CERTIFICATE OF AUTHENTICITY

THIS IS TO CERTIFY THAT THE FOLLOWING ELECTRONIC RECORDS ARE TRUE AND ACCURATE REPRODUCTIONS OF THE ORIGINAL RECORDS OF JAMES CITY COUNTY GENERAL SERVICES DEPARTMENT- STORMWATER DIVISION; WERE SCANNED IN THE REGULAR COURSE OF BUSINESS PURSUANT TO GUIDELINES ESTABLISHED BY THE LIBRARY OF VIRGINIA AND ARCHIVES; AND HAVE BEEN VERIFIED IN THE CUSTODY OF THE INDIVIDUAL LISTED BELOW.

BMP NUMBER: **JR007**

DATE VERIFIED: **June 1, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: March 12, 2010

TO: Michael J. Gillis, Virginia Correctional Enterprises Document Management Services

FROM: Tina Cantwell, Stormwater

PO: 270712

RE: Files Approved for Scanning

General File ID or BMP ID: JR007

PIN: 4521100001J

Subdivision, Tract, Business or Owner Name (if known): Berkeley's Green

Property Description: End of Mossy Creek Road

Site Address: End of Cul-de-sac of Mossy Creek Road

(For internal use only) **Box** 13 **Drawer:** 7

Agreements: (in file as of scan date) **N** **Book or Doc#:** **Page:**

Comments
Colonial National Park on Jamestown Island

JR-007

Contents for Stormwater Management Facilities As-built Files

Each file is to contain:

1. As-built plan
2. Completed construction certification
3. Construction Plan
4. Design Calculations
5. Watershed Map
6. Maintenance Agreement
7. Correspondence with owners
8. Inspection Records
9. Enforcement Actions

Printed On 05/13/2008 By WOOLRIDGE

JR 007
Berkeley Green
Section 5-8

910007275

EXEMPT FROM RECORDATION TAX UNDER VIRGINIA CODE SECTION 58.1-811(A)(3), AS AMENDED

DEED OF EASEMENT FOR NATURAL OPEN SPACE

THIS DEED OF EASEMENT, made this 17th day of April, 19 97, by and between Berkeley's Green Owners Association and its/his/her/their heirs, successors and assigns ("Grantor") and the County of James City, Virginia ("Grantee").

WHEREAS, the Grantor is the owner of certain property known as A portion of the recreational facility of Berkeley's Green Owners Association, consisting of a tract of land containing 5622.28 sq.ft. ~~acres~~, more or less, more particularly described herein ("Property"); a portion of the 3.1 acre recreational center parcel, tax parcel (45-2) (1-1A)

WHEREAS, Grantee has adopted The Chesapeake Bay Preservation Ordinance, Chapter 19B of the James City County Code, as required by Chapter 21 of Title 10.1 of the Code of Virginia to protect the Chesapeake Bay and its tributaries from nonpoint source pollution within the Chesapeake Bay drainage area; and

WHEREAS, Grantor wishes to preserve land as natural open space as part of Grantor's efforts to improve the quality of stormwater runoff from the Property.

NOW, THEREFORE, in recognition of the foregoing and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration, the receipt of which is hereby

MAY-5-97 0162

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acknowledged, the Grantor does hereby grant and convey to Grantee an easement in perpetuity in gross, with the right in perpetuity to restrict the use as described below, of the portion herein described of that certain tract, lot, piece or parcel of land ("Easement Property"), to wit: All that portion of the recreational center tract described as "new open space area" as shown on a plat by Langley and McDonald, P.C., dated December 2, 1996, and revised 4-8-97 titled "Plat showing relocation of a portion of open space easement from Berkeley's Green-Phase 7 to Berkeley's Green Recreation Center Parcel" in exchange for James City County deleting from open space the area described as "area deleted from openspace easement" shown on the same plat.

The restrictions hereby imposed on the use of the Easement Property, the acts which the Grantor covenants to do or not to do and the restrictions which the Grantee is hereby entitled to enforce, shall be as follows:

1. No building or structure shall be built or maintained on the Easement Property other than such building or structure approved by the County Engineer, in writing;

2. The Easement Property shall be kept free and clear of any junk, trash, rubbish or other unsightly or offensive material;

3. No new signs, billboards, outdoor advertising, road or utility lines shall be placed on the property without the expressed written consent of the County Engineer;

4. The Easement Property shall remain in its natural condition with respect to natural leaf litter or other ground

MAY-5-97 0163

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covering vegetation, understory vegetation or shrub layer, and tree canopy. The activities of Grantor within the Easement Property shall be limited to those which do not remove or damage any vegetation or disturb any soil. Such activities include selective trimming and pruning which will not alter the natural character of the Easement Property. Grantor may install walk trails or remove dead, diseased, poisonous or invasive vegetation with the expressed written consent of the County Engineer;

5. Grantee and its representatives may enter upon the Easement Property from time to time for inspection, to enforce the terms of this Easement and to post a sign or marker identifying Grantee's interest in the Easement Property as natural open space;

6. In the event of a violation of the Easement, the Grantee shall have the right to seek all appropriate legal and equitable relief, including, but not limited to, the right to restore the Easement Property to its natural condition and assess the cost of such restoration as a lien against the Easement Property.

Although this easement in gross will benefit the public in the ways recited above, nothing herein shall be construed to convey a right to the public of access to or use of the Easement Property, and the Grantor shall retain exclusive right to such access and use, subject only to the provisions herein recited.

MAY-5-97 0164

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Witness the following signatures and seals on the date first above written.

Nanette L. Neely (SEAL)
President / Berkley's Green Homeowners Association

_____ (SEAL)

Commonwealth of Virginia
City/County of James City, to wit:

I, Nancy S. Abbott, a Notary Public for the Commonwealth of Virginia, do hereby certify that Nanette L. Neely, whose name is signed to the foregoing Deed, has acknowledged the same before me in the jurisdiction aforesaid.

Given under my hand this 18 day of April, 1997.

Nancy S. Abbott
Notary Public

My Commission expires: August 31, 2000

The form of this deed of easement is approved and, pursuant to Resolution of the Board of Supervisors of James City County, Virginia, duly executed on the 17th day of May, 1993, this conveyance is hereby accepted on behalf of said County.

5/5/97
DATE

Leo P. Rogers
COUNTY ATTORNEY

MAY-5 97 0165

Commonwealth of Virginia
City/County of James City, to wit:

I, Carole E. Giuliano, a Notary Public for the Commonwealth of Virginia, do hereby certify that Leo P. Rogers, Attorney for James City County, Virginia, has acknowledged the same before me in the jurisdiction aforesaid.

Given under my hand this 5 day of May, 1997.

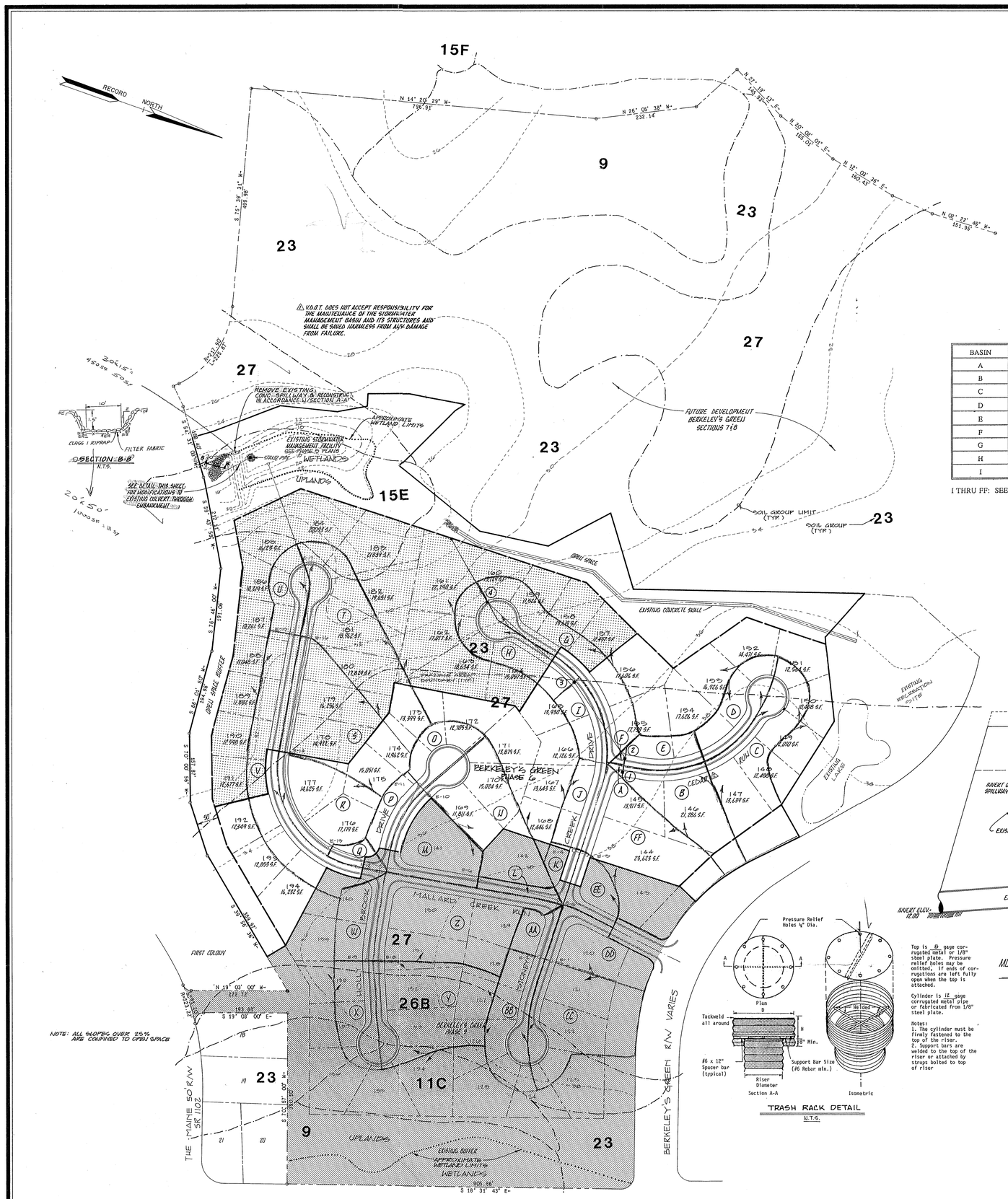
Carole E. Giuliano
Notary Public

My Commission expires: May 31, 1998

(Rev. 1-11-94)

VIRGINIA: City of Williamsburg and County of James City, to Wit:
In the Clerk's Office of the Circuit Court for the City of Williamsburg and County of James City the 5 day of May, 1997 this Deed of Easement was presented with the certificate annexed and admitted to record at 2:53 o'clock.
Teste: Helene S. Ward, Clerk
By: Helene S. Ward
Deputy Clerk

Prepared by Doug White
Langley & McDonald
201 Packets Ct.
Williamsburg, VA 2318



HYDRAULIC GRADELINE

JUNCTION LOSS

INLET STATION	OUTFALL SURFACE ELEV	D (ft)	S (%)	L (ft)	SF (%)	AFF (ft)	V (ft/s)	HI (ft)	HO (ft)	HT (ft)	W (ft)	CAV	BE	H (ft)	ANGLE	K	ND (ft)	HI (ft)	1.3H HT (ft)	0.5H HT (ft)	FINAL H	INLET SURFACE ELEV	RIM ELEV
1	25.8	15	0.5	165	0.0030	0.25	3.31	0.04	2.0	15	1.60	3	0.04	0.01	90	0.28	0.01	0.07	0.09	0.04	0.70	26.50	29.34
3	26.42	15	2.0	200	0.0050	0.25	1.80	0.01	1.5	12	1.25	2	0.02	0.01	15	0.10	0.00	0.02	0.02	0.01	0.25	26.68	32.57
6	28.52	15	1.5	210	0.0300	0.25	1.25	0.01	1.1	12	1.43	2	0.03	0.01	45	0.43	0.01	0.03	0.04	0.02	0.14	28.67	36.59
4	33.77	12	1.1	24	0.0010	0.02	1.43	0.01	0.0	0	0.00	0	0.00	0.00	0	0.00	0.00	0.01	0.01	0.01	0.03	33.80	36.59

INLET CALCULATIONS

INLET NUMBER 1 LENGTH 2.5 STATION 10+39 12.5' R

DRAINAGE AREA = 0.700 ACRES C VALUE = .350 CA = 0.245
DRAINAGE AREA = 0.100 ACRES C VALUE = .350 CA = 0.035

FOR THE FIRST SIDE
SUM CA= 0.245 INT= 4.00 CFS= 0.980 CO= 0.000 GUTTER FLOW= 0.980
FOR THE OTHER SIDE
SUM CA= 0.035 INT= 4.00 CFS= 0.140 CO= 0.000 GUTTER FLOW= 0.140
AT THE INLET

SUM CA= 0.280 INT= 4.00 CFS= 1.120 CO= 0.000 GUTTER FLOW= 1.120

GUTTER SLOPE = 0.0040 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD AT A SLOPE OF .004 (ft./ft.) AND 0.98 (cfs) IS 4.94 (ft.)

XXXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX
P EFFEC. LENGTH (ft) = 6.10 H (ft) = 0.292
DEPTH OF WATER (ft) = 0.19 SPREAD (ft) = 5.92

INLET NUMBER 2 LENGTH 2.5 STATION 10+39 12.5' L

DRAINAGE AREA = 0.200 ACRES C VALUE = .350 CA = 0.070
DRAINAGE AREA = 0.100 ACRES C VALUE = .350 CA = 0.035

FOR THE FIRST SIDE
SUM CA= 0.070 INT= 4.00 CFS= 0.280 CO= 0.000 GUTTER FLOW= 0.280
FOR THE OTHER SIDE
SUM CA= 0.035 INT= 4.00 CFS= 0.140 CO= 0.000 GUTTER FLOW= 0.140
AT THE INLET

SUM CA= 0.105 INT= 4.00 CFS= 0.420 CO= 0.000 GUTTER FLOW= 0.420

GUTTER SLOPE = 0.0040 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD AT A SLOPE OF .004 (ft./ft.) AND 0.28 (cfs) IS 2.04 (ft.)

XXXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX
P EFFEC. LENGTH (ft) = 6.10 H (ft) = 0.292
DEPTH OF WATER (ft) = 0.10 SPREAD (ft) = 3.08

INLET NUMBER 3 LENGTH 6.0 STATION 15+50 12.5' L

DRAINAGE AREA = 0.300 ACRES C VALUE = .350 CA = 0.105
SUM CA= 0.105 INT= 4.00 CFS= 0.420 CO= 0.000 GUTTER FLOW= 0.420

GUTTER SLOPE = 0.0220 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD	W	W/T	SW	SW/SX	Eo	a	S'W	SE
1.71	2.0	1.17	0.0833	2.7	1.00	3.2	0.135	0.167

XXXXXXXXXX CURB INLET ON A CONTINUOUS GRADE XXXXXXXXXX
REQUIRED LENGTH (ft) = 5.3 EFFICIENCY= 1.00
CFS INTERCEPTED= 0.42 CFS CARRYOVER= 0.00

INLET NUMBER 4 LENGTH 6.0 STATION 18+22 21' RT

DRAINAGE AREA = 0.600 ACRES C VALUE = .350 CA = 0.210
DRAINAGE AREA = 0.900 ACRES C VALUE = .350 CA = 0.315

FOR THE FIRST SIDE
SUM CA= 0.210 INT= 4.00 CFS= 0.840 CO= 0.000 GUTTER FLOW= 0.840
FOR THE OTHER SIDE
SUM CA= 0.315 INT= 4.00 CFS= 1.260 CO= 0.000 GUTTER FLOW= 1.260
AT THE INLET

SUM CA= 0.525 INT= 4.00 CFS= 2.100 CO= 0.000 GUTTER FLOW= 2.100

GUTTER SLOPE = 0.0050 FT/FT PAVEMENT CROSS SLOPE = 0.0240 FT/FT

SPREAD AT A SLOPE OF .005 (ft./ft.) AND 1.26 (cfs) IS 6.14 (ft.)

XXXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX
P EFFEC. LENGTH (ft) = 9.60 H (ft) = 0.292
DEPTH OF WATER (ft) = 0.21 SPREAD (ft) = 8.67

CHECK STATION 14+00 "C" RT

DRAINAGE AREA = 0.900 ACRES C VALUE = .350 CA = 0.315
SUM CA= 0.315 INT= 4.00 CFS= 1.260 CO= 0.000 GUTTER FLOW= 1.260

GUTTER SLOPE = 0.0063 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

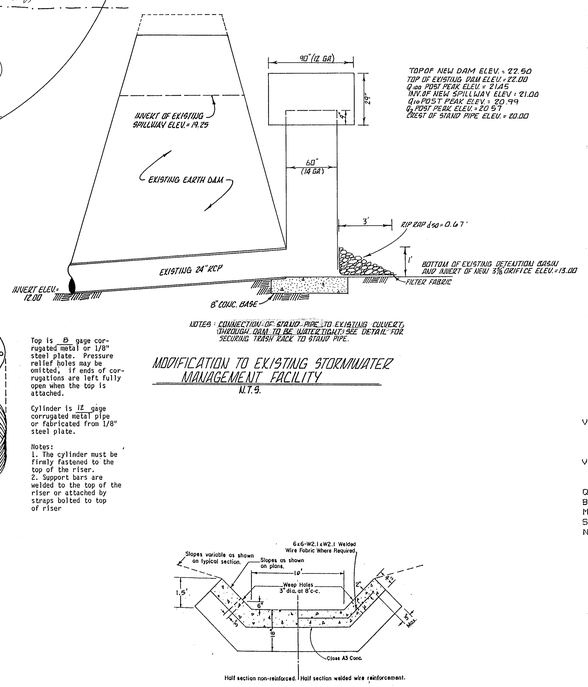
SPREAD	W	W/T	SW	SW/SX	Eo	a	S'W	SE
5.45	1.5	0.28	0.0833	2.7	0.64	0.9	0.052	0.064

STORM DRAINAGE CALCULATIONS

BASIN	AREA	C	I_{10}	Q_{10}
A	0.1 AC	0.35	4.0	0.14
B	0.7 AC	0.35	4.0	0.98
C	0.9 AC	0.35	4.0	1.26
D	0.7 AC	0.35	4.0	0.98
E	0.3 AC	0.35	4.0	0.42
F	0.1 AC	0.35	4.0	0.14
G	0.9 AC	0.35	4.0	1.26
H	0.6 AC	0.35	4.0	0.84
I	0.3 AC	0.35	4.0	0.42

I THRU FF: SEE DRAINAGE CALCULATIONS FOR BERKELEY'S GREEN PHASE 5

Soil name and map symbol	Erosion hazard
9 Chickahominy	Slight
11B*, 11C* Craven	Slight
15E* Emporia	Slight
23 Newflat	Slight
25B* Panuskey	Slight
27 Peawick	Slight



TRASH RACK DETAIL
N.T.S.

EMERGENCY SPILLWAY DETAIL
SECTION A-A
N.T.S.

MAN MADE CHANNEL CALCULATIONS

VARIABLES LIST:
Y - FLOW DEPTH B - CHANNEL BOTTOM WIDTH S - CHANNEL SLOPE
Q - FLOWRATE M - CHANNEL SIDE SLOPE N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

Q (CFS) ? 2.94
B (FT) ? 0
M (FT/FT) ? 3
S (FT/FT) ? .0078
N (FT^1/6) ? .013

RESULTS
Y= 0.54 FT
A= 0.97 SF
P= 2.40 FT
V= 3.90 FPS
F= 1.33 SUPER-CRITICAL FLOW

100 50 0 100 200 300
GRAPHIC SCALE IN FEET

COMMONWEALTH OF VIRGINIA
3/4/92
STEPHEN A. ROMEO
No. 1440-B
LAND SURVEYOR

JR 007

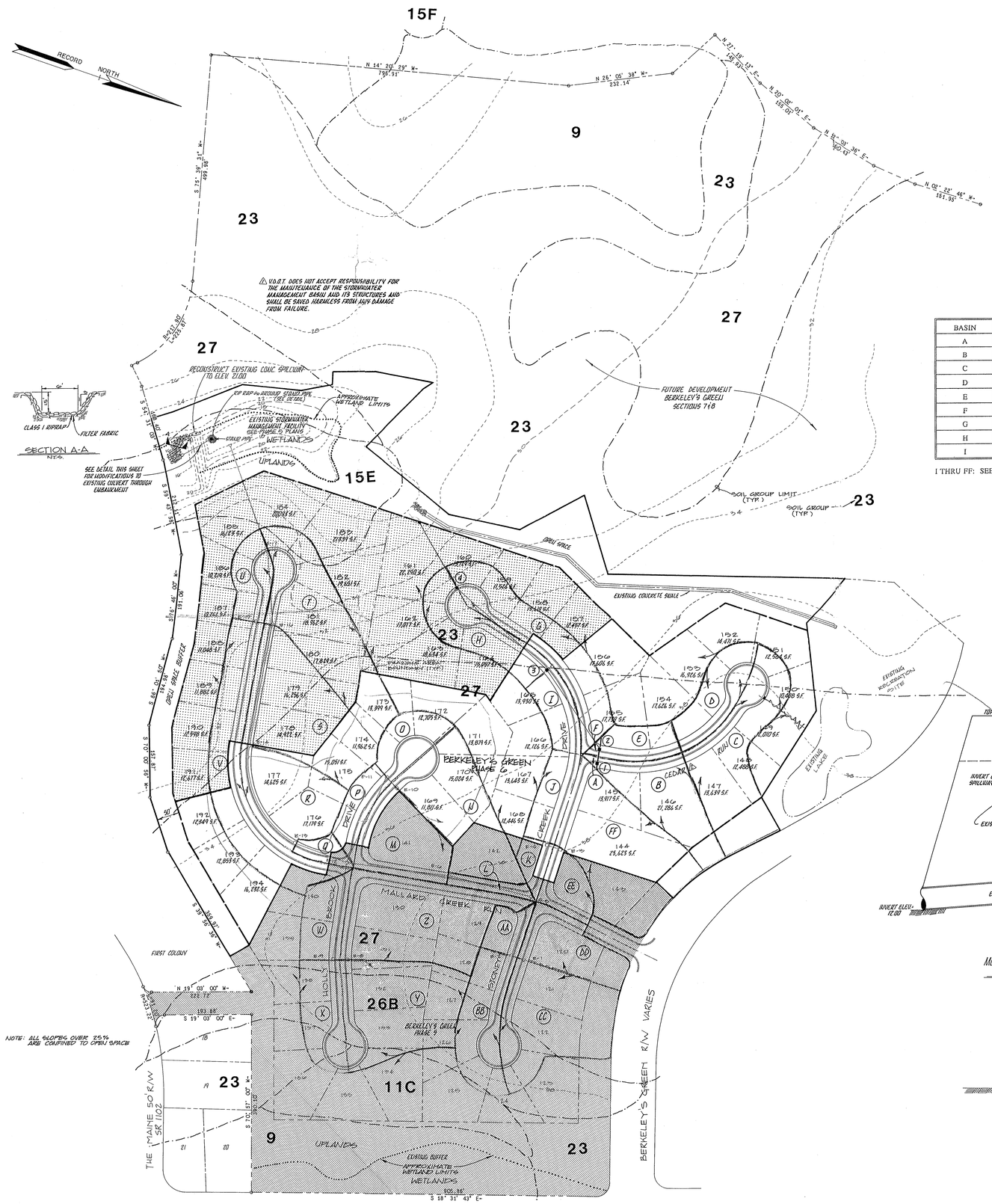
Langley and McDonald
A PROFESSIONAL CORPORATION
ENGINEERS • PLANNERS • SURVEYORS
VIRGINIA BEACH — WILLIAMSBURG, VIRGINIA

DES. SAR
DWN. BSG
CHK. SAR
DATE FEB. 24, 1992

C. RICHARD DOBSON BUILDERS, INC.
BERKELEY'S GREEN PHASE 6
JAMES CITY COUNTY, VIRGINIA
DRAINAGE AREA MAP & ENVIROMENTAL INVENTORY

4 SEP 1992
RECEIVED
PLANNING DEPARTMENT

PROJ. NO. 85040
SCALE 1"=100'
SHEET 2 OF 8
DWG. 4304W



HYDRAULIC GRADELINE

JUNCTION LOSS

INLET STATION	OUTLET SURFACE ELEV	Q	T	S	L	SF O	SF I	V(O)	H(O)	D(O)	D(I)	V(I)	CAV	Z6	H(E)	ANGLE	K	H(J)	H(F)	H(I)	H(D)	N	INLET SURFACE ELEV	SIP ELEV
1	38.0	15	[illegible]	165	[illegible]	[illegible]	[illegible]	3.31	0.04	2.0	15	7.60	3	0.04	0.01	90	0.28	0.01	0.07	0.38	0.04	0.76	36.80	38.84
3	29.42	15	2.0	270	0.0067	[illegible]	1.61	0.01	1.5	12	1.25	3	0.02	0.01	15	0.10	0.00	0.02	0.02	0.01	0.25	29.69		36.57
2	28.57	15	1.5	210	0.0064	[illegible]	1.25	0.01	1.1	12	1.43	2	0.03	0.01	45	0.43	0.01	0.13	0.04	0.02	0.14	28.69		36.59
4	33.77	15	1.5	24	0.0125	[illegible]	1.43	0.01	0.0	0	0.00	0	0.00	0.00	0	0.00	0.00	0.01	0.01	0.01	0.03	33.80		36.59

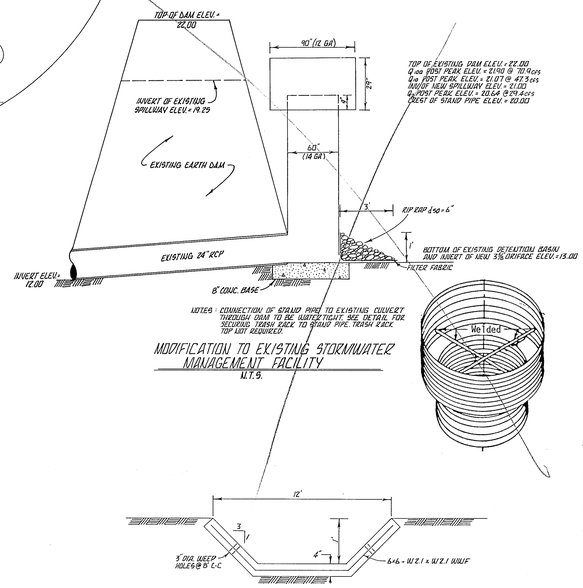
STORM DRAINAGE CALCULATIONS

BASIN	AREA	C	I_{10}	Q_{10}
A	0.1 AC	0.35	4.0	0.14
B	0.7 AC	0.35	4.0	0.98
C	0.9 AC	0.35	4.0	1.26
D	0.7 AC	0.35	4.0	0.98
E	0.3 AC	0.35	4.0	0.42
F	0.1 AC	0.35	4.0	0.14
G	0.9 AC	0.35	4.0	1.26
H	0.6 AC	0.35	4.0	0.84
I	0.3 AC	0.35	4.0	0.42

I THRU FF: SEE DRAINAGE CALCULATIONS FOR BERKELEY'S GREEN PHASE 5

Soil name and map symbol	Erosion hazard
9---------- Chickahominy	Slight
11B*, 11C*- Craven----------	Slight
15E*---------- Emporia	Slight
23---------- Newflat	Slight
35B*---------- Pamunkey	Slight
27---------- Peawick	Slight

Q_2: PRE = 64.6 Ac. x 0.2 x 2.5 = 32.3 cfs
Q_2: POST = 64.6 Ac. x 0.35 x 3.0 = 67.8 cfs
Q_{10}: POST = 64.6 Ac. x 0.35 x 4.0 = 90.4 cfs
Q_{100}: POST = 64.6 Ac. x 0.35 x 5.8 = 131.1 cfs



MODIFICATION TO EXISTING STORMWATER MANAGEMENT FACILITY
N.T.S.

NEW CONCRETE SPILLWAY DETAIL
N.T.S.

INLET CALCULATIONS

INLET NUMBER 1 LENGTH 2.5 STATION 10+39 12.5' R

DRAINAGE AREA = 0.700 ACRES C VALUE = .350 CA = 0.245
DRAINAGE AREA = 0.100 ACRES C VALUE = .350 CA = 0.035

FOR THE FIRST SIDE
SUM CA= 0.245 INT= 4.00 CFS= 0.980 CO= 0.000 GUTTER FLOW= 0.980
FOR THE OTHER SIDE
SUM CA= 0.035 INT= 4.00 CFS= 0.140 CO= 0.000 GUTTER FLOW= 0.140
AT THE INLET

SUM CA= 0.280 INT= 4.00 CFS= 1.120 CO= 0.000 GUTTER FLOW= 1.120

GUTTER SLOPE = 0.0050 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD AT A SLOPE OF .004 (ft./ft.) AND 0.98 (cfs) IS 4.94 (ft.)

XXXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX
P EFFEC. LENGTH (ft) = 6.10 H (ft) = 0.292
DEPTH OF WATER (ft) = 0.19 SPREAD (ft) = 5.92

INLET NUMBER 2 LENGTH 2.5 STATION 10+39 12.5' L

DRAINAGE AREA = 0.200 ACRES C VALUE = .350 CA = 0.070
DRAINAGE AREA = 0.100 ACRES C VALUE = .350 CA = 0.035

FOR THE FIRST SIDE
SUM CA= 0.070 INT= 4.00 CFS= 0.280 CO= 0.000 GUTTER FLOW= 0.280
FOR THE OTHER SIDE
SUM CA= 0.035 INT= 4.00 CFS= 0.140 CO= 0.000 GUTTER FLOW= 0.140
AT THE INLET

SUM CA= 0.105 INT= 4.00 CFS= 0.420 CO= 0.000 GUTTER FLOW= 0.420

GUTTER SLOPE = 0.0060 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD AT A SLOPE OF .004 (ft./ft.) AND 0.28 (cfs) IS 2.04 (ft.)

XXXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX
P EFFEC. LENGTH (ft) = 6.10 H (ft) = 0.292
DEPTH OF WATER (ft) = 0.19 SPREAD (ft) = 3.08

INLET NUMBER 3 LENGTH 6.0 STATION 15+50 12.5' L

DRAINAGE AREA = 0.300 ACRES C VALUE = .350 CA = 0.105
SUM CA= 0.105 INT= 4.00 CFS= 0.420 CO= 0.000 GUTTER FLOW= 0.420

GUTTER SLOPE = 0.0280 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD	W	W/T	SW	SW/SX	Eo	a	S'W	SE
1.71	2.0	1.17	0.0833	2.7	1.00	3.2	0.135	0.167

XXXXXXXXXX CURB INLET ON A CONTINUOUS GRADE XXXXXXXXXX
REQUIRED LENGTH (ft) = 5.3 EFFICIENCY= 1.00
CFS INTERCEPTED= 0.42 CFS CARRYOVER= 0.00

INLET NUMBER 4 LENGTH 6.0 STATION 18+22 21' RT

DRAINAGE AREA = 0.600 ACRES C VALUE = .350 CA = 0.210
DRAINAGE AREA = 0.900 ACRES C VALUE = .350 CA = 0.315

FOR THE FIRST SIDE
SUM CA= 0.210 INT= 4.00 CFS= 0.840 CO= 0.000 GUTTER FLOW= 0.840
FOR THE OTHER SIDE
SUM CA= 0.315 INT= 4.00 CFS= 1.260 CO= 0.000 GUTTER FLOW= 1.260
AT THE INLET

SUM CA= 0.525 INT= 4.00 CFS= 2.100 CO= 0.000 GUTTER FLOW= 2.100

GUTTER SLOPE = 0.0050 FT/FT PAVEMENT CROSS SLOPE = 0.0240 FT/FT

SPREAD AT A SLOPE OF .005 (ft./ft.) AND 1.26 (cfs) IS 6.14 (ft.)

XXXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX
P EFFEC. LENGTH (ft) = 9.60 H (ft) = 0.292
DEPTH OF WATER (ft) = 0.21 SPREAD (ft) = 8.67

"C" STATION 14+00 "C" RT

DRAINAGE AREA = 0.900 ACRES C VALUE = .350 CA = 0.315
SUM CA= 0.315 INT= 4.00 CFS= 1.260 CO= 0.000 GUTTER FLOW= 1.260

GUTTER SLOPE = 0.0063 FT/FT PAVEMENT CROSS SLOPE = 0.0313 FT/FT

SPREAD	W	W/T	SW	SW/SX	Eo	a	S'W	SE
5.45	1.5	0.28	0.0833	2.7	0.64	0.9	0.052	0.064

MAN MADE CHANNEL CALCULATIONS

VARIABLES LIST:
Y - FLOW DEPTH B - CHANNEL BOTTOM WIDTH S - CHANNEL SLOPE
Q - FLOWRATE M - CHANNEL SIDE SLOPE N - CHANNEL ROUGHNESS

VARIABLE TO BE SOLVED (Y,Q,B,M,S OR N) ? Y

Q (CFS) = 8.24
B (FT) = 2.0
M (FT/FT) = 3
S (FT/FT) = .0028
N (FT^1/6) = .013

RESULTS
Y= 0.54 FT
A= 0.57 SF
P= 2.40 FT
V= 3.90 FPS
F= 1.33 SUPER-CRITICAL FLOW

100 50 0 100 200 300
GRAPHIC SCALE IN FEET

COMMONWEALTH OF VIRGINIA
3/4/92
STEPHEN A. ROMEO
No. 1448-B
LAND SURVEYOR

Langley and McDonald
A PROFESSIONAL CORPORATION
ENGINEERS • PLANNERS • SURVEYORS
VIRGINIA BEACH – WILLIAMSBURG, VIRGINIA

DES.	SAR
DWN.	BSG
CHK.	SAR
DATE	FEB. 24, 1992

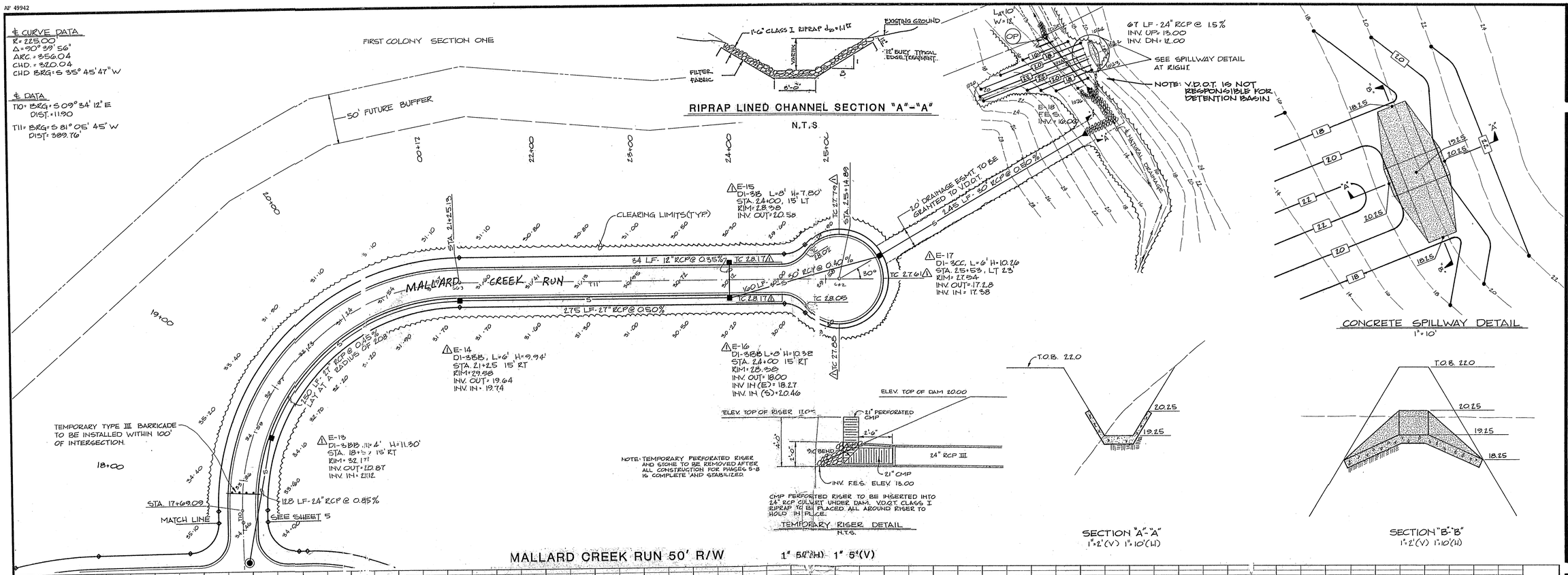
C. RICHARD DOBSON BUILDERS, INC.
BERKELEY'S GREEN PHASE 6
JAMES CITY COUNTY, VIRGINIA
DRAINAGE AREA MAP & ENVIROMENTAL INVENTORY

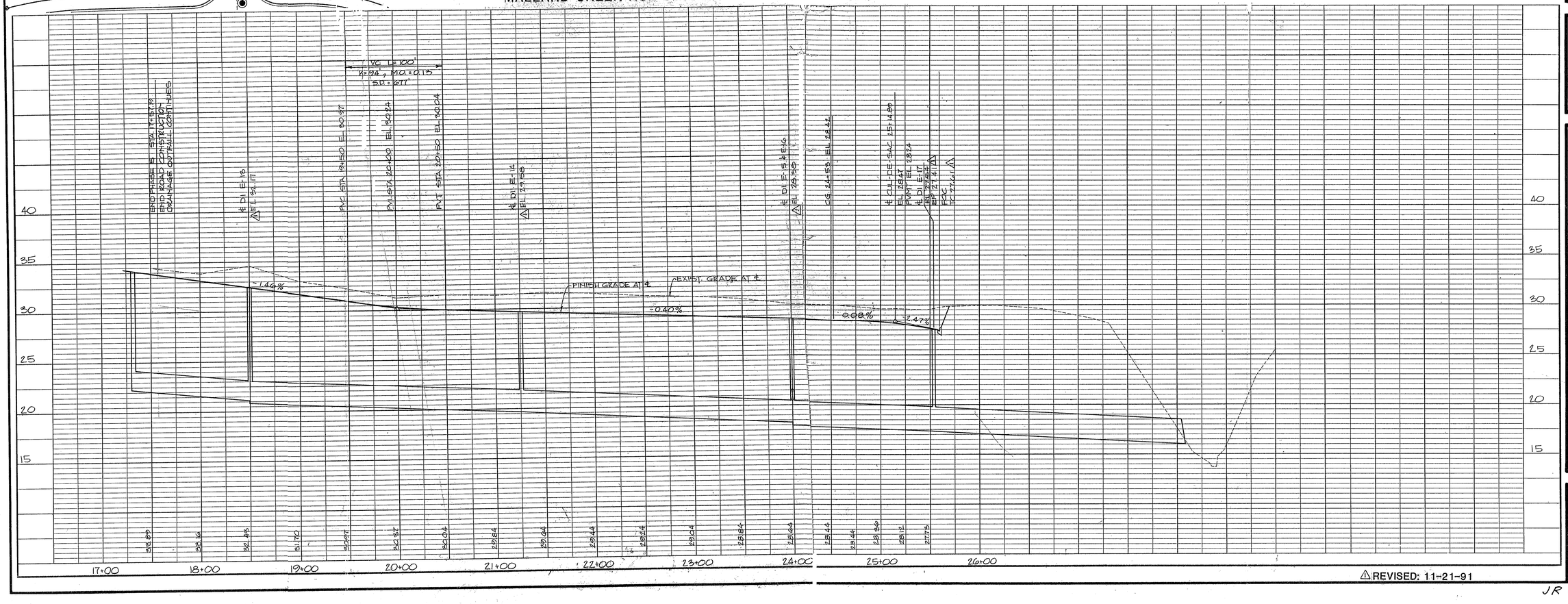
PROJ. NO.	85040
SCALE	1" = 100'
SHEET	2 OF 8
DWG.	4304W

Nº 49942

℄ CURVE DATA
R=225.00
Δ=90° 39' 56"
ARC.=356.04
CHD.=320.04
CHD BRG=S 35° 45' 47" W

℄ DATA
T10: BRG=S 09° 34' 12" E
DIST.=11.90
T11: BRG=S 81° 05' 45" W
DIST=389.76'





⚠REVISED: 11-21-91

Langley and McDonald
A PROFESSIONAL CORPORATION
ENGINEERS • PLANNERS • SURVEYORS
VIRGINIA BEACH – WILLIAMSBURG, VIRGINIA

DES.	BLM
DWN.	ENH
CHK.	BLM
DATE	12/20/89

LAND DEVELOPMENT INCORPORATED

BERKELEY'S GREEN PHASE 5

PLAN & PROFILE

JAMES CITY COUNTY, VIRGINIA

PROJ. NO.	85040-43
SCALE:	AS SHOWN
SHEET	9 OF 11
DWG.	3438W

JR 007

WORKSHEET A : NEW DEVELOPMENT

OPTION TWO: VA. CHESAPEAKE BAY DEFAULT

5 **Calculate the pre-development load (L_{pre}).**

L_{pre} = $P \times P_j \times [0.05 + (0.009 \times I_{watershed})] \times C_{pre} \times A \times 2.72 / 12$

= 45 × 0.9 × [0.05 + (0.009 × 14)] × 0.26 × 62 × 2.72 / 12

40.5 × .194 16.12 .227

= 28.75 pounds per year

6 **Calculate the post-development load (L_{post}).**

L_{post} = $P \times P_j \times [0.05 + (0.009 \times I_{site})] \times C \times A \times 2.72 / 12$

= 45 × 0.9 × [0.05 + (0.009 × 30)] × 0.26 × 62 × 2.72 / 12

= 53.91 pounds per year

28.75 × 30/14

7 **Calculate the pollutant removal requirement (RR).**

RR = $L_{post} - L_{pre}$

= 53.91 - 28.75

= 25.14 pounds per year

To determine the overall BMP efficiency required (%RR) when selecting BMP options:

%RR = $RR / L_{post} \times 100$

= (25.14 / 53.91) × 100

= 47% % ≈ 50%

NEED 9 PT BMP

FOR STORMLINK

Post T_c = 21 min

DA = 62.4

Pre T_c = 30 min

13 - 0	0
2	0.07
4	0.38
19 - 6	1.02
21 - 8	2.1
22 - 9	2.8

structure 1 - elev 0 - .3' ø

2 - elev 4.7 24" ø

3 - elev 7.9 12' weir

Pre RCN = 77 } BERGRS.DAT

Post RCN = 86 } BERGRSB.DAT

D SOILS

STORM	Pre	POST	QREL	Elev	Vs
2 - 24	43	68	50.9	8.9	2.7
2 - ~~24~~ 6	49	95	49.6	8.8	2.7
10 - 24	88	117	110	9.8	3.4
100 - 24	160	193	186	10.7	4.3
				↳ 23.7	

Top of dam needs to be 24.7

unless spillway widened - 14' - 10.5 - 100yr elev - 24.5 for top of dam.

