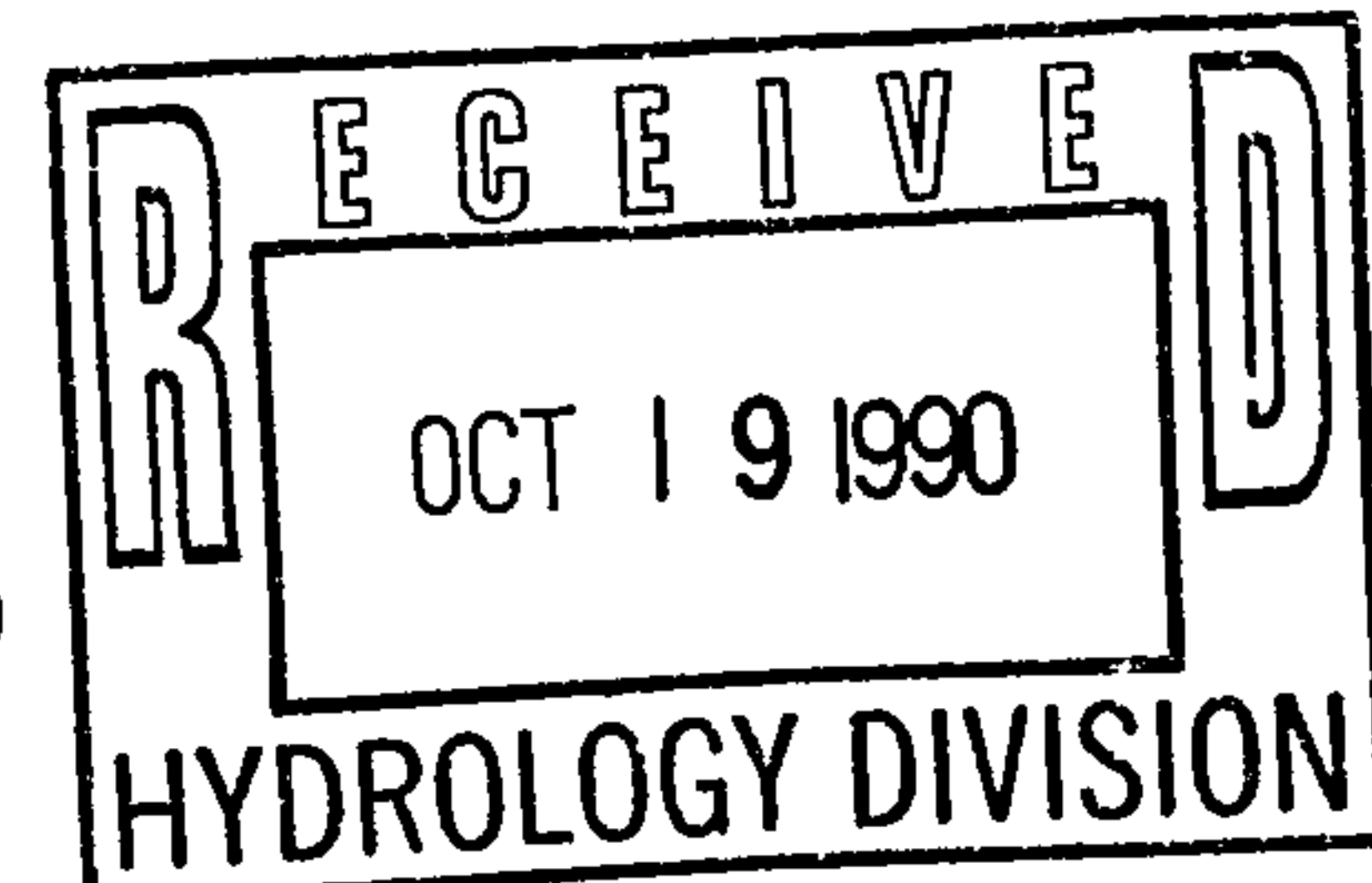




# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 17, 1990



## CERTIFICATE OF COMPLETION AND ACCEPTANCE

Mr. James A. Arias  
Club Mart Limited Partnership  
4209 San Mateo N.E.  
Albuquerque, NM 87110

RE: PROJECT NO. 4131.80, FIRE HYDRANT - CLUB MARKET II, (MAP NO. F-16)

Dear Mr. Arias:

This is to certify that the City of Albuquerque accepts Project No. 4131.80 as being completed according to approved plans and construction specifications. The City of Albuquerque will accept for continuous maintenance all public infrastructure improvements constructed as part of Project No. 4131.80.

