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: **YR004**

DATE VERIFIED: **August 21, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: March 10, 2010

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

FROM: Jo Anna Ripley, Stormwater

PO: 270712

RE: Files Approved for Scanning

General File ID or BMP ID: YR004

PIN: 2430100018

Subdivision, Tract, Business or Owner Name (if known): Action Park of Williamsburg

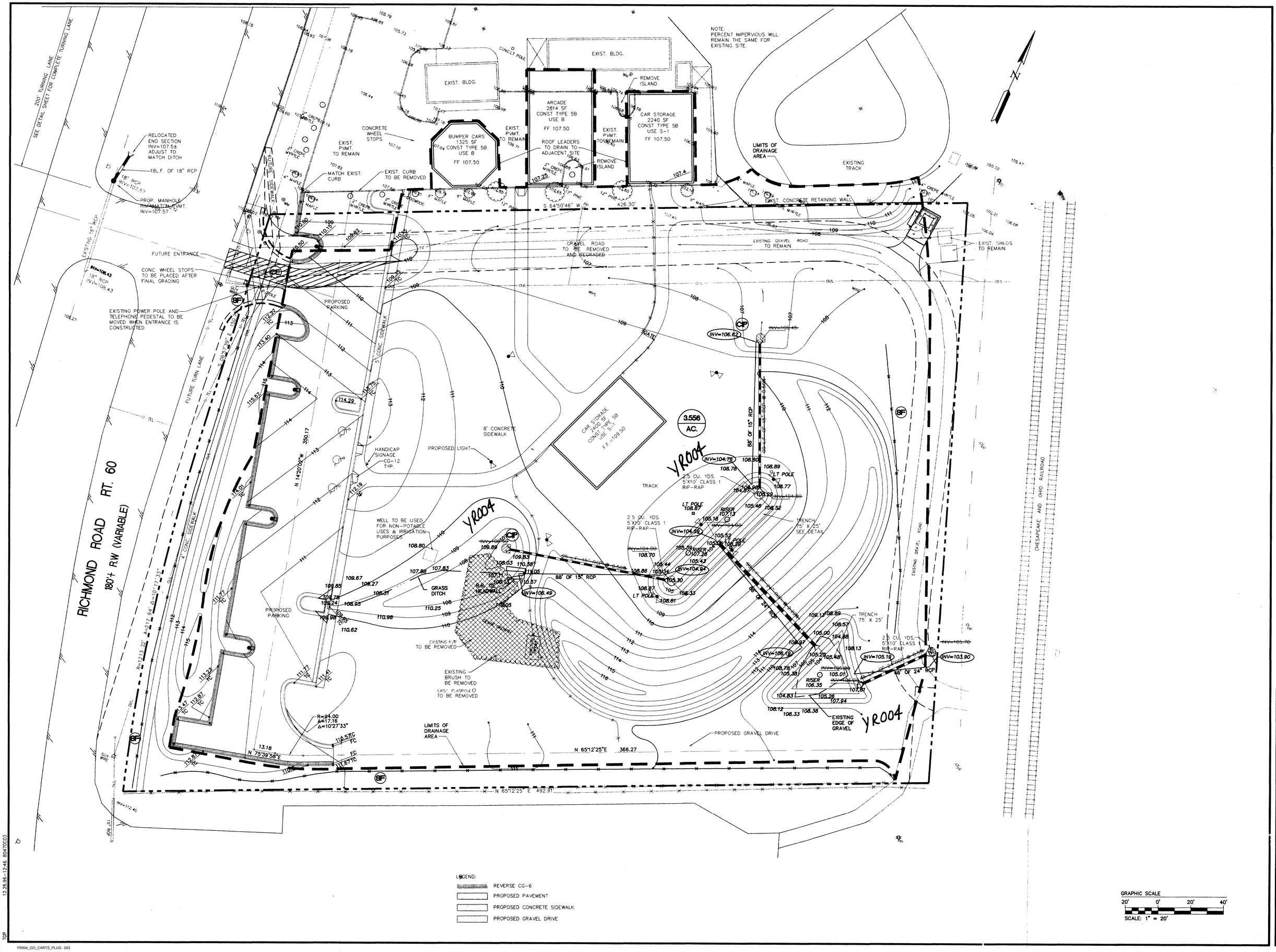
Property Description: Go Carts Plus

Site Address: 6870 Richmond Road

(For internal use only) **Box** 9 **Drawer:** 5

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

Comments



No.	DATE	REVISION / COMMENT / NOTE	BY
4	12/26/96	AS BUILT	
3	1/22/96	REV. PER JCC COMMENTS	EMG
2	1/12/96	REV. PER JCC COMMENTS	EMG
1	12/15/96	REV. PER JCC COMMENTS	EMG

COMMONWEALTH OF VIRGINIA
RICHARD A. COSELLO
CERTIFICATE NO. 013250
CERTIFIED PROFESSIONAL ENGINEER
1/12/96

ES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(804) 253-0040
Fax (804) 220-8994

AS-BUILT LOCATION
SHOWING EXISTING CONDITIONS
FOR
GO KARTS PLUS

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

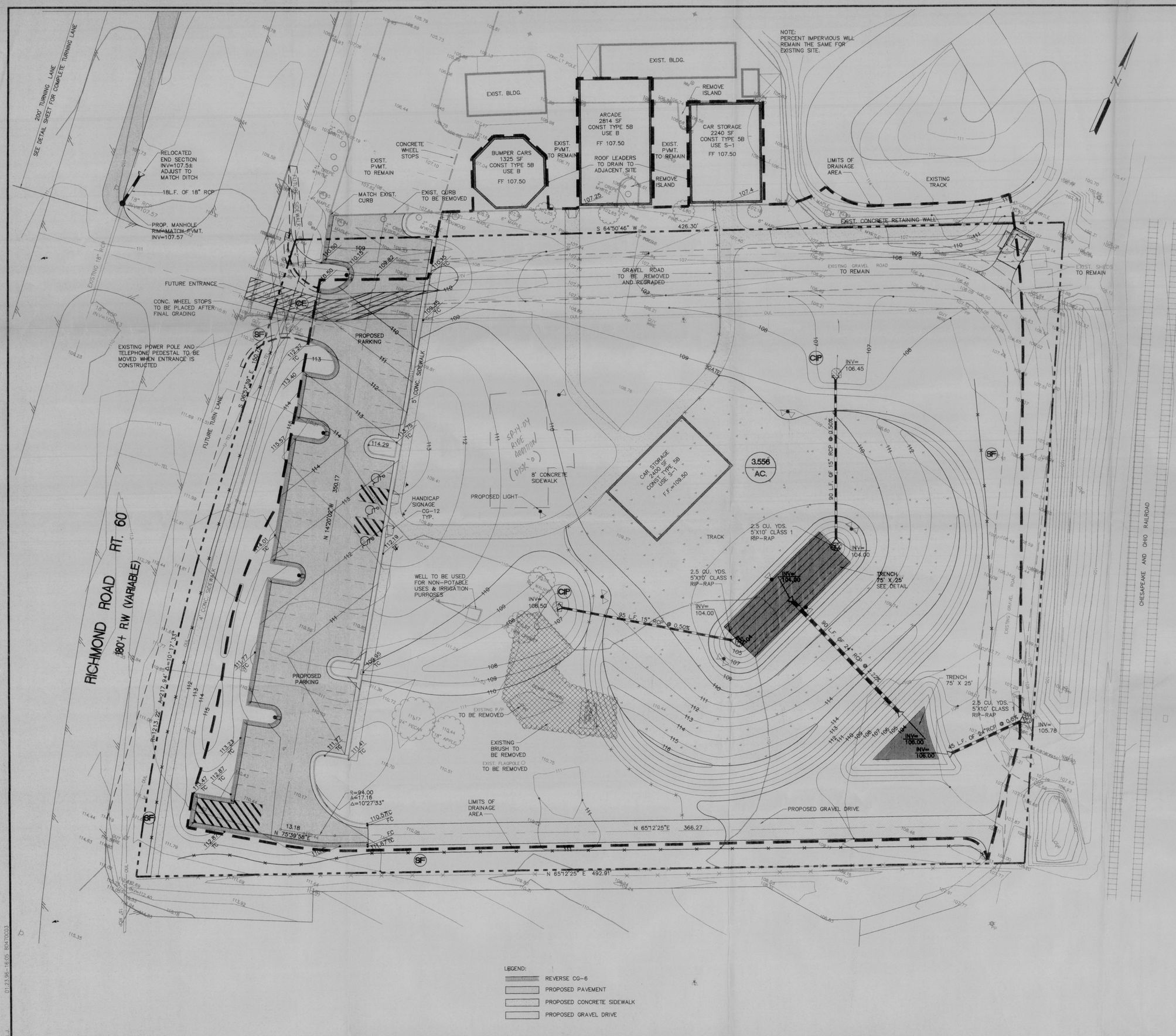
Designed	Drawn
RAC/emg	
Scale	Date
1"=20'	12/26/96

Project No. 8047

Drawing No. 1 OF 1

12.26.96-12:46 80470003

YR004_GO_CARTS_PLUS - 003



LEGEND:

- REVERSE CG-6
- PROPOSED PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED GRAVEL DRIVE

GRAPHIC SCALE

20' 0' 20' 40'

SCALE: 1" = 20'

SEQUENCE OF CONSTRUCTION

PHASE 1

INSTALLATION OF ALL SILT FENCING AND THE CONSTRUCTION ENTRANCE.

PHASE 2

INSTALLATION OF THE MAIN INFILTRATION TRENCH IN THE CENTER OF THE TRACK AREA. THE TRENCH IS TO BE EXCAVATED FROM THE PERIMETER, NO HEAVY EQUIPMENT IS ALLOWED IN THE BOTTON OF THE TRENCH. AFTER PLACING THE REQUIRED TOP LAYER OF FILTER FABRIC, THE ADDITIONAL 1 FOOT OF #57 STONE IS TO BE PLACED. A TEMPORARY LAYER OF FILTER FABRIC SHALL THEN BE PLACED TO PROTECT THE TRENCH DURING CONSTRUCTION.

PHASE 3

SITE IMPROVEMENTS INCLUDING INSTALLATION OF THE 3 PIPES UNDER CENTER OF THE TRACK AND THE FILL FOR THE TRACK. AS SOON AS THE PIPES ARE PLACED THE CULVERT INLET PROTECTION SHALL BE PUT IN PLACE.

PHASE 4

SITE STABILIZATION AND EXCAVATION FOR THE SMALL POND OUTSIDE THE TRACK.

PHASE 5

ONCE THE ENTIRE SITE IS STABILIZED, THE STONE AND FILTER FABRIC CAN BE PLACED IN THE SMALL POND. REMOVE THE TEMPORARY FILTER FABRIC FROM THE TRACK POND.

No.	DATE	REVISION / COMMENT / NOTE	BY
3	1/02/96	REV. PER JCC COMMENTS	DAC
2	11/29/95	REV. PER JCC COMMENTS	DAC
1	12/15/95	REV. PER JCC COMMENTS	DAC

COMMONWEALTH OF VIRGINIA
CARLOS A. CASTELLO
LICENSED PROFESSIONAL ENGINEER
No. 23036
10/10/95

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(804) 253-0040
Fax (804) 220-8994
CONSULTING ENGINEERS

GRADING AND DRAINAGE PLAN FOR GO KARTS PLUS

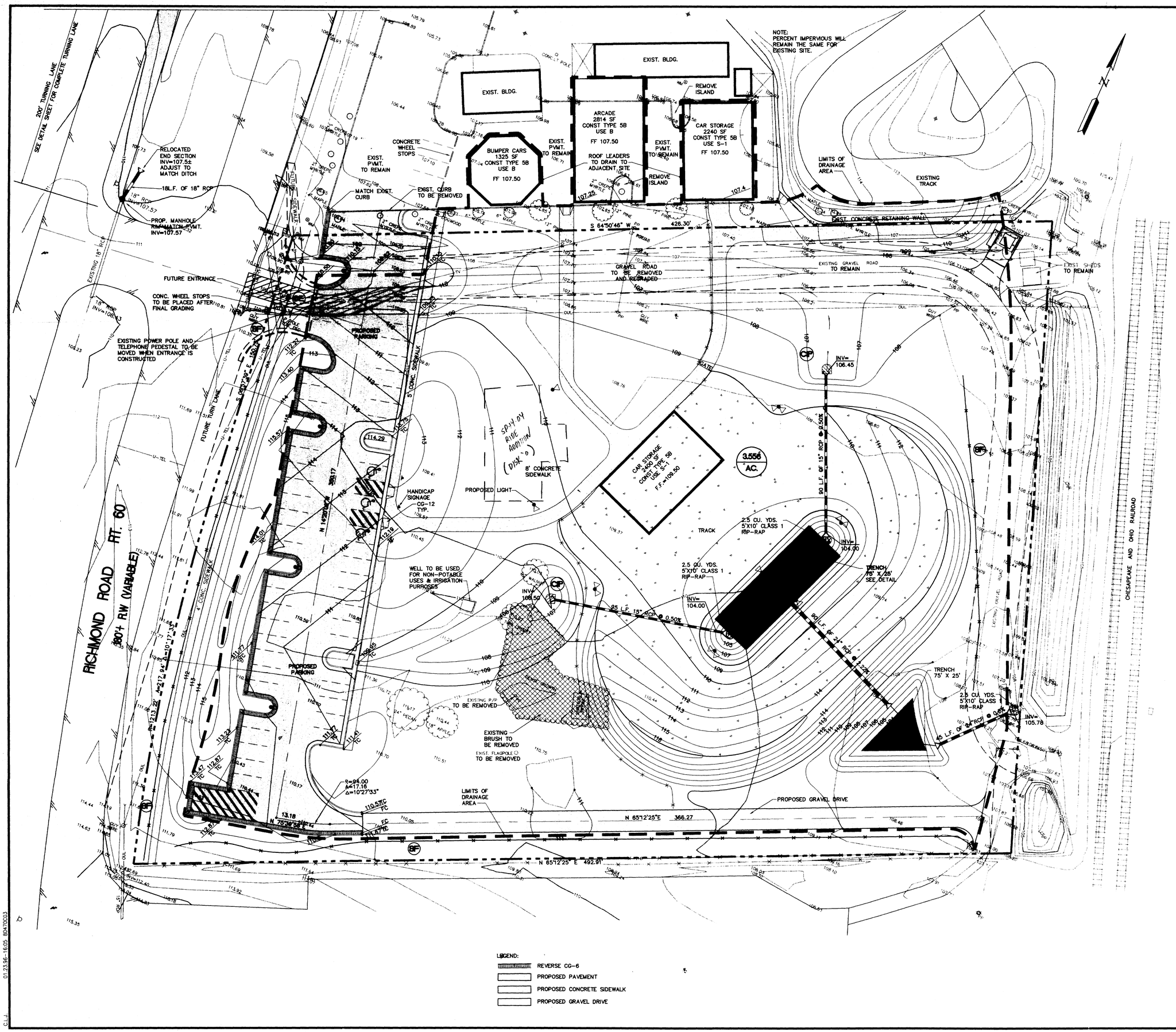
JAMES CITY COUNTY VIRGINIA

STONEHOUSE DISTRICT

Designed	Drawn
RAC/emg	SCL
Scale	Date
1"=20'	10/10/95

Project No. 8047

Drawing No. 3 OF 7



LEGEND:

- REVERSE CG-6
- PROPOSED PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED GRAVEL DRIVE

GRAPHIC SCALE

20' 0' 20' 40'

SCALE: 1" = 20'

SEQUENCE OF CONSTRUCTION

PHASE 1

INSTALLATION OF ALL SILT FENCING AND THE CONSTRUCTION ENTRANCE.

