CITY OF
Albuquerque

June 8, 1998

Ronald Bohannan, P.E.
Tierra West, LLC
4421 McLeod Rd. NE
Suite D
Albuquerque, NM 87109

RE: EASTDALE LITTLE LEAGUE (C17-D102). DRAINAGE PLAN FOR GRADING PERMIT ANDBUILDING PERMIT APPROVALS. ENGINEER'S STAMP DATED MAY 5, 1998.

Dear Mr. Bohannan:

Based on the information provided on your September 24, 1997 submittal, the above referenced project is approved for Grading and Building Permits.

Prior to Certificate of Occupancy approval, an Engineer's Certification will be required.

If I can be of further assistance, please feel free to contact me at 924-3984. Play Ball!

Sincerely,

John P. Murray, P.E.
Hydrology

c: Andrew Garcia
File

CITY OF
Albuquerque

September 5, 1996

Martin J. Chávez, Mayor

Ronald Bohannan
Tierra West Dev. Mgt. Ser.
4421 McCleod Rd. NE
Suite D
Albuquerque, NM 87109

RE: EASTDALE LITTLE LEAGUE (C17-D102) DRAINAGE PLAN UPDATE FOR GRADING PERMIT APPROVAL. ENGINEER'S STAMP DATED AUGUST 7, 1996.

Dear Mr. Bohannan:

Based on the information provided on your August 13, 1996 submittal, above referenced project is approved for Grading Permit.

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

January 12, 1996

Ronald Bohannan
Tierra West Dev. Mgt. Ser.
4421 McCleod Rd. NE
Suite D
Albuquerque, NM 87109

RE: EASTDALE LITTLE LEAGUE (C17-D102) DRAINAGE PLAN UPDATE FOR GRADING PERMIT APPROVAL. ENGINEER'S STAMP DATED JANUARY 8, 1996.

Dear Mr. Bohannan:

Based on the information provided on your January 9, 1996 submittal, the changes to the above referenced project are approved for Grading Permit.

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

December 21, 1995

Ronald Bohannan
Tierra West Dev. Mgt. Ser.
4421 McCleod Rd. NE
Suite D
Albuquerque, NM 87109

RE: EASTDALE LITTLE LEAGUE (C17-D102) DRAINAGE REPORT FOR GRADING PERMIT APPROVAL. ENGINEER'S STAMP DATED DECEMBER 19, 1995.

Dear Mr. Bohannan:

Based on the information provided on your December 19, 1995 submittal, the above referenced project is approved for Grading Permit.

As you are aware, Bohannan-Huston is in the process of a drainage master plan, which encompassed the Eastdale Little League Fields. This project will be required to comply with all accepted criteria set forth in the master plan.

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

Sincerely,

Lisa Ann Manwill
Engineering Assoc./Hyd.

c: Sandy Zuschlag
Andrew Garcia
File

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT N E - ALBUQUERQUE, N M 87107
TELEPHONE (505) 884-2215

December 21, 1995

Mr. Ronald Bohannan, P.E.
Tierra West Development
4421Mcleod Road, Ste. D
Albuquerque, NM 87109

RE: Eastdale Little League Grading and Drainage Plan dated 12-19-95
Map #B-17, C-17.

Dear Ron:

We have reviewed your submittal with regard to AMAFCA concerns. It appears the Vista Sandia channel (ditch) through the center of the site is not being altered, per our recent meeting.

We agree with the concept. AMAFCA will need to approve the details (spec, elevations, dimensions, etc.) for the rundown into the ditch. We assume the flowrates from the east were taken from previous reports and will defer these issues to City Hydrology.

Please note, AMAFCA will not maintain any of the proposed drainage facilities. Also, encroachment permits for Little League improvements (corners of ballfields as shown on the plan) infringing into the ditch easement will **not** be necessary.

It is our understanding that, long term drainage issues and solutions will be addressed by the masterplan for the Balloon Park.

