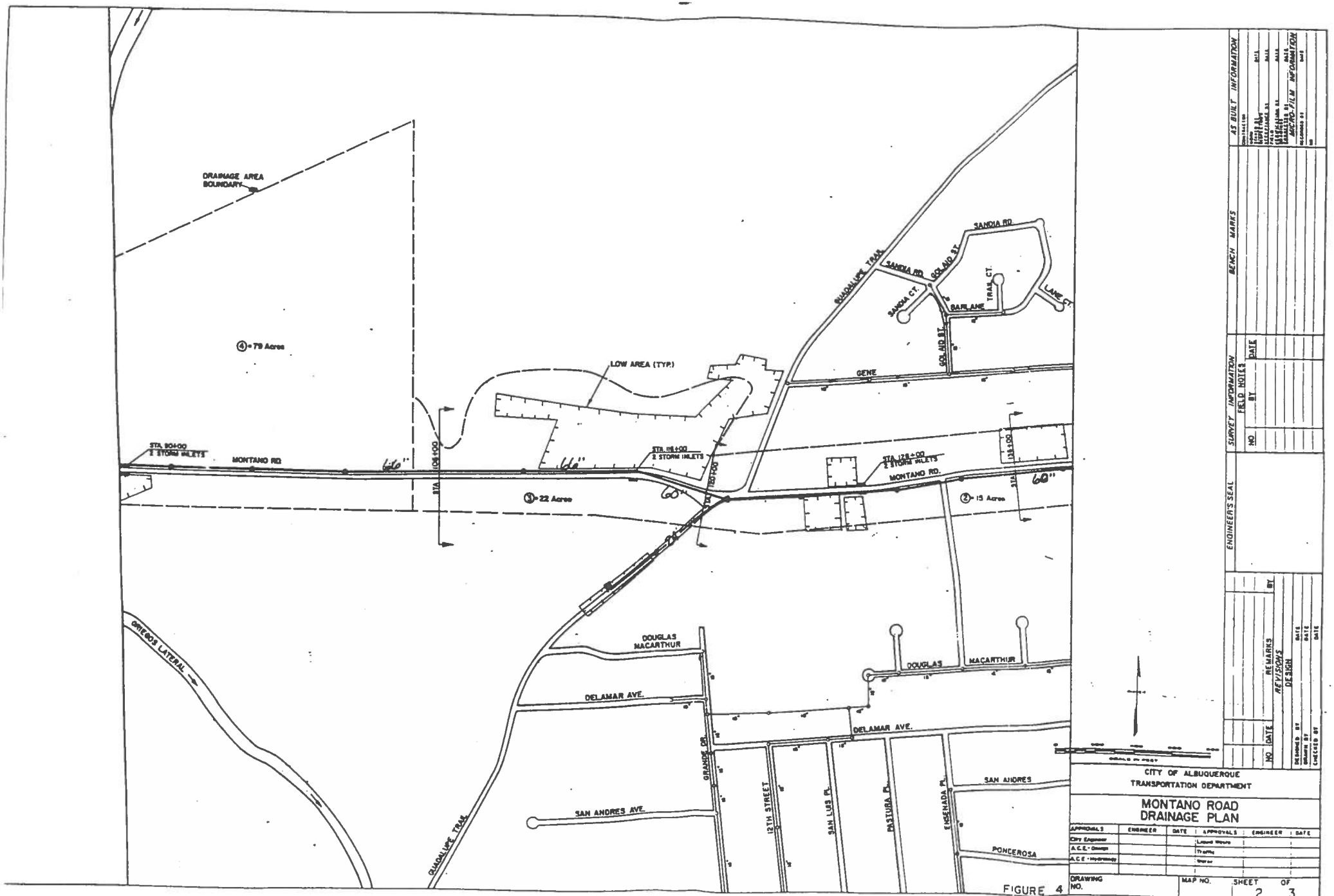

DRAINAGE AREA BOUNDARY
④ = 79 Acres
LOW AREA (TYP.)
STA. 104+00
2 STORM INLETS
MONTANO RD.
66"
STA. 108+00
STA. 116+00
2 STORM INLETS
STA. 128+00
2 STORM INLETS
MONTANO RD.
60"
③ = 22 Acres
② = 15 Acres
GUADALUPE TRAIL
SANDIA RD.
GOLAND ST.
SANDIA CT.
BAIR AVE.
TRAM CT.
LANE CT.
GENE
GREGGS LATERAL
DOUGLAS MACARTHUR
DELAMAR AVE.
GRANDE DR.
12TH STREET
SAN LUIS PL.
PASTURA PL.
ENSENADA PL.
SAN ANDRES
SAN ANDRES AVE.
PONCEROSA
AS BUILT INFORMATION
BENCH MARKS
SURVEY INFORMATION
FIELD NOTES
ENGINEER'S SEAL
REMARKS
REVISIONS
DESIGN
DESIGNED BY
DRAWN BY
CHECKED BY
CITY OF ALBUQUERQUE
TRANSPORTATION DEPARTMENT
MONTANO ROAD
DRAINAGE PLAN
APPROVALS
ENGINEER
DATE
City Engineer
A.C.E. - Design
A.C.E. - Hydrology
Land Development
Traffic
Water
DRAWING NO.
MAP NO.
SHEET 2 OF 3

FIGURE 4

FIGURE 5

AS BUILT INFORMATION
BENCH MARKS
SURVEY INFORMATION
FIELD NOTES
NO. DATE BY
ENGINEER'S SEAL
MICRO-FILM INFORMATION
NO. DATE REMARKS
REVISIONS
DESIGN
DRAWN BY
CHECKED BY
DATE

CITY OF ALBUQUERQUE
TRANSPORTATION DEPARTMENT

MONTANO ROAD DRAINAGE PLAN

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Land Devel.		
A.C.E. - Design			Traffic		
A.C.E. - Inspection			Water		

DRAWING NO. | MAP NO. | SHEET 3 OF 3

WILSON & COMPANY
ENGINEERS & PLANNERS
ALBUQUERQUE, N.M.

WILSON
&COMPANY
4775 Indian School Road, N.E., Suite 200
Albuquerque, New Mexico 87110
Post Office Box 3548 87190
505-254-4000

Albuquerque
Colorado Springs
Denver
Kansas City
Lenexa
Phoenix
Salina
San Diego
Wichita

10 March 1997

Mr. Steve Boberg, Drainage Engineer
Hydrology Section - Public Works Department
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87102

Re: **Submittal of Drainage Flow/Basin Map for Montaño Corridor**
COA Project 3255.90
WCEA File No: 96-210-076

Dear Steve:

In conjunction with you, we have developed the attached Montano Road Drainage Flow/Basin Map. The Map was developed to quantify flows that will be routed to the proposed Montaño Storm Water Pump Station, and help analyze flow discharges from developments as they are proposed. Provided on the Map we have shown the current and developed discharge conditions. The information on existing inflows was taken from two prior reports prepared for the City of Albuquerque; Drainage Report (Phase 1 of the Montaño Corridor From Rio Grande Boulevard to Edith), March 1986, by Wilson & Company and North Valley Drainage Systems Final Design Analysis Report, Volume II, System A, December 1985, by Scanlon & Associates, Inc. The existing inflows are:

Renaissance Pond	± 24 CFS
AGP Pond	± 6 CFS
Bernalillo County Pond	± 19 CFS
Albuquerque Grociers Pond	± 5 CFS
Total	**± 54 CFS**

Proposed developments along the Montaño Corridor will occur and require a discharge rate to the Montano System. To reflect this, we have added all existing flows and diverted off 30 CFS to the Alameda Drain. This leaves 80 CFS from approximately 2nd Street to the Pump Station at Rio Grande Boulevard. It was determined that approximately 76 acres would be able to discharge to the Montano system. At 0.5 cfs per acre, an additional 30 CFS is developed. This gives a total of 110 cfs for the system to handle. Even though the Pump Station was only designed to handle 95 cfs, it will have sufficient capacity due to available storage on Montaño Road and within the right-of-way from Guadalupe Trail to Rio Grande Boulevard. Also, the specific routing of flows along the Montaño Corridor will allow for offsetting the peaks.

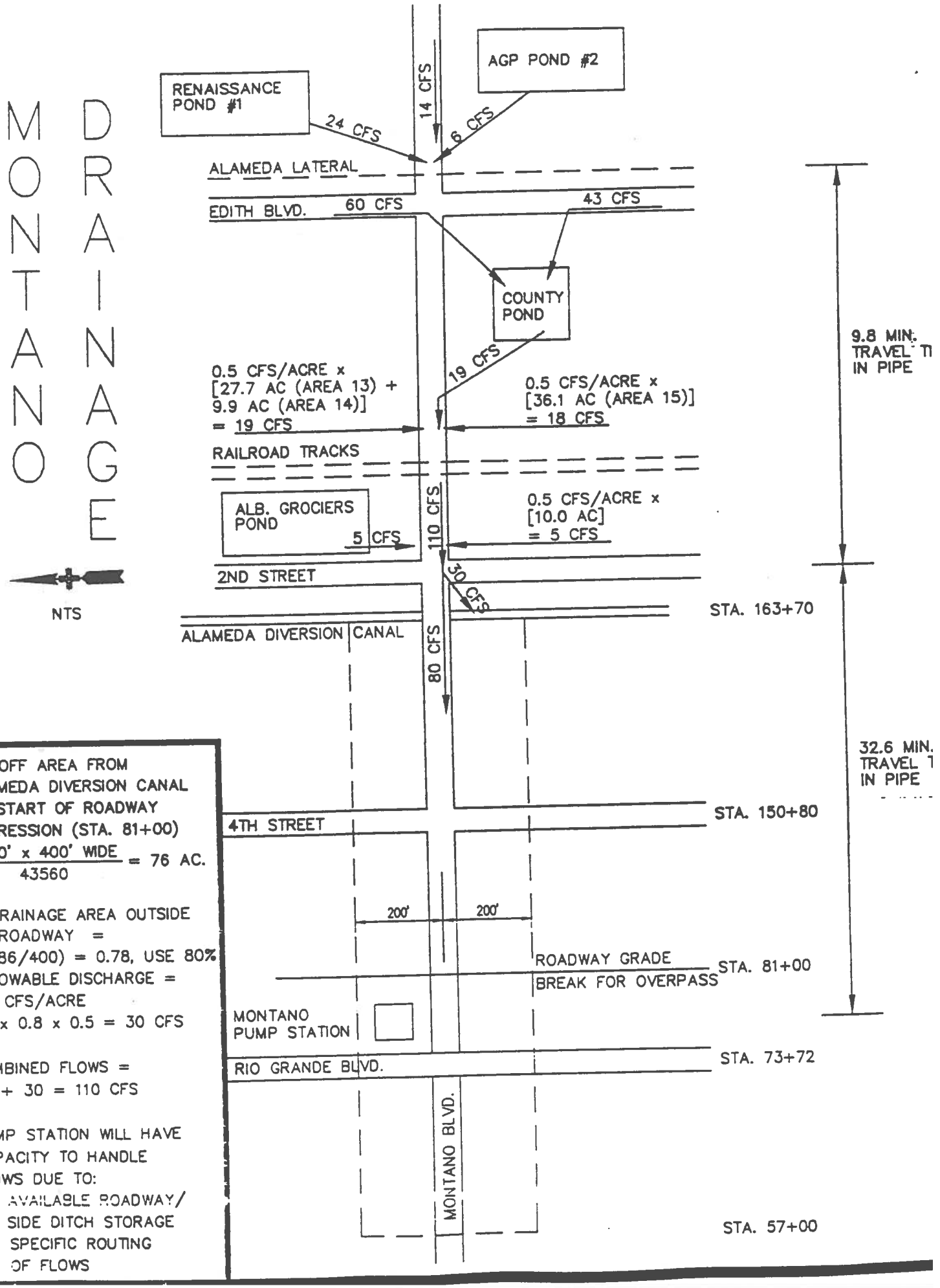
If you have any questions, please give us a call.

WILSON & COMPANY

Scott F. Perkins, P.E.
Principal

SFP/lb

cc: Ed Adams, COA Trans. Development



RUNOFF AREA FROM ALAMEDA DIVERSION CANAL TO START OF ROADWAY DEPRESSION (STA. 81+00)

$\frac{8270' \times 400' \text{ WIDE}}{43560} = 76$ AC.