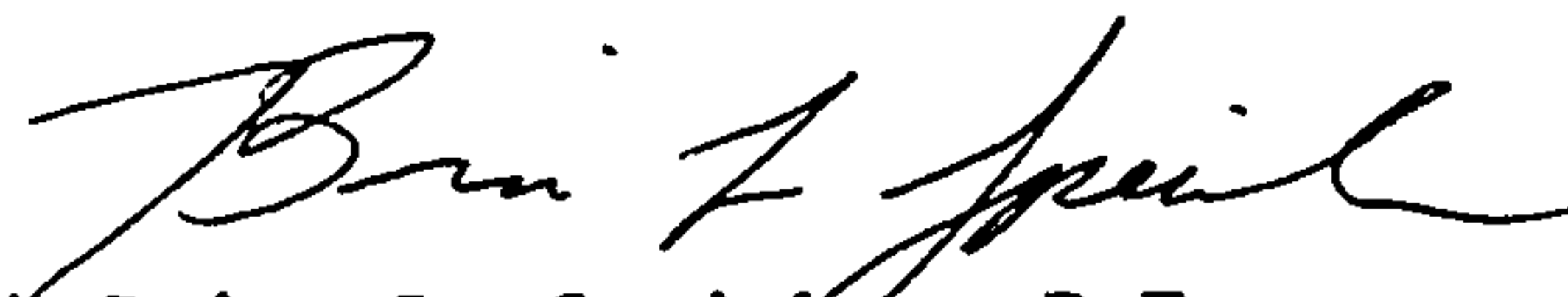
The project is described as follows:

- Project is located on Montbel Loop N.E. on the south side of Club Market II, 1220 South Renaissance Blvd. N.E.

The work consisted of relocation of an existing fire hydrant approximately six feet north of it's present location. The fire hydrant was excavated and 6" PVC pipe was connected to the existing lateral with a sleeve joint.

- The contractor's correction period begins the date of this letter and will be effective for a period of one (1) year.

Sincerely,

  
 Brian L. Speicher, P.E.  
 Chief Construction Engineer  
 Design/Construction Division  
 Engineering Group  
 Public Works Department

BLS:kt

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 21, 1990

John Andrews  
Andrews, Asbury & Robert  
149 Jackson, NE  
Albuquerque, New Mexico 87108

RE: REVISED DRAINAGE PLAN FOR CLUB MARKET CENTER II  
(F-16/D3N) REVISION DATED MARCH 15, 1990

Dear Mr. Andrews:

Based on the information provided on your submittal of March 15, 1990, the above referenced plan is approved for Building Permit.

Please be advised that a separate permit is required for construction within the City right-of-way. A copy of this approval letter must be on hand when applying for the excavation permit.

