE

ALBUQUERQUE NEW MEXICO

NOVEMBER 1985

RECEIVED
DEC 04 1985
HYDROLOGY SECTION

Prepared by:

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, N.M. 87108

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER

12-2-85

Fred C. Arfman, P.E. Date

0000 0000 1602

I. INTRODUCTION

Emerald Square Commercial Center is comprised of three buildings with a total gross square footage of 58,068 sq. ft. The balance of the 5.4 acre site, currently zoned Commercial (C-2), will consist of asphaltic paving, concrete walks, and eleven percent landscaped area. See vicinity map in Appendix.

A pre-design meeting was held with Mr. Billy Goolsby of City Hydrology. The following findings were established as design criteria for this project:

1. Minimum requirement shall be a conceptual drainage plan for Site Development Plan approval. Plan shall be of sufficient detail to show adequate drainage scheme and approximate size of any necessary drainage facilities.

2. The site was previously developed; therefore, discharge shall remain the same or less than existing, unless it is demonstrated that sufficient downstream capacity is available for increased runoff.

3. A detailed drainage plan for building permit purposes will be required prior to Hydrology sign-off.

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II. SITE CHARACTERISTICS

A. Flood Hazard - As shown on Panel 17 of FEMA Flood Maps, this site is not within an established flood hazard area.

III. EROSION CONTROL PLAN

1. Rough Grading - Only the standard specifications of watering the ground's surface for dust control will be imposed upon this site.

2. Construction Phase - The site watering mentioned above will suffice during construction.

3. Permanent Phase - No erosion control measures are required once the site is completed. All ground surfaces shall be either impervious or landscaped.

IV. ONSITE CONDITIONS

A. The previously developed site conditions consist of abandoned asphalt paving, concrete walks and service areas, two commercial buildings, and hard packed dirt/gravel R.V. storage yards. All existing site surface improvements shall be demolished and removed.

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Present grading conditions are such that storm waters sheet flow to the westerly property line and exit into the public right-of-way of San Mateo Boulevard via four exiting driveway pads.

The calculations determining the previously developed runoff rates and volumes are as follows:

Area = 5.3972 ac. = 235,100 sq. ft.
Tc = 10 minutes D = 2.2" = 0.183'
I = 2.16 x 2.2 = 4.75"/hr

EXISTING COMPOSITE 'C' FACTOR

Asphalt, Roof, & Concrete	2.15/5.4 x 0.95 = 0.38
Hard Packed Gravel	0.60/5.4 x 0.85 = 0.09
Hard Packed Dirt	2.65/5.40 x 0.70 = 0.35
	Composite 'C' = 0.82

Q_{100} = (0.82)(4.75)(5.40) = 21.0 cfs
Q_{10} = (21.0)(.657) = 13.8 cfs
V_{100} = (0.82)(0.183)(235,100) = 35,279 cu.ft.
V_{10} = (35,279)(.657) = 23,178 cu.ft.

B. The proposed site shall consist of asphaltic paving, concrete walks, impervious roof areas and eleven percent landscaped area.

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Calculations determining the proposed redeveloped runoff rates and volumes follow:

PROPOSED COMPOSITE 'C' FACTOR

Landscaped Area	0.60/5.4 X 0.20	= 0.02
Asphalt, Roof, & Concrete	4.80/5.4 X 0.95	= 0.85
	Composite 'C'	= 0.87

Q_{100} = (0.87)(4.75)(5.40) = 22.3 cfs

Q_{10} = (22.3)(0.657) = 14.6 cfs

V_{100} = (0.87)(0.183)(235,100) = 37,430 cu.ft.

V_{10} = (37,430)(0.657) = 24,592

These values represent an increase of 6% in storm water runoff. This minor increase in runoff should be allowed to runoff as per the previous development since it is within the ±10% acceptable range of accuracy.

V. OFFSITE CONDITIONS

A. This site does not accept any off-site flows. The adjacent property to the east directs all generated storm waters to the north via a private storm drain which empties into the public storm drain network.

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The adjacent properties north and south both discharge their storm waters westward to the public right-of-way of San Mateo Boulevard.

VI. DOWNSTREAM CONDITIONS

From the Albuquerque Master Drainage Study (A copy of the portion covering this area and the corresponding map are found in the Appendix of this report); Analysis Points #2201 and #2301 detail the hydrologic characteristics of this area. The majority of the general storm waters exit the site at the two northerly drive pads, where they enter the 24" storm drain system via two catch basins adjacent to the site. The flows are then carried north to the Bear Canyon Arroyo. A small portion of the generated storm waters is carried south on San Mateo approximately 300' where it is picked up by storm drain inlets at the McLeod St. intersection.

The above referenced Master Drainage Study shows no overland flow required to handle 100 year flows at AP2201 and only 11 cfs of overland flow at AP2301. This suggests additional capacity is available as street flow.

25×

VII. SUMMARY & RECOMMENDATIONS

The increase in the 100 year flow rate of 1.3 cfs is a minor impact on the established flow rates, and sufficient additional downstream capacity exists as street flow.

1. Stormwaters are divided and carried offsite through four seperate drainage swales thereby preventing large amounts of runoff in any one location.

2. No offsite flows should be accepted onto the site.

3. Onsite flows shall be directed away from all building foundations.

4. Flows should be allowed to discharge onto San Mateo Boulevard via the four existing and proposed drive pads. Three

In addition, this site is located at the uppermost end of the drainage basin which contributes to the public system.

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APPENDIX

	Pg #
1. Information Sheet	8
2. Conference Recap	9
3. Vicinity Map	10
4. Flood Boundary Map	11
5. Albuquerque Master Drainage Study	12
6. A. M. D. S. Analysis Point Map	13
7. Drainage & Grading Plan (in pocket)	

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: Emerald Square Shopping Center ZONE ATLAS/DRAINAGE FILE # F-18

LEGAL DESCRIPTION: Tracts A-1 & B-1 Camptown Addition

CITY ADDRESS: 5204 San Mateo N.E.

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Fred Arfman

ADDRESS: 128 Monroe, Albuquerque, N.M. PHONE: 268-8828

OWNER: Westcor Development CONTACT: Ed Becvarik

ADDRESS: 505 Marquette N.W. Albuquerque, N.M. PHONE: 243-1031

ARCHITECT: Dekker & Associates CONTACT: Dale Dekker

ADDRESS: 600 1st N.W. Albuquerque, N.M. PHONE: 247-2888

SURVEYOR: Southwest Surveying Company CONTACT: Frank Wilson

ADDRESS: 333 Lomas N.E., Albuquerque, N.M. PHONE: 247-4444

CONTRACTOR: UNKN CONTACT: -

ADDRESS: - PHONE: -

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ 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: Dec. 4, 1985

BY: Scott M McGee

REV. 6/85

8

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: F-18 DATE: 10/10/85

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Emerald Plaza Commercial Center

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: Tracts A-1, B-1 Camptown Addn.

APPROVAL REQUESTED:

____ PRELIMINARY PLAT	_X_ FINAL PLAT
_X_ SITE DEVELOPMENT PLAN	____ BUILDING PERMIT
____ OTHER	____ ROUGH GRADING

	WHO	REPRESENTING
ATTENDANCE:	Fred Artman	Isaacson & Artman P.A.
	Billy Goolsby	City / Design Hydrology

FINDINGS:

① Minimum requirement shall be a conceptual drainage plan for Site Development ~~Plan~~ approval, Plan shall be of sufficient detail to show adequate drainage scheme and approximate size of any necessary drainage facilities.

② Site previously developed. Therefore, discharge shall remain the same or less than existing. ~~Cannot~~ unless ~~the~~ it is demonstrated that sufficient downstream capacity is available for increased runoff.

~~③ [redacted]~~

③ A detailed drainage plan for building permit purposes will be required prior to Hydrology sign-off.