% DRAINAGE AREA OUTSIDE OF ROADWAY = (1−86/400) = 0.78, USE 80%
ALLOWABLE DISCHARGE = 0.5 CFS/ACRE
76 x 0.8 x 0.5 = 30 CFS

COMBINED FLOWS = 80 + 30 = 110 CFS

'UMP STATION WILL HAVE CAPACITY TO HANDLE FLOWS DUE TO:

1) AVAILABLE ROADWAY/ SIDE DITCH STORAGE
2) SPECIFIC ROUTING OF FLOWS

North Valley Drainage Management Plan
Literature Review

Title of Report: Documentation For "Ranchitos Road Localized Ponding Relief Protect"
Author: James Boardman
Date: Summer 1995
Owner/Authorizing Agency: Bernalillo County
Study Area: Ranchitos Road/2nd Street
Location: Bernalillo County
Purpose of Report: Convey Runoff in Ranchitos Road/2nd Street to ATSF Railroad to P.S. then discharge to drop inlet at 2nd/Ranchitos

Drainage Area Size (sq.miles):Unknown
Drainage Area Boundary: Unknown
Design Event Return Period (years): No Specific Design Event (Pumps 10 yr event in 11.8 hrs.) Allows surface ponding.
Design Event Duration (hrs): 6 hrs.
Other Events Analyzed: 2, 10, 100 - year
Soils: N/A
Numerical Models Used (specify version): DPM 22.2 Rational Formula
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): DPM 22.2
Rainfall-runoff Transformation Method: N/A
Time of Concentration Method: N/A
Mapping Used to Delineate Watershed (Type of map): Unknown
Date: Unknown
Scale: Unknown
Contour Interval: Unknown
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: N/A
Describe Existing Floodplains: N/A
Summary of Existing Drainage Structures: N/A

Summary of Proposed Drainage Structures: Build 2 (250 gpm) pumps. 2 year 6 hour - volume = 0.30 AF. 10-year 6 hour volume = 0.90 AF, 100-year 6-hour - volume = 2.03 AF. 2 year pumping time = 4 hours, 10 year pumping time = 11.8 hours, 100 year pumping time = 26.6 hours.
Max Q Out = 0.9 CFS from 6" FM to 2nd Street dmp inlet for 100 year storm.

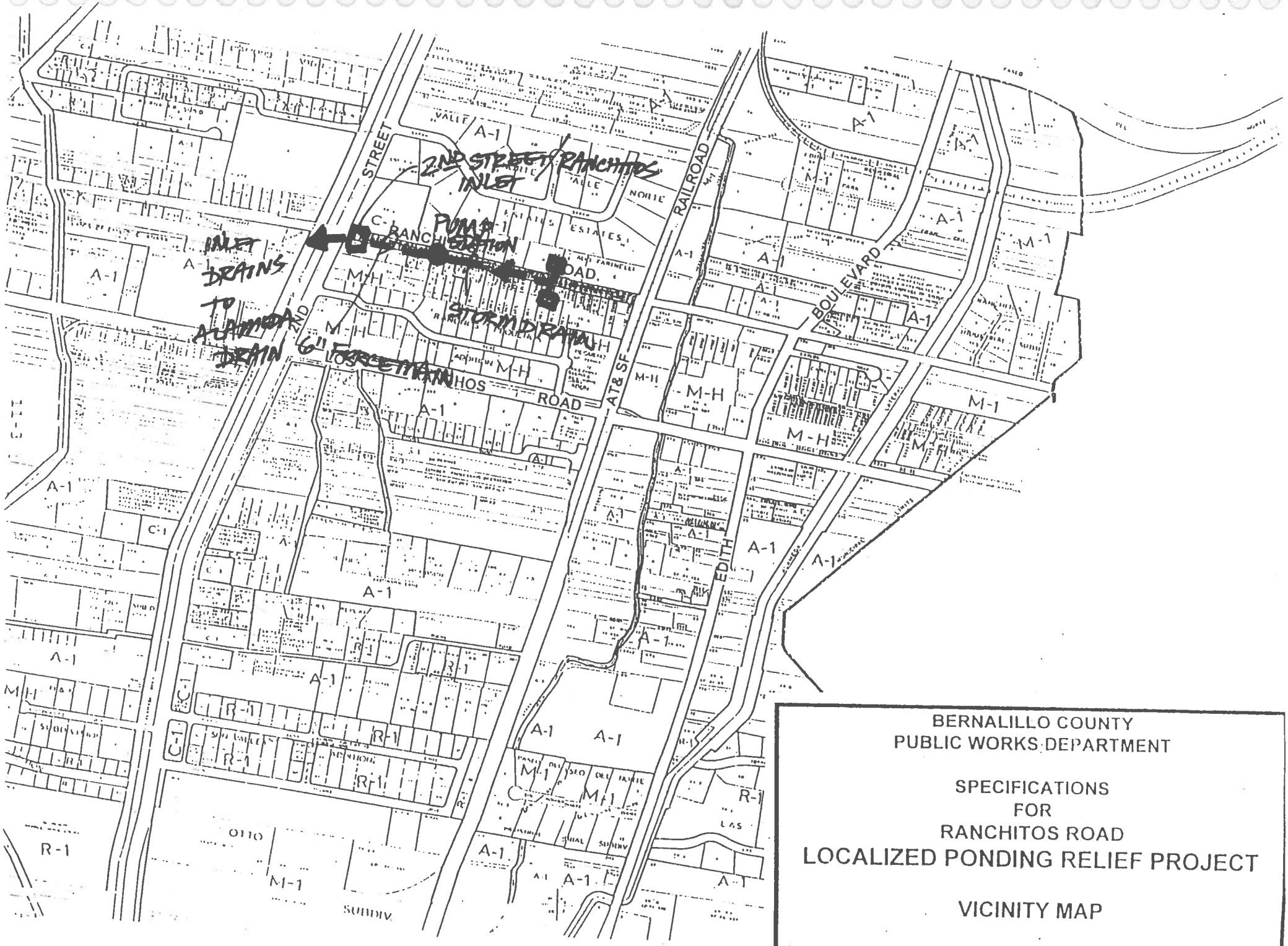
Comments:

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SPK Date: 6/25/98

* I talked with Jim Boardman (6/26/98) about Ranchitos P.S. He helped me sketch the S.D./P.S. Schematic attached. Small storm drain and inlets collect runoff in North and South roadside ditches along Ranchitos from about 600' West of ATSF Railroad to P.S. (located at about 700' east of 2nd Street) P.S. pumps to existing Ranchitos/2nd Street inlet that drains to Alameda Drain.



BERNALILLO COUNTY
PUBLIC WORKS DEPARTMENT

SPECIFICATIONS
FOR
RANCHITOS ROAD
LOCALIZED PONDING RELIEF PROJECT

VICINITY MAP

North Valley Drainage Management Plan
Literature Review

Title of Report: Final Storm Water Pump Stations Report
Author: Gannett Fleming West
Date: August 1997
Owner/Authorizing Agency: Bernalillo County Public Works
Study Area: Bernalillo County - 6 Pump Stations
Location: Bernalillo County
Purpose of Report: Evaluate existing Bernalillo County Stormwater P.S. (for this NVDMP I'll focus on Ortega P.S. and copy info. for Paselo Del Norte P.S. and Edith P.S.).

Drainage Area Size (sq.miles): Ortega P.S. = 66 Acres ±
Drainage Area Boundary: See Map (Chamsal Lateral on West, 250' South of Ortega on South, 4th Street on East, and 850' North of Ortega on North).
Design Event Return Period (years): Unknown (Nuisance Ponding Only)
Design Event Duration (hrs): Unknown (No Drainage Analysis Performed)
Other Events Analyzed: N/A
Soils: N/A
Numerical Models Used (specify version): N/A
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): N/A
Rainfall-runoff Transformation Method: N/A
Time of Concentration Method: N/A
Mapping Used to Delineate Watershed (Type of map): Zone Atlas
Date: N/A
Scale: 1" = 400'
Contour Interval: N/A
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: N/A
Describe Existing Floodplains: Floodplain Along Ortega
Summary of Existing Drainage Structures: 24" Storm Drain from 9th Street to 4th Street conveys flow to Ortega P.S. (one 300 GPM Pump). Wet well Volume = 605 $(ft)^3$
Outfall is 6" F.M. South on 4th Street that ties into Paseo Del Norte Storm Drain.

Summary of Proposed Drainage Structures: N/A

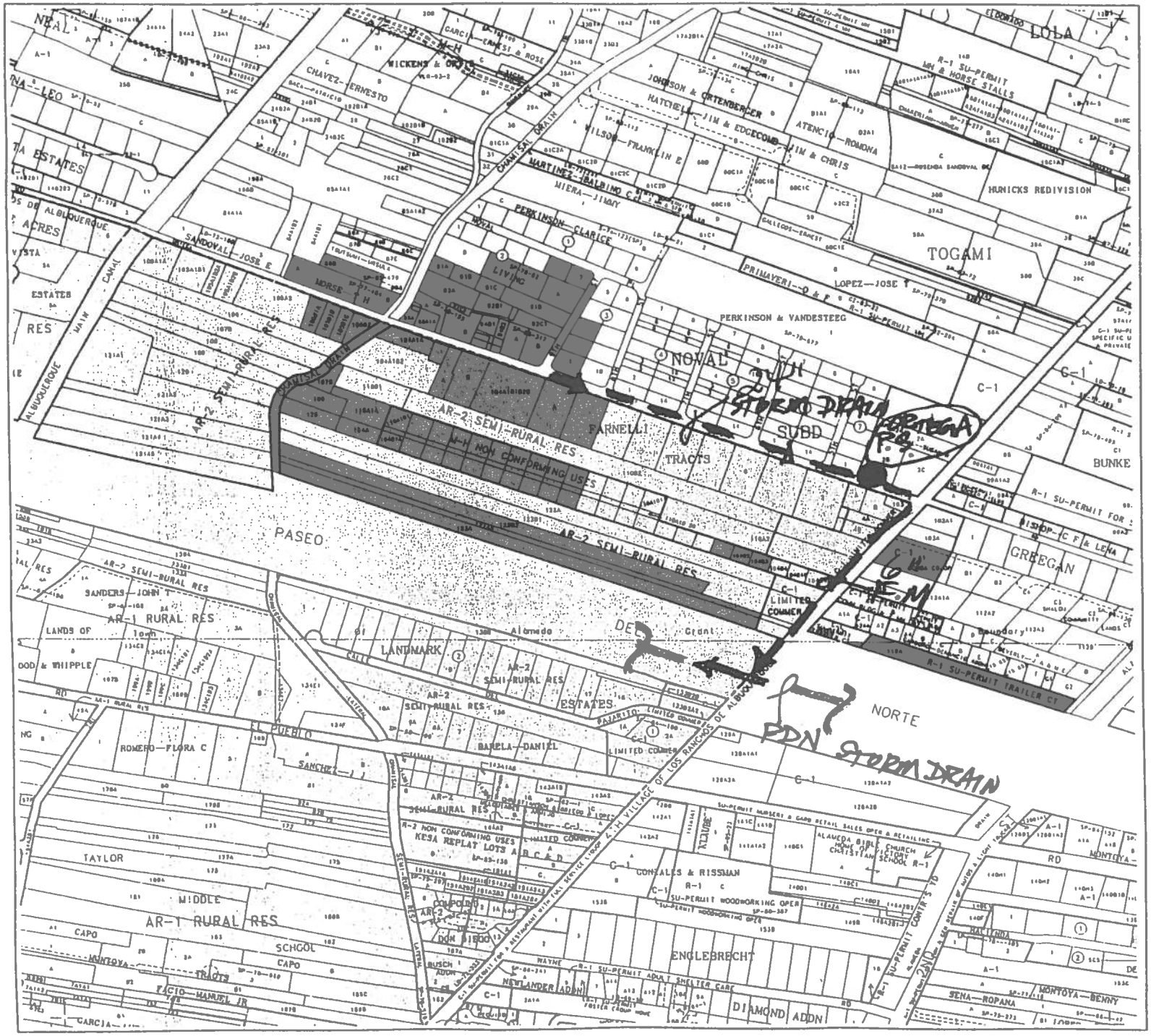
Comments: Bernalillo County Operates Edith and Ortega P.S.
City of Albuquerque Operates Paseo Del Norte P.S.
Alameda Operated by Bernalillo County
Montano Operated by City of Albuquerque - per Phil Morris - Phone Call 6/24/98
COA Phone # 873-7037

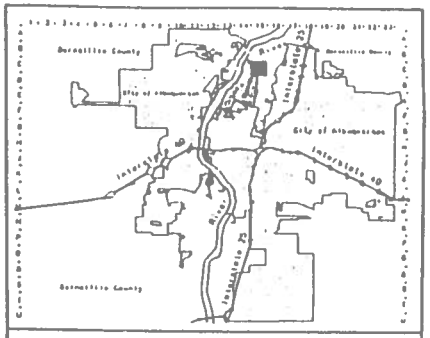
⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SPK Date: 6-24-98

- 6-23-98 - Phone Conversation with Bob Foglesong at Bernalillo County.
- Goal of Orega P.S.
  - Replaced plugged french drain.
  - Wanted to pump to PDN Pond but property owners south of Ortega would not sell easement.
  - Report says ultimately ran F. Main from P.S. to 4th Street, South on 4th Street and tied into PDN Storm Drain.
- 6-26-98 - Phone conversation with Jim Boardman - He says Ortega F. Main ties directly into PDN Storm Drain.





Location map

N

SCALE IN FEET

250 0 500 1000

1" = 500'

LEGAL DESCRIPTION

T11N
R3E
SEC 16

UNIFORM PROPERTY CODE

1-015-084

C-15-Z

Bernalillo County

Map Amended by AGIS through May 05, 1995

North Valley Drainage Management Plan
Literature Review

Title of Report: Drainage Master Plan for Vista Del Norte Subdivision
Author: AVID Engineering, Inc.
Date: March 1998
Owner/Authorizing Agency: Sundt Corp.
Study Area: Presently Cal-Mart Gravel Pit
Location: City of Albuquerque/ Bernalillo County

Purpose of Report Drainage Master Plan for entire subdivision and specific drainage plan for Phase 1. Identify major infrastructure required to handle 100-yr. storm.