PHASE 2

INSTALLATION OF THE MAIN INFILTRATION TRENCH IN THE CENTER OF THE TRACK AREA. THE TRENCH IS TO BE EXCAVATED FROM THE PERIMETER, NO HEAVY EQUIPMENT IS ALLOWED IN THE BOTTON OF THE TRENCH. AFTER PLACING THE REQUIRED TOP LAYER OF FILTER FABRIC, THE ADDITIONAL 1 FOOT OF #57 STONE IS TO BE PLACED. A TEMPORARY LAYER OF FILTER FABRIC SHALL THEN BE PLACED TO PROTECT THE TRENCH DURING CONSTRUCTION.

PHASE 3

SITE IMPROVEMENTS INCLUDING INSTALLATION OF THE 3 PIPES UNDER CENTER OF THE TRACK AND THE FILL FOR THE TRACK. AS SOON AS THE PIPES ARE PLACED THE CULVERT INLET PROTECTION SHALL BE PUT IN PLACE.

PHASE 4

SITE STABILIZATION AND EXCAVATION FOR THE SMALL POND OUTSIDE THE TRACK.

PHASE 5

ONCE THE ENTIRE SITE IS STABILIZED, THE STONE AND FILTER FABRIC CAN BE PLACED IN THE SMALL POND. REMOVE THE TEMPORARY FILTER FABRIC FROM THE TRACK POND.

No.	DATE	REVISION / COMMENT / NOTE	BY
3	1/23/96	REV. PER JCC COMMENTS	DMG
2	1/12/96	REV. PER JCC COMMENTS	DMG
1	12/15/95	REV. PER JCC COMMENTS	DMG

COMMONWEALTH OF VIRGINIA
RICHARD A. COSTELLO
CERTIFICATE NO. 9000
10/10/95
CERTIFIED PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(804) 253-0040
Fax (804) 220-8994
CONSULTING ENGINEERS

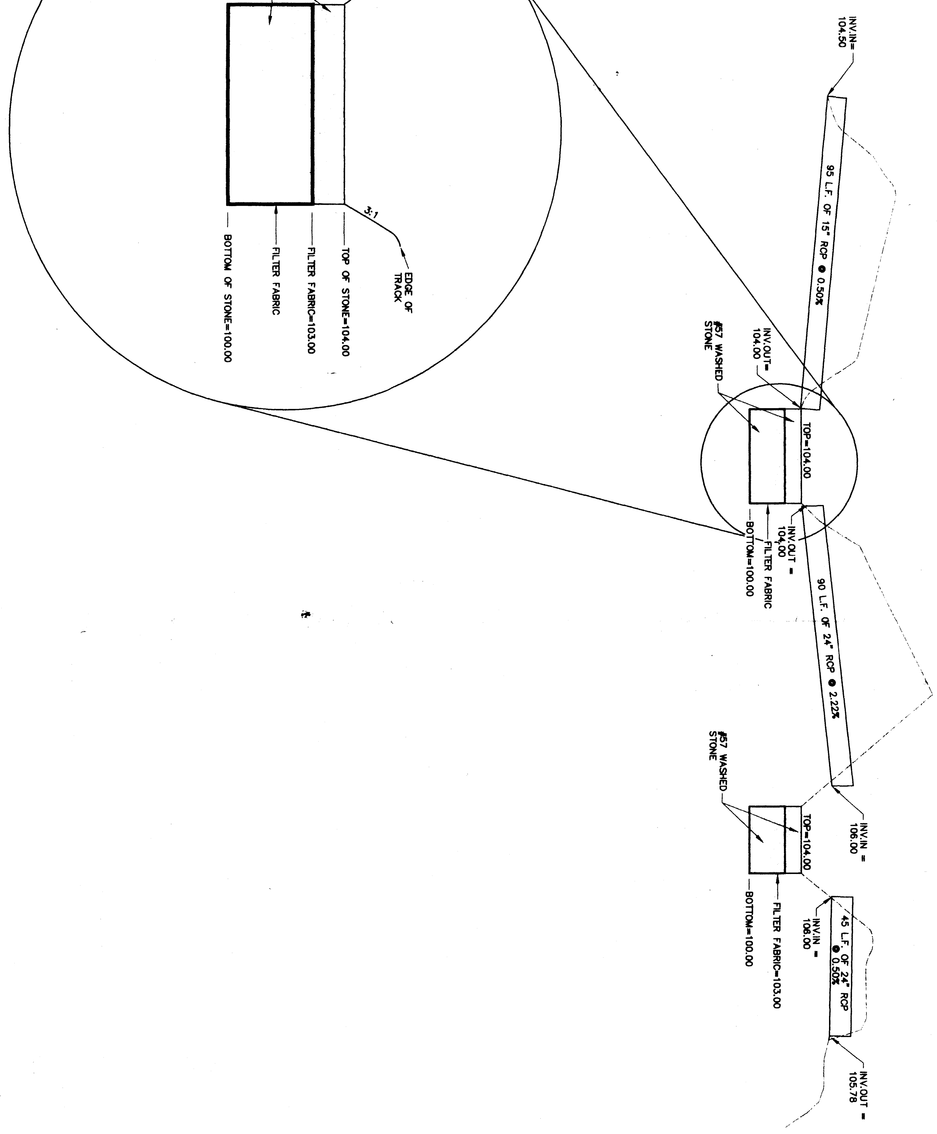
GRADING AND DRAINAGE PLAN FOR GO KARTS PLUS

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Designed RAC/emg	Drawn SCL
Scale 1"=20'	Date 10/10/95
Project No. 8047	
Drawing No. 3 OF 7	

C.L.J. 01.23.96-16:05 80470003

YR004_GO_CARTS_PLUS - 005



NOTES AND DETAILS FOR GO KARTS PLUS

STONEHOUSE DISTRICT — JAMES CITY COUNTY — VIRGINIA

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(804) 253-0040
Fax (804) 220-8994

COMMONWEALTH OF VIRGINIA
RICHARD A. COSTELLO
CERTIFICATE NO. 013250
CERTIFIED PROFESSIONAL ENGINEER
10/10/95

Designed	Drawn
RAC/EMG	GO
Scale	Date
NONE	10-10-95
Project No.	
80470	
Drawing No.	
7 OF 7	

No.	DATE	REVISION / COMMENT / NOTE	BY
2	1/22/96	REV. PER JCC COMMENTS	EMG
1	1/12/96	REV. PER JCC COMMENTS	EMG

Option 1 STAGE / STORAGE TABLE R to reset

1. RESERVOIR No = 4. 2. RESERVOIR NAME = combined....
3. S = Ks * Z^b
Ks = 0..... b = 0.....
START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	92.54.	886.....	0	0
5	9.46	102.00.	886.....	8378	8378
6	10.45	102.99.	1811....	1340	9718
7	11.46	104.00.	2870....	2363	12081
8	12.45	104.99.	4047....	3423	15504
9	13.46	106.00.	5338....	4739	20243
10	14.45	106.99.	6743....	5980	26223
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

Change item number: 0 ↵ to cont

Reservoir No. 4 OUTLET STRUCTURES

CULVERT STRUC A. Q=CoA[2gh/k]^.5

1. WIDTH (in) = 24.
2. HEIGHT (in) = 24.
3. No. BARRELS = 1..
4. INVERT ELEV. = 104.....
5. Co = 0.60
6. CULVERT LENGTH (ft) = 75..
7. CULVERT SLOPE (%) = .5..
8. MANNING'S N-VALUE = .013

CULVERT STRUC B. Q=CoA[2gh/k]^.5

9. WIDTH (in) = 0..
10. HEIGHT (in) = 0..
11. No. BARRELS = 0..
12. INVERT ELEV. = 0.....
13. Co = 0.60
14. CULVERT LENGTH (ft) = 0...
15. CULVERT SLOPE (%) = 0...
16. MANNING'S N-VALUE = .013
17. MULTI-STAGE OPTION ? (Y/N) N

WEIR STRUCTURE A. Q=CwLH^EXP

18. CREST LENGTH (ft) = 0.....
19. CREST ELEVATION = 0.....
20. Cw = 3.00
21. EXP = 1.50
22. MULTI-STAGE OPTION ? (Y/N) N

WEIR STRUCTURE B. Q=CwLH^EXP

23. CREST LENGTH (ft) = 0.....
24. CREST ELEVATION = 0.....
25. Cw = 3.00
26. EXP = 1.50
27. MULTI-STAGE OPTION ? (Y/N) N

Change item number: 0 ↵ to cont

Option 1 STAGE / STORAGE / DISCHARGE SUMMARY

RESERVOIR No = 4 RESERVOIR NAME = combined....

S = Ks * Z^b

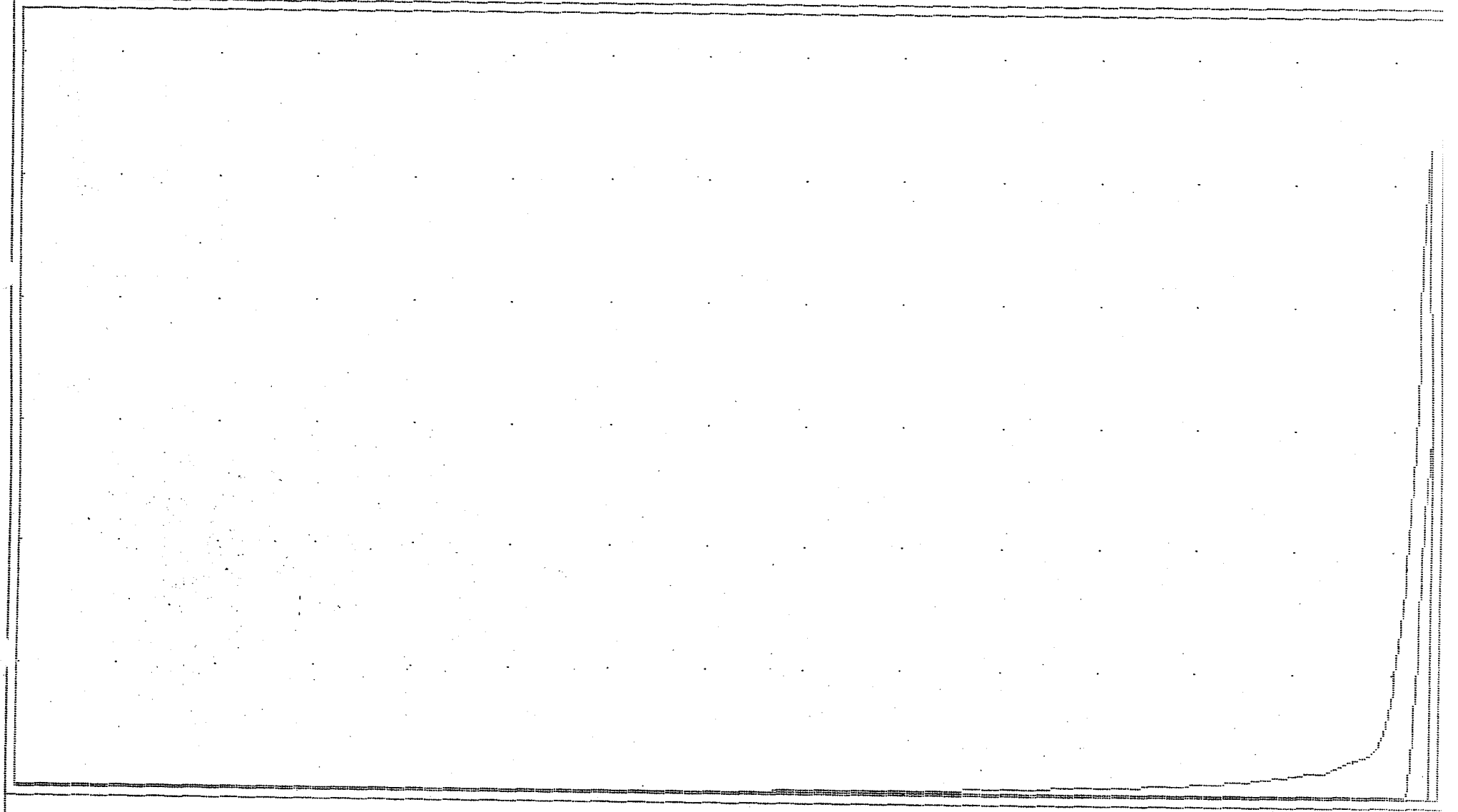
Ks = 0 b = 0

START ELEV = 0 INCREMENT = 0

STAGE ft	ELEVATION ft	STORAGE cu ft	DISCHARGE cfs	
0.00	92.54	0	0.00	1.
9.46	102.00	8378	0.00	2.
10.45	102.99	9718	0.00	3.
11.46	104.00	12081	0.00	4.
12.45	104.99	15504	5.33	5.
13.46	106.00	20243	15.16	6.
14.45	106.99	26223	21.36	7.
0.00	0.00	0	0.00	8.
0.00	0.00	0	0.00	9.
0.00	0.00	0	0.00	10.
0.00	0.00	0	0.00	11.