City Hydrology may have further comments. We look forward to baseball in the Spring and further involvement with the Balloon Park drainage in the future. Should you have any questions, please feel free to call me.

Sincerely,
AMAFCA

Kurt Browning, P.E.
Drainage Engineer

RECEIVED
JAN - 3 1995

c: Ms. Lisa Manwell, COA PWD Hydrology
Ms. Sandy Zuschlag, COA Parks and General Services

DRAINAGE REPORT
FOR

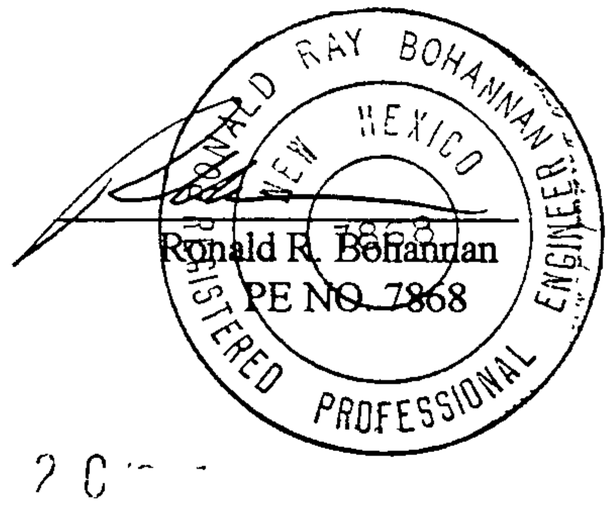
EASTDALE LITTLE LEAGUE

Prepared by:

Tierra West Development Management Services
4421 McLeod Rd., NE, Suite D
Albuquerque, New Mexico 87109