FILE

T JOSEPH McDONALD
1906-1982

Consultant
Burk G. Ph 6

Langley and McDonald
A Professional Corporation

FAX TRANSMITTAL COVER SHEET

PLEASE DELIVER THE FOLLOWING MATERIAL AS SOON AS POSSIBLE

TO: Darryl Cook

TELECOPIER NUMBER:

FROM: Stephen Romero

NUMBER OF PAGES: 2 (Including Cover Sheet)

IF NOT RECEIVED PROPERLY PLEASE NOTIFY US IMMEDIATELY BY CALLING: (804) 253-2975

JOB NO.: 85040 PHASE 6

DATE SENT: 3/30/93

IF YOU WISH TO RESPOND BY FAX, OUR FAX NUMBER IS: (804) 229-0049

SPECIAL MESSAGE: PLEASE CALL ME AT YOUR CONVENIENCE

THANKS,

Steve

ENGINEERS • PLANNERS • SURVEYORS

IN OFFICES • 5644 GREENWICH ROAD • SUITE 200 • VIRGINIA BEACH • VIRGINIA • 23462 • TEL: (804) 473-2000 • FAX: (804) 497-7933
CH CORPORATE CENTER • 201 PACKETS COURT • WILLIAMSBURG • VIRGINIA • 23188 • TEL: (804) 253-2975 • FAX: (804) 229-0049

POND-2 Version: 3.17
S/N: 1295130250

BERKELEY'S BREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

CALCULATED 03-30-1993 09:48:39
DISK FILE: b:B01 .VOL

Planimeter scale: 1 inch = 50 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
13.00	0.00	0	0	0	0
14.00	0.55	1,375	1,375	458	458
15.00	0.89	2,000	5,033	1,678	2,136
16.00	1.80	4,500	9,500	3,167	5,303
17.00	3.25	8,125	18,672	6,224	11,527
18.00	5.60	14,000	32,790	10,930	22,457
19.00	8.25	20,625	51,618	17,206	39,663
20.00	11.50	28,750	73,726	24,575	64,238
20.15	*I*	30,055	88,201	4,410	68,648
21.00	15.20	38,000	99,803	33,268	97,506
21.50	*I*	43,325	121,901	20,317	117,822
22.00	19.50	49,000	130,151	43,384	140,889
23.00	24.60	61,500	165,375	55,132	196,021
24.00	29.90	74,750	204,052	68,017	264,038
25.00	35.60	89,000	245,314	81,771	345,810

I ---> Interpolated area from closest two planimeter readings.

$$IA = (sq.rt(Area1) + ((Ei-E1)/(E2-E1))*(sq.rt(Area2)-sq.rt(Area1)))^2$$

where: E1, E2 = Closest two elevations with planimeter data
Ei = Elevation at which to interpolate area
Area1,Area2 = Areas computed for E1, E2, respectively
IA = Interpolated area for Ei

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

MODIFICATION FOR TEMPORARY SEDIMENT BASIN

A = 64.6 ACRES
x 67 CY/AC
4328.2 CY
x 27 CF/CY
116,861 CF REQ'D. VOLUME

AVAILABLE VOLUME BEFORE CLEANOUT REQ'D = 64.6 AC
x 40 CY/AC
2584 CY
x 27 CF/CY
69,768 CF

ELEVATION REQ'D FOR SED. BASIN = 21.50
ELEVATION REQ'D @ CLEAN OUT = 20.15
ELEVATION OF STAND PIPE = 20.00
THEREFORE NO ADDITIONAL MODIFICATION WARRANTED

NOTE: CURRENT DRAINAGE AREA LESS THAN ULTIMATE CONDITION, HOWEVER, THIS DIFFERENCE IS INSIGNIFICANT.

$27 \times 64.6 \times \frac{27\ CF}{CY} = 47{,}093\ CY$

use elev = ½ rise + ht.

1. Freeboard of 1' is required at 100-year storm elevation - not 10-year storm. Original design provided 2.1 feet @ 10-year elevation and 1 foot @ 100-year elevation.

2. Original calculations for pond show that the 100-year storm was 152 cfs. Current submittal uses 131 cfs. Also, original calculations were based on critical storm methodology as provided in the Va. Storm Water Training Manual. The current design assumes storm duration $T_D = T_c$ (time of concentration). Original design showed that critical storm for 2-year event was approx. 30 minutes and the 10-year critical storm was in excess of 30 minutes. The method calculates that critical storm duration is 30 min. for 2-year and 42.6 min for 10-year event.

∴ Pond needs to be redesigned so apples can be compared w/ apples - original design methodology must be used on resubmission.

VII. DETENTION POND DESIGN FOR SMALL SITES*

A. DESIGN OBJECTIVES

1. IMPOUNDMENT STORAGE VOLUME

2. OUTLET DEVICE SELECTION

B. DESIGN REQUIREMENTS

1. INFLOW HYDROGRAPH

   (a) Peak Discharge: From the Rational Equation

   (b) Hydrograph Shape: Modified Rational Assumption

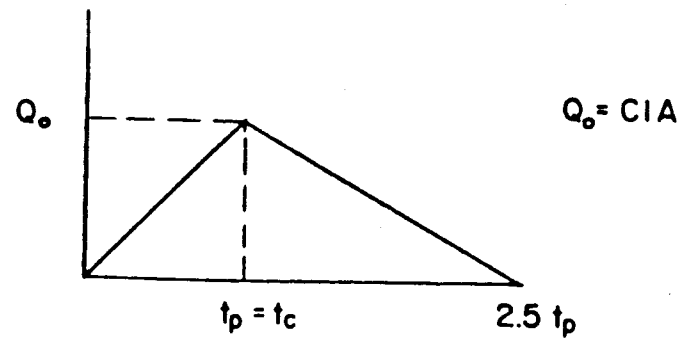


Figure VII-1 ASSUMED TRIANGULAR SHAPE OF HYDROGRAPH

(Note: the declining limb equals 1.5 times the Time of Concentration)

   (c) The Long Storm Effect: Since the inflow hydrograph volume is critical to detention basin design, storms of like frequency and longer duration than the watershed Time of Concentration must be analyzed. The following figure depicts this design consideration.

* This method was developed based on Reference 1.11, Estimate Detention Reservoir Storage, by A. S. Paintal, P.E., Ph.D., published in Water and Wastes Engineering.

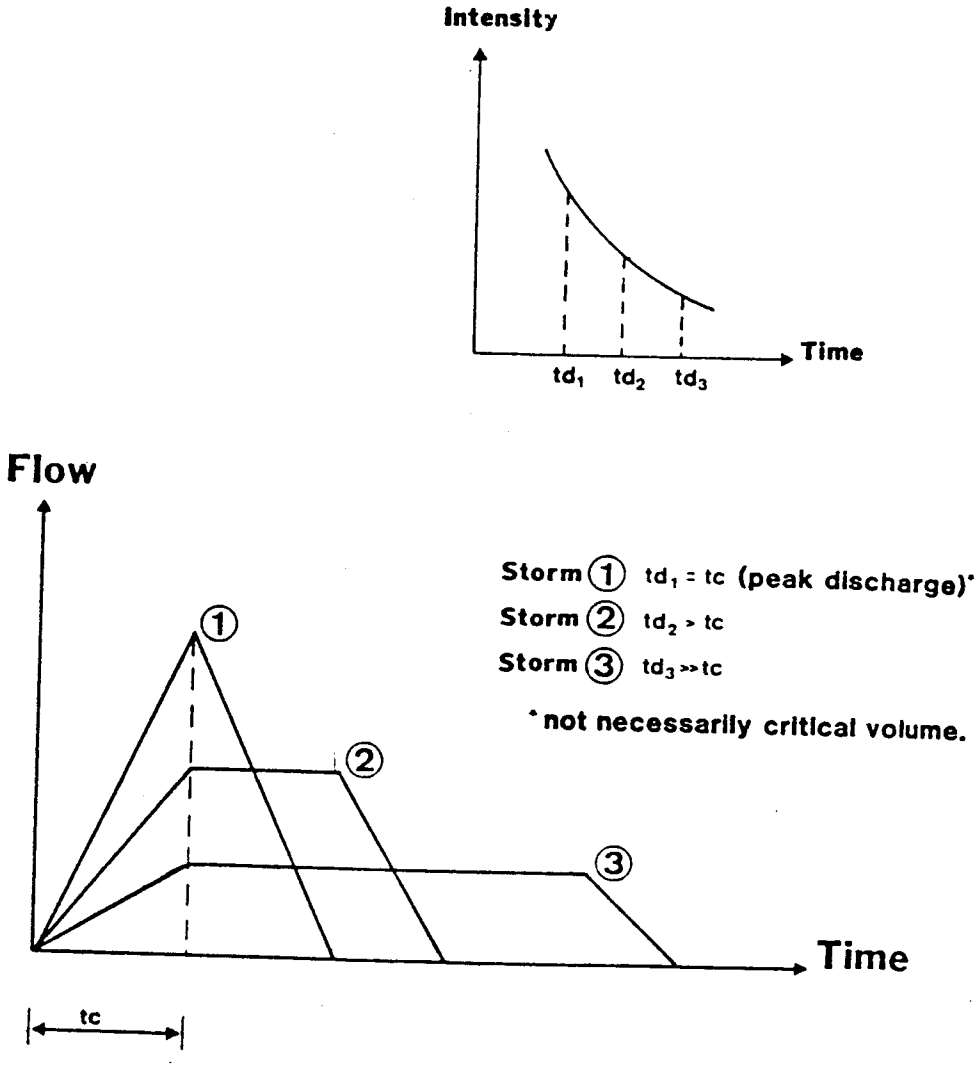


Figure VII-2. STORMS OF LIKE RETURN INTERVAL AND VARYING DURATION

(d) Rainfall Intensity

This direct solution methodology requires the expression of rainfall intensity in equation form. The rainfall intensity-duration relationship may be expressed as:

$$I = \frac{a}{b + T} \quad \cdots\cdots\cdots\cdots\cdots \quad (VII - 1)$$

Where I = rainfall intensity, in/hr
a&b = constants, and
T = rainfall duration, minutes.

(e) Rainfall Constants for Selected Sites in Virginia (Table VII-1)

Table VII-1 RAINFALL CONSTANTS FOR VIRGINIA
(Duration 5 min. to 2 hours)

Station	Rainfall Frequency	Constants a	Constants b
Wytheville	2	117.7	19.1
	5	168.6	23.8
	10	197.8	25.2
Lynchburg	2	118.8	17.2
	5	158.9	20.6
	10	189.8	22.6
Richmond	2	130.3	18.5
	5	166.9	20.9
	10	189.2	22.1
Norfolk	2	126.3	17.3
	5	173.8	22.7
	10	201.0	23.9
Cape Henry	2	143.2	21.0
	5	173.8	22.7
	10	203.9	24.8

The above constants are based on linear regression analyses of the frequency intensity-duration curves contained in the VDH&T Drainage Manual. They provide excellent correlations over the range of rainfall durations from 5 minutes to 120 minutes.

Arlington	2	120.5	17.4
	5	163.3	21.2
	10	191.3	22.5

2. OUTFLOW HYDROGRAPH

(a) Peak Discharge

Limitations may be based upon

- Legislative mandate
- Physical constraints (receiving pipe or channel)

(b) Outflow Hydrograph Shape

- Dependent upon the type of outlet device.
- Typical shapes for the two most common outlet devices, the orifice and the weir, are depicted below.

- GOOD APPROXIMATION FOR ORIFICE
- NOT CONSERVATIVE FOR WEIR DEVICE

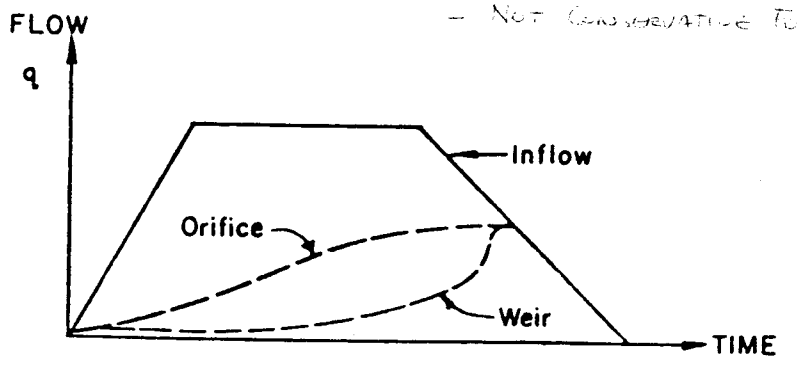


Figure VII-3. TYPICAL SHAPES OF FLOW vs. TIME CURVES FOR VARIOUS OUTLET DEVICES

A linear approximately from zero discharge to the peak outflow appears to be a reasonable yet conservative assumption for estimating the outflow hydrograph shape for orifice control. In equation form,

$$q = K\ t$$

Caution should be used in applying this assumption to an outlet weir.

C. DESIGN EQUATIONS

1. STORAGE VOLUME (GRAPHICAL REPRESENTATION)

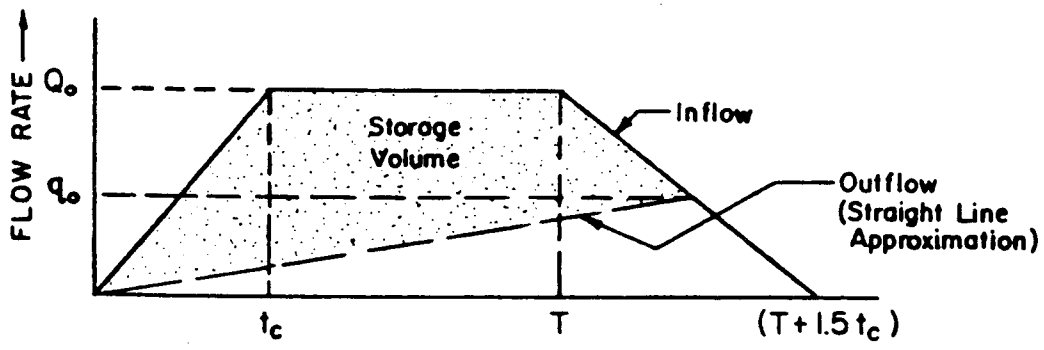


Figure VII-4. REQUIRED STORAGE VOLUME FOR DETENTION BASIN

2. STORAGE VOLUME (EQUATION FORM)

$$V = \left[Q_o T + \frac{Q_o t_c}{4} - \frac{q_o T}{2} - \frac{3\, q_o t_c}{4} \right] 60 \quad \cdots\cdots (VII\text{-}2)$$

Where V = storage volume required, cubic feet

Q_o = inflow peak discharge for a storm of duration T, Q_o = CIA

C = rational coefficient for developed area

A = area in acres

I = rainfall intensity for a storm duration T, $I = \frac{a}{b + T}$

T = storm duration, minutes

t_c = watershed time of concentration after development, minutes

and q_o = allowable peak outflow, cubic feet per second (cfs).

3. CRITICAL STORM DURATION

The above equation expresses volume as a function of time. Equating the first derivative of the expression to zero will provide an estimate of the critical storm duration resulting in the maximum required storage volume. The expression is:

$$T_c = \sqrt{\frac{2CAa\,(b - t_c/4)}{q_o}} - b \cdots\cdots (VII\text{-}3)$$

Where T_c = critical storm duration in minutes

C = Rational coefficient for developed area

A = drainage area in acres

t_c = Time of Concentration after development in minutes

q_o = allowable peak outflow in cfs

and a&b = rainfall constants from previous tables.

Notes:

Since inflow peak discharge is also a function of storm duration, the equation $Q = \frac{CAa}{b + T}$ was substituted into the original expression before the derivative was taken. If T_c is less than the time of concentration after development, set $T_c = t_c$. Also, C and A for the developed area will generally be represented by the sum of the products of the two variables, based on the planned development.

D. DESIGN PROCEDURE

1. OBTAIN RELEVANT DESIGN DATA INCLUDING:

- drainage area
- Time of Concentration (before and after development)
- Rational Equation coefficient (before and after development)
- Rainfall constants (a and b) for the most representative rainfall station, and the frequency of interest.

2. COMPUTE THE PRE-DEVELOPMENT RAINFALL INTENSITY ($I = \frac{a}{b + t_c}$)

3. DETERMINE THE ALLOWABLE PEAK DISCHARGE

Based on q_o = CIA or other constraints.

4. FIND THE CRITICAL STORM DURATION BY SOLVING EQUATION (VII-3):

$$T_c = \sqrt{\frac{2CA_a \quad (b - t_c/4)}{q_o}} - b$$

5. USING THE RATIONAL EQUATION, SOLVE FOR THE PEAK INFLOW USING THE CRITICAL STORM DURATION INTENSITY.

6. DETERMINE THE REQUIRED STORAGE VOLUME BY LETTING $T = T_c$ AND SOLVING EQUATION (VII-2):

$$V = \left[Q_o T_c + \frac{Q_o t_c}{4} - \frac{q_o T_c}{2} - \frac{3 q_o t_c}{4} \right] 60$$

7. SIZE A BASIN TO PROVIDE THE REQUIRED VOLUME.

8. SELECT AN OUTLET DEVICE (ORIFICE) WHICH WILL JUST PASS THE ALLOWABLE PEAK DISCHARGE WHEN THE BASIN IS FULL.

CODE COMPLIANCE

ANNUAL STORM PHOSPHOROUS EXPORT — *TABLE 1*

For Existing Urban Land Uses (in pounds/acre/year)

LAND USES	IMPERVIOUS COVER (%)	ANNUAL RAINFALL (in) 40	41	42	43	44	45
	0	0.11	0.11	0.11	0.11	0.12	0.12
5.0 acre residential lots	5	0.20	0.21	0.21	0.22	0.22	0.23
2.0 acre residential lots	10	0.30	0.30	0.31	0.32	0.33	0.33
1.0 acre residential lots	15	0.39	0.40	0.41	0.42	0.43	0.44
	16	0.41	0.42	0.43	0.44	0.45	0.46
	17	0.43	0.44	0.45	0.46	0.47	0.48
	18	0.45	0.46	0.47	0.48	0.49	0.51
	19	0.47	0.48	0.49	0.50	0.52	0.53
0.50 acre residential lots	20	2.03	2.08	2.13	2.18	2.23	2.28
0.33 acre residential lots	25	2.42	2.48	2.54	2.61	2.67	2.72
0.25 acre residential lots	30	2.82	2.89	2.96	3.03	3.10	3.17
Townhouses	35	3.22	3.30	3.38	3.46	3.54	3.62
	40	3.61	3.70	3.79	3.88	3.97	4.06
	45	4.01	4.11	4.21	4.31	4.41	4.51
Garden Apartments	50	4.41	4.52	4.63	4.74	4.85	4.96
	55	4.80	4.92	5.04	5.16	5.28	5.40
	60	5.20	5.33	5.46	5.59	5.72	5.85
Light Commercial/Industrial	65	5.60	5.74	5.88	6.02	6.16	6.30
	70	5.99	6.14	6.29	6.44	6.59	6.74
	75	6.39	6.55	6.71	6.87	7.03	7.19
	80	6.79	6.96	7.13	7.29	7.46	7.63
Heavy Commercial/Industrial	85	7.98	8.17	8.37	8.57	8.77	8.97
	90	7.58	7.77	7.96	8.15	8.34	8.53
	95	7.98	8.17	8.37	8.57	8.77	8.97
Asphalt/Pavement	100	8.37	8.58	8.79	9.00	9.21	9.42

For Non-Urban Land Uses (in pounds/acre/year)

LAND USE	SILT LOAM SOILS	LOAM SOILS	SANDY LOAM SOILS
Conventional Tillage Cropland	3.71	2.42	0.83
Conservation Tillage Cropland	2.32	1.52	0.52
Pasture Land	0.91	0.59	0.20
Forest Land	0.19	0.12	0.04

STRUCTURAL BMPS FOR CHESAPEAKE BAY PRESERVATION AREAS — *TABLE 2*

	Acceptable BMP	Average Total P Removal Efficiency
A.	**Extended Detention**	
	(1) Design 2 (6-12):	20%
	(2) Design 3 (24 hours):	**30%**
	(3) Design 4 (shallow marsh):	50%
B.	Wet Pond	
	(1) Design 5 (0.5 in/imp.ac):	35%
	(2) Design 6 (2.5 V_r):	40-45%
	(3) Design 7 (4.0 V_r):	50%
C.	Infiltration	
	(1) Design 8 (0.5 in/imp. ac):	50%
	(2) Design 9 (1.0 in/imp. ac):	65%
	(3) Design 10 (2-year storm):	70%
D.	Grassed Swale	
	(1) Design 15 (check dams):	10-20%

These designs are taken from Metropolitan Washington Council of Governments, ***Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs***, ,1987

Effeciency ratings are taken from John P. Hartigan, P.E., ***Three Step Process for Evaluating Compliance with BMP Requirements for Chesapeake Bay Preservation Areas***, 1990

WORKSHEET A : NEW DEVELOPMENT

OPTION TWO: VA. CHESAPEAKE BAY DEFAULT

1 **Compile site-specific data and determine site imperviousness (I_{site}).**

		POST-DEVELOPMENT	
A*		= 64.6	acres
I_a:**	structures	= _____	acres
	parking lot	= _____	acres
	roadway	= _____	acres
	other	= _____	acres
		= _____	acres
		= _____	acres
	total I_a	= _____	acres

TOTAL DRAINAGE AREA = 64.6 AC
LPZ + OTHER OPEN AREA = 9.5 AC
LOTS + ROADS = 55.1 AC
IMPERVIOUS % FOR ⅓ AC LOTS = 25%

$$\left[\frac{(55.1 \times 0.25) + (9.5 \times 0.16)}{64.6}\right] \times 100 = 24\%$$

(CHES. BAY DEFAULT VALUE 16% FOR OPEN SPACE)

I_{site} = (total I_a/A) × 100 = 24 (percent expressed in whole numbers)

* Although the area subject to regulations may be only the area actually in a CBPA, some localities may require all of the site to comply with criteria.

** I_a represents the actual amount of impervious area.

2 **Determine the average land cover conditions ($I_{watershed}$).**

Use $I_{watershed} = I_{VA}$=16 because $F_{average}$ = 0.45 lbs/ac/yr for Virginia's Chesapeake Bay Watershed. Use C_{pre} = 0.26 mg/l.

3 **Determine need to continue.**

I_{site} = 24 % (from Step 1)
$I_{watershed}$ = 16 % (from Step 2)

If $I_{site} \leq I_{watershed}$, STOP and submit analysis to this point.
If $I_{site} > I_{waterhed}$, CONTINUE.

4 **Set constants.**

P_j = unitless rainfall correction factor
= 0.9 for all of Tidewater Virginia

C = flow weighted mean concentration of total phosphorus
= 0.26 mg/l for all I_{site}

P = annual rainfall depth in inches
= 40 inches for Northern Virginia area
= 43 inches for Richmond Metropolian area
= 45 inches for Hampton Roads area

12 and 2.72 are used in the equation as unit conversion factors.

WORKSHEET A : NEW DEVELOPMENT

OPTION TWO: VA. CHESAPEAKE BAY DEFAULT

5 **Calculate the pre-development load (L_{pre}).**

L_{pre} $= P \times P_j \times [0.05 + (0.009 \times I_{watershed})] \times C_{pre} \times A \times 2.72 / 12$

$= \underline{44} \times 0.9 \times [0.05 + (0.009 \times \underline{16})] \times 0.26 \times \underline{64.6} \times 2.72 / 12$

$= \underline{29.2}$ pounds per year

6 **Calculate the post-development load (L_{post}).**

L_{post} $= P \times P_j \times [0.05 + (0.009 \times I_{site})] \times C \times A \times 2.72 / 12$

$= \underline{44} \times 0.9 \times [0.05 + (0.009 \times \underline{24})] \times 0.26 \times \underline{64.6} \times 2.72 / 12$

$= \underline{40.1}$ pounds per year

7 **Calculate the pollutant removal requirement (RR).**

RR $= L_{post} - L_{pre}$

$= \underline{40.1} - \underline{29.2}$

$= \underline{10.9}$ pounds per year

To determine the overall BMP efficiency required (%RR) when selecting BMP options:

%RR $= RR / L_{post} \times 100$

$= (\underline{10.9} / \underline{40.1}) \times 100$

$= \underline{27}$ %

EXTENDED DRY DETENTION (24 HOURS) REQ'D.

VOLUME = 64.6 AC × 43,560 SF/AC × $\frac{1}{12}$ × (0.05 + (0.009 × 24))

= 62376 CF TO BE RELEASED OVER 24 HOURS

Need 1.7 ac ft or 74,000 ft^3 for Ches Bay.

TRANSMITTAL

DATE: May 27, 1992

TO: Code Compliance, Darryl Cook +
Wayland Bass #
JCSA *
VDOT (2)

FROM: Trent Funkhouser, Sr. Planner

SUBJECT: Case No. S-13-92. Berkeley's Green, Phase 6

ITEMS ATTACHED: Revised Subdivision Plan
Applicant letter describing revisions
+Drainage calculations
#BMP worksheet
*Water and sewer data

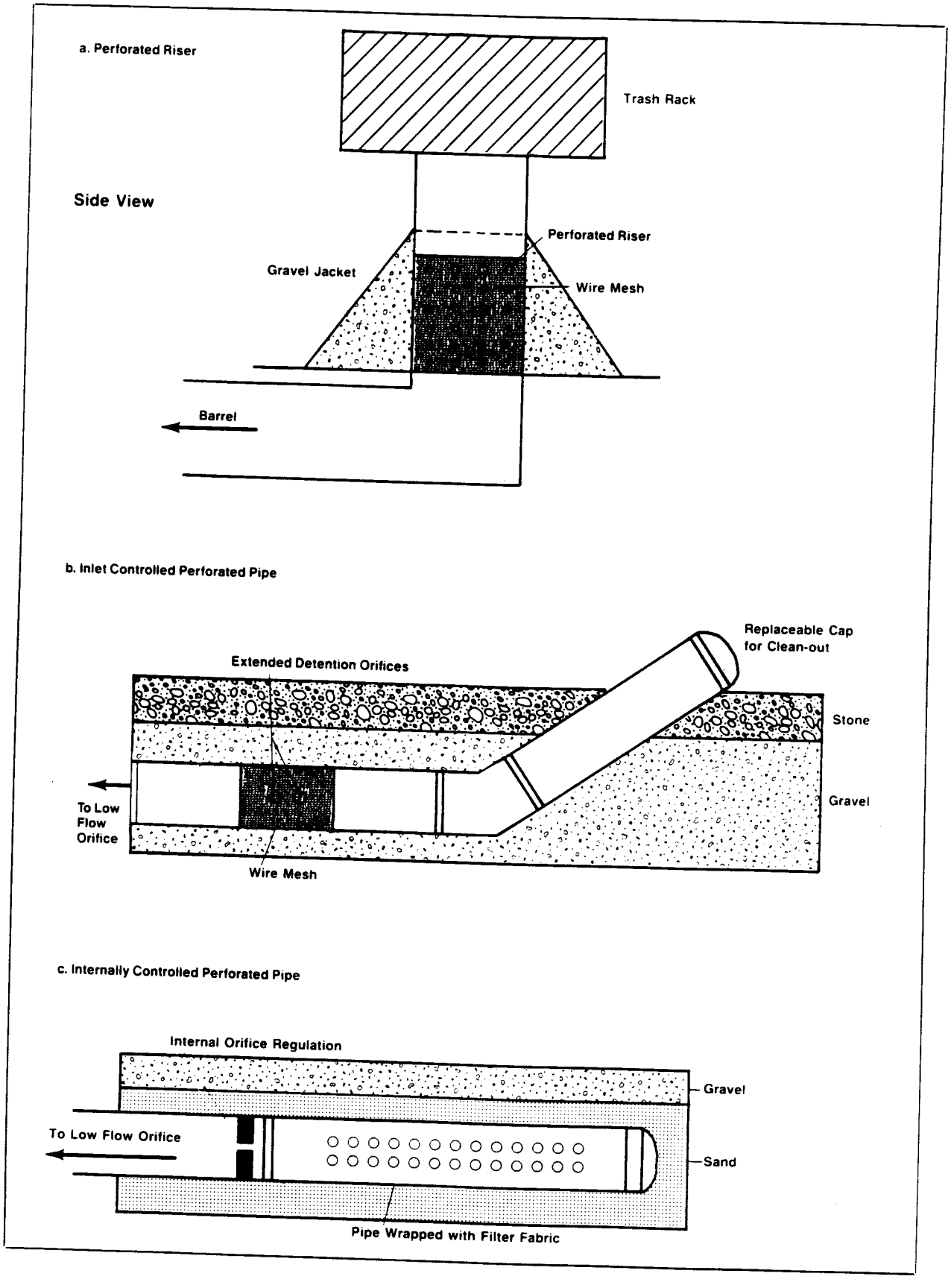
INSTRUCTIONS: Please review and comment

RETURN REQUIRED BY: June 15, 1992

AGENCY'S COMMENTS:

1. The top of the dam for the detention basin needs to be raised to elevation ~~24.5~~ 24.7
2. The concrete emergency spillway needs to be reconstructed to the required 12 foot dimension at elevation 20.9. The concrete needs to extend to at least elevation 23.7.
3. The riser needs to be redesigned to eliminate the horizontal release structure or else provide an approved trash protection/antivortex device over the horizontal release structure. I recommend using a standard round riser with the antivortex device in the Virginia Erosion Control Handbook.
4. Provide a trash protection device over the 4" release structure ~~need~~ of the type suggest in the attached detail from the Controlling Urban Runoff manual from the Washington Council of Governments.

Figure 3.2: Methods For Extending Detention Times in Dry Ponds



Berkeley's Green - Phase 5+6 - Detention Basin

I. Runoff

	Existing Conditions		Post Dev - Original Design		Post Dev - Current Submittal
t_c	30		20		20
		34		72	
Q_2	33.8		72		67.8
		79		131	
Q_{10}	45.0		95.9		90.4
		147		204	
Q_{100}	65.0		152		131.1

Note - 100-yr value is mult. by 1.25-VDOT

II. Basin Info

Stage	Discharge - Original	Discharge - Current
13	0	0
14	4.1	0.3
16	20	0.6
18	30	0.8
20	48	0.9
21	84	45.3
22	140+	73.8

	Elev Orig.	Elev Curr.
Orifice	–	13.0
Culvert	13.0	–
Riser	–	20.0
Em. Spwy	19.35	21.0
Top Dam	22.0	22.0

III Routing Info

	Original $T_D = 30$ min Qin	Qout	Elev	Original $T_c = T_D$ Qin	Qout		Current $T_c = T_D$		
Q_2	58.9	33.0	18.8 (19.1)	68.6	32.4	18.6	67.8	29.4	20.6
Q_{10}	78.5	46.3	19.9 (20.4)	82.2	41.5	19.7	90.4	46.8	21.1
Q_{100}	122	≈ 85	≈ 21 (21.3)	152			131.1	70.9	21.9

Berkeley's Green - Ph 6

1. DA = 62 ac
   1/3 ac lots - 25% Imp

   6 Pt BMP - 1" R_v for 24 hrs.
   need 1.43 ac ft release over 24 hrs. (62,291 ft^3)

   @ E.S. have 51,227 or 1.18
   would need to raise E.S. to 19.85

   if 17.6 - Nat Open Space = $\frac{17.6}{62.4}$ = 3.5 PTS.
   need 6.5 more -

   Phase 6: 14.26 ac - 100% to BMP - 6 PTS
   Phase 5 = 14.68 ac × 60% to BMP - 8.8ac 3.7 PTS
   9.7 PTS

   Nat Open Space 50×370 = 18,500 = .425 ac. = 3% .3
   10 PTS.

   4 Pt BMP -
   0.64 ac ft - or 1.3 ac surface area - marsh
   total - 1.43 ac ft storage

Langley and McDonald
A PROFESSIONAL CORPORATION
ENGINEERS • PLANNERS • SURVEYORS
VIRGINIA BEACH – WILLIAMSBURG, VIRGINIA

Subject: BERKELEY'S GREEN S-8
SWM W/ CHES DAY MODIFICATION
Computed By: SAR Checked By:

Project No. 85040
Client: DOBSON
Date: Sheet No.

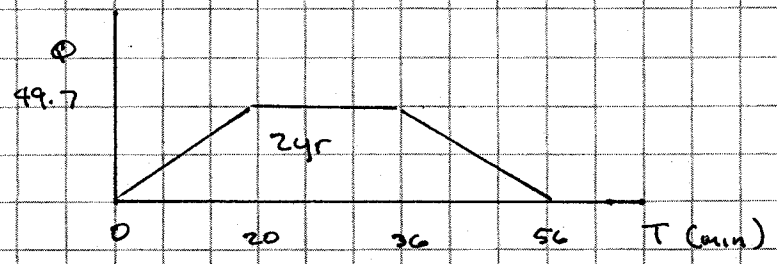
A = 64.6 Ac C_{PRE} = 0.2 C_{POST} = 0.35 t_c PRE = 30 MIN t_c POST = 20 MIN

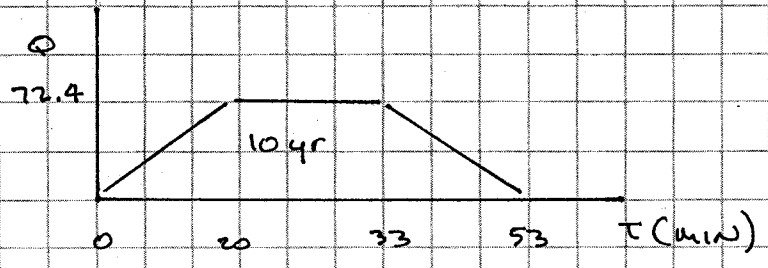
Q_2 PRE = 31 Q_{10} PRE = 43.9 Q_{100} PRE = 62

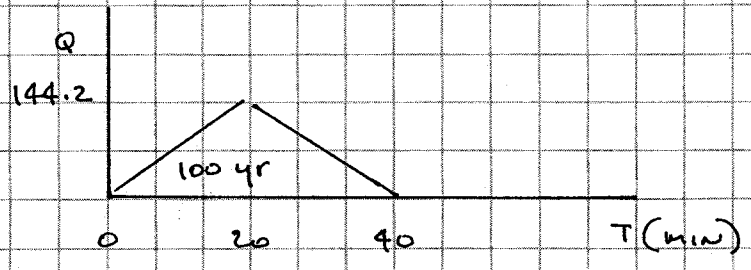
Q_2 POST = 67.8 Q_{10} POST = 90.4 Q_{100} POST = 131.1 × 1.1 = 144.2

Q_2 POST CRITICAL DURATION STORM @ 36 MIN

Q_{10} POST CRITICAL DURATION STORM @ 33 MIN







NOV 1992
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PLANNING DEPARTMENT

• BERKELEY'S GREEN S-8 24R

R E S E R V O I R R O U T I N G

INFLOW HYDROGRAPH		CAPACITY/OUTFLOW RATING		
TIME-min	FLOW-cfs	STAGE-ft	VOLUME-cf	OUTFLOW-cfs
0	0	13	0	0
20	67.8	14	458	.3
40	0	15	2136	.5
		16	5303	.6
		17	11527	.7
		18	22457	.8
		19	39663	.81
		20	64238	.9
		21	97506	45.3
		22	140889	86.3

TIME INCREMENT (min) = 1

TIME (MIN)	INFLOW (CFS)	STAGE (FT)	VOLUME (CF)	OUTFLOW (CFS)	
36.0		20.3	73,711	13.5	<<< MAXIMUM VALUES

<Shift> <Prt Sc> print <P> hydrograph <Ret> repeat <Space> back to menu

BERKELEY'S GREEN S-8 10 YR

R E S E R V O I R R O U T I N G

INFLOW HYDROGRAPH		CAPACITY/OUTFLOW RATING		
TIME-min	FLOW-cfs	STAGE-ft	VOLUME-cf	OUTFLOW-cfs
0	0	13	0	0
20	90.4	15	2136	.5
40	0	16	5303	.6
		17	11527	.7
		18	22457	.8
		19	39663	.81
		20	64238	.9
		21	97506	45.3
		22	140889	86.3
		23	196021	171.4

TIME INCREMENT (min) = 1

TIME (MIN)	INFLOW (CFS)	STAGE (FT)	VOLUME (CF)	OUTFLOW (CFS)	
33.0		20.7	86,839	31.1	<<< MAXIMUM VALUES

<Shift> <Prt Sc> print <P> hydrograph <Ret> repeat <Space> back to menu

POND-2 Version: 5.17 S/N: 1295130250

BERKELEY'S GREEN 5-8
24r Critical Duration
Storm

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-27-1992 07:38:01

Hydrograph file: b:CDS2 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	2.50	5.00	7.50	10.00	12.50	14.90
7.00	17.40	19.90	22.40	24.90	27.40	29.90	32.40
14.00	34.90	37.40	39.80	42.30	44.80	47.30	49.70
21.00	49.70	49.70	49.70	49.70	49.70	49.70	49.70
28.00	49.70	49.70	49.70	49.70	49.70	49.70	49.70
35.00	49.70	49.50	47.00	44.50	42.10	39.60	37.10
42.00	34.60	32.10	29.60	27.10	24.60	22.10	19.60
49.00	17.10	14.70	12.20	9.70	7.20	4.70	2.20
56.00	0.00						

POND-2 Version: 5.17 S/N: 1295130250

BERKELEY'S GREEN 5-8
10yr Critical Duration
Storm

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-27-1992 07:38:18

Hydrograph file: b:CDS10 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	3.60	7.30	10.90	14.50	18.10	21.80
7.00	25.40	29.00	32.60	36.30	39.90	43.50	47.20
14.00	50.80	54.40	58.00	61.70	65.30	68.90	72.40
21.00	72.40	72.40	72.40	72.40	72.40	72.40	72.40
28.00	72.40	72.40	72.40	72.40	72.40	72.20	68.50
35.00	64.90	61.30	57.70	54.00	50.40	46.80	43.10
42.00	39.50	35.90	32.30	28.60	25.00	21.40	17.70
49.00	14.10	10.50	6.90	3.20	0.00		

POND-2 Version: 5.17 S/N: 1295130250

BERKELEY'S GREEN
100YR POST DEVELOPMEN
STORM

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-27-1992 08:41:49

Hydrograph file: b:CDS100 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first 0 in each row.

Time Minutes							
0.00	0.00	7.20	14.50	21.70	28.90	36.10	43.40
7.00	50.60	57.80	65.00	72.30	79.50	86.70	93.90
14.00	101.20	108.40	115.60	122.80	130.10	137.30	144.20
21.00	136.70	129.50	122.20	115.00	107.80	100.60	93.30
28.00	86.10	78.90	71.70	64.40	57.20	50.00	42.80
35.00	35.60	28.30	21.10	13.90	6.70	0.00	

POND-2 Version: 5.17
S/N: 1295130250

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

CALCULATED 08-27-1992 07:38:56
DISK FILE: b:BG1 .VOL

Planimeter scale: 1 inch = 50 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
13.00	0.00	0	0	0	0
14.00	0.55	1,375	1,375	458	458
15.00	0.80	2,000	5,033	1,678	2,136
16.00	1.80	4,500	9,500	3,167	5,303
17.00	3.25	8,125	18,672	6,224	11,527
18.00	5.60	14,000	32,790	10,930	22,457
19.00	8.25	20,625	51,618	17,206	39,663
20.00	11.50	28,750	73,726	24,575	64,238
21.00	15.20	38,000	99,808	33,268	97,506
22.00	19.60	49,000	130,151	43,384	140,889
23.00	24.60	61,500	165,395	55,132	196,021
24.00	29.90	74,750	204,052	68,017	264,038
25.00	35.60	89,000	245,314	81,771	345,810

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	1
14.00	0.3	1
15.00	0.5	1
16.00	0.6	1
17.00	0.7	1
18.00	0.8	1
19.00	0.8	1
20.00	0.9	1
21.00	45.3	1
22.00	86.3	1
23.00	171.4	1

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

Outlet Structure File: b:BG5-8 .STR
Planimeter Input File: b:BG1 .VOL
Rating Table Output File: b:BG5-8 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 23 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table	Q Table
TABLE	1	->	1

Outflow rating table summary was stored in file:
b:BG5-8 .PND

Outlet Structure File: BGS-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

>>>>>> Structure No. 1 <<<<<<
(Input Data)

TABLE
Input your own rating table.
E1 (ft) = 13 E2 (ft) = 23.001

Constant (ft) added to each elevation was:

Elev. (ft)	Q (cfs)
13	0
14	.3
15	.5
16	.6
17	.7
18	.8
19	.8
20	.9
21	45.3
22	86.3
23	171.4

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

Outflow Rating Table for Structure #1
TABLE Input your own rating table.