[↵] cont [E] edit [R] reset [G] graph [S] screen [P] print

Qp = 14.3 RESERVOIR ROUTE 50 Yr

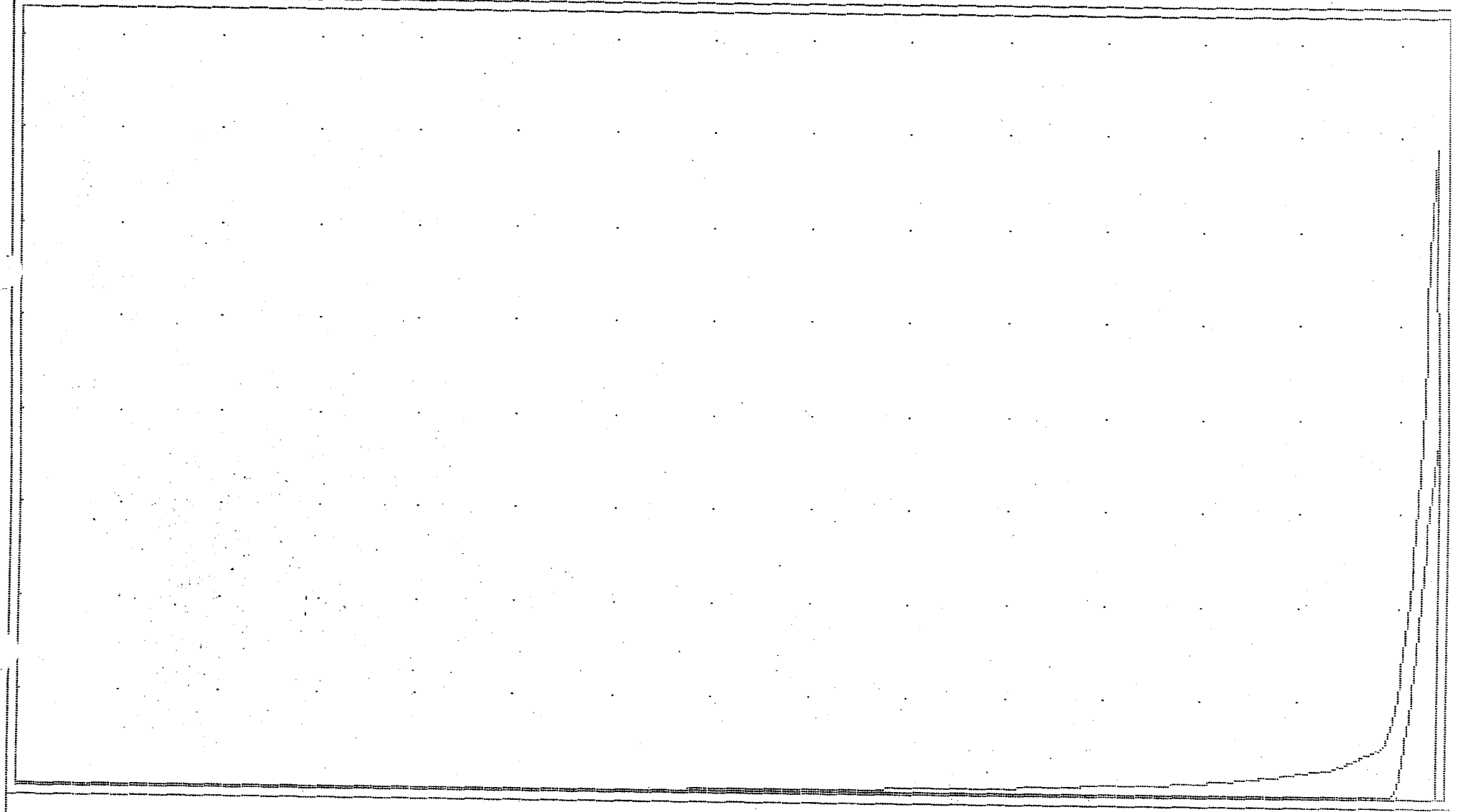


HGU = 50 min 10 VGU = 5.0 cfs

MAX STORAGE = 19597

MAX ELEVATION = 105.87

Qp = 18.5 RESERVOIR ROUTE 100 Yr



HGU = 50 min 16 VGU = 5.0 cfs

MAX STORAGE = 23174

MAX ELEVATION = 106.49

S.C.S. HYDROGRAPH c:8047.GP1

TYP. PRE-DEV

1. HYDROGRAPH No. = 2.....

2. HYDROGRAPH DESCRIPTION

   A. 10 year pre dev.....
   B. .....
   C. .....

3. AREA (ac) = 3.82.....

4. BASIN SLOPE (%) = 1.....

5. HYDRAULIC LENGTH (ft) = 250...

6. CURVE NUMBER = 74.....

7. TIME INTERVAL (min) = 1.....

8. 24 HR PRECIPITATION = 5.9.

9. RETURN PERIOD = 10.

10. DISTRIBUTION = 3....

    1. I 2. IA 3. II

    4. III 5. SYNTH 6. MAN

    7. IIA 8. SOMERSET

11. STORM DUR (hrs) = 0..

Change item number: 0

S.C.S. HYDROGRAPH c:8047.GP1

TYP. POST DEV

1. HYDROGRAPH No. = 3.....

2. HYDROGRAPH DESCRIPTION

   A. 2 year post dev.....
   B. .....
   C. .....

3. AREA (ac) = 3.82.....

4. BASIN SLOPE (%) = 1.....

5. HYDRAULIC LENGTH (ft) = 250...

6. CURVE NUMBER = 81.....

7. TIME INTERVAL (min) = 1.....

8. 24 HR PRECIPITATION = 3.7.

9. RETURN PERIOD = 2..

10. DISTRIBUTION = 3....

    1. I 2. IA 3. II

    4. III 5. SYNTH 6. MAN

    7. IIA 8. SOMERSET

11. STORM DUR (hrs) = 0..

Change item number: 0

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 3

OUTSIDE TRACK POND

RESERVOIR NAME = outside.....
STORAGE VALUES WERE INPUT MANUALLY

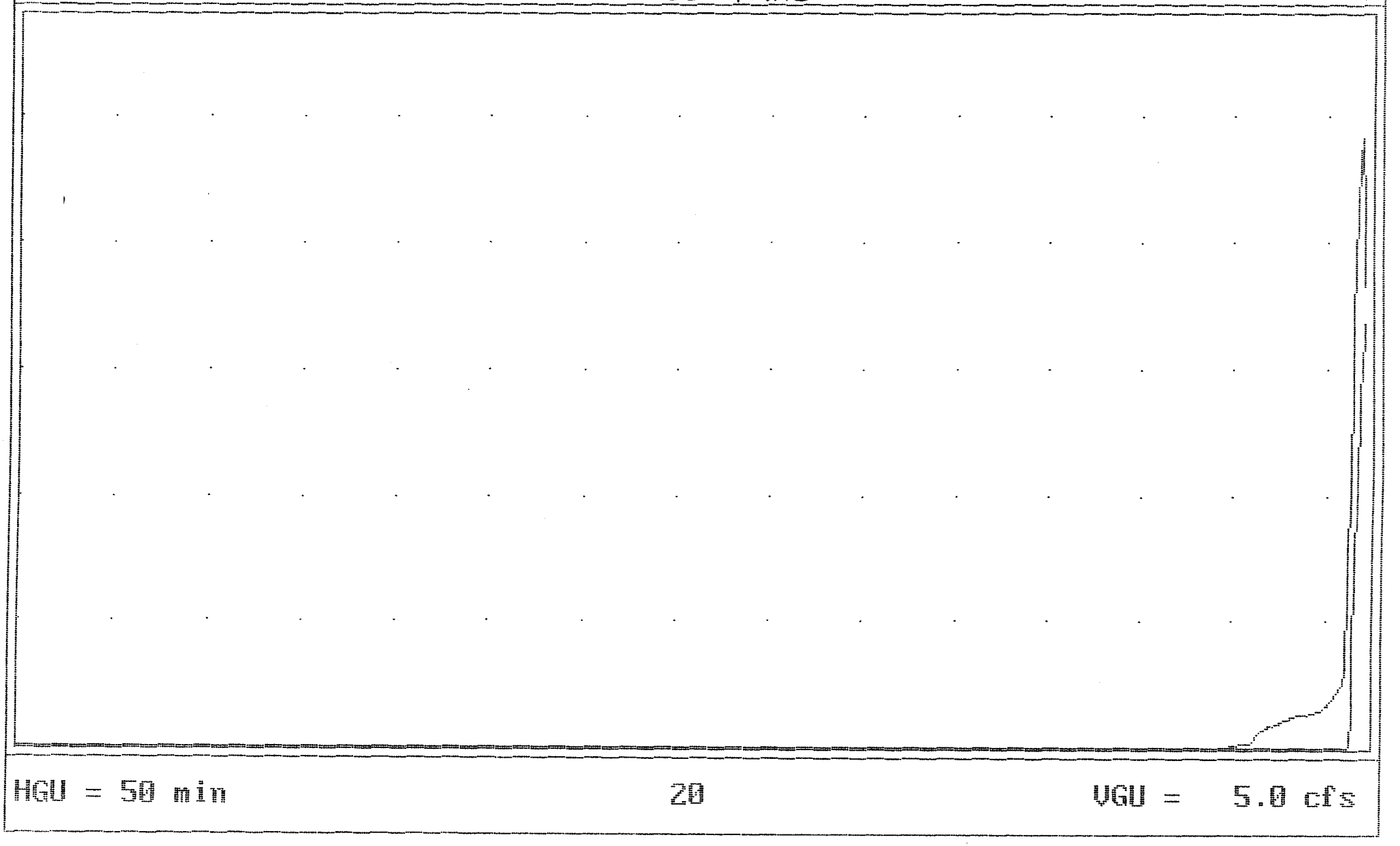
DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 1
CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 0
WEIR STRUCT A. Q = 3 * 0 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A	CULVERT B	WEIR A	WEIR B
104.00	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00
106.00	0.00	0.00	0.00	0.00
107.00	0.00	0.00	0.00	0.00
108.00	1.75	0.00	0.00	0.00
109.00	14.18	0.00	0.00	0.00
110.00	26.42	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	104.00	0	0	0.00
1.00	105.00	701	701	0.00
2.00	106.00	1129	1830	0.00
3.00	107.00	1637	3467	0.00
4.00	108.00	2205	5672	1.75
5.00	109.00	2829	8501	14.18
6.00	110.00	3510	12011	26.42
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