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

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

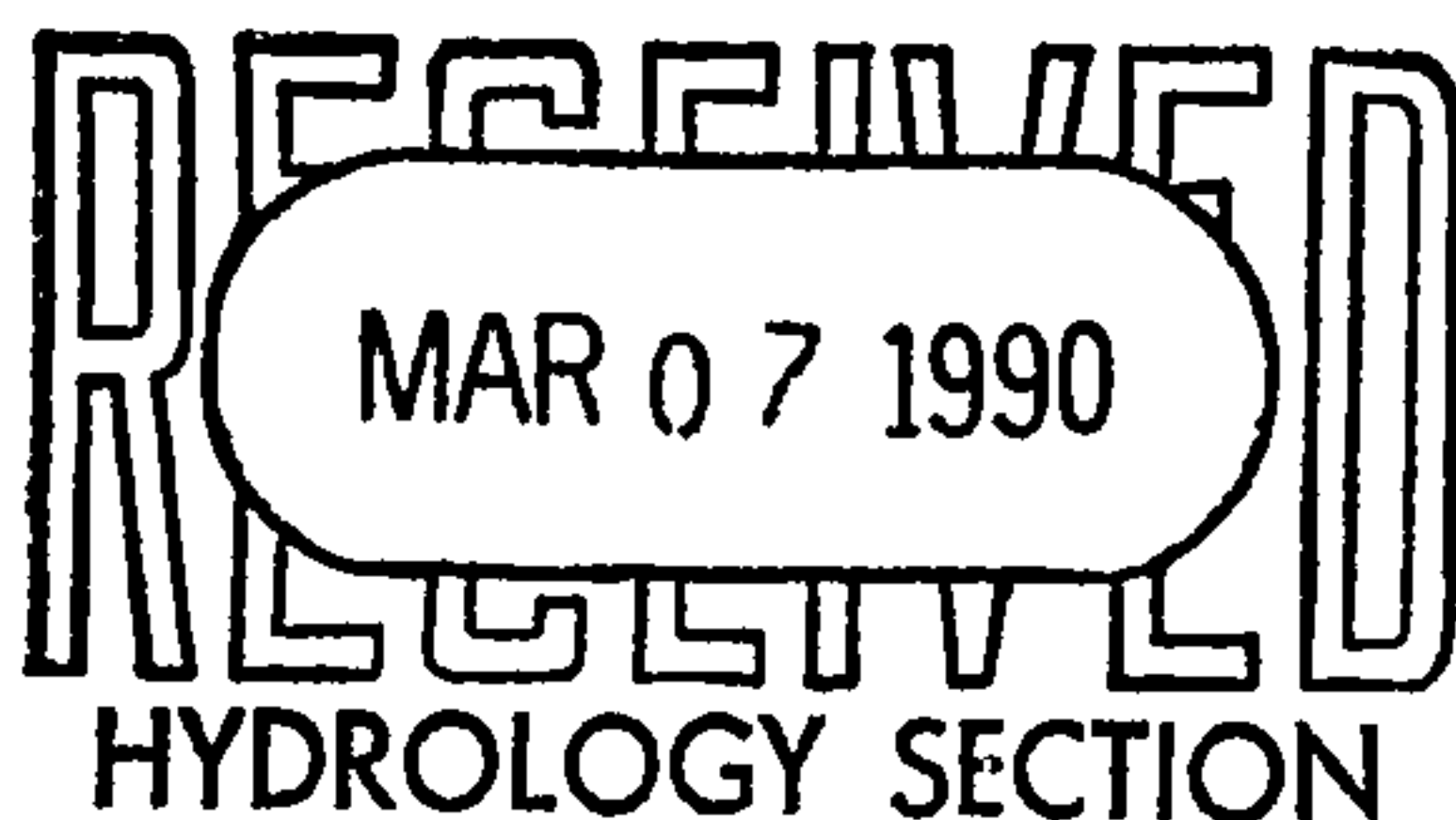
*for Benito Montoya*  
Fred J. Aguirre, P.E.  
Hydrologist

xc: Darlene Saavedra

BJM:FJA/bsj  
(WP+1713)

ANDREWS, ASBURY & ROBERT, INC. ?  
CONSULTING ENGINEERS  
149 Jackson, N.E., Albuquerque, N.M. 87108  
Telephone (505) 265-6631

Project CLUB MARKET CENTER II Sheet 1 of 5  
TRACT 14-A-1 RENAISSANCE CENTER II Job No. 575  
By J. A ANDREWS Chk'd \_\_\_\_\_ Date 03-05-90



DRAINAGE ANALYSIS

CLUB MARKET CENTER II

TRACT 14-A-1 RENAISSANCE CENTER II  
ZONE ATLAS F-16



DRAINAGE AREAS

OFFSITE - 0.0472 ACRES

OFFSITE AREA CONSISTS OF A PORTION OF THE ACCESS EASEMENT  
ON EAST SIDE OF TRACT.

ONSITE - 1.9095 ACRES

PEAK RATE OF RUNOFF - DRAINAGE AREAS

(SEE DRAINAGE PLAN FOR DRAINAGE AREA LOCATIONS AND  
DESIGNATIONS.)

RATIONAL FORMULA -  $Q = CIA$

RAINFALL INTENSITY -  $I_{100} = 4.65$  IN./HR.  $T_c = 10$  MIN.

RUNOFF COEFFICIENT - DETERMINED FROM EMERGENCY RULE DATED 1-14-86.