Drainage Area Size (sq.miles):0.64 sq. miles

Drainage Area Boundary: North Diversion Channel on east, Edith Blvd on west, Osuna Road on south, and Paseo del Norte on north.
Design Event Return Period (years): 100 year
Design Event Duration (hrs): 24 hour
Other Events Analyzed: None
Soils: WEB, BKD (names unk.)

Numerical Models Used (specify version): AHYMO 194 ("new" COA hydrology)

Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Land treatments A,B,C,d DPM 22.2

Rainfall-runoff Transformation Method: DPM 22.2
Time of Concentration Method: SCS Upland DPM 22.2
Mapping Used to Delineate Watershed (Type of map Topography
Date: Unknown (Probably 1997 or 1998)
Scale: 1" =300'
Contour Interval: 2'
Peak Inflow (cfs)/Location: Unknown
Peak Outflow (cfs)/Location: Unk. Except North Pond (16cfs) & South Pond (7.5 cfs)
Peak Volume (ac-ft)/Location: North Pond (23.5), Middle Pond (15.4), South Pond (18.9)

Peak Water Surface Elevation (ft)/Location: North Pond (5016.1), Middle Pond (5026,5), South Pond (5020).
Describe Offsite Flows: 10 acre Sego-Cox property on SE corner = 47 cfs. 22 Acre Way - Cor Concrete Plant - 99 cfs.

Describe Existing Floodplains: None

Summary of Existing Drainage Structures: Existing open pit gavelmine retains 100 year event. No storm drains; only crude ponds.

. **(Edith Pond #6 is the only exist. fac. - See "Edith Blvd" Review)

Summary of Proposed Drainage Structures: 3 major watersheds each drains to Detention Pond. North Basin drains to Detention pond that is pumped to North Divsersion Channel. Middle Basin drains to Detention Pond that joins South Basin in Park/Pond . Ultimatelv Park/Pond drains to enlarged Edith Detention Pond #6 (existing)

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation.

Unk = unknown information
N/A = not applicable

Reviewed by: SPK Date: 5-10-98

North Valley Drainage Management Plan
Literature Review

Title of Report: Renaissance Center Drainage Report
Author: Andrews, Asbury & Robert, Inc.
Date: February 22, 1985
Owner/Authorizing Agency: First Western - Montano Joint Venture
Study Area: West of I25, North of Montano
Location: City of Albuquerque

Purpose of Report To develop a drainage plan for the Renaissance Center according to the COA drainage requirements.
Drainage Area Size (sq.miles): 0.493 sq. mi. (on-site & off-site)

Drainage Area Boundary: Unk - off-site drainage area map unavailable.
Design Event Return Period (years): 100 year
Design Event Duration (hrs): 6 hour
Other Events Analyzed: 10 year - 6 hour
Soils: SCS soil Group B

Numerical Models Used (specify version): COA DPM Volume 2 Section 22.2

Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk

Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map Unk.
Date: Unk
Scale: 1" = 200'
Contour Interval: 1'
Peak Inflow (cfs)/Location: 20.18 CFS
Peak Outflow (cfs)/Location: 24.3 adjacent to Montano Road, into the Montano Rd. Storm Drain.
Peak Volume (ac-ft)/Location: 19.81 AC-Ft. Southwest corner of property.

Peak Water Surface Elevation (ft)/Location: 5135.5 the intersection of Renaissance Blvd and Alexander Blvd.
Describe Offsite Flows: Off-site flows are from the South and are concentrated in primarily two locations. ❶ at the railroad spur bridge ❷ culverts under I25.

Describe Existing Floodplains: None.

Summary of Existing Drainage Structures: Retention area, formed by a gravel pit.

Summary of Proposed Drainage Structures: Detention Pond in southwest corner of the property. Runoff is conveyed to detention pond by street surface and storm drain within the street right of ways. Catch basins are proposed as inlets to the storm drain system. Each individual parcel will provide adequate detention to limit runoff to 0.09 CFS/Acre. Thre will be an outlet from the primary detention basin at the SW property corner which is to be connected to a storm drain in Montano Road. Some runoff on the North side of the property will be retained by the adjacent property as agreed upon with the gravel company. (Consistent with historic flows).

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 7-9-98

Renaissance Center

Drainage Analysis

LOCATION MAP

F-16-Z

MAP A

North Valley Drainage Management Plan
Literature Review

Title of Report: Conceptual Master Drainage Plan - Tract B-1-A-1 Springer Building Lands
Author: Bohannan - Huston
Date: July 22, 1998
Owner/Authorizing Agency: Unknown
Study Area: Tract B-1-A-1 of Springer Building Lands
Location: City of Albuquerque

Purpose of Report Master Drainage Plan for future light industrial, commercial, office, and warehouse uses.

Drainage Area Size (sq.miles):66 Acres

Drainage Area Boundary: Bounded on the north by Alameda Blvd, on the east by the North Diversion Channel, on the west by Edith Blvd, and the south property line is approximately 1500 ft. north of Paseo del Norte
Design Event Return Period (years): 100 year
Design Event Duration (hrs): 24 hour
Other Events Analyzed: None
Soils: Former gravel mining operation

Numerical Models Used (specify version): AHYMO

Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): A = 0%, B = 15%, C = 15%, D = 70%

Rainfall-runoff Transformation Method: AHYMO
Time of Concentration Method: COA DPM Plates 22.2
Mapping Used to Delineate Watershed (Type of map Topography
Date: Unknown
Scale: 1" =100'
Contour Interval: 1'
Peak Inflow (cfs)/Location: Peak inflow to detention pond is 189 cfs.
Peak Outflow (cfs)/Location: Peak outflow from detention pond is 2 cfs.
Peak Volume (ac-ft)/Location: Peak volume in detention pond is 9.1 acre-ft.

Peak Water Surface Elevation (ft)/Location: The peak water surface will reach a depth of approximately 8 feet.
Describe Offsite Flows: No offsite flows.

Describe Existing Floodplains: No FEMA floodplains.

Summary of Existing Drainage Structures: None

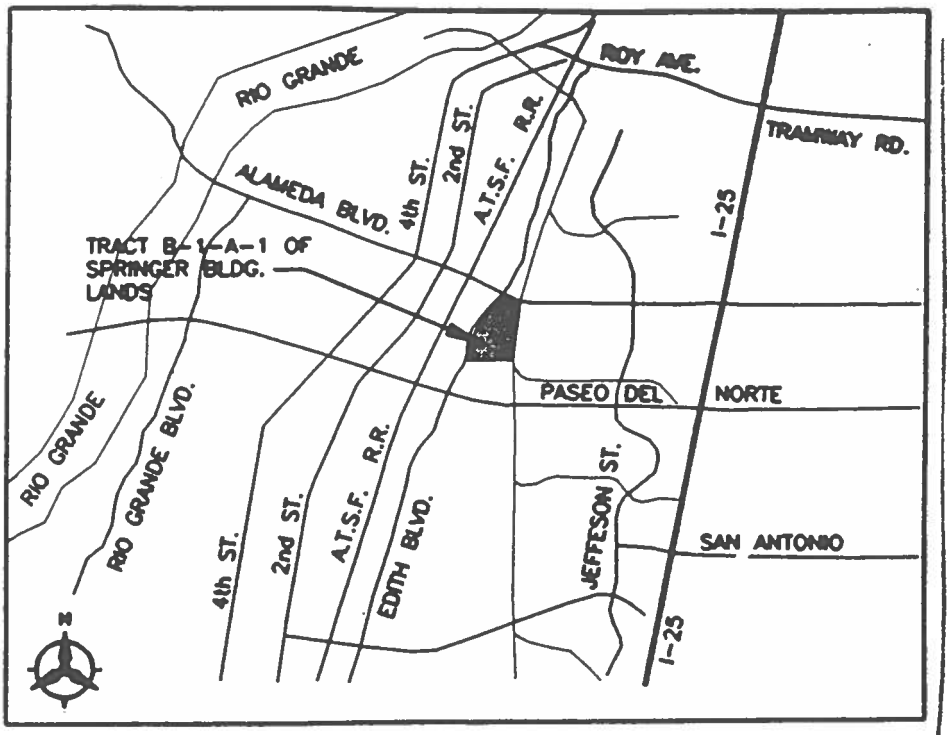
Summary of Proposed Drainage Structures: All of the on site flow is proposed to drain via storm drains and streets to a detention pond located on the west edge of the site. The detention basin will drain at a controlled rate of 2 cfs to the Alameda Lateral.

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SPK Date: 8-18-98



VICINITY MAP – ZONE C-16-Z

North Valley Drainage Management Plan
Literature Review

Title of Report: Bona Terra Farms
Author: Jeff Mortensen & Associates, Inc.
Date: April 1994
Owner/Authorizing Agency: Bernalillo County
Study Area: North of Alameda, East of the Rio Grande River
Location:

Purpose of Report: To Determine the Runoff for the 100 year, 6 hr. Storm event, and provide adequate drainage structures to retain the design storm.

Drainage Area Size (sq.miles): 0.044
Drainage Area Boundary: Southern boundary of the Meadows Subdivision is the Northern boundary. Alameda Blvd is the Southern boundary. The Riverside Drain & Rio Grande Blvd. Are the West & East boundaries respectively.
Design Event Return Period (years): 100 years
Design Event Duration (hrs): 6 hour
Other Events Analyzed: none
Soils: Af, Bs, & Bt
Numerical Models Used (specify version): City of Albuquerque - DPM Section 22.2
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map): Unk
Date: Unk
Scale: 1" = 40'
Contour Interval: 1'
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: Mostly Irrigation Ditches
Describe Existing Floodplains: Zone AH is adjacent to SW Corner of property
Summary of Existing Drainage Structures: Irrigation Ditches

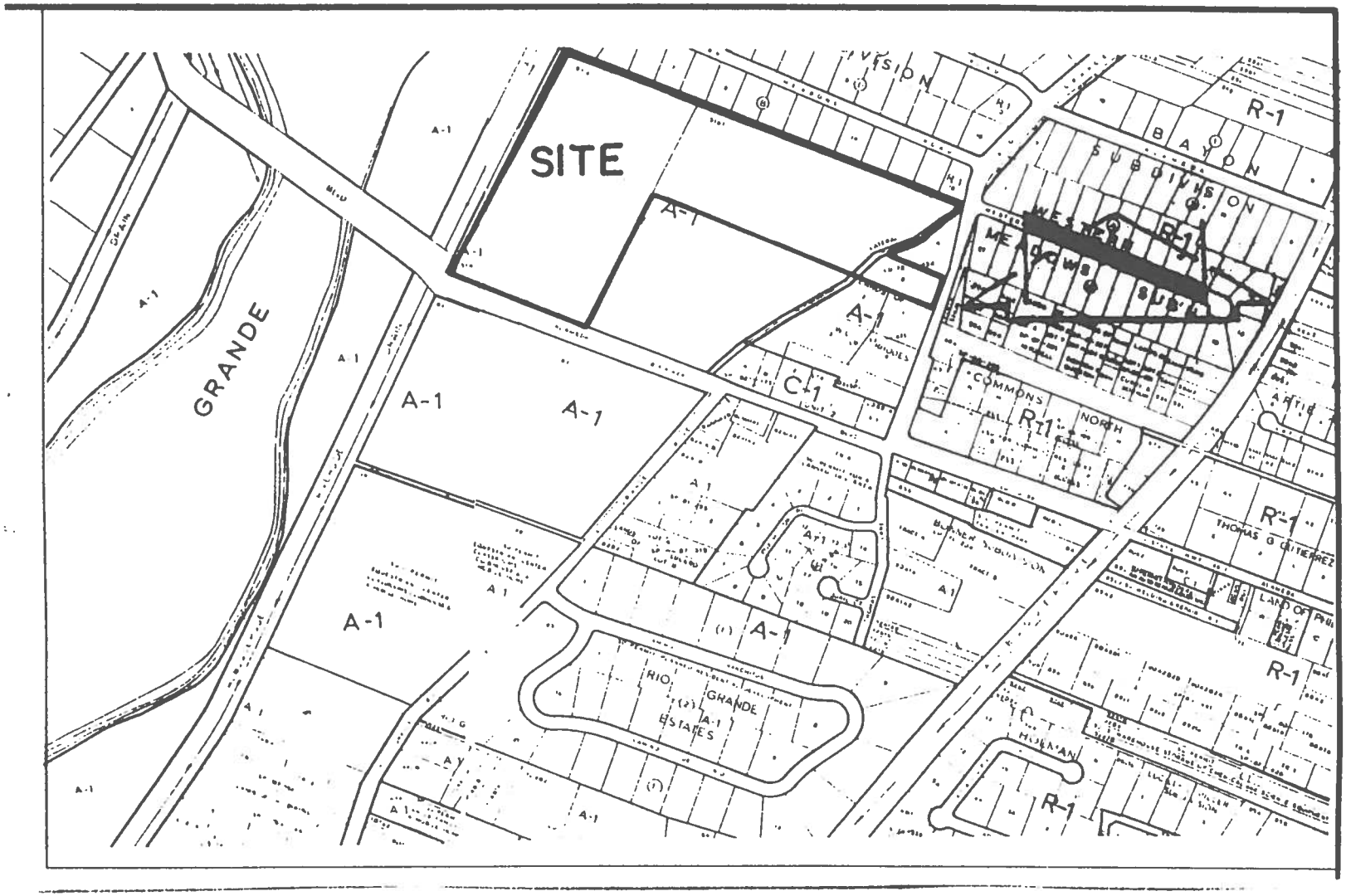
Summary of Proposed Drainage Structures: Retention Basins constructed on individual lots as they are developed. Existing Irrigation Ditches will be piped underground.