Qp = 16.8 RESERVOIR ROUTE 50 Yr

OUTSIDE TRACK POND



HGU = 50 min 20 VGU = 5.0 cfs

MAX STORAGE = 9371

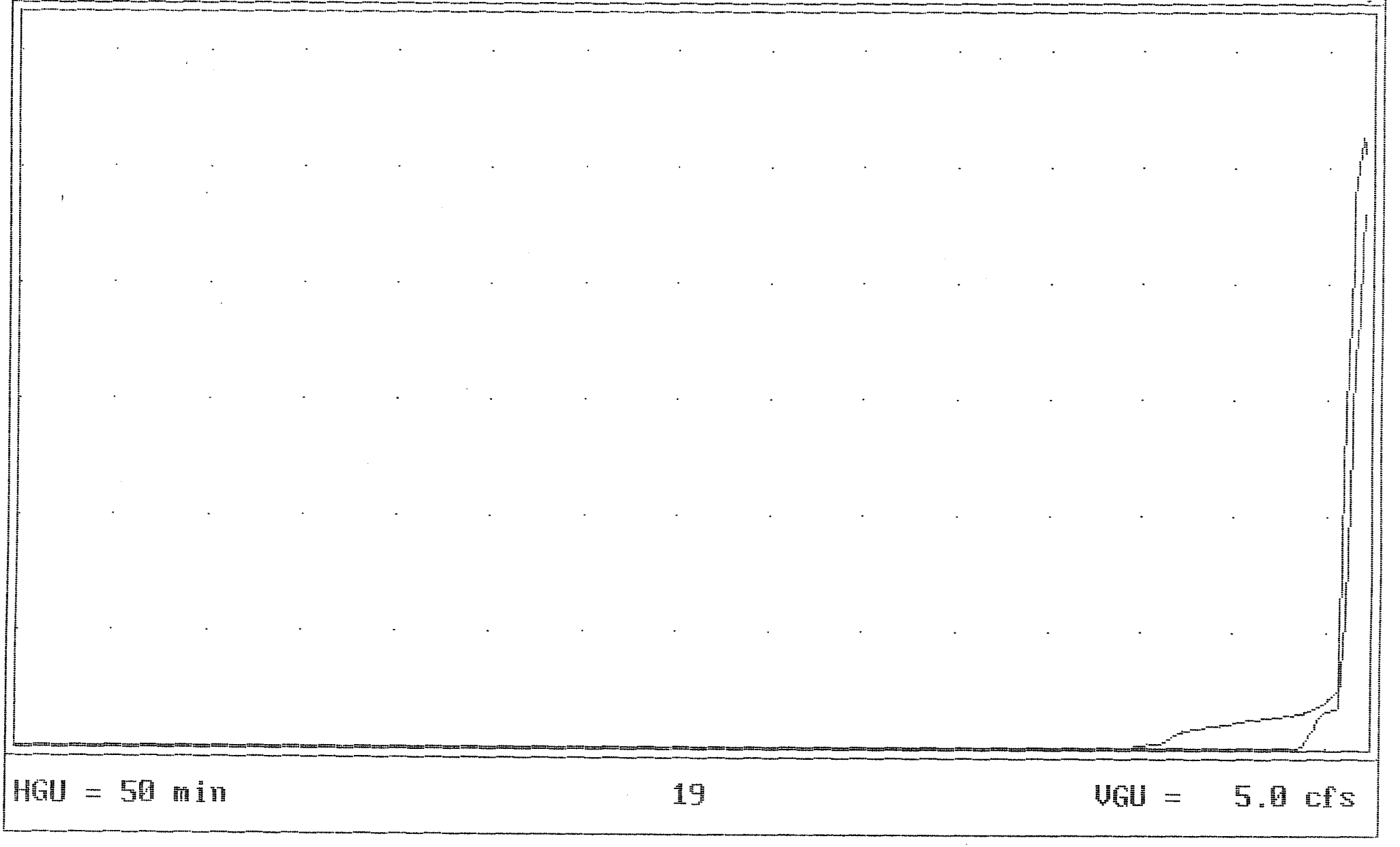
MAX ELEVATION = 109.25

Qp = 23.0

RESERVOIR ROUTE

OUTSIDE TRACK POND

100 Yr



HGU = 50 min

19

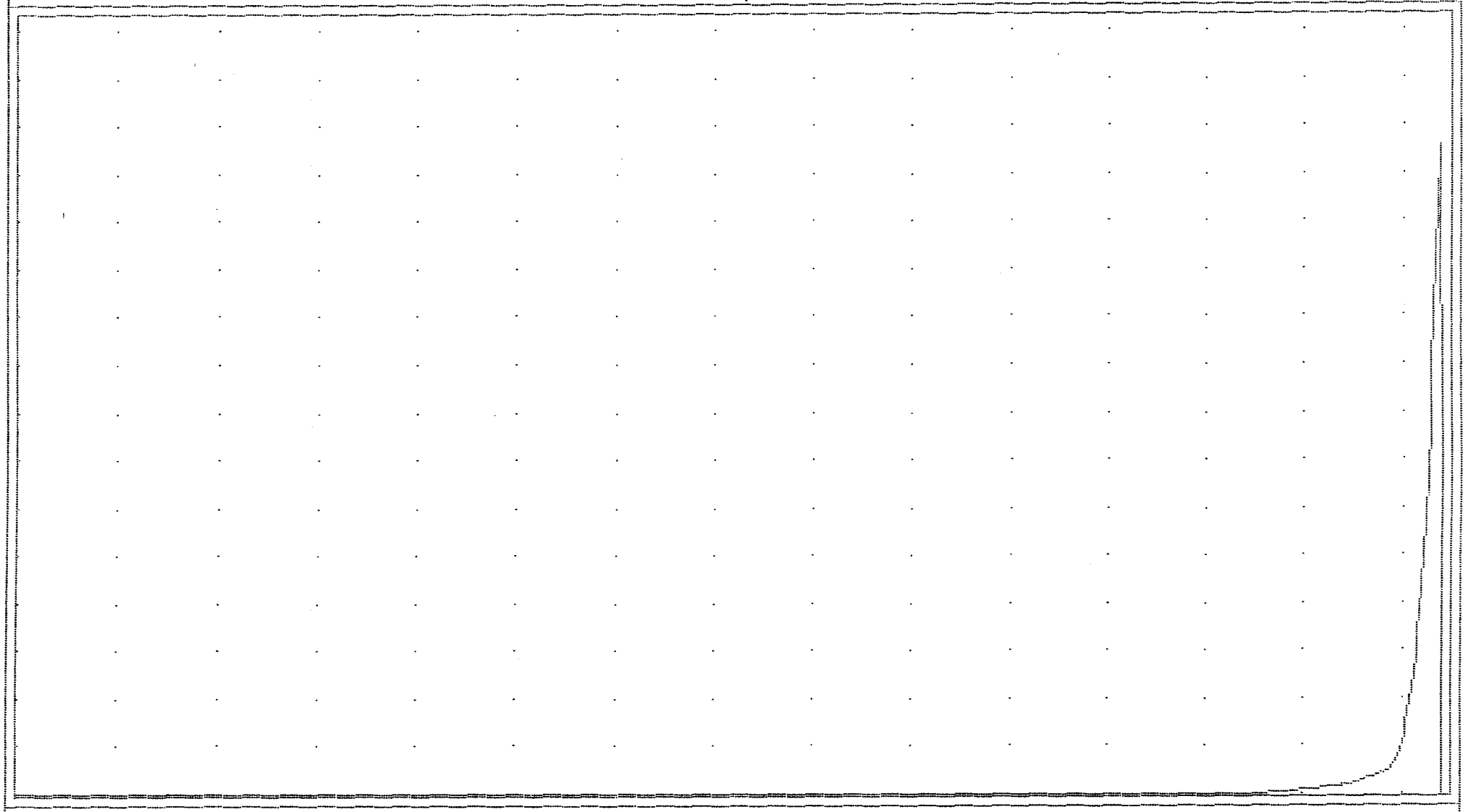
VGU = 5.0 cfs

MAX STORAGE = 10840

MAX ELEVATION = 109.67

Qp = 6.8 S.C.S. RUNOFF 2 Yr

PRE -DEV

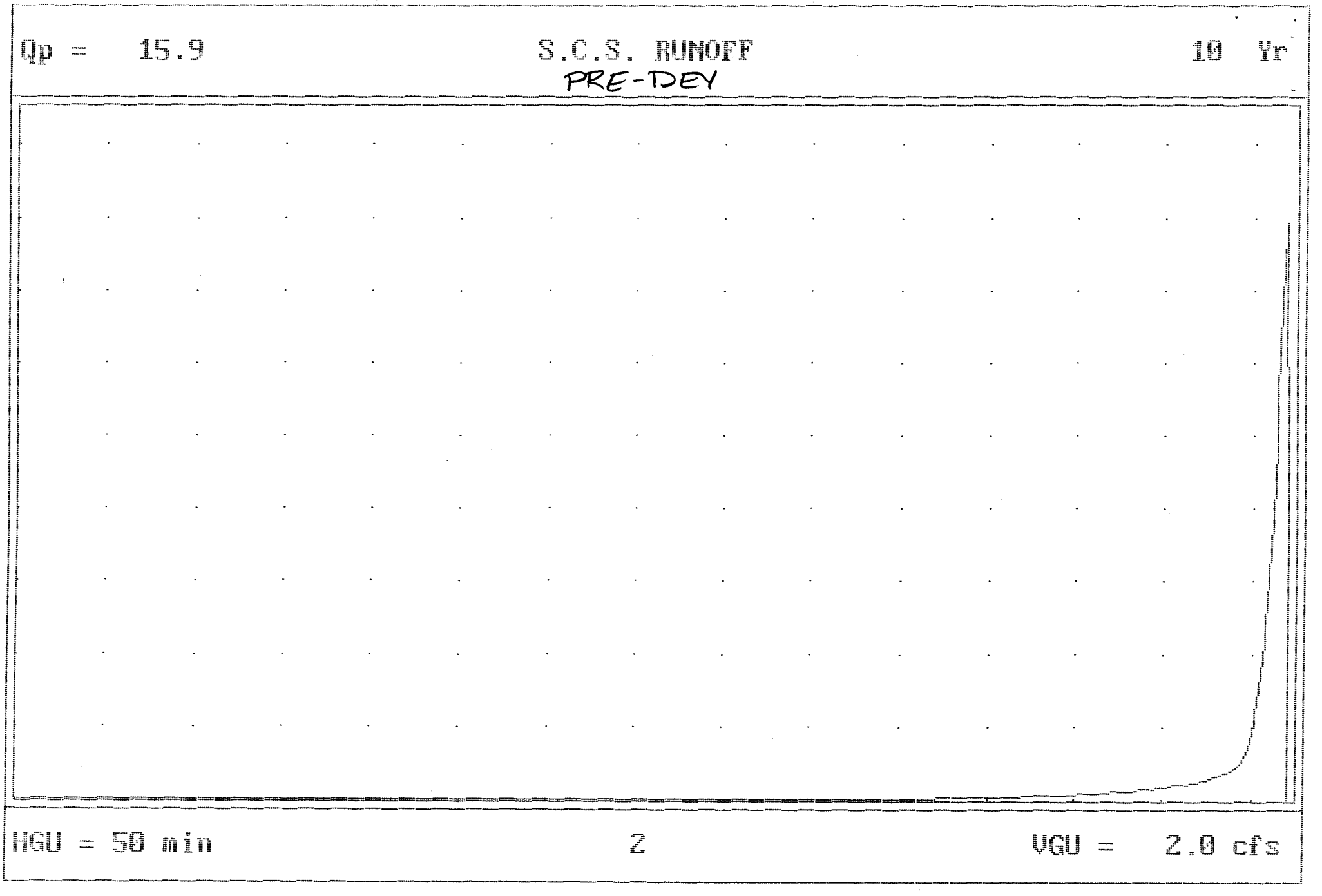


HGU = 50 min 1 VGU = 0.5 cfs

VOL = (cuft/acft) = 3786 / 0.087

Qp = 15.9 S.C.S. RUNOFF 10 Yr

PRE-DEV

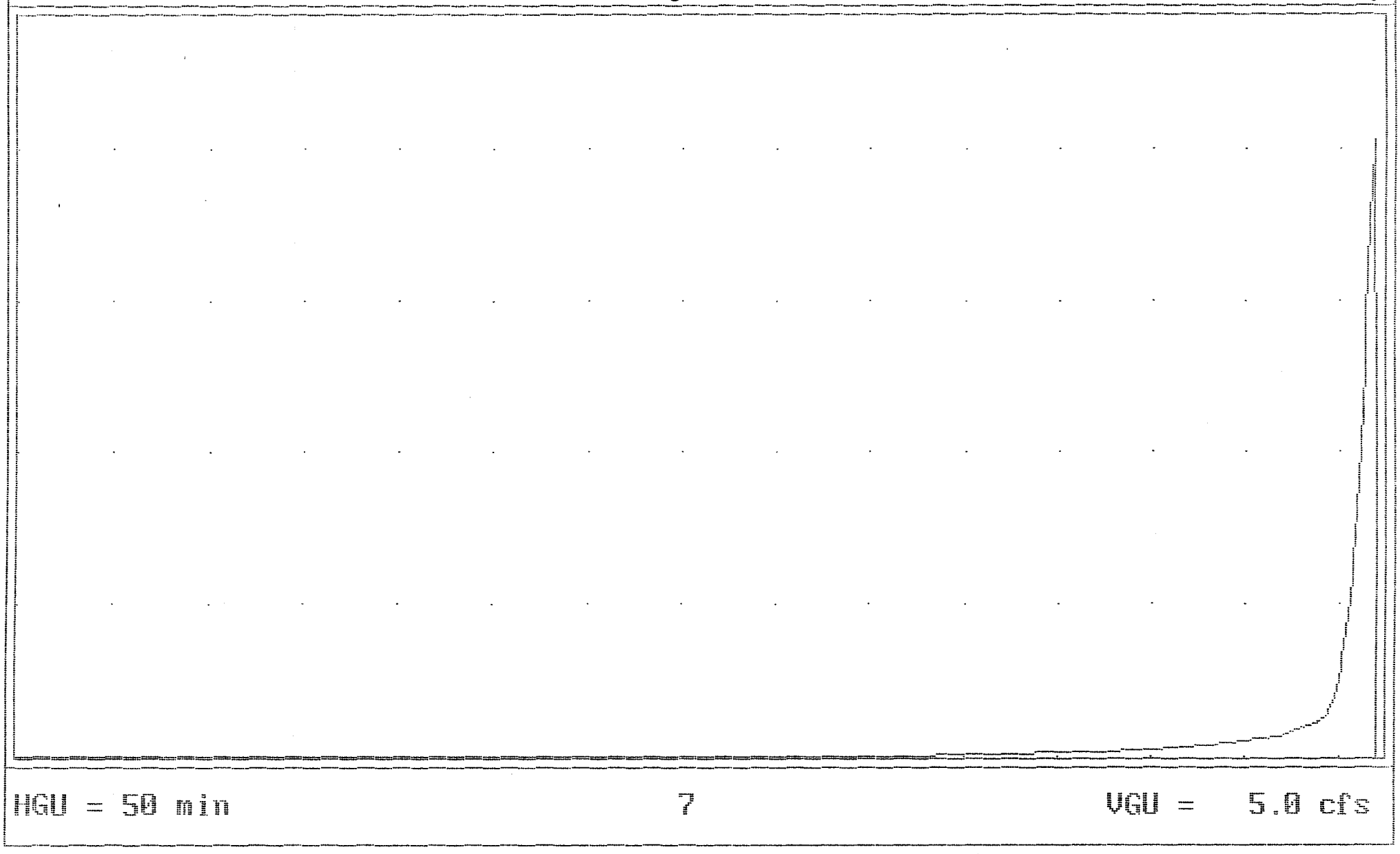


HGU = 50 min 2 VGU = 2.0 cfs

VOL = (cuft/acft) = 11643 / 0.267

Qp = 20.3 S.C.S. RUNOFF 50 Yr

PRE-DEV



HGU = 50 min 7 VGU = 5.0 cfs

VOL = (cuft/acft) = 15995 / 0.367

Project _____ Plan Sheet No. ____ Designer _____ Sheet ____ of ____

Rev. Date _____ Date _____

HYDROLOGICAL DATA:

D.A. = _____ AC.

AHW Controls STATION: _____

100 yr. Flood plain _____ elev. _____

Design AHW depth _____ elev. _____

Structures _____ elev. _____

freq. TW elev.

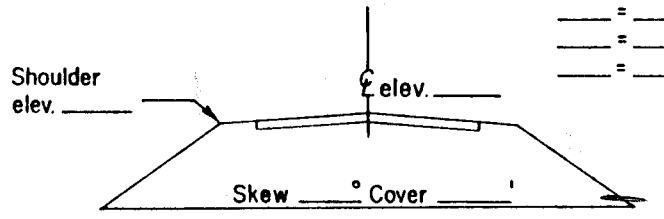
____ = _____

____ = _____

____ = _____

____ = _____

____ = _____



Inv. El. 104 So = 2.22 Inv. El. 106

Orig. Gr. Elev. _____ L = 90 Orig. Gr. Elev. _____

DISCHARGES USED

Q ____ = _____ CFS

Q ____ = _____ CFS

Q ____ = _____ CFS

Q ____ = _____ CFS

Q ____ = _____ CFS

RISK ASSESSMENT ADT _____

Detours Available _____, Length _____

Overtopping Stage _____

Flood Plain Management _____

Criteria and Significant Impact _____

CULVERT TYPE & SIZE	Q	Q/B	HEADWATER COMPUTATIONS: INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ke	dc	$\frac{dc+D}{2}$	ho	H	LSo	HW	CONT. HW. ELEV.	OUTLET VELOCITY C.M.	OUTLET VELOCITY Smooth	End Treat.	COMMENTS
24" RCP in	10		N/A		0.5	-	-	1.78	.4	-2	4.18	108.18				TW = 107.78
1st Pond	15		N/A		0.5	-	-	2.33	0.85	-2	5.18	109.18				TW = 108.33
	5		N/A					1.18	0	-2	3.18	107.18				TW = 107.18
Pipe in lower Pond	5		0.55	1.1	0.5	0.8	1.4	0.5	0	.22	1.18	107.18				
	10		0.85	1.7	0.5	1.2	1.6	0.7	.4	.22	1.78	107.78				
	15		1.1	2.2	0.5	1.4	1.7	0.8	.85	.22	2.33	108.33				

