



# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 15, 1995

Ronald Bohannon  
Tierra West Dev. Magt. Ser.  
4421 McLeod Road NE  
Suite D  
Albuquerque, NM 87109

**RE: GART SPORTS (F16-D3S) ENGINEER'S CERTIFICATION FOR  
CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S CERTIFICATION  
10-30-95 DATED.**

Dear Mr. Bohannon:

Based on the information provided on your November 8, 1995  
submittal, the above referenced project is approved for Final  
Certificate of Occupancy.

If I can be of further assistance, please feel free to contact me  
at 768-3622.

Sincerely,

Lisa Ann Manwill  
Engineering Assoc./Hyd.

c: Andrew Garcia  
File



# *City of Albuquerque*

P. O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103  
PUBLIC WORKS DEPARTMENT

November 13, 1995

## ***CERTIFICATE OF WORK ORDER COMPLETION***

Reliance Development Co.  
527 Marquette Ave So  
Minneapolis, MN 55402

**RE: GART SPORTS PROJECT NO. 5197.90 (MAP NO. F-16)**

Dear Sir:

This is to certify that the City of Albuquerque accepts Project No. 5197.90 as being completed according to approved plans and construction specifications. Please be advised this certificate of completion and acceptance shall only become effective upon final plat approval and filing in the office of the Bernalillo County Clerk's Office.

The project is described as follows:

- This project consisted of construction of water and sanitary sewer line connection to the existing lines. Storm sewer connection was made to an existing manhole. A waterline connection for the fire hydrant was done.

The contractor's correction period began the date of this letter and is effective for a period of one (1) year.

Sincerely,

Russell B. Givler, P.E.  
Chief Construction Engineer,  
Engineering Group  
Public Works Department



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 12, 1995

Ron Bohannan  
Tierra West Development  
4600 Montgomery Blvd. NE Suite 3  
Albuquerque, NM 87109

RE: REVISED DRAINAGE PLAN FOR GART SPORTS (F16-D3S) ENGINEER'S STAMP  
DATED 4/1/95.

Dear Mr. Bohannan:

Based on the information provided on your April 6, 1995 resubmittal, the above referenced site is approved for Site Development, building Permit, and Work Order.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the D.P.M. checklist will be required.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