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: Billy J. Goolsby SIGNED: Fred C. Artman

TITLE: CE/Design Hydrology TITLE: CE,

DATE: 10/10/85 DATE: 10/10/85

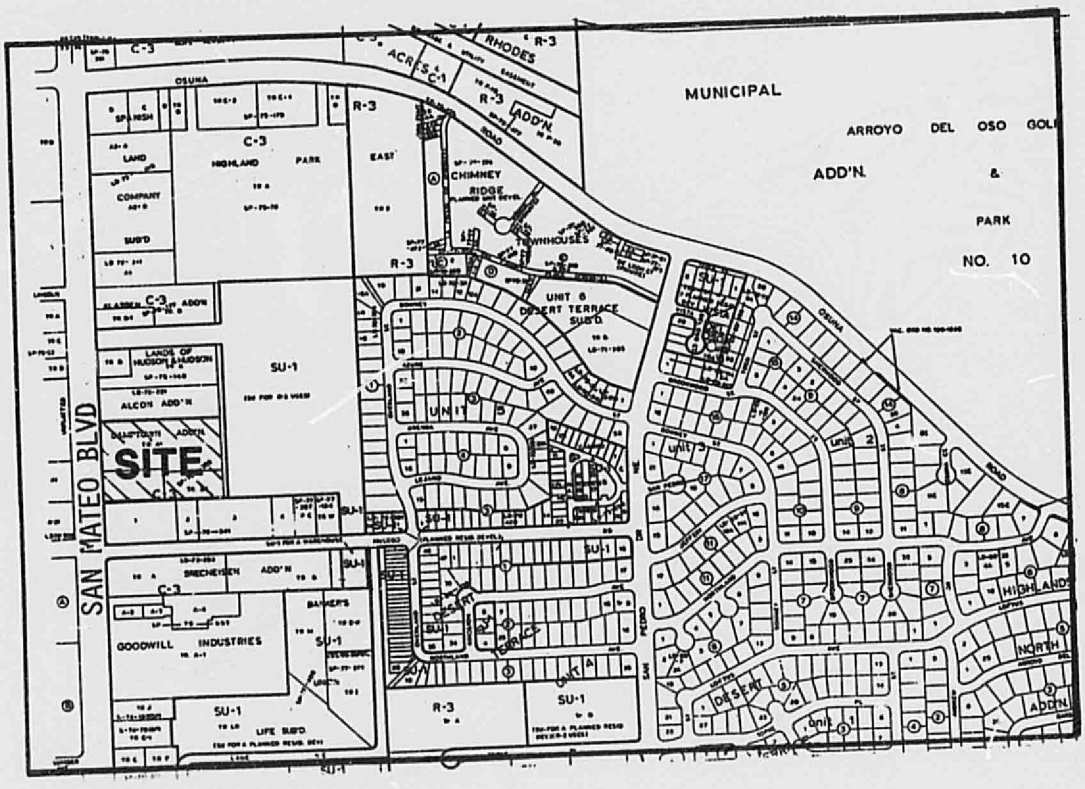
NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

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VICINITY MAP

ZONE ATLAS MAP NO. F-18



Isaacson & Arfman, P.A.

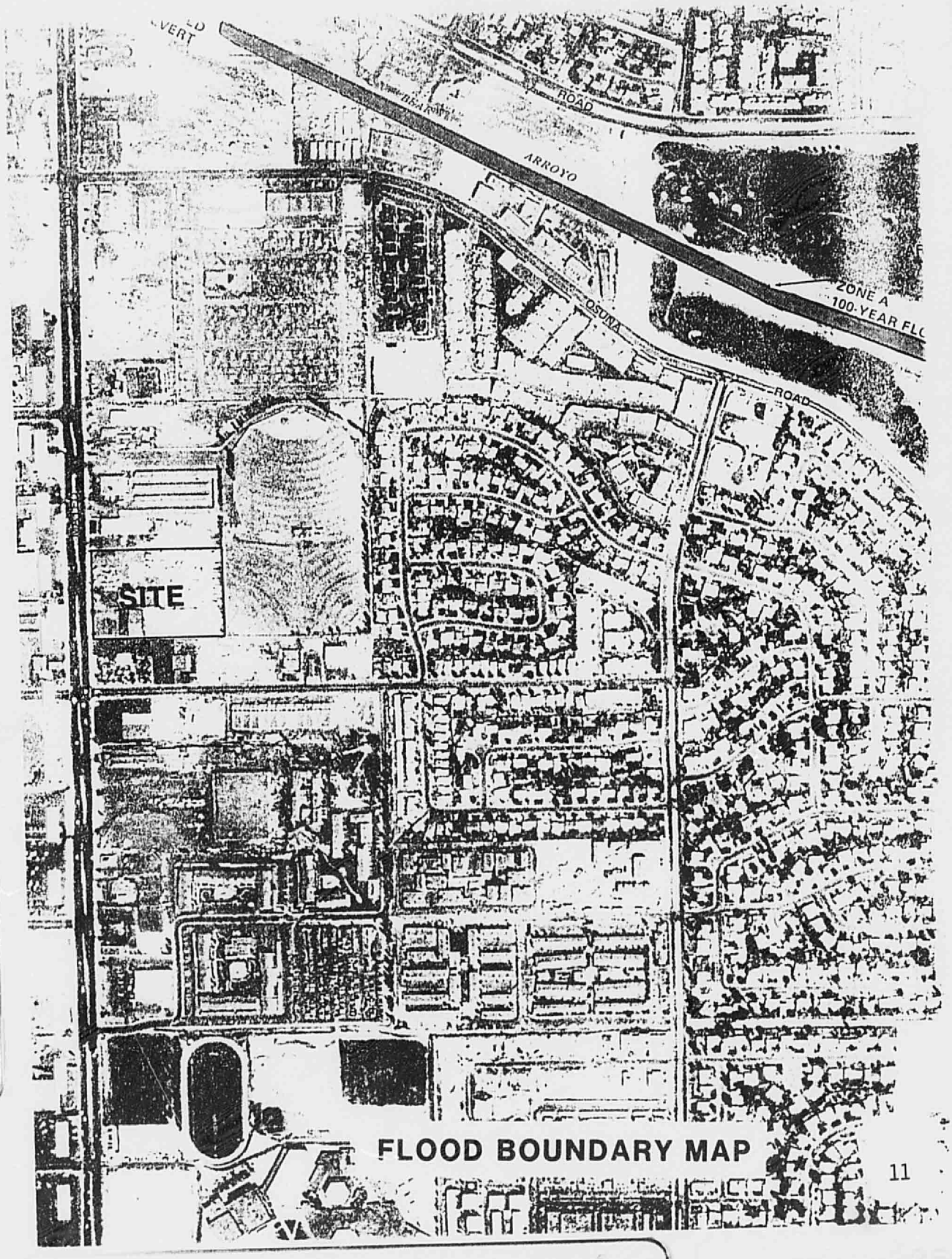
SUBJECT EMERALD SQUARE JOB NO.

BY DATE SHEET NO. 10 OF 14

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REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT



FLOOD BOUNDARY MAP

ALBUQUERQUE MASTER DRAINAGE STUDY
SUMMARY OF HYDROLOGIC AND HYDRAULIC ANALYSES

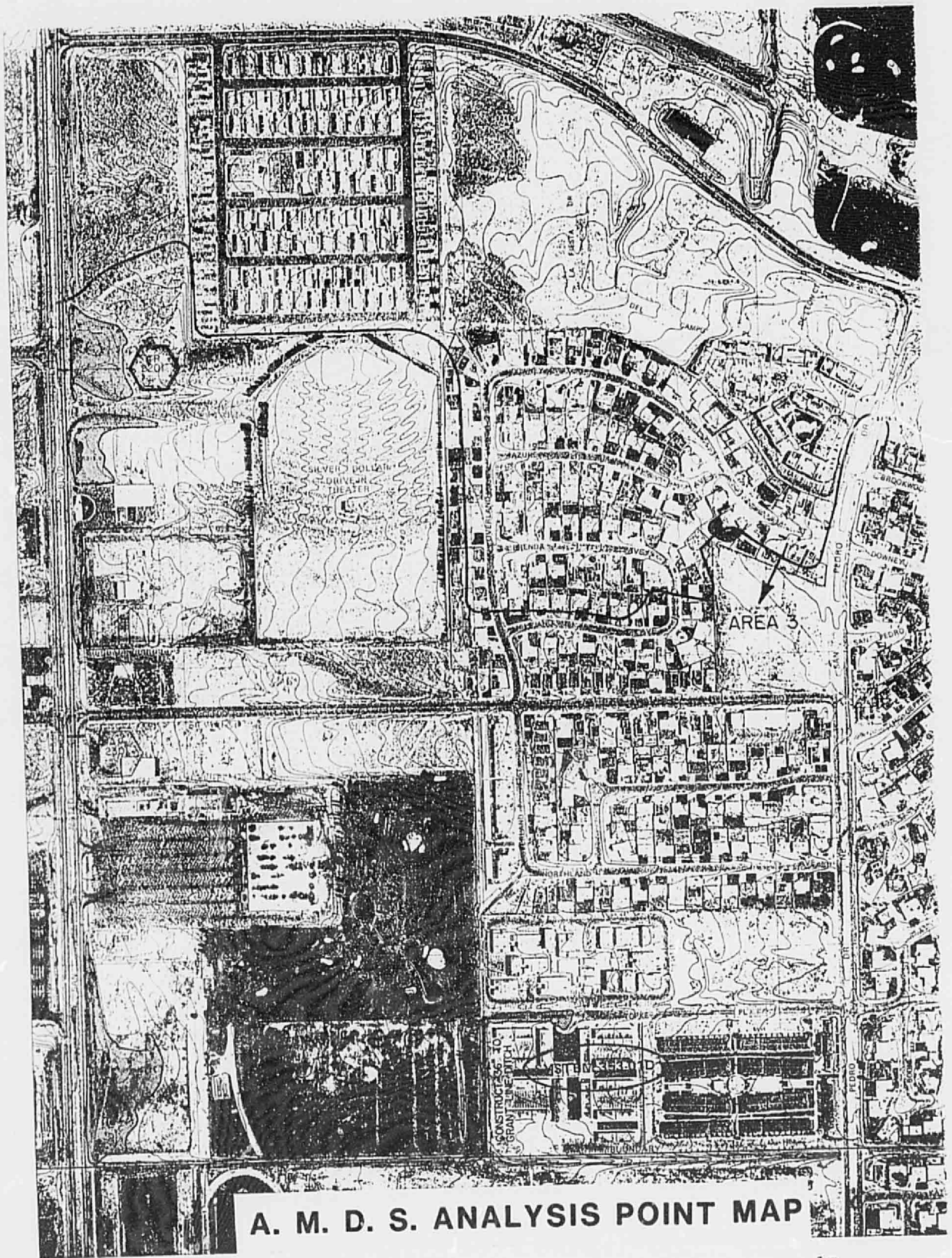
AREA 3

Location	10 - YEAR			100 - YEAR			Comments	
	Peak Discharge (c.f.s.) / Overland Flow	Flow Depth (ft.)	Velocity (ft./sec.)	Peak Discharge (c.f.s.) / Overland Flow	Flow Depth (ft.)	Velocity (ft./sec.)	Map	
ON CHEROKEE ROAD AT SAN MATEO (AP 2003)	43 / 27	.43	4.4	95 / 60	.67	5.8	G-17	
ON COMANCHE ROAD 500' EAST OF CARLISLE BLVD. (AP 2004)	67 / 0	0	0	121 / 36	.62	3.3	G-17	ALL FLOW OUTFALLS INTO STORM SEWER WHICH DUMPS INTO SEAR CANYON ARROYO
ON SAN MATEO BLVD. AT LINCOLN ROAD (AP 2201)	21 / 0	0	0	71 / 0	0	0	F-17 & F-18	SOUTH OF I-25
ALONG EAST I-25 FRONTAGE ROAD AT JEFFERSON STREET (AP 2202)	51 / 0	0	0	173 / 68	2.37	6.8	F-17	FROM JEFFERSON DOWN SOUTH SIDE OF I-25 FROM
ALONG EAST I-25 FRONTAGE ROAD AT MCLEOD ROAD (AP 2203)	51 / 0	2	0	216 / 156	1.01	6.2	F-17	JEFFERSON TO MC LEOD
ALONG EAST I-25 FRONTAGE ROAD AT GRANTLINE CHANNEL (AP 2204)	38 / 38	.45	2.6	167 / 167	1.10	6.4	F-16	ALL FLOW OUTFALLS INTO THE NORTH DIVERSION CHANNEL
ALONG EAST I-25 FRONTAGE ROAD AT GRANTLINE CHANNEL (AP 2205)	15 / 0	0	0	43 / 11	.27	2.4	F-17 & F-18	
ON SAN MATEO BLVD. AT MC LEOD ROAD (AP 2301)	37 / 37	.42	3.1	82 / 82	.56	6.2	F-17 & F-18	ALL FLOW OUTFALLS INTO GRANT LINE DITCH
ON SAN MATEO BLVD. 100' SOUTH OF GRANT LINE CHANNEL (AP 2302)	29 / 29	.52	3.3	58 / 58	.66	6.1	H-18	ALL FLOW OUTFALLS INTO ENCHADO DIVERSION CHANNEL
ON PALOMAS DRIVE AND I-40 CHANNEL (AP 2401)	46 / 46	.53	5.0	98 / 98	.68	6.4	H-17 & H-18	ALL FLOW OUTFALLS INTO ENCHADO DIVERSION CHANNEL
ON SAN MATEO PL. AND I-40 CHANNEL (AP 2501)	38 / 0	0	0	77 / 0	0	0	H-17	ALL FLOW CARRIED BY STORM SEWER
ON PROSPECT AVENUE AT SAN MATEO BLVD. (AP 2601)	48 / 48	.46	3.2	196 / 196	.90	6.8	F-17	RUNNING SOUTH WEST ALONG I-25
ALONG EAST I-25 FRONTAGE ROAD AT LINCOLN ROAD (AP 2701)	79 / 0	0	0	198 / 97	.61	3.9	H-17	WEST ON LOS ARBOLES FROM GRACELAND
ON LOS ARBOLES ROAD AT MONTCLAIRE DRIVE (AP 2801)	117 / 0	0	0	271 / 96	.68	5.4	G-16	ALL FLOW OUTFALLS INTO THE NORTH DIVERSION CHANNEL
ON CANDELARIA INTERCEPTOR DITCH AT AMHERST DRIVE (AP 2802)	22 / 22	.38	4.8	92 / 92	.63	5.7	G-17 & G-16	
ON CARLISLE BLVD. SOUTH OF COMANCHE ROAD (AP 2904)	155 / 0	0	0	328 / 102	.60	7.3	H-18	
ON UPTOWN BLVD. AT LOUISIANA BLVD. (AP 2701)	53 / 0	0	0	130 / 54	.48	5.7	H-18	ALL FLOW OUTFALLS INTO STRUCTURE UNDER SAN PEDRO AND INTO ENCHADO CHANNEL
ON SAN PEDRO BLVD. AT 300' S. OF INDIAN SCHOOL ROAD (AP 3801)	53 / 0	0	0	130 / 54	.48	5.7	H-18	

MASTER DRAINAGE STUDY

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OF THE ORIGINAL DOCUMENT



A. M. D. S. ANALYSIS POINT MAP

0000 0000 16 15

A&E ENGINEERING INC.

CIVIL ENGINEERING, LAND PLANNING, AND SURVEYING

April 16, 1974

RECEIVED
APR 17 1974
CITY ENGINEERS

Mr. Quentin R. Kielich
City Engineer
City of Albuquerque
Albuquerque, New Mexico

Dear Mr. Kielich:

Transmitted herewith is a copy of the Drainage Report for the Pizza Hut No. 9 for your review and approval. Pizza Hut No. 9 is located on the east side of San Mateo N.E., between Birdie-Bogey Lane N.E. and McLeod Road N.E.

Your prompt attention will be greatly appreciated.

Sincerely,

A&E ENGINEERING, INC.

John F. Esquibel
President

JFE:jg

APPROVED FOR DRAINAGE
23 Apr 74
ACE
DATE
TITLE
SIGNATURE
CONTINGENCIES

4100 SILVER S.E. ALBUQUERQUE, NEW MEXICO 87108 505/266-8791

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DRAINAGE REPORT

FOR

PIZZA HUT NO. 9

Albuquerque, New Mexico

PREPARED FOR:

PIZZA CORPORATION OF AMERICA

Wichita, Kansas

BY:

A & E ENGINEERING, INC.
4100 Silver S.E.
Albuquerque, New Mexico

April, 1974

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR No. 2933 NEW MEXICO T. M. CONRARDY

T. M. Conrardy, P.E. & L.S. 2933

25×10

DRAINAGE REPORT

PIZZA HUT

NO. 9

Albuquerque, New Mexico

TABLE OF CONTENTS

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Development	1
Proposed Onsite Drainage Plans	2
Discussion of Method	2
Onsite Drainage Calculations	2-3
Summary	3

Plates

0000 0000 16 18

GENERAL

This report consists of a hydrologic study of a probable 100-year storm affecting this proposed development being Tract C-1, within the Elena Gallegos Grant, City of Albuquerque, referred to herein as the Pizza Hut No. 9.