Trial 1 $HW = H + h_o - LS_o$

$= .4 + 1 - (-2) = 3.4 + 104$

Design Flood Exceed. Prob. _____ Elev. _____

Overtop Flood Exceed. Prob. _____ Elev. _____

Base Flood 1% Exceed. Prob. _____ Elev. _____

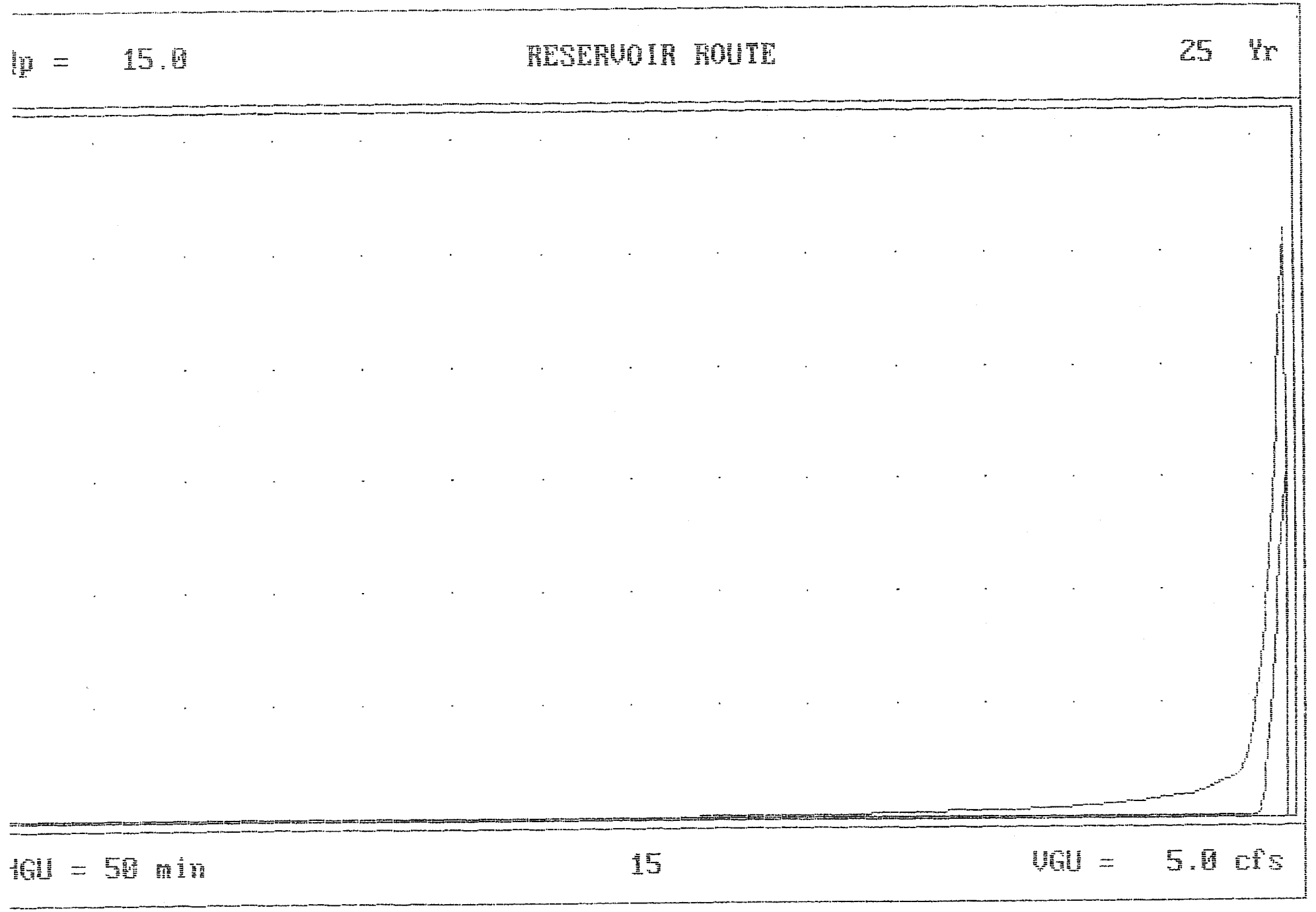
SUMMARY & RECOMMENDATIONS:

Option 1 STAGE / STORAGE TABLE R to reset

1. RESERVOIR No = 5. 2. RESERVOIR NAME = new combined
3. S = Ks * Z^b
Ks = 0..... b = 0.....
START ELEV = 0..... INCREMENT = 0...

	STAGE ft	ELEVATION ft	CO AREA sq ft	INC STORAGE cu ft	TOT STORAGE cu ft
4	0.00	102.40.	905.....	0	0
5	1.60	104.00.	905.....	1448	1448
6	2.60	105.00.	1810....	5429	6877
7	3.60	106.00.	2870....	2340	9217
8	4.60	107.00.	4270....	3570	12787
9	5.60	108.00.	5000....	4635	17422
10	6.60	109.00.	9600....	7300	24722
11	0.00	0.00.	0.....	0	0
12	0.00	0.00.	0.....	0	0
13	0.00	0.00.	0.....	0	0
14	0.00	0.00.	0.....	0	0