December, 1995
Revised December, 1995

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. Bohannan
PE NO. 7868

Job No 950040

LOCATION AND LOCATION MAP

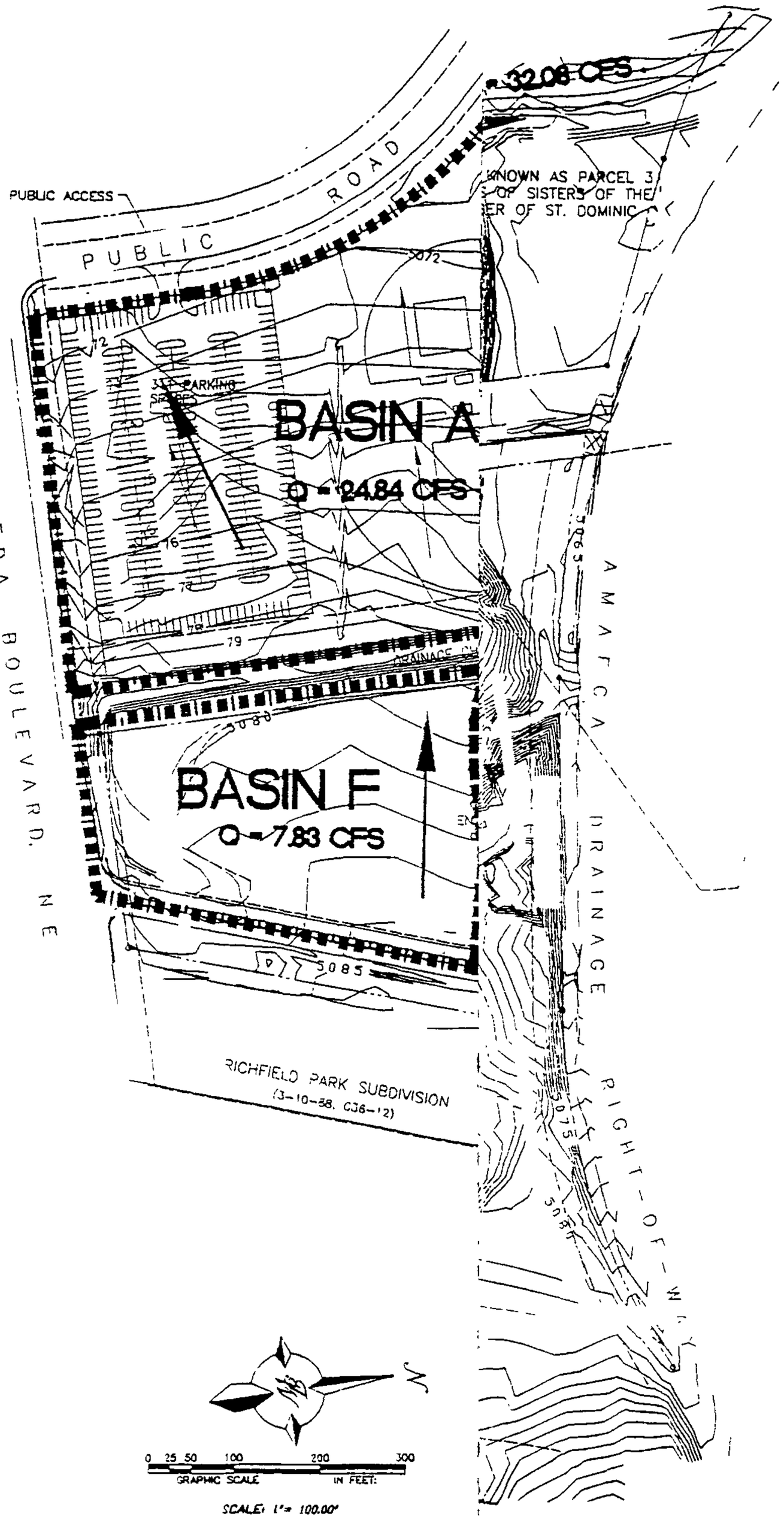
Eastdale Little League is located in Tract A the Lands of Sisters of The Order of St. Dominic together with Tract D-1 Richfield Park Subdivision within the Elena Gallegos Land Grant Sections 11 & 14, T11n., R3E, N.M.P.M. The site is located on the North side of Alameda Boulevard and is about a 350' West of Washington Street. Attached is a copy of a highlighted Vicinity Map which shows the location of the site.

EXISTING CONDITIONS

There is an existing earthen channel running through the site from South to North. The entire site drains from East to West and South to North. AMAFCA's channel has divided the site into two basins, an Easterly drainage basin and Westerly drainage basin. The Easterly drainage basin drains West to AMAFCA's earthen channel, and then from there flows North to the North Diversion Channel. There are two paved drainage channels which drain offsite flows of 86.70 cfs and 93.70 cfs from the development just East of the site. The offsite flows drain West to AMAFCA's channel (See Drainage Report C-17/D2A). The Westerly portion of the site drains West and then North to the North Diversion Channel. The site is located within FEMA Map panel # 350002-0003 & 0009C and does fall within an existing flood plain. See attached highlighted FEMA Map for site location within the flood plain.

PROPOSED CONDITIONS AND DRAINAGE MANAGEMENT PLAN

The site will include several baseball fields and parking areas. The drainage patterns will stay the same with minor modifications. Attached is the basin layout for the proposed project. The offsite runoff of 86.70 will be rerouted around the proposed baseball field. The 93.70 cfs offsite runoff will


PUBLIC ACCESS
PUBLIC ROAD
Q=32.08 CFS
KNOWN AS PARCEL 3
OF SISTERS OF THE
ER OF ST. DOMINIC
BASIN A
Q=24.84 CFS
PARKING
ALAMEDA BOULEVARD, NE
BASIN F
Q=7.83 CFS
DRAINAGE
RICHFIELD PARK SUBDIVISION
(3-10-58, C36-12)
AMARCA DRAINAGE RIGHT-OF-
0 25 50 100 200 300
GRAPHIC SCALE IN FEET:
SCALE: 1"= 100.00'

maintain the same drainage path and will not be modified. All the basins will drain West and then North to the North Diversion channel. All the proposed drainage routs have been checked for flow capacity. See cross-sections and calculations for drainage capacity of the proposed drainage routings. Also see the enclosed Grading and Drainage Plan for the locations of the cross-sections. Basin A sheet flows East to an existing Public Road, and then from there the runoff is carried along the road to North Diversion Channel.