LOCATION AND DESCRIPTION

The Pizza Hut No. 9 parcel is a proposed 0.83 acre development situated in Section 36, Township 11 North, Range 3 East, N.M.P.M. and is designated Tract C-1, Elena Gallegos Grant on a plat recorded in Bernalillo County, New Mexico on March 21, 1974. The development is located on the east side of San Mateo Boulevard, N.E. between Birdie-Bogey Lane, N.E. and McLeod Road, N.E.

The development is bordered by the Camptown Trailer Sales on the north, vacant land on the east and south all of which contribute no runoff to the subject area. There are no outside contributing drainage areas onto this development.

The natural terrain of the Pizza Hut No. 9 parcel slopes to the southwest at about a 2.06 percent grade.

DEVELOPMENT

This parcel of land is to be developed into a restaurant, lounge and liquor store. It will be paved and landscaped to retain storm water on the property so that a lesser amount will flow onto San Mateo Boulevard. Ponding depressions will be constructed to contain the largest percentage of the storm water. The architect has designed the roofs to drain the water onto the parking area and ponding areas.

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PROPOSED ONSITE DRAINAGE PLANS

In order to control the onsite drainage and reduce the runoff limiting street and parking lot grades have been set to reduce velocity and overland flows.

Being a small parcel of land, the tract has been considered as a single unit of drainage before and after development.

No provision has been made for offsite drainage as there is no outside contributing drainage onto this area.

DISCUSSION OF METHOD

Development of this area will be controlled by the guidelines set forth in the recent Resolution of the Albuquerque Metropolitan Arroyo Flood Control Authority.

The amount of storm water is computed by using a 100-year storm, this being a storm consisting of 100-year 6 hours precipitation as shown by the Rainfall Frequency Maps for New Mexico, June, 1967, published by the Special Studies Branch, Office of Hydrology, United States Weather Bureau.

Ponding areas were calculated so that the volume of water ponded would exceed the increased volume runoff resulting from the development.

ONSITE DRAINAGE CALCULATIONS

The 100-year 6 hour precipitation factor is 2.5 inches.

The area is 0.83 acre = 38,994 sq. ft.

Volume of water after development $\frac{2.5}{12} \times 38,944 \times 0.95 = 7,717$ cu. ft.

Volume of water runoff before development allowing for 40% perculation

$\frac{2.5}{12} \times 38,944 \times .60 = 4,874$ cu. ft.

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ONSITE DRAINAGE CALCULATIONS Continued

Ponding areas (2) = 4,296 cu. ft.

Volume, developed area	7,717
Less Ponding Capacity	4,296
Vol. runoff after development	3,521

Conclusion: Runoff after development will be less than runoff before development.

SUMMARY

It is recommended that this development be approved since the computations above show that the proposed design is adequate to satisfactorily handle a 100-year storm.

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ONSITE DRAINAGE CALCULATIONS Continued

Ponding areas (2) = 4,296 cu. ft.

Volume, 30% Voids in Ponding Area = 1,288 cu. ft.

Volume, 40% Infiltration in Ponding Area = 1,718 cu. ft.

Volume, developed area	7,717
Less Ponding Capacity	3,006
Vol. runoff after development	4,711

Conclusion: Runoff after development will be less than runoff before development.

SUMMARY

It is recommended that this development be approved since the computations above show that the proposed design is adequate to satisfactorily handle a 100-year storm.

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PLANS/PLATS ON FILE

FILE DESC: F18/D12

PLANS/PLATS 3

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PUBLIC WORKS/HYDROLOGY

F18/D12

0000 0000 1590

F18/012

25×10

0000 0000 1591

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

March 11, 1986

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: REVISED DRAINAGE PLAN FOR EMERALD SQUARE SHOPPING CENTER
RECEIVED FEBRUARY 19, 1986 (F-18/D12)

Dear Fred:

The referenced plan, revision date February 14, 1986, is approved.

If the building permit has already been issued, it is your responsibility to see that the contractor gets a copy of the revised plan. Also, prior to Certificate of Occupancy release, site must be replatted to move lot lines, or all tracts must be covered with drainage easements.

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

Cordially,

Carlos A. Montoya

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

cc: Westcor Development
505 Marquette, NW

BJM:CAM/bsj

25×10

0000 0000 1542

DRAINAGE INFORMATION SHEET

PROJECT TITLE: EMERALD SQUARE SHOPPING CENTER ZONE ATLAS/DRAINAGE FILE #: F-18/D12

LEGAL DESCRIPTION: TRACTS A-1 & B-1 CAMPTOWN ADDITION

CITY ADDRESS: 5204 SAN MATEO NE

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: FRED ARFMAN

ADDRESS: 128 MONROE, ALBUQ PHONE: 268-8828

OWNER: WESTCOR DEVELOPMENT CONTACT: ED BECVARIK

ADDRESS: 505 MARQUETTE NW, ALBUQ PHONE: 243 - 1031

ARCHITECT: DEKKER & ASSOCIATES CONTACT: DALE DEKKER

ADDRESS: 600 1ST NW, ALBUQ PHONE: 247 - 2888

SURVEYOR: FRANKLIN E. WILSON CONTACT: FRANK WILSON

ADDRESS: 333 LOMAS, NE ALBUQ PHONE: 247- 4444

CONTRACTOR: UNKN CONTACT: —

ADDRESS: — PHONE: —

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED
FEB 19 1986
HYDROLOGY SECTION

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT (EXHIBIT ONLY)

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

X BUILDING PERMIT APPROVAL (APPROVED 12-16-85)

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

X OTHER REVISED PLAN (SPECIFY)

DATE SUBMITTED: FEB. 19, 1986

BY: Fred C. Arfman

REV. 6/85
25130

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

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

December 16, 1985

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINGE REPORT FOR EMERALD SQUARE SHOPPING CENTER
SUBMITTED NOVEMBER 19, 1985 FOR SITE DEVELOPMENT PLAN
AND DECEMBER 4, 1985 FOR BUILDING PERMIT APPROVAL
(F-18/D12)

Dear Fred:

The referenced submittal dated December 2, 1985, is approved for Site Development Plan and Building Permit. Prior to Certificate of Occupancy approval, site must be replatted to remove lot lines, or all tracts covered with a drainage easement.

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

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Design Hydrology

cc: Westcor Development
505 Marquette, NW

RAG/bsj

25×

0000 0000 1594

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Emerald Square Shopping Center ZONE ATLAS/DRAINAGE FILE # F-18/D12

LEGAL DESCRIPTION: Tracts A-1 & B-1 Camptown Addition

CITY ADDRESS: 5204 San Mateo N.E.