*Bernie J. Montoya*  
Bernie J. Montoya, CE  
Engineering Associate

BJM/dl

c: Andrew Garcia  
File

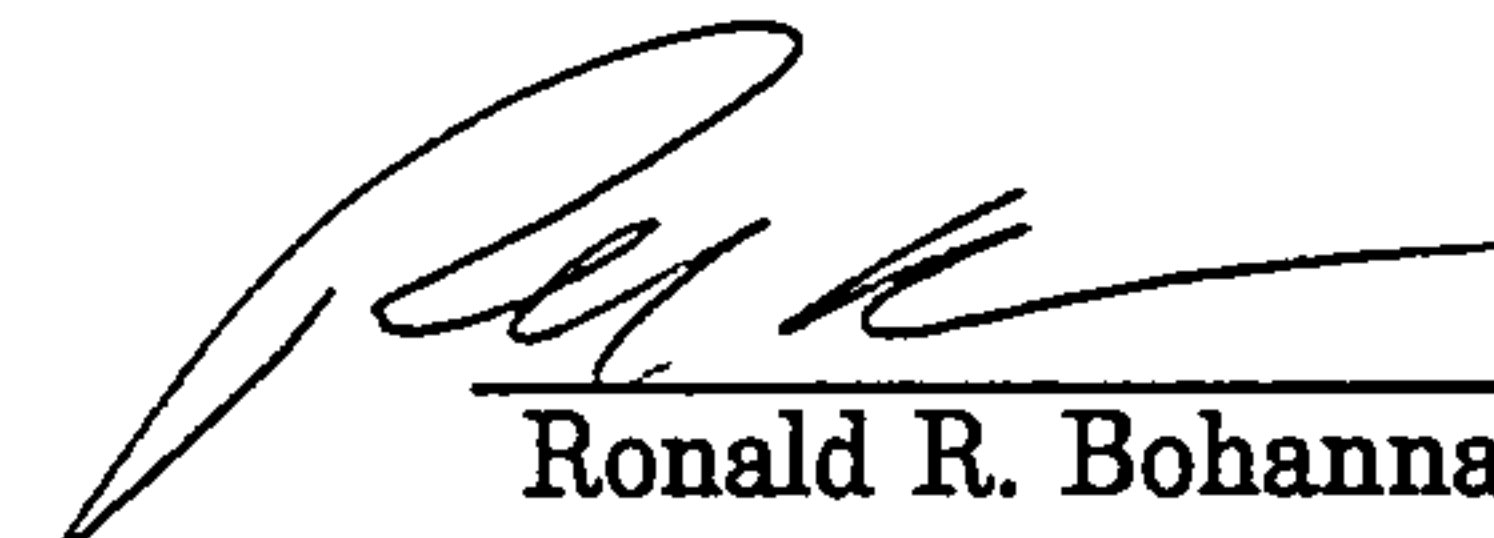
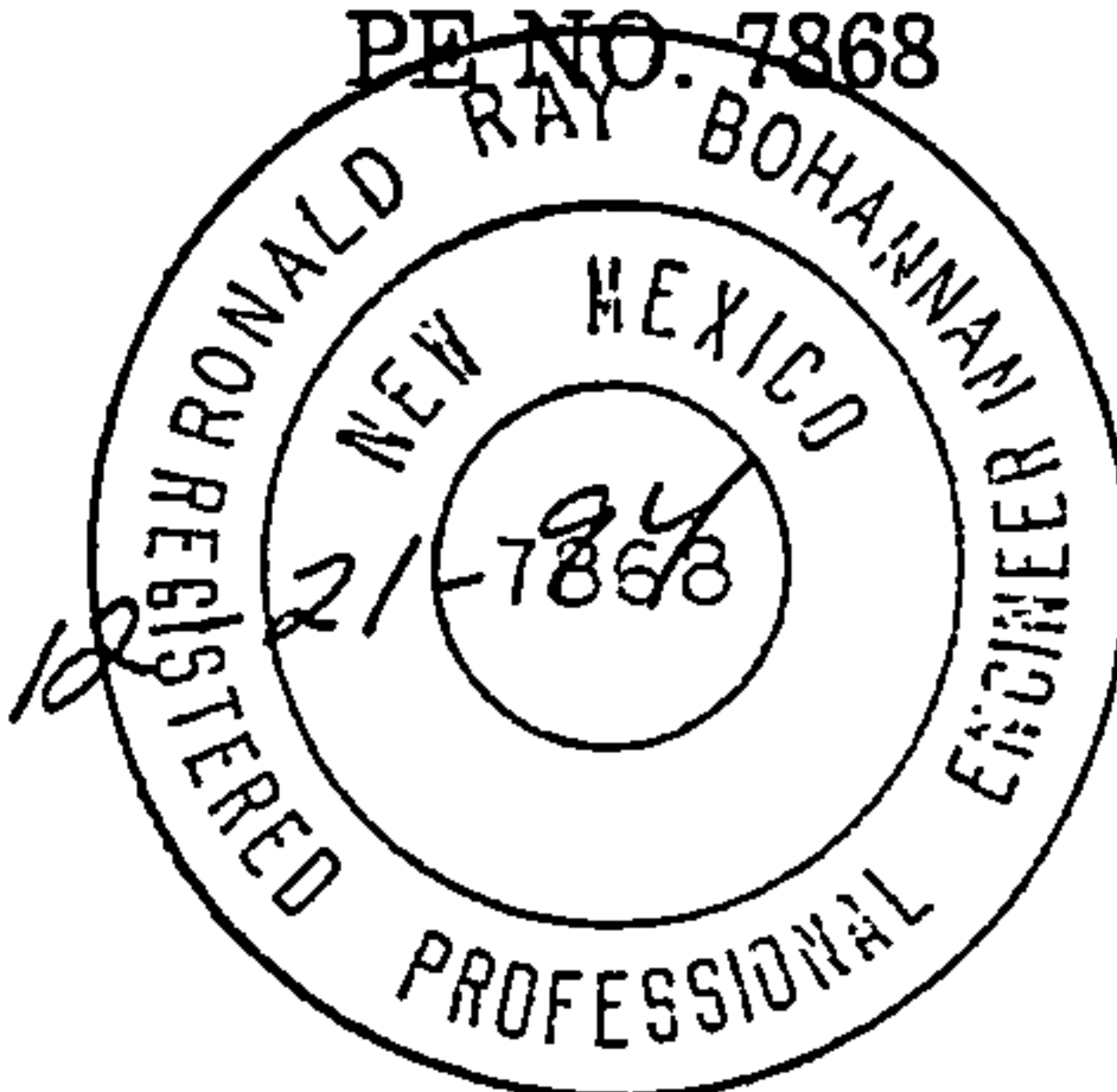
# DRAINAGE REPORT

FOR

*GART SPORTS*

12/21/94

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the state of New Mexico in good standing.