Comments: Site is very flat and will require minimal grading. Reasonable drainage exhibit not available.

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-18-98


SITE
GRANDE
A-1
C-1
R-1
COMMONS
NORTH
RIO GRANDE ESTATES
THOMAS G GUTIERREZ
HUSMAN

North Valley Drainage Management Plan
Literature Review

Title of Report: Grading and Drainage Plan - Mini Storage Facilities
Author: Marvin R. Kortum, P.E.
Date: August 14, 1993
Owner/Authorizing Agency: Marvin Kortum
Study Area: Adjacent to and East of 2nd Street, Adjacent to and West of the P.T. & S.F., Irrigation Ditch on South side & North side is the Village Park Mobile Home Park
Location: Bernalillo County

Purpose of Report: To Analyze and determine the required retention volume provided according to Bernalillo County Drainage Ordinance.

Drainage Area Size (sq.miles): 0.011 sq. mi.
Drainage Area Boundary: Same As Study Area
Design Event Return Period (years): 100 years
Design Event Duration (hrs): 6 hour
Other Events Analyzed: 100 year - 10 day
Soils: Vinton Sandy Loam (Vba) & Vinton Clayey Loam (Vc)
Numerical Models Used (specify version): City of Albuquerque - DPM Section 22.2 Hydrology
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map): COA Floodway Flood Boundary and Floodway Map, Panel 3 of 50.
Date: Unk
Scale: 1" = 500'
Contour Interval: 1'
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: None
Describe Existing Floodplains: Adjacent AH (to the West)
Summary of Existing Drainage Structures: Irrigation Ditches & Ponding Preps on Farmland.

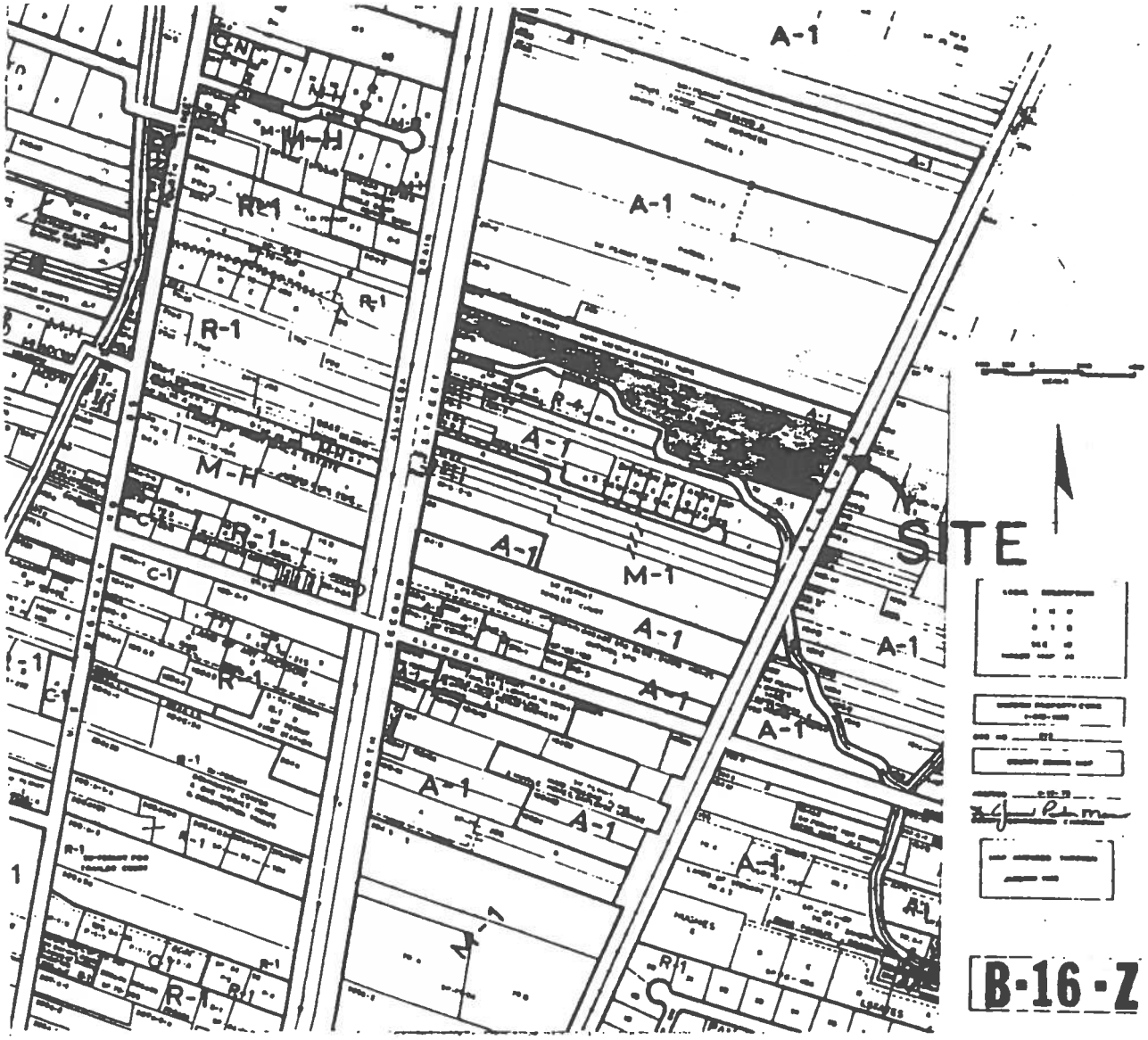
Summary of Proposed Drainage Structures: 1 Major & 2 Minor Retention Ponds. Property is graded to direct runoff into the Retention Ponds. The Retention Ponds will provide for most of the Runoff Storage. Additional Storage is provided within the Parking Surface Areas, to an Approximate Depth of 3".

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-25-98



LEGAL DESCRIPTION

Tracts 61-B-1; 61-B-2; 62-B; 68; and tract B, Lands of Stephen Harp, NMOCD MAP #23, BERNALILLO COUNTY, NEW MEXICO

NOTES

(A) 20 feet x 40 feet storage building

(B) 20 feet x 50 feet storage building

(C) 20 feet x 60 feet storage building

(D) 20 feet x 105 feet storage building

(E) 5 feet wide landscaped area along perimeter of property.

(F) Landscaped areas adjacent to storage buildings (pond B).

(G) Existing office building

(H) Parking for office

(J) RV Storage area

(K) Caretakers house and yard

(L) Main retention pond A

(M) Hardstand drive and parking area

(N) All berms and earthwork supporting structures must be compacted to 95% of maximum dry density (Modified Proctor Test).

North Valley Drainage Management Plan
Literature Review

Title of Report: DerraMadera Subdivision Terrain Management & Conceptual Grading Plan
Author: Bohannan - Huston, Inc.
Date: August 1995
Owner/Authorizing Agency: Duncan Melloy
Study Area: West of Edith Blvd., South of Roehl Rd. Adjacent to the AT & S.F. Railroad
Location: Bernalillo County

Purpose of Report: To Determine the 100 yr - 6 hr. runoff and provide Retention Capacity according to the Bernalillo County Drainage Ordinance.

Drainage Area Size (sq.miles): 0.0126 sq. mi.
Drainage Area Boundary: Same As Study Area
Design Event Return Period (years): 100 years
Design Event Duration (hrs): 6 hour
Other Events Analyzed:
Soils: Unk
Numerical Models Used (specify version): City of Albuquerque - DPM Section 22.2
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map
Date: Unk
Scale: 1" = 50'
Contour Interval: 2'
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: None
Describe Existing Floodplains: None
Summary of Existing Drainage Structures: None.

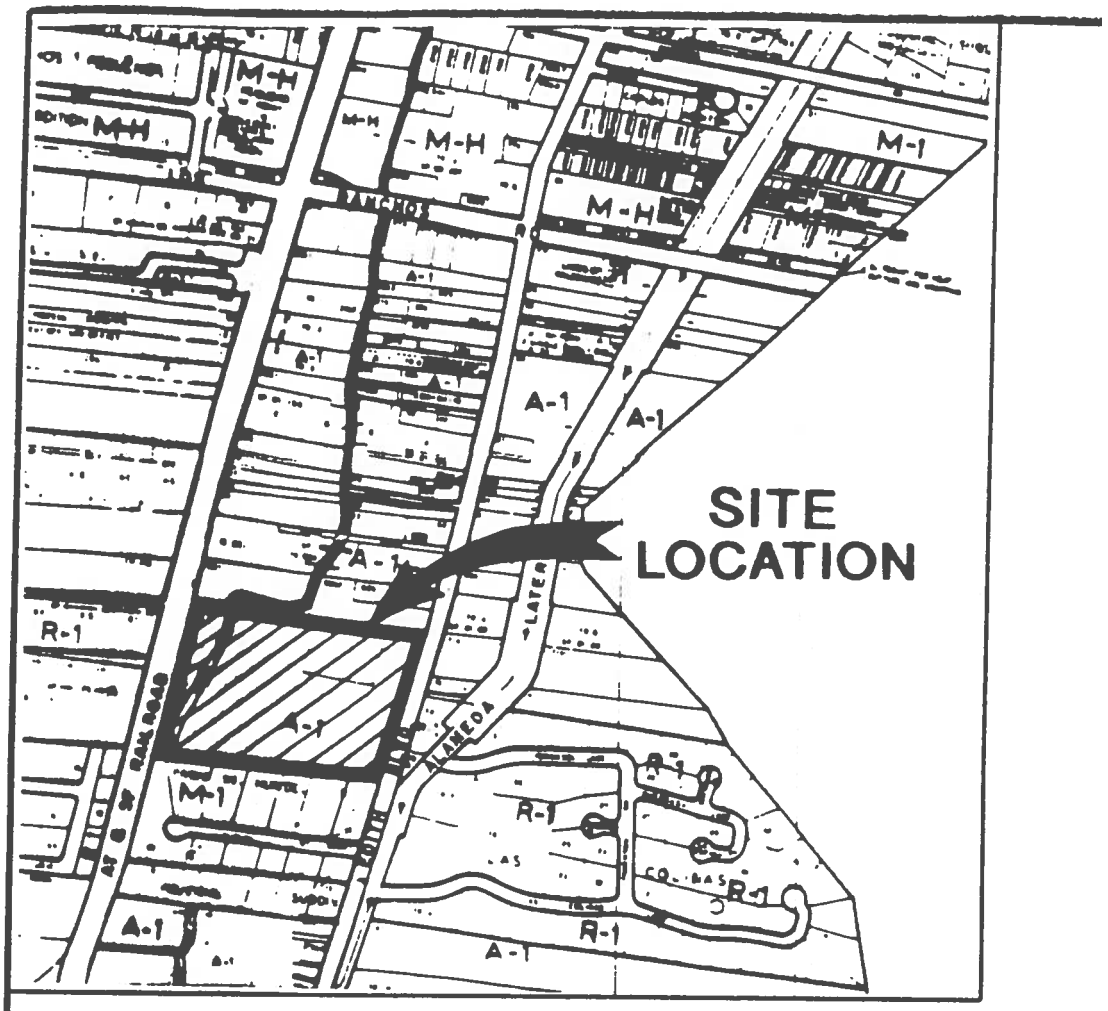
Summary of Proposed Drainage Structures: Individual Retention Ponds on each lot to retain the 100yr - 6 hr Runoff according to the Bernalillo County Drainage Ordinance

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-23-98



LOCATION MAP

ZONE ATLAS MAP NO. D-15-Z AND D-16-Z

NO SCALE

North Valley Drainage Management Plan
Literature Review

Title of Report: Las Haciendas de Gregoria Candelaria Grading & DrainagePlan
Author: Brasher & Lorenz, Inc..
Date: May 1996
Owner/Authorizing Agency: Dennis Lorenz
Study Area: Jacobson Lane East of 2nd Street, East Boundary is AT & SF Railroad.
Location: Bernalillo County

Purpose of Report: To outline the Drainage Management Criteria for Controlling Developed Runoff on, and Exiting the Project Site According to Bernalillo County Drainage Ordinance.