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Fred Arfman

ADDRESS: 128 Monroe, Albuquerque, N.M. PHONE: 268-8828

OWNER: Westcor Development CONTACT: Ed Becvarik

ADDRESS: 505 Marquette N.W. Albuquerque, N.M. PHONE: 243-1031

ARCHITECT: Dekker & Associates CONTACT: Dale Dekker

ADDRESS: 600 1st N.W. Albuquerque, N.M. PHONE: 247-2888

SURVEYOR: Southwest Surveying Company CONTACT: Frank Wilson

ADDRESS: 333 Lomas N.E., Albuquerque, N.M. PHONE: 247-4444

CONTRACTOR: UNKN CONTACT: -

ADDRESS: - PHONE: -

PRE-DESIGN MEETING:

RECEIVED
DEC 04 1985
HYDROLOGY SECTION

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ 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: Dec. 4, 1985

BY: Scott M McGee

REV. 6/85

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DRAINAGE INFORMATION SHEET

PROJECT TITLE: EMERALD SQUARE SHOPPING CENTER ZONE ATLAS/DRAINAGE FILE # F-18/D12

LEGAL DESCRIPTION: TRACTS A-1 & B-1 CAMPTOWN ADDITION

CITY ADDRESS: 5204 SAN MATEO NE

ENGINEERING FIRM: ISAACSON & ARFMAN, PA CONTACT: FRED ARFMAN

ADDRESS: 128 MONROE, ALBUQ PHONE: 268-8828

OWNER: WESTCOR DEVELOPMENT CONTACT: ED BECVARIK

ADDRESS: 505 MARQUETTE NW, ALBUQ PHONE: 243 - 1031

ARCHITECT: DEKKER & ASSOCIATES CONTACT: DALE DEKKER

ADDRESS: 600 1ST NW, ALBUQ PHONE: 247 - 2888

SURVEYOR: FRANKLIN E. WILSON CONTACT: FRANK WILSON

ADDRESS: 333 LOMAS, NE ALBUQ PHONE: 247-4444

CONTRACTOR: UNKN CONTACT: —

ADDRESS: — PHONE: —

RECEIVED
NOV 19 1985
HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 85-695 10/15/85

EPC NO. _____

PROJECT NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

X SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: Nov 19 1985

BY: Scott M McGee

REV. 6/85

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: E-18 DATE: 10/10/85

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Emerald Plaza Commercial Center

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: Tracts R-1, B-1 Camptown Addn

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	X	FINAL PLAT
X	SITE DEVELOPMENT PLAN	____	BUILDING PERMIT
____	OTHER	____	ROUGH GRADING

ATTENDANCE:	WHO	REPRESENTING
	Fred Artman	Isaacson & Artman P.A.
	Billy Goolsby	City / Design Hydrology

FINDINGS:

① Minimum requirement shall be a conceptual drainage plan for Site Development ~~Plan~~ approval. Plan shall be at sufficient detail to show adequate drainage scheme and approximate size of any necessary drainage facilities.

② Site previously developed. Therefore, discharge shall remain the same or less than existing ~~Current~~ unless ~~the~~ it is demonstrated that sufficient downstream capacity is available for increased runoff.

~~③ Expansion Pond~~

③ A detailed drainage plan for building permit purposes will be required prior to Hydrology sign-off.

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:	Billy Goolsby	SIGNED:	Fred C. Artman
TITLE:	CE/Design Hydrology	TITLE:	PE
DATE:	10/10/85	DATE:	10/10/85

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

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

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

March 11, 1986

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: REVISED DRAINAGE PLAN FOR EMERALD SQUARE SHOPPING CENTER
RECEIVED FEBRUARY 19, 1986 (F-18/D12)

Dear Fred:

The referenced plan, revision date February 14, 1986, is approved.

If the building permit has already been issued, it is your responsibility to see that the contractor gets a copy of the revised plan. Also, prior to Certificate of Occupancy release, site must be replatted to move lot lines, or all tracts must be covered with drainage easements.

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

Cordially,

Carlos A. Montoya

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

cc: Westcor Development
505 Marquette, NW

BJM:CAM/bsj

25×10

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City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

December 16, 1985

Fred Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe, NE
Albuquerque, New Mexico 87108

RE: DRAINGE REPORT FOR EMERALD SQUARE SHOPPING CENTER
SUBMITTED NOVEMBER 19, 1985 FOR SITE DEVELOPMENT PLAN
AND DECEMBER 4, 1985 FOR BUILDING PERMIT APPROVAL
(F-18/D12)

Dear Fred:

The referenced submittal dated December 2, 1985, is approved for Site Development Plan and Building Permit. Prior to Certificate of Occupancy approval, site must be replatted to remove lot lines, or all tracts covered with a drainage easement.

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

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Design Hydrology

cc: Westcor Development
505 Marquette, NW

RAG/bsj

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FOLLOWING DOCUMENT(S)

PRINTED ON COLORED

PAPER STOCK DO NOT

ALWAYS REPRODUCE WELL.

THIS RESULTS IN

A POOR FILM IMAGE.

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DRAINAGE REPORT

FOR

EMERALD SQUARE COMMERCIAL CENTER

5204 SAN MATEO NE

ALBUQUERQUE NEW MEXICO

NOVEMBER 1985

0000 0000 1601

DRAINAGE REPORT

FOR

EMERALD SQUARE COMMERCIAL CENTER

5204 SAN MATEO NE

ALBUQUERQUE NEW MEXICO

NOVEMBER 1985

RECEIVED
DEC 04 1985
HYDROLOGY SECTION

Prepared by:

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, N.M. 87108

FRED C. ARFMAN NEW MEXICO 7322 REGISTERED PROFESSIONAL ENGINEER

12-2-85

Fred C. Arfman, P.E. Date

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I. INTRODUCTION

Emerald Square Commercial Center is comprised of three buildings with a total gross square footage of 58,068 sq. ft. The balance of the 5.4 acre site, currently zoned Commercial (C-2), will consist of asphaltic paving, concrete walks, and eleven percent landscaped area. See vicinity map in Appendix.

A pre-design meeting was held with Mr. Billy Goolsby of City Hydrology. The following findings were established as design criteria for this project:

1. Minimum requirement shall be a conceptual drainage plan for Site Development Plan approval. Plan shall be of sufficient detail to show adequate drainage scheme and approximate size of any necessary drainage facilities.

2. The site was previously developed; therefore, discharge shall remain the same or less than existing, unless it is demonstrated that sufficient downstream capacity is available for increased runoff.

3. A detailed drainage plan for building permit purposes will be required prior to Hydrology sign-off.

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II. SITE CHARACTERISTICS

A. Flood Hazard - As shown on Panel 17 of FEMA Flood Maps, this site is not within an established flood hazard area.

III. EROSION CONTROL PLAN

1. Rough Grading - Only the standard specifications of watering the ground's surface for dust control will be imposed upon this site.

2. Construction Phase - The site watering mentioned above will suffice during construction.

3. Permanent Phase - No erosion control measures are required once the site is completed. All ground surfaces shall be either impervious or landscaped.

IV. ONSITE CONDITIONS

A. The previously developed site conditions consist of abandoned asphalt paving, concrete walks and service areas, two commercial buildings, and hard packed dirt/gravel R.V. storage yards. All existing site surface improvements shall be demolished and removed.

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Present grading conditions are such that storm waters sheet flow to the westerly property line and exit into the public right-of-way of San Mateo Boulevard via four exiting driveway pads.

The calculations determining the previously developed runoff rates and volumes are as follows:

Area = 5.3972 ac. = 235,100 sq. ft.
Tc = 10 minutes D = 2.2" = 0.183'
I = 2.16 x 2.2 = 4.75"/hr

EXISTING COMPOSITE 'C' FACTOR

Asphalt, Roof, & Concrete	2.15/5.4 x 0.95 = 0.38
Hard Packed Gravel	0.60/5.4 x 0.85 = 0.09
Hard Packed Dirt	2.65/5.4 x 0.70 = 0.35
	Composite 'C' = 0.82

Q_{100} = (0.82)(4.75)(5.40) = 21.0 cfs
Q_{10} = (21.0)(.657) = 13.8 cfs
V_{100} = (0.82)(0.183)(235,100) = 35,279 cu.ft.
V_{10} = (35,279)(.657) = 23,178 cu.ft.

B. The proposed site shall consist of asphaltic paving, concrete walks, impervious roof areas and eleven percent landscaped area.

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Calculations determining the proposed redeveloped runoff rates and volumes follow:

PROPOSED COMPOSITE 'C' FACTOR

Landscaped Area	0.60/5.4 X 0.20 = 0.02
Asphalt, Roof, & Concrete	4.80/5.4 X 0.95 = 0.85
	Composite 'C' = 0.87

Q_{100} = (0.87)(4.75)(5.40) = 22.3 cfs

Q_{10} = (22.3)(0.657) = 14.6 cfs

V_{100} = (0.87)(0.183)(235,100) = 37,430 cu.ft.

V_{10} = (37,430)(0.657) = 24,592

These values represent an increase of 6% in storm water runoff. This minor increase in runoff should be allowed to runoff as per the previous development since it is within the ±10% acceptable range of accuracy.

V. OFFSITE CONDITIONS

A. This site does not accept any off-site flows. The adjacent property to the east directs all generated storm waters to the north via a private storm drain which empties into the public storm drain network.