  
 Ronald R. Bohannon  
 PE NO. 7868  


Prepared by:

Tierra West Development  
 Management Services  
 4600 Montgomery Blvd. NE, Suite 3  
 Albuquerque, NM 87109  
 (505) 883-7592

How  
viewed  
SMT

## PURPOSE

The purpose of this report is to present the drainage management plan for the GART SPORTS Site Development Plan and Grading/Drainage approval, situated on Tract 11, Renaissance. GART SPORTS is proposing to build a new 45,968 SF building. The site is located in the South Renaissance Center adjacent to John Salazar Road NE and east of Alexander Blvd. as shown on zone atlas page F-16. (See attached Vicinity Map, Zone Map F-16)

## EXISTING CONDITIONS

The parcel is Tract 11 of Renaissance Center, Filed May 30, 1985 in Volume C27, Folio 70 containing 4.375 acres. This site lies at the NE corner of Alexander and John P. Salazar Drive. The site does not lie within designated Flood Hazard Zone.

This site is part of the Renaissance Master Plan, and all of the existing and developed runoff discharge via surface flow and storm drainage systems to the "Renaissance Detention Pond" located on the west side of the North Renaissance Center. That pond under City control, releases the water in Montano Blvd.

## HYDROLOGY ANALYSIS

Hydrological aspects of this site were evaluated using AMAFCA's AHYMO program according to guidelines presented in the City of Albuquerque DPM, Section 22.2 (January 1993). All of the pertinent hydrologic parameters and calculations are located in the calculations of this report.

## PROPOSED MANAGEMENT PLAN

Improvements consist of a new building and parking. This site is part of the Renaissance Master Plan prepared by ANDREWS, ASBURY & ROBERT, INC., (F16/D6). The flows are being collected on-site by a series of storm drain pipes and then routed to the existing 42" RCP storm sewer on the east side of the Tract. These flows then drain to the "Renaissance Detention Pond". (See Grading and Drainage Map.)

The proposed Grading and Drainage Plan show future grades indicated by spot elevations and on-site drainage patterns. All grades range between a minimum of 1% and a maximum of 3%. A one foot water block has been designed at all driveways entrances.



The proposed improvements on GART SPORTS will generate a runoff of 18.13 cfs, which are divided into several sub-basins. This runoff will be discharged at a rate of 0.31 cfs, via a series of on-site catch basins and storm drainage pipes directly into an existing 42" storm drainage pipe, located north of the property on Renaissance Boulevard. The runoff is detained in four parking lot ponds that are collected in a 6" storm drain pipe. This storm drain ties to the 42 inch existing drain as mentioned. An orifice plate will limit the flow to the approved 0.1 cfs/acre discharge rate allowed.

As required by the Master Plan, the peak 100-year discharge of 18.13 cfs is to be detained on-site and released at a rate of 0.1 cfs per acre, totalling 0.44 cfs. Our design discharge will be at 0.31 cfs, which is less than the allowable discharge.

### DESIGN OF THE HOME DEPOT STORM DRAIN SYSTEM

The runoff on Tract 11 is designed to be drained through a series of catch basins, with 6" outlet pipes orifice plates limiting the flow, to an existing 42" storm drain pipe which drains into "Renaissance Detention Pond". See Table 1 for orifice plate sizes. Each subbasin will have an orifice plate mounted on the catch basin to limit the flow out of that subbasin. The sizing of the orifice plates was done on a trial basis using the AHYMO program. Since the flows from the site were limited by a number of orifice plates, a 6" storm sewer pipe was used to route the flows between catch basins to the 42" existing storm pipe. It is also recommended to connect the roof drains to the proposed storm system on site. (See enclosed Grading and Drainage Plan for catch basin locations).

### INTERIM EROSION CONTROL

The plan centers on the fact that storm water will not be allowed to discharge during the construction process until the site is developed. A desilting pond will be placed at the NE corner of the lot where the pad is located.