Elevation (ft)	Q (cfs)	Computation Messages
13.00	0.0	
14.00	0.3	
15.00	0.5	
16.00	0.6	
17.00	0.7	
18.00	0.8	
19.00	0.8	
20.00	0.9	
21.00	45.3	
22.00	86.3	
23.00	171.4	

EXECUTED: 08-27-1992 07:40:46 Return Freq: 2 years

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*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*  EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS2 .HYD
Outflow Hydrograph: b:CRT2OUT .HYD

INFLOW HYDROGRAPH — ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	------	0.0	0.0	0.00	13.00
1.0	2.50	2.5	2.4	2.5	0.05	13.16
2.0	5.00	7.5	9.5	9.9	0.19	13.64
3.0	7.50	12.5	21.4	22.0	0.32	14.11
4.0	10.00	17.5	38.1	38.9	0.38	14.42
5.0	12.50	22.5	59.7	60.6	0.46	14.80
6.0	14.90	27.4	86.1	87.1	0.51	15.15
7.0	17.40	32.3	117.3	118.4	0.54	15.44
8.0	19.90	37.3	153.4	154.6	0.58	15.78
9.0	22.40	42.3	194.5	195.7	0.61	16.09
10.0	24.90	47.3	240.5	241.8	0.63	16.31
11.0	27.40	52.3	291.5	292.8	0.66	16.56
12.0	29.90	57.3	347.5	348.8	0.68	16.83
13.0	32.40	62.3	408.3	409.8	0.71	17.07
14.0	34.90	67.3	474.2	475.6	0.72	17.25
15.0	37.40	72.3	545.0	546.5	0.74	17.44
16.0	39.80	77.2	620.7	622.2	0.77	17.65
17.0	42.30	82.1	701.2	702.8	0.79	17.87
18.0	44.80	87.1	786.7	788.3	0.80	18.07
19.0	47.30	92.1	877.2	878.8	0.80	18.23
20.0	49.70	97.0	972.6	974.2	0.80	18.39
21.0	49.70	99.4	1070.4	1072.0	0.80	18.56
22.0	49.70	99.4	1168.2	1169.8	0.80	18.73
23.0	49.70	99.4	1266.0	1267.6	0.80	18.90
24.0	49.70	99.4	1363.8	1365.4	0.81	19.05
25.0	49.70	99.4	1461.6	1463.2	0.82	19.17
26.0	49.70	99.4	1559.3	1561.0	0.83	19.29
27.0	49.70	99.4	1657.0	1658.7	0.84	19.41
28.0	49.70	99.4	1754.7	1756.4	0.85	19.53
29.0	49.70	99.4	1852.4	1854.1	0.86	19.65
30.0	49.70	99.4	1950.0	1951.8	0.88	19.77
31.0	49.70	99.4	2047.7	2049.4	0.89	19.89
32.0	49.70	99.4	2144.9	2147.1	1.09	20.00
33.0	49.70	99.4	2234.6	2244.3	4.83	20.09
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Pond File: b:BGS-8 .PND
Inflow Hydrograph: b:CDS2 .HYD
Outflow Hydrograph: b:CRT2OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
35.0	49.70
36.0	49.50
37.0	47.00
38.0	44.50
39.0	42.10
40.0	39.60
41.0	37.10
42.0	34.60
43.0	32.10
44.0	29.60
45.0	27.10
46.0	24.60
47.0	22.10
48.0	19.60
49.0	17.10
50.0	14.70
51.0	12.20
52.0	9.70
53.0	7.20
54.0	4.70
55.0	2.20
56.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
99.4	2393.9	2416.8	11.47	20.24
99.2	2464.3	2493.1	14.41	20.30
96.5	2526.7	2560.8	17.02	20.36
91.5	2579.8	2618.2	19.23	20.41
86.6	2624.2	2666.4	21.08	20.45
81.7	2660.7	2705.9	22.60	20.49
76.7	2689.8	2737.4	23.82	20.52
71.7	2712.0	2761.5	24.74	20.54
66.7	2727.9	2778.7	25.41	20.55
61.7	2737.9	2789.6	25.82	20.56
56.7	2742.6	2794.6	26.02	20.57
51.7	2742.3	2794.3	26.01	20.57
46.7	2737.4	2789.0	25.80	20.56
41.7	2728.2	2779.1	25.42	20.55
36.7	2715.2	2764.9	24.88	20.54
31.8	2698.6	2747.0	24.18	20.52
26.9	2678.8	2725.5	23.36	20.51
21.9	2655.9	2700.7	22.40	20.48
16.9	2630.1	2672.8	21.33	20.46
11.9	2601.8	2642.0	20.14	20.43
6.9	2570.9	2608.7	18.86	20.40
2.2	2538.2	2573.1	17.49	20.37

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS2 .HYD
Outflow Hydrograph: b:CRT2OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 49.70 cfs
Peak Outflow = 26.02 cfs
Peak Elevation = 20.57 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	83,059 cu-ft
Total Storage in Pond	=	83,059 cu-ft

EXECUTED: 08-27-1992 07:41:12 Return Freq: 10 years

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*****************************************
*                                       *
*            BERKELEY'S GREEN           *
*              SECTIONS 5-8             *
*          STORMWATER MANAGEMENT        *
*   EXTENDED DRY DETENTION (24 HOURS)   *
*                                       *
*****************************************
```

Pond File: b:BGS-8 .PND
Inflow Hydrograph: b:CDS10 .HYD
Outflow Hydrograph: b:CRT10OUT.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	------	0.0	0.0	0.00	13.00
1.0	3.60	3.6	3.5	3.6	0.07	13.23
2.0	7.30	10.9	13.8	14.4	0.28	13.92
3.0	10.90	18.2	31.3	32.0	0.36	14.29
4.0	14.50	25.4	55.8	56.7	0.45	14.73
5.0	18.10	32.6	87.4	88.4	0.52	15.16
6.0	21.80	39.9	126.2	127.3	0.55	15.53
7.0	25.40	47.2	172.2	173.4	0.60	15.96
8.0	29.00	54.4	225.3	226.6	0.62	16.24
9.0	32.60	61.6	285.6	286.9	0.65	16.53
10.0	36.30	68.9	353.1	354.5	0.69	16.85
11.0	39.90	76.2	427.9	429.3	0.71	17.12
12.0	43.50	83.4	509.9	511.3	0.73	17.35
13.0	47.20	90.7	599.0	600.6	0.76	17.59
14.0	50.80	98.0	695.5	697.0	0.79	17.86
15.0	54.40	105.2	799.1	800.7	0.80	18.09
16.0	58.00	112.4	909.9	911.5	0.80	18.28
17.0	61.70	119.7	1028.0	1029.6	0.80	18.49
18.0	65.30	127.0	1153.4	1155.0	0.80	18.71
19.0	68.90	134.2	1286.0	1287.6	0.80	18.94
20.0	72.40	141.3	1425.6	1427.3	0.81	19.13
21.0	72.40	144.8	1568.8	1570.4	0.83	19.30
22.0	72.40	144.8	1711.9	1713.6	0.85	19.48
23.0	72.40	144.8	1855.0	1856.7	0.87	19.65
24.0	72.40	144.8	1998.0	1999.8	0.88	19.83
25.0	72.40	144.8	2140.9	2142.8	0.92	20.00
26.0	72.40	144.8	2272.9	2285.7	6.43	20.12
27.0	72.40	144.8	2394.7	2417.7	11.51	20.24
28.0	72.40	144.8	2507.1	2539.5	16.20	20.34
29.0	72.40	144.8	2610.8	2651.9	20.52	20.44
30.0	72.40	144.8	2706.6	2755.6	24.52	20.53
31.0	72.40	144.8	2795.0	2851.4	28.20	20.61
32.0	72.40	144.8	2876.6	2939.8	31.61	20.69
33.0	72.20	144.6	2951.7	3021.2	34.74	20.76

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS10 .HYD
Outflow Hydrograph: b:CRT10OUT.HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
35.0	64.90
36.0	61.30
37.0	57.70
38.0	54.00
39.0	50.40
40.0	46.80
41.0	43.10
42.0	39.50
43.0	35.90
44.0	32.30
45.0	28.60
46.0	25.00
47.0	21.40
48.0	17.70
49.0	14.10
50.0	10.50
51.0	6.90
52.0	3.20
53.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
133.4	3071.4	3150.8	39.73	20.87
126.2	3114.5	3197.6	41.53	20.92
119.0	3147.7	3233.5	42.91	20.95
111.7	3171.6	3259.4	43.91	20.97
104.4	3186.9	3276.0	44.55	20.98
97.2	3194.3	3284.1	44.86	20.99
89.9	3194.5	3284.2	44.87	20.99
82.6	3187.9	3277.1	44.59	20.98
75.4	3175.2	3263.3	44.06	20.97
68.2	3156.8	3243.4	43.29	20.95
60.9	3133.1	3217.7	42.31	20.93
53.6	3104.5	3186.7	41.11	20.91
46.4	3071.4	3150.9	39.73	20.87
39.1	3034.1	3110.5	38.18	20.84
31.8	2993.0	3065.9	36.46	20.80
24.6	2948.4	3017.6	34.60	20.76
17.4	2900.6	2965.8	32.61	20.71
10.1	2849.7	2910.7	30.49	20.67
3.2	2796.4	2852.9	28.26	20.62

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS10 .HYD
Outflow Hydrograph: b:CRT10OUT.HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	72.40 cfs
Peak Outflow	=	44.87 cfs
Peak Elevation	=	20.99 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	97,181 cu-ft
Total Storage in Pond	=	97,181 cu-ft

EXECUTED: 08-27-1992 07:42:09 Return Freq: 100 years

```
*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*  EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS100 .HYD
Outflow Hydrograph: b:CRT100OT.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	13.00
1.0	7.20	7.2	6.9	7.2	0.14	13.46
2.0	14.50	21.7	27.9	28.6	0.35	14.23
3.0	21.70	36.2	63.2	64.1	0.47	14.87
4.0	29.90	50.6	112.7	113.8	0.54	15.40
5.0	36.10	65.0	176.5	177.7	0.60	16.00
6.0	43.40	79.5	254.7	256.0	0.64	16.38
7.0	50.60	94.0	347.4	348.7	0.68	16.83
8.0	57.80	109.4	454.3	455.8	0.72	17.19
9.0	65.00	122.8	575.6	577.1	0.75	17.53
10.0	72.30	137.3	711.3	712.9	0.79	17.90
11.0	79.50	151.8	861.5	863.1	0.80	18.20
12.0	86.70	166.2	1026.1	1027.7	0.80	18.49
13.0	93.90	180.6	1205.1	1206.7	0.80	18.80
14.0	101.20	195.1	1398.6	1400.2	0.81	19.09
15.0	108.40	209.6	1606.5	1608.2	0.83	19.35
16.0	115.60	224.0	1828.8	1830.5	0.86	19.62
17.0	122.80	238.4	2065.4	2067.2	0.89	19.91
18.0	130.10	252.9	2303.0	2318.3	7.68	20.15
19.0	137.30	267.4	2535.6	2570.4	17.39	20.37
20.0	143.90	281.2	2763.1	2816.8	26.87	20.58
21.0	136.70	280.6	2972.5	3043.7	35.61	20.78
22.0	129.50	266.2	3152.4	3238.7	43.11	20.95
23.0	122.20	251.7	3307.5	3404.1	48.30	21.07
24.0	115.00	237.2	3440.4	3544.7	52.17	21.17
25.0	107.80	222.8	3552.3	3663.2	55.44	21.25
26.0	100.60	208.4	3644.5	3760.7	58.13	21.31
27.0	93.30	193.9	3717.8	3838.4	60.27	21.37
28.0	86.10	179.4	3773.4	3897.2	61.89	21.40
29.0	78.90	165.0	3812.4	3938.4	63.09	21.43
30.0	71.70	150.6	3835.6	3963.0	63.70	21.45
31.0	64.40	136.1	3843.8	3971.7	63.94	21.45
32.0	57.20	121.6	3837.9	3965.4	63.77	21.45
33.0	50.00	107.2	3818.6	3945.1	63.21	21.44

Pond File: b:BGS-8 .PND
Inflow Hydrograph: b:CDS100 .HYD
Outflow Hydrograph: b:CRT100OT.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
35.0	35.60	78.4	3743.3	3865.3	61.01	21.38
36.0	28.30	63.9	3688.3	3807.2	59.41	21.34
37.0	21.10	49.4	3622.8	3737.7	57.49	21.30
38.0	13.90	35.0	3547.2	3657.8	55.29	21.24
39.0	6.70	20.6	3462.2	3567.8	52.81	21.18
40.0	0.00	6.7	3368.7	3468.9	50.08	21.12

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS100 .HYD
Outflow Hydrograph: b:CRT100OT.HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	143.90 cfs
Peak Outflow	=	63.94 cfs
Peak Elevation	=	21.45 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	117,233 cu-ft
Total Storage in Pond	=	117,233 cu-ft

Langley and McDonald
A PROFESSIONAL CORPORATION
ENGINEERS · PLANNERS · SURVEYORS
VIRGINIA BEACH - WILLIAMSBURG, VIRGINIA

Subject: BERKELEY'S GREEN 5-8
SWM W/ CHES BAY MODIFICATION
Computed By: SAR Checked By:

Project No. 85040
Client: DOBSON
Date: Sheet No.

A = 64.6 Ac C_{PRE} = 0.2 C_{POST} = 0.35 t_c PRE = 30 MIN t_c POST = 20 MIN

Q_2 PRE = 31 Q_{10} PRE = 43.9 Q_{100} PRE = 62

Q_2 POST = 67.8 Q_{10} POST = 90.4 Q_{100} POST = 131.1 × 1.1 = 144.2

Q_2 POST CRITICAL DURATION STORM @ 36 MIN

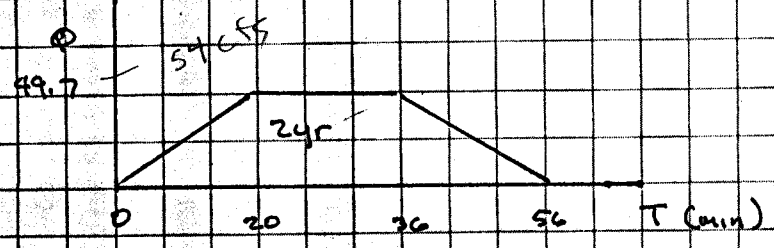
Q_{10} POST CRITICAL DURATION STORM @ 33 MIN

Richmond (mm)

I_{2-20} = 3.35 = 75.7

I_{10-20} = 4.5 = 101.7

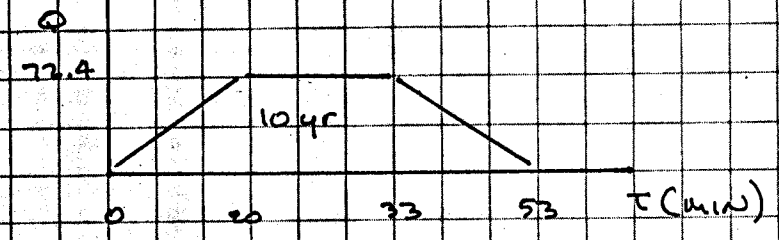
I_{100-20} = 6.4 = 144.7 × 1.1 = 159.2

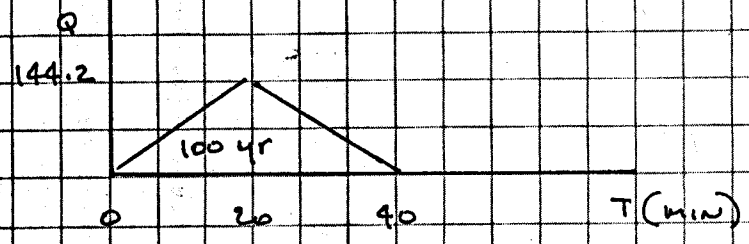


I_{2-30} = 2.6 = 33.3

I_{10-30} = 3.5 = 44.9

I_{100-20} = 5.1 = 65.5





check – old ES width
– Anti Vortex Dev.
–

BERKELEY'S GREEN S-8 24R

R E S E R V O I R R O U T I N G

INFLOW HYDROGRAPH TIME-min	FLOW-cfs	CAPACITY/OUTFLOW RATING STAGE-ft	VOLUME-cf	OUTFLOW-cfs
0	0	13	0	0
20	67.8	14	458	.3
40	0	15	2136	.5
		16	5303	.6
		17	11527	.7
		18	22457	.8
		19	39663	.81
		20	64238	.9
		21	97506	45.3
		22	140889	86.3
				48.6

Supporting data?

TIME INCREMENT (min) = 1

TIME (MIN)	INFLOW (CFS)	STAGE (FT)	VOLUME (CF)	OUTFLOW (CFS)	
36.0		20.3	73,711	13.5	<<< MAXIMUM VALUES

<Shift> <Prt Sc> print <P> hydrograph <Ret> repeat <Space> back to menu

86
48
38

10' wide Q@1' dep =

$Q = CLH^{3/2}$
$= 3.1 \times 10 \times 1^{3/2} = 31$ cfs

BERKELEY'S GREEN S-8 10 YR

R E S E R V O I R R O U T I N G

INFLOW HYDROGRAPH TIME-min	FLOW-cfs	CAPACITY/OUTFLOW RATING STAGE-ft	VOLUME-cf	OUTFLOW-cfs
0	0	13	0	0
20	90.4	15	2136	.5
40	0	16	5303	.6
		17	11527	.7
		18	22457	.8
		19	39663	.81
		20	64238	.9
		21	97506	45.3
		22	140889	86.3
		23	196021	171.4

TIME INCREMENT (min) = 1

TIME (MIN)	INFLOW (CFS)	STAGE (FT)	VOLUME (CF)	OUTFLOW (CFS)	
33.0		20.7	86,839	31.1	<<< MAXIMUM VALUES

<Shift> <Prt Sc> print <P> hydrograph <Ret> repeat <Space> back to menu

POND-2 Version: 5.17 S/N: 1295130250

BERKELEY'S GREEN 5-8
24r Critical Duration Storm

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-27-1992 07:38:01

Hydrograph file: b:CDS2 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	2.50	5.00	7.50	10.00	12.50	14.90
7.00	17.40	19.90	22.40	24.90	27.40	29.90	32.40
14.00	34.90	37.40	39.80	42.30	44.80	47.30	49.70
21.00	49.70	49.70	49.70	49.70	49.70	49.70	49.70
28.00	49.70	49.70	49.70	49.70	49.70	49.70	49.70
35.00	49.70	49.50	47.00	44.50	42.10	39.60	37.10
42.00	34.60	32.10	29.60	27.10	24.60	22.10	19.60
49.00	17.10	14.70	12.20	9.70	7.20	4.70	2.20
56.00	0.00						

POND-2 Version: 5.17 S/N: 1295130250

BERKELEY'S GREEN 5-8
10yr Critical Duration
Storm

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-27-1992 07:38:18

Hydrograph file: b:CDS10 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	3.60	7.30	10.90	14.50	18.10	21.80
7.00	25.40	29.00	32.60	36.30	39.90	43.50	47.20
14.00	50.80	54.40	58.00	61.70	65.30	68.90	72.40
21.00	72.40	72.40	72.40	72.40	72.40	72.40	72.40
28.00	72.40	72.40	72.40	72.40	72.40	72.20	68.50
35.00	64.90	61.30	57.70	54.00	50.40	46.80	43.10
42.00	39.50	35.90	32.30	28.60	25.00	21.40	17.70
49.00	14.10	10.50	6.90	3.20	0.00		

POND-2 Version: 5.17 S/N: 1295130250

BERKELEY'S GREEN
100YR POST DEVELOPM
STORM

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-27-1992 08:41:49

Hydrograph file: b:CDS100 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 1.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	7.20	14.50	21.70	28.90	36.10	43.40
7.00	50.60	57.80	65.00	72.30	79.50	86.70	93.90
14.00	101.20	108.40	115.60	122.80	130.10	137.30	144.20
21.00	136.70	129.50	122.20	115.00	107.80	100.60	93.30
28.00	86.10	78.90	71.70	64.40	57.20	50.00	42.80
35.00	35.60	28.30	21.10	13.90	6.70	0.00	

POND-2 Version: 5.17
S/N: 1295130250

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

CALCULATED 08-27-1992 07:38:56
DISK FILE: b:BG1 .VOL

Planimeter scale: 1 inch = 50 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
13.00	0.00	0	0	0	0
14.00	0.55	1,375	1,375	458	458
15.00	0.80	2,000	5,033	1,678	2,136
16.00	1.80	4,500	9,500	3,167	5,303
17.00	3.25	8,125	18,672	6,224	11,527
18.00	5.60	14,000	32,790	10,930	22,457
19.00	8.25	20,625	51,618	17,206	39,663
20.00	11.50	28,750	73,726	24,575	64,238
21.00	15.20	38,000	99,803	33,268	97,506
22.00	19.60	49,000	130,151	43,384	140,889
23.00	24.60	61,500	165,395	55,132	196,021
24.00	29.90	74,750	204,052	68,017	264,038
25.00	35.60	89,000	245,314	81,771	345,810

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	1
14.00	0.3	1
15.00	0.5	1
16.00	0.6	1
17.00	0.7	1
18.00	0.8	1
19.00	0.8	1
20.00	0.9	1
21.00	45.3	1
22.00	86.3	1
23.00	171.4	1

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

Outlet Structure File: b:BG5-8 .STR
Planimeter Input File: b:BG1 .VOL
Rating Table Output File: b:BG5-8 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 23 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
TABLE	1		->	1

Outflow rating table summary was stored in file:
b:BG5-8 .PND

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

>>>>> Structure No. 1 <<<<<<
(Input Data)

TABLE
Input your own rating table.
E1 (ft) = 13 E2 (ft) = 23.001

Constant (ft) added to each elevation was:

Elev. (ft)	Q (cfs)
13	0
14	.3
15	.5
16	.6
17	.7
18	.8
19	.8
20	.9
21	45.3
22	86.3
23	171.4

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

Outflow Rating Table for Structure #1
TABLE Input your own rating table.

Elevation (ft)	Q (cfs)	Computation Messages
13.00	0.0	
14.00	0.3	
15.00	0.5	
16.00	0.6	
17.00	0.7	
18.00	0.8	
19.00	0.8	
20.00	0.9	
21.00	45.3	
22.00	86.3	
23.00	171.4	

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-27-1992 07:40:46

Return Freq: 2 years

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*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*  EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS2 .HYD
Outflow Hydrograph: b:CRT2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	------	0.0	0.0	0.00	13.00
1.0	2.50	2.5	2.4	2.5	0.05	13.16
2.0	5.00	7.5	9.5	9.9	0.19	13.64
3.0	7.50	12.5	21.4	22.0	0.32	14.11
4.0	10.00	17.5	38.1	38.9	0.38	14.42
5.0	12.50	22.5	59.7	60.6	0.46	14.80
6.0	14.90	27.4	86.1	87.1	0.51	15.15
7.0	17.40	32.3	117.3	118.4	0.54	15.44
8.0	19.90	37.3	153.4	154.6	0.58	15.78
9.0	22.40	42.3	194.5	195.7	0.61	16.09
10.0	24.90	47.3	240.5	241.8	0.63	16.31
11.0	27.40	52.3	291.5	292.8	0.66	16.56
12.0	29.90	57.3	347.5	348.8	0.68	16.83
13.0	32.40	62.3	408.3	409.8	0.71	17.07
14.0	34.90	67.3	474.2	475.6	0.72	17.25
15.0	37.40	72.3	545.0	546.5	0.74	17.44
16.0	39.80	77.2	620.7	622.2	0.77	17.65
17.0	42.30	82.1	701.2	702.8	0.79	17.87
18.0	44.80	87.1	786.7	788.3	0.80	18.07
19.0	47.30	92.1	877.2	878.8	0.80	18.23
20.0	49.70	97.0	972.6	974.2	0.80	18.39
21.0	49.70	99.4	1070.4	1072.0	0.80	18.56
22.0	49.70	99.4	1168.2	1169.8	0.80	18.73
23.0	49.70	99.4	1266.0	1267.6	0.80	18.90
24.0	49.70	99.4	1363.8	1365.4	0.81	19.05
25.0	49.70	99.4	1461.6	1463.2	0.82	19.17
26.0	49.70	99.4	1559.3	1561.0	0.83	19.29
27.0	49.70	99.4	1657.0	1658.7	0.84	19.41
28.0	49.70	99.4	1754.7	1756.4	0.85	19.53
29.0	49.70	99.4	1852.4	1854.1	0.86	19.65
30.0	49.70	99.4	1950.0	1951.8	0.88	19.77
31.0	49.70	99.4	2047.7	2049.4	0.89	19.89
32.0	49.70	99.4	2144.9	2147.1	1.09	20.00
33.0	49.70	99.4	2234.6	2244.3	4.83	20.09
34.0	49.70	99.4	2317.4	2334.0	8.29	20.17

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS2 .HYD
Outflow Hydrograph: b:CRT2OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
35.0	49.70
36.0	49.50
37.0	47.00
38.0	44.50
39.0	42.10
40.0	39.60
41.0	37.10
42.0	34.60
43.0	32.10
44.0	29.60
45.0	27.10
46.0	24.60
47.0	22.10
48.0	19.60
49.0	17.10
50.0	14.70
51.0	12.20
52.0	9.70
53.0	7.20
54.0	4.70
55.0	2.20
56.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
99.4	2393.9	2416.8	11.47	20.24
99.2	2464.3	2493.1	14.41	20.30
96.5	2526.7	2560.8	17.02	20.36
91.5	2579.8	2618.2	19.23	20.41
86.6	2624.2	2666.4	21.08	20.45
81.7	2660.7	2705.9	22.60	20.49
76.7	2689.8	2737.4	23.82	20.52
71.7	2712.0	2761.5	24.74	20.54
66.7	2727.9	2778.7	25.41	20.55
61.7	2737.9	2789.6	25.82	20.56
56.7	2742.6	2794.6	26.02	20.57
51.7	2742.3	2794.3	26.01	20.57
46.7	2737.4	2789.0	25.80	20.56
41.7	2728.2	2779.1	25.42	20.55
36.7	2715.2	2764.9	24.88	20.54
31.8	2698.6	2747.0	24.18	20.52
26.9	2678.8	2725.5	23.36	20.51
21.9	2655.9	2700.7	22.40	20.48
16.9	2630.1	2672.8	21.33	20.46
11.9	2601.8	2642.0	20.14	20.43
6.9	2570.9	2608.7	18.86	20.40
2.2	2538.2	2573.1	17.49	20.37

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS2 .HYD
Outflow Hydrograph: b:CRT2OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	49.70 cfs
Peak Outflow	=	26.02 cfs
Peak Elevation	=	20.57 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	83,059 cu-ft
Total Storage in Pond	=	83,059 cu-ft

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-27-1992 07:41:12

Return Freq: 10 years

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*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*  EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS10 .HYD
Outflow Hydrograph: b:CRT10OUT.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	13.00
1.0	3.60	3.6	3.5	3.6	0.07	13.23
2.0	7.30	10.9	13.8	14.4	0.28	13.92
3.0	10.90	18.2	31.3	32.0	0.36	14.29
4.0	14.50	25.4	55.8	56.7	0.45	14.73
5.0	18.10	32.6	87.4	88.4	0.52	15.16
6.0	21.80	39.9	126.2	127.3	0.55	15.53
7.0	25.40	47.2	172.2	173.4	0.60	15.96
8.0	29.00	54.4	225.3	226.6	0.62	16.24
9.0	32.60	61.6	285.6	286.9	0.65	16.53
10.0	36.30	68.9	353.1	354.5	0.69	16.85
11.0	39.90	76.2	427.9	429.3	0.71	17.12
12.0	43.50	83.4	509.9	511.3	0.73	17.35
13.0	47.20	90.7	599.0	600.6	0.76	17.59
14.0	50.80	98.0	695.5	697.0	0.79	17.86
15.0	54.40	105.2	799.1	800.7	0.80	18.09
16.0	58.00	112.4	909.9	911.5	0.80	18.28
17.0	61.70	119.7	1028.0	1029.6	0.80	18.49
18.0	65.30	127.0	1153.4	1155.0	0.80	18.71
19.0	68.90	134.2	1286.0	1287.6	0.80	18.94
20.0	72.40	141.3	1425.6	1427.3	0.81	19.13
21.0	72.40	144.8	1568.8	1570.4	0.83	19.30
22.0	72.40	144.8	1711.9	1713.6	0.85	19.48
23.0	72.40	144.8	1855.0	1856.7	0.87	19.65
24.0	72.40	144.8	1998.0	1999.8	0.88	19.83
25.0	72.40	144.8	2140.9	2142.8	0.92	20.00
26.0	72.40	144.8	2272.9	2285.7	6.43	20.12
27.0	72.40	144.8	2394.7	2417.7	11.51	20.24
28.0	72.40	144.8	2507.1	2539.5	16.20	20.34
29.0	72.40	144.8	2610.8	2651.9	20.52	20.44
30.0	72.40	144.8	2706.6	2755.6	24.52	20.53
31.0	72.40	144.8	2795.0	2851.4	28.20	20.61
32.0	72.40	144.8	2876.6	2939.8	31.61	20.69
33.0	72.20	144.6	2951.7	3021.2	34.74	20.76
34.0	68.50	140.7	3017.4	3092.4	37.48	20.82

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS10 .HYD
Outflow Hydrograph: b:CRT10OUT.HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
35.0	64.90
36.0	61.30
37.0	57.70
38.0	54.00
39.0	50.40
40.0	46.80
41.0	43.10
42.0	39.50
43.0	35.90
44.0	32.30
45.0	28.60
46.0	25.00
47.0	21.40
48.0	17.70
49.0	14.10
50.0	10.50
51.0	6.90
52.0	3.20
53.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
133.4	3071.4	3150.8	39.73	20.87
126.2	3114.5	3197.6	41.53	20.92
119.0	3147.7	3233.5	42.91	20.95
111.7	3171.6	3259.4	43.91	20.97
104.4	3186.9	3276.0	44.55	20.98
97.2	3194.3	3284.1	44.86	20.99
89.9	3194.5	3284.2	44.87	20.99
82.6	3187.9	3277.1	44.59	20.98
75.4	3175.2	3263.3	44.06	20.97
68.2	3156.8	3243.4	43.29	20.95
60.9	3133.1	3217.7	42.31	20.93
53.6	3104.5	3186.7	41.11	20.91
46.4	3071.4	3150.9	39.73	20.87
39.1	3034.1	3110.5	38.18	20.84
31.8	2993.0	3065.9	36.46	20.80
24.6	2948.4	3017.6	34.60	20.76
17.4	2900.6	2965.8	32.61	20.71
10.1	2849.7	2910.7	30.49	20.67
3.2	2796.4	2852.9	28.26	20.62

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS10 .HYD
Outflow Hydrograph: b:CRT10OUT.HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	72.40 cfs
Peak Outflow	=	44.87 cfs
Peak Elevation	=	20.99 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	97,181 cu-ft
Total Storage in Pond	=	97,181 cu-ft

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-27-1992 07:42:09

Return Freq: 100 years

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*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*  EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
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Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS100 .HYD
Outflow Hydrograph: b:CRT100OT.HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	13.00
1.0	7.20	7.2	6.9	7.2	0.14	13.46
2.0	14.50	21.7	27.9	28.6	0.35	14.23
3.0	21.70	36.2	63.2	64.1	0.47	14.87
4.0	28.90	50.6	112.7	113.8	0.54	15.40
5.0	36.10	65.0	176.5	177.7	0.60	16.00
6.0	43.40	79.5	254.7	256.0	0.64	16.38
7.0	50.60	94.0	347.4	348.7	0.68	16.83
8.0	57.80	108.4	454.3	455.8	0.72	17.19
9.0	65.00	122.8	575.6	577.1	0.75	17.53
10.0	72.30	137.3	711.3	712.9	0.79	17.90
11.0	79.50	151.8	861.5	863.1	0.80	18.20
12.0	86.70	166.2	1026.1	1027.7	0.80	18.49
13.0	93.90	180.6	1205.1	1206.7	0.80	18.80
14.0	101.20	195.1	1398.6	1400.2	0.81	19.09
15.0	108.40	209.6	1606.5	1608.2	0.83	19.35
16.0	115.60	224.0	1828.8	1830.5	0.86	19.62
17.0	122.80	238.4	2065.4	2067.2	0.89	19.91
18.0	130.10	252.9	2303.0	2318.3	7.68	20.15
19.0	137.30	267.4	2535.6	2570.4	17.39	20.37
20.0	143.90	281.2	2763.1	2816.8	26.87	20.58
21.0	136.70	280.6	2972.5	3043.7	35.61	20.78
22.0	129.50	266.2	3152.4	3238.7	43.11	20.95
23.0	122.20	251.7	3307.5	3404.1	48.30	21.07
24.0	115.00	237.2	3440.4	3544.7	52.17	21.17
25.0	107.80	222.8	3552.3	3663.2	55.44	21.25
26.0	100.60	208.4	3644.5	3760.7	58.13	21.31
27.0	93.30	193.9	3717.8	3838.4	60.27	21.37
28.0	86.10	179.4	3773.4	3897.2	61.89	21.40
29.0	78.90	165.0	3812.4	3938.4	63.03	21.43
30.0	71.70	150.6	3835.6	3963.0	63.70	21.45
31.0	64.40	136.1	3843.8	3971.7	63.94	21.45
32.0	57.20	121.6	3837.9	3965.4	63.77	21.45
33.0	50.00	107.2	3818.6	3945.1	63.21	21.44
34.0	42.80	92.8	[illegible]	[illegible]	62.32	21.41

Pond File: b:BG5-S .PND
Inflow Hydrograph: b:CDS100 .HYD
Outflow Hydrograph: b:CRT100OT.HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
35.0	35.60
36.0	28.30
37.0	21.10
38.0	13.90
39.0	6.70
40.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
78.4	3743.3	3865.8	61.01	21.39
63.9	3688.3	3807.2	59.41	21.34
49.4	3622.8	3737.7	57.49	21.30
35.0	3547.2	3657.8	55.29	21.24
20.6	3462.2	3567.8	52.81	21.18
6.7	3368.7	3468.9	50.08	21.12

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:CDS100 .HYD
Outflow Hydrograph: b:CRT100OT.HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow	=	143.90 cfs
Peak Outflow	=	63.94 cfs
Peak Elevation	=	21.45 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	117,233 cu-ft
Total Storage in Pond	=	117,233 cu-ft

Quick TR-55 Version: 5.46 S/N: 1315430271

>>>>> GRAPHICAL PEAK DISCHARGE METHOD <<<<<

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
PRE-DEVELOPMENT CONDITION

CALCULATED
DISK FILE: BGPRE .GPD

Drainage Area	(acres)	64.6	--->	0.1009 sq.mi.
Runoff Curve Number	(CN)	77		
Time of Concentration, Tc	(hrs)	.50		
Rainfall Distribution	(Type)	II		
Pond and Swamp Areas	(%)	2	--->	1.3 acres

	Storm #1	Storm #2	Storm #3
Frequency (years)	2	10	100
Rainfall, P, 24-hr (in)	3.36	5.04	7.68
Initial Abstraction, Ia (in)	0.597	0.597	0.597
Ia/p Ratio	0.178	0.119	0.078
Unit Discharge, * qu (csm/in)	494	521	529
Runoff, Q (in)	1.33	2.66	4.98
Pond & Swamp Adjustment Factor	0.87	0.87	0.87
PEAK DISCHARGE, qp (cfs)	58	121	231

Summary of Computations for qu

Ia/p	#1	0.100	0.100	0.100
C0	#1	2.553	2.553	2.553
C1	#1	-0.615	-0.615	-0.615
C2	#1	-0.164	-0.164	-0.164
qu (csm)	#1	529.097	529.097	529.097
Ia/p	#2	0.300	0.300	0.100
C0	#2	2.465	2.465	2.553
C1	#2	-0.623	-0.623	-0.615
C2	#2	-0.117	-0.117	-0.164
qu (csm)	#2	438.701	438.701	529.097
* qu (csm)		494	521	529

* Interpolated for computed Ia/p ratio (between Ia/p #1 & Ia/p #2)
If computed Ia/p exceeds Ia/p limits, bounding limit for Ia/p is used.

$$\log(qu) = C0 + (C1 * \log(Tc)) + (C2 * (\log(Tc))^2)$$

qp (cfs) = qu(csm) * Area(sq.mi.) * Q(in.) * (Pond & Swamp Adj.)

Quick TR-55 Version: 5.46 S/N: 1315430271

>>>>> GRAPHICAL PEAK DISCHARGE METHOD <<<<<

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
POST DEVELOPMENT CONDITION

CALCULATED
DISK FILE: BGPOST .GPD

Drainage Area	(acres)	64.6	--->	0.1009 sq.mi.
Runoff Curve Number	(CN)	85		
Time of Concentration,Tc	(hrs)	.33		
Rainfall Distribution	(Type)	II		
Pond and Swamp Areas	(%)	2	--->	1.3 acres

	Storm #1	Storm #2	Storm #3
Frequency (years)	2	10	100
Rainfall, P, 24-hr (in)	3.36	5.04	7.68
Initial Abstraction, Ia (in)	0.353	0.353	0.353
Ia/p Ratio	0.105	0.070	0.046
Unit Discharge, * qu (csm/in)	645	648	648
Runoff, Q (in)	1.89	3.41	5.90
Pond & Swamp Adjustment Factor	0.87	0.87	0.87
PEAK DISCHARGE, qp (cfs)	107	194	336

Summary of Computations for qu

Ia/p	#1	0.100	0.100	0.100
CO	#1	2.553	2.553	2.553
C1	#1	-0.615	-0.615	-0.615
C2	#1	-0.164	-0.164	-0.164
qu (csm)	#1	647.701	647.701	647.701
Ia/p	#2	0.300	0.100	0.100
CO	#2	2.465	2.553	2.553
C1	#2	-0.623	-0.615	-0.615
C2	#2	-0.117	-0.164	-0.164
qu (csm)	#2	547.085	647.701	647.701
* qu (csm)		645	648	648

* Interpolated for computed Ia/p ratio (between Ia/p #1 & Ia/p #2)
If computed Ia/p exceeds Ia/p limits, bounding limit for Ia/p is used.

$$\log(qu) = CO + (C1 * \log(Tc)) + (C2 * (\log(Tc))^2)$$

qp (cfs) = qu(csm) * Area(sq.mi.) * Q(in.) * (Pond & Swamp Adj.)