DRAINAGE INFORMATION FOR AHYMO INPUT FILE

The site is @ Zone 2

LAND TREATMENT

B = 70.00 %
C = 15.00 %
D = 15.00 %

DEPTH (INCHES) @ 100-YEAR STORM

P_{60} = 2.01 inches

P_{360} = 2.35 inches

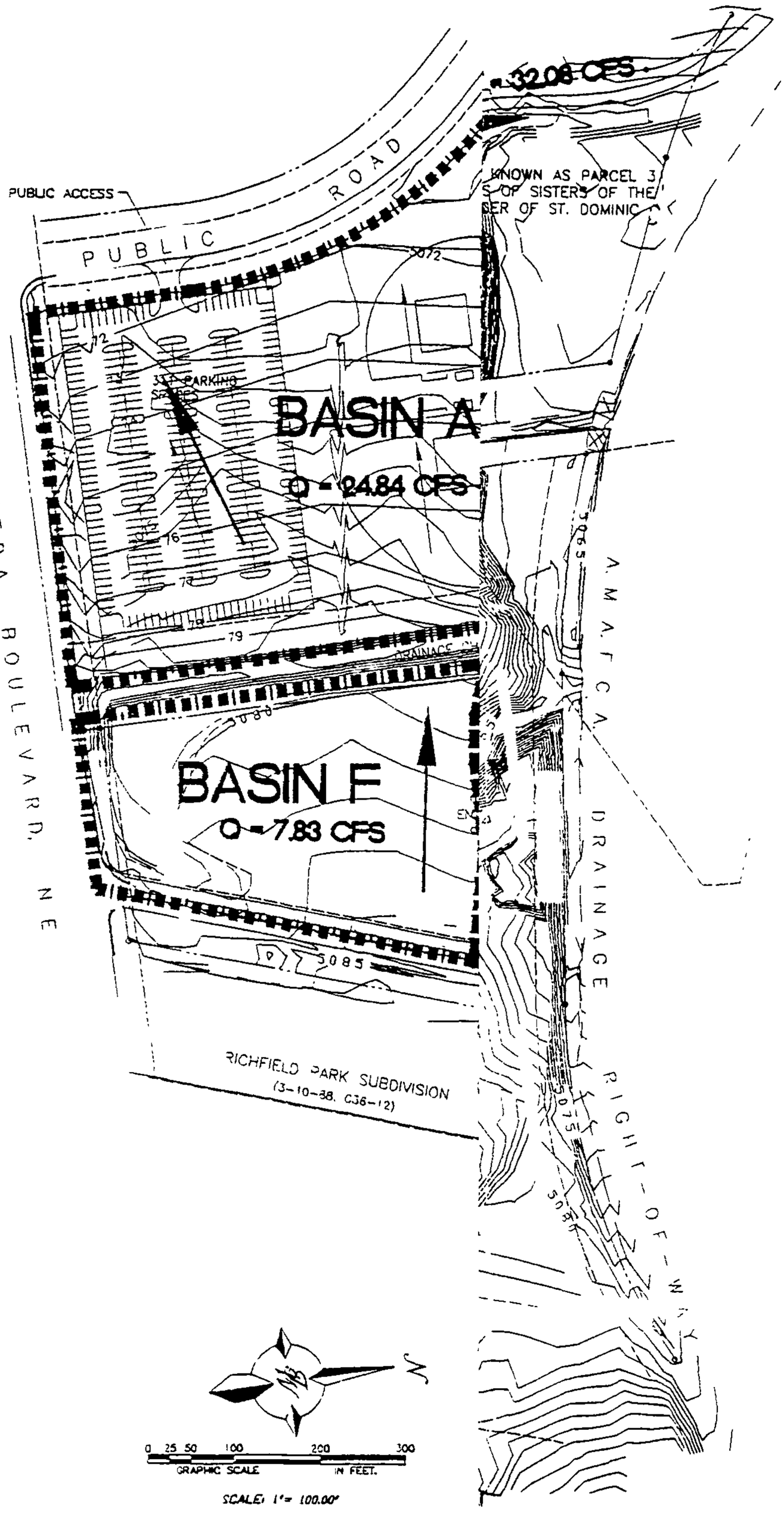
P_{1440} = 2.75 inches

DEPTH (INCHES) @ 10-YEAR STORM

P_{60} = 2.01 x 0.667
= 1.34 inches

P_{360} = 1.57

P_{1440} = 1.83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Q = 24.84 CFS
BASIN E
Q = 7.83 CFS
ALAMEDA BOULEVARD, NE
AMARCA DRAINAGE RIGHT-OF-WAY
RICHFIELD PARK SUBDIVISION
(3-10-38, C36-12)
N
0 25 50 100 200 300
GRAPHIC SCALE IN FEET.
SCALE: 1"= 100.00'

DRAINAGE BASINS

SUB-BASIN	AREA (SF)	AREA (AC-FT)	AREA (MI^2)
A	390909.49	8.9740	0.014022