### EMERGENCY SPILLWAY

In case of emergency all of the overflow will go to the east side of the Tract out of the entrance to Alexander Blvd.

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**TABLE 1.**

DRAINAGE BASIN	Qp-10YR (CFS)	V-RUNOFF (AC-FT)	Qp-100YR (CFS)	V-RUNOFF (AC-FT)	ORIFICE PLATE SIZE ON PIPE COMING OUT OF CB
B1	3.85	0.137	2.76	0.102	3.5"
B2	3.65	0.130	0.16	0.005	3"
B3	2.35	0.083	3.63	0.134	3"
B4	0.10	0.003	5.64	0.209	3"
B5	1.79	0.063	5.94	0.220	3"

**TABLE 2.**

CATCH BASIN CONNECTIONS	FLOW W/ PLATE	L. F.	PIPE USED	SLOPE	VELOCITY (FT/S)
CB 5 TO 4	0.28	190.00	6"-PVC	0.50 %	2.33
CB 4 TO 3	0.32	142.65	6"-PVC	0.50 %	2.4
CB 3 TO MH	0.27	135.05	6"-PVC	0.50 %	2.31
MH TO CB1	0.27	216.18	6"-PVC	1.04 %	3.05
CB 2 TO 1	0.27	141.60	6"-PVC	6.69 %	5.99
CB 1 TO MH	0.31	148.00	6"-PVC/RCP	1.01 %	3.02

**TABLE 3.**

CATCH BASIN	INV. @ CB (FT)	WT. ELEV. (FT)	RIM ELEV. (FT)	**WT. HT. (FT)
B1	5024.85	5033.98	5033.45	0.53
B2	5028.15	5032.88	5032.15	0.73
B3	5027.77	5033.45	5032.71	0.74
B4	5028.47	5033.01	5032.00	1.01
B5	5029.42	5033.75	5032.95	0.80

See Grading and Drainage Plan for drainage patterns and catch basin locations.

\*\* Water height (100-YEAR WATER SURFACE ELEVATION) from the rim of the catchbasin.



### SAMPLE DRAINAGE CALCULATIONS

The site is @ Zone 2, Area 4.375 acres.

$P_{100\text{-yr}}$  1 hr storm = 2.01 inches  
 $P_{100\text{-yr}}$  6 hr storm = 2.35 inches  
 $P_{100\text{-yr}}$  24 hr storm = 2.75 inches

$P_{10\text{-yr}}$  1 hr storm = 1.34 inches  
 $P_{10\text{-yr}}$  6 hr storm = 1.57 inches  
 $P_{10\text{-yr}}$  24 hr storm = 1.83 inches

Treatment, B = 10%, and D = 90% for commercial site.

Time of concentration,  $T_c = 12$  min

$$\begin{aligned} T_p &= \frac{2}{3}T_c \\ &= \frac{2}{3} \times 12 \\ &= 8 \text{ min, } = 0.1333 \text{ hr} \end{aligned}$$