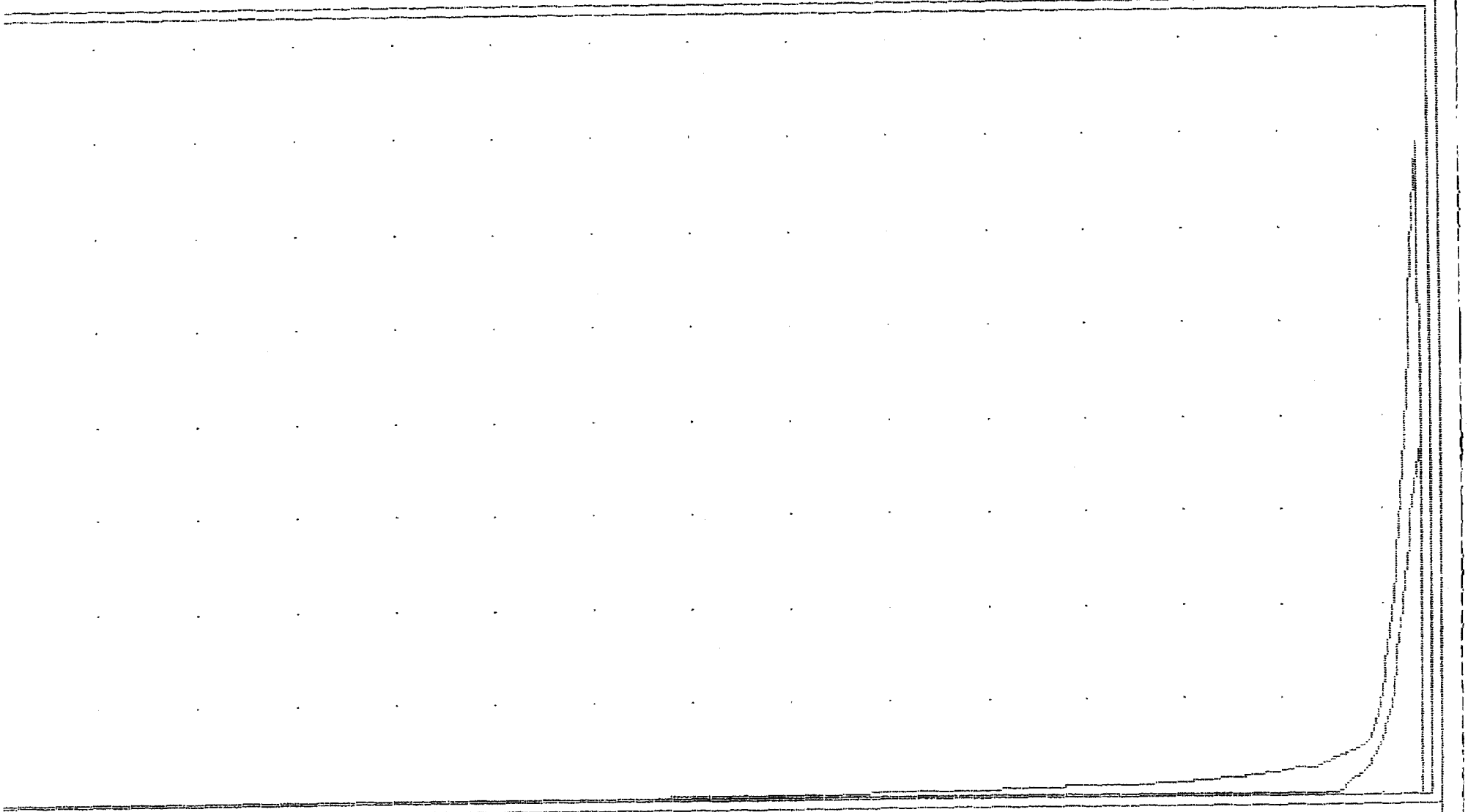
Change item number: 0 ↵ to cont



MAX STORAGE = 17270

MAX ELEVATION = 187.97

p = 18.1 RESERVOIR ROUTE 100 Yr

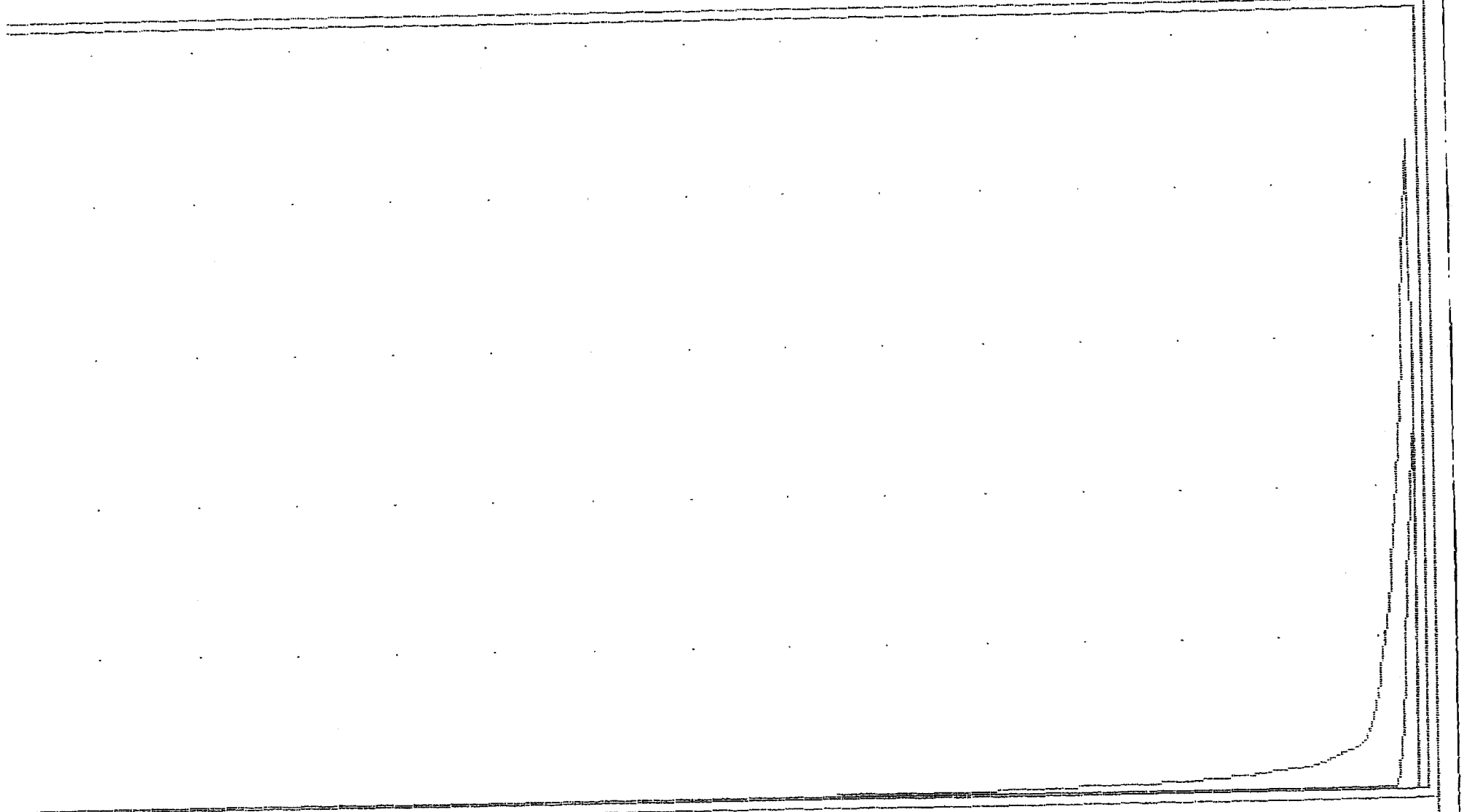


HGU = 50 min 16 VGU = 5.0 cfs

MAX STORAGE = 20590

MAX ELEVATION = 100.43

p = 11.7 RESERVOIR ROUTE 10 Yr



HGU = 50 min 14 VGU = 5.0 cfs

MAX STORAGE = 15311

MAX ELEVATION = 187.54

Qp = 0.0 RESERVOIR ROUTE 2 Yr

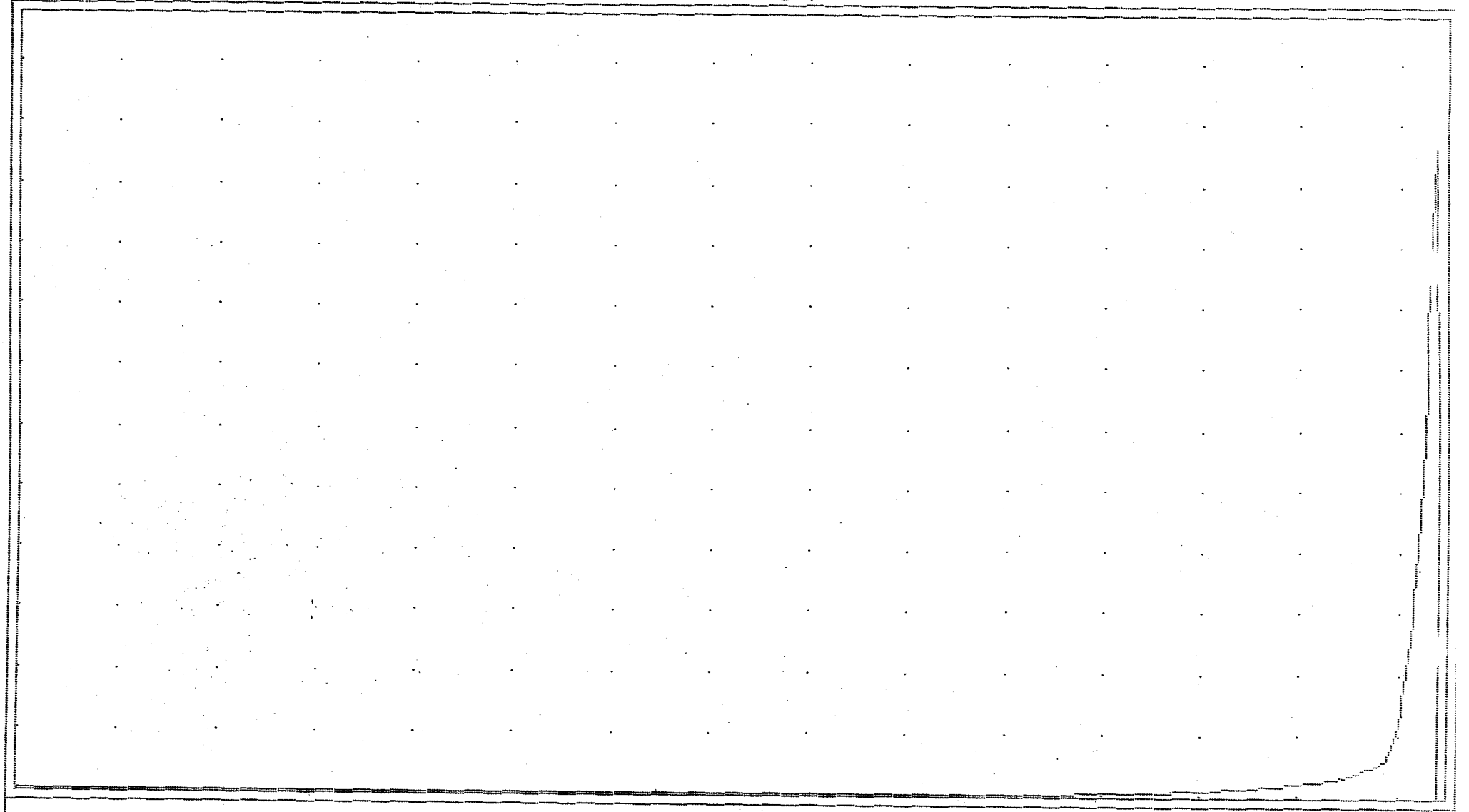
HGU = 1 min 13 VGU = 1.0 cfs

MAX STORAGE = 7685

MAX ELEVATION = 185.31

Qp = 10.6 S.C.S. RUNOFF 2 Yr

POST-DEV



HGU = 50 min 3 VGU = 1.0 cfs

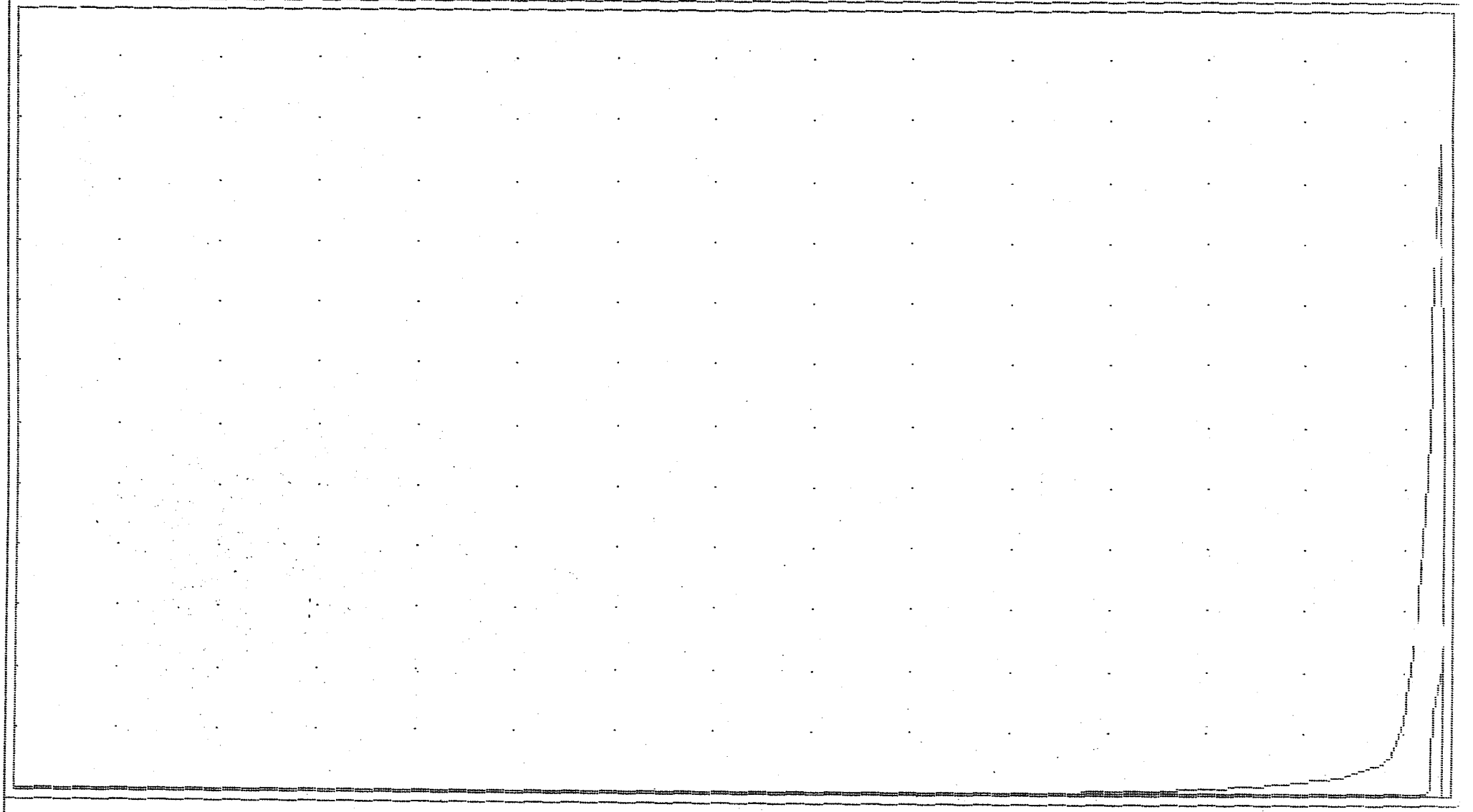
VOL = (cuft/acft) = 7605 / 0.175

Qp = 2.0

RESERVOIR ROUTE

TRACK POND

2 Yr



HGU = 50 min

13

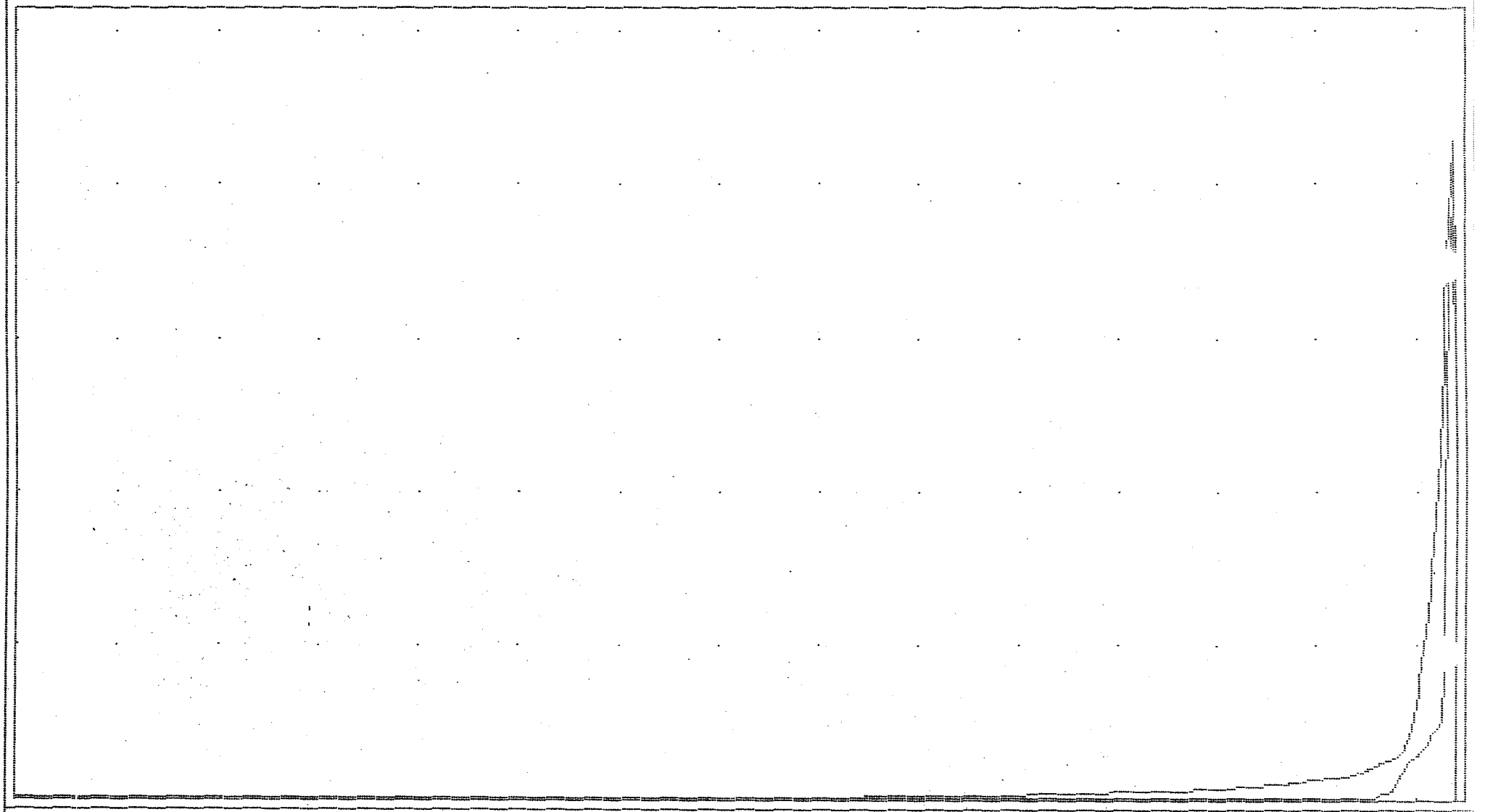
VGU = 1.0 cfs

MAX STORAGE = 7084

MAX ELEVATION = 107.00

Qp = 20.1 RESERVOIR ROUTE 10 Yr

TRACK POND



HGU = 50 min 14 VGU = 5.0 cfs

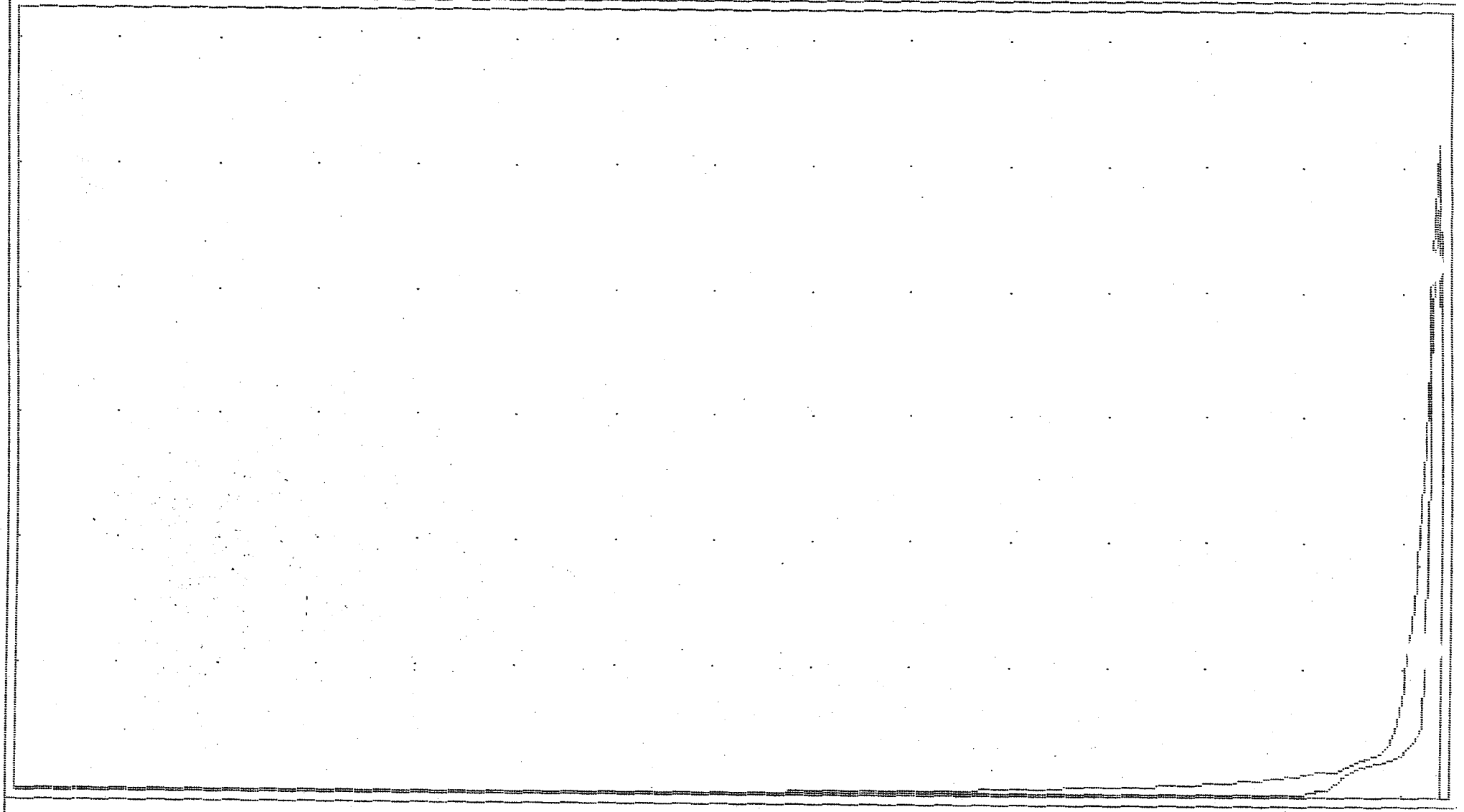
MAX STORAGE = 11245

MAX ELEVATION = 108.52

Qp = 24.1

RESERVOIR ROUTE
TRACK POND

25 Yr



HGU = 50 min

15

VGU = 5.0 cfs

MAX STORAGE = 11557

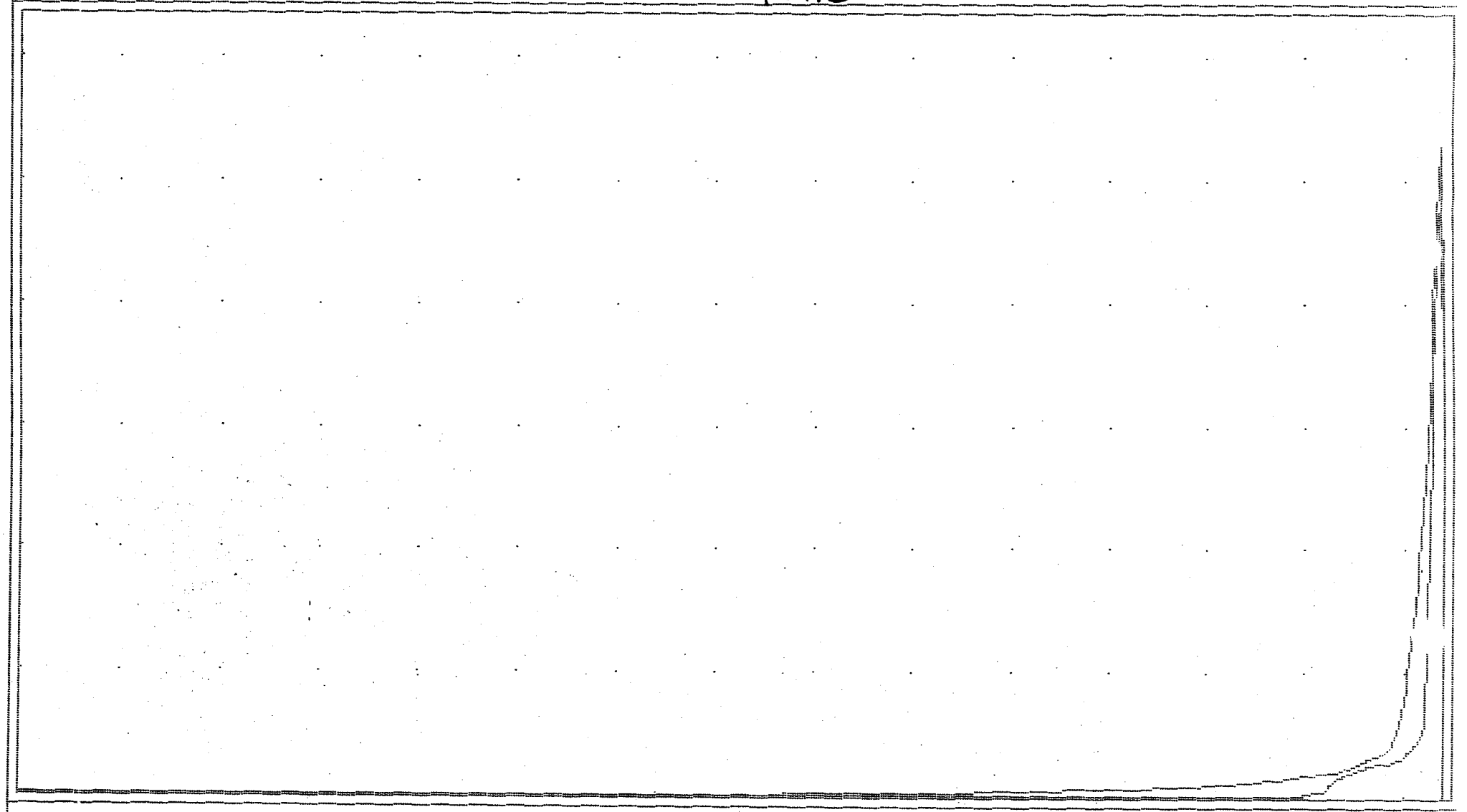
MAX ELEVATION = 108.62

Qp = 24.2

RESERVOIR ROUTE

TRACK POND

50 Yr



HGU = 50 min

18

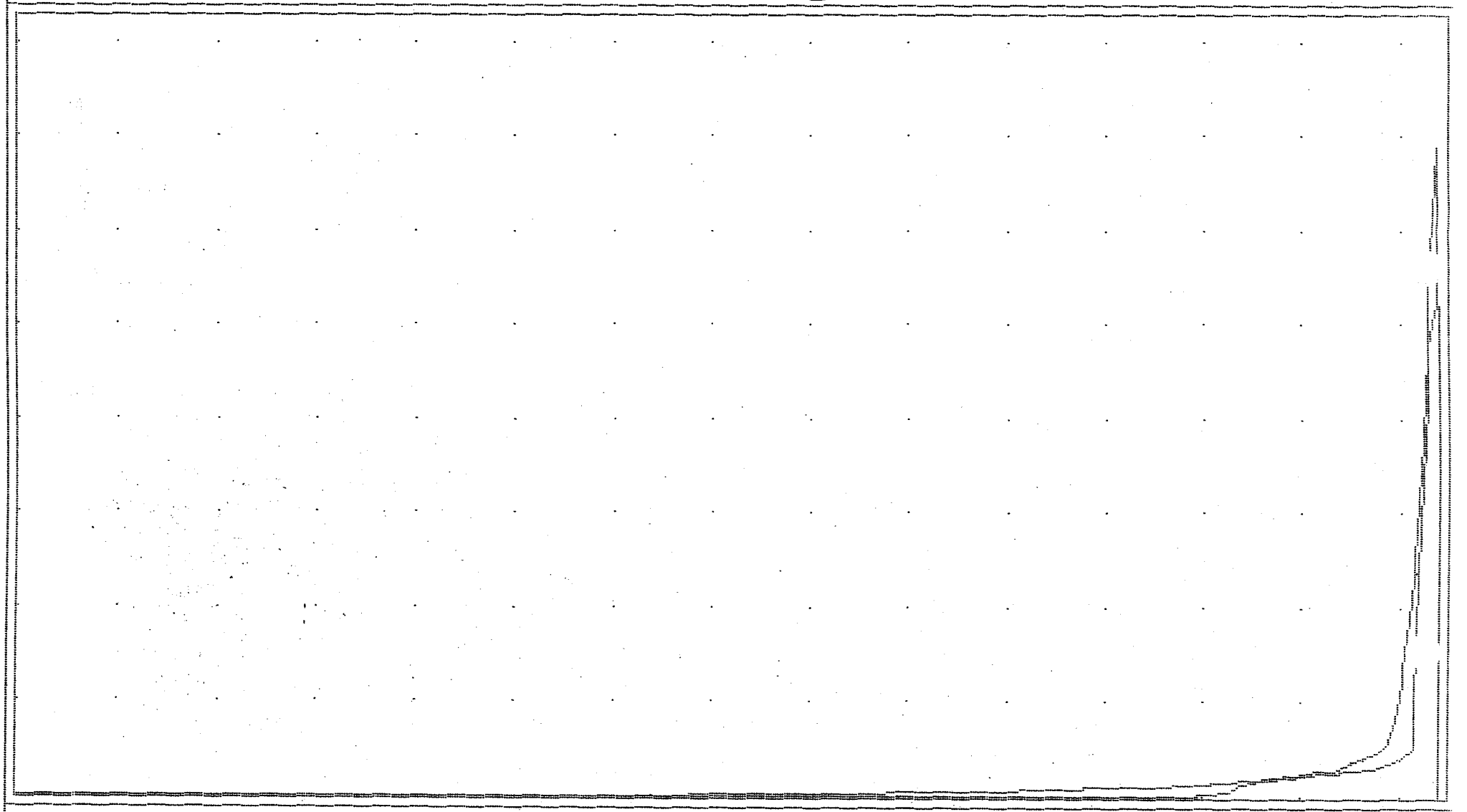
VGU = 5.0 cfs

MAX STORAGE = 11600

MAX ELEVATION = 108.63

Qp = 26.4 RESERVOIR ROUTE 100 Yr

TRACK POND



HGU = 50 min 16 VGU = 5.0 cfs

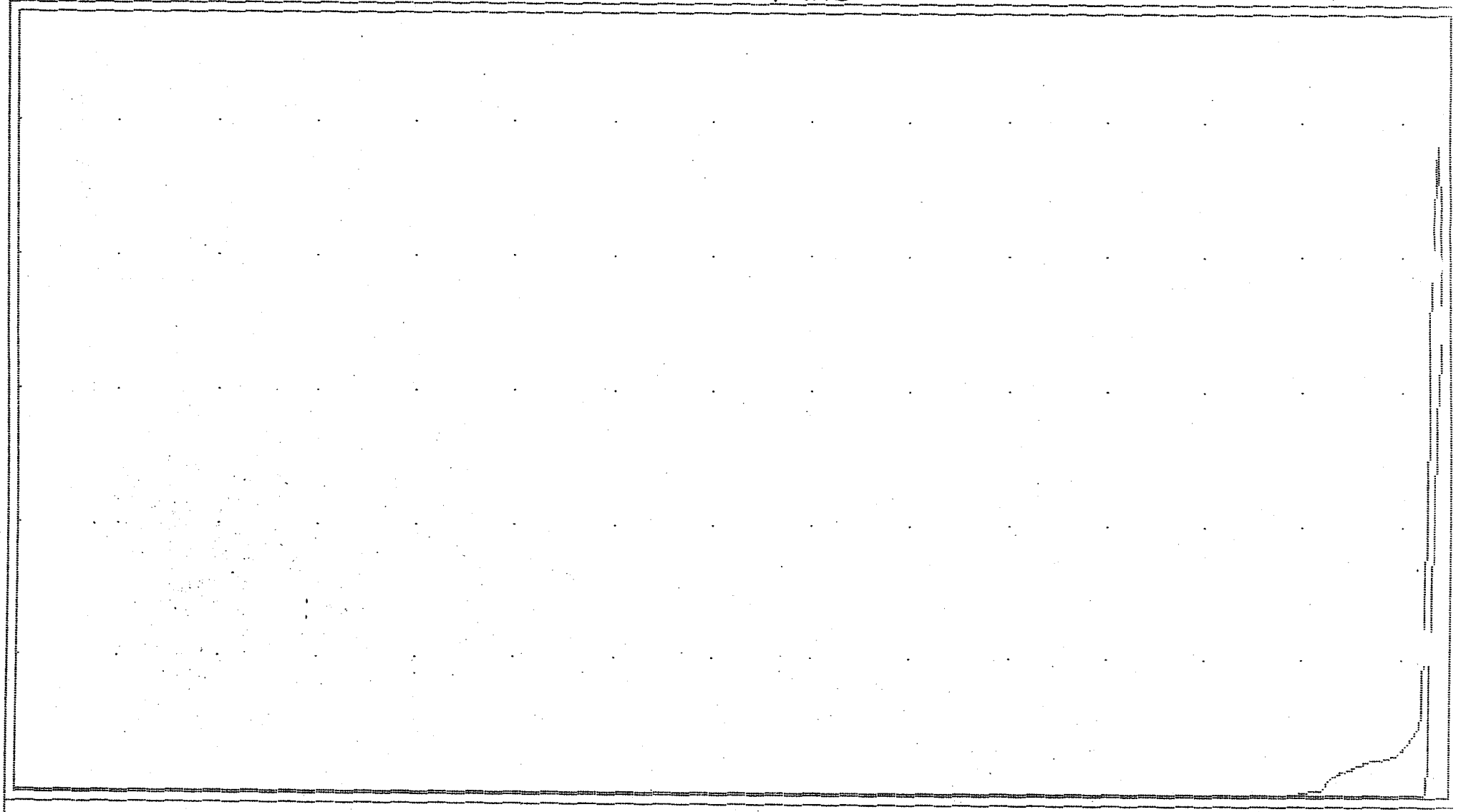
MAX STORAGE = 12930

MAX ELEVATION = 109.04

Qp = 16.8

RESERVOIR ROUTE
OUTSIDE TRACK POND

50 Yr



HGU = 50 min

20

VGU = 5.0 cfs

MAX STORAGE = 9371

MAX ELEVATION = 109.25

HYDROLOGIC REPORT

STAGE / STORAGE / DISCHARGE

RESERVOIR NUMBER = 2

RESERVOIR NAME = TRACK POND. (* Controlled by Culv Structure A)
STORAGE VALUES WERE INPUT MANUALLY

DISCHARGE VALUES: CULVERT STRUCT A. Q = .6 *A*[2gh/k]^.5 * 1
* CULVERT STRUCT B. Q = .6 *A*[2gh/k]^.5 * 1
* WEIR STRUCT A. Q = 3 * 15.89 * H ^ 1.5
WEIR STRUCT B. Q = 3 * 0 * H ^ 1.5