B	124585.43	2.8601	0.004469
C	106596.38	2.4471	0.003824
D	92948.6	2.1338	0.003334
E	179908.2	4.1301	0.006453
F	123028.8	2.8244	0.004413
G	276643.98	6.3509	0.009923
H	330793.02	7.5940	0.011866

BASINS RUNOFF CALCULATION RESULTS

BASIN	Q-100 CFS	Q-10 CFS
A	24.84	12.02
B	7.93	3.84
C	6.79	3.29
D	5.92	2.87
E	11.44	5.54
F	7.83	3.79
G	17.58	8.51
H	21.02	10.17

Triangular Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name:

Comment: SECTION B-B

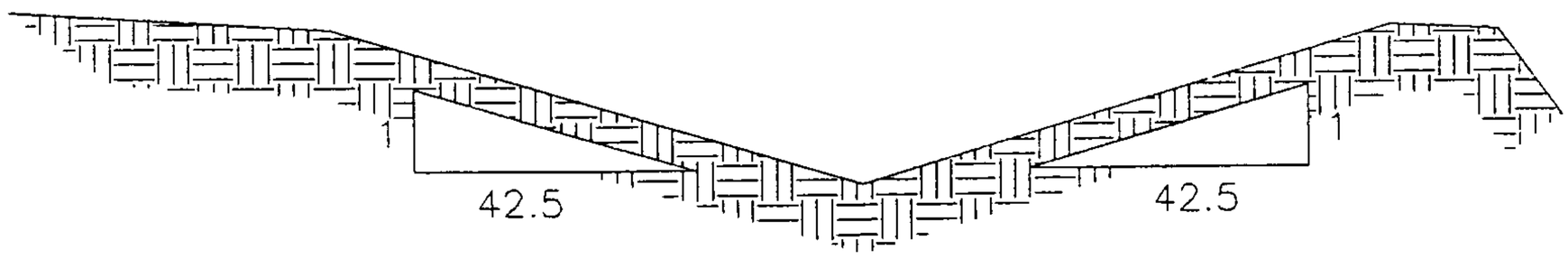
Solve For Depth

Given Input Data:

Left Side Slope..	42.50:1 (H:V)
Right Side Slope.	42.50:1 (H:V)
Manning's n.....	0.030
Channel Slope....	0.0114 ft/ft
Discharge.....	107.72 cfs

Computed Results:

Depth.....	0.90 ft
Velocity.....	3.11 fps
Flow Area.....	34.62 sf
Flow Top Width...	76.72 ft
Wetted Perimeter.	76.74 ft
Critical Depth...	0.83 ft
Critical Slope...	0.0176 ft/ft
Froude Number....	0.82 (flow is Subcritical)



TYPICAL SECTION B-B

NTS

Triangular Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name:

Comment: SECTION C-C

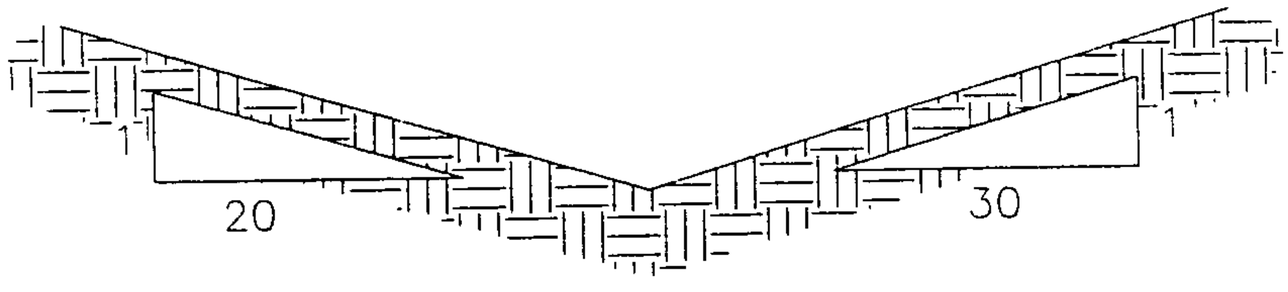
Solve For Depth

Given Input Data:

Left Side Slope..	20.00:1 (H:V)
Right Side Slope.	30.00:1 (H:V)
Manning's n.....	0.030
Channel Slope....	0.0051 ft/ft
Discharge.....	32.08 cfs

Computed Results:

Depth.....	0.81 ft
Velocity.....	1.94 fps
Flow Area.....	16.53 sf
Flow Top Width...	40.66 ft
Wetted Perimeter.	40.69 ft
Critical Depth...	0.63 ft
Critical Slope...	0.0193 ft/ft
Froude Number....	0.54 (flow is Subcritical)



TYPICAL SECTION C-C
NTS

Triangular Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name:

Comment: EXISTING EARTHEN CHANNEL CAPACITY

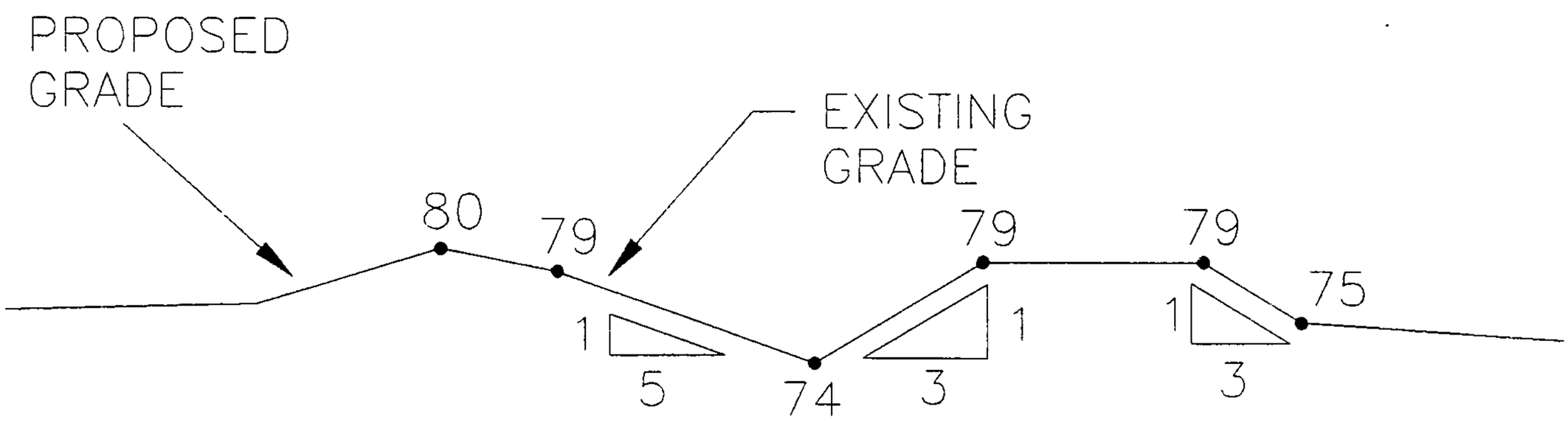
Solve For Depth

Given Input Data:

Left Side Slope..	5.00:1 (H:V)
Right Side Slope.	3.00:1 (H:V)
Manning's n.....	0.030
Channel Slope....	0.0025 ft/ft
Discharge.....	198.20 cfs

Computed Results:

Depth.....	3.69 ft
Velocity.....	3.64 fps
Flow Area.....	54.38 sf
Flow Top Width...	29.50 ft
Wetted Perimeter.	30.46 ft
Critical Depth...	2.73 ft
Critical Slope...	0.0123 ft/ft
Froude Number....	0.47 (flow is Subcritical)



TYPICAL SECTION E-E

NTS

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =11/30/1995

INPUT FILE = C:\9540\D.DAT USER NO.= R_BOHANN.I01

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	NOTATION	
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	2.350
COMPUTE NM HYD	101.10	-	1	.01402	24.84	.766	1.02408	1.500	2.768	PER IMP=	15.00
COMPUTE NM HYD	101.20	-	1	.00447	7.93	.244	1.02408	1.500	2.772	PER IMP=	15.00
COMPUTE NM HYD	101.30	-	1	.00382	6.79	.209	1.02408	1.500	2.773	PER IMP=	15.00
COMPUTE NM HYD	101.40	-	1	.00333	5.92	.182	1.02408	1.500	2.774	PER IMP=	15.00
COMPUTE NM HYD	101.50	-	1	.00645	11.44	.352	1.02408	1.500	2.770	PER IMP=	15.00
COMPUTE NM HYD	101.60	-	1	.00441	7.83	.241	1.02408	1.500	2.772	PER IMP=	15.00
COMPUTE NM HYD	101.70	-	1	.00992	17.58	.542	1.02408	1.500	2.768	PER IMP=	15.00
COMPUTE NM HYD	101.80	-	1	.01187	21.02	.648	1.02408	1.500	2.768	PER IMP=	15.00
START										TIME=	.00
RAINFALL TYPE= 1										RAIN6=	1.570
COMPUTE NM HYD	111.10	-	1	.01402	12.02	.348	.46586	1.533	1.339	PER IMP=	15.00
COMPUTE NM HYD	111.20	-	1	.00447	3.84	.111	.46586	1.533	1.342	PER IMP=	15.00
COMPUTE NM HYD	111.30	-	1	.00382	3.29	.095	.46586	1.533	1.342	PER IMP=	15.00
COMPUTE NM HYD	111.40	-	1	.00333	2.87	.083	.46586	1.533	1.343	PER IMP=	15.00
COMPUTE NM HYD	111.50	-	1	.00645	5.54	.160	.46586	1.533	1.341	PER IMP=	15.00
COMPUTE NM HYD	111.60	-	1	.00441	3.79	.110	.46586	1.533	1.342	PER IMP=	15.00
COMPUTE NM HYD	111.70	-	1	.00992	8.51	.247	.46586	1.533	1.340	PER IMP=	15.00
COMPUTE NM HYD	111.80	-	1	.01187	10.17	.295	.46586	1.533	1.340	PER IMP=	15.00
FINISH											