Drainage Area Size (sq.miles):0.0094 sq. mi.
Drainage Area Boundary: Same As Study Area
Design Event Return Period (years): 100 years
Design Event Duration (hrs): 6 hour
Other Events Analyzed: None
Soils: Unk
Numerical Models Used (specify version): Unk
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map
Date: Unk
Scale: 1" = 500'
Contour Interval: Unk
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: None
Describe Existing Floodplains: None
Summary of Existing Drainage Structures: Natural Drainage Swales and Ponding in Natural Depressions

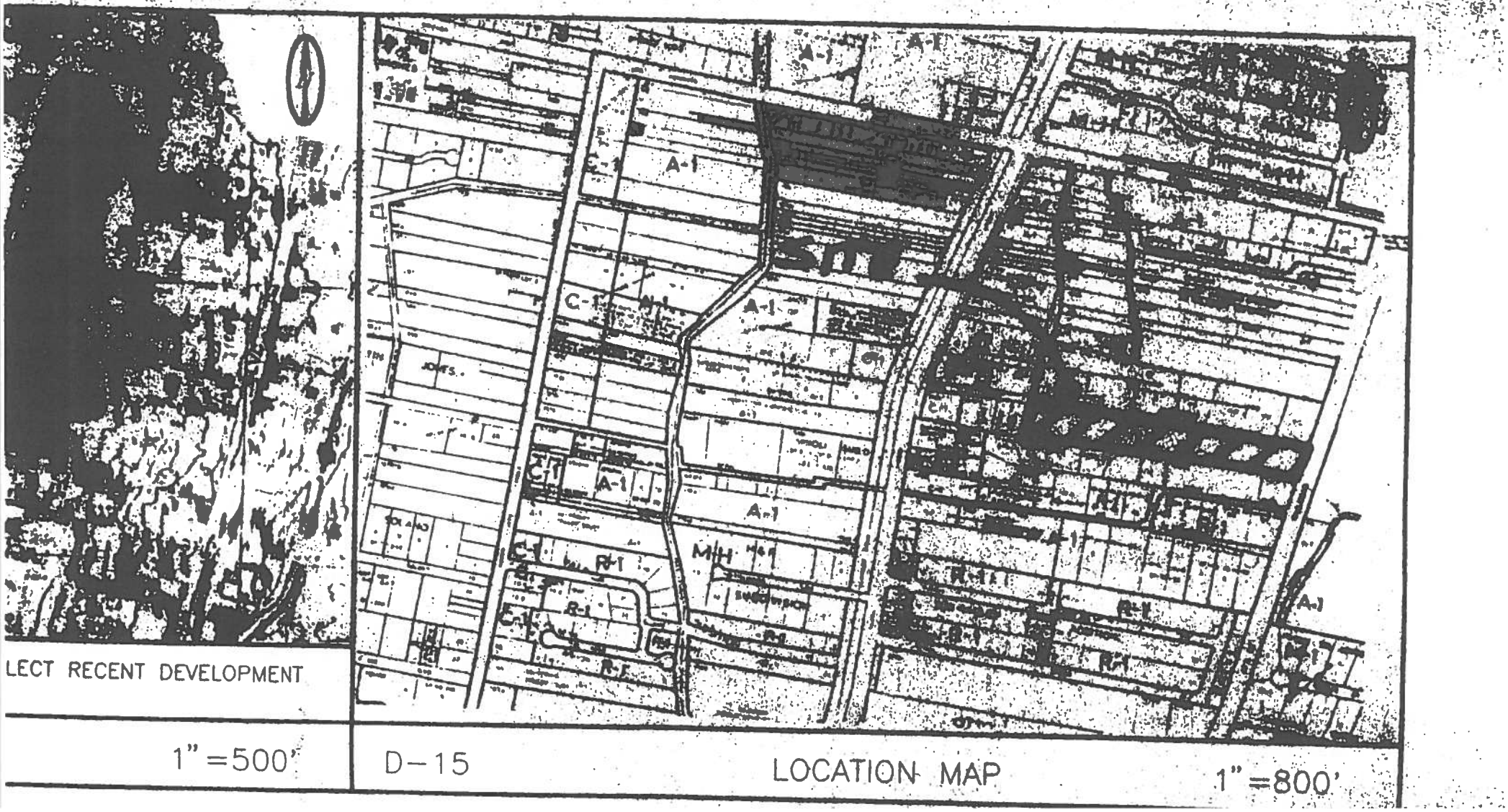
Summary of Proposed Drainage Structures: On-Site Retention Ponds on Each Lot. Lots are Graded to Convey Flows to Retention Ponds.

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-25-98



LECT RECENT DEVELOPMENT

1" =500'

D-15

LOCATION MAP

1" =800'

North Valley Drainage Management Plan
Literature Review

Title of Report: Holbrook Subdivision - Grading & Drainage Plan
Author: JEL & Associates
Date: February 1998
Owner/Authorizing Agency: Penny Holbrook
Study Area: Property Site Only - No Off-Site Flows.
Location: Bernalillo County

Purpose of Report: To determine the required retention capacity for the site runoff from the 100 yr - 6 hr storm and the 10 yr - 6 hr storm.

Drainage Area Size (sq.miles):0.009 sq. mi.
Drainage Area Boundary: 5.53 AC located approximately 900 feet south of Alameda Blvd. on the west side of Guadalupe Rd., NW. The eastern boundary is adjacent to the Chamisa Drain.
Design Event Return Period (years): 100 years
Design Event Duration (hrs): 6 hour
Other Events Analyzed: 10 year - 6 hour
Soils: Unk
Numerical Models Used (specify version): DPM - COA Section 22.2
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map
Date: Unk
Scale: Unk
Contour Interval: Unk
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: None
Describe Existing Floodplains: None
Summary of Existing Drainage Structures: None

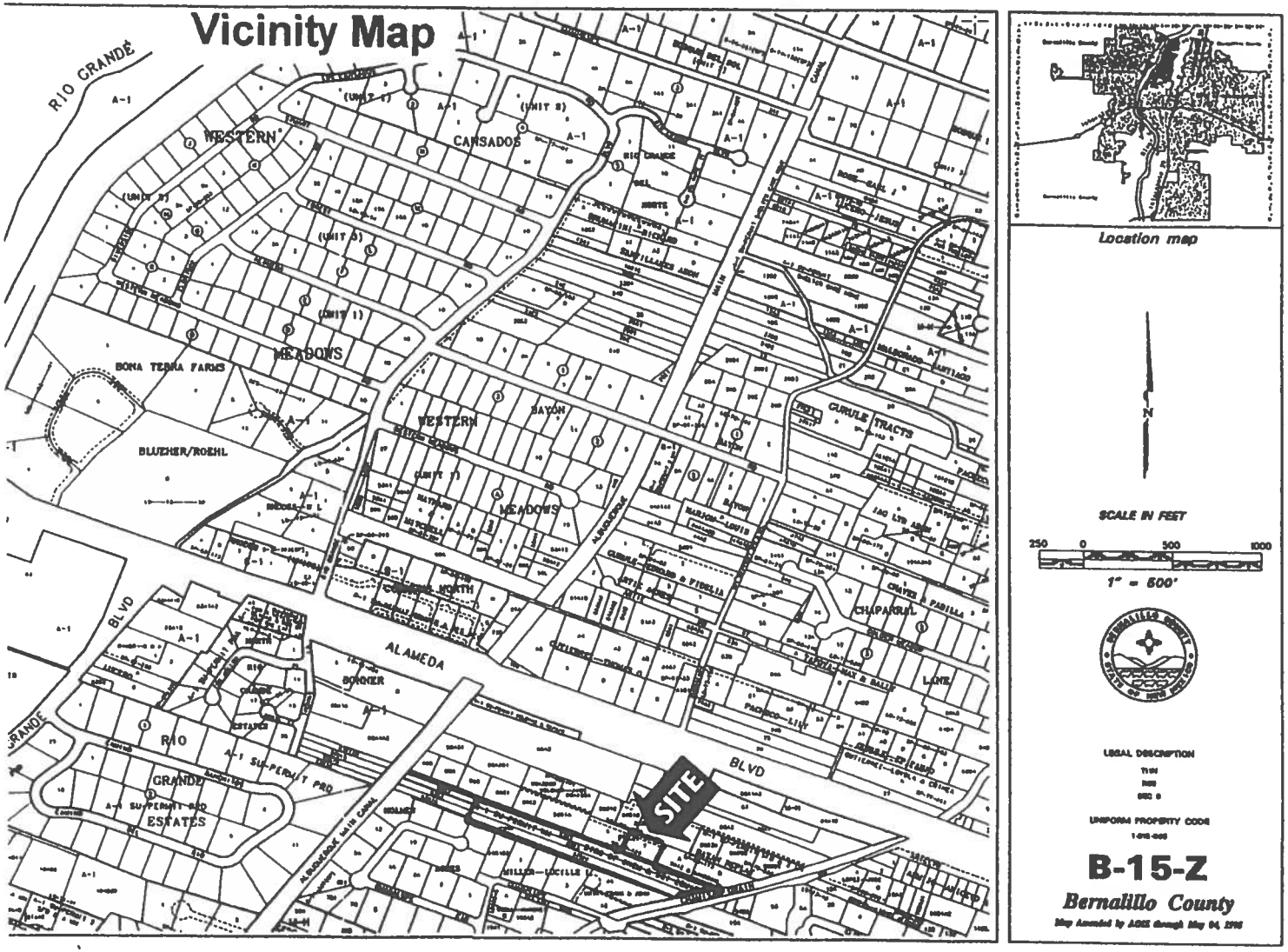
Summary of Proposed Drainage Structures: Retention ponds varying in depths from 0.49 feet to 0.93 feet on each individual lot.

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-23-98


Vicinity Map
RIO GRANDE
WESTERN
CANSADOS
MEADOWS
BONA TERRA FARMS
BLUEHER/ROEHL
GURULE TRACTS
ALAMEDA
BLVD
SITE
RIO GRANDE ESTATES
Location map
SCALE IN FEET
250 0 500 1000
1" = 500'
LEGAL DESCRIPTION
UNIFORM PROPERTY CODE
B-15-Z
Bernalillo County

North Valley Drainage Management Plan
Literature Review

Title of Report: Sandia Preparatory School Master Grading & Drainage Plan
Author: Frank D. Lovelady, P.E.
Date: December 1990
Owner/Authorizing Agency: Sandia Preparatory School
Study Area: The north, south, east & west boundaries are Osuna Rd., NE, El Paraiso Rd, NE, Universal Industrial Parkl, & Edith Blvd., NE, respectively..
Location: City of Albuquerque

Purpose of Report: To provide drainage structures according to COA Drainage Ordinance.

Drainage Area Size (sq.miles):0.041 sq. mi.
Drainage Area Boundary: Same as study area.
Design Event Return Period (years): 100 years
Design Event Duration (hrs): 6 hour
Other Events Analyzed: 10 year - 6 hour
Soils: Unk
Numerical Models Used (specify version): DPM - COA Section 22.2 - Hydrology
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map
Date: Unk
Scale: 1" = 50'
Contour Interval: 1'
Peak Inflow (cfs)/Location: 79.64 cfs
Peak Outflow (cfs)/Location: 26.72 cfs
Peak Volume (ac-ft)/Location: 0.744 AC-FT
Peak Water Surface Elevation (ft)/Location: 4995.36 (Spillway elevation is 5000.50)
Describe Offsite Flows: None
Describe Existing Floodplains: None
Summary of Existing Drainage Structures: Grading to direct flow to Athletic Fields and adjacent retention areas.

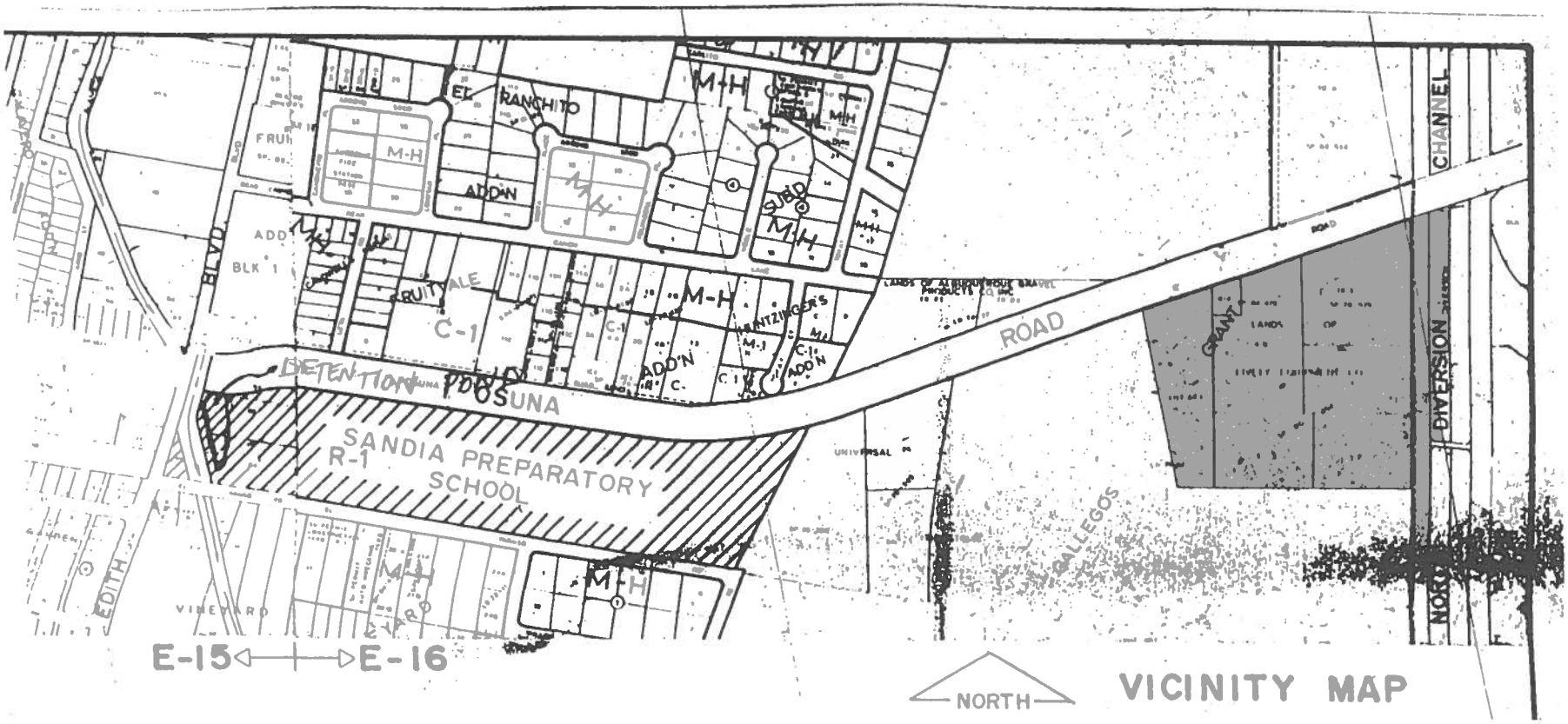
Summary of Proposed Drainage Structures: Due to the addition of a storm sewer in Edith Blvd. A detention pond with a drainage pipe to the storm sewer is proposed. The detention pond also has a spillway to accommodate overflow. Berms are so located on the athletic fields to assist in runoff retention.

Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-30-98


M-H
EL RANCHITO
ADD'N
BLVD
BLK 1
FRUITDALE
C-1
DETENTION POND
ROAD
SANDIA PREPARATORY SCHOOL
R-1
EDITH
VINEYARD
E-15
E-16
CHANNEL
DIVERSION
GALLEGOS
NORTH
VICINITY MAP

North Valley Drainage Management Plan
Literature Review

Title of Report: Drainage Report for Arboleda Del Sol Subdivision
Author: Mark Goodwin & Associates
Date: May 1998
Owner/Authorizing Agency: SH Company
Study Area: East of 2nd Street, Between 2nd Street & A.T.&S.F. Railroad, approx. 100' South of Alameda Blvd.
Location: Bernalillo County

Purpose of Report: To determine the drainage parameters which will occur as the result of the development of this site, in accordance with the Bernalillo County Drainage Ordinance..

Drainage Area Size (sq.miles):0.0962 sq. mi.
Drainage Area Boundary: Same as study area - property site.
Design Event Return Period (years): 100 year
Design Event Duration (hrs): 6 hour
Other Events Analyzed: 10 year - 6 hour
Soils: B & D
Numerical Models Used (specify version): AHYMO
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unk
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: Unk
Mapping Used to Delineate Watershed (Type of map
Date: Unk
Scale: 1" = 50'
Contour Interval: 1'
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: None
Describe Existing Floodplains: AH - Small portion in far SW Corner of site
Summary of Existing Drainage Structures: Irrigation Ditches on Existing Farmland..

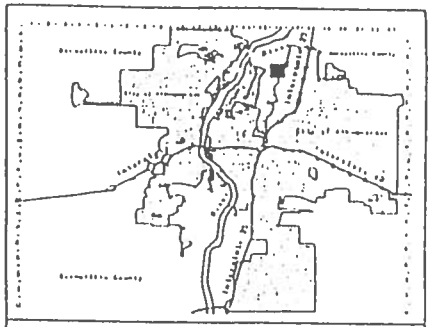
Summary of Proposed Drainage Structures: Retention ponds in common areas and/or individual subdivision lots will provide on-site storage for the 100yr - 6hr runoff. There is an emergency overflow on the NW corner of the site, that will overflow into 2nd Street.

Comments The historical discharge from the site will not be altered.

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-23-98



Location map

N

SCALE IN FEET

250 0 500 1000

1" = 500'

LEGAL DESCRIPTION

T11N

R3E

SEC 18

UNIFORM PROPERTY CODE

1-018-044

C-16-Z

Bernalillo County

Map Amended by AGIS through May 05, 1995

`North Valley Drainage Management Plan
Literature Review

Title of Report: North Valley Drainage Systems Final Design Analysis Report
Author: Scanlon & Associates, Inc.
Date: December 1985
Owner/Authorizing Agency: COA
Study Area: North and South of Montano Road between I25 & the Alameda Drain
Location: City of Albuquerque

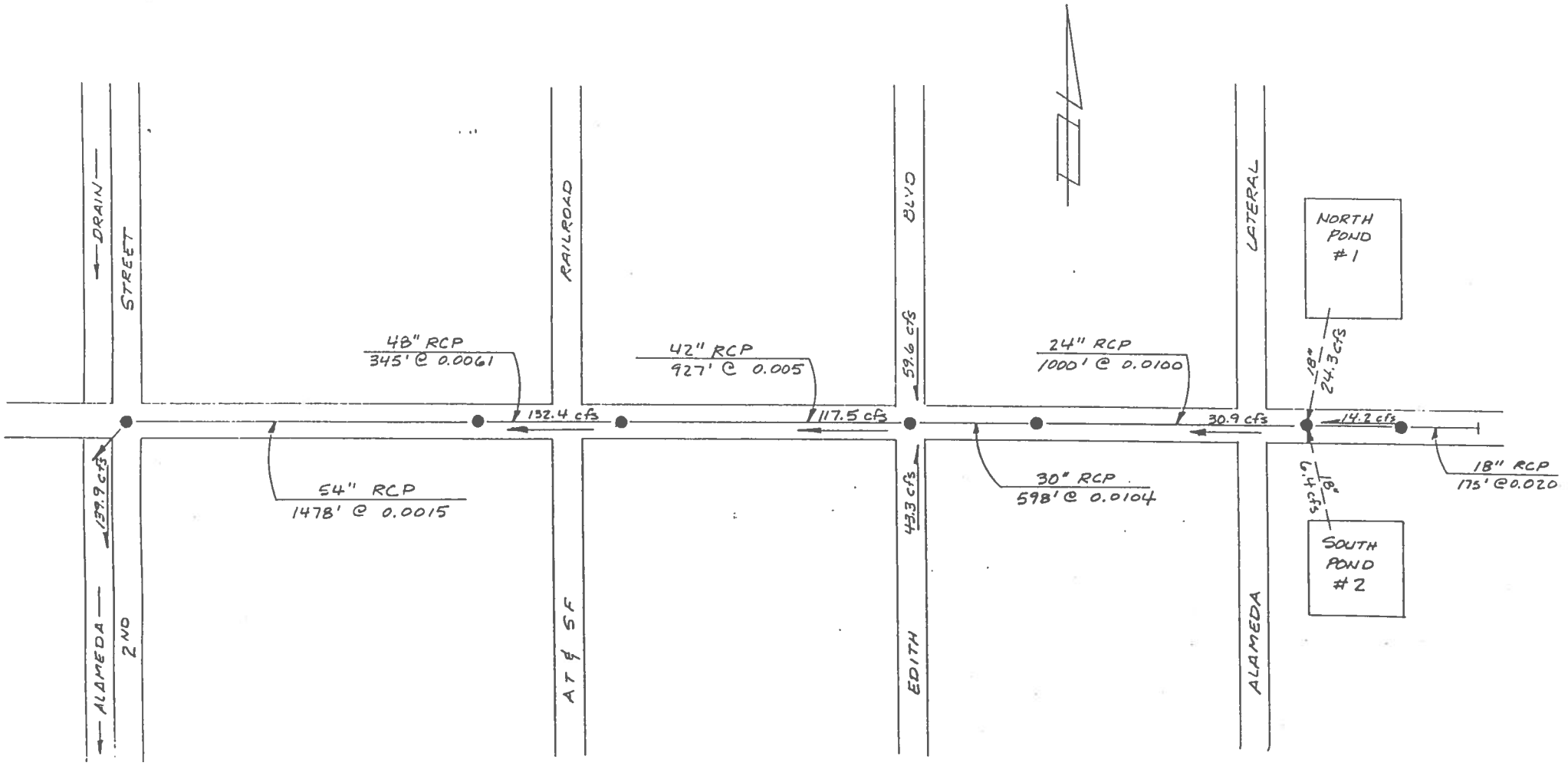
Purpose of Report To show the existing conditions of the Montano Road Study Area.

Drainage Area Size (sq.miles):1.179
Drainage Area Boundary: The Alameda Drain on the West, the Pan American Freeway & North Diversion Channel on the East, Statts Lateral and Mission Road on the North, the Felix Sanchez Addition Railroad, Yale Blvd. and I-25 on the South.

Design Event Return Period (years): 10,25 & 100 year
Design Event Duration (hrs): 6 hour
Other Events Analyzed: Unk
Soils: BluePoint - Kokan (Bkd) & Wink-Embudo (Web) in East portion, Gila Loam (Gb) & Vinton (Vba) Series in West Portion. Hydrologic Group 'B'.

Numerical Models Used (specify version): HYMO
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Curve Numbers
Rainfall-runoff Transformation Method: Unk
Time of Concentration Method: COA DPM Plates 22.2B-1, 22.2B-2
Mapping Used to Delineate Watershed (Type of map Unk
Date: Unk
Scale: Unk
Contour Interval: None
Peak Inflow (cfs)/Location: Unk
Peak Outflow (cfs)/Location: North Pond #1 = 24.3 cfs, South Pond # 2 = 6.4 cfs.
Peak Volume (ac-ft)/Location: Unk
Peak Water Surface Elevation (ft)/Location: Unk
Describe Offsite Flows: None Known

Describe Existing Floodplains: Scattered 'AH' Flood Areas along Railroad & Alameda Drain, North of Montano Road.
Summary of Existing Drainage Structures: 12" Storm Drain on Montano Road at 2nd Street Drains the Albuquerque Gravel Products Parking Lot. Also an 18" Storm Drain in Sandia Road to the East of 2nd Street that drains directly into the Alameda Drain. There are four catch basins in this system.