ELEVATION	DISCHARGE (cfs) CULVERT A	CULVERT B	WEIR A	WEIR B
100.60	0.00	0.00	0.00	0.00
105.00	0.00	0.00	0.00	0.00
106.00	6.40	1.28	0.00	0.00
107.00	14.81	2.03	0.00	0.00
108.00	21.39	2.60	0.00	0.00
109.00	26.20	0.00	47.67	0.00
109.50	28.30	0.00	87.58	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00

STAGE	ELEVATION	INC STOR cu ft	TOT STOR cu ft	OUTFLOW cfs
0.00	100.60	0 920	0	0.00
4.40	103~~105~~.00	4048 920	4048	0.00
5.40	104~~106~~.00	1211 1502	5259	1.28
6.40	105~~107~~.00	1821 2140	7080	2.03
7.40	106~~108~~.00	2487 2835	9567	2.60
8.40	107~~109~~.00	3210 3587	12777	26.20
~~8.90~~	~~107.5 109.50~~	~~2149~~ 5012	14926	28.30
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00
0.00	0.00	0	0	0.00

S.C.S. HYDROGRAPH c:8047.GP1

TYP. PRE-DEV

1. HYDROGRAPH No. = 2.....

2. HYDROGRAPH DESCRIPTION

   A. 10 year pre dev.....
   B. .....
   C. .....

3. AREA (ac) = 3.82.....

4. BASIN SLOPE (%) = 1.....

5. HYDRAULIC LENGTH (ft) = 250...

6. CURVE NUMBER = 74.....

7. TIME INTERVAL (min) = 1.....

8. 24 HR PRECIPITATION = 5.9.

9. RETURN PERIOD = 10.

10. DISTRIBUTION = 3....

    1. I 2. IA 3. II
    4. III 5. SYNTH 6. MAN
    7. IIA 8. SOMERSET

11. STORM DUR (hrs) = 0..

Change item number: 0

S.C.S. HYDROGRAPH c:8047.GP1

TYP. POST DEV

1. HYDROGRAPH No. = 3.....

2. HYDROGRAPH DESCRIPTION

   A. 2 year post dev.....
   B. .....
   C. .....

3. AREA (ac) = 3.82.....

4. BASIN SLOPE (%) = 1.....

5. HYDRAULIC LENGTH (ft) = 250...

6. CURVE NUMBER = 81.....

7. TIME INTERVAL (min) = 1.....

8. 24 HR PRECIPITATION = 3.7.

9. RETURN PERIOD = 2..

10. DISTRIBUTION = 3....

    1. I 2. IA 3. II
    4. III 5. SYNTH 6. MAN
    7. IIA 8. SOMERSET

11. STORM DUR (hrs) = 0..

Change item number: 0

GO KARTS PLUS
TRENCH CALCULATIONS
CURRENT DEVELOPMENT

11-27-95
8047

TOTAL SITE AREA 165,550 S.F. OR 3.8 AC

TOTAL IMPERVIOUS = 99,315 S.F. OR 38%

TO MEET BMP POINTS, NEED TRENCH TO STORE

2-YR STORM = 7,605 C.F. (POST-DEV)

- ASSUMING #57 STONE (40% VOIDS)
  TOTAL TRENCH VOLUME = 19,013 C.F.