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The adjacent properties north and south both discharge their storm waters westward to the public right-of-way of San Mateo Boulevard.

VI. DOWNSTREAM CONDITIONS

From the Albuquerque Master Drainage Study (A copy of the portion covering this area and the corresponding map are found in the Appendix of this report); Analysis Points #2201 and #2301 detail the hydrologic characteristics of this area. The majority of the general storm waters exit the site at the two northerly drive pads, where they enter the 24" storm drain system via two catch basins adjacent to the site. The flows are then carried north to the Bear Canyon Arroyo. A small portion of the generated storm waters is carried south on San Mateo approximately 300' where it is picked up by storm drain inlets at the McLeod St. intersection.

The above referenced Master Drainage Study shows no overland flow required to handle 100 year flows at AP2201 and only 11 cfs of overland flow at AP2301. This suggests additional capacity is available as street flow.

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VII. SUMMARY & RECOMMENDATIONS

The increase in the 100 year flow rate of 1.3 cfs is a minor impact on the established flow rates, and sufficient additional downstream capacity exists as street flow.

1. Stormwaters are divided and carried offsite through four seperate drainage swales thereby preventing large amounts of runoff in any one location.

2. No offsite flows should be accepted onto the site.

3. Onsite flows shall be directed away from all building foundations.

4. Flows should be allowed to discharge onto San Mateo Boulevard via the four existing and proposed drive pads. Three

In addition, this site is located at the uppermost end of the drainage basin which contributes to the public system.

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APPENDIX

	Pg #
1. Information Sheet	8
2. Conference Recap	9
3. Vicinity Map	10
4. Flood Boundary Map	11
5. Albuquerque Master Drainage Study	12
6. A. M. D. S. Analysis Point Map	13
7. Drainage & Grading Plan (in pocket)	

25×

0000 0000 1609

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Emerald Square Shopping Center ZONE ATLAS/DRAINAGE FILE #: F-18

LEGAL DESCRIPTION: Tracts A-1 & B-1 Camptown Addition

CITY ADDRESS: 5204 San Mateo N.E.

ENGINEERING FIRM: Isaacson & Arfman, P.A. CONTACT: Fred Arfman

ADDRESS: 128 Monroe, Albuquerque, N.M. PHONE: 268-8828

OWNER: Westcor Development CONTACT: Ed Becvarik

ADDRESS: 505 Marquette N.W. Albuquerque, N.M. PHONE: 243-1031

ARCHITECT: Dekker & Associates CONTACT: Dale Dekker

ADDRESS: 600 1st N.W. Albuquerque, N.M. PHONE: 247-2888

SURVEYOR: Southwest Surveying Company CONTACT: Frank Wilson

ADDRESS: 333 Lomas N.E., Albuquerque, N.M. PHONE: 247-4444

CONTRACTOR: UNKN CONTACT: -

ADDRESS: - PHONE: -

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO._____

EPC NO._____

PROJECT NO._____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT

___ DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SECTOR PLAN APPROVAL

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ 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: Dec. 4, 1985

BY: Scott M McGee

REV. 6/85

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: F-18 DATE: 10/10/85

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Emerald Plaza Commercial Center

STREET ADDRESS (IF KNOWN): _____

SUBDIVISION NAME: Tracts A-1, B-1 Camptown Addn.

APPROVAL REQUESTED:

____ PRELIMINARY PLAT	X FINAL PLAT
X SITE DEVELOPMENT PLAN	____ BUILDING PERMIT
____ OTHER	____ ROUGH GRADING

ATTENDANCE:	WHO	REPRESENTING
	Fred Arfman	Isaacson & Arfman P.A.
	Billy Grolsby	City / Design Hydrology

FINDINGS:

① Minimum requirement shall be a conceptual drainage plan for Site Development ~~Plan~~ approval. Plan shall be of sufficient detail to show adequate drainage scheme and approximate size of any necessary drainage facilities.

② Site previously developed. Therefore, discharge shall remain the same or less than existing. ~~Exempt~~ unless ~~the~~ it is demonstrated that sufficient downstream capacity is available for increased runoff.

~~③ [illegible]~~

③ A detailed drainage plan for building permit purposes will be required prior to Hydrology sign-off.

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:	Billy J. Grolsby	SIGNED:	Fred C. Arfman
TITLE:	CE/Design Hydrology	TITLE:	CE,
DATE:	10/10/85	DATE:	10/10/85

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

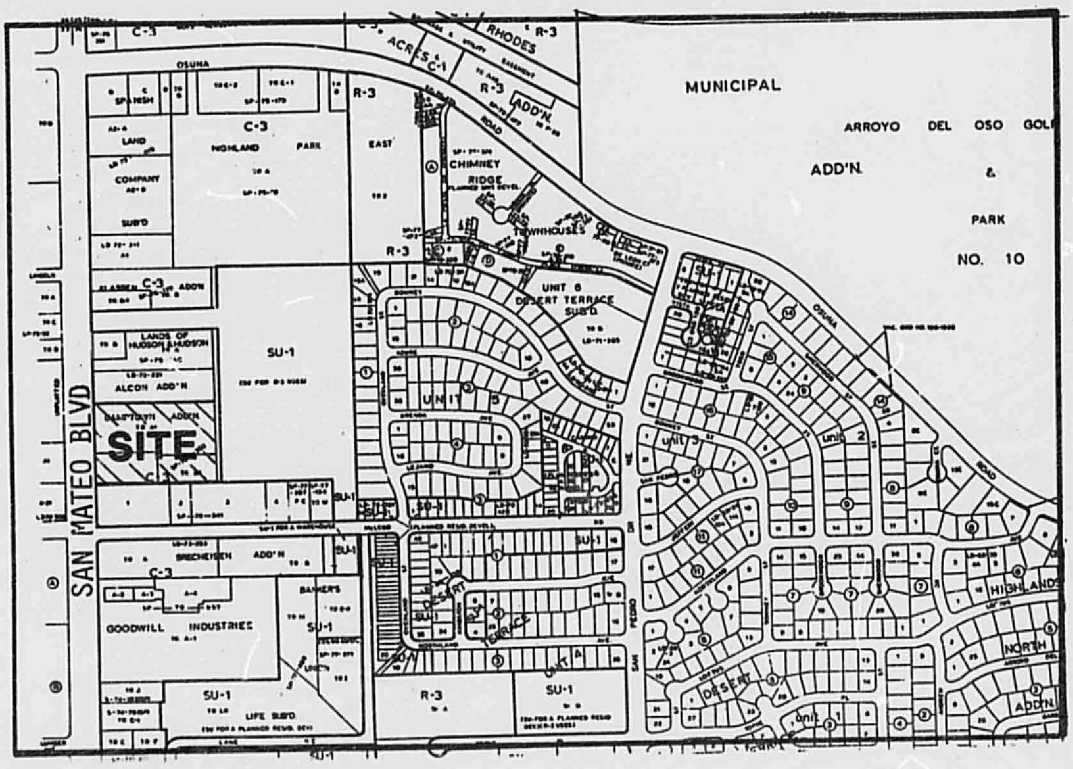
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VICINITY MAP

ZONE ATLAS MAP NO. F-18



Isaacson & Arfman, P.A.