EXISTING CONDITIONS

OFFSITE AREA (PAVED) -  $Q = (0.95)(4.65)(0.0472) = 0.21$  CFS  
ONSITE (UNDEVELOPED) -  $Q = (0.40)(4.65)(1.9095) = 3.55$  CFS  
TOTAL (100 YEAR) = 3.76 CFS

DEVELOPED CONDITIONS

<u>AREA</u>	<u>AREA ACRES</u>	<u>"C" VALUE</u>	<u>Q<sub>100</sub> CFS</u>	<u>Q<sub>10</sub> CFS</u>
A	0.6721	0.827	2.58	1.70
B	0.3508	0.869	1.42	0.93
C	0.6767	0.826	2.60	1.71
D	0.2456	0.859	0.98	0.64
E	<u>0.0115</u>	0.250	0.01	0.01
	1.9567			

AREAS C, D AND E WILL BE ALLOWED TO FREE FLOW FROM SITE.

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Project CLUB MARKET CENTER II Sheet 2 of 5  
TRACT 14-A-1 RENAISSANCE CENTER II Job No. 575  
By J.A. ANDREWS Chk'd \_\_\_\_\_ Date 03-05-90

DEVELOPED CONDITIONS - SITE RUNOFF

DRAINAGE AREA C = 2.60 CFS  
DRAINAGE AREA D = 0.98 CFS  
DRAINAGE AREA E = 0.01 CFS

TOTAL (100 Year) = 3.59 CFS

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Project CLUB MARKET CENTER II Sheet 3 of 5  
TRACT 14-A-1 RENAISSANCE CENTER II Job No. 575  
By J.A. ANDREWS Chk'd \_\_\_\_\_ Date 03-05-90

## DRAINAGE VOLUME ANALYSIS

### CRITERIA

VOLUME OF FREE RUNOFF FROM SITE IS BASED ON A RUNOFF COEFFICIENT ("C") = 0.40.

DETAIN INCREASED RUNOFF CAUSED BY DEVELOPMENT AND RELEASE AT MAXIMUM OF 0.10 CFS/ACRE.

100 YEAR 6-HOUR RAINFALL = 2.2" FROM PLATE 22.2 D-1 OF DPM.

### VOLUME OF RUNOFF

ONSITE DRAINAGE AREA = 1.9095 ACRES

*.1910 cfs*

COMPOSITE COEFFICIENT OF RUNOFF DEVELOPED

PAVING AND WALKS	54.59% X 0.95 = 0.519
ROOF AREAS	30.74% X 0.90 = 0.277
LANDSCAPED	14.67% X 0.25 = <u>0.037</u>

COMPOSITE "C" = 0.833

VOLUME OF RUNOFF DEVELOPED =

$1.9095 \times 0.833 \times 2.2/12 \times 43,560 = 12,703 \text{ CU. FT.}$

VOLUME OF RUNOFF ALLOWED - UNDEVELOPED

$1.9095 \times 0.40 \times 2.2/12 \times 43,560 = 6,100 \text{ CU. FT.}$

VOLUME OF DETENTION PONDING REQUIRED =

6,603 CU. FT.

### DETENTION VOLUME PROVIDED

VOLUME OF POND NO. 1 = 5,682 CU. FT.

VOLUME OF POND NO. 2 = 1,435 CU. FT.

TOTAL DETENTION CAPACITY VOL. 7,117 CU. FT.

TOTAL VOLUME DETAINED = 6,873 CU. FT.  
(SEE SHEET 5)



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Project CLUB MARKET CENTER II Sheet 4 of 5  
TRACT 14-A-1 RENAISSANCE CENTER II Job No. 575  
By J.A. ANDREWS Chk'd \_\_\_\_\_ Date 03-05-90

### DETENTION POND RELEASE SYSTEM

#### RELEASE RATE ALLOWABLE

$$1.9505 \text{ ACRES} \times 0.10 \text{ CFS/ACRE} = 0.195 \text{ CFS}$$

$$\text{RELEASE RATE FROM POND NO. 1} = 0.14 \text{ CFS}$$

$$\text{RELEASE RATE FROM POND NO. 2} = 0.055 \text{ CFS}$$

INSTALL PLATE WITH SLOTS AND OPENINGS ON 4 INCH DRAINLINES  
AS REQUIRED TO CONTROL RELEASE RATES.