Quick TR-55 Version: 5.46 S/N: 1315430271

>>>>> DETENTION STORAGE ESTIMATE <<<<<

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
POST DEVELOPMENT CONDITION

ROUTED

CALCULATED
DISK FILE: BG .DET

Drainage Area	(acres)	64.6	0.1009 sq.mi.
Rainfall Distribution	(Type)	II	

	Storm #1	Storm #2	Storm #3
Frequency (years)	2	10	100
Peak Inflow, qi (cfs)	107	194	336
Inflow Runoff, Q (in)	1.89	3.41	5.9
Peak Outflow, qo (cfs)	58	121	231
qo/qi Ratio	0.542	0.624	0.688
* Vs/Vr Ratio	0.261	0.233	0.213
Inflow Volume, Vr (ac-ft)	10.2	18.4	31.8
STORAGE VOLUME, Vs (ac-ft)	2.7	4.3	6.8

Summary of Volume Computations

C0	0.682	0.682	0.682
C1	-1.430	-1.430	-1.430
C2	1.640	1.640	1.640
C3	-0.804	-0.804	-0.804
* Vs/Vr	0.261	0.233	0.213

$$* \quad Vs/Vr = C0 + (C1*(qo/qi)) + (C2*(qo/qi)^2) + (C3*(qo/qi)^3)$$

Graphical Peak Discharge File Used for Inflow Data:
BGPOST .GPD
Graphical Peak Discharge File Used for Outflow Data:
BGPRE .GPD

85040 5&6
Post Dev 2yr
Hydrograph

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:36:01
Watershed file: --> B:BG2 .WSD
Hydrograph file: --> B:BG255 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
SUBAREA1	64.60	85.0	0.30	0.40	3.36	1.89	.11	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 64.60 acres or 0.10094 sq.mi
Peak discharge = 97 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
SUBAREA1	0.33	0.33	0.30	0.40	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:36:01
Watershed file: --> B:BG2 .WSD
Hydrograph file: --> B:BG255 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
SUBAREA1	97	12.6
Composite Watershed	97	12.6

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:36:01
Watershed file: --> B:BG2 .WSD
Hydrograph file: --> B:BG255 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
BAREA1	3	4	5	7	9	12	20	37	63
tal (cfs)	3	4	5	7	9	12	20	37	63

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
BAREA1	88	97	91	76	45	27	18	13	11
tal (cfs)	88	97	91	76	45	27	18	13	11

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
BAREA1	10	8	7	6	6	5	5	4	4
tal (cfs)	10	8	7	6	6	5	5	4	4

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
BAREA1	4	3	3	2	0
tal (cfs)	4	3	3	2	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:36:01
Watershed file: --> B:BG2 .WSD
Hydrograph file: --> B:BG255 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	3	14.8	6
11.1	3	14.9	6
11.2	4	15.0	6
11.3	4	15.1	6
11.4	4	15.2	6
11.5	5	15.3	6
11.6	5	15.4	6
11.7	6	15.5	6
11.8	6	15.6	6
11.9	7	15.7	6
12.0	9	15.8	5
12.1	12	15.9	5
12.2	20	16.0	5
12.3	37	16.1	5
12.4	63	16.2	5
12.5	88	16.3	5
12.6	97	16.4	5
12.7	91	16.5	5
12.8	76	16.6	5
12.9	60	16.7	5
13.0	45	16.8	4
13.1	36	16.9	4
13.2	27	17.0	4
13.3	22	17.1	4
13.4	18	17.2	4
13.5	16	17.3	4
13.6	13	17.4	4
13.7	12	17.5	4
13.8	11	17.6	4
13.9	10	17.7	4
14.0	10	17.8	4
14.1	9	17.9	4
14.2	9	18.0	4
14.3	8	18.1	4
14.4	8	18.2	4
14.5	7	18.3	4
14.6	7	18.4	4
14.7	7	18.5	4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:36:01
Watershed file: --> B:BG2 .WSD
Hydrograph file: --> B:BG255 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	3	22.4	2
18.7	3	22.5	2
18.8	3	22.6	2
18.9	3	22.7	2
19.0	3	22.8	2
19.1	3	22.9	2
19.2	3	23.0	2
19.3	3	23.1	1
19.4	3	23.2	1
19.5	3	23.3	1
19.6	3	23.4	1
19.7	3	23.5	1
19.8	3	23.6	1
19.9	3	23.7	1
20.0	3	23.8	1
20.1	3	23.9	1
20.2	3	24.0	1
20.3	3	24.1	1
20.4	3	24.2	1
20.5	3	24.3	1
20.6	3	24.4	1
20.7	3	24.5	1
20.8	3	24.6	1
20.9	3	24.7	1
21.0	3	24.8	1
21.1	2	24.9	1
21.2	2	25.0	1
21.3	2	25.1	0
21.4	2	25.2	0
21.5	2	25.3	0
21.6	2	25.4	0
21.7	2	25.5	0
21.8	2	25.6	0
21.9	2	25.7	0
22.0	2	25.8	0
22.1	2	25.9	0
22.2	2		
22.3	2		

$t_c = 20$ min
$V_s = 62,400$

85040 SPG
2yr Post Dev
Hydrograph
$T_c = 20$ MIN
$T_p = T_c$
$T_b = 2.67\ T_c$
may not be critical condition
$T_D = 30$ min is critical case

POND-2 Version: 5.17 S/N: 1295130250

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-13-1992 10:28:36

critical storm duration = 32.6 min

Hydrograph file: b:BG2 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 5.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	16.96	33.92	50.87	67.83	58.14	48.45
35.00	38.76	29.07	19.38	9.69	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
525.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
805.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
980.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1365.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1435.00	0.00	0.00					

need to check for critical condition

POND-2 Version: 5.17 S/N: 1295130250

85040 S&C
10 yr Post Dev
Hydrograph
T_c = 20 min
T_p = T_c
T_B = 2.67 T_c

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-13-1992 10:28:59

critical = 47.2 min

Hydrograph file: b:BG10 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 5.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	27.61	45.22	67.83	90.44	77.52	64.60
35.00	51.68	38.76	25.84	12.92	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
525.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
805.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
980.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1365.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1435.00	0.00	0.00					

10yr Post Dev
Hydrograph
T_c = 20 min
T_p = T_c
T_B = 2.67 TC

POND-2 Version: 5.17 S/N: 1295130250

>>>>> HYDROGRAPH PRINTOUT <<<<<

08-13-1992 10:29:27

Hydrograph file: b:BG100 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 5.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	32.79	65.57	98.36	131.14	112.41	93.67
35.00	74.94	56.20	37.47	18.73	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
525.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
805.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
980.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1365.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1435.00	0.00	0.00					