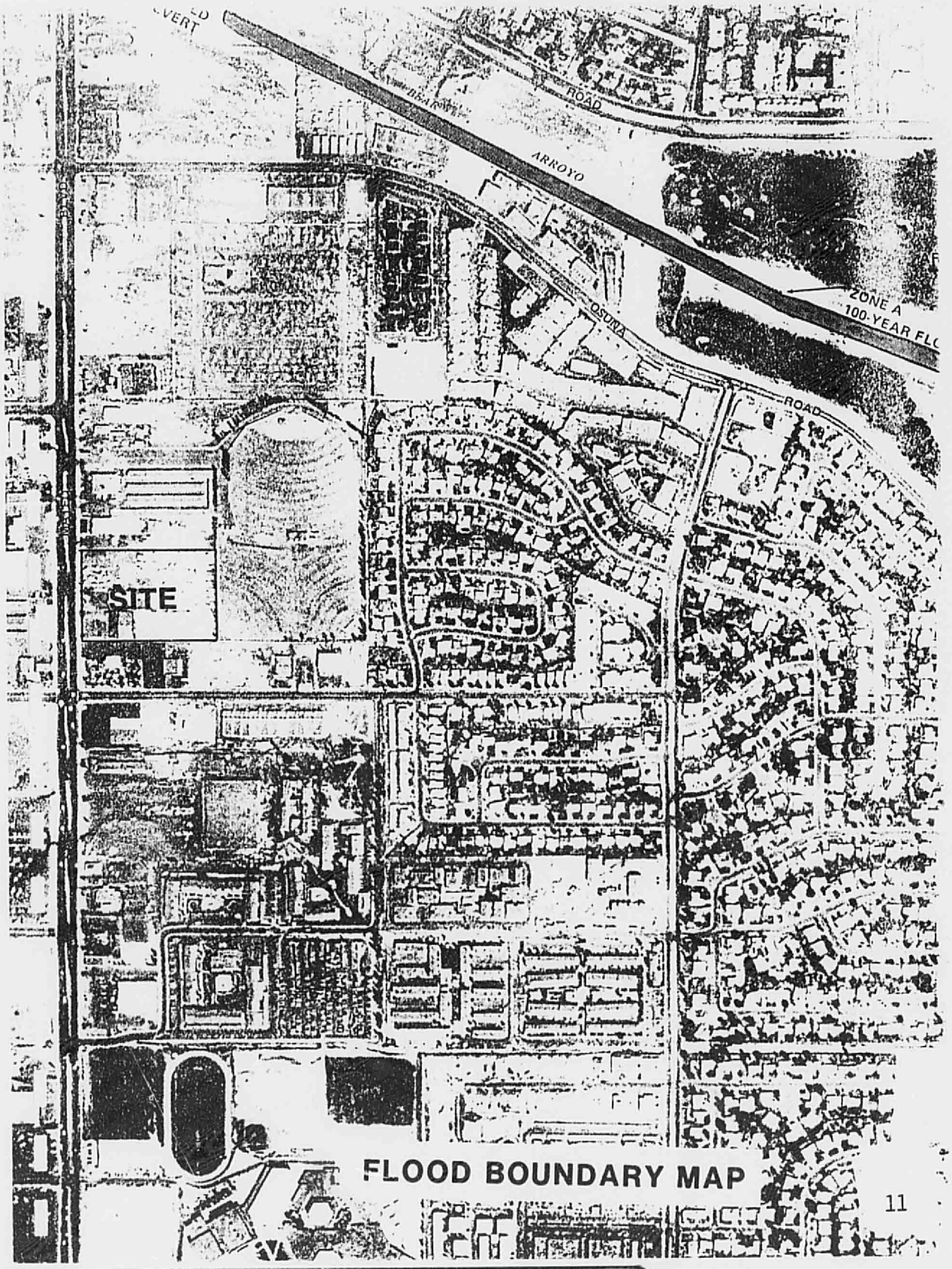
SUBJECT EMERALD SQUARE JOB NO.

BY DATE SHEET NO. 10 OF 14

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REPRODUCTION DUE TO THE POOR QUALITY
OF THE ORIGINAL DOCUMENT



FLOOD BOUNDARY MAP

AREA 3

ALBUQUERQUE MASTER DRAINAGE STUDY
SUMMARY OF HYDROLOGIC AND HYDRAULIC ANALYSES

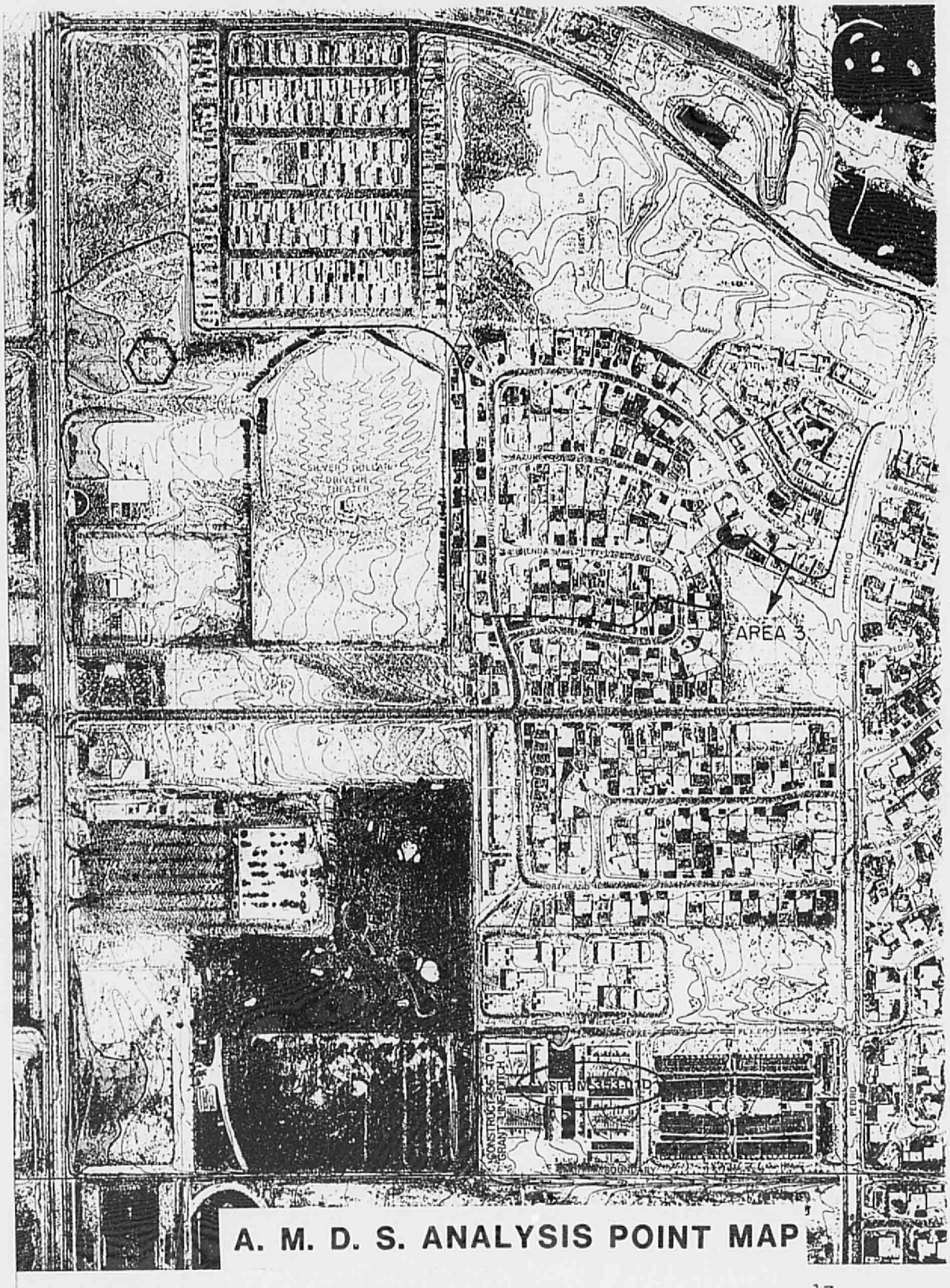
Location	10 - YEAR			100 - YEAR			Comments
	Peak Discharge (c.f.s.) / Overland Flow	Flow Depth (ft.)	Velocity (ft./sec.)	Peak Discharge (c.f.s.) / Overland Flow	Flow Depth (ft.)	Velocity (ft./sec.)	Map
ON CHEROKEE ROAD AT SAN MATEO (AP 2003)	43 / 27	.43	4.4	95 / 60	.57	5.8	G-17
ON COMANCHE ROAD 500' EAST OF CARLISLE BLVD. (AP 2004)	47 / 0	0	0	121 / 36	.52	3.3	G-17
ON SAN MATEO BLVD. AT LINCOLN ROAD (AP 2201)	21 / 0	0	0	71 / 0	0	0	F-17 & F-18 ALL FLOW OUTFALLS INTO STORM SEWER WHICH DUMPS INTO BEAR CANYON ARROYO
ALONG EAST I-25 FRONTAGE ROAD AT JEFFERSON STREET (AP 2202)	51 / 0	0	0	173 / 88	3.31	6.8	F-17 SOUTH OF I-25 FROM JEFFERSON
ALONG EAST I-25 FRONTAGE ROAD AT MCLEOD ROAD (AP 2203)	51 / 0	0	0	216 / 156	1.01	4.2	F-17 DOWN SOUTH SIDE OF I-25 FROM JEFFERSON TO MC LEOD
ALONG EAST I-25 FRONTAGE ROAD AT GRANTLINE CHANNEL (AP 2204)	38 / 38	.45	2.6	167 / 167	1.10	4.4	F-16 ALL FLOW OUTFALLS INTO THE NORTH DIVERSION CHANNEL
ON SAN MATEO BLVD. AT MC LEOD ROAD (AP 2301)	15 / 0	0	0	93 / 11	.27	2.4	F-17 & F-18
ON SAN MATEO BLVD. 100' SOUTH OF GRANT LINE CHANNEL (AP 2302)	37 / 37	.42	3.1	82 / 82	.56	4.2	F-17 & F-18 ALL FLOW OUTFALLS INTO GRANT LINE DITCH
ON PALOMAS DRIVE AND I-40 CHANNEL (AP 2401)	29 / 29	.52	3.3	58 / 58	.66	4.1	H-16 ALL FLOW OUTFALLS INTO EMBUDO DIVERSION CHANNEL
ON SAN MATEO PL. AND I-40 CHANNEL (AP 2501)	46 / 46	.53	5.0	98 / 98	.68	6.4	H-17 & H-18 ALL FLOW OUTFALLS INTO EMBUDO DIVERSION CHANNEL
ON PROSPECT AVENUE AT SAN MATEO BLVD. (AP 2601)	38 / 0	0	0	77 / 0	0	0	H-17 ALL FLOW CARRIED BY STORM SEWER
ALONG EAST I-25 FRONTAGE ROAD AT LINCOLN ROAD (AP 2701)	48 / 48	.46	3.2	146 / 146	.90	4.8	F-17 RUNNING SOUTH WEST ALONG I-25
ON LOS ARBOLES ROAD AT MONTCLAIRE DRIVE (AP 2801)	79 / 0	0	0	148 / 47	.61	3.9	H-17 WEST ON LOS ARBOLES FROM GRACELAND
ON CANDELARIA INTERCEPTOR DITCH AT AMHERST DRIVE (AP 2802)	117 / 0	0	0	271 / 96	.68	5.4	G-16 ALL FLOW OUTFALLS INTO THE NORTH DIVERSION CHANNEL
ON CARLISLE BLVD. SOUTH OF COMANCHE ROAD (AP 2901)	22 / 22	.34	4.8	42 / 42	.43	5.7	G-17 & G-16
ON UPTOWN BLVD. AT LOUISIANA BLVD. (AP 3701)	155 / 0	0	0	328 / 102	.60	7.3	H-18
ON SAN PEDRO BLVD. AT 300' S. OF INDIAN SCHOOL ROAD (AP 3801)	53 / 0	0	0	130 / 54	.46	5.7	H-18 ALL FLOW OUTFALLS INTO STRUCTURE UNDER SAN PEDRO AND INTO EMBUDO CHANNEL