  8' DEEP x 20' WIDE x 190' LONG

- WITH 2 - 5' DIAMETER, FULLY PERFORATED CMP'S

  2 - 75' LENGTH TOTAL VOID = 2,944 C.F.

PLUS STONE 80' LONG x 25' WIDE x 7.5' DEEP = 15,000 C.F
15,000 - 2,944 = 12,056 C.F
40% VOIDS = 4,822 C.F

4,822 + 2,944 = 7766 C.F.
- 7605
161 CF excess

FEB 1999
RECEIVED
ENVIRONMENTAL DIVISION

Addition - 40'x50' = 2000 SF

10 Pt Infil trench $\frac{1'' \times 2000 SF}{12''/FT}$ = 167 Ft^3 req'd. — ok - close enough.

GO-KARTS PLUS
12-15-95

POND ROUTED WITH A FALSE BOTTOM TO ACCOUNT FOR BOTH TRENCHES COMBINED TRENCH STORAGE = 8,379 C.F.

50 yr AND 100 yr STORM EVENTS ROUTED, DETAINING THE 50 yr POST-DEVELOPMENT STORM EVENT TO BELOW PRE-DEVELOPMENT LEVELS.

50 yr

FEB 1999
RECEIVED
ENVIRONMENTAL DIVISION

GO KARTS PLUS
TRENCH CALCULATIONS
CURRENT DEVELOPMENT

11-27-95
8047

TOTAL SITE AREA 165,550 S.F. OR 3.8 AC

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  PLUS STONE 80' LONG x 25' WIDE x 7.5' DEEP = 15,000 C.F.
  15,000 - 2,944 = 12,056 C.F.
  40% VOIDS = 4,822 C.F

  4,822 + 2,944 = 7766 C.F.

1. Where is infiltration trench
2. Tc's ?
3. Is the lower pond elevation/backwater taken into account in pipe #1 calculations.
4. What does lower pond do? Infiltrate volume?

GO-KARTS PLUS
12-15-95

POND ROUTED WITH A FALSE BOTTOM TO ACCOUNT FOR BOTH TRENCHES. COMBINED TRENCH STORAGE = 8,379 C.F.

50 yr AND 100 yr STORM EVENTS ROUTED, DETAINING THE 50 yr POST-DEVELOPMENT STORM EVENT TO BELOW PRE-DEVELOPMENT LEVELS.

Need more backup data -

24" RCP @ 0.5% Q_{full} = 16 cfs

elev. 105.87

Inlet control - 24" RCP w/15 cfs HW/D = 1.05 = 2.1 ELEV = 106.1 lower basin

OUTLET CONTROL - L = 90'
S_o = 2.22% > LS_o = 2'

h_o = 106.1 - 102 = 4.1
H = 1.1
HW = H + h_o - LS_o = 1.1 + 4.1 - 2 = 3.2 + 104 = 107.2.

11 Pt BMP - 2 yr storm infil -

1/23/96

FAX MAIL

AES Consulting Engineers
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
TELEPHONE NO. (804) 253-0040
FAX NO. (804) 220-8994

SEND TO

NAME DARRYL COOKE FAX NO. _____

OFFICE CODE COMPLIANCE

SENT BY

NAME ELIZABETH PROJECT NO. 8647

SENT BY Darlene DATE 1/22/96 TIME 2pm

TOTAL PAGES INCLUDING THIS PAGE 9

PLEASE CONTACT AES AT 804/253-0040 IF ANY PROBLEMS OCCUR WITH THIS TRANSMISSION.

MESSAGE

THE FOLLOWING IS THE GO-KARTS INFO YOU REQUESTED. THE REV. PLANS ARE FORTHCOMING.

AES CONSULTING ENGINEERS

SOIL PROFILE DESCRIPTIONS

Ref: #774, Go Karts Plus, Richmond Road, James City County

Hole#	Hzn	Depth	Color and USDA Texture Glass	Cmin/Inch
1	Ap	0-12	Dark brown loamy sand	15
	E	12-26	Light yellowish brown loamy sand	15
	Bt	26-45	Strong brown sandy clay loam	35
	BC	45-55	Yellowish brown sandy clay loam mottled with gray	40
	C	55-70	Yellowish brown fine sandy loam mottled with strong brown and gray	15
2	Ap	0-10	Dark brown loamy sand	15
	E	10-20	Light yellowish brown loamy sand	15
	Bt	20-48	Strong brown sandy clay loam	35
	BC	48-70	Yellowish brown fine sandy loam and sandy clay loam mottled with gray and light yellowish brown	15-20

ANN L. RUFF SOIL SCIENTIST

January 22, 1996
Ref.# 774

Ms Elizabeth Mertz-Guinn
AES
5248 Olde Towne Rd, Suite !
Williamsburg, VA 23188

Reg: Infiltration trench, Go Karts Plus, Richmond Rd.

Dear Ms Mertz-Guinn:

Enclosed please find the infiltration rates given in minutes per inchfor the two soil profiles done at the above mentioned site. The soil classification is Uchee loamy sand.

Sincerely,

Ann L. Ruff
Soil Scientist

Date Record Created:

Created By:

WS_BMPNO: YR004

Print Record

PRINTED ON
Wednesday, March 10, 201
1:41:11 PM

WATERSHED	YR
BMP ID NO	004
PLAN NO	
TAX PARCEL	(24-3)(1-18)
PIN NO	24301000018
CONSTRUCTION DATE	1/1/1995
PROJECT NAME	Action Park of Williamsburg
FACILITY LOCATION	6870 Richmond Road
CITY-STATE	Williamsburg, VA
CURRENT OWNER	Robert Miller
OWNER ADDRESS	113 Hempstead Road
OWNER ADDRESS 2	
CITY-STATE-ZIP CODE	Williamsburg, VA 23188
OWNER PHONE	
MAINT AGREEMENT	Yes
EMERG ACTION PLAN	No

Get Last BMP No

Return to Menu

MAINTENANCE PLAN	No	CTRL STRUC DESC	
SITE AREA acre	4.3	CTRL STRUC SIZE inches	
LAND USE	COMM	OTLT BARRL DESC	RCP
old BMP TYP	Infiltration	OTLT BARRL SIZE inch	24
JCC BMP CODE	C1 Infiltration Trench .5		
POINT VALUE	11	EMERG SPILLWAY	No
		DESIGN HW ELEV	106.5
		PERM POOL ELEV	
SVC DRAIN AREA acres	4.3	2-YR OUTFLOW cfs	
		10-YR OUTFLOW cfs	
		REC DRAWING	Yes
SERVICE AREA DESCRI	Parking Lot & Ride areas		
IMPERV AREA acres		CONSTR CERTIF	No
RECV STREAM	SKIMINO CREEK		
EXT DET-WQ-CTRL	No	LAST INSP DATE 11/19/2001	Inspected by:
WTR QUAL VOL acre-ft	0.178		
		INTERNAL RATING	3
CHAN PROT CTRL	No		
CHAN PROT VOL acre-ft	0	MISC/COMMENTS	
SW/FLOOD CONTROL	Yes	Go Karts Plus. Detains 50-year storm. Two cells-basin & in go-kart track.	
GEOTECH REPORT	Yes		

Additional Comments:

GOKARTS

TABLE 3

WORKSHEET FOR BMP POINT SYSTEM

A. STRUCTURAL BMP POINT ALLOCATION

BMP	BMP Points		Fraction of Site Served by BMP		Weighted BMP Points
2YR TRENCH	11 POINTS	x	3.556 / 3.82	=	10.24
		x		=	
		x		=	
		x		=	

TOTAL WEIGHTED STRUCTURAL BMP POINTS: _____

B. NATURAL OPEN SPACE CREDIT

Fraction of Site		Natural Open Space Credit (0.1 per 1%)		Points for Natural Open Space
	x		=	

C. TOTAL WEIGHTED POINTS

Structural BMP Points	+	Natural Open Space Points	=	TOTAL

GOKARTS

TABLE 3

WORKSHEET FOR BMP POINT SYSTEM

A. STRUCTURAL BMP POINT ALLOCATION

BMP	BMP Points		Fraction of Site Served by BMP		Weighted BMP Points
2YR TRENCH	11 POINTS	x	.95	=	10.45
		x		=	
		x		=	
		x		=	

TOTAL WEIGHTED STRUCTURAL BMP POINTS: _____

B. NATURAL OPEN SPACE CREDIT

Fraction of Site		Natural Open Space Credit (0.1 per 1%)		Points for Natural Open Space
	x		=	

C. TOTAL WEIGHTED POINTS

Structural BMP Points	+	Natural Open Space Points	=	TOTAL

JAMES CITY COUNTY
ENVIRONMENTAL DIVISION
BMP INFORMATION WORKSHEET

YR004

Applicant to submit one worksheet for each proposed BMP.

1. Project Name: GO KARTS PLUS EXPANSION

2. Location of BMP (street address or closest building lot number):

   6910 Richmond Road

3. Owner Information: Name: ROBERT MILLER

   Mailing Address: 113 Hempstead Road

   WILLIAMSBURG VA 23188

4. BMP Data: Drainage area served by BMP: _____ acres.

   BMP Type (Check One):

BMP TYPE	BMP DESIGN NO.'S	BMP POINTS
A. **Extended Dry Detention**	☐ Design 2 (6 - 12 hours) ☐ Design 3 (24 hours) ☐ Design 4 (Shallow Marsh)	4 6 9
B. **Wet Pond**	☐ Design 5 (0.5 inch/imp acre) ☐ Design 6 (2.5 V) ☐ Design 7 (4.0 V) ☐ Design 7A (10-15 V)	6 8 9 10
C. **Infiltration (Trench, Basin, Porous Pavement)**	☐ Design 8 (0.5 in/imp acre) ☐ Design 9 (1.0 in/imp. acre) ☑ Design 10 (2 year storm)	9 10 11
D. **Grassed Swale**	☐ Design 15 (Check Dams)	2
E. **Water Quality Inlet**	☐ Design 11 (400 cubic feet/imp. acre)	2

Storage Volumes in Acre Feet: Water Quality 0.178 2 Year Storm * 0.178

* (Include Water Quality Volume for Dry Detention Basins)

Type of release structure: RCP

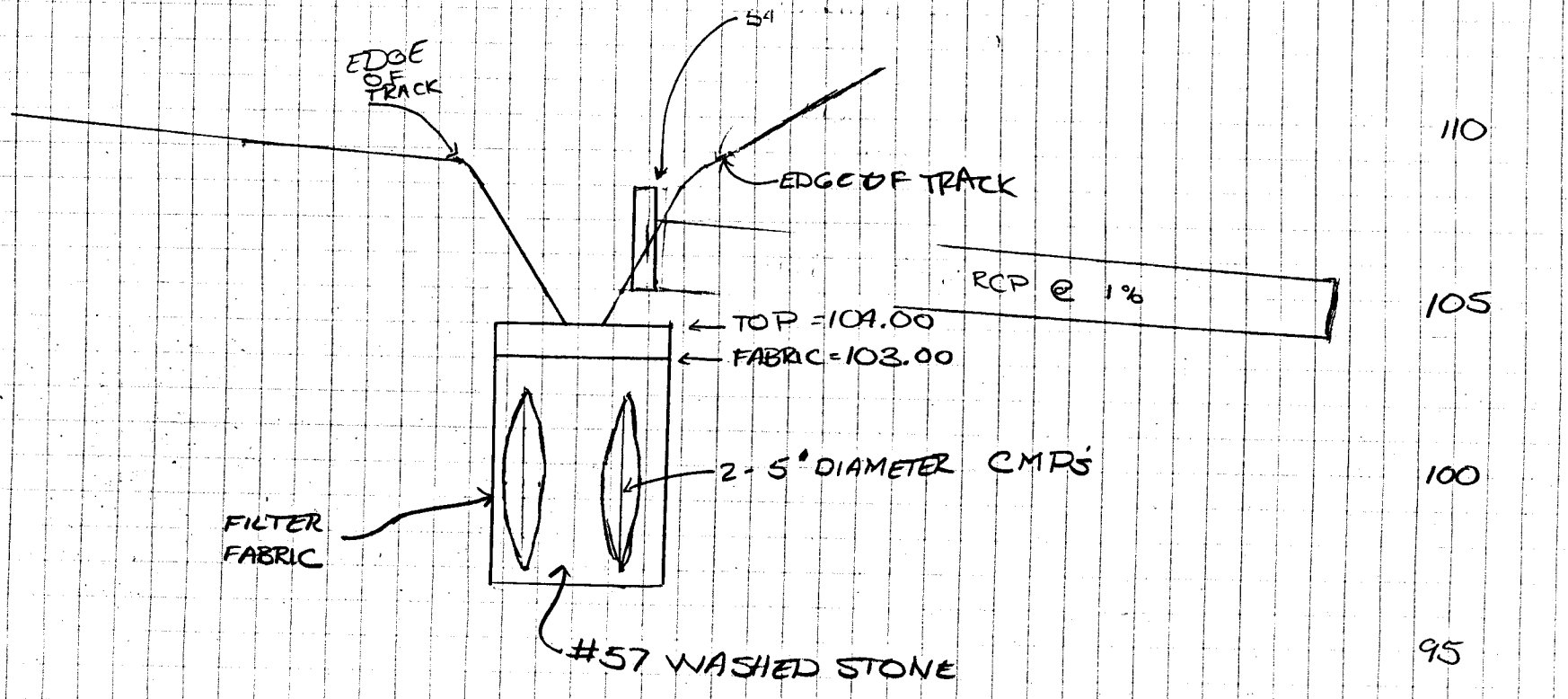
Size of structure: 24" ø

5. Site Information:

   Site Area in Acres: 4.3 Name of Receiving Stream: SKIMINO CREEK

   Other property and acreage served by BMP: None

BMPWrkSt.frm


54
EDGE OF TRACK
EDGE OF TRACK
RCP @ 1%
TOP = 104.00
FABRIC = 103.00
2 - 5' DIAMETER CMPS
FILTER FABRIC
#57 WASHED STONE
110
105
100
95

1" = 25'

1" = 5'

Stormwater Division

MEMORANDUM

Date: April 6, 2012

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

From: Leah Hardenbergh

PO: 110426

Re: Files Approved for Scanning

General File ID or BMP ID: **YR004**

PIN: **2430100018**

Owner Name (if known): **ACTION PARK OF WILLIAMSBURG VA INC**

Legal Property Description: **ADJ WMSBG POTTERY, R**

Site Address: **6870 RICHMOND ROAD**

(For internal use only):

Box # 3

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

This is a supplemental file for YR004, so it must be merged into the existing file.