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

ESTD 5 yr
2yr POST DEV
THROUGH POND

```
*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*        STORMWATER MANAGEMENT      *
*   EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Inflow Hydrograph: b:BG2 .HYD
Rating Table file: b:BG5-8 .PND

----INITIAL CONDITIONS----
Elevation = 13.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
13.00	0.0	0
14.00	0.3	458
15.00	0.5	2,854
16.00	0.6	7,988
17.00	0.7	16,389
18.00	0.8	28,304
19.00	0.8	44,311
20.00	0.9	64,982
21.00	45.3	90,471
22.00	73.8	121,224

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
3.1	3.4
19.0	19.5
53.3	53.9
109.3	110.0
188.7	189.5
295.4	296.2
433.2	434.1
603.1	648.4
808.2	882.0

Time increment (t) = 5.0 min.

POND-2 Version: 5.17-S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
0.0	0.00
5.0	16.96
10.0	33.92
15.0	50.87
20.0	67.83
25.0	58.14
30.0	48.45
35.0	38.76
40.0	29.07
45.0	19.38
50.0	9.69
55.0	0.00
60.0	0.00
65.0	0.00
70.0	0.00
75.0	0.00
80.0	0.00
85.0	0.00
90.0	0.00
95.0	0.00
100.0	0.00
105.0	0.00
110.0	0.00
115.0	0.00
120.0	0.00
125.0	0.00
130.0	0.00
135.0	0.00
140.0	0.00
145.0	0.00
150.0	0.00
155.0	0.00
160.0	0.00
165.0	0.00
170.0	0.00
175.0	0.00
180.0	0.00
185.0	0.00
190.0	0.00
195.0	0.00
200.0	0.00
205.0	0.00
210.0	0.00
215.0	0.00
220.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
------	0.0	0.0	0.00	13.00
17.0	16.0	17.0	0.47	14.84
50.9	65.7	66.9	0.62	16.23
84.8	148.9	150.4	0.75	17.51
118.7	266.0	267.6	0.80	18.73
126.0	390.3	392.0	0.87	19.69
106.6	469.1	496.9	13.90	20.29
87.2	503.9	556.3	26.21	20.57
67.8	512.9	571.7	29.40	20.64
48.5	506.8	561.3	27.26	20.59
29.1	491.9	535.9	21.99	20.47
9.7	471.8	501.6	14.88	20.31
0.0	454.4	471.8	8.72	20.18
0.0	444.2	454.4	5.11	20.09
0.0	438.2	444.2	2.99	20.05
0.0	434.7	438.2	1.75	20.02
0.0	432.7	434.7	1.03	20.00
0.0	430.9	432.7	0.90	19.99
0.0	429.1	430.9	0.90	19.98
0.0	427.3	429.1	0.90	19.96
0.0	425.5	427.3	0.90	19.95
0.0	423.7	425.5	0.89	19.94
0.0	421.9	423.7	0.89	19.92
0.0	420.1	421.9	0.89	19.91
0.0	418.4	420.1	0.89	19.90
0.0	416.6	418.4	0.89	19.89
0.0	414.8	416.6	0.89	19.87
0.0	413.0	414.8	0.89	19.86
0.0	411.3	413.0	0.88	19.85
0.0	409.5	411.3	0.88	19.83
0.0	407.7	409.5	0.88	19.82
0.0	406.0	407.7	0.88	19.81
0.0	404.2	406.0	0.88	19.80
0.0	402.5	404.2	0.88	19.78
0.0	400.7	402.5	0.88	19.77
0.0	398.9	400.7	0.88	19.76
0.0	397.2	398.9	0.87	19.75
0.0	395.5	397.2	0.87	19.73
0.0	393.7	395.5	0.87	19.72
0.0	392.0	393.7	0.87	19.71
0.0	390.2	392.0	0.87	19.69
0.0	388.5	390.2	0.87	19.68
0.0	386.8	388.5	0.87	19.67
0.0	385.0	386.8	0.87	19.66
0.0	383.3	385.0	0.86	19.64

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
225.0	0.001	0.0	381.6	383.3	0.86	19.63
230.0	0.001	0.0	379.8	381.6	0.86	19.62
235.0	0.001	0.0	378.1	379.8	0.86	19.61
240.0	0.001	0.0	376.4	378.1	0.86	19.59
245.0	0.001	0.0	374.7	376.4	0.86	19.58
250.0	0.001	0.0	373.0	374.7	0.86	19.57
255.0	0.001	0.0	371.3	373.0	0.86	19.56
260.0	0.001	0.0	369.6	371.3	0.85	19.54
265.0	0.001	0.0	367.9	369.6	0.85	19.53
270.0	0.001	0.0	366.1	367.9	0.85	19.52
275.0	0.001	0.0	364.4	366.1	0.85	19.51
280.0	0.001	0.0	362.7	364.4	0.85	19.49
285.0	0.001	0.0	361.1	362.7	0.85	19.48
290.0	0.001	0.0	359.4	361.1	0.85	19.47
295.0	0.001	0.0	357.7	359.4	0.85	19.46
300.0	0.001	0.0	356.0	357.7	0.84	19.45
305.0	0.001	0.0	354.3	356.0	0.84	19.43
310.0	0.001	0.0	352.6	354.3	0.84	19.42
315.0	0.001	0.0	350.9	352.6	0.84	19.41
320.0	0.001	0.0	349.2	350.9	0.84	19.40
325.0	0.001	0.0	347.6	349.2	0.84	19.38
330.0	0.001	0.0	345.9	347.6	0.84	19.37
335.0	0.001	0.0	344.2	345.9	0.84	19.36
340.0	0.001	0.0	342.6	344.2	0.83	19.35
345.0	0.001	0.0	340.9	342.6	0.83	19.34
350.0	0.001	0.0	339.2	340.9	0.83	19.32
355.0	0.001	0.0	337.6	339.2	0.83	19.31
360.0	0.001	0.0	335.9	337.6	0.83	19.30
365.0	0.001	0.0	334.2	335.9	0.83	19.29
370.0	0.001	0.0	332.6	334.2	0.83	19.28
375.0	0.001	0.0	330.9	332.6	0.83	19.26
380.0	0.001	0.0	329.3	330.9	0.83	19.25
385.0	0.001	0.0	327.6	329.3	0.82	19.24
390.0	0.001	0.0	326.0	327.6	0.82	19.23
395.0	0.001	0.0	324.3	326.0	0.82	19.22
400.0	0.001	0.0	322.7	324.3	0.82	19.20
405.0	0.001	0.0	321.1	322.7	0.82	19.19
410.0	0.001	0.0	319.4	321.1	0.82	19.18
415.0	0.001	0.0	317.8	319.4	0.82	19.17
420.0	0.001	0.0	316.2	317.8	0.82	19.16
425.0	0.001	0.0	314.5	316.2	0.81	19.14
430.0	0.001	0.0	312.9	314.5	0.81	19.13
435.0	0.001	0.0	311.3	312.9	0.81	19.12
440.0	0.001	0.0	309.7	311.3	0.81	19.11
445.0	0.001	0.0	308.0	309.7	0.81	19.10
450.0	0.001	0.0	306.4	308.0	0.81	19.09

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
455.0	0.001	0.0	304.8	306.4	0.81	19.07
460.0	0.001	0.0	303.2	304.8	0.81	19.06
465.0	0.001	0.0	301.6	303.2	0.81	19.05
470.0	0.001	0.0	300.0	301.6	0.80	19.04
475.0	0.001	0.0	298.4	300.0	0.80	19.03
480.0	0.001	0.0	296.8	298.4	0.80	19.02
485.0	0.001	0.0	295.2	296.8	0.80	19.00
490.0	0.001	0.0	293.6	295.2	0.80	18.99
495.0	0.001	0.0	292.0	293.6	0.80	18.98
500.0	0.001	0.0	290.4	292.0	0.80	18.96
505.0	0.001	0.0	288.8	290.4	0.80	18.95
510.0	0.001	0.0	287.2	288.8	0.80	18.93
515.0	0.001	0.0	285.6	287.2	0.80	18.92
520.0	0.001	0.0	284.0	285.6	0.80	18.90
525.0	0.001	0.0	282.4	284.0	0.80	18.89
530.0	0.001	0.0	280.8	282.4	0.80	18.87
535.0	0.001	0.0	279.2	280.8	0.80	18.86
540.0	0.001	0.0	277.6	279.2	0.80	18.84
545.0	0.001	0.0	276.0	277.6	0.80	18.83
550.0	0.001	0.0	274.4	276.0	0.80	18.81
555.0	0.001	0.0	272.8	274.4	0.80	18.80
560.0	0.001	0.0	271.2	272.8	0.80	18.78
565.0	0.001	0.0	269.6	271.2	0.80	18.77
570.0	0.001	0.0	268.0	269.6	0.80	18.75
575.0	0.001	0.0	266.4	268.0	0.80	18.74
580.0	0.001	0.0	264.8	266.4	0.80	18.72
585.0	0.001	0.0	263.2	264.8	0.80	18.71
590.0	0.001	0.0	261.6	263.2	0.80	18.69
595.0	0.001	0.0	260.0	261.6	0.80	18.68
600.0	0.001	0.0	258.4	260.0	0.80	18.66
605.0	0.001	0.0	256.8	258.4	0.80	18.65
610.0	0.001	0.0	255.2	256.8	0.80	18.63
615.0	0.001	0.0	253.6	255.2	0.80	18.62
620.0	0.001	0.0	252.0	253.6	0.80	18.60
625.0	0.001	0.0	250.4	252.0	0.80	18.59
630.0	0.001	0.0	248.8	250.4	0.80	18.57
635.0	0.001	0.0	247.2	248.8	0.80	18.56
640.0	0.001	0.0	245.6	247.2	0.80	18.54
645.0	0.001	0.0	244.0	245.6	0.80	18.53
650.0	0.001	0.0	242.4	244.0	0.80	18.51
655.0	0.001	0.0	240.8	242.4	0.80	18.50
660.0	0.001	0.0	239.2	240.8	0.80	18.48
665.0	0.001	0.0	237.6	239.2	0.80	18.47
670.0	0.001	0.0	236.0	237.6	0.80	18.45
675.0	0.001	0.0	234.4	236.0	0.80	18.44
680.0	0.001	0.0	232.8	234.4	0.80	18.42

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH / ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
685.0	0.001	0.0	231.2	232.8	0.80	18.41
690.0	0.001	0.0	229.6	231.2	0.80	18.39
695.0	0.001	0.0	228.0	229.6	0.80	18.38
700.0	0.001	0.0	226.4	228.0	0.80	18.36
705.0	0.001	0.0	224.8	226.4	0.80	18.35
710.0	0.001	0.0	223.2	224.8	0.80	18.33
715.0	0.001	0.0	221.6	223.2	0.80	18.32
720.0	0.001	0.0	220.0	221.6	0.80	18.30
725.0	0.001	0.0	218.4	220.0	0.80	18.29
730.0	0.001	0.0	216.8	218.4	0.80	18.27
735.0	0.001	0.0	215.2	216.8	0.80	18.26
740.0	0.001	0.0	213.6	215.2	0.80	18.24
745.0	0.001	0.0	212.0	213.6	0.80	18.23
750.0	0.001	0.0	210.4	212.0	0.80	18.21
755.0	0.001	0.0	208.8	210.4	0.80	18.20
760.0	0.001	0.0	207.2	208.8	0.80	18.18
765.0	0.001	0.0	205.6	207.2	0.80	18.17
770.0	0.001	0.0	204.0	205.6	0.80	18.15
775.0	0.001	0.0	202.4	204.0	0.80	18.14
780.0	0.001	0.0	200.8	202.4	0.80	18.12
785.0	0.001	0.0	199.2	200.8	0.80	18.11
790.0	0.001	0.0	197.6	199.2	0.80	18.09
795.0	0.001	0.0	196.0	197.6	0.80	18.08
800.0	0.001	0.0	194.4	196.0	0.80	18.06
805.0	0.001	0.0	192.8	194.4	0.80	18.05
810.0	0.001	0.0	191.2	192.8	0.80	18.03
815.0	0.001	0.0	189.6	191.2	0.80	18.02
820.0	0.001	0.0	188.0	189.6	0.80	18.00
825.0	0.001	0.0	186.4	188.0	0.80	17.98
830.0	0.001	0.0	184.8	186.4	0.80	17.96
835.0	0.001	0.0	183.2	184.8	0.79	17.94
840.0	0.001	0.0	181.6	183.2	0.79	17.92
845.0	0.001	0.0	180.0	181.6	0.79	17.90
850.0	0.001	0.0	178.5	180.0	0.79	17.88
855.0	0.001	0.0	176.9	178.5	0.79	17.86
860.0	0.001	0.0	175.3	176.9	0.78	17.84
865.0	0.001	0.0	173.7	175.3	0.78	17.82
870.0	0.001	0.0	172.2	173.7	0.78	17.80
875.0	0.001	0.0	170.6	172.2	0.78	17.78
880.0	0.001	0.0	169.1	170.6	0.78	17.76
885.0	0.001	0.0	167.5	169.1	0.77	17.74
890.0	0.001	0.0	166.0	167.5	0.77	17.72
895.0	0.001	0.0	164.4	166.0	0.77	17.70
900.0	0.001	0.0	162.9	164.4	0.77	17.69
905.0	0.001	0.0	161.4	162.9	0.77	17.67
910.0	0.001	0.0	159.8	161.4	0.76	17.65

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
915.0	0.001	0.0	158.3	159.8	0.76	17.63
920.0	0.001	0.0	156.8	158.3	0.76	17.61
925.0	0.001	0.0	155.3	156.8	0.76	17.59
930.0	0.001	0.0	153.8	155.3	0.76	17.57
935.0	0.001	0.0	152.3	153.8	0.76	17.55
940.0	0.001	0.0	150.7	152.3	0.75	17.53
945.0	0.001	0.0	149.2	150.7	0.75	17.51
950.0	0.001	0.0	147.7	149.2	0.75	17.49
955.0	0.001	0.0	146.3	147.7	0.75	17.48
960.0	0.001	0.0	144.8	146.3	0.75	17.46
965.0	0.001	0.0	143.3	144.8	0.74	17.44
970.0	0.001	0.0	141.8	143.3	0.74	17.42
975.0	0.001	0.0	140.3	141.8	0.74	17.40
980.0	0.001	0.0	138.8	140.3	0.74	17.38
985.0	0.001	0.0	137.4	138.8	0.74	17.36
990.0	0.001	0.0	135.9	137.4	0.73	17.34
995.0	0.001	0.0	134.4	135.9	0.73	17.33
1000.0	0.001	0.0	133.0	134.4	0.73	17.31
1005.0	0.001	0.0	131.5	133.0	0.73	17.29
1010.0	0.001	0.0	130.1	131.5	0.73	17.27
1015.0	0.001	0.0	128.6	130.1	0.73	17.25
1020.0	0.001	0.0	127.2	128.6	0.72	17.23
1025.0	0.001	0.0	125.7	127.2	0.72	17.22
1030.0	0.001	0.0	124.3	125.7	0.72	17.20
1035.0	0.001	0.0	122.8	124.3	0.72	17.18
1040.0	0.001	0.0	121.4	122.8	0.72	17.16
1045.0	0.001	0.0	120.0	121.4	0.71	17.14
1050.0	0.001	0.0	118.6	120.0	0.71	17.13
1055.0	0.001	0.0	117.1	118.6	0.71	17.11
1060.0	0.001	0.0	115.7	117.1	0.71	17.09
1065.0	0.001	0.0	114.3	115.7	0.71	17.07
1070.0	0.001	0.0	112.9	114.3	0.71	17.05
1075.0	0.001	0.0	111.5	112.9	0.70	17.04
1080.0	0.001	0.0	110.1	111.5	0.70	17.02
1085.0	0.001	0.0	108.7	110.1	0.70	17.00
1090.0	0.001	0.0	107.3	108.7	0.70	16.98
1095.0	0.001	0.0	105.9	107.3	0.70	16.95
1100.0	0.001	0.0	104.5	105.9	0.69	16.93
1105.0	0.001	0.0	103.1	104.5	0.69	16.90
1110.0	0.001	0.0	101.7	103.1	0.69	16.88
1115.0	0.001	0.0	100.4	101.7	0.69	16.85
1120.0	0.001	0.0	99.0	100.4	0.68	16.83
1125.0	0.001	0.0	97.7	99.0	0.68	16.80
1130.0	0.001	0.0	96.3	97.7	0.68	16.78
1135.0	0.001	0.0	94.9	96.3	0.68	16.76
1140.0	0.001	0.0	93.6	94.9	0.67	16.73

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .FND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1145.0	0.001	0.0	92.3	93.6	0.67	16.71
1150.0	0.001	0.0	90.9	92.3	0.67	16.68
1155.0	0.001	0.0	89.6	90.9	0.67	16.66
1160.0	0.001	0.0	88.3	89.6	0.66	16.64
1165.0	0.001	0.0	86.9	88.3	0.66	16.61
1170.0	0.001	0.0	85.6	86.9	0.66	16.59
1175.0	0.001	0.0	84.3	85.6	0.66	16.57
1180.0	0.001	0.0	83.0	84.3	0.65	16.54
1185.0	0.001	0.0	81.7	83.0	0.65	16.52
1190.0	0.001	0.0	80.4	81.7	0.65	16.50
1195.0	0.001	0.0	79.1	80.4	0.65	16.47
1200.0	0.001	0.0	77.8	79.1	0.64	16.45
1205.0	0.001	0.0	76.5	77.8	0.64	16.43
1210.0	0.001	0.0	75.2	76.5	0.64	16.40
1215.0	0.001	0.0	74.0	75.2	0.64	16.38
1220.0	0.001	0.0	72.7	74.0	0.64	16.36
1225.0	0.001	0.0	71.4	72.7	0.63	16.34
1230.0	0.001	0.0	70.2	71.4	0.63	16.31
1235.0	0.001	0.0	68.9	70.2	0.63	16.29
1240.0	0.001	0.0	67.7	68.9	0.63	16.27
1245.0	0.001	0.0	66.4	67.7	0.62	16.25
1250.0	0.001	0.0	65.2	66.4	0.62	16.22
1255.0	0.001	0.0	63.9	65.2	0.62	16.20
1260.0	0.001	0.0	62.7	63.9	0.62	16.18
1265.0	0.001	0.0	61.5	62.7	0.62	16.16
1270.0	0.001	0.0	60.2	61.5	0.61	16.14
1275.0	0.001	0.0	59.0	60.2	0.61	16.11
1280.0	0.001	0.0	57.8	59.0	0.61	16.09
1285.0	0.001	0.0	56.6	57.8	0.61	16.07
1290.0	0.001	0.0	55.4	56.6	0.60	16.05
1295.0	0.001	0.0	54.2	55.4	0.60	16.03
1300.0	0.001	0.0	53.0	54.2	0.60	16.01
1305.0	0.001	0.0	51.8	53.0	0.60	15.97
1310.0	0.001	0.0	50.6	51.8	0.59	15.94
1315.0	0.001	0.0	49.4	50.6	0.59	15.90
1320.0	0.001	0.0	48.2	49.4	0.59	15.87
1325.0	0.001	0.0	47.0	48.2	0.58	15.84
1330.0	0.001	0.0	45.9	47.0	0.58	15.80
1335.0	0.001	0.0	44.7	45.9	0.58	15.77
1340.0	0.001	0.0	43.6	44.7	0.57	15.73
1345.0	0.001	0.0	42.4	43.6	0.57	15.70
1350.0	0.001	0.0	41.3	42.4	0.57	15.67
1355.0	0.001	0.0	40.2	41.3	0.56	15.63
1360.0	0.001	0.0	39.1	40.2	0.56	15.60
1365.0	0.001	0.0	38.0	39.1	0.56	15.57
1370.0	0.001	0.0	36.8	38.0	0.55	15.54

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
1375.0	0.00
1380.0	0.00
1385.0	0.00
1390.0	0.00
1395.0	0.00
1400.0	0.00
1405.0	0.00
1410.0	0.00
1415.0	0.00
1420.0	0.00
1425.0	0.00
1430.0	0.00
1435.0	0.00
1440.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	35.7	36.8	0.55	15.50
0.0	34.6	35.7	0.55	15.47
0.0	33.6	34.6	0.54	15.44
0.0	32.5	33.6	0.54	15.41
0.0	31.4	32.5	0.54	15.38
0.0	30.3	31.4	0.53	15.35
0.0	29.3	30.3	0.53	15.31
0.0	28.2	29.3	0.53	15.28
0.0	27.2	28.2	0.53	15.25
0.0	26.1	27.2	0.52	15.22
0.0	25.1	26.1	0.52	15.19
0.0	24.0	25.1	0.52	15.16
0.0	23.0	24.0	0.51	15.13
0.0	22.0	23.0	0.51	15.10

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 67.83 cfs
Peak Outflow = 29.40 cfs Q_2 Pre = 32.3 cfs
Peak Elevation = 20.64 ft

***** Summary of Approximate Peak Storage *****

Initial Storage = 0 cu-ft
Peak Storage From Storm = 81,343 cu-ft

Total Storage in Pond = 81,343 cu-ft ← 70,400 55.7 ac

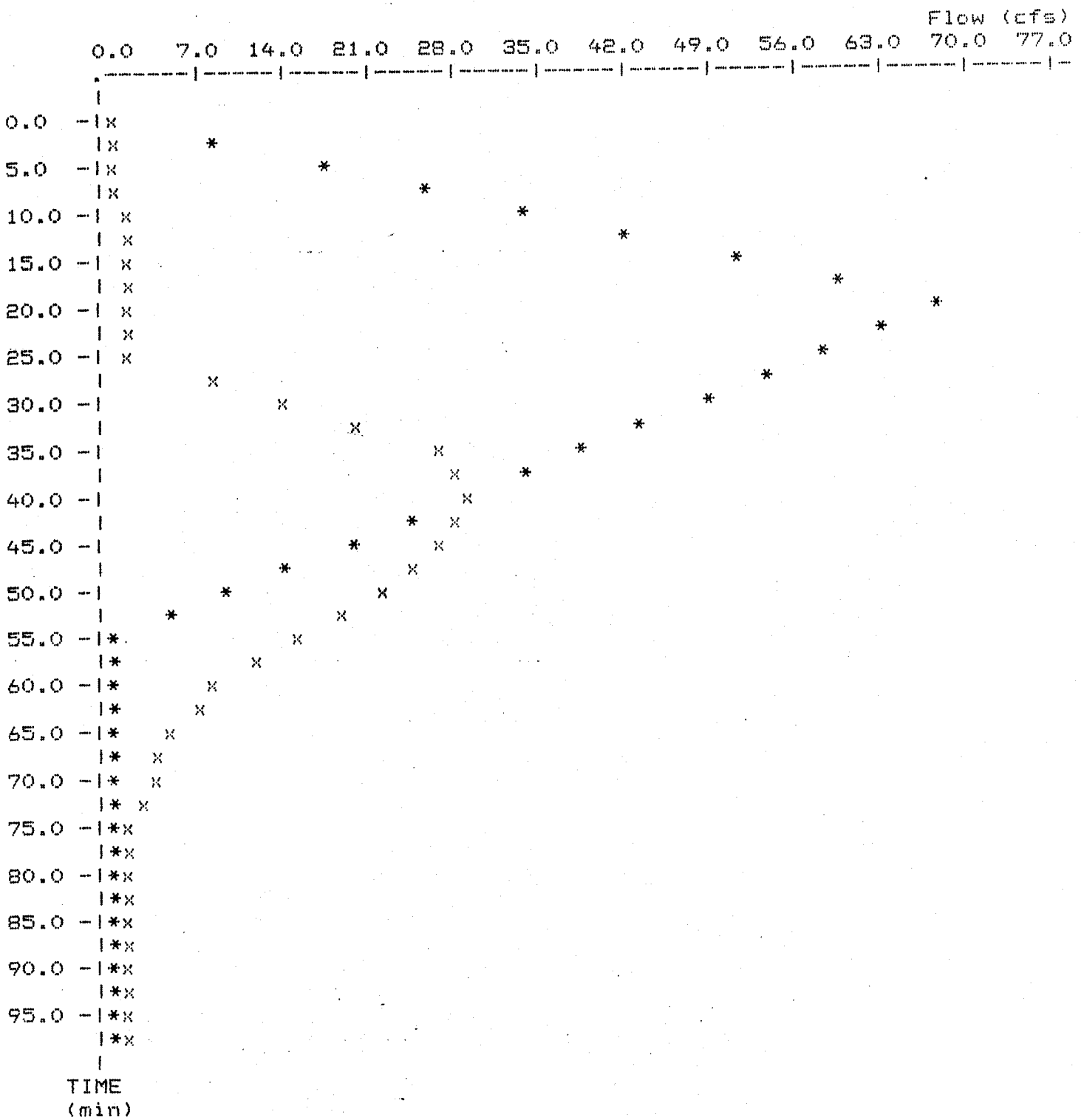
POND-2 Version: 5.17 S/N: 1295130250

Return Freq: 2 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG2 .HYD
Outflow Hydrograph: b:2OUT .HYD

EXECUTED: 08-13-1992
11:01:50

Peak Inflow = 67.83 cfs
Peak Outflow = 29.40 cfs
Peak Elevation = 20.64 ft



* File: b:BG2 .HYD Qmax = 67.8 cfs
x File: b:2OUT .HYD Qmax = 29.4 cfs

85040 5&6
POST DEV 10 yr
Hydrograph

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:37:38
Watershed file: --> B:BG10 .WSD
Hydrograph file: --> B:BG1055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used	
SUBAREA1	64.60	85.0	0.30	0.40	5.04	3.41	.07	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 64.60 acres or 0.10094 sq.mi
Peak discharge = 176 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	* Tt (hr)	Rounded Values Tc (hr)	* Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
SUBAREA1	0.33	0.33	0.30	0.40	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:37:38
Watershed file: --> B:BG10 .WSD
Hydrograph file: --> B:BG1055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
SUBAREA1	176	12.6
Composite Watershed	176	12.6

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:37:38
Watershed file: --> B:BG10 .WSD
Hydrograph file: --> B:BG1055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
BAREA1	5	7	9	13	15	22	36	66	114
tal (cfs)	5	7	9	13	15	22	36	66	114

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
BAREA1	158	176	164	137	82	48	32	24	20
tal (cfs)	158	176	164	137	82	48	32	24	20

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
BAREA1	18	15	13	12	10	9	8	7	7
tal (cfs)	18	15	13	12	10	9	8	7	7

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
BAREA1	7	6	5	4	0
tal (cfs)	7	6	5	4	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:37:38
Watershed file: --> B:BG10 .WSD
Hydrograph file: --> B:BG1055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	5	14.8	12
11.1	6	14.9	12
11.2	6	15.0	12
11.3	7	15.1	12
11.4	8	15.2	11
11.5	8	15.3	11
11.6	9	15.4	10
11.7	10	15.5	10
11.8	12	15.6	10
11.9	13	15.7	10
12.0	15	15.8	9
12.1	22	15.9	9
12.2	36	16.0	9
12.3	66	16.1	9
12.4	114	16.2	9
12.5	158	16.3	8
12.6	176	16.4	8
12.7	164	16.5	8
12.8	137	16.6	8
12.9	109	16.7	8
13.0	82	16.8	7
13.1	65	16.9	7
13.2	48	17.0	7
13.3	40	17.1	7
13.4	32	17.2	7
13.5	28	17.3	7
13.6	24	17.4	7
13.7	22	17.5	7
13.8	20	17.6	7
13.9	19	17.7	7
14.0	18	17.8	7
14.1	17	17.9	7
14.2	16	18.0	7
14.3	15	18.1	7
14.4	14	18.2	7
14.5	14	18.3	7
14.6	13	18.4	7
14.7	13	18.5	7

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:37:38
Watershed file: --> B:BG10 .WSD
Hydrograph file: --> B:BG1055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	6	22.4	4
18.7	6	22.5	4
18.8	6	22.6	3
18.9	6	22.7	3
19.0	6	22.8	3
19.1	6	22.9	3
19.2	6	23.0	3
19.3	6	23.1	3
19.4	6	23.2	3
19.5	6	23.3	3
19.6	5	23.4	3
19.7	5	23.5	3
19.8	5	23.6	2
19.9	5	23.7	2
20.0	5	23.8	2
20.1	5	23.9	2
20.2	5	24.0	2
20.3	5	24.1	2
20.4	5	24.2	2
20.5	5	24.3	2
20.6	5	24.4	2
20.7	5	24.5	2
20.8	5	24.6	1
20.9	5	24.7	1
21.0	5	24.8	1
21.1	4	24.9	1
21.2	4	25.0	1
21.3	4	25.1	1
21.4	4	25.2	1
21.5	4	25.3	1
21.6	4	25.4	1
21.7	4	25.5	1
21.8	4	25.6	0
21.9	4	25.7	0
22.0	4	25.8	0
22.1	4	25.9	0
22.2	4		
22.3	4		

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 10 years

65% 5%
10 yr post dev
THROUGH POND

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*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*   EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
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Inflow Hydrograph: b:BG10 .HYD
Rating Table file: b:BG5-8 .PND

-----INITIAL CONDITIONS-----
Elevation = 13.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
13.00	0.0	0
14.00	0.3	458
15.00	0.5	2,854
16.00	0.6	7,988
17.00	0.7	16,389
18.00	0.8	28,304
19.00	0.8	44,311
20.00	0.9	64,982
21.00	45.3	90,471
22.00	73.8	121,224

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
3.1	3.4
19.0	19.5
53.3	53.9
109.3	110.0
188.7	189.5
295.4	296.2
433.2	434.1
603.1	648.4
808.2	882.0

Time increment (t) = 5.0 min.

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 10 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	13.00
5.0	27.61	27.6	26.6	27.6	0.52	15.24
10.0	45.22	72.8	98.0	99.4	0.68	16.81
15.0	67.83	113.1	209.5	211.1	0.80	18.20
20.0	90.44	158.3	366.0	367.8	0.85	19.52
25.0	77.52	168.0	490.8	534.0	21.59	20.47
30.0	64.60	142.1	548.8	632.9	42.09	20.93
35.0	51.68	116.3	570.4	665.0	47.33	21.07
40.0	38.76	90.4	567.2	660.8	46.81	21.05
45.0	25.84	64.6	548.1	631.8	41.85	20.92
50.0	12.92	38.8	521.8	586.9	32.54	20.71
55.0	0.00	12.9	491.2	534.7	21.74	20.47
60.0	0.00	0.0	465.8	491.2	12.73	20.27
65.0	0.00	0.0	450.8	465.8	7.46	20.15
70.0	0.00	0.0	442.1	450.8	4.37	20.08
75.0	0.00	0.0	437.0	442.1	2.56	20.04
80.0	0.00	0.0	434.0	437.0	1.50	20.01
85.0	0.00	0.0	432.2	434.0	0.90	20.00
90.0	0.00	0.0	430.4	432.2	0.90	19.99
95.0	0.00	0.0	428.6	430.4	0.90	19.97
100.0	0.00	0.0	426.8	428.6	0.90	19.96
105.0	0.00	0.0	425.0	426.8	0.89	19.95
110.0	0.00	0.0	423.2	425.0	0.89	19.93
115.0	0.00	0.0	421.5	423.2	0.89	19.92
120.0	0.00	0.0	419.7	421.5	0.89	19.91
125.0	0.00	0.0	417.9	419.7	0.89	19.90
130.0	0.00	0.0	416.1	417.9	0.89	19.88
135.0	0.00	0.0	414.3	416.1	0.89	19.87
140.0	0.00	0.0	412.6	414.3	0.89	19.86
145.0	0.00	0.0	410.8	412.6	0.88	19.84
150.0	0.00	0.0	409.0	410.8	0.88	19.83
155.0	0.00	0.0	407.3	409.0	0.88	19.82
160.0	0.00	0.0	405.5	407.3	0.88	19.81
165.0	0.00	0.0	403.8	405.5	0.88	19.79
170.0	0.00	0.0	402.0	403.8	0.88	19.78
175.0	0.00	0.0	400.2	402.0	0.88	19.77
180.0	0.00	0.0	398.5	400.2	0.88	19.75
185.0	0.00	0.0	396.7	398.5	0.87	19.74
190.0	0.00	0.0	395.0	396.7	0.87	19.73
195.0	0.00	0.0	393.3	395.0	0.87	19.72
200.0	0.00	0.0	391.5	393.3	0.87	19.70
205.0	0.00	0.0	389.8	391.5	0.87	19.69
210.0	0.00	0.0	388.0	389.8	0.87	19.68
215.0	0.00	0.0	386.3	388.0	0.87	19.67
220.0	0.00	0.0	384.6	386.3	0.87	19.65

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EXECUTED: 08-13-1992 11:01:50

Return Freq: 10 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
225.0	0.00
230.0	0.00
235.0	0.00
240.0	0.00
245.0	0.00
250.0	0.00
255.0	0.00
260.0	0.00
265.0	0.00
270.0	0.00
275.0	0.00
280.0	0.00
285.0	0.00
290.0	0.00
295.0	0.00
300.0	0.00
305.0	0.00
310.0	0.00
315.0	0.00
320.0	0.00
325.0	0.00
330.0	0.00
335.0	0.00
340.0	0.00
345.0	0.00
350.0	0.00
355.0	0.00
360.0	0.00
365.0	0.00
370.0	0.00
375.0	0.00
380.0	0.00
385.0	0.00
390.0	0.00
395.0	0.00
400.0	0.00
405.0	0.00
410.0	0.00
415.0	0.00
420.0	0.00
425.0	0.00
430.0	0.00
435.0	0.00
440.0	0.00
445.0	0.00
450.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	382.9	384.6	0.86	19.64
0.0	381.1	382.9	0.86	19.63
0.0	379.4	381.1	0.86	19.62
0.0	377.7	379.4	0.86	19.60
0.0	376.0	377.7	0.86	19.59
0.0	374.2	376.0	0.86	19.58
0.0	372.5	374.2	0.86	19.57
0.0	370.8	372.5	0.86	19.55
0.0	369.1	370.8	0.85	19.54
0.0	367.4	369.1	0.85	19.53
0.0	365.7	367.4	0.85	19.52
0.0	364.0	365.7	0.85	19.50
0.0	362.3	364.0	0.85	19.49
0.0	360.6	362.3	0.85	19.48
0.0	358.9	360.6	0.85	19.47
0.0	357.2	358.9	0.85	19.45
0.0	355.5	357.2	0.84	19.44
0.0	353.9	355.5	0.84	19.43
0.0	352.2	353.9	0.84	19.42
0.0	350.5	352.2	0.84	19.41
0.0	348.8	350.5	0.84	19.39
0.0	347.1	348.8	0.84	19.38
0.0	345.5	347.1	0.84	19.37
0.0	343.8	345.5	0.84	19.36
0.0	342.1	343.8	0.83	19.35
0.0	340.5	342.1	0.83	19.33
0.0	338.8	340.5	0.83	19.32
0.0	337.1	338.8	0.83	19.31
0.0	335.5	337.1	0.83	19.30
0.0	333.8	335.5	0.83	19.28
0.0	332.2	333.8	0.83	19.27
0.0	330.5	332.2	0.83	19.26
0.0	328.9	330.5	0.82	19.25
0.0	327.2	328.9	0.82	19.24
0.0	325.6	327.2	0.82	19.22
0.0	323.9	325.6	0.82	19.21
0.0	322.3	323.9	0.82	19.20
0.0	320.6	322.3	0.82	19.19
0.0	319.0	320.6	0.82	19.18
0.0	317.4	319.0	0.82	19.17
0.0	315.7	317.4	0.82	19.15
0.0	314.1	315.7	0.81	19.14
0.0	312.5	314.1	0.81	19.13
0.0	310.9	312.5	0.81	19.12
0.0	309.2	310.9	0.81	19.11
0.0	307.6	309.2	0.81	19.09

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
455.0	0.001	0.0	306.0	307.61	0.81	19.08
460.0	0.001	0.0	304.4	306.01	0.81	19.07
465.0	0.001	0.0	302.8	304.41	0.81	19.06
470.0	0.001	0.0	301.2	302.81	0.80	19.05
475.0	0.001	0.0	299.6	301.21	0.80	19.04
480.0	0.001	0.0	298.0	299.61	0.80	19.02
485.0	0.001	0.0	296.4	298.01	0.80	19.01
490.0	0.001	0.0	294.8	296.41	0.80	19.00
495.0	0.001	0.0	293.2	294.81	0.80	18.99
500.0	0.001	0.0	291.6	293.21	0.80	18.97
505.0	0.001	0.0	290.0	291.61	0.80	18.96
510.0	0.001	0.0	288.4	290.01	0.80	18.94
515.0	0.001	0.0	286.8	288.41	0.80	18.93
520.0	0.001	0.0	285.2	286.81	0.80	18.91
525.0	0.001	0.0	283.6	285.21	0.80	18.90
530.0	0.001	0.0	282.0	283.61	0.80	18.88
535.0	0.001	0.0	280.4	282.01	0.80	18.87
540.0	0.001	0.0	278.8	280.41	0.80	18.85
545.0	0.001	0.0	277.2	278.81	0.80	18.84
550.0	0.001	0.0	275.6	277.21	0.80	18.82
555.0	0.001	0.0	274.0	275.61	0.80	18.81
560.0	0.001	0.0	272.4	274.01	0.80	18.79
565.0	0.001	0.0	270.8	272.41	0.80	18.78
570.0	0.001	0.0	269.2	270.81	0.80	18.76
575.0	0.001	0.0	267.6	269.21	0.80	18.75
580.0	0.001	0.0	266.0	267.61	0.80	18.73
585.0	0.001	0.0	264.4	266.01	0.80	18.72
590.0	0.001	0.0	262.8	264.41	0.80	18.70
595.0	0.001	0.0	261.2	262.81	0.80	18.69
600.0	0.001	0.0	259.6	261.21	0.80	18.67
605.0	0.001	0.0	258.0	259.61	0.80	18.66
610.0	0.001	0.0	256.4	258.01	0.80	18.64
615.0	0.001	0.0	254.8	256.41	0.80	18.63
620.0	0.001	0.0	253.2	254.81	0.80	18.61
625.0	0.001	0.0	251.6	253.21	0.80	18.60
630.0	0.001	0.0	250.0	251.61	0.80	18.58
635.0	0.001	0.0	248.4	250.01	0.80	18.57
640.0	0.001	0.0	246.8	248.41	0.80	18.55
645.0	0.001	0.0	245.2	246.81	0.80	18.54
650.0	0.001	0.0	243.6	245.21	0.80	18.52
655.0	0.001	0.0	242.0	243.61	0.80	18.51
660.0	0.001	0.0	240.4	242.01	0.80	18.49
665.0	0.001	0.0	238.8	240.41	0.80	18.48
670.0	0.001	0.0	237.2	238.81	0.80	18.46
675.0	0.001	0.0	235.6	237.21	0.80	18.45
680.0	0.001	0.0	234.0	235.61	0.80	18.43

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 10 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
685.0	0.001	0.0	232.4	234.01	0.80	18.42
690.0	0.001	0.0	230.8	232.41	0.80	18.40
695.0	0.001	0.0	229.2	230.81	0.80	18.39
700.0	0.001	0.0	227.6	229.21	0.80	18.37
705.0	0.001	0.0	226.0	227.61	0.80	18.36
710.0	0.001	0.0	224.4	226.01	0.80	18.34
715.0	0.001	0.0	222.8	224.41	0.80	18.33
720.0	0.001	0.0	221.2	222.81	0.80	18.31
725.0	0.001	0.0	219.6	221.21	0.80	18.30
730.0	0.001	0.0	218.0	219.61	0.80	18.28
735.0	0.001	0.0	216.4	218.01	0.80	18.27
740.0	0.001	0.0	214.8	216.41	0.80	18.25
745.0	0.001	0.0	213.2	214.81	0.80	18.24
750.0	0.001	0.0	211.6	213.21	0.80	18.22
755.0	0.001	0.0	210.0	211.61	0.80	18.21
760.0	0.001	0.0	208.4	210.01	0.80	18.19
765.0	0.001	0.0	206.8	208.41	0.80	18.18
770.0	0.001	0.0	205.2	206.81	0.80	18.16
775.0	0.001	0.0	203.6	205.21	0.80	18.15
780.0	0.001	0.0	202.0	203.61	0.80	18.13
785.0	0.001	0.0	200.4	202.01	0.80	18.12
790.0	0.001	0.0	198.8	200.41	0.80	18.10
795.0	0.001	0.0	197.2	198.81	0.80	18.09
800.0	0.001	0.0	195.6	197.21	0.80	18.07
805.0	0.001	0.0	194.0	195.61	0.80	18.06
810.0	0.001	0.0	192.4	194.01	0.80	18.04
815.0	0.001	0.0	190.8	192.41	0.80	18.03
820.0	0.001	0.0	189.2	190.81	0.80	18.01
825.0	0.001	0.0	187.6	189.21	0.80	18.00
830.0	0.001	0.0	186.0	187.61	0.80	17.98
835.0	0.001	0.0	184.4	186.01	0.80	17.96
840.0	0.001	0.0	182.8	184.41	0.79	17.94
845.0	0.001	0.0	181.2	182.81	0.79	17.92
850.0	0.001	0.0	179.6	181.21	0.79	17.90
855.0	0.001	0.0	178.0	179.61	0.79	17.88
860.0	0.001	0.0	176.5	178.01	0.79	17.86
865.0	0.001	0.0	174.9	176.51	0.78	17.84
870.0	0.001	0.0	173.3	174.91	0.78	17.82
875.0	0.001	0.0	171.8	173.31	0.78	17.80
880.0	0.001	0.0	170.2	171.81	0.78	17.78
885.0	0.001	0.0	168.7	170.21	0.78	17.76
890.0	0.001	0.0	167.1	168.71	0.77	17.74
895.0	0.001	0.0	165.6	167.11	0.77	17.72
900.0	0.001	0.0	164.0	165.61	0.77	17.70
905.0	0.001	0.0	162.5	164.01	0.77	17.68
910.0	0.001	0.0	161.0	162.51	0.77	17.66

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 10 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
915.0	0.00	0.0	159.5	161.0	0.76	17.64
920.0	0.00	0.0	157.9	159.5	0.76	17.62
925.0	0.00	0.0	156.4	157.9	0.76	17.60
930.0	0.00	0.0	154.9	156.4	0.76	17.58
935.0	0.00	0.0	153.4	154.9	0.76	17.56
940.0	0.00	0.0	151.9	153.4	0.75	17.55
945.0	0.00	0.0	150.4	151.9	0.75	17.53
950.0	0.00	0.0	148.9	150.4	0.75	17.51
955.0	0.00	0.0	147.4	148.9	0.75	17.49
960.0	0.00	0.0	145.9	147.4	0.75	17.47
965.0	0.00	0.0	144.4	145.9	0.75	17.45
970.0	0.00	0.0	142.9	144.4	0.74	17.43
975.0	0.00	0.0	141.4	142.9	0.74	17.41
980.0	0.00	0.0	139.9	141.4	0.74	17.40
985.0	0.00	0.0	138.5	139.9	0.74	17.38
990.0	0.00	0.0	137.0	138.5	0.74	17.36
995.0	0.00	0.0	135.5	137.0	0.73	17.34
1000.0	0.00	0.0	134.1	135.5	0.73	17.32
1005.0	0.00	0.0	132.6	134.1	0.73	17.30
1010.0	0.00	0.0	131.1	132.6	0.73	17.28
1015.0	0.00	0.0	129.7	131.1	0.73	17.27
1020.0	0.00	0.0	128.2	129.7	0.72	17.25
1025.0	0.00	0.0	126.8	128.2	0.72	17.23
1030.0	0.00	0.0	125.3	126.8	0.72	17.21
1035.0	0.00	0.0	123.9	125.3	0.72	17.19
1040.0	0.00	0.0	122.5	123.9	0.72	17.18
1045.0	0.00	0.0	121.0	122.5	0.72	17.16
1050.0	0.00	0.0	119.6	121.0	0.71	17.14
1055.0	0.00	0.0	118.2	119.6	0.71	17.12
1060.0	0.00	0.0	116.8	118.2	0.71	17.10
1065.0	0.00	0.0	115.3	116.8	0.71	17.09
1070.0	0.00	0.0	113.9	115.3	0.71	17.07
1075.0	0.00	0.0	112.5	113.9	0.70	17.05
1080.0	0.00	0.0	111.1	112.5	0.70	17.03
1085.0	0.00	0.0	109.7	111.1	0.70	17.01
1090.0	0.00	0.0	108.3	109.7	0.70	17.00
1095.0	0.00	0.0	106.9	108.3	0.70	16.97
1100.0	0.00	0.0	105.5	106.9	0.69	16.95
1105.0	0.00	0.0	104.1	105.5	0.69	16.92
1110.0	0.00	0.0	102.8	104.1	0.69	16.90
1115.0	0.00	0.0	101.4	102.8	0.69	16.87
1120.0	0.00	0.0	100.0	101.4	0.68	16.85
1125.0	0.00	0.0	98.7	100.0	0.68	16.82
1130.0	0.00	0.0	97.3	98.7	0.68	16.80
1135.0	0.00	0.0	95.9	97.3	0.68	16.77
1140.0	0.00	0.0	94.6	95.9	0.68	16.75

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1145.0	0.001	0.0	93.2	94.6	0.67	16.73
1150.0	0.001	0.0	91.9	93.2	0.67	16.70
1155.0	0.001	0.0	90.6	91.9	0.67	16.68
1160.0	0.001	0.0	89.2	90.6	0.67	16.65
1165.0	0.001	0.0	87.9	89.2	0.66	16.63
1170.0	0.001	0.0	86.6	87.9	0.66	16.61
1175.0	0.001	0.0	85.3	86.6	0.66	16.58
1180.0	0.001	0.0	84.0	85.3	0.66	16.56
1185.0	0.001	0.0	82.7	84.0	0.65	16.54
1190.0	0.001	0.0	81.4	82.7	0.65	16.51
1195.0	0.001	0.0	80.1	81.4	0.65	16.49
1200.0	0.001	0.0	78.8	80.1	0.65	16.47
1205.0	0.001	0.0	77.5	78.8	0.64	16.44
1210.0	0.001	0.0	76.2	77.5	0.64	16.42
1215.0	0.001	0.0	74.9	76.2	0.64	16.40
1220.0	0.001	0.0	73.6	74.9	0.64	16.38
1225.0	0.001	0.0	72.4	73.6	0.64	16.35
1230.0	0.001	0.0	71.1	72.4	0.63	16.33
1235.0	0.001	0.0	69.8	71.1	0.63	16.31
1240.0	0.001	0.0	68.6	69.8	0.63	16.28
1245.0	0.001	0.0	67.3	68.6	0.63	16.26
1250.0	0.001	0.0	66.1	67.3	0.62	16.24
1255.0	0.001	0.0	64.8	66.1	0.62	16.22
1260.0	0.001	0.0	63.6	64.8	0.62	16.20
1265.0	0.001	0.0	62.4	63.6	0.62	16.17
1270.0	0.001	0.0	61.1	62.4	0.62	16.15
1275.0	0.001	0.0	59.9	61.1	0.61	16.13
1280.0	0.001	0.0	58.7	59.9	0.61	16.11
1285.0	0.001	0.0	57.5	58.7	0.61	16.09
1290.0	0.001	0.0	56.3	57.5	0.61	16.06
1295.0	0.001	0.0	55.0	56.3	0.60	16.04
1300.0	0.001	0.0	53.8	55.0	0.60	16.02
1305.0	0.001	0.0	52.6	53.8	0.60	16.00
1310.0	0.001	0.0	51.5	52.6	0.60	15.96
1315.0	0.001	0.0	50.3	51.5	0.59	15.93
1320.0	0.001	0.0	49.1	50.3	0.59	15.90
1325.0	0.001	0.0	47.9	49.1	0.59	15.86
1330.0	0.001	0.0	46.7	47.9	0.58	15.83
1335.0	0.001	0.0	45.6	46.7	0.58	15.79
1340.0	0.001	0.0	44.4	45.6	0.58	15.76
1345.0	0.001	0.0	43.3	44.4	0.57	15.73
1350.0	0.001	0.0	42.2	43.3	0.57	15.69
1355.0	0.001	0.0	41.0	42.2	0.57	15.66
1360.0	0.001	0.0	39.9	41.0	0.56	15.63
1365.0	0.001	0.0	38.8	39.9	0.56	15.59
1370.0	0.001	0.0	37.7	38.8	0.56	15.56

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 08-13-1992 11:01:50

Return Freq: 10 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
1375.0	0.00
1380.0	0.00
1385.0	0.00
1390.0	0.00
1395.0	0.00
1400.0	0.00
1405.0	0.00
1410.0	0.00
1415.0	0.00
1420.0	0.00
1425.0	0.00
1430.0	0.00
1435.0	0.00
1440.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	36.6	37.7	0.55	15.53
0.0	35.5	36.6	0.55	15.50
0.0	34.4	35.5	0.55	15.46
0.0	33.3	34.4	0.54	15.43
0.0	32.2	33.3	0.54	15.40
0.0	31.1	32.2	0.54	15.37
0.0	30.1	31.1	0.53	15.34
0.0	29.0	30.1	0.53	15.31
0.0	27.9	29.0	0.53	15.28
0.0	26.9	27.9	0.52	15.25
0.0	25.9	26.9	0.52	15.21
0.0	24.8	25.9	0.52	15.18
0.0	23.8	24.8	0.52	15.15
0.0	22.8	23.8	0.51	15.12

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 90.44 cfs
Peak Outflow = 47.33 cfs Q_{10} PRE = 43.9 cfs
Peak Elevation = 21.07 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	92,657 cu-ft
Total Storage in Pond	=	92,657 cu-ft

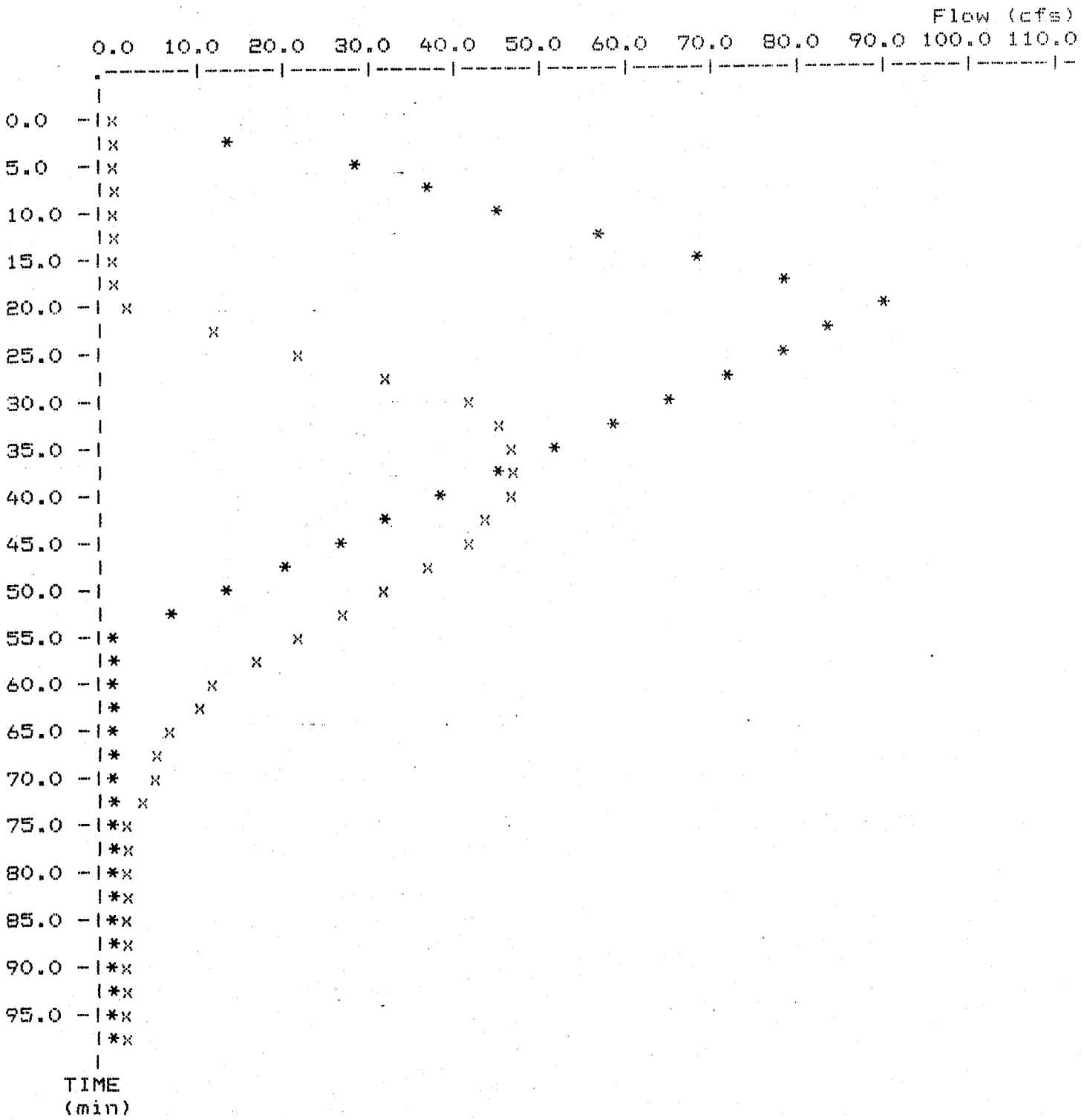
POND-2 Version: 5.17 S/N: 1295130250

Return Freq: 10 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10 .HYD
Outflow Hydrograph: b:10OUT .HYD

EXECUTED: 08-13-1992
11:01:50

Peak Inflow = 90.44 cfs
Peak Outflow = 47.33 cfs
Peak Elevation = 21.07 ft



* File: b:BG10 .HYD Qmax = 90.4 cfs
x File: b:10OUT .HYD Qmax = 47.3 cfs

85040 5d
Post Dev 100 yr
Hydrograph

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:39:20
Watershed file: --> B:BG100 .WSD
Hydrograph file: --> B:BG10055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea escription	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used	
SUBAREA1	64.60	85.0	0.30	0.40	7.68	5.90	.05	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 64.60 acres or 0.10094 sq.mi
Peak discharge = 304 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea escription	Input Values Tc (hr)	* Tt (hr)	Rounded Values Tc (hr)	* Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
SBAREA1	0.33	0.33	0.30	0.40	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:39:20
Watershed file: --> B:BG100 .WSD
Hydrograph file: --> B:BG10055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
SUBAREA1	304	12.6
Composite Watershed	304	12.6

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:39:20
Watershed file: --> B:BG100 .WSD
Hydrograph file: --> B:BG10055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Composite Hydrograph Summary (cfs)

Subarea escription	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
BAREA1	8	11	15	22	27	38	63	115	197
tal (cfs)	8	11	15	22	27	38	63	115	197

Subarea escription	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
BAREA1	273	304	284	237	141	83	55	42	35
tal (cfs)	273	304	284	237	141	83	55	42	35

Subarea escription	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
BAREA1	31	26	23	20	18	16	14	13	12
tal (cfs)	31	26	23	20	18	16	14	13	12

Subarea escription	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
BAREA1	11	10	8	7	0
tal (cfs)	11	10	8	7	0

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:39:20
Watershed file: --> B:BG100 .WSD
Hydrograph file: --> B:BG10055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	8	14.8	21
11.1	9	14.9	21
11.2	10	15.0	20
11.3	11	15.1	20
11.4	12	15.2	19
11.5	14	15.3	19
11.6	15	15.4	18
11.7	17	15.5	18
11.8	20	15.6	18
11.9	22	15.7	17
12.0	27	15.8	17
12.1	38	15.9	16
12.2	63	16.0	16
12.3	115	16.1	16
12.4	197	16.2	15
12.5	273	16.3	15
12.6	304	16.4	14
12.7	284	16.5	14
12.8	237	16.6	14
12.9	189	16.7	14
13.0	141	16.8	13
13.1	112	16.9	13
13.2	83	17.0	13
13.3	69	17.1	13
13.4	55	17.2	13
13.5	49	17.3	12
13.6	42	17.4	12
13.7	38	17.5	12
13.8	35	17.6	12
13.9	33	17.7	12
14.0	31	17.8	11
14.1	29	17.9	11
14.2	28	18.0	11
14.3	26	18.1	11
14.4	25	18.2	11
14.5	24	18.3	11
14.6	23	18.4	11
14.7	22	18.5	11

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 08-14-1992 00:39:20
Watershed file: --> B:BG100 .WSD
Hydrograph file: --> B:BG10055 .HYD

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	10	22.4	6
18.7	10	22.5	6
18.8	10	22.6	6
18.9	10	22.7	6
19.0	10	22.8	6
19.1	10	22.9	5
19.2	10	23.0	5
19.3	9	23.1	5
19.4	9	23.2	5
19.5	9	23.3	5
19.6	9	23.4	5
19.7	9	23.5	4
19.8	8	23.6	4
19.9	8	23.7	4
20.0	8	23.8	4
20.1	8	23.9	4
20.2	8	24.0	4
20.3	8	24.1	3
20.4	8	24.2	3
20.5	8	24.3	3
20.6	8	24.4	3
20.7	8	24.5	3
20.8	8	24.6	2
20.9	8	24.7	2
21.0	8	24.8	2
21.1	7	24.9	2
21.2	7	25.0	2
21.3	7	25.1	2
21.4	7	25.2	1
21.5	7	25.3	1
21.6	7	25.4	1
21.7	7	25.5	1
21.8	7	25.6	1
21.9	7	25.7	1
22.0	7	25.8	0
22.1	7	25.9	0
22.2	7		
22.3	6		

POND-2 Version: 5.17 S/N: 1295130250 Page 1
EXECUTED: 08-13-1992 11:01:50 Return Freq: 100 years

B5040 5 & 6
100 yr Post DEV
THROUGH POND

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*****************************************
*                                       *
*            BERKELEY'S GREEN           *
*              SECTIONS 5-8             *
*          STORMWATER MANAGEMENT        *
*    EXTENDED DRY DETENTION (24 HOURS)  *
*                                       *
*****************************************
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Inflow Hydrograph: b:BG100 .HYD
Rating Table file: b:BG5-8 .PND

-----INITIAL CONDITIONS-----
Elevation = 13.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
13.00	0.0	0
14.00	0.3	458
15.00	0.5	2,854
16.00	0.6	7,988
17.00	0.7	16,389
18.00	0.8	28,304
19.00	0.8	44,311
20.00	0.9	64,982
21.00	45.3	90,471
22.00	73.8	121,224

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
3.1	3.4
19.0	19.5
53.3	53.9
109.3	110.0
188.7	189.5
295.4	296.2
433.2	434.1
603.1	648.4
808.2	882.0

Time increment (t) = 5.0 min.

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

INFLOW HYDROGRAPH — ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	------	0.0	0.0	0.00	13.00
5.0	32.79	32.8	31.7	32.8	0.54	15.39
10.0	65.57	98.4	128.6	130.1	0.73	17.25
15.0	98.36	163.9	291.0	292.6	0.80	18.97
20.0	131.14	229.5	482.9	520.5	18.79	20.40
25.0	112.41	243.6	616.8	726.4	54.82	21.33
30.0	93.67	206.1	689.7	822.9	66.59	21.75
35.0	74.94	168.6	716.5	858.3	70.91	21.90 ←
40.0	56.20	131.1	708.4	847.6	69.61	21.85
45.0	37.47	93.7	674.0	802.1	64.05	21.66
50.0	18.73	56.2	619.6	730.2	55.27	21.35
55.0	0.00	18.7	551.9	638.4	43.21	20.95
60.0	0.00	0.0	501.3	551.9	25.31	20.55
65.0	0.00	0.0	471.7	501.3	14.82	20.31
70.0	0.00	0.0	454.3	471.7	8.68	20.18
75.0	0.00	0.0	444.1	454.3	5.08	20.09
80.0	0.00	0.0	438.2	444.1	2.98	20.05
85.0	0.00	0.0	434.7	438.2	1.74	20.02
90.0	0.00	0.0	432.7	434.7	1.02	20.00
95.0	0.00	0.0	430.9	432.7	0.90	19.99
100.0	0.00	0.0	429.1	430.9	0.90	19.98
105.0	0.00	0.0	427.3	429.1	0.90	19.96
110.0	0.00	0.0	425.5	427.3	0.90	19.95
115.0	0.00	0.0	423.7	425.5	0.89	19.94
120.0	0.00	0.0	421.9	423.7	0.89	19.92
125.0	0.00	0.0	420.1	421.9	0.89	19.91
130.0	0.00	0.0	418.3	420.1	0.89	19.90
135.0	0.00	0.0	416.6	418.3	0.89	19.89
140.0	0.00	0.0	414.8	416.6	0.89	19.87
145.0	0.00	0.0	413.0	414.8	0.89	19.86
150.0	0.00	0.0	411.3	413.0	0.88	19.85
155.0	0.00	0.0	409.5	411.3	0.88	19.83
160.0	0.00	0.0	407.7	409.5	0.88	19.82
165.0	0.00	0.0	406.0	407.7	0.88	19.81
170.0	0.00	0.0	404.2	406.0	0.88	19.80
175.0	0.00	0.0	402.4	404.2	0.88	19.78
180.0	0.00	0.0	400.7	402.4	0.88	19.77
185.0	0.00	0.0	398.9	400.7	0.88	19.76
190.0	0.00	0.0	397.2	398.9	0.87	19.74
195.0	0.00	0.0	395.4	397.2	0.87	19.73
200.0	0.00	0.0	393.7	395.4	0.87	19.72
205.0	0.00	0.0	392.0	393.7	0.87	19.71
210.0	0.00	0.0	390.2	392.0	0.87	19.69
215.0	0.00	0.0	388.5	390.2	0.87	19.68
220.0	0.00	0.0	386.7	388.5	0.87	19.67

ond File: b:BG5-B .PND
nflow Hydrograph: b:BG100 .HYD
utflow Hydrograph: b:100OUT .HYD

NFLOW HYDROGRAPH — ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
225.0	0.00	0.0	385.0	386.7	0.87	19.66
230.0	0.00	0.0	383.3	385.0	0.86	19.64
235.0	0.00	0.0	381.6	383.3	0.86	19.63
240.0	0.00	0.0	379.8	381.6	0.86	19.62
245.0	0.00	0.0	378.1	379.8	0.86	19.61
250.0	0.00	0.0	376.4	378.1	0.86	19.59
255.0	0.00	0.0	374.7	376.4	0.86	19.58
260.0	0.00	0.0	373.0	374.7	0.86	19.57
265.0	0.00	0.0	371.3	373.0	0.86	19.56
270.0	0.00	0.0	369.5	371.3	0.85	19.54
275.0	0.00	0.0	367.8	369.5	0.85	19.53
280.0	0.00	0.0	366.1	367.8	0.85	19.52
285.0	0.00	0.0	364.4	366.1	0.85	19.51
290.0	0.00	0.0	362.7	364.4	0.85	19.49
295.0	0.00	0.0	361.0	362.7	0.85	19.48
300.0	0.00	0.0	359.3	361.0	0.85	19.47
305.0	0.00	0.0	357.7	359.3	0.85	19.46
310.0	0.00	0.0	356.0	357.7	0.84	19.45
315.0	0.00	0.0	354.3	356.0	0.84	19.43
320.0	0.00	0.0	352.6	354.3	0.84	19.42
325.0	0.00	0.0	350.9	352.6	0.84	19.41
330.0	0.00	0.0	349.2	350.9	0.84	19.40
335.0	0.00	0.0	347.6	349.2	0.84	19.38
340.0	0.00	0.0	345.9	347.6	0.84	19.37
345.0	0.00	0.0	344.2	345.9	0.84	19.36
350.0	0.00	0.0	342.5	344.2	0.83	19.35
355.0	0.00	0.0	340.9	342.5	0.83	19.34
360.0	0.00	0.0	339.2	340.9	0.83	19.32
365.0	0.00	0.0	337.5	339.2	0.83	19.31
370.0	0.00	0.0	335.9	337.5	0.83	19.30
375.0	0.00	0.0	334.2	335.9	0.83	19.29
380.0	0.00	0.0	332.6	334.2	0.83	19.28
385.0	0.00	0.0	330.9	332.6	0.83	19.26
390.0	0.00	0.0	329.3	330.9	0.83	19.25
395.0	0.00	0.0	327.6	329.3	0.82	19.24
400.0	0.00	0.0	326.0	327.6	0.82	19.23
405.0	0.00	0.0	324.3	326.0	0.82	19.22
410.0	0.00	0.0	322.7	324.3	0.82	19.20
415.0	0.00	0.0	321.1	322.7	0.82	19.19
420.0	0.00	0.0	319.4	321.1	0.82	19.18
425.0	0.00	0.0	317.8	319.4	0.82	19.17
430.0	0.00	0.0	316.2	317.8	0.82	19.16
435.0	0.00	0.0	314.5	316.2	0.81	19.14
440.0	0.00	0.0	312.9	314.5	0.81	19.13
445.0	0.00	0.0	311.3	312.9	0.81	19.12
450.0	0.00	0.0	309.7	311.3	0.81	19.11

Pond File: b:BG5-2 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

INFLOW HYDROGRAPH — ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
455.0	0.00	0.0	308.0	309.7	0.81	19.10
460.0	0.00	0.0	306.4	308.0	0.81	19.09
465.0	0.00	0.0	304.8	306.4	0.81	19.07
470.0	0.00	0.0	303.2	304.8	0.81	19.06
475.0	0.00	0.0	301.6	303.2	0.81	19.05
480.0	0.00	0.0	300.0	301.6	0.80	19.04
485.0	0.00	0.0	298.4	300.0	0.80	19.03
490.0	0.00	0.0	296.8	298.4	0.80	19.02
495.0	0.00	0.0	295.2	296.8	0.80	19.00
500.0	0.00	0.0	293.6	295.2	0.80	18.99
505.0	0.00	0.0	292.0	293.6	0.80	18.98
510.0	0.00	0.0	290.4	292.0	0.80	18.96
515.0	0.00	0.0	288.8	290.4	0.80	18.95
520.0	0.00	0.0	287.2	288.8	0.80	18.93
525.0	0.00	0.0	285.6	287.2	0.80	18.92
530.0	0.00	0.0	284.0	285.6	0.80	18.90
535.0	0.00	0.0	282.4	284.0	0.80	18.89
540.0	0.00	0.0	280.8	282.4	0.80	18.87
545.0	0.00	0.0	279.2	280.8	0.80	18.86
550.0	0.00	0.0	277.6	279.2	0.80	18.84
555.0	0.00	0.0	276.0	277.6	0.80	18.83
560.0	0.00	0.0	274.4	276.0	0.80	18.81
565.0	0.00	0.0	272.8	274.4	0.80	18.80
570.0	0.00	0.0	271.2	272.8	0.80	18.78
575.0	0.00	0.0	269.6	271.2	0.80	18.77
580.0	0.00	0.0	268.0	269.6	0.80	18.75
585.0	0.00	0.0	266.4	268.0	0.80	18.74
590.0	0.00	0.0	264.8	266.4	0.80	18.72
595.0	0.00	0.0	263.2	264.8	0.80	18.71
600.0	0.00	0.0	261.6	263.2	0.80	18.69
605.0	0.00	0.0	260.0	261.6	0.80	18.68
610.0	0.00	0.0	258.4	260.0	0.80	18.66
615.0	0.00	0.0	256.8	258.4	0.80	18.65
620.0	0.00	0.0	255.2	256.8	0.80	18.63
625.0	0.00	0.0	253.6	255.2	0.80	18.62
630.0	0.00	0.0	252.0	253.6	0.80	18.60
635.0	0.00	0.0	250.4	252.0	0.80	18.59
640.0	0.00	0.0	248.8	250.4	0.80	18.57
645.0	0.00	0.0	247.2	248.8	0.80	18.56
650.0	0.00	0.0	245.6	247.2	0.80	18.54
655.0	0.00	0.0	244.0	245.6	0.80	18.53
660.0	0.00	0.0	242.4	244.0	0.80	18.51
665.0	0.00	0.0	240.8	242.4	0.80	18.50
670.0	0.00	0.0	239.2	240.8	0.80	18.48
675.0	0.00	0.0	237.6	239.2	0.80	18.47
680.0	0.00	0.0	236.0	237.6	0.80	18.45

[illegible] 5 [illegible] a:ESS-8 .END
[illegible] [illegible] b:EP100 .HYD
[illegible] [illegible] c:1000UT .MTC

INFLOW H DROPPER

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
685.0	0.001	0.0	234.4	236.0	0.80	18.44
690.0	0.001	0.0	232.8	234.4	0.80	18.42
695.0	0.001	0.0	231.2	232.8	0.80	18.41
700.0	0.001	0.0	229.6	231.2	0.80	18.39
705.0	0.001	0.0	228.0	229.6	0.80	18.38
710.0	0.001	0.0	226.4	228.0	0.80	18.36
715.0	0.001	0.0	224.8	226.4	0.80	18.35
720.0	0.001	0.0	223.2	224.8	0.80	18.33
725.0	0.001	0.0	221.6	223.2	0.80	18.32
730.0	0.001	0.0	220.0	221.6	0.80	18.30
735.0	0.001	0.0	218.4	220.0	0.80	18.29
740.0	0.001	0.0	216.8	218.4	0.80	18.27
745.0	0.001	0.0	215.2	216.8	0.80	18.26
750.0	0.001	0.0	213.6	215.2	0.80	18.24
755.0	0.001	0.0	212.0	213.6	0.80	18.23
760.0	0.001	0.0	210.4	212.0	0.80	18.21
765.0	0.001	0.0	208.8	210.4	0.80	18.20
770.0	0.001	0.0	207.2	208.8	0.80	18.18
775.0	0.001	0.0	205.6	207.2	0.80	18.17
780.0	0.001	0.0	204.0	205.6	0.80	18.15
785.0	0.001	0.0	202.4	204.0	0.80	18.14
790.0	0.001	0.0	200.8	202.4	0.80	18.12
795.0	0.001	0.0	199.2	200.8	0.80	18.11
800.0	0.001	0.0	197.6	199.2	0.80	18.09
805.0	0.001	0.0	196.0	197.6	0.80	18.08
810.0	0.001	0.0	194.4	196.0	0.80	18.06
815.0	0.001	0.0	192.8	194.4	0.80	18.05
820.0	0.001	0.0	191.2	192.8	0.80	18.03
825.0	0.001	0.0	189.6	191.2	0.80	18.02
830.0	0.001	0.0	188.0	189.6	0.80	18.00
835.0	0.001	0.0	186.4	188.0	0.80	17.98
840.0	0.001	0.0	184.8	186.4	0.80	17.96
845.0	0.001	0.0	183.2	184.8	0.79	17.94
850.0	0.001	0.0	181.6	183.2	0.79	17.92
855.0	0.001	0.0	180.0	181.6	0.79	17.90
860.0	0.001	0.0	178.4	180.0	0.79	17.88
865.0	0.001	0.0	176.9	178.4	0.79	17.86
870.0	0.001	0.0	175.3	176.9	0.78	17.84
875.0	0.001	0.0	173.7	175.3	0.78	17.82
880.0	0.001	0.0	172.2	173.7	0.78	17.80
885.0	0.001	0.0	170.6	172.2	0.78	17.78
890.0	0.001	0.0	169.1	170.6	0.78	17.76
895.0	0.001	0.0	167.5	169.1	0.77	17.74
900.0	0.001	0.0	166.0	167.5	0.77	17.72
905.0	0.001	0.0	164.4	166.0	0.77	17.70
910.0	0.001	0.0	162.9	164.4	0.77	17.68

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

INFLOW HYDROGRAPH — ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
915.0	0.00	0.0	161.4	162.9	0.77	17.67
920.0	0.00	0.0	159.8	161.4	0.76	17.65
925.0	0.00	0.0	158.3	159.8	0.76	17.63
930.0	0.00	0.0	156.8	158.3	0.76	17.61
935.0	0.00	0.0	155.3	156.8	0.76	17.59
940.0	0.00	0.0	153.8	155.3	0.76	17.57
945.0	0.00	0.0	152.2	153.8	0.76	17.55
950.0	0.00	0.0	150.7	152.2	0.75	17.53
955.0	0.00	0.0	149.2	150.7	0.75	17.51
960.0	0.00	0.0	147.7	149.2	0.75	17.49
965.0	0.00	0.0	146.2	147.7	0.75	17.47
970.0	0.00	0.0	144.8	146.2	0.75	17.46
975.0	0.00	0.0	143.3	144.8	0.74	17.44
980.0	0.00	0.0	141.8	143.3	0.74	17.42
985.0	0.00	0.0	140.3	141.8	0.74	17.40
990.0	0.00	0.0	138.8	140.3	0.74	17.38
995.0	0.00	0.0	137.4	138.8	0.74	17.36
1000.0	0.00	0.0	135.9	137.4	0.73	17.34
1005.0	0.00	0.0	134.4	135.9	0.73	17.33
1010.0	0.00	0.0	133.0	134.4	0.73	17.31
1015.0	0.00	0.0	131.5	133.0	0.73	17.29
1020.0	0.00	0.0	130.0	131.5	0.73	17.27
1025.0	0.00	0.0	128.6	130.0	0.73	17.25
1030.0	0.00	0.0	127.1	128.6	0.72	17.23
1035.0	0.00	0.0	125.7	127.1	0.72	17.22
1040.0	0.00	0.0	124.3	125.7	0.72	17.20
1045.0	0.00	0.0	122.8	124.3	0.72	17.18
1050.0	0.00	0.0	121.4	122.8	0.72	17.16
1055.0	0.00	0.0	120.0	121.4	0.71	17.14
1060.0	0.00	0.0	118.5	120.0	0.71	17.13
1065.0	0.00	0.0	117.1	118.5	0.71	17.11
1070.0	0.00	0.0	115.7	117.1	0.71	17.09
1075.0	0.00	0.0	114.3	115.7	0.71	17.07
1080.0	0.00	0.0	112.9	114.3	0.71	17.05
1085.0	0.00	0.0	111.5	112.9	0.70	17.04
1090.0	0.00	0.0	110.1	111.5	0.70	17.02
1095.0	0.00	0.0	108.7	110.1	0.70	17.00
1100.0	0.00	0.0	107.3	108.7	0.70	16.98
1105.0	0.00	0.0	105.9	107.3	0.70	16.95
1110.0	0.00	0.0	104.5	105.9	0.69	16.93
1115.0	0.00	0.0	103.1	104.5	0.69	16.90
1120.0	0.00	0.0	101.7	103.1	0.69	16.88
1125.0	0.00	0.0	100.4	101.7	0.69	16.85
1130.0	0.00	0.0	99.0	100.4	0.68	16.83
1135.0	0.00	0.0	97.6	99.0	0.68	16.80
1140.0	0.00	0.0	96.3	97.6	0.68	16.78

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1145.0	0.00	0.0	94.9	96.3	0.68	16.76
1150.0	0.00	0.0	93.6	94.9	0.67	16.73
1155.0	0.00	0.0	92.2	93.6	0.67	16.71
1160.0	0.00	0.0	90.9	92.2	0.67	16.68
1165.0	0.00	0.0	89.6	90.9	0.67	16.66
1170.0	0.00	0.0	88.2	89.6	0.66	16.64
1175.0	0.00	0.0	86.9	88.2	0.66	16.61
1180.0	0.00	0.0	85.6	86.9	0.66	16.59
1185.0	0.00	0.0	84.3	85.6	0.66	16.57
1190.0	0.00	0.0	83.0	84.3	0.65	16.54
1195.0	0.00	0.0	81.7	83.0	0.65	16.52
1200.0	0.00	0.0	80.4	81.7	0.65	16.50
1205.0	0.00	0.0	79.1	80.4	0.65	16.47
1210.0	0.00	0.0	77.8	79.1	0.64	16.45
1215.0	0.00	0.0	76.5	77.8	0.64	16.43
1220.0	0.00	0.0	75.2	76.5	0.64	16.40
1225.0	0.00	0.0	74.0	75.2	0.64	16.38
1230.0	0.00	0.0	72.7	74.0	0.64	16.36
1235.0	0.00	0.0	71.4	72.7	0.63	16.34
1240.0	0.00	0.0	70.2	71.4	0.63	16.31
1245.0	0.00	0.0	68.9	70.2	0.63	16.29
1250.0	0.00	0.0	67.6	68.9	0.63	16.27
1255.0	0.00	0.0	66.4	67.6	0.62	16.25
1260.0	0.00	0.0	65.2	66.4	0.62	16.22
1265.0	0.00	0.0	63.9	65.2	0.62	16.20
1270.0	0.00	0.0	62.7	63.9	0.62	16.18
1275.0	0.00	0.0	61.4	62.7	0.62	16.16
1280.0	0.00	0.0	60.2	61.4	0.61	16.14
1285.0	0.00	0.0	59.0	60.2	0.61	16.11
1290.0	0.00	0.0	57.8	59.0	0.61	16.09
1295.0	0.00	0.0	56.6	57.8	0.61	16.07
1300.0	0.00	0.0	55.4	56.6	0.60	16.05
1305.0	0.00	0.0	54.1	55.4	0.60	16.03
1310.0	0.00	0.0	52.9	54.1	0.60	16.01
1315.0	0.00	0.0	51.7	52.9	0.60	15.97
1320.0	0.00	0.0	50.6	51.7	0.59	15.94
1325.0	0.00	0.0	49.4	50.6	0.59	15.90
1330.0	0.00	0.0	48.2	49.4	0.59	15.87
1335.0	0.00	0.0	47.0	48.2	0.58	15.84
1340.0	0.00	0.0	45.9	47.0	0.58	15.80
1345.0	0.00	0.0	44.7	45.9	0.58	15.77
1350.0	0.00	0.0	43.6	44.7	0.57	15.73
1355.0	0.00	0.0	42.4	43.6	0.57	15.70
1360.0	0.00	0.0	41.3	42.4	0.57	15.67
1365.0	0.00	0.0	40.2	41.3	0.56	15.63
1370.0	0.00	0.0	39.1	40.2	0.56	15.60

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

INFLOW HYDROGRAPH | ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1375.0	0.00	0.0	37.9	39.1	0.56	15.57
1380.0	0.00	0.0	36.8	37.9	0.55	15.54
1385.0	0.00	0.0	35.7	36.8	0.55	15.50
1390.0	0.00	0.0	34.6	35.7	0.55	15.47
1395.0	0.00	0.0	33.6	34.6	0.54	15.44
1400.0	0.00	0.0	32.5	33.6	0.54	15.41
1405.0	0.00	0.0	31.4	32.5	0.54	15.38
1410.0	0.00	0.0	30.3	31.4	0.53	15.35
1415.0	0.00	0.0	29.3	30.3	0.53	15.31
1420.0	0.00	0.0	28.2	29.3	0.53	15.28
1425.0	0.00	0.0	27.2	28.2	0.53	15.25
1430.0	0.00	0.0	26.1	27.2	0.52	15.22
1435.0	0.00	0.0	25.1	26.1	0.52	15.19
1440.0	0.00	0.0	24.0	25.1	0.52	15.16

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 131.14 cfs
Peak Outflow = 70.91 cfs Q_{100} Pre = 62 cfs
Peak Elevation = 21.90 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	118,109 cu-ft
Total Storage in Pond	=	118,109 cu-ft

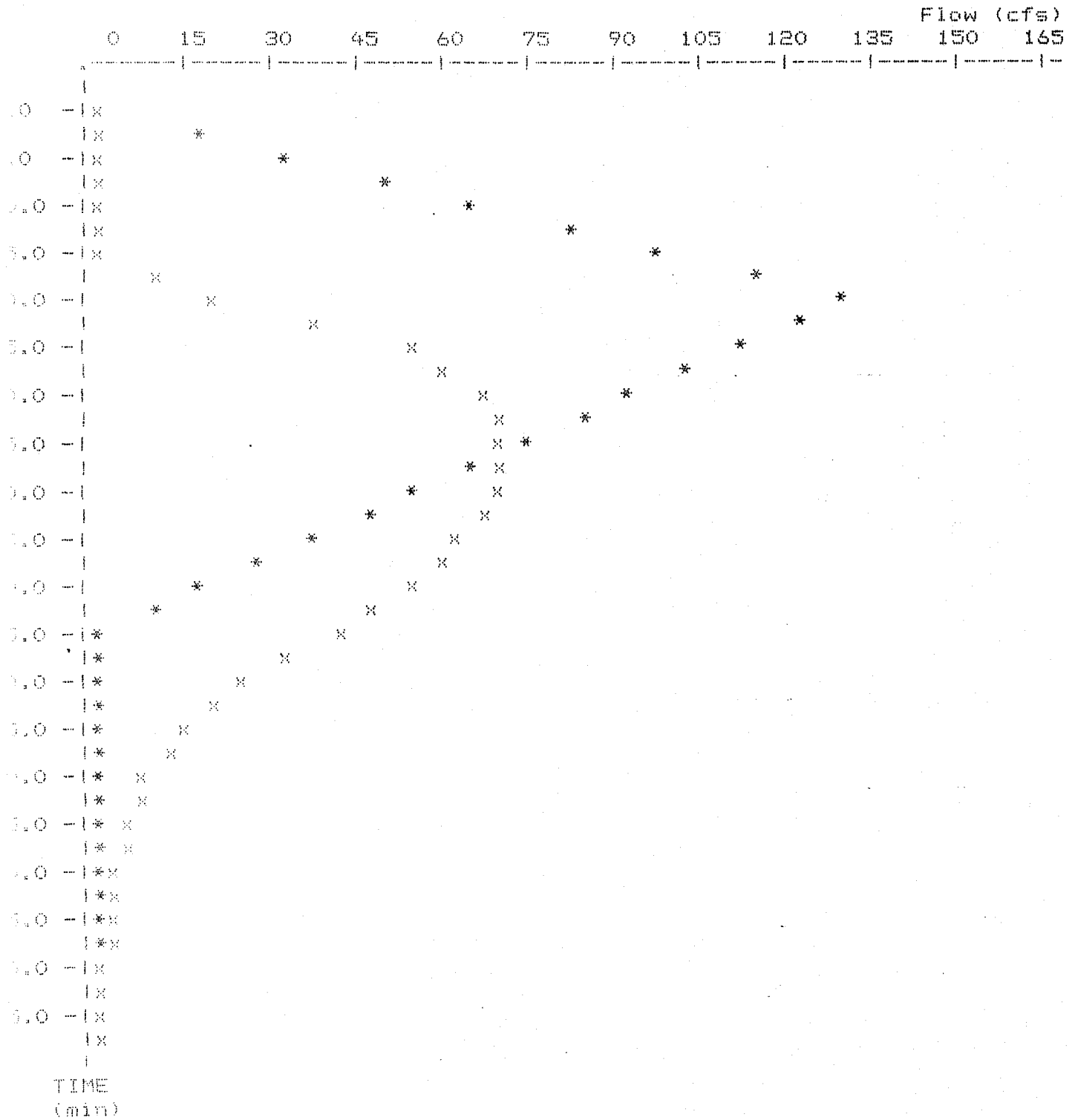
POND-2 Version: 5.17 S/N: 1295130250

Return Freq: 100 years

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG100 .HYD
Outflow Hydrograph: b:100OUT .HYD

EXECUTED: 08-13-1992
11:01:50

Peak Inflow = 131.14 cfs
Peak Outflow = 70.91 cfs
Peak Elevation = 21.90 ft



* File: b:BG100 .HYD Qmax = 131.1 cfs
x File: b:100OUT .HYD Qmax = 70.9 cfs

```
*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*       STORMWATER MANAGEMENT       *
*   EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG25S .HYD
Outflow Hydrograph: b:2OUT5S .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 97.00 cfs
Peak Outflow = 69.07 cfs
Peak Elevation = 21.83 ft

***** Summary of Approximate Peak Storage *****

Initial Storage = 0 cu-ft
Peak Storage From Storm = 116,119 cu-ft

Total Storage in Pond = 116,119 cu-ft 2.7 ac/ft

Warning: Inflow hydrograph truncated on left side.

```
*****************************************
*                                       *
*            BERKELEY'S GREEN           *
*              SECTIONS 5-8             *
*          STORMWATER MANAGEMENT        *
*   EXTENDED DRY DETENTION (24 HOURS)   *
*                                       *
*****************************************
```

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG1055 .HYD
Outflow Hydrograph: b:10OUT55 .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 176.00 cfs
Peak Outflow = 73.80 cfs
Peak Elevation = 22.00 ft

>>>>>> Warning, pond overtopped during routing. <<<<<<
The calculated peak outflow/elevation is invalid.