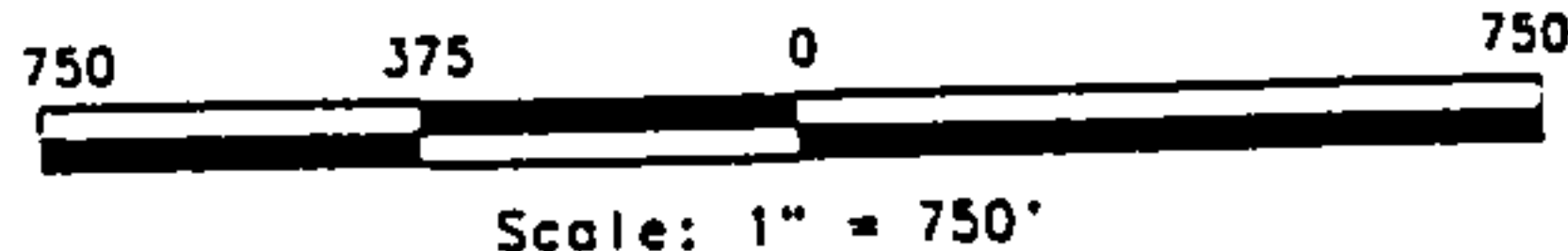
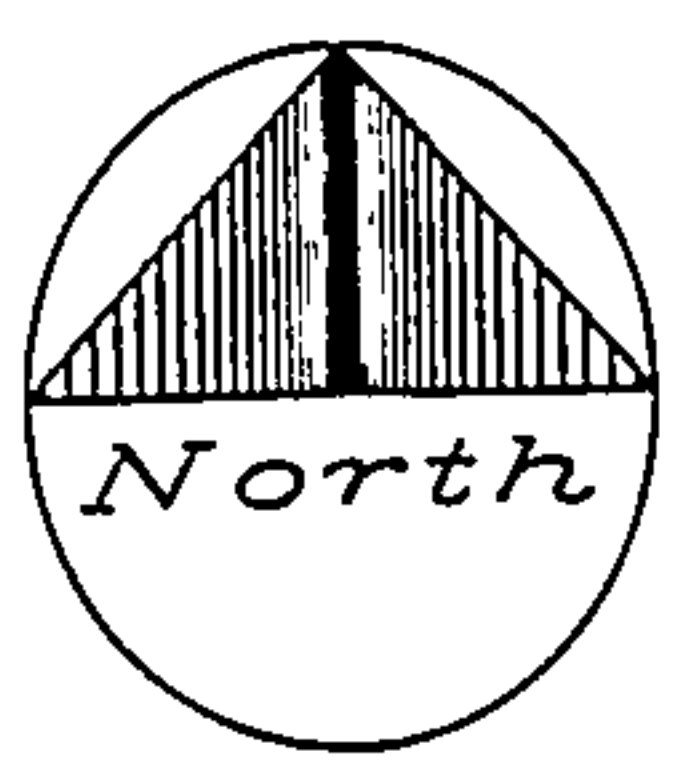
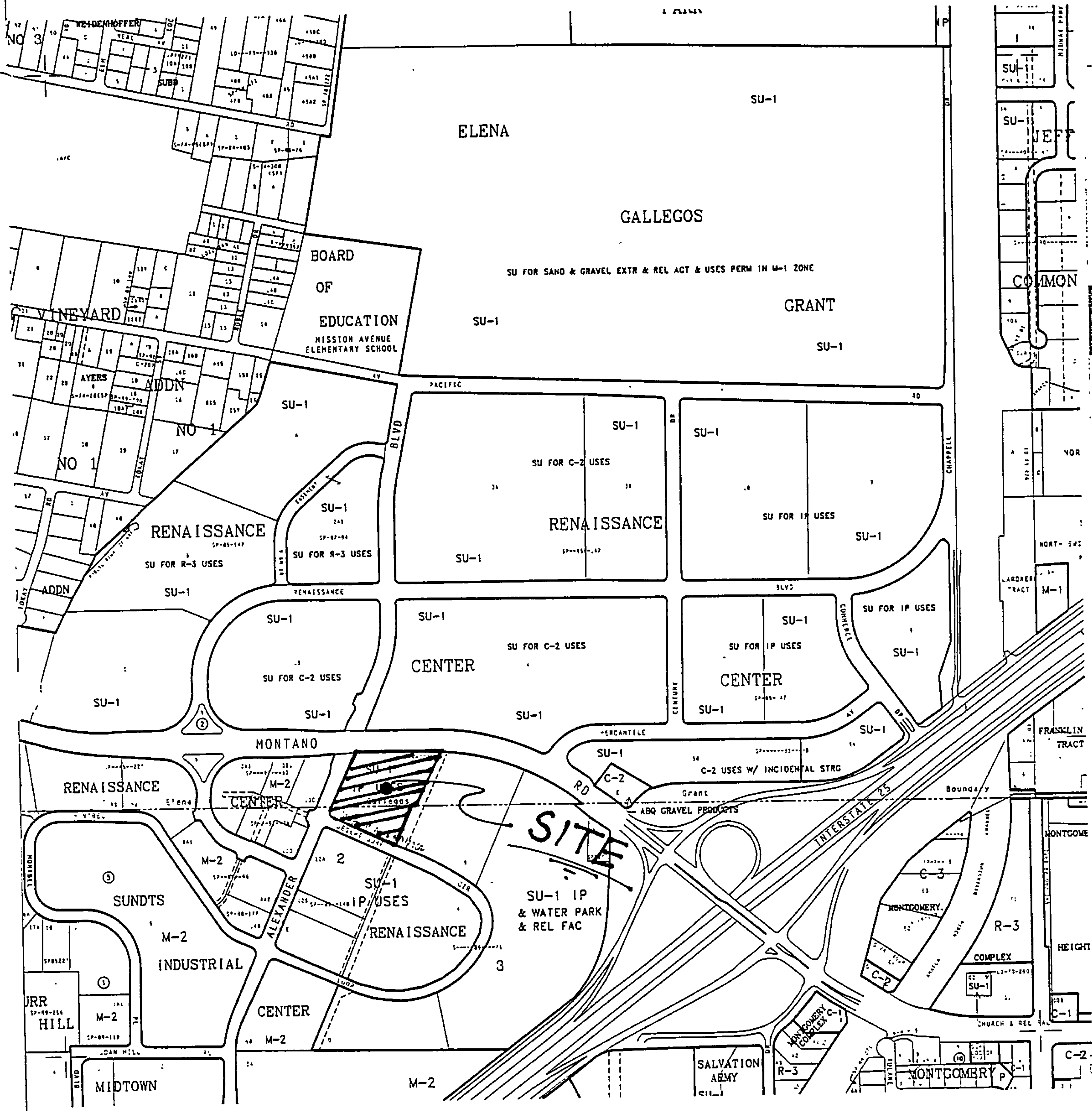
From attached AHYMO calculation (for ponding area 1)