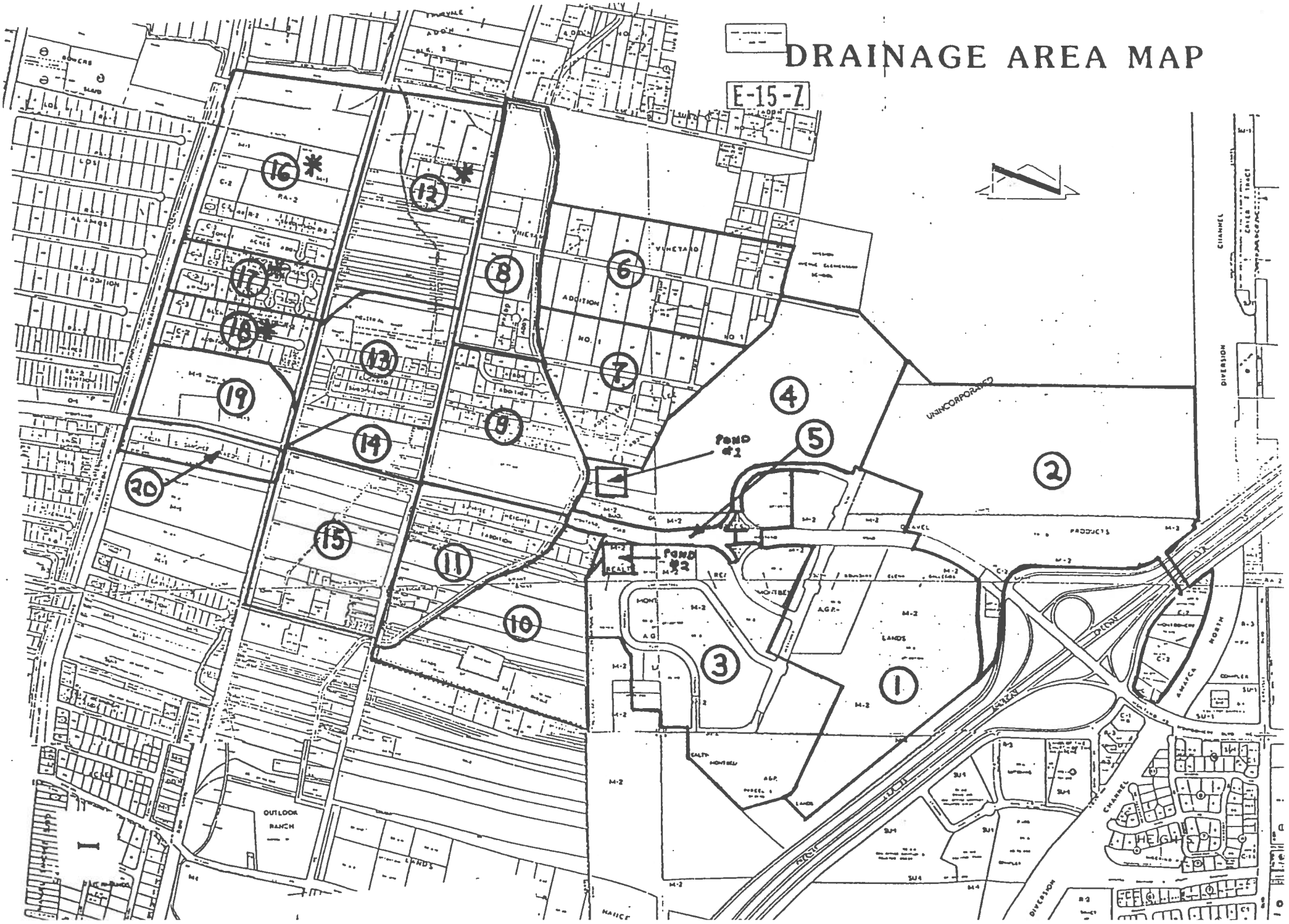
MONTANO ROAD SKETCH

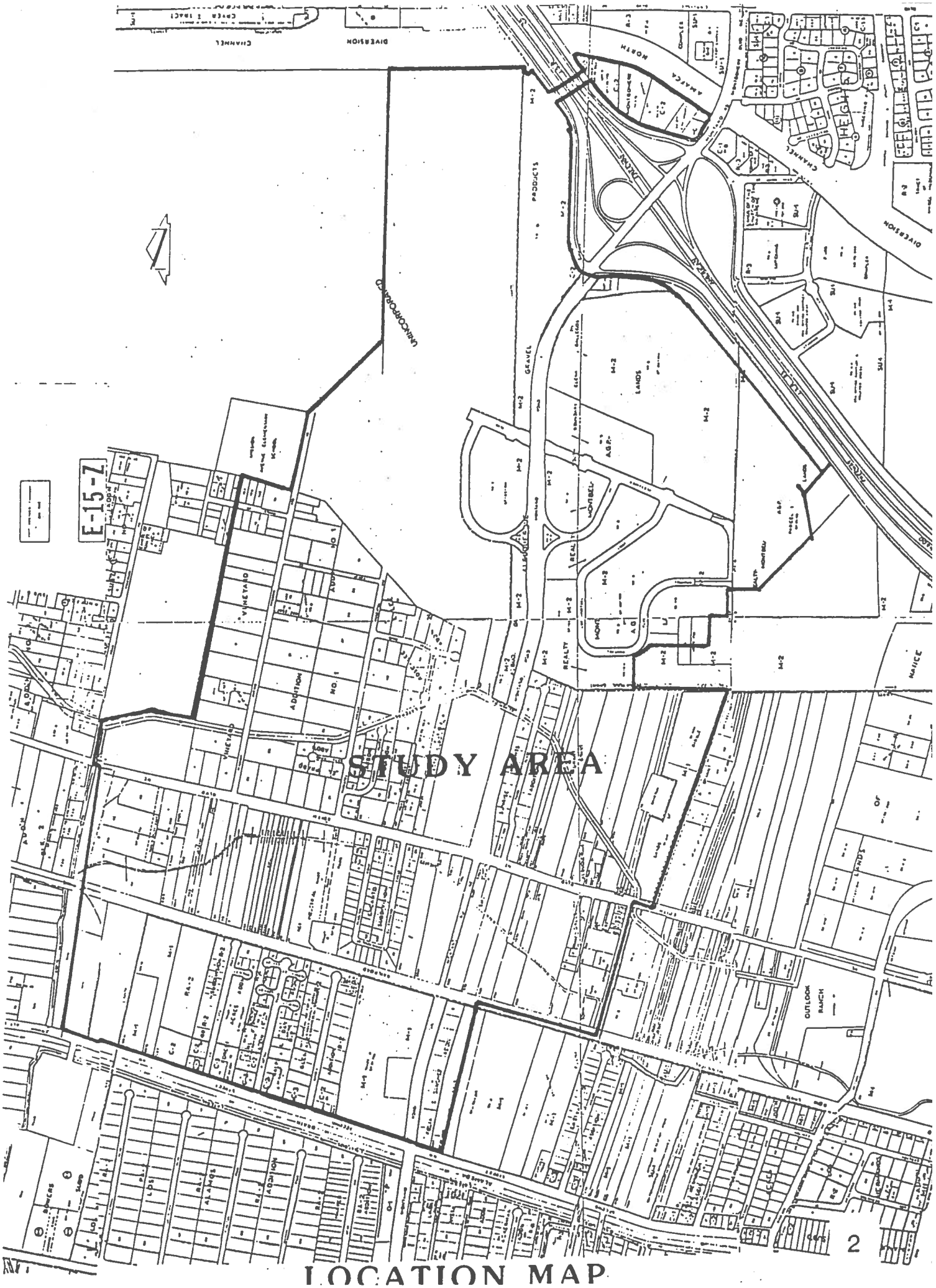
PROPOSED STORM DRAIN

(FLOWS BASED ON 100 YEAR - 6 HOUR DESIGN STORM)

DRAINAGE AREA MAP

E-15-Z





2

LOCATION MAP

North Valley Drainage Management Plan
Literature Review

Title of Report: Final Drainage Report - PDN & 2nd Street Interchange
Author: AVID
Date: March 1993
Owner/Authorizing Agency: NMSHTD
Study Area: PDN between 4th & Jefferson
Location: Bernalillo County

Purpose of Report Analyze existing drainage conditions, changes due to proposed construction. The report assumes that existing detention/retention ponds are adequate for existing roadway flows.

Drainage Area Size (sq.miles): 38 acres = 0.0592 $M1^2$

Drainage Area Boundary: West - 4th Street, East - AT & SF Railroad, North - existing pond, South - existing pond.
Design Event Return Period (years): Ponds West 2nd - 10 yr Ponds East 2nd - 100 yr.
Design Event Duration (hrs): Ponds East 2nd - 24 hr
Other Events Analyzed:
Soils: Not Mentioned

Numerical Models Used (specify version): Inlets - Q HEC 12 Culverts - Flowmaster

Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): DPM Part A 22.2

Rainfall-runoff Transformation Method: DPM Part A 22.2
Time of Concentration Method: COA DPM Plates 22.2 Part A
Mapping Used to Delineate Watershed (Type of map ACAD - Contour Maps
Date: March 1993 ?
Scale: 1" = 200'
Contour Interval:
Peak Inflow (cfs)/Location: All basins are internally drained with retention/detention ponds
Peak Outflow (cfs)/Location:
Peak Volume (ac-ft)/Location:
Peak Water Surface Elevation (ft)/Location:
Describe Offsite Flows: West of 2nd Street - ponds are designed to accept offsite flows - although no offsite flows reach them.

Describe Existing Floodplains: No existing flood plains within roadway

Summary of Existing Drainage Structures: 3 - Existing retention ponds
2 - Existing detention ponds, the two existing detention ponds are connected by 2 - 4' x 3' CBCS

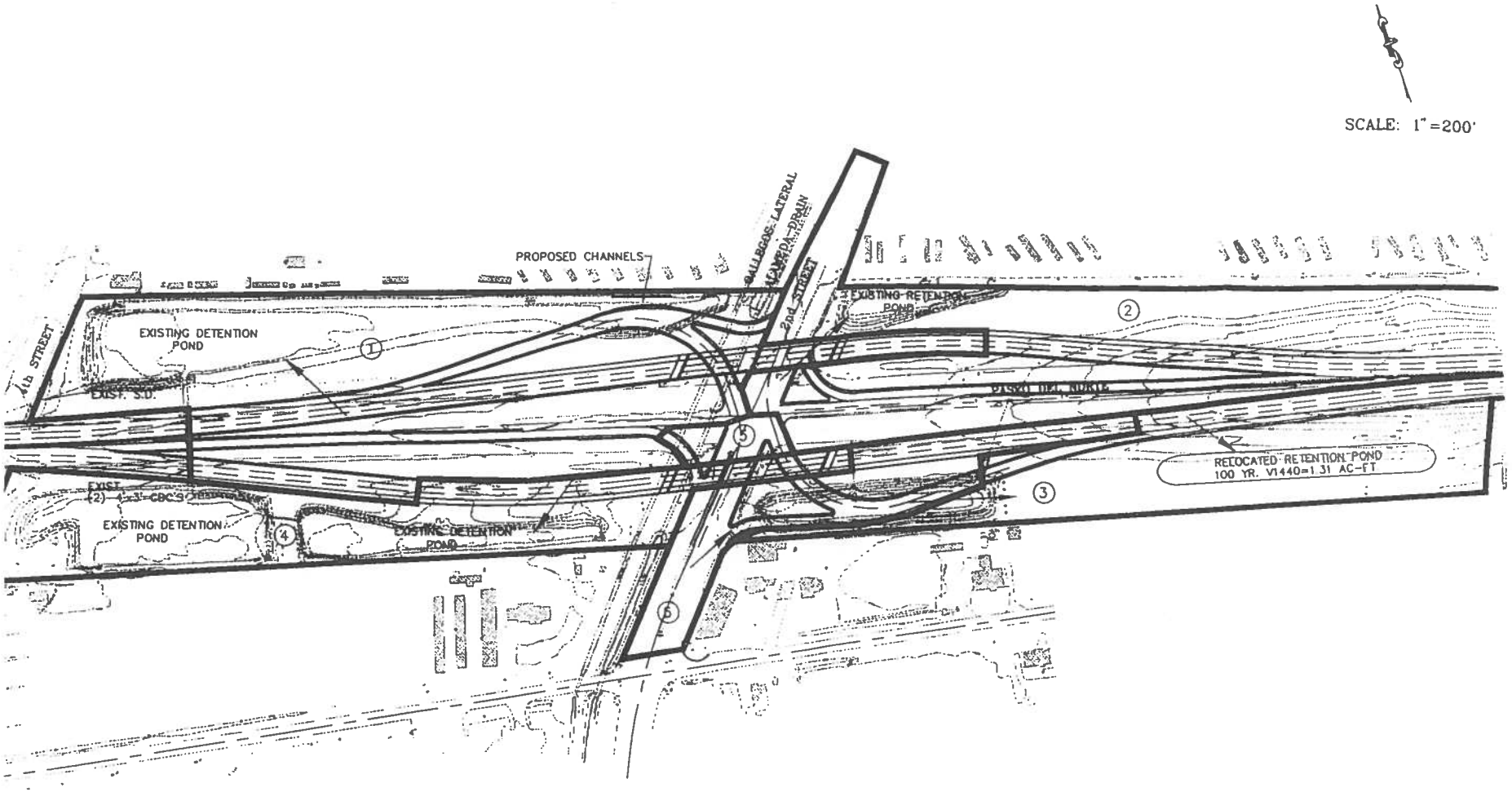
Summary of Proposed Drainage Structures: There are various MDI's and culverts that will be constructed or modified to accept flows from the roadway and drain it to the existing ponds. No major drainage structures will be constructed that will alter the overall drainage scheme in the area.

Comments All of the existing detention/retention ponds were assumed to be able to hold all of the developed flows from the roadway. The available storage capacity of the ponds indicates that this assumption is correct.

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: CJR Date: 5/14/98

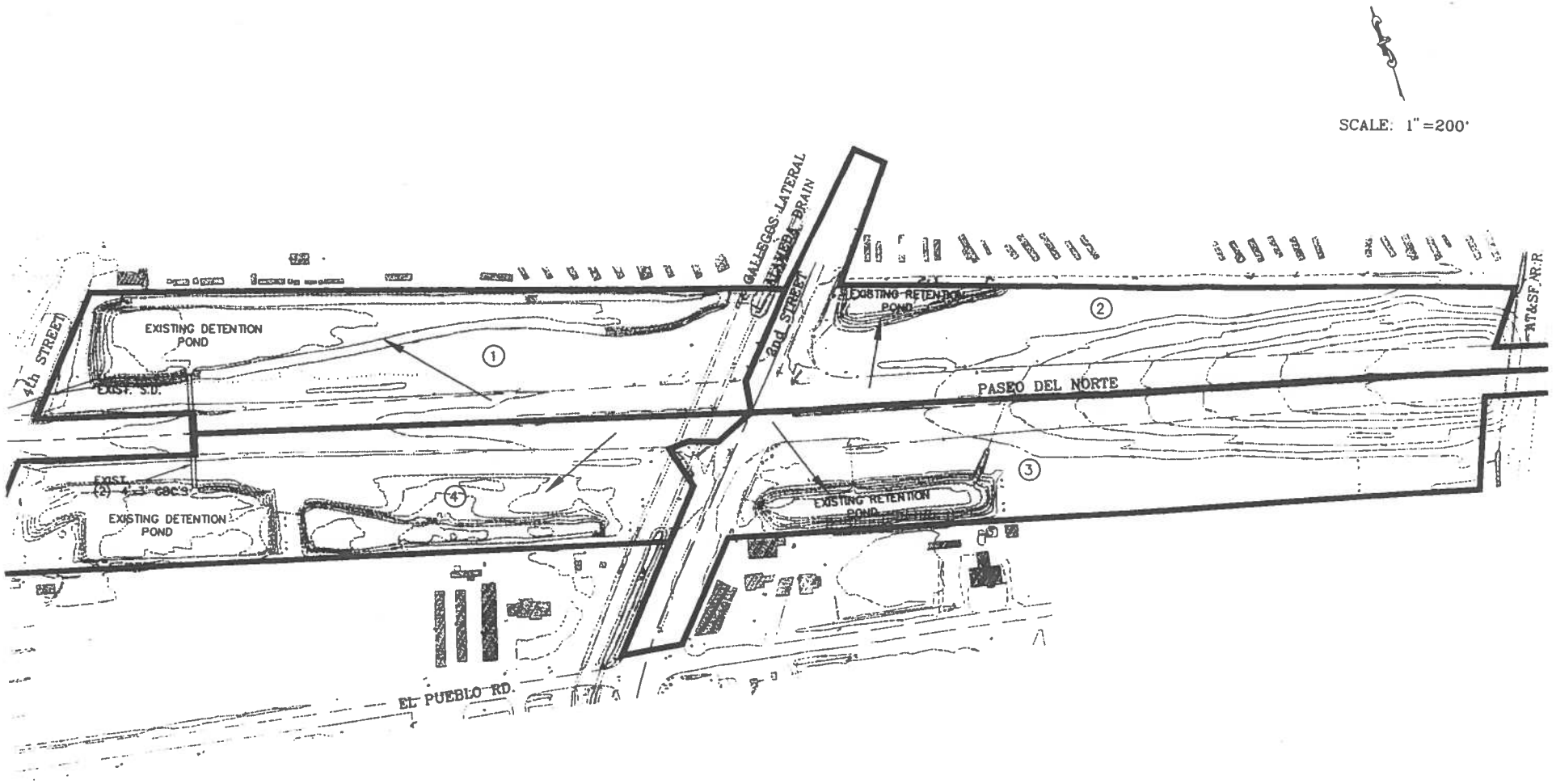


LEGEND

①	BASIN NUMBER
———	BASIN BOUNDARY
→	GENERAL FLOW DIRECTION

PROPOSED DRAINAGE BASINS

FIGURE



EXISTING DRAINAGE BASINS

FIGURE 2

North Valley Drainage Management Plan
Literature Review

Title of Report: CalMat Business Park - Phase I
Author: Andrews, Asbury & Report, Inc..
Date: September 1997
Owner/Authorizing Agency: Unk. .
Study Area: From approximately Edith Blvd. (East of Edith) to the N.D.C. & from Pacific RD to approximately El Paraiso Road.
Location: City of Albuquerque