>>>>>> Warning, pond overtopped during routing. <<<<<<
The calculated peak outflow/elevation is invalid.

EXECUTED: 08-13-1992 12:05:03 Return Freq: 100 years

```
*****************************************
*                                       *
*            BERKELEY'S GREEN           *
*              SECTIONS 5-8             *
*          STORMWATER MANAGEMENT        *
*   EXTENDED DRY DETENTION (24 HOURS)   *
*                                       *
*****************************************
```

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: b:BG5-8 .PND
Inflow Hydrograph: b:BG10055 .HYD
Outflow Hydrograph: b:100OUT55.HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 304.00 cfs
Peak Outflow = 73.80 cfs
Peak Elevation = 22.00 ft

>>>>> Warning, pond overtopped during routing. <<<<<<
The calculated peak outflow/elevation is invalid.

>>>>>> Warning, pond overtopped during routing. <<<<<<
The calculated peak outflow/elevation is invalid.

POND-2 Version: 5.17
S/N: 1295130250

B50F0 5-8
EXISTING
DETENTION
BASIN

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXISTING DETENTION BASIN

CALCULATED 08-13-1992 10:30:28
DISK FILE: b:BG .VOL

Planimeter scale: 1 inch = 50 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
13.00	0.00	0	0	0	0
14.00	0.55	1,375	1,375	458	458
16.00	2.74	6,850	11,294	7,529	7,988
18.00	5.55	13,875	30,474	20,316	28,304
20.00	9.28	23,200	55,017	36,678	64,981
21.00	11.14	27,850	76,469	25,490	90,471
22.00	13.50	33,750	92,258	30,753	121,224

$$IA = (sq.rt(Area1) + ((Ei-E1)/(E2-E1))*(sq.rt(Area2)-sq.rt(Area1)))^2$$

where: E1, E2 = Closest two elevations with planimeter data
Ei = Elevation at which to interpolate area
Area1,Area2 = Areas computed for E1, E2, respectively
IA = Interpolated area for Ei

*' Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Pond 5 & 6
Low Flow Drain
Principal Spillway
Emergency Spillway
Composite Struct

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	1
14.00	0.3	1
15.00	0.5	1
16.00	0.6	1
17.00	0.7	1
18.00	0.8	1
19.00	0.8	1
20.00	0.9	1
21.00	45.3	1
22.00	73.8	1

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

Outlet Structure File: b:BG5-8 .STR
Planimeter Input File: b:BG .VOL
Rating Table Output File: b:BG5-8 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 22 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table	Q Table
TABLE	1	->	1

Outflow rating table summary was stored in file:
b:BG5-8 .PND

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

>>>>>> Structure No. 1 <<<<<<
(Input Data)

TABLE
Input your own rating table.
E1 (ft) = 13 E2 (ft) = 22.001

Constant (ft) added to each elevation was:

Elev. (ft)	Q (cfs)
13	0
14	.3
15	.5
16	.6
17	.7
18	.8
19	.8
20	.9
21	45.3
22	73.8

Outlet Structure File: BG5-8 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT

****

Outflow Rating Table for Structure #1
TABLE Input your own rating table.

Elevation (ft)	Q (cfs)	Computation Messages
13.00	0.0	
14.00	0.3	
15.00	0.5	
16.00	0.6	
17.00	0.7	
18.00	0.8	
19.00	0.8	
20.00	0.9	
21.00	45.3	
22.00	73.8	

Outlet Structure File: TEST .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outflow Rating Table for Structure #1
CULVERT-CR Circular Culvert (With Inlet Control)

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	orig calcs	Computation Messages		
13.00	0.0		No headwater		
14.00	4.1		Equ.1: HW =1.0	dc=.71	Ac=1.0
15.00	13.4		Equ.1: HW =2.0	dc=1.315	Ac=2.191
16.00	22.3	20.0	Submerged: HW =3.0		
17.00	28.4		Submerged: HW =4.0		
18.00	33.5		Submerged: HW =5.0		
19.00	37.9	32.2	Submerged: HW =6.0		
20.00	41.8	34.8	Submerged: HW =7.0		
21.00	45.3	37.2	Submerged: HW =8.0		
22.00	48.6		Submerged: HW =9.0		

Used Unsubmerged Equ. Form (1) for straight pipe, culvert elev. less than 15.21 ft
Used Submerged Equation for elevations greater than 15.42 ft
HW=Headwater (ft) dc=Critical depth (ft) Ac=Area (sq.ft) at dc

Transition flows interpolated from the following values:
E1=15.21 ft; Q1=15.55 cfs; Dc=1.42 ft; E2=15.42 ft; Q2=17.77 cfs

Outlet Structure File: TEST .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

>>>>>> Structure No. 1 <<<<<<
(Input Data)

CULVERT-CR
Circular Culvert (With Inlet Control)

E1 elev.(ft)?	13
E2 elev.(ft)?	22.001
Diam. (ft)?	2
Inv. el.(ft)?	13
Slope (ft/ft)?	.015
T1 ratio?	
T2 ratio?	
K Coeff.?	.0045
M Coeff.?	2
c Coeff.?	.0317
Y Coeff.?	.69
Form 1 or 2?	1
Slope factor?	.7

Outlet Structure File: TEST .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outlet Structure File: b:TEST .STR
Planimeter Input File: b:BG .VOL
Rating Table Output File: b:TEST .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 22 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
CULVERT-CR	1		->	1

Outflow rating table summary was stored in file:
b:TEST .PND

Outlet Structure File: TEST .STR

85040 5 of 6

POND-2 Version: 5.17
Date Executed:

S/N: 1295130250
Time Executed:

EXIST 24" CULVERT UNDER DAM

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	orig calc	Contributing Structures
13.00	0.0		1
14.00	4.1		1
15.00	13.4		1
16.00	22.3	20.0	1
17.00	28.4		1
18.00	33.5		1
19.00	37.9	32.2	1
20.00	41.8	34.8	1
21.00	45.3	37.2	1
22.00	48.6		1

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outflow Rating Table for Structure #1
ORIFICE-VC Orifice - Vertical Circular

Elevation (ft)	Q (cfs)	Computation Messages
13.00	0.0	E < E1=13.001
14.00	0.3	H =1.0
15.00	0.5	H =2.0
16.00	0.6	H =3.0
17.00	0.7	H =4.0
18.00	0.8	H =5.0
19.00	0.8	H =6.0
20.00	0.9	H =7.0
21.00	1.0	H =8.0
22.00	1.0	H =9.0

C = .6 A = 7.167891E-02 sq.ft.
H (ft) = Table elev. - Datum elev. (13 ft)
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

>>>>>> Structure No. 1 <<<<<<
(Input Data)

ORIFICE-VC
Orifice - Vertical Circular

E1 elev.(ft)?	13.001
E2 elev.(ft)?	22.001
Orifice coeff.?	.6
Invert elev.(ft)?	13
Datum elev.(ft)?	13
Diameter (ft)?	.3021

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outlet Structure File: b:TEST1 .STR
Planimeter Input File: b:BG .VOL
Rating Table Output File: b:TEST1 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 22 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
ORIFICE-VC	1		->	1

Outflow rating table summary was stored in file:
b:TEST1 .PND

85040 5 of 6

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	
14.00	0.3	1
15.00	0.5	1
16.00	0.6	1
17.00	0.7	1
18.00	0.8	1
19.00	0.8	1
20.00	0.9	1
21.00	1.0	1
22.00	1.0	1

BOX 5#6
5' ϕ STANC PIPE

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	
14.00	0.0	
15.00	0.0	
16.00	0.0	
17.00	0.0	
18.00	0.0	
19.00	0.0	
20.00	0.0	1
21.00	48.7	1
22.00	133.7	1

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outlet Structure File: b:TEST1 .STR
Planimeter Input File: b:BG .VOL
Rating Table Output File: b:TEST1 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 22 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
STAND PIPE	1		->	1

Outflow rating table summary was stored in file:
b:TEST1 .PND

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

>>>>>> Structure No. 1 <<<<<<
(Input Data)

STAND PIPE
Stand Pipe with weir or orifice flow

E1 elev.(ft)?	20
E2 elev.(ft)?	22.001
Crest elev.(ft)?	20
Diameter (ft)?	5
Weir coefficient?	3.1
Orifice coefficient?	.6
Start transition elev.(ft) @ ?	
Transition height (ft)?	

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outflow Rating Table for Structure #1
STAND PIPE Stand Pipe with weir or orifice flow

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
13.00	0.0	E < Inv.El.= 20
14.00	0.0	E < El= 20
15.00	0.0	E < El= 20
16.00	0.0	E < El= 20
17.00	0.0	E < El= 20
18.00	0.0	E < El= 20
19.00	0.0	E < El= 20
20.00	0.0	Weir: H =0.0
21.00	48.7 ✓	Weir: H =1.0
22.00	133.7 ✓	Orifice: H =2.0

Weir Cw = 3.1 Weir length = 15.70796 ft
Orifice Co = .6 Orifice area = 19.63496 sq.ft.
Q (cfs) = (Cw * L * H**1.5) or (Co * A * sqr(2*g*H))
No transition used, transition height = 0.0
Weir equation = Orifice equation @ elev.= 21.94152 ft

B5040 586
EMERGENCY SPILLWAY

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	
14.00	0.0	
15.00	0.0	
16.00	0.0	
17.00	0.0	
18.00	0.0	
19.00	0.0	
20.00	0.0	
21.00	0.0	1
22.00	25.2	1

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outlet Structure File: b:TEST1 .STR
Planimeter Input File: b:BG .VDL
Rating Table Output File: b:TEST1 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 22 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
WEIR-XY	1		->	1

Outflow rating table summary was stored in file:
b:TEST1 .PND

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

>>>>>> Structure No. 1 <<<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) = 21 E2 (ft) = 22.001

X dist.(ft)	Y elev.(ft)
0	22
3	21
9	21
12	22

Outlet Structure File: TEST1 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

Outflow Rating Table for Structure #1
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages	
13.00	0.0	E < Y min= 21	
14.00	0.0	E < E1= 21	
15.00	0.0	E < E1= 21	
16.00	0.0	E < E1= 21	
17.00	0.0	E < E1= 21	
18.00	0.0	E < E1= 21	
19.00	0.0	E < E1= 21	
20.00	0.0	E < E1= 21	
21.00	0.0	E = Y min= 21	
22.00	25.2	W(ft)=12.0	Max. D(ft)=1.0

OLD RUN

POND-2 Version: 5.17 S/N: 1295130250

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-30-1992 11:51:06

Hydrograph file: B:BG2 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 5.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	16.96	33.92	50.87	67.83	58.14	48.45
35.00	38.76	29.07	19.38	9.69	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
525.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
805.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
980.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1365.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1435.00	0.00	0.00					

POND-2 Version: 5.17 S/N: 1295130250

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-30-1992 11:51:29

Hydrograph file: B:BG10 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 5.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	27.61	45.22	67.83	90.44	77.52	64.60
35.00	51.68	38.76	25.84	12.92	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
525.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
805.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
980.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1365.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1435.00	0.00	0.00					

POND-2 Version: 5.17 S/N: 1295130250

>>>>> HYDROGRAPH PRINTOUT <<<<<

04-30-1992 11:51:52

Hydrograph file: B:BG100 .HYD

HYDROGRAPH ORDINATES (cfs)
Time increment = 5.00 Minutes
Time on left represents time for first Q in each row.

Time Minutes							
0.00	0.00	32.79	65.57	98.36	131.14	112.41	93.67
35.00	74.94	56.20	37.47	18.73	0.00	0.00	0.00
70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
385.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
420.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
490.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
525.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
560.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
595.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
630.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
665.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
805.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
840.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
910.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
945.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
980.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1015.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1050.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1120.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1155.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1260.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1295.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1330.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1365.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1435.00	0.00	0.00					

POND-2 Version: 5.17
S/N: 1295130250

BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXISTING DETENTION BASIN

CALCULATED 04-30-1992 11:52:20
DISK FILE: B:BG .VOL

Planimeter scale: 1 inch = 50 ft.

Elevation (ft)	Planimeter (sq.in.)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	* Volume (cubic-ft)	Volume Sum (cubic-ft)
13.00	0.00	0	0	0	0
14.00	0.55	1,375	1,375	458	458
16.00	2.74	6,850	11,294	7,529	7,988
18.00	5.55	13,875	30,474	20,316	28,304
20.00	9.28	23,200	55,017	36,678	64,981
21.00	11.14	27,850	76,469	25,490	90,471
22.00	13.50	33,750	92,258	30,753	121,224

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

***** COMPOSITE OUTFLOW SUMMARY ****

Elevation (ft)	Q (cfs)	Contributing Structures
13.00	0.0	
14.00	0.5	1
15.00	0.6	1
16.00	0.7	1
17.00	0.8	1
18.00	0.8	1
19.00	0.9	1
20.00	1.0	1 +2
21.00	41.8	1 +2 +3
22.00	130.2	1 +2 +3

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

Outlet Structure File: B:BG2 .STR
Planimeter Input File: B:BG .VOL
Rating Table Output File: B:BG2 .PND

Min. Elev.(ft) = 13 Max. Elev.(ft) = 22 Incr.(ft) = 1

Additional elevations (ft) to be included in table:
* *

****
SYSTEM CONNECTIVITY
****

Structure	No.	Q Table		Q Table
ORIFICE-VC	1		->	1
INLET BOX	2		->	2
WEIR-XY	3		->	3

Outflow rating table summary was stored in file:
B:BG2 .PND

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

>>>>>> Structure No. 1 <<<<<<
(Input Data)

ORIFICE-VC
Orifice - Vertical Circular

E1 elev.(ft)?	13.01
E2 elev.(ft)?	22.001
Orifice coeff.?	.6
Invert elev.(ft)?	13.01
Datum elev.(ft)?	12.0
Diameter (ft)?	.3021 3.62"

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

>>>>>> Structure No. 2 <<<<<<
(Input Data)

INLET BOX
Weir & Orifice defined by length and area

E1 elev.(ft)? 20
E2 elev.(ft)? 22.001
Crest elev.(ft)? 20
Weir length (ft)? 12
Weir coefficient? 3.3
Orifice area (sq.ft)? 9
Orifice coefficient? .6
Start transition elev.(ft) @ ?
Transition height (ft)?

RISER

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

>>>>>> Structure No. 3 <<<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) = 20.92 E2 (ft) = 22.001

X dist.(ft)	Y elev.(ft)
0	22
3.24	20.92
19.26	20.92
22.5	22

ES

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

Outflow Rating Table for Structure #1
ORIFICE-VC Orifice - Vertical Circular

Elevation (ft)	Q (cfs)	Computation Messages
13.00	0.0	E < E1= 13.01
14.00	0.5	H =2.0
15.00	0.6	H =3.0
16.00	0.7	H =4.0
17.00	0.8	H =5.0
18.00	0.8	H =6.0
19.00	0.9	H =7.0
20.00	1.0	H =8.0
21.00	1.0	H =9.0
22.00	1.1	H =10.0

C = .6 A = 7.167891E-02 sq.ft.
H (ft) = Table elev. - Datum elev. (12 ft)
Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

Outflow Rating Table for Structure #2
INLET BOX Weir & Orifice defined by length and area

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages	
13.00	0.0	E < Inv.El.= 20	
14.00	0.0	E < El= 20	
15.00	0.0	E < El= 20	
16.00	0.0	E < El= 20	
17.00	0.0	E < El= 20	
18.00	0.0	E < El= 20	
19.00	0.0	E < El= 20	
20.00	0.0	Weir:	H =0.0
21.00	39.6	Weir:	H =1.0
22.00	61.3	Orifice:	H =2.0

Weir Cw = 3.3 Weir length = 12 ft
Orifice Co = .6 Orifice area = 9 sq.ft.
Q (cfs) = (Cw * L * H**1.5) or (Co * A * sqr(2*g*H))
No transition used, transition height = 0.0
Weir equation = Orifice equation @ elev.= 21.09431 ft

Outlet Structure File: BG2 .STR

POND-2 Version: 5.17 S/N: 1295130250
Date Executed: Time Executed:

****
BERKELEY'S GREEN
SECTIONS 5-8
STORMWATER MANAGEMENT
EXTENDED DRY DETENTION (24 HOURS)
****

Outflow Rating Table for Structure #3
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages	
13.00	0.0	E < Y min= 20.92	
14.00	0.0	E < Y min= 20.92	
15.00	0.0	E < Y min= 20.92	
16.00	0.0	E < Y min= 20.92	
17.00	0.0	E < Y min= 20.92	
18.00	0.0	E < Y min= 20.92	
19.00	0.0	E < Y min= 20.92	
20.00	0.0	E < E1= 20.92	
21.00	1.2	W(ft)=16.5	Max. D(ft)=8.0
22.00	67.8	W(ft)=22.5	Max. D(ft)=1.08

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 2 years

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*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*        STORMWATER MANAGEMENT      *
*  EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Inflow Hydrograph: B:BG2 .HYD
Rating Table file: B:BG2 .PND

----INITIAL CONDITIONS----
Elevation = 13.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
13.00	0.0	0
14.00	0.5	458
15.00	0.6	2,854
16.00	0.7	7,988
17.00	0.8	16,389
18.00	0.8	28,304
19.00	0.9	44,311
20.00	1.0	64,982
21.00	41.8	90,471
22.00	130.2	121,224

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
3.1	3.6
19.0	19.6
53.3	54.0
109.3	110.1
188.7	189.5
295.4	296.3
433.2	434.2
603.1	644.9
808.2	938.4

Time increment (t) = 5.0 min.

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
0.0	0.00
5.0	16.96
10.0	33.92
15.0	50.87
20.0	67.83
25.0	58.14
30.0	48.45
35.0	38.76
40.0	29.07
45.0	19.38
50.0	9.69
55.0	0.00
60.0	0.00
65.0	0.00
70.0	0.00
75.0	0.00
80.0	0.00
85.0	0.00
90.0	0.00
95.0	0.00
100.0	0.00
105.0	0.00
110.0	0.00
115.0	0.00
120.0	0.00
125.0	0.00
130.0	0.00
135.0	0.00
140.0	0.00
145.0	0.00
150.0	0.00
155.0	0.00
160.0	0.00
165.0	0.00
170.0	0.00
175.0	0.00
180.0	0.00
185.0	0.00
190.0	0.00
195.0	0.00
200.0	0.00
205.0	0.00
210.0	0.00
215.0	0.00
220.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
-----	0.0	0.0	0.00	13.00
17.0	15.8	17.0	0.58	14.83
50.9	65.2	66.7	0.72	16.23
84.8	148.4	150.0	0.80	17.50
118.7	265.4	267.1	0.87	18.73
126.0	389.4	391.3	0.97	19.69
106.6	470.1	496.0	12.96	20.29
87.2	507.6	557.3	24.83	20.58
67.8	518.8	575.5	28.35	20.67
48.5	513.7	567.2	26.75	20.63
29.1	498.7	542.8	22.02	20.52
9.7	477.7	508.4	15.37	20.35
0.0	458.9	477.7	9.42	20.21
0.0	447.3	458.9	5.77	20.12
0.0	440.2	447.3	3.54	20.06
0.0	435.9	440.2	2.17	20.03
0.0	433.2	435.9	1.33	20.01
0.0	431.2	433.2	1.00	19.99
0.0	429.3	431.2	1.00	19.98
0.0	427.3	429.3	1.00	19.96
0.0	425.3	427.3	0.99	19.95
0.0	423.3	425.3	0.99	19.94
0.0	421.3	423.3	0.99	19.92
0.0	419.3	421.3	0.99	19.91
0.0	417.3	419.3	0.99	19.89
0.0	415.4	417.3	0.99	19.88
0.0	413.4	415.4	0.99	19.86
0.0	411.4	413.4	0.98	19.85
0.0	409.5	411.4	0.98	19.83
0.0	407.5	409.5	0.98	19.82
0.0	405.5	407.5	0.98	19.81
0.0	403.6	405.5	0.98	19.79
0.0	401.6	403.6	0.98	19.78
0.0	399.7	401.6	0.98	19.76
0.0	397.7	399.7	0.97	19.75
0.0	395.8	397.7	0.97	19.74
0.0	393.8	395.8	0.97	19.72
0.0	391.9	393.8	0.97	19.71
0.0	389.9	391.9	0.97	19.69
0.0	388.0	389.9	0.97	19.68
0.0	386.1	388.0	0.97	19.66
0.0	384.1	386.1	0.97	19.65
0.0	382.2	384.1	0.96	19.64
0.0	380.3	382.2	0.96	19.62
0.0	378.4	380.3	0.96	19.61

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
225.0	0.001	0.0	376.5	378.4	0.96	19.60
230.0	0.001	0.0	374.5	376.5	0.96	19.58
235.0	0.001	0.0	372.6	374.5	0.96	19.57
240.0	0.001	0.0	370.7	372.6	0.96	19.55
245.0	0.001	0.0	368.8	370.7	0.95	19.54
250.0	0.001	0.0	366.9	368.8	0.95	19.53
255.0	0.001	0.0	365.0	366.9	0.95	19.51
260.0	0.001	0.0	363.1	365.0	0.95	19.50
265.0	0.001	0.0	361.2	363.1	0.95	19.48
270.0	0.001	0.0	359.3	361.2	0.95	19.47
275.0	0.001	0.0	357.4	359.3	0.95	19.46
280.0	0.001	0.0	355.5	357.4	0.94	19.44
285.0	0.001	0.0	353.6	355.5	0.94	19.43
290.0	0.001	0.0	351.8	353.6	0.94	19.42
295.0	0.001	0.0	349.9	351.8	0.94	19.40
300.0	0.001	0.0	348.0	349.9	0.94	19.39
305.0	0.001	0.0	346.1	348.0	0.94	19.37
310.0	0.001	0.0	344.2	346.1	0.94	19.36
315.0	0.001	0.0	342.4	344.2	0.93	19.35
320.0	0.001	0.0	340.5	342.4	0.93	19.33
325.0	0.001	0.0	338.6	340.5	0.93	19.32
330.0	0.001	0.0	336.8	338.6	0.93	19.31
335.0	0.001	0.0	334.9	336.8	0.93	19.29
340.0	0.001	0.0	333.1	334.9	0.93	19.28
345.0	0.001	0.0	331.2	333.1	0.93	19.27
350.0	0.001	0.0	329.4	331.2	0.93	19.25
355.0	0.001	0.0	327.5	329.4	0.92	19.24
360.0	0.001	0.0	325.7	327.5	0.92	19.23
365.0	0.001	0.0	323.8	325.7	0.92	19.21
370.0	0.001	0.0	322.0	323.8	0.92	19.20
375.0	0.001	0.0	320.2	322.0	0.92	19.19
380.0	0.001	0.0	318.3	320.2	0.92	19.17
385.0	0.001	0.0	316.5	318.3	0.92	19.16
390.0	0.001	0.0	314.7	316.5	0.91	19.15
395.0	0.001	0.0	312.8	314.7	0.91	19.13
400.0	0.001	0.0	311.0	312.8	0.91	19.12
405.0	0.001	0.0	309.2	311.0	0.91	19.11
410.0	0.001	0.0	307.4	309.2	0.91	19.09
415.0	0.001	0.0	305.6	307.4	0.91	19.08
420.0	0.001	0.0	303.7	305.6	0.91	19.07
425.0	0.001	0.0	301.9	303.7	0.91	19.05
430.0	0.001	0.0	300.1	301.9	0.90	19.04
435.0	0.001	0.0	298.3	300.1	0.90	19.03
440.0	0.001	0.0	296.5	298.3	0.90	19.01
445.0	0.001	0.0	294.7	296.5	0.90	19.00
450.0	0.001	0.0	292.9	294.7	0.90	18.99

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Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
455.0	0.00	0.0	291.1	292.9	0.90	18.97
460.0	0.00	0.0	289.3	291.1	0.90	18.95
465.0	0.00	0.0	287.5	289.3	0.89	18.93
470.0	0.00	0.0	285.8	287.5	0.89	18.92
475.0	0.00	0.0	284.0	285.8	0.89	18.90
480.0	0.00	0.0	282.2	284.0	0.89	18.88
485.0	0.00	0.0	280.4	282.2	0.89	18.87
490.0	0.00	0.0	278.7	280.4	0.89	18.85
495.0	0.00	0.0	276.9	278.7	0.88	18.83
500.0	0.00	0.0	275.1	276.9	0.88	18.82
505.0	0.00	0.0	273.4	275.1	0.88	18.80
510.0	0.00	0.0	271.6	273.4	0.88	18.79
515.0	0.00	0.0	269.9	271.6	0.88	18.77
520.0	0.00	0.0	268.1	269.9	0.88	18.75
525.0	0.00	0.0	266.4	268.1	0.87	18.74
530.0	0.00	0.0	264.6	266.4	0.87	18.72
535.0	0.00	0.0	262.9	264.6	0.87	18.70
540.0	0.00	0.0	261.1	262.9	0.87	18.69
545.0	0.00	0.0	259.4	261.1	0.87	18.67
550.0	0.00	0.0	257.7	259.4	0.87	18.65
555.0	0.00	0.0	255.9	257.7	0.86	18.64
560.0	0.00	0.0	254.2	255.9	0.86	18.62
565.0	0.00	0.0	252.5	254.2	0.86	18.61
570.0	0.00	0.0	250.8	252.5	0.86	18.59
575.0	0.00	0.0	249.1	250.8	0.86	18.57
580.0	0.00	0.0	247.4	249.1	0.86	18.56
585.0	0.00	0.0	245.6	247.4	0.85	18.54
590.0	0.00	0.0	243.9	245.6	0.85	18.53
595.0	0.00	0.0	242.2	243.9	0.85	18.51
600.0	0.00	0.0	240.5	242.2	0.85	18.49
605.0	0.00	0.0	238.8	240.5	0.85	18.48
610.0	0.00	0.0	237.2	238.8	0.85	18.46
615.0	0.00	0.0	235.5	237.2	0.84	18.45
620.0	0.00	0.0	233.8	235.5	0.84	18.43
625.0	0.00	0.0	232.1	233.8	0.84	18.41
630.0	0.00	0.0	230.4	232.1	0.84	18.40
635.0	0.00	0.0	228.7	230.4	0.84	18.38
640.0	0.00	0.0	227.1	228.7	0.84	18.37
645.0	0.00	0.0	225.4	227.1	0.84	18.35
650.0	0.00	0.0	223.7	225.4	0.83	18.34
655.0	0.00	0.0	222.1	223.7	0.83	18.32
660.0	0.00	0.0	220.4	222.1	0.83	18.30
665.0	0.00	0.0	218.7	220.4	0.83	18.29
670.0	0.00	0.0	217.1	218.7	0.83	18.27
675.0	0.00	0.0	215.4	217.1	0.83	18.26
680.0	0.00	0.0	213.8	215.4	0.82	18.24

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Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
685.0	0.001	0.0	212.1	213.8	0.82	18.23
690.0	0.001	0.0	210.5	212.1	0.82	18.21
695.0	0.001	0.0	208.9	210.5	0.82	18.20
700.0	0.001	0.0	207.2	208.9	0.82	18.18
705.0	0.001	0.0	205.6	207.2	0.82	18.17
710.0	0.001	0.0	204.0	205.6	0.82	18.15
715.0	0.001	0.0	202.3	204.0	0.81	18.14
720.0	0.001	0.0	200.7	202.3	0.81	18.12
725.0	0.001	0.0	199.1	200.7	0.81	18.11
730.0	0.001	0.0	197.5	199.1	0.81	18.09
735.0	0.001	0.0	195.9	197.5	0.81	18.07
740.0	0.001	0.0	194.2	195.9	0.81	18.06
745.0	0.001	0.0	192.6	194.2	0.80	18.04
750.0	0.001	0.0	191.0	192.6	0.80	18.03
755.0	0.001	0.0	189.4	191.0	0.80	18.01
760.0	0.001	0.0	187.8	189.4	0.80	18.00
765.0	0.001	0.0	186.2	187.8	0.80	17.98
770.0	0.001	0.0	184.6	186.2	0.80	17.96
775.0	0.001	0.0	183.0	184.6	0.80	17.94
780.0	0.001	0.0	181.4	183.0	0.80	17.92
785.0	0.001	0.0	179.8	181.4	0.80	17.90
790.0	0.001	0.0	178.2	179.8	0.80	17.88
795.0	0.001	0.0	176.6	178.2	0.80	17.86
800.0	0.001	0.0	175.0	176.6	0.80	17.84
805.0	0.001	0.0	173.4	175.0	0.80	17.82
810.0	0.001	0.0	171.8	173.4	0.80	17.80
815.0	0.001	0.0	170.2	171.8	0.80	17.78
820.0	0.001	0.0	168.6	170.2	0.80	17.76
825.0	0.001	0.0	167.0	168.6	0.80	17.74
830.0	0.001	0.0	165.4	167.0	0.80	17.72
835.0	0.001	0.0	163.8	165.4	0.80	17.70
840.0	0.001	0.0	162.2	163.8	0.80	17.68
845.0	0.001	0.0	160.6	162.2	0.80	17.66
850.0	0.001	0.0	159.0	160.6	0.80	17.64
855.0	0.001	0.0	157.4	159.0	0.80	17.62
860.0	0.001	0.0	155.8	157.4	0.80	17.60
865.0	0.001	0.0	154.2	155.8	0.80	17.58
870.0	0.001	0.0	152.6	154.2	0.80	17.56
875.0	0.001	0.0	151.0	152.6	0.80	17.54
880.0	0.001	0.0	149.4	151.0	0.80	17.52
885.0	0.001	0.0	147.8	149.4	0.80	17.50
890.0	0.001	0.0	146.2	147.8	0.80	17.48
895.0	0.001	0.0	144.6	146.2	0.80	17.46
900.0	0.001	0.0	143.0	144.6	0.80	17.44
905.0	0.001	0.0	141.4	143.0	0.80	17.42
910.0	0.001	0.0	139.8	141.4	0.80	17.39

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Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
915.0	0.00
920.0	0.00
925.0	0.00
930.0	0.00
935.0	0.00
940.0	0.00
945.0	0.00
950.0	0.00
955.0	0.00
960.0	0.00
965.0	0.00
970.0	0.00
975.0	0.00
980.0	0.00
985.0	0.00
990.0	0.00
995.0	0.00
1000.0	0.00
1005.0	0.00
1010.0	0.00
1015.0	0.00
1020.0	0.00
1025.0	0.00
1030.0	0.00
1035.0	0.00
1040.0	0.00
1045.0	0.00
1050.0	0.00
1055.0	0.00
1060.0	0.00
1065.0	0.00
1070.0	0.00
1075.0	0.00
1080.0	0.00
1085.0	0.00
1090.0	0.00
1095.0	0.00
1100.0	0.00
1105.0	0.00
1110.0	0.00
1115.0	0.00
1120.0	0.00
1125.0	0.00
1130.0	0.00
1135.0	0.00
1140.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	138.2	139.8	0.80	17.37
0.0	136.6	138.2	0.80	17.35
0.0	135.0	136.6	0.80	17.33
0.0	133.4	135.0	0.80	17.31
0.0	131.8	133.4	0.80	17.29
0.0	130.2	131.8	0.80	17.27
0.0	128.6	130.2	0.80	17.25
0.0	127.0	128.6	0.80	17.23
0.0	125.4	127.0	0.80	17.21
0.0	123.8	125.4	0.80	17.19
0.0	122.2	123.8	0.80	17.17
0.0	120.6	122.2	0.80	17.15
0.0	119.0	120.6	0.80	17.13
0.0	117.4	119.0	0.80	17.11
0.0	115.8	117.4	0.80	17.09
0.0	114.2	115.8	0.80	17.07
0.0	112.6	114.2	0.80	17.05
0.0	111.0	112.6	0.80	17.03
0.0	109.4	111.0	0.80	17.01
0.0	107.8	109.4	0.80	16.99
0.0	106.2	107.8	0.80	16.96
0.0	104.7	106.2	0.79	16.93
0.0	103.1	104.7	0.79	16.90
0.0	101.5	103.1	0.79	16.88
0.0	99.9	101.5	0.78	16.85
0.0	98.4	99.9	0.78	16.82
0.0	96.8	98.4	0.78	16.79
0.0	95.3	96.8	0.78	16.76
0.0	93.7	95.3	0.77	16.74
0.0	92.2	93.7	0.77	16.71
0.0	90.6	92.2	0.77	16.68
0.0	89.1	90.6	0.77	16.65
0.0	87.6	89.1	0.76	16.63
0.0	86.1	87.6	0.76	16.60
0.0	84.5	86.1	0.76	16.57
0.0	83.0	84.5	0.75	16.55
0.0	81.5	83.0	0.75	16.52
0.0	80.0	81.5	0.75	16.49
0.0	78.5	80.0	0.75	16.46
0.0	77.0	78.5	0.74	16.44
0.0	75.6	77.0	0.74	16.41
0.0	74.1	75.6	0.74	16.39
0.0	72.6	74.1	0.74	16.36
0.0	71.1	72.6	0.73	16.33
0.0	69.7	71.1	0.73	16.31
0.0	68.2	69.7	0.73	16.28

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Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1145.0	0.001	0.0	66.8	68.2	0.73	16.25
1150.0	0.001	0.0	65.3	66.8	0.72	16.23
1155.0	0.001	0.0	63.9	65.3	0.72	16.20
1160.0	0.001	0.0	62.5	63.9	0.72	16.18
1165.0	0.001	0.0	61.0	62.5	0.72	16.15
1170.0	0.001	0.0	59.6	61.0	0.71	16.13
1175.0	0.001	0.0	58.2	59.6	0.71	16.10
1180.0	0.001	0.0	56.8	58.2	0.71	16.08
1185.0	0.001	0.0	55.4	56.8	0.71	16.05
1190.0	0.001	0.0	54.0	55.4	0.70	16.03
1195.0	0.001	0.0	52.6	54.0	0.70	16.00
1200.0	0.001	0.0	51.2	52.6	0.70	15.96
1205.0	0.001	0.0	49.8	51.2	0.69	15.92
1210.0	0.001	0.0	48.4	49.8	0.69	15.88
1215.0	0.001	0.0	47.0	48.4	0.68	15.84
1220.0	0.001	0.0	45.7	47.0	0.68	15.80
1225.0	0.001	0.0	44.3	45.7	0.68	15.76
1230.0	0.001	0.0	43.0	44.3	0.67	15.72
1235.0	0.001	0.0	41.6	43.0	0.67	15.68
1240.0	0.001	0.0	40.3	41.6	0.66	15.64
1245.0	0.001	0.0	39.0	40.3	0.66	15.60
1250.0	0.001	0.0	37.7	39.0	0.66	15.56
1255.0	0.001	0.0	36.4	37.7	0.65	15.53
1260.0	0.001	0.0	35.1	36.4	0.65	15.49
1265.0	0.001	0.0	33.8	35.1	0.65	15.45
1270.0	0.001	0.0	32.5	33.8	0.64	15.41
1275.0	0.001	0.0	31.2	32.5	0.64	15.38
1280.0	0.001	0.0	30.0	31.2	0.63	15.34
1285.0	0.001	0.0	28.7	30.0	0.63	15.30
1290.0	0.001	0.0	27.4	28.7	0.63	15.26
1295.0	0.001	0.0	26.2	27.4	0.62	15.23
1300.0	0.001	0.0	25.0	26.2	0.62	15.19
1305.0	0.001	0.0	23.7	25.0	0.62	15.16
1310.0	0.001	0.0	22.5	23.7	0.61	15.12
1315.0	0.001	0.0	21.3	22.5	0.61	15.08
1320.0	0.001	0.0	20.1	21.3	0.60	15.05
1325.0	0.001	0.0	18.9	20.1	0.60	15.01
1330.0	0.001	0.0	17.7	18.9	0.60	14.95
1335.0	0.001	0.0	16.5	17.7	0.59	14.88
1340.0	0.001	0.0	15.4	16.5	0.58	14.81
1345.0	0.001	0.0	14.2	15.4	0.57	14.73
1350.0	0.001	0.0	13.1	14.2	0.57	14.66
1355.0	0.001	0.0	12.0	13.1	0.56	14.59
1360.0	0.001	0.0	10.9	12.0	0.55	14.52
1365.0	0.001	0.0	9.8	10.9	0.55	14.45
1370.0	0.001	0.0	8.7	9.8	0.54	14.39

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Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1375.0	0.00	0.0	7.6	8.7	0.53	14.32
1380.0	0.00	0.0	6.6	7.6	0.53	14.25
1385.0	0.00	0.0	5.5	6.6	0.52	14.19
1390.0	0.00	0.0	4.5	5.5	0.51	14.12
1395.0	0.00	0.0	3.5	4.5	0.51	14.06
1400.0	0.00	0.0	2.5	3.5	0.49	13.98
1405.0	0.00	0.0	1.8	2.5	0.35	13.71
1410.0	0.00	0.0	1.3	1.8	0.25	13.51
1415.0	0.00	0.0	0.9	1.3	0.18	13.36
1420.0	0.00	0.0	0.7	0.9	0.13	13.26
1425.0	0.00	0.0	0.5	0.7	0.09	13.19
1430.0	0.00	0.0	0.3	0.5	0.07	13.14
1435.0	0.00	0.0	0.2	0.3	0.05	13.10
1440.0	0.00	0.0	0.2	0.2	0.03	13.07

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 67.83 cfs
Peak Outflow = 28.35 cfs
Peak Elevation = 20.67 ft

***** Summary of Approximate Peak Storage *****

Initial Storage = 0 cu-ft
Peak Storage From Storm = 82,066 cu-ft

Total Storage in Pond = 82,066 cu-ft

POND-2 Version: 5.17 S/N: 1295130250

Return Freq: 2 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG2 .HYD
Outflow Hydrograph: B:2OUT .HYD

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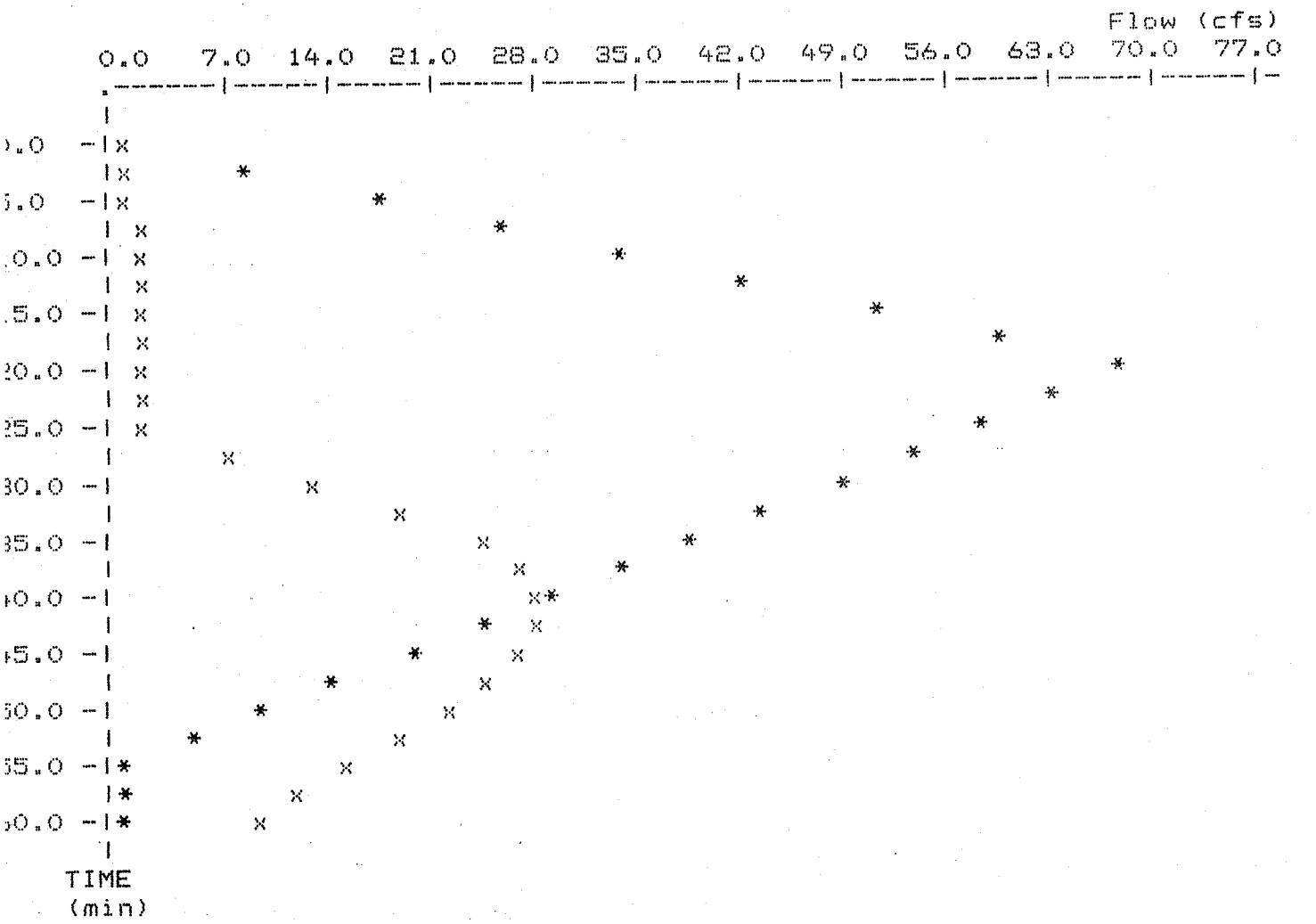
Peak Inflow = 67.83 cfs
Peak Outflow = 28.35 cfs
Peak Elevation = 20.67 ft