$$Q_{P-100\text{yr}} = 2.76 \text{ cfs}$$

$$\text{Volume} = 0.137 \text{ AC-FT}$$

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.350
COMPUTE NM HYD	105.10	-	1	.00208	5.94	.220	1.98165	1.500	4.470	PER IMP= 90.00
ROUTE RESERVOIR	505.10	1	2	.00208	.28	.220	1.98148	2.366	.212	AC-FT= .181
COMPUTE NM HYD	104.10	-	1	.00197	5.64	.209	1.98165	1.500	4.470	PER IMP= 90.00
ADD HYD	104.20	1& 2	3	.00405	5.86	.428	1.98114	1.500	2.259	
ROUTE RESERVOIR	504.10	3	2	.00405	.32	.423	1.95738	3.333	.122	AC-FT= .195
COMPUTE NM HYD	103.10	-	1	.00127	3.63	.134	1.98165	1.500	4.478	PER IMP= 90.00
ADD HYD	103.20	1& 2	3	.00532	3.87	.557	1.96312	1.500	1.136	
ROUTE RESERVOIR	503.10	3	2	.00532	.27	.405	1.42754	14.132	.079	AC-FT= .178
COMPUTE NM HYD	102.10	-	1	.00005	.16	.005	1.98165	1.500	4.765	PER IMP= 90.00
ADD HYD	102.20	1& 2	3	.00537	.35	.410	1.43222	1.533	.101	
ROUTE RESERVOIR	502.10	3	2	.00537	.27	.408	1.42313	14.599	.079	AC-FT= .003
COMPUTE NM HYD	101.10	-	1	.00096	2.76	.102	1.98165	1.500	4.486	PER IMP= 90.00
ADD HYD	101.20	1& 2	3	.00633	2.98	.509	1.50793	1.500	.735	
ROUTE RESERVOIR	501.10	3	2	.00633	.31	.450	1.33333	2.633	.077	AC-FT= .092
FINISH										

										PAGE = 1	
COMMAND	HYDROGRAPH IDENTIFICATION	FROM	TO	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
		ID NO.	ID NO.								
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	105.10	-	1	.00208	3.85	.137	1.23171	1.500	2.893	PER IMP= 90.00	
COMPUTE NM HYD	104.10	-	1	.00197	3.65	.130	1.23171	1.500	2.893	PER IMP= 90.00	
COMPUTE NM HYD	103.10	-	1	.00127	2.35	.083	1.23172	1.500	2.897	PER IMP= 90.00	
COMPUTE NM HYD	102.10	-	1	.00005	.10	.003	1.23172	1.500	3.080	PER IMP= 90.00	
COMPUTE NM HYD	101.10	-	1	.00096	1.79	.063	1.23172	1.500	2.902	PER IMP= 90.00	
FINISH											



LEGAL DESCRIPTION  
T11N  
R3E  
SEC 34

UNIFORM PROPERTY CODE  
1-016-061

**A G I S**  
Albuquerque Geographic Information System  
City of Albuquerque

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**F-16-Z**