Purpose of Report To determine the 100 yr. peak flows and provide drainage structures to contain the Q100 developed.
Drainage Area Size (sq.miles): 0.258 sq. miles

Drainage Area Boundary: Same as study area plus the Northern strip of the Renaissance Center.
Design Event Return Period (years): 100 year .
Design Event Duration (hrs): Unk
Other Events Analyzed: Unk
Soils: Unk

Numerical Models Used (specify version): Unknown

Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): Unknown

Rainfall-runoff Transformation Method: Unknown
Time of Concentration Method: Unknown
Mapping Used to Delineate Watershed (Type of map Unknown .
Date: Unknown
Scale: 1" =200'
Contour Interval: 2'
Peak Inflow (cfs)/Location: Q100 = 486.6 CAS
Peak Outflow (cfs)/Location: Q100 = 5 cfs
Peak Volume (ac-ft)/Location: Unknown

Peak Water Surface Elevation (ft)/Location: Unknown
Describe Offsite Flows: Q100 = 63.9 cfs from the southside, as strip of the northside to the Renaissance Center.

Describe Existing Floodplains: None .

Summary of Existing Drainage Structures: On-site natural surfaces and ponding

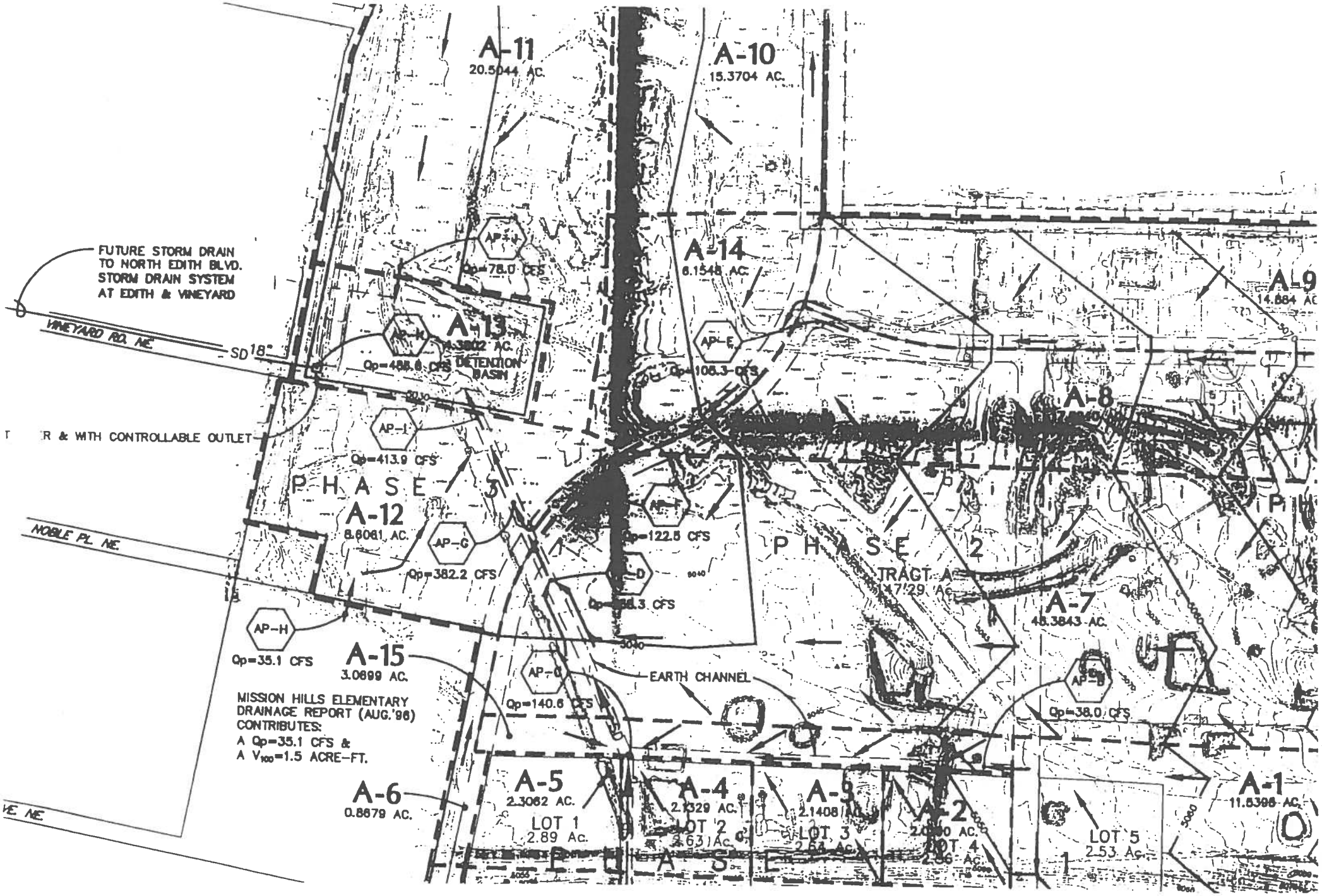
Summary of Proposed Drainage Structures: Earth channel conveys runoff to an on-site detention pond. There is a proposed outlet riser with a controllable outlet to an 18" storm drain along Vineyard Road to Edith Blvd.

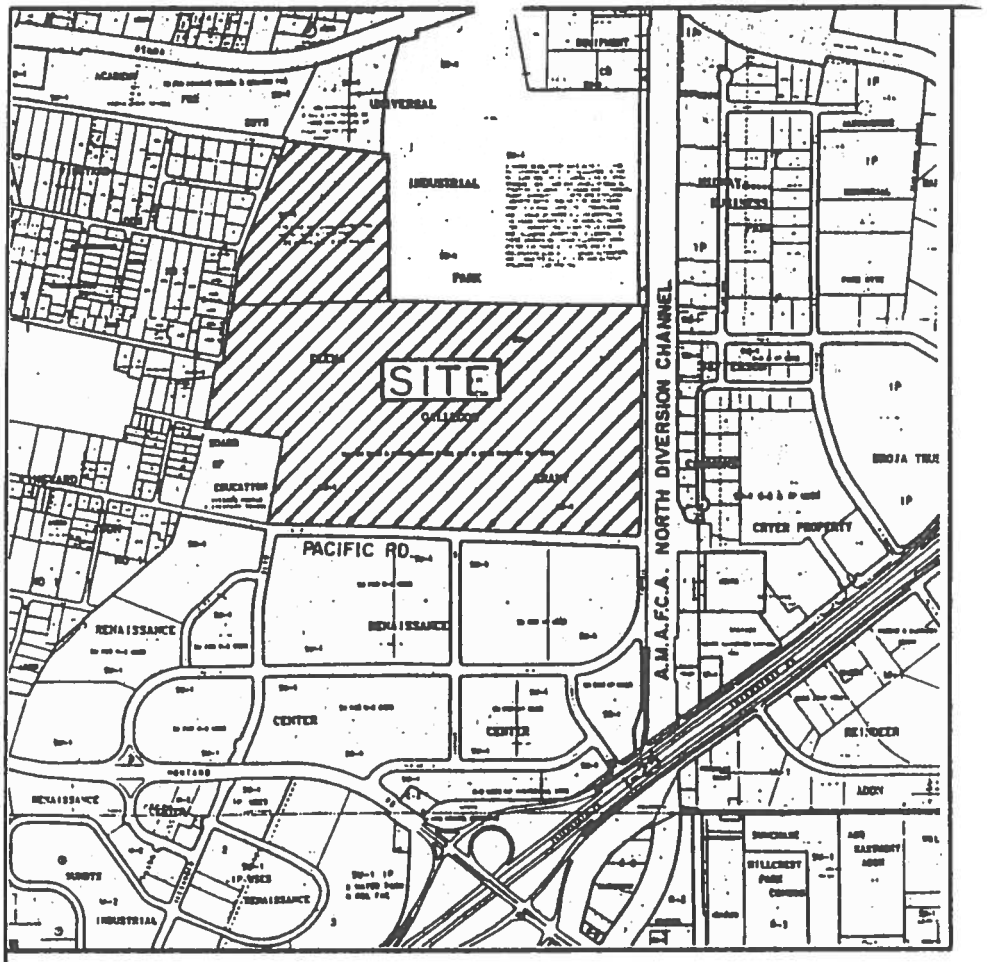
Comments

⇒ Attach a copy of map showing the existing drainage facilities and any proposed drainage facilities described in this report that have been built since the report was completed. Include: location, size, name, design peak flow, and for detention basins include design volume and water surface elevation. Make sure that the map has enough detail so that the information can be transposed to our projects overall base map later on.

Unk = unknown information
N/A = not applicable

Reviewed by: SKM Date: 6-16-98


A-11
20.5044 AC.
A-10
15.3704 AC.
A-14
6.1548 AC.
A-9
14.684 AC
A-13
4.3802 AC.
DETENTION BASIN
A-8
A-12
8.6061 AC.
A-7
45.3843 AC.
A-15
3.0899 AC.
A-6
0.8679 AC.
A-5
2.3062 AC.
A-4
2.1329 AC.
A-3
2.1408 AC.
A-2
2.0980 AC.
A-1
11.8398 AC.
LOT 1
2.89 Ac.
LOT 2
2.63 Ac.
LOT 3
2.68 Ac.
LOT 4
2.56 Ac.
LOT 5
2.53 Ac.
TRACT A
17.29 Ac.
PHASE 1
PHASE 2
PHASE 3
FUTURE STORM DRAIN TO NORTH EDITH BLVD. STORM DRAIN SYSTEM AT EDITH & VINEYARD
VINEYARD RD. NE
SD 18"
R & WITH CONTROLLABLE OUTLET
NOBLE PL. NE
AP-A
Qp=78.0 CFS
AP-K
Qp=488.6 CFS
AP-L
Qp=413.9 CFS
AP-E
Qp=106.3 CFS
AP-F
Qp=122.5 CFS
AP-C
Qp=382.2 CFS
AP-D
Qp=386.3 CFS
AP-H
Qp=35.1 CFS
AP-G
Qp=140.6 CFS
AP-B
Qp=38.0 CFS
EARTH CHANNEL
MISSION HILLS ELEMENTARY DRAINAGE REPORT (AUG.'96) CONTRIBUTES:
A Qp=35.1 CFS &
A V100=1.5 ACRE-FT.



LOCATION MAP

ZONE ATLAS MAP E-16 & F-16
SCALE: 1"=1000'

North Valley Drainage Management Plan
Literature Review

Title of Report: Analysis of the AHYMO Program for Flat Valley Areas (Osage LaMedia)
Author: Bohannan - Huston
Date: February 1995
Owner/Authorizing Agency: City of Albuquerque
Study Area: City of Albuquerque/ East of Atrisco, North of Sunset Gardens, West of Rio Grande, and South of Central
Location: City of Albuquerque
Purpose of Report: Calibrate AHYMO for Flat Valley Areas

Drainage Area Size (sq.miles):64 Acres ±
Drainage Area Boundary: East of Atrisco, West of Rio Grande, South of Central, and North of Sunset Gardens
Design Event Return Period (years): Historic Rainfall August 14, 1994
Design Event Duration (hrs): 1.6 inches rainfall in 10 hour event ±
Other Events Analyzed: N/A
Soils: N/A
Numerical Models Used (specify version): AHYMO
Infiltration Loss Method (if AHYMO used then specify if land treatments A, B, C, D used or curve numbers): A,B,C,D
Rainfall-runoff Transformation Method: AHYMO
Time of Concentration Method: DPM 22.2
Mapping Used to Delineate Watershed (Type of map):Basins #624, 625 from BE'Hs "Is LETA Watershed Report"
Date: N/A
Scale: N/A
Contour Interval: N/A
Peak Inflow (cfs)/Location: N/A
Peak Outflow (cfs)/Location: N/A
Peak Volume (ac-ft)/Location: N/A
Peak Water Surface Elevation (ft)/Location: N/A
Describe Offsite Flows: N/A
Describe Existing Floodplains: N/A
Summary of Existing Drainage Structures: N/A
- Adjusted Initial Abstraction to Calibrate AHYMO for Measured Runoff Volume
- Increased A 1A from 0.65" to 1.2"
B 1A from 0.50" to 1.05"
C 1A from 0.35" to 0.9"
D 1A from 0.10" to 0.85"