* File: B:BG2 .HYD Qmax = 67.8 cfs
x File: B:2OUT .HYD Qmax = 28.4 cfs

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Return Freq: 10 years

```
*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*        STORMWATER MANAGEMENT      *
*   EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Inflow Hydrograph: B:BG10 .HYD
Rating Table file: B:BG2 .PND

-----INITIAL CONDITIONS-----
Elevation = 13.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
13.00	0.0	0
14.00	0.5	458
15.00	0.6	2,854
16.00	0.7	7,988
17.00	0.8	16,389
18.00	0.8	28,304
19.00	0.9	44,311
20.00	1.0	64,982
21.00	41.8	90,471
22.00	130.2	121,224

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
3.1	3.6
19.0	19.6
53.3	54.0
109.3	110.1
188.7	189.5
295.4	296.3
433.2	434.2
603.1	644.9
808.2	938.4

Time increment (t) = 5.0 min.

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	-----	0.0	0.0	0.00	13.00
5.0	27.61	27.6	26.4	27.6	0.62	15.23
10.0	45.22	72.8	97.6	99.2	0.78	16.81
15.0	67.83	113.1	209.0	210.7	0.82	18.20
20.0	90.44	158.3	365.4	367.3	0.95	19.51
25.0	77.52	168.0	493.0	533.4	20.20	20.47
30.0	64.60	142.1	555.3	635.1	39.89	20.95
35.0	51.68	116.3	571.9	671.6	49.83	21.09
40.0	38.76	90.4	568.3	662.4	47.05	21.06
45.0	25.84	64.6	553.9	632.9	39.46	20.94
50.0	12.92	38.8	529.3	592.7	31.69	20.75
55.0	0.00	12.9	498.4	542.3	21.92	20.51
60.0	0.00	0.0	471.6	498.4	13.43	20.30
65.0	0.00	0.0	455.1	471.6	8.23	20.18
70.0	0.00	0.0	445.0	455.1	5.04	20.10
75.0	0.00	0.0	438.8	445.0	3.09	20.05
80.0	0.00	0.0	435.0	438.8	1.89	20.02
85.0	0.00	0.0	432.7	435.0	1.16	20.00
90.0	0.00	0.0	430.7	432.7	1.00	19.99
95.0	0.00	0.0	428.7	430.7	1.00	19.97
100.0	0.00	0.0	426.7	428.7	1.00	19.96
105.0	0.00	0.0	424.7	426.7	0.99	19.95
110.0	0.00	0.0	422.8	424.7	0.99	19.93
115.0	0.00	0.0	420.8	422.8	0.99	19.92
120.0	0.00	0.0	418.8	420.8	0.99	19.90
125.0	0.00	0.0	416.8	418.8	0.99	19.89
130.0	0.00	0.0	414.8	416.8	0.99	19.87
135.0	0.00	0.0	412.9	414.8	0.99	19.86
140.0	0.00	0.0	410.9	412.9	0.98	19.85
145.0	0.00	0.0	408.9	410.9	0.98	19.83
150.0	0.00	0.0	407.0	408.9	0.98	19.82
155.0	0.00	0.0	405.0	407.0	0.98	19.80
160.0	0.00	0.0	403.1	405.0	0.98	19.79
165.0	0.00	0.0	401.1	403.1	0.98	19.77
170.0	0.00	0.0	399.1	401.1	0.98	19.76
175.0	0.00	0.0	397.2	399.1	0.97	19.75
180.0	0.00	0.0	395.3	397.2	0.97	19.73
185.0	0.00	0.0	393.3	395.3	0.97	19.72
190.0	0.00	0.0	391.4	393.3	0.97	19.70
195.0	0.00	0.0	389.4	391.4	0.97	19.69
200.0	0.00	0.0	387.5	389.4	0.97	19.68
205.0	0.00	0.0	385.6	387.5	0.97	19.66
210.0	0.00	0.0	383.6	385.6	0.96	19.65
215.0	0.00	0.0	381.7	383.6	0.96	19.63
220.0	0.00	0.0	379.8	381.7	0.96	19.62

POND-2 Version: 5.17 S/N: 1295130250
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Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
225.0	0.001
230.0	0.001
235.0	0.001
240.0	0.001
245.0	0.001
250.0	0.001
255.0	0.001
260.0	0.001
265.0	0.001
270.0	0.001
275.0	0.001
280.0	0.001
285.0	0.001
290.0	0.001
295.0	0.001
300.0	0.001
305.0	0.001
310.0	0.001
315.0	0.001
320.0	0.001
325.0	0.001
330.0	0.001
335.0	0.001
340.0	0.001
345.0	0.001
350.0	0.001
355.0	0.001
360.0	0.001
365.0	0.001
370.0	0.001
375.0	0.001
380.0	0.001
385.0	0.001
390.0	0.001
395.0	0.001
400.0	0.001
405.0	0.001
410.0	0.001
415.0	0.001
420.0	0.001
425.0	0.001
430.0	0.001
435.0	0.001
440.0	0.001
445.0	0.001
450.0	0.001

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	377.9	379.8	0.96	19.61
0.0	375.9	377.9	0.96	19.59
0.0	374.0	375.9	0.96	19.58
0.0	372.1	374.0	0.96	19.56
0.0	370.2	372.1	0.95	19.55
0.0	368.3	370.2	0.95	19.54
0.0	366.4	368.3	0.95	19.52
0.0	364.5	366.4	0.95	19.51
0.0	362.6	364.5	0.95	19.49
0.0	360.7	362.6	0.95	19.48
0.0	358.8	360.7	0.95	19.47
0.0	356.9	358.8	0.95	19.45
0.0	355.0	356.9	0.94	19.44
0.0	353.1	355.0	0.94	19.43
0.0	351.3	353.1	0.94	19.41
0.0	349.4	351.3	0.94	19.40
0.0	347.5	349.4	0.94	19.38
0.0	345.6	347.5	0.94	19.37
0.0	343.8	345.6	0.94	19.36
0.0	341.9	343.8	0.93	19.34
0.0	340.0	341.9	0.93	19.33
0.0	338.2	340.0	0.93	19.32
0.0	336.3	338.2	0.93	19.30
0.0	334.4	336.3	0.93	19.29
0.0	332.6	334.4	0.93	19.28
0.0	330.7	332.6	0.93	19.26
0.0	328.9	330.7	0.92	19.25
0.0	327.0	328.9	0.92	19.24
0.0	325.2	327.0	0.92	19.22
0.0	323.3	325.2	0.92	19.21
0.0	321.5	323.3	0.92	19.20
0.0	319.7	321.5	0.92	19.18
0.0	317.8	319.7	0.92	19.17
0.0	316.0	317.8	0.92	19.16
0.0	314.2	316.0	0.91	19.14
0.0	312.3	314.2	0.91	19.13
0.0	310.5	312.3	0.91	19.12
0.0	308.7	310.5	0.91	19.10
0.0	306.9	308.7	0.91	19.09
0.0	305.1	306.9	0.91	19.08
0.0	303.3	305.1	0.91	19.06
0.0	301.4	303.3	0.91	19.05
0.0	299.6	301.4	0.90	19.04
0.0	297.8	299.6	0.90	19.02
0.0	296.0	297.8	0.90	19.01
0.0	294.2	296.0	0.90	19.00

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Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
455.0	0.001	0.0	292.4	294.2	0.90	18.98
460.0	0.001	0.0	290.6	292.4	0.90	18.96
465.0	0.001	0.0	288.9	290.6	0.89	18.95
470.0	0.001	0.0	287.1	288.9	0.89	18.93
475.0	0.001	0.0	285.3	287.1	0.89	18.91
480.0	0.001	0.0	283.5	285.3	0.89	18.90
485.0	0.001	0.0	281.7	283.5	0.89	18.88
490.0	0.001	0.0	280.0	281.7	0.89	18.86
495.0	0.001	0.0	278.2	280.0	0.88	18.85
500.0	0.001	0.0	276.4	278.2	0.88	18.83
505.0	0.001	0.0	274.7	276.4	0.88	18.81
510.0	0.001	0.0	272.9	274.7	0.88	18.80
515.0	0.001	0.0	271.1	272.9	0.88	18.78
520.0	0.001	0.0	269.4	271.1	0.88	18.76
525.0	0.001	0.0	267.6	269.4	0.87	18.75
530.0	0.001	0.0	265.9	267.6	0.87	18.73
535.0	0.001	0.0	264.2	265.9	0.87	18.72
540.0	0.001	0.0	262.4	264.2	0.87	18.70
545.0	0.001	0.0	260.7	262.4	0.87	18.68
550.0	0.001	0.0	258.9	260.7	0.87	18.67
555.0	0.001	0.0	257.2	258.9	0.87	18.65
560.0	0.001	0.0	255.5	257.2	0.86	18.63
565.0	0.001	0.0	253.8	255.5	0.86	18.62
570.0	0.001	0.0	252.0	253.8	0.86	18.60
575.0	0.001	0.0	250.3	252.0	0.86	18.59
580.0	0.001	0.0	248.6	250.3	0.86	18.57
585.0	0.001	0.0	246.9	248.6	0.86	18.55
590.0	0.001	0.0	245.2	246.9	0.85	18.54
595.0	0.001	0.0	243.5	245.2	0.85	18.52
600.0	0.001	0.0	241.8	243.5	0.85	18.51
605.0	0.001	0.0	240.1	241.8	0.85	18.49
610.0	0.001	0.0	238.4	240.1	0.85	18.47
615.0	0.001	0.0	236.7	238.4	0.85	18.46
620.0	0.001	0.0	235.0	236.7	0.84	18.44
625.0	0.001	0.0	233.3	235.0	0.84	18.43
630.0	0.001	0.0	231.6	233.3	0.84	18.41
635.0	0.001	0.0	230.0	231.6	0.84	18.39
640.0	0.001	0.0	228.3	230.0	0.84	18.38
645.0	0.001	0.0	226.6	228.3	0.84	18.36
650.0	0.001	0.0	225.0	226.6	0.83	18.35
655.0	0.001	0.0	223.3	225.0	0.83	18.33
660.0	0.001	0.0	221.6	223.3	0.83	18.32
665.0	0.001	0.0	220.0	221.6	0.83	18.30
670.0	0.001	0.0	218.3	220.0	0.83	18.29
675.0	0.001	0.0	216.7	218.3	0.83	18.27
680.0	0.001	0.0	215.0	216.7	0.83	18.25

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Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
685.0	0.001	0.0	213.4	215.0	0.82	18.24
690.0	0.001	0.0	211.7	213.4	0.82	18.22
695.0	0.001	0.0	210.1	211.7	0.82	18.21
700.0	0.001	0.0	208.4	210.1	0.82	18.19
705.0	0.001	0.0	206.8	208.4	0.82	18.18
710.0	0.001	0.0	205.2	206.8	0.82	18.16
715.0	0.001	0.0	203.5	205.2	0.81	18.15
720.0	0.001	0.0	201.9	203.5	0.81	18.13
725.0	0.001	0.0	200.3	201.9	0.81	18.12
730.0	0.001	0.0	198.7	200.3	0.81	18.10
735.0	0.001	0.0	197.0	198.7	0.81	18.09
740.0	0.001	0.0	195.4	197.0	0.81	18.07
745.0	0.001	0.0	193.8	195.4	0.81	18.06
750.0	0.001	0.0	192.2	193.8	0.80	18.04
755.0	0.001	0.0	190.6	192.2	0.80	18.03
760.0	0.001	0.0	189.0	190.6	0.80	18.01
765.0	0.001	0.0	187.4	189.0	0.80	17.99
770.0	0.001	0.0	185.8	187.4	0.80	17.97
775.0	0.001	0.0	184.2	185.8	0.80	17.95
780.0	0.001	0.0	182.6	184.2	0.80	17.93
785.0	0.001	0.0	181.0	182.6	0.80	17.91
790.0	0.001	0.0	179.4	181.0	0.80	17.89
795.0	0.001	0.0	177.8	179.4	0.80	17.87
800.0	0.001	0.0	176.2	177.8	0.80	17.85
805.0	0.001	0.0	174.6	176.2	0.80	17.83
810.0	0.001	0.0	173.0	174.6	0.80	17.81
815.0	0.001	0.0	171.4	173.0	0.80	17.79
820.0	0.001	0.0	169.8	171.4	0.80	17.77
825.0	0.001	0.0	168.2	169.8	0.80	17.75
830.0	0.001	0.0	166.6	168.2	0.80	17.73
835.0	0.001	0.0	165.0	166.6	0.80	17.71
840.0	0.001	0.0	163.4	165.0	0.80	17.69
845.0	0.001	0.0	161.8	163.4	0.80	17.67
850.0	0.001	0.0	160.2	161.8	0.80	17.65
855.0	0.001	0.0	158.6	160.2	0.80	17.63
860.0	0.001	0.0	157.0	158.6	0.80	17.61
865.0	0.001	0.0	155.4	157.0	0.80	17.59
870.0	0.001	0.0	153.8	155.4	0.80	17.57
875.0	0.001	0.0	152.2	153.8	0.80	17.55
880.0	0.001	0.0	150.6	152.2	0.80	17.53
885.0	0.001	0.0	149.0	150.6	0.80	17.51
890.0	0.001	0.0	147.4	149.0	0.80	17.49
895.0	0.001	0.0	145.8	147.4	0.80	17.47
900.0	0.001	0.0	144.2	145.8	0.80	17.45
905.0	0.001	0.0	142.6	144.2	0.80	17.43
910.0	0.001	0.0	141.0	142.6	0.80	17.41

POND-2 Version: 5.17 S/N: 1295130250
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Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
915.0	0.00	0.0	139.4	141.0	0.80	17.39
920.0	0.00	0.0	137.8	139.4	0.80	17.37
925.0	0.00	0.0	136.2	137.8	0.80	17.35
930.0	0.00	0.0	134.6	136.2	0.80	17.33
935.0	0.00	0.0	133.0	134.6	0.80	17.31
940.0	0.00	0.0	131.4	133.0	0.80	17.29
945.0	0.00	0.0	129.8	131.4	0.80	17.27
950.0	0.00	0.0	128.2	129.8	0.80	17.25
955.0	0.00	0.0	126.6	128.2	0.80	17.23
960.0	0.00	0.0	125.0	126.6	0.80	17.21
965.0	0.00	0.0	123.4	125.0	0.80	17.19
970.0	0.00	0.0	121.8	123.4	0.80	17.17
975.0	0.00	0.0	120.2	121.8	0.80	17.15
980.0	0.00	0.0	118.6	120.2	0.80	17.13
985.0	0.00	0.0	117.0	118.6	0.80	17.11
990.0	0.00	0.0	115.4	117.0	0.80	17.09
995.0	0.00	0.0	113.8	115.4	0.80	17.07
1000.0	0.00	0.0	112.2	113.8	0.80	17.05
1005.0	0.00	0.0	110.6	112.2	0.80	17.03
1010.0	0.00	0.0	109.0	110.6	0.80	17.01
1015.0	0.00	0.0	107.4	109.0	0.80	16.98
1020.0	0.00	0.0	105.8	107.4	0.80	16.95
1025.0	0.00	0.0	104.2	105.8	0.79	16.92
1030.0	0.00	0.0	102.7	104.2	0.79	16.90
1035.0	0.00	0.0	101.1	102.7	0.79	16.87
1040.0	0.00	0.0	99.5	101.1	0.78	16.84
1045.0	0.00	0.0	97.9	99.5	0.78	16.81
1050.0	0.00	0.0	96.4	97.9	0.78	16.78
1055.0	0.00	0.0	94.8	96.4	0.78	16.76
1060.0	0.00	0.0	93.3	94.8	0.77	16.73
1065.0	0.00	0.0	91.8	93.3	0.77	16.70
1070.0	0.00	0.0	90.2	91.8	0.77	16.67
1075.0	0.00	0.0	88.7	90.2	0.76	16.65
1080.0	0.00	0.0	87.2	88.7	0.76	16.62
1085.0	0.00	0.0	85.6	87.2	0.76	16.59
1090.0	0.00	0.0	84.1	85.6	0.76	16.56
1095.0	0.00	0.0	82.6	84.1	0.75	16.54
1100.0	0.00	0.0	81.1	82.6	0.75	16.51
1105.0	0.00	0.0	79.6	81.1	0.75	16.48
1110.0	0.00	0.0	78.1	79.6	0.75	16.46
1115.0	0.00	0.0	76.7	78.1	0.74	16.43
1120.0	0.00	0.0	75.2	76.7	0.74	16.40
1125.0	0.00	0.0	73.7	75.2	0.74	16.38
1130.0	0.00	0.0	72.2	73.7	0.74	16.35
1135.0	0.00	0.0	70.8	72.2	0.73	16.33
1140.0	0.00	0.0	69.3	70.8	0.73	16.30

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1145.0	0.001	0.0	67.8	69.3	0.73	16.27
1150.0	0.001	0.0	66.4	67.8	0.72	16.25
1155.0	0.001	0.0	65.0	66.4	0.72	16.22
1160.0	0.001	0.0	63.5	65.0	0.72	16.20
1165.0	0.001	0.0	62.1	63.5	0.72	16.17
1170.0	0.001	0.0	60.6	62.1	0.71	16.14
1175.0	0.001	0.0	59.2	60.6	0.71	16.12
1180.0	0.001	0.0	57.8	59.2	0.71	16.09
1185.0	0.001	0.0	56.4	57.8	0.71	16.07
1190.0	0.001	0.0	55.0	56.4	0.70	16.04
1195.0	0.001	0.0	53.6	55.0	0.70	16.02
1200.0	0.001	0.0	52.2	53.6	0.70	15.99
1205.0	0.001	0.0	50.8	52.2	0.69	15.95
1210.0	0.001	0.0	49.4	50.8	0.69	15.91
1215.0	0.001	0.0	48.0	49.4	0.69	15.87
1220.0	0.001	0.0	46.7	48.0	0.68	15.83
1225.0	0.001	0.0	45.3	46.7	0.68	15.79
1230.0	0.001	0.0	44.0	45.3	0.67	15.75
1235.0	0.001	0.0	42.6	44.0	0.67	15.71
1240.0	0.001	0.0	41.3	42.6	0.67	15.67
1245.0	0.001	0.0	40.0	41.3	0.66	15.63
1250.0	0.001	0.0	38.6	40.0	0.66	15.59
1255.0	0.001	0.0	37.3	38.6	0.66	15.55
1260.0	0.001	0.0	36.0	37.3	0.65	15.52
1265.0	0.001	0.0	34.7	36.0	0.65	15.48
1270.0	0.001	0.0	33.4	34.7	0.64	15.44
1275.0	0.001	0.0	32.2	33.4	0.64	15.40
1280.0	0.001	0.0	30.9	32.2	0.64	15.37
1285.0	0.001	0.0	29.6	30.9	0.63	15.33
1290.0	0.001	0.0	28.4	29.6	0.63	15.29
1295.0	0.001	0.0	27.1	28.4	0.63	15.25
1300.0	0.001	0.0	25.9	27.1	0.62	15.22
1305.0	0.001	0.0	24.6	25.9	0.62	15.18
1310.0	0.001	0.0	23.4	24.6	0.61	15.15
1315.0	0.001	0.0	22.2	23.4	0.61	15.11
1320.0	0.001	0.0	21.0	22.2	0.61	15.07
1325.0	0.001	0.0	19.8	21.0	0.60	15.04
1330.0	0.001	0.0	18.6	19.8	0.60	15.00
1335.0	0.001	0.0	17.4	18.6	0.59	14.93
1340.0	0.001	0.0	16.2	17.4	0.59	14.86
1345.0	0.001	0.0	15.0	16.2	0.58	14.79
1350.0	0.001	0.0	13.9	15.0	0.57	14.72
1355.0	0.001	0.0	12.8	13.9	0.56	14.64
1360.0	0.001	0.0	11.7	12.8	0.56	14.57
1365.0	0.001	0.0	10.6	11.7	0.55	14.50
1370.0	0.001	0.0	9.5	10.6	0.54	14.44

POND-2 Version: 5.17 S/N: 1295130250
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Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
1375.0	0.00
1380.0	0.00
1385.0	0.00
1390.0	0.00
1395.0	0.00
1400.0	0.00
1405.0	0.00
1410.0	0.00
1415.0	0.00
1420.0	0.00
1425.0	0.00
1430.0	0.00
1435.0	0.00
1440.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	8.4	9.5	0.54	14.37
0.0	7.3	8.4	0.53	14.30
0.0	6.3	7.3	0.52	14.24
0.0	5.3	6.3	0.52	14.17
0.0	4.2	5.3	0.51	14.11
0.0	3.2	4.2	0.50	14.04
0.0	2.3	3.2	0.45	13.91
0.0	1.7	2.3	0.33	13.65
0.0	1.2	1.7	0.23	13.47
0.0	0.9	1.2	0.17	13.34
0.0	0.6	0.9	0.12	13.24
0.0	0.4	0.6	0.09	13.17
0.0	0.3	0.4	0.06	13.13
0.0	0.2	0.3	0.04	13.09

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 90.44 cfs
Peak Outflow = 49.83 cfs
Peak Elevation = 21.09 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	93,264 cu-ft
Total Storage in Pond	=	93,264 cu-ft

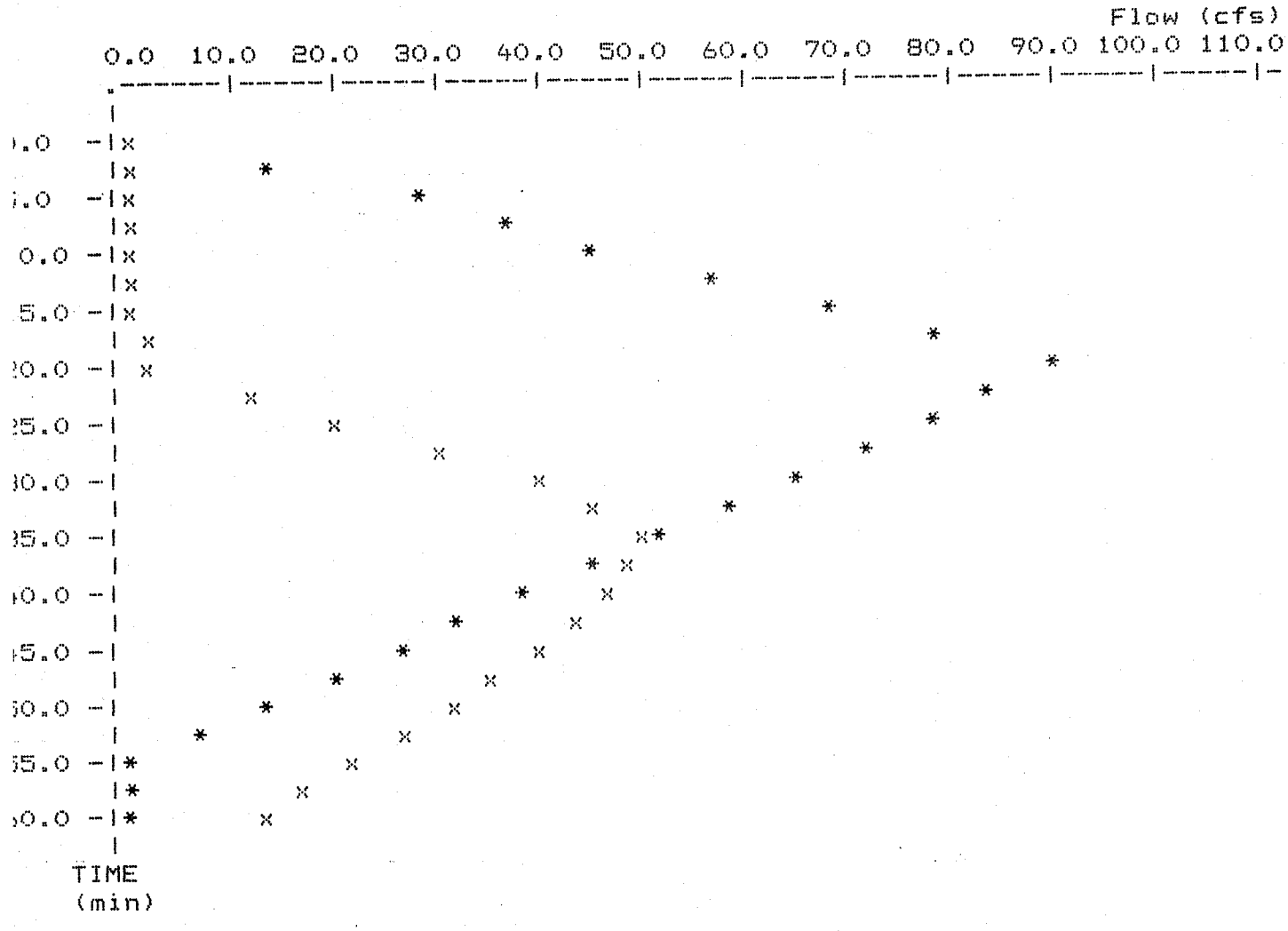
POND-2 Version: 5.17 S/N: 1295130250

Return Freq: 10 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG10 .HYD
Outflow Hydrograph: B:10OUT .HYD

EXECUTED: 04-30-1992
11:55:14

Peak Inflow = 90.44 cfs
Peak Outflow = 49.83 cfs
Peak Elevation = 21.09 ft



* File: B:BG10 .HYD Qmax = 90.4 cfs
x File: B:10OUT .HYD Qmax = 49.8 cfs