USE ORIFICE FORMULA:  $Q = CA(2gH)^{\frac{1}{2}}$   
"C" = 0.6

#### POND NO. 1

1. PROVIDE 3/4" DIAMETER HOLE IN PLATE AT PIPE FLOWLINE TO ALLOW  
FOR COMPLETE DRAINAGE OF POND.

$$\begin{array}{rcl} \text{MAXIMUM WATER SURFACE ELEVATION} & = & 38.55 \\ \text{CENTERLINE OF 3/4" HOLE} & = & 37.43 \\ \text{HEAD ("H")} & = & 1.12 \text{ FT.} \end{array}$$

$$Q = (0.60)(.00307)(2g \times 1.12)^{\frac{1}{2}} = 0.0156 \text{ CFS}$$

2. PROVIDE SLOTS IN PLATE AS REQUIRED .

$$\text{SLOTS TO DISCHARGE } 0.14 - 0.0156 = 0.1244 \text{ CFS}$$

$$\begin{array}{rcl} \text{MAXIMUM WATER SURFACE ELEVATION} & = & 38.55 \\ \text{CENTERLINE OF SLOTS ELEVATION} & = & 38.57 \\ \text{HEAD ("H")} & = & 0.97 \text{ FT.} \end{array}$$

$$0.1244 = (0.60) A (2g \times 0.97)^{\frac{1}{2}}$$

$$A = 0.1244 / 4.742 = 0.02623 \text{ SQ. FT.} = 3.78 \text{ SQ. IN.}$$

USE 2 SLOTS 1/2" WIDE X 3 3/4" LONG  
AREA = 3.75 SQ. IN.

#### POND No. 2

1. PROVIDE 3/4" DIAMETER HOLE IN PLATE AT PIPE FLOWLINE TO ALLOW  
FOR COMPLETE DRAINAGE OF POND.

$$\begin{array}{rcl} \text{MAXIMUM WATER SURFACE ELEVATION} & = & 38.55 \\ \text{CENTERLINE OF 3/4" HOLE} & = & 37.77 \\ \text{HEAD ("H")} & = & 0.78 \text{ FT.} \end{array}$$

$$Q = (0.60)(.00307)(2g \times 0.78)^{\frac{1}{2}} = 0.0130 \text{ CFS}$$

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Project CLUB MARKET CENTER II Sheet 5 of 5  
TRACT 14-A-1 RENAISSANCE CENTER II Job No. 575  
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2. PROVIDE SLOTS IN PLATE AS REQUIRED.

SLOTS TO DISCHARGE  $0.055 - 0.013 = 0.042$  CFS

MAXIMUM WATER SURFACE ELEVATION = 38.55

CENTERLINE OF SLOTS ELEVATION = 37.92

HEAD ("H") = 0.63 FT.

$$0.042 = (0.60) A (2g \times 0.63)^{\frac{1}{2}}$$

$$A = 0.042/3.82 = 0.011 \text{ SQ. FT.} = 1.58 \text{ SQ. IN.}$$

USE 2 SLOTS 3/8" WIDE X 2 1/8" LONG

AREA = 1.59 SQ. IN.

CHECK FOR DEVELOPED RUNOFF VOLUME GENERATED FROM DRAINAGE AREA A  
AND DRAINAGE AREA B.

VOLUME = "C" X AREA

DRAINAGE AREA A (POND NO. 1)

$$\text{RUNOFF VOLUME} = 0.827 \times 29,278 \times 2.2/12 = 4,439 \text{ CU. FT.}$$

DRAINAGE AREA B (POND NO. 2)

$$\text{RUNOFF VOLUME} = 0.869 \times 15,280 \times 2.2/12 = \underline{2,434 \text{ CU. FT.}}$$

$$\text{TOTAL} = \underline{6,873 \text{ CU. FT.}}$$

NOTE: WHEN THE WATER SURFACE OF POND NO. 2 BECOMES GREATER THAN 38.55, WATER FROM POND NO. 2 (DRAINAGE AREA B) WILL FLOW TO POND NO. 1. THIS ALLOWS FOR DETENTION OF THE EXCESS VOLUME OF RUNOFF FROM DRAINAGE AREA B TO BE DETAINED IN POND NO. 1.