MASTER DRAINAGE STUDY

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OF THE ORIGINAL DOCUMENT



A. M. D. S. ANALYSIS POINT MAP

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A&E ENGINEERING INC.
CIVIL ENGINEERING, LAND PLANNING, AND SURVEYING

April 16, 1974

RECEIVED
APR 17 1974
CITY ENGINEERS

Mr. Quentin R. Kielich
City Engineer
City of Albuquerque
Albuquerque, New Mexico

Dear Mr. Kielich:

Transmitted herewith is a copy of the Drainage Report for the Pizza Hut No. 9 for your review and approval. Pizza Hut No. 9 is located on the east side of San Mateo N.E., between Birdie-Bogey Lane N.E. and McLeod Road N.E.

Your prompt attention will be greatly appreciated.

Sincerely,

A&E ENGINEERING, INC.

John F. Esquibel
President

JFE:jg

APPROVED FOR DRAINAGE
23 Apr 74
ACE
CITY ENGINEER
SIGNATURE
CONTINGENCIES

4100 SILVER S.E. ALBUQUERQUE, NEW MEXICO 87108 505/266-8791

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DRAINAGE REPORT

FOR

PIZZA HUT NO. 9

Albuquerque, New Mexico

PREPARED FOR:

PIZZA CORPORATION OF AMERICA

Wichita, Kansas

BY:

A & E ENGINEERING, INC.

4100 Silver S.E.

Albuquerque, New Mexico

April, 1974



T. M. Conrardy

T. M. Conrardy, P.E. & L.S. 2933

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DRAINAGE REPORT

PIZZA HUT

NO. 9

Albuquerque, New Mexico

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GENERAL

This report consists of a hydrologic study of a probable 100-year storm affecting this proposed development being Tract C-1, within the Elena Gallegos Grant, City of Albuquerque, referred to herein as the Pizza Hut No. 9.

LOCATION AND DESCRIPTION

The Pizza Hut No. 9 parcel is a proposed 0.83 acre development situated in Section 36, Township 11 North, Range 3 East, N.M.P.M. and is designated Tract C-1, Elena Gallegos Grant on a plat recorded in Bernalillo County, New Mexico on March 21, 1974. The development is located on the east side of San Mateo Boulevard, N.E. between Birdie-Bogey Lane, N.E. and McLeod Road, N.E.

The development is bordered by the Camptown Trailer Sales on the north, vacant land on the east and south all of which contribute no runoff to the subject area. There are no outside contributing drainage areas onto this development.

The natural terrain of the Pizza Hut No. 9 parcel slopes to the southwest at about a 2.06 percent grade.

DEVELOPMENT

This parcel of land is to be developed into a restaurant, lounge and liquor store. It will be paved and landscaped to retain storm water on the property so that a lesser amount will flow onto San Mateo Boulevard. Ponding depressions will be constructed to contain the largest percentage of the storm water. The architect has designed the roofs to drain the water onto the parking area and ponding areas.

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PROPOSED ONSITE DRAINAGE PLANS

In order to control the onsite drainage and reduce the runoff limiting street and parking lot grades have been set to reduce velocity and overland flows.

Being a small parcel of land, the tract has been considered as a single unit of drainage before and after development.

No provision has been made for offsite drainage as there is no outside contributing drainage onto this area.

DISCUSSION OF METHOD

Development of this area will be controlled by the guidelines set forth in the recent Resolution of the Albuquerque Metropolitan Arroyo Flood Control Authority.

The amount of storm water is computed by using a 100-year storm, this being a storm consisting of 100-year 6 hours precipitation as shown by the Rainfall Frequency Maps for New Mexico, June, 1967, published by the Special Studies Branch, Office of Hydrology, United States Weather Bureau.

Ponding areas were calculated so that the volume of water ponded would exceed the increased volume runoff resulting from the development.

ONSITE DRAINAGE CALCULATIONS

The 100-year 6 hour precipitation factor is 2.5 inches.

The area is 0.83 acre = 38,994 sq. ft.

Volume of water after development $\frac{2.5}{12} \times 38{,}944 \times 0.95 = 7{,}717$ cu. ft.

Volume of water runoff before development allowing for 40% perculation

$\frac{2.5}{12} \times 38{,}944 \times .60 = 4{,}874$ cu. ft.

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ONSITE DRAINAGE CALCULATIONS Continued

Ponding areas (2) = 4,296 cu. ft.

Volume, developed area	7,717
Less Ponding Capacity	4,296
Vol. runoff after development	3,521

Conclusion: Runoff after development will be less than runoff before development.

SUMMARY

It is recommended that this development be approved since the computations above show that the proposed design is adequate to satisfactorily handle a 100-year storm.

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ONSITE DRAINAGE CALCULATIONS Continued

Ponding areas (2) = 4,296 cu. ft.

Volume, 30% Voids in Ponding Area = 1,288 cu. ft.

Volume, 40% Infiltration in Ponding Area = 1,718 cu. ft.

Volume, developed area	7,717
Less Ponding Capacity	3,006
Vol. runoff after development	4,711

Conclusion: Runoff after development will be less than runoff before development.

SUMMARY

It is recommended that this development be approved since the computations above show that the proposed design is adequate to satisfactorily handle a 100-year storm.

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PLANS/PLATS ON FILE

FILE DESC: F18/012

PLANS/PLATS 3

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