```
*************************************
*                                   *
*          BERKELEY'S GREEN         *
*            SECTIONS 5-8           *
*        STORMWATER MANAGEMENT      *
*   EXTENDED DRY DETENTION (24 HOURS) *
*                                   *
*************************************
```

Inflow Hydrograph: B:BG100 .HYD
Rating Table file: B:BG2 .PND

-----INITIAL CONDITIONS-----
Elevation = 13.00 ft
Outflow = 0.00 cfs
Storage = 0 cu-ft

GIVEN POND DATA

ELEVATION (ft)	OUTFLOW (cfs)	STORAGE (cu-ft)
13.00	0.0	0
14.00	0.5	458
15.00	0.6	2,854
16.00	0.7	7,988
17.00	0.8	16,389
18.00	0.8	28,304
19.00	0.9	44,311
20.00	1.0	64,982
21.00	41.8	90,471
22.00	130.2	121,224

INTERMEDIATE ROUTING COMPUTATIONS

2S/t (cfs)	2S/t + O (cfs)
0.0	0.0
3.1	3.6
19.0	19.6
53.3	54.0
109.3	110.1
188.7	189.5
295.4	296.3
433.2	434.2
603.1	644.9
808.2	938.4

Time increment (t) = 5.0 min.

POND-2 Version: 5.17 S/N: 1295130250
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Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	0.00	------	0.0	0.0	0.00	13.00
5.0	32.79	32.8	31.5	32.8	0.64	15.38
10.0	65.57	98.4	128.3	129.9	0.80	17.25
15.0	98.36	163.9	290.4	292.2	0.90	18.96
20.0	131.14	229.5	484.7	519.9	17.59	20.41
25.0	112.41	243.6	594.5	728.3	66.91	21.28
30.0	93.67	206.1	623.2	800.5	88.68	21.53
35.0	74.94	168.6	619.7	791.8	86.04	21.50
40.0	56.20	131.1	603.4	750.8	73.71	21.36
45.0	37.47	93.7	582.1	697.1	57.52	21.18
50.0	18.73	56.2	557.3	638.3	40.51	20.97
55.0	0.00	18.7	519.1	576.0	28.45	20.67
60.0	0.00	0.0	484.2	519.1	17.43	20.40
65.0	0.00	0.0	462.9	484.2	10.68	20.24
70.0	0.00	0.0	449.8	462.9	6.55	20.14
75.0	0.00	0.0	441.7	449.8	4.01	20.07
80.0	0.00	0.0	436.8	441.7	2.46	20.04
85.0	0.00	0.0	433.8	436.8	1.51	20.01
90.0	0.00	0.0	431.8	433.8	1.00	20.00
95.0	0.00	0.0	429.8	431.8	1.00	19.98
100.0	0.00	0.0	427.8	429.8	1.00	19.97
105.0	0.00	0.0	425.8	427.8	1.00	19.95
110.0	0.00	0.0	423.8	425.8	0.99	19.94
115.0	0.00	0.0	421.9	423.8	0.99	19.92
120.0	0.00	0.0	419.9	421.9	0.99	19.91
125.0	0.00	0.0	417.9	419.9	0.99	19.90
130.0	0.00	0.0	415.9	417.9	0.99	19.88
135.0	0.00	0.0	413.9	415.9	0.99	19.87
140.0	0.00	0.0	412.0	413.9	0.99	19.85
145.0	0.00	0.0	410.0	412.0	0.98	19.84
150.0	0.00	0.0	408.0	410.0	0.98	19.82
155.0	0.00	0.0	406.1	408.0	0.98	19.81
160.0	0.00	0.0	404.1	406.1	0.98	19.80
165.0	0.00	0.0	402.2	404.1	0.98	19.78
170.0	0.00	0.0	400.2	402.2	0.98	19.77
175.0	0.00	0.0	398.3	400.2	0.98	19.75
180.0	0.00	0.0	396.3	398.3	0.97	19.74
185.0	0.00	0.0	394.4	396.3	0.97	19.73
190.0	0.00	0.0	392.4	394.4	0.97	19.71
195.0	0.00	0.0	390.5	392.4	0.97	19.70
200.0	0.00	0.0	388.6	390.5	0.97	19.68
205.0	0.00	0.0	386.6	388.6	0.97	19.67
210.0	0.00	0.0	384.7	386.6	0.97	19.65
215.0	0.00	0.0	382.8	384.7	0.96	19.64
220.0	0.00	0.0	380.8	382.8	0.96	19.63

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Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
225.0	0.001	0.0	378.9	380.8	0.96	19.61
230.0	0.001	0.0	377.0	378.9	0.96	19.60
235.0	0.001	0.0	375.1	377.0	0.96	19.59
240.0	0.001	0.0	373.2	375.1	0.96	19.57
245.0	0.001	0.0	371.2	373.2	0.96	19.56
250.0	0.001	0.0	369.3	371.2	0.95	19.54
255.0	0.001	0.0	367.4	369.3	0.95	19.53
260.0	0.001	0.0	365.5	367.4	0.95	19.52
265.0	0.001	0.0	363.6	365.5	0.95	19.50
270.0	0.001	0.0	361.7	363.6	0.95	19.49
275.0	0.001	0.0	359.8	361.7	0.95	19.47
280.0	0.001	0.0	357.9	359.8	0.95	19.46
285.0	0.001	0.0	356.1	357.9	0.94	19.45
290.0	0.001	0.0	354.2	356.1	0.94	19.43
295.0	0.001	0.0	352.3	354.2	0.94	19.42
300.0	0.001	0.0	350.4	352.3	0.94	19.41
305.0	0.001	0.0	348.5	350.4	0.94	19.39
310.0	0.001	0.0	346.7	348.5	0.94	19.38
315.0	0.001	0.0	344.8	346.7	0.94	19.37
320.0	0.001	0.0	342.9	344.8	0.94	19.35
325.0	0.001	0.0	341.0	342.9	0.93	19.34
330.0	0.001	0.0	339.2	341.0	0.93	19.32
335.0	0.001	0.0	337.3	339.2	0.93	19.31
340.0	0.001	0.0	335.5	337.3	0.93	19.30
345.0	0.001	0.0	333.6	335.5	0.93	19.28
350.0	0.001	0.0	331.7	333.6	0.93	19.27
355.0	0.001	0.0	329.9	331.7	0.93	19.26
360.0	0.001	0.0	328.0	329.9	0.92	19.24
365.0	0.001	0.0	326.2	328.0	0.92	19.23
370.0	0.001	0.0	324.4	326.2	0.92	19.22
375.0	0.001	0.0	322.5	324.4	0.92	19.20
380.0	0.001	0.0	320.7	322.5	0.92	19.19
385.0	0.001	0.0	318.8	320.7	0.92	19.18
390.0	0.001	0.0	317.0	318.8	0.92	19.16
395.0	0.001	0.0	315.2	317.0	0.92	19.15
400.0	0.001	0.0	313.3	315.2	0.91	19.14
405.0	0.001	0.0	311.5	313.3	0.91	19.12
410.0	0.001	0.0	309.7	311.5	0.91	19.11
415.0	0.001	0.0	307.9	309.7	0.91	19.10
420.0	0.001	0.0	306.1	307.9	0.91	19.08
425.0	0.001	0.0	304.3	306.1	0.91	19.07
430.0	0.001	0.0	302.4	304.3	0.91	19.06
435.0	0.001	0.0	300.6	302.4	0.90	19.04
440.0	0.001	0.0	298.8	300.6	0.90	19.03
445.0	0.001	0.0	297.0	298.8	0.90	19.02
450.0	0.001	0.0	295.2	297.0	0.90	19.01

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Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
455.0	0.001	0.0	293.4	295.2	0.90	18.99
460.0	0.001	0.0	291.6	293.4	0.90	18.97
465.0	0.001	0.0	289.8	291.6	0.90	18.96
470.0	0.001	0.0	288.0	289.8	0.89	18.94
475.0	0.001	0.0	286.3	288.0	0.89	18.92
480.0	0.001	0.0	284.5	286.3	0.89	18.91
485.0	0.001	0.0	282.7	284.5	0.89	18.89
490.0	0.001	0.0	280.9	282.7	0.89	18.87
495.0	0.001	0.0	279.2	280.9	0.89	18.86
500.0	0.001	0.0	277.4	279.2	0.88	18.84
505.0	0.001	0.0	275.6	277.4	0.88	18.82
510.0	0.001	0.0	273.9	275.6	0.88	18.81
515.0	0.001	0.0	272.1	273.9	0.88	18.79
520.0	0.001	0.0	270.4	272.1	0.88	18.77
525.0	0.001	0.0	268.6	270.4	0.88	18.76
530.0	0.001	0.0	266.9	268.6	0.87	18.74
535.0	0.001	0.0	265.1	266.9	0.87	18.72
540.0	0.001	0.0	263.4	265.1	0.87	18.71
545.0	0.001	0.0	261.6	263.4	0.87	18.69
550.0	0.001	0.0	259.9	261.6	0.87	18.68
555.0	0.001	0.0	258.2	259.9	0.87	18.66
560.0	0.001	0.0	256.4	258.2	0.86	18.64
565.0	0.001	0.0	254.7	256.4	0.86	18.63
570.0	0.001	0.0	253.0	254.7	0.86	18.61
575.0	0.001	0.0	251.3	253.0	0.86	18.59
580.0	0.001	0.0	249.6	251.3	0.86	18.58
585.0	0.001	0.0	247.8	249.6	0.86	18.56
590.0	0.001	0.0	246.1	247.8	0.85	18.55
595.0	0.001	0.0	244.4	246.1	0.85	18.53
600.0	0.001	0.0	242.7	244.4	0.85	18.51
605.0	0.001	0.0	241.0	242.7	0.85	18.50
610.0	0.001	0.0	239.3	241.0	0.85	18.48
615.0	0.001	0.0	237.6	239.3	0.85	18.47
620.0	0.001	0.0	235.9	237.6	0.85	18.45
625.0	0.001	0.0	234.3	235.9	0.84	18.43
630.0	0.001	0.0	232.6	234.3	0.84	18.42
635.0	0.001	0.0	230.9	232.6	0.84	18.40
640.0	0.001	0.0	229.2	230.9	0.84	18.39
645.0	0.001	0.0	227.5	229.2	0.84	18.37
650.0	0.001	0.0	225.9	227.5	0.84	18.36
655.0	0.001	0.0	224.2	225.9	0.83	18.34
660.0	0.001	0.0	222.5	224.2	0.83	18.32
665.0	0.001	0.0	220.9	222.5	0.83	18.31
670.0	0.001	0.0	219.2	220.9	0.83	18.29
675.0	0.001	0.0	217.6	219.2	0.83	18.28
680.0	0.001	0.0	215.9	217.6	0.83	18.26

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Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH

ROUTING COMPUTATIONS

TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
685.0	0.00	0.0	214.3	215.9	0.82	18.25
690.0	0.00	0.0	212.6	214.3	0.82	18.23
695.0	0.00	0.0	211.0	212.6	0.82	18.22
700.0	0.00	0.0	209.3	211.0	0.82	18.20
705.0	0.00	0.0	207.7	209.3	0.82	18.19
710.0	0.00	0.0	206.1	207.7	0.82	18.17
715.0	0.00	0.0	204.4	206.1	0.82	18.16
720.0	0.00	0.0	202.8	204.4	0.81	18.14
725.0	0.00	0.0	201.2	202.8	0.81	18.12
730.0	0.00	0.0	199.5	201.2	0.81	18.11
735.0	0.00	0.0	197.9	199.5	0.81	18.09
740.0	0.00	0.0	196.3	197.9	0.81	18.08
745.0	0.00	0.0	194.7	196.3	0.81	18.06
750.0	0.00	0.0	193.1	194.7	0.80	18.05
755.0	0.00	0.0	191.5	193.1	0.80	18.03
760.0	0.00	0.0	189.9	191.5	0.80	18.02
765.0	0.00	0.0	188.3	189.9	0.80	18.00
770.0	0.00	0.0	186.7	188.3	0.80	17.98
775.0	0.00	0.0	185.1	186.7	0.80	17.96
780.0	0.00	0.0	183.5	185.1	0.80	17.94
785.0	0.00	0.0	181.9	183.5	0.80	17.92
790.0	0.00	0.0	180.3	181.9	0.80	17.90
795.0	0.00	0.0	178.7	180.3	0.80	17.88
800.0	0.00	0.0	177.1	178.7	0.80	17.86
805.0	0.00	0.0	175.5	177.1	0.80	17.84
810.0	0.00	0.0	173.9	175.5	0.80	17.82
815.0	0.00	0.0	172.3	173.9	0.80	17.80
820.0	0.00	0.0	170.7	172.3	0.80	17.78
825.0	0.00	0.0	169.1	170.7	0.80	17.76
830.0	0.00	0.0	167.5	169.1	0.80	17.74
835.0	0.00	0.0	165.9	167.5	0.80	17.72
840.0	0.00	0.0	164.3	165.9	0.80	17.70
845.0	0.00	0.0	162.7	164.3	0.80	17.68
850.0	0.00	0.0	161.1	162.7	0.80	17.66
855.0	0.00	0.0	159.5	161.1	0.80	17.64
860.0	0.00	0.0	157.9	159.5	0.80	17.62
865.0	0.00	0.0	156.3	157.9	0.80	17.60
870.0	0.00	0.0	154.7	156.3	0.80	17.58
875.0	0.00	0.0	153.1	154.7	0.80	17.56
880.0	0.00	0.0	151.5	153.1	0.80	17.54
885.0	0.00	0.0	149.9	151.5	0.80	17.52
890.0	0.00	0.0	148.3	149.9	0.80	17.50
895.0	0.00	0.0	146.7	148.3	0.80	17.48
900.0	0.00	0.0	145.1	146.7	0.80	17.46
905.0	0.00	0.0	143.5	145.1	0.80	17.44
910.0	0.00	0.0	141.9	143.5	0.80	17.42

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
915.0	0.001	0.0	140.3	141.9	0.80	17.40
920.0	0.001	0.0	138.7	140.3	0.80	17.38
925.0	0.001	0.0	137.1	138.7	0.80	17.36
930.0	0.001	0.0	135.5	137.1	0.80	17.34
935.0	0.001	0.0	133.9	135.5	0.80	17.32
940.0	0.001	0.0	132.3	133.9	0.80	17.30
945.0	0.001	0.0	130.7	132.3	0.80	17.28
950.0	0.001	0.0	129.1	130.7	0.80	17.26
955.0	0.001	0.0	127.5	129.1	0.80	17.24
960.0	0.001	0.0	125.9	127.5	0.80	17.22
965.0	0.001	0.0	124.3	125.9	0.80	17.20
970.0	0.001	0.0	122.7	124.3	0.80	17.18
975.0	0.001	0.0	121.1	122.7	0.80	17.16
980.0	0.001	0.0	119.5	121.1	0.80	17.14
985.0	0.001	0.0	117.9	119.5	0.80	17.12
990.0	0.001	0.0	116.3	117.9	0.80	17.10
995.0	0.001	0.0	114.7	116.3	0.80	17.08
1000.0	0.001	0.0	113.1	114.7	0.80	17.06
1005.0	0.001	0.0	111.5	113.1	0.80	17.04
1010.0	0.001	0.0	109.9	111.5	0.80	17.02
1015.0	0.001	0.0	108.3	109.9	0.80	17.00
1020.0	0.001	0.0	106.7	108.3	0.80	16.97
1025.0	0.001	0.0	105.1	106.7	0.79	16.94
1030.0	0.001	0.0	103.5	105.1	0.79	16.91
1035.0	0.001	0.0	101.9	103.5	0.79	16.88
1040.0	0.001	0.0	100.4	101.9	0.79	16.86
1045.0	0.001	0.0	98.8	100.4	0.78	16.83
1050.0	0.001	0.0	97.2	98.8	0.78	16.80
1055.0	0.001	0.0	95.7	97.2	0.78	16.77
1060.0	0.001	0.0	94.1	95.7	0.77	16.74
1065.0	0.001	0.0	92.6	94.1	0.77	16.72
1070.0	0.001	0.0	91.1	92.6	0.77	16.69
1075.0	0.001	0.0	89.5	91.1	0.77	16.66
1080.0	0.001	0.0	88.0	89.5	0.76	16.63
1085.0	0.001	0.0	86.5	88.0	0.76	16.61
1090.0	0.001	0.0	85.0	86.5	0.76	16.58
1095.0	0.001	0.0	83.5	85.0	0.76	16.55
1100.0	0.001	0.0	81.9	83.5	0.75	16.53
1105.0	0.001	0.0	80.4	81.9	0.75	16.50
1110.0	0.001	0.0	79.0	80.4	0.75	16.47
1115.0	0.001	0.0	77.5	79.0	0.74	16.45
1120.0	0.001	0.0	76.0	77.5	0.74	16.42
1125.0	0.001	0.0	74.5	76.0	0.74	16.39
1130.0	0.001	0.0	73.0	74.5	0.74	16.37
1135.0	0.001	0.0	71.6	73.0	0.73	16.34
1140.0	0.001	0.0	70.1	71.6	0.73	16.31

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH		ROUTING COMPUTATIONS				
TIME (min)	INFLOW (cfs)	I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
1145.0	0.001	0.0	68.6	70.1	0.73	16.29
1150.0	0.001	0.0	67.2	68.6	0.73	16.26
1155.0	0.001	0.0	65.7	67.2	0.72	16.24
1160.0	0.001	0.0	64.3	65.7	0.72	16.21
1165.0	0.001	0.0	62.9	64.3	0.72	16.18
1170.0	0.001	0.0	61.4	62.9	0.72	16.16
1175.0	0.001	0.0	60.0	61.4	0.71	16.13
1180.0	0.001	0.0	58.6	60.0	0.71	16.11
1185.0	0.001	0.0	57.2	58.6	0.71	16.08
1190.0	0.001	0.0	55.8	57.2	0.71	16.06
1195.0	0.001	0.0	54.3	55.8	0.70	16.03
1200.0	0.001	0.0	52.9	54.3	0.70	16.01
1205.0	0.001	0.0	51.6	52.9	0.70	15.97
1210.0	0.001	0.0	50.2	51.6	0.69	15.93
1215.0	0.001	0.0	48.8	50.2	0.69	15.89
1220.0	0.001	0.0	47.4	48.8	0.68	15.85
1225.0	0.001	0.0	46.1	47.4	0.68	15.81
1230.0	0.001	0.0	44.7	46.1	0.68	15.77
1235.0	0.001	0.0	43.4	44.7	0.67	15.73
1240.0	0.001	0.0	42.0	43.4	0.67	15.69
1245.0	0.001	0.0	40.7	42.0	0.67	15.65
1250.0	0.001	0.0	39.4	40.7	0.66	15.61
1255.0	0.001	0.0	38.0	39.4	0.66	15.58
1260.0	0.001	0.0	36.7	38.0	0.65	15.54
1265.0	0.001	0.0	35.4	36.7	0.65	15.50
1270.0	0.001	0.0	34.1	35.4	0.65	15.46
1275.0	0.001	0.0	32.9	34.1	0.64	15.42
1280.0	0.001	0.0	31.6	32.9	0.64	15.39
1285.0	0.001	0.0	30.3	31.6	0.63	15.35
1290.0	0.001	0.0	29.1	30.3	0.63	15.31
1295.0	0.001	0.0	27.8	29.1	0.63	15.27
1300.0	0.001	0.0	26.6	27.8	0.62	15.24
1305.0	0.001	0.0	25.3	26.6	0.62	15.20
1310.0	0.001	0.0	24.1	25.3	0.62	15.17
1315.0	0.001	0.0	22.9	24.1	0.61	15.13
1320.0	0.001	0.0	21.6	22.9	0.61	15.09
1325.0	0.001	0.0	20.4	21.6	0.61	15.06
1330.0	0.001	0.0	19.2	20.4	0.60	15.02
1335.0	0.001	0.0	18.0	19.2	0.60	14.97
1340.0	0.001	0.0	16.8	18.0	0.59	14.90
1345.0	0.001	0.0	15.7	16.8	0.58	14.83
1350.0	0.001	0.0	14.5	15.7	0.58	14.75
1355.0	0.001	0.0	13.4	14.5	0.57	14.68
1360.0	0.001	0.0	12.3	13.4	0.56	14.61
1365.0	0.001	0.0	11.2	12.3	0.55	14.54
1370.0	0.001	0.0	10.1	11.2	0.55	14.47

POND-2 Version: 5.17 S/N: 1295130250
EXECUTED: 04-30-1992 11:55:14

Return Freq: 100 years

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

INFLOW HYDROGRAPH

TIME (min)	INFLOW (cfs)
1375.0	0.00
1380.0	0.00
1385.0	0.00
1390.0	0.00
1395.0	0.00
1400.0	0.00
1405.0	0.00
1410.0	0.00
1415.0	0.00
1420.0	0.00
1425.0	0.00
1430.0	0.00
1435.0	0.00
1440.0	0.00

ROUTING COMPUTATIONS

I1+I2 (cfs)	2S/t - O (cfs)	2S/t + O (cfs)	OUTFLOW (cfs)	ELEVATION (ft)
0.0	9.0	10.1	0.54	14.41
0.0	7.9	9.0	0.53	14.34
0.0	6.9	7.9	0.53	14.27
0.0	5.8	6.9	0.52	14.21
0.0	4.8	5.8	0.51	14.14
0.0	3.8	4.8	0.51	14.08
0.0	2.8	3.8	0.50	14.01
0.0	2.0	2.8	0.39	13.78
0.0	1.4	2.0	0.28	13.56
0.0	1.0	1.4	0.20	13.40
0.0	0.7	1.0	0.14	13.29
0.0	0.5	0.7	0.10	13.21
0.0	0.4	0.5	0.07	13.15
0.0	0.3	0.4	0.05	13.11

********** SUMMARY OF ROUTING COMPUTATIONS **********

Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

Starting Pond W.S. Elevation = 13.00 ft

***** Summary of Peak Outflow and Peak Elevation *****

Peak Inflow = 131.14 cfs
Peak Outflow = 88.68 cfs
Peak Elevation = 21.53 ft

***** Summary of Approximate Peak Storage *****

Initial Storage	=	0 cu-ft
Peak Storage From Storm	=	106,779 cu-ft
Total Storage in Pond	=	106,779 cu-ft

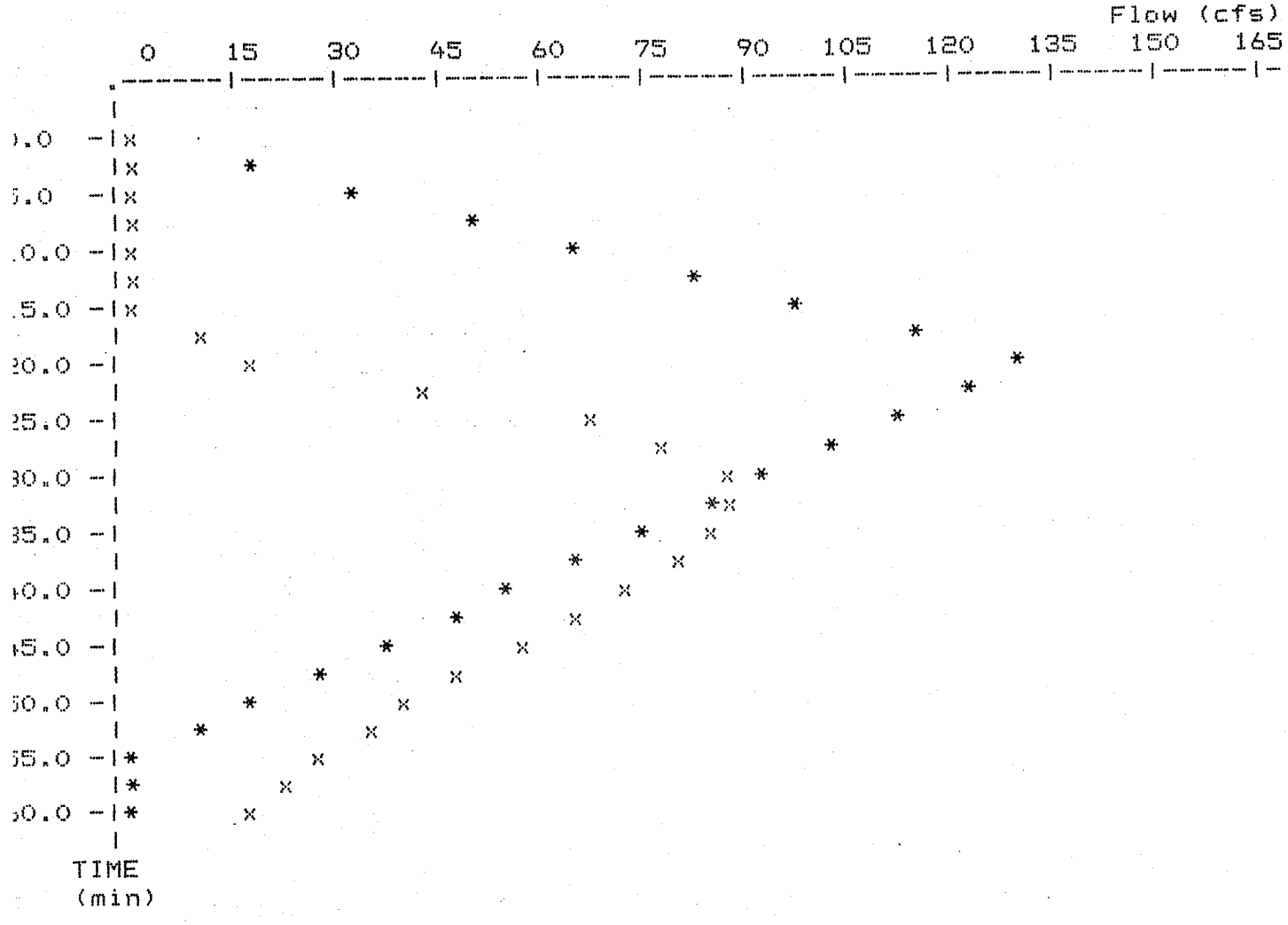
POND-2 Version: 5.17 S/N: 1295130250

Return Freq: 100 years

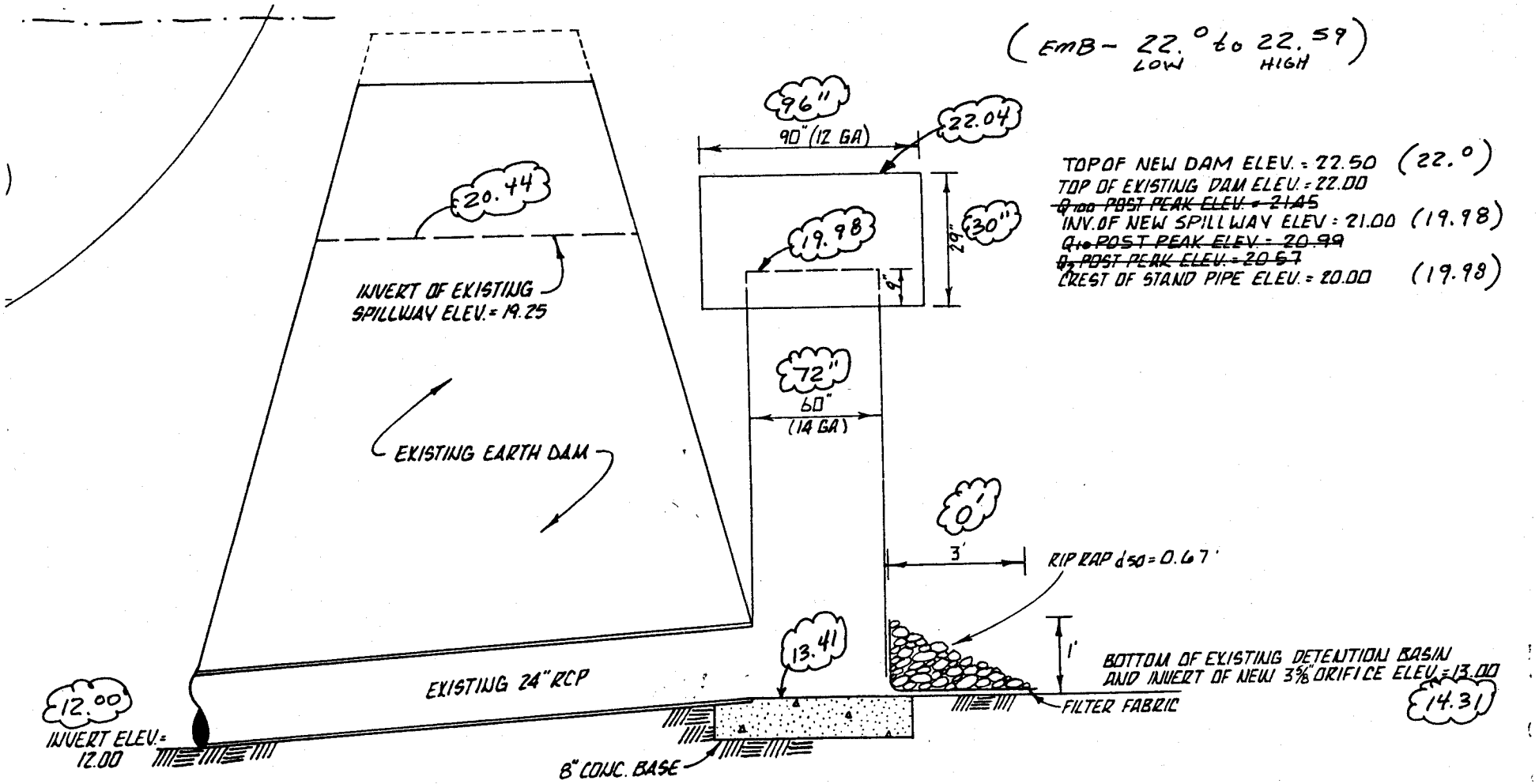
Pond File: B:BG2 .PND
Inflow Hydrograph: B:BG100 .HYD
Outflow Hydrograph: B:100OUT .HYD

EXECUTED: 04-30-1992
11:55:14

Peak Inflow = 131.14 cfs
Peak Outflow = 88.68 cfs
Peak Elevation = 21.53 ft



* File: B:BG100 .HYD Qmax = 131.1 cfs
x File: B:100OUT .HYD Qmax = 88.7 cfs



NOTES: CONNECTION OF STAND PIPE TO EXISTING CULVERT THROUGH DAM TO BE WATERTIGHT. SEE DETAIL FOR SECURING TRASH RACK TO STAND PIPE.

Top is 8 gage corrugated metal or 1/8" steel plate. Pressure relief holes may be omitted, if ends of corrugations are left fully open when the top is attached.

Culinder is 12 gage

MODIFICATION TO EXISTING STORMWATER MANAGEMENT FACILITY

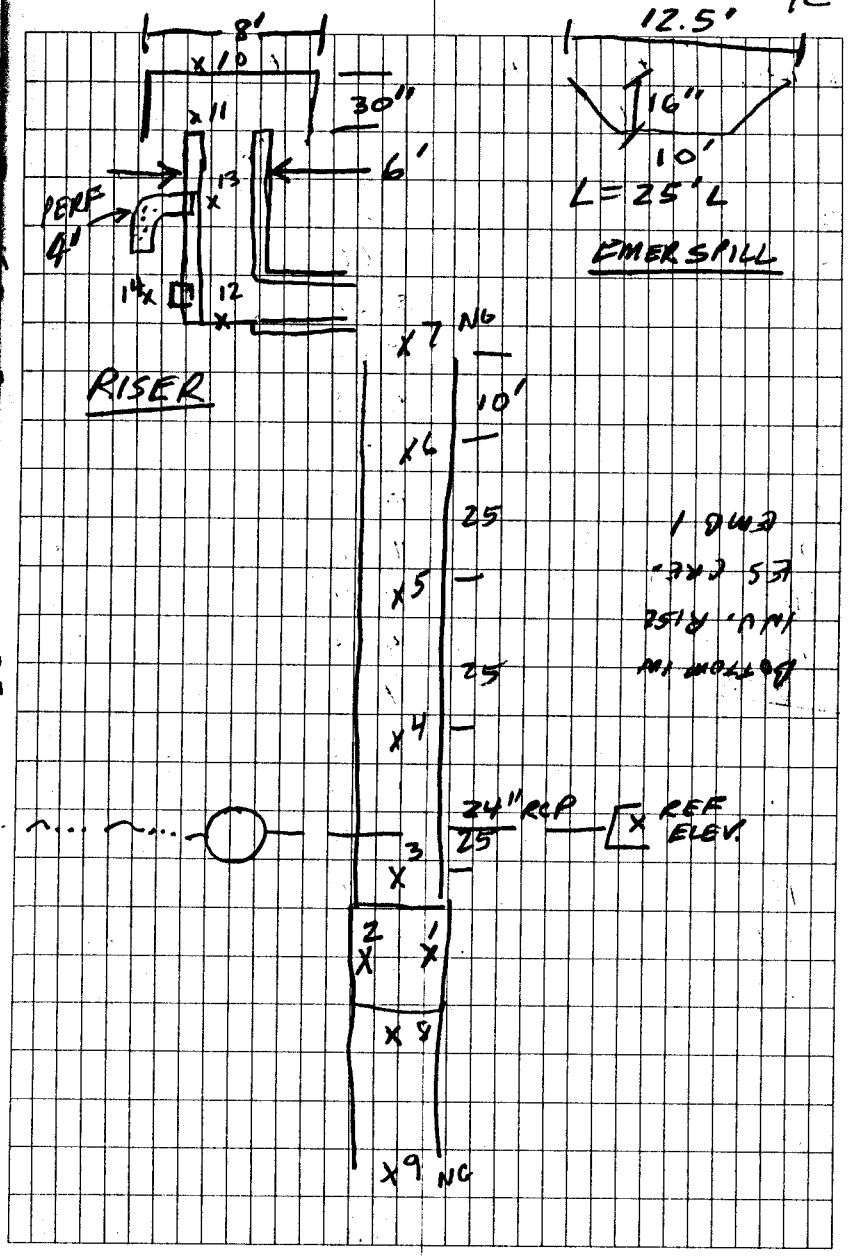
N.T.S.

BERKELEYS GREEN 6/8
DRY POND - MOSSY CREEK RD.
June 21, 2001 SJ THOMAS, MD WOOLSON

	+	HI	−	ELEV	
FS ES-1 PIPE OUT	14.93	26.93		12.00	24"
1 ES 1			6.49	20.44	
2 ES 2			6.39	20.54	
3 EMB 1 (ES) 25'			4.53	22.40	
4 EMB 2 25			4.34	22.59	
5 EMB 3 25'			4.51	22.42	
6 EMB 4 10'			4.47	22.46	
7 EMB 5 - N.G.			4.39	22.54	
8 EMB 6 (ES)			4.60	22.33	
9 EMB 7 ES·NG			4.93	22.00	
10 TOP CMP CAP			4.89	22.04	
11 RISER CR (NOTE: CURB LESS 1")			6.95	19.98	
12 INV RISER			13.52	13.41	
13 UPPER ORIF			10.11	16.82	
14 LOW FLOW ORIF (6")			12.62	14.31	

REF ELEV = 12.00 at DS BARREL INV.
PER DESIGN PLAN

Sunny Hot 80's



DARRYL COOK

T. JOSEPH McDONALD
1906-1982

GEORGE E. LANGLEY
Consultant

Langley and McDonald
A Professional Corporation

August 24, 1992

AUG 1992
RECEIVED
PLANNING DEPARTMENT

Mr. Trenton L. Funkhouser
Senior Planner
James City County
Department of Development Management
P. O. Box JC
Williamsburg, VA 23187

RE: Case No. S-13-92, Berkeley's Green Phase Six

Dear Mr. Funkhouser:

This letter is in response to your letter dated June 23, 1992 regarding the referenced project. We have discussed the Chesapeake Bay Preservation Ordinance requirements for this project again with Mr. Bernard M. Farmer, Jr., P.E., Director of Code Compliance, and as in our similar telephone conversation of April 23, 1992, it was stated by Mr. Farmer that a 6 point structural BMP along with the open space shown on the plans and existing development that will be served by the BMP would be adequate. Accompanying this letter are calculations and details for modifying the existing detention basin to function as a 6 point BMP as well as attenuate the peak flow from the post-development two year storm to that of the pre-developed condition, (based on using the Rational Method). For your convenience, we are also enclosing the following information with the aforementioned calculations:

1. A composite outflow summary showing the capacity of the existing 24 inch culvert through the dam. It should be noted that this 24 inch culvert was selected in the original design of the detention basin in order to attenuate the post-development peak flow from the two year storm to that of the pre-development condition using the Rational Method.

2. A composite outflow summary for a 3 5/8 inch diameter vertical circular orifice to be used to release the runoff volume generated from the 1 inch storm over 24 hours.

3. A composite outflow summary for a 5 foot diameter standpipe that will be used to provide the storage required for the runoff volume generated from the 1 inch storm, and function as part of the principal spillway for conveying the attenuated

Mr. Trenton L. Funkhouser
Senior Planner
James City County
Department of Development Management
P. O. Box JC
Williamsburg, VA

August 24, 1992

post-development peak flows from the 2, 10 and 100 year storms generated using the Rational Method.

4. A composite outflow summary of a 1 foot deep, 6 foot bottom width trapezoidal weir which will function as the emergency spillway.

5. Hydrograph printouts for the post-development 2, 10 and 100 year storms as generated using the Rational Method.

6. Tabulated volumes of the existing detention basin.

7. A composite outflow summary of the combined 3 5/8 inch diameter vertical circular orifice, 5 foot diameter standpipe and 1 foot deep, 6 foot bottom width trapezoidal weir.

8. Computations routing the 2, 10 and 100 year post-development storms through the modified pond.

Based on these calculations, we do not see the need to raise the elevation of the top of the dam because nearly 1 foot of freeboard is provided between the peak elevation of the 10 year storm and the top of the dam. In addition, the calculations indicate that the peak elevation of the 100 year storm is lower than the existing top of dam.

need 1' F.B. @ 100 year storm —

Revised calcs will show dam will not pass 100-year storm

The emergency spillway will be reconstructed so that the invert of the 6 foot bottom will be at elevation 21.

A detail for the trash rack has been added to the accompanying plans. Also, a detail showing riprap trash protection for the 3 5/8 inch vertical circular orifice has been added to the accompanying plans.

In accordance with Item 5 of your June 23, 1992 letter, we are enclosing calculations based on the TR55 24 hour duration storm methodology. We agree that the post-development flows generated using the Rational Method appear low compared to those calculated based on

Mr. Trenton L. Funkhouser
Senior Planner
James City County
Department of Development Management
P. O. Box JC
Williamsburg, VA

August 24, 1992

Need to use same values as original design - and also same methodology - needs to use critical storm.

the TR55 Method. It should be noted, however, that the original design of this facility was based on the Rational Method. We question whether it is appropriate to review post-development storage volumes, water surface elevations and discharge rates of storm generated from a methodology that differs from that of the original basis of design. The calculations based on the TR55 methodology indicate that the pre-development 2 year 24 hour duration storm peak discharge is 58 CFS. This is nearly double the 32 CFS rate calculated using the Rational Method which was the basis for selecting the existing 24 inch culvert through the dam. The computations for routing the TR55 method storms through the modified detention pond clearly indicate that major modifications to the detention pond would be required versus the minor modifications that are proposed. This is the result of trying to compare apples with oranges and we are unaware of any existing requirement specifying the use the TR55 methodology as the design basis for small stormwater management facilities.

Please contact us at your earliest convenience so that we may meet and resolve these issues in order to obtain final approval.

Best regards,

LANGLEY AND McDONALD

Stephen Romeo

Stephen A. Romeo, L.S.,
Principal

SAR/dhm
Enclosure
cc: Mr. Michael Armentrout
File 85040-5&6

DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784
(757) 253-6671 Fax: (757) 253-6850 E-MAIL: devtman@james-city.va.us

CODE COMPLIANCE
(757) 253-6626
codecomp@james-city.va.us

ENVIRONMENTAL DIVISION
(757) 253-6670
environ@james-city.va.us

PLANNING
(757) 253-6685
planning@james-city.va.us

COUNTY ENGINEER
(757) 253-6678

INTEGRATED PEST MANAGEMENT
(757) 259-4116

July 24, 2001

Ms. Dorothy J. Stoba
Berkeleys Green HOA
3445 Fiddlers Ridge Parkway
Williamsburg, Va. 23185

Re: Berkeleys Green Subdivision
Stormwater Management Facilities

Dear Ms. Stoba:

As per our recent emails, I am forwarding some "***first contact***" information to you related to maintenance of stormwater management facilities relative to the above referenced community.

Information as attached includes: a brochure entitled *Best Management Practices Education Program for Homeowners Associations*; landscaping tips for stormwater management BMP's, a sample maintenance plan for dry pond type facilities; three brochures related to liability and maintenance; and various copies of other general information collected by our division.

I feel it is important to get together to discuss setting up a long-term maintenance plan for the dry detention facility along Mossy Creek (County BMP ID Code: JR 007). Please contact me at your convenience when you and/or other members of your board can informally sit down to discuss the facility. I have found that it works out pretty well to set a meeting time at 3:00 pm or after due to work hours of individuals that may be involved and so there are no time constraints for the meeting.

Again, our division is always readily available to assist owners and HOA representatives with guidance related to stormwater management facilities and we look forward working with you in the future. In the meantime, if you have any additional questions or comments, please call me at 757-253-6639.

Sincerely,

Scott J. Thomas, P.E.
Civil Engineer
Environmental Division

SWMProg\Education\Subdivsions\BerkGreen.let1

DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784
(757) 253-6671 Fax: (757) 253-6850 E-MAIL: devtman@james-city.va.us

CODE COMPLIANCE
(757) 253-6626
codecomp@james-city.va.us

ENVIRONMENTAL DIVISION
(757) 253-6670
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PLANNING
(757) 253-6685
planning@james-city.va.us

COUNTY ENGINEER
(757) 253-6678

INTEGRATED PEST MANAGEMENT
(757) 259-4116

June 29, 2001

Mr. Bill Aardappel
3017 Mossy Creek Drive
Williamsburg, Virginia 23185

Dear Mr. Aardappel,

Thank you for assisting the James City County Environmental Division with the stormwater management facility/BMP in the Berkeley's Green subdivision. Your efforts and interest in your community are greatly appreciated. Thank you again for assisting us with the use of your ladder, gloves, and observational input.

Sincerely,

Scott J. Thomas, P.E.
Civil Engineer

C. E. Davis
Catherine "Beth" Davis
Engineering Inspector

Scott Thomas

From: Scott Thomas
Sent: Monday, July 23, 2001 1:35 PM
To: 'dstolba@widowmaker.com'
Cc: Darryl Cook; John Horne; Beth Davis
Subject: Berkeleys Green Subdivision

Dorothy J. Stolba
Berkeleys Green HOA
Re: Stormwater Management/BMP Facilties

Dorothy

Hello. My name is Scott Thomas, I am a civil engineer with the James City County Environmental Division. I apologize for having to contact you via email at this point because as of yet I do not have your address or phone number. My responsibility with the Environmental Division is for engineering and construction issues related to stormwater management facilities. This also includes coordinating with official representatives of HOA's that are involved with the task of maintenance associated with stormwater management facilities.

Although I have not yet spoken with you or any members of your board about facilities at Berkeleys Green, I would appreciate if you could provide me with your phone number and address so that I can proceed with first contact and assisting you in whatever manner possible. Usually, I like to sent a "first contact" packet of information to you that provides information publications, brochures, general landscaping and maintenance plan tips, etc. that we have available at our office pertaining to maintenance of stormwater management (BMP) facilities. We have several tiers of resources available to assist you in addition to our first contact packet, depending on the level of service your HOA requires.

1) We have a general presentation that can be given to you or other board members. This is a slide presentation which outlines, in general, the stormwater management program at the County, regulations pertaining to water quality/quantity and the different types of facilities that are commonly used to provide stormwater management.

2) We are currently involved with a County-wide stormwater management facility inspection program in James City County, where we are performing inventory and inspection of all the facilities in the County. Currently, we have not yet been through the lower portions of the Berkeleys Green subdivision area as part of that program. However, we did look at the BMP facilities up along Route 5 which drain to the Powhatan Creek Watershed. Inspection information and ratings for those facilities are available if requested.

3) We have a more thorough technical assessment type program, which is geared toward helping the HOA's set up a specific maintenance plan for certain BMP facilities, especially for BMP's that are older. Currently, a maintenance plan is required for all new BMPs in the County, however for older facilities or developments there may be no formal maintenance plan to follow. This portion of our program is what I would envision for your specific community. As you may or may not be aware, our division was involved with performing final inspections on and requiring the contractor to address all required construction-related activities on the dry pond BMP for Sections 6/8. This is the dry pond near the JCSA pump station along Mossy Creek. The County BMP ID Code for this facility is JR007. Based on my knowledge of this facility and the way it should operate based on our final inspections, I would like to coordinate with you to set up a maintenance plan specifically for this facility.

I can fully explain any of the above programs in depth with you if you have any questions. Again, I want you to know that this is an attempt to establish a starting point between me and our office to coordinate with the HOA about future maintenance activities associated with stormwater management facilities within Berkeleys Green. Please contact me by phone or email at your convenience.

Scott J. Thomas, P.E.
James City County
Environmental Division

DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784
(757) 253-6671 Fax: (757) 253-6850 E-MAIL: devtman@james-city.va.us

CODE COMPLIANCE
(757) 253-6626
codecomp@james-city.va.us

ENVIRONMENTAL DIVISION
(757) 253-6670
environ@james-city.va.us

PLANNING
(757) 253-6685
planning@james-city.va.us

COUNTY ENGINEER
(757) 253-6678

INTEGRATED PEST MANAGEMENT
(757) 259-4116

January 23, 2001

Mr. Ken Schultz
5000 Easter Circle
Williamsburg, VA 23188

RE: Berkeley's Green Section 6 Dry Pond Conversion

A follow-up site visit was conducted on January 22, 2001 by Mssr. Michael Woolson and Scott Thomas from our office regarding the dry pond conversion of the sediment basin in section 6. As a result of this site visit, two items still need to be addressed from the original punch list before we will consider releasing the bond for this project. These items are:

- Removal of **all** woody vegetation on the embankment.
- Removal of **all** woody debris and human trash from the limits of the designed 100-yr flood elevation.

An inspector from our office will be glad to meet with you on site to discuss these issues if you have any questions. Please call our office to arrange a site visit at 253-6670.

Michael Woolson
Engineering Inspector
JCC Environmental Division

Scott- 1/2/01

Have we received as-builts for this? Can you check w/ Beth on status of other items such as st.

DOBSON BUILDERS

a D.R. Horton Company

DEC 2000 RECEIVED ENVIRONMENTAL DIVISION

December 22, 2000

James City County Development Management
101-E Mounts Bay Road
P.O. Box 8784
Williamsburg, Va. 23187-8784
(attn. Scott Thomas)

RE: Berkeley's Green Section 6 Dry Pond Conversion

This letter is written to inform you that all items on your list of August 29, 2000 have been completed. We have inspected this area and believe we are in full compliance. If you would like to schedule an inspection please feel free to contact me at 565-7221 ext. 702.

Sincerely,
Ken Schultz

Construction Manager

MIKE
SEE ME ABOUT THIS WHEN YOU RETURN. WE CAN BOTH CHECK THAT ALL ITEMS REF OUR LIST WERE DONE SCOTT

5000 Easter Circle
Williamsburg, VA 23188
(757) 565-7221 ▶ (757) 565-7996

DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784
(757) 253-6671 Fax: (757) 253-6850 E-MAIL: devtman@james-city.va.us

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PLANNING
(757) 253-6685
planning@james-city.va.us

COUNTY ENGINEER
(757) 253-6678

INTEGRATED PEST MANAGEMENT
(757) 253-2620

August 29, 2000

Mr. Ken Schultz
5000 Easter Circle
Williamsburg, VA 23188

RE: Berkeley's Green Section 6 Dry Pond Conversion

A site visit was conducted on August 24, 2000 regarding the dry pond conversion of the sediment basin in section 6. As a result of this site visit, several items need to be addressed during the reconstruction of this pond in order to facilitate the acceptance of the pond and as-built drawings and the release of your surety. These items are:

- Removal of all dead trees within and adjacent to the designed 100-yr flood elevation.
- Restore the pond to original design plan contours.
- Clean the pipe inflows of vegetation and sediment.
- Establish positive drainage from the upper end of the pond to the riser, grade should be a minimum of 1%. No ponding of water over a forty-eight hour period will be allowed.
- Clean debris from the inside of the riser. A CMP plate needs to be removed, it is blocking outflow from barrel. Inspect outflow pipe to make sure flow is entering the barrel and not seeping around it.
- Replace emergency spillway geotextile and riprap. Riprap will be placed in an excavated manner rather than dumped on grade. Improper original installation caused the riprap to fail during Hurricane Floyd by sliding down the embankment.
- Removal of all woody vegetation on the embankment.
- Outlet barrel riprap needs to be installed correctly. Riprap needs to be in an excavated manner rather than dumped on grade. The riprap will be flush with the bottom of the outlet pipe and have a level grade (0% slope).
- Clean and flush all inflow storm pipes. Replace all riprap at inflow pipes. Riprap will be placed in an excavated manner rather than dumped on grade. Riprap will be flush with the bottom of the pipe and have a level grade (0% slope).
- Removal of all woody debris and human trash from the limits of the designed 100-yr flood elevation.

An inspector from our office will be glad to meet with you on site to discuss these issues if you have any questions. Please call our office to arrange a site visit at 253-6670.

Darryl E Cook

Darryl Cook
Environmental Division Director
JCC Environmental Division

August 29, 2000

Mr. Ken Schultz
5000 Easter Circle
Williamsburg, VA 23188

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not complete 1/22/01 MDW/SJT

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not complete 1/22/01 MDW/SJT

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Darryl Cook
Environmental Division Director
JCC Environmental Division

Darryl, info, file

T. JOSEPH McDONALD
1906-1982

GEORGE E. LANGLEY
Consultant

Langley and McDonald
A Professional Corporation

July 7, 1992

Mr. Trenton L. Funkhouser
Senior Planner
James City County
Department of Development Management
P. O. Box JC
Williamsburg, VA 23187

Re: Case No. S-13-92
Berkeley's Green Phase 6

Dear Mr. Funkhouser:

Pursuant to your letter dated June 23, 1992, regarding the referenced project, we are enclosing a portion of the County's 200 scale topo and a copy of the record plat for First Colony Section One. The record plat shows that easements were reserved along the property lines common to lots 9 and 10 and 214 and 215. The topo shows these property lines to be very close to the natural drainage-way between Berkeley's Green and Lake Pasbehegh. We believe that the intention of the record plat was to provide an easement to convey stormwater runoff from the Berkeley's Green property to Lake Pasbehegh. Accordingly, we are proposing to delete the modification to the existing detention basin from the plans and let Lake Pasbehegh serve as the stormwater runoff quality BMP as required by the County's Chesapeake Bay Preservation Ordinance. Lake Pasbehegh, more likely than not, has capacity in excess of what is necessary to function as a Design 7 (4.0V) wet pond for the remaining Berkeley's Green development subject to the aforementioned ordinance. This would provide at least 9 BMP points and the other points required could be obtained through credits for runoff from existing, developed phases of Berkeley's Green draining to the BMP. The existing detention basin, approved and constructed in conjunction with Berkeley's Green Phase 5, would be left in place as its function is to serve as a sediment basin during construction of the remaining phases of the development and ultimately attenuate the peak flow of the post development 2 year storm to that of the pre-developed condition.

By using Lake Pasbehegh as the "water quality" BMP, modifications to the existing detention basin are no longer needed and comments from Code Compliance associated with the modification, (1, 2, 3, 4), are addressed. In addition, as previously mentioned, Lake Pasbehegh would, more likely than not, provide a minimum of 9 BMP points and the balance could be made up through "off-site" credits, thereby addressing comment 6.

Mr. Trenton L. Funkhouser
Senior Planner
James City County
Department of Development Management
P. O. Box JC
Williamsburg, VA

July 7, 1992

For peak discharge only - not total runoff volume

Although we agree with the part of comment 5 relating to the post-development flows derived from TR-55, we are unaware of any ordinances requiring the use of TR-55 instead of the Rational Method. The calculations submitted are based on the Rational Method, which is acceptable for drainage areas up to 200 acres in size. The hydrographs were generated using the method found in the VDOT Drainage Manual, (copy enclosed). This comment is addressed by eliminating the proposed modifications to the existing detention basin as approval of the design and calculations was granted in conjunction with the Phase 5 plans. We do, however, ask that you advise us of any ordinance that we may have overlooked requiring the use of the TR-55 method instead of the Rational Method in order that we do not encounter this issue on other projects.

Lastly, an analogy was made last week by the Zoning Administrator with regard to Mill Creek and the drainage area above Lake Powell. Not knowing all of the details involved with that particular location, it is difficult for us to respond to the analogy given. We do, however, believe that if an easement exists between a man made feature, (i.e.: pond, lake, etc.) and undeveloped land upstream, then use should be made of the feature to the extent allowable by the feature. - To convey water - I agree - but to use an offsite facility to serve as water quality feature - I disagree - no maintenance resp.

We trust that you find this satisfactory and appreciate your prompt reply as this appears to be the only issue needing resolution for final approval.

Best regards,

LANGLEY AND McDONALD

Stephen A. Romeo, L.S.,
Principal

SAR/dhm
Enclosure
cc: Mr. Michael Armentrout
Mr. Bernard M. Farmer, Jr., P.E.
L&M File 85040 Phases 5 & 6

WATERSHED	JR	MAINTENANCE PLAN	No	CTRL STRUC DESC	CMP Riser
BMP ID NO	007	SITE AREA acre	14.7	CTRL STRUC SIZE inches	60
PLAN NO	S-13-92	LAND USE	SF Residential	OTLT BARRL DESC	RCP
TAX PARCEL	(45-2)(11-1J)	old BMP TYP	Dry Pond	OTLT BARRL SIZE inch	24
PIN NO	4521100001J	JCC BMP CODE			
CONSTRUCTION DATE	1/1/1993	POINT VALUE	6	EMERG SPILLWAY	Yes
PROJECT NAME	Berkeleys Green Phase 6 Dry Pond			DESIGN HW ELEV	21.9
FACILITY LOCATION	End of Moss Creek Road			PERM POOL ELEV	None
CITY-STATE	Williamsburg, Va. 23185	SVC DRAIN AREA acres	64.6	2-YR OUTFLOW cfs	29.40
CURRENT OWNER	C. Richard Dobson Builders, Inc.			10-YR OUTFLOW cfs	46.80
OWNER ADDRESS	739 Thimble Shoals Blvd.			REC DRAWING	No
OWNER ADDRESS 2	Suite 105	SERVICE AREA DESCRI	SF Lots & Roads, Sections 5 - 8		
CITY-STATE-ZIP CODE	Newport News, Va. 23606	IMPERV AREA acres	16	CONSTR CERTI	No
OWNER PHONE		RECV STREAM	Lake Pasbehegh		
MAINT AGREEMENT	Yes	EXT DET-WQ-CTRL	Yes	LAST INSP DATE	2/20/2001
EMERG ACTION PLAN	No	WTR QUAL VOL acre-ft	2.7	INTERNAL RATING	3
		CHAN PROT CTRL	No	MISC/COMMENTS	
		CHAN PROT VOL acre-ft	0	3-5/8 inch BMP orifice. Inspections for release of bond 8/ 24/2000 & 2/20/01.	
		SW/FLOOD CONTROL	Yes		
		GEOTECH REPORT	No		

Get Last BMP No

Return to Menu

James City County
Department of Code Compliance
P.O. Box JC
Williamsburg, VA 23187

Jamestown·1607
JAMES CITY COUNTY

LAND DISTURBING PERMIT

Application

GEO 365

LANDOWNER

NAME C. Richard Dobson Builders, Inc. DATE 10-07-92

ADDRESS (STREET) 739 Thimble Shoals Blvd. Suite 105 N.N. VA 23606

P.O. BOX PHONE 873-1163 7717

PROJECT Berkeley Green Phase 6

LOCATION (USE STREET ADDRESS) Berkeley Green Drive of Va. State Rt. 614

TOTAL SIZE OF TRACT OR LOT 14.26 Acres

TOTAL AREA TO BE DISTURBED 2.08 Acres

DESCRIPTION OF LAND DISTURBING ACTIVITY Site Improvements as per approved plans.

RIGHT OF ENTRY

I, [signature] PRESIDENT (Signature) hereby grant designated officials of James City County, Virginia, the right to enter my property for the purpose of inspection or monitoring for compliance with the approved erosion and sediment plan on the above-referenced project.

Released 9-14-95 per DEC

PLAN IMPLEMENTATION

I, _____ PRESIDENT (Signature) certify that I fully understand the provisions of the James City County, Virginia, Erosion and Sediment Control Ordinance and agree to carry out the approved erosion and sedimentation control plan on the above-referenced project. I also understand that the approved erosion and sedimentation control plan becomes null and void on April 11, 1993 and no further work subject to Chapter 5A of the County Code shall be allowed unless and until an additional or updated erosion and sedimentation control plan has been submitted and approved in accordance with Chapter 5A or unless all requirements of the approved control plan have been completed by April 11, 1993 in accord with such plan and verified by the on-site inspection by the Administrator or his designee.

(For office use only)

PERMIT NO. 93-12 BOND AMOUNT $ 24,000

REVIEWED BY Darryl E Cook DATE 10/13/92

SPECIFIC REQUIREMENTS _____

APPROVED BY Bernard Farmer ADMINISTRATOR - EROSION AND SEDIMENT CONTROL ORDINANCE

DATE 10-23-92

Renewal of ~~ESS plan~~ requested by:

VICE PRES

Renewal Reviewed By: Renewal Date:

Darryl E. Cook 3-8-93

Renewal Approved By: Updated Erosion and Sedimentation Control Plan becomes null and void on: 10-11-93

Bernard Farmer

Bernard M. Farmer, Jr., Administrator
Erosion and Sediment Control Ordinance

JR 007 - BERKELEYS GREEN

PHASE 5,6,7 & 8

DRY POND

TRANSMITTAL

DATE: August 25, 1992

TO: CODE COMPLIANCE, Darryl Cook+
WAYLAND BASS

FROM: Trent Funkhouser, Senior Planner

SUBJECT: S-13-92. Berkeley's Green, Phase 6

ITEMS ATTACHED: Revised subdivision plan
letter
+drainage calculations

INSTRUCTIONS: Please review and comment or initial if approved.

RETURN REQUIRED BY: September 4, 1992

AGENCY'S COMMENTS:

The basin needs to be redesigned using the original design methodology and assumptions under which it was approved. The basin was designed using the Rational Method but since the method does not compute a hydrograph or a volume of runoff, the critical storm must be determined. This critical storm may not produce the largest peak flow but will produce the largest volume of runoff which is needed to design a stormwater basin. The original design determined the critical 2-year storm to be 30 minutes in duration and based on the Rational method, the 10-year critical storm duration is 42 minutes. The basin needs to be redesigned using these storm events and durations. Also, the original design was based on a 100-year storm of 152 cfs while the current submission only uses a peak of 131 cfs for the 100-year storm. The pond needs to use the original design assumption. Finally, a freeboard of 1 foot is required for the 100-year storm, not the 10-year storm. The original design provided 2.1 feet of freeboard at the 10-year event and 1 foot at the 100-year storm. This current submission needs to have similar freeboard numbers provided.

DFC 9/4/92