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: **PC178**

DATE VERIFIED: **October 29, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: March 9, 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: PC178

PIN: 3221200001D

Subdivision, Tract, Business or Owner Name (if known): Scotts Pond

Property Description: Common Area Section 3C

Site Address:

(For internal use only) **Box** 6 **Drawer:** 3

Agreements: (in file as of scan date) **Y** **Book or Doc#:** 020011074 **Page:**

970003951

Comments

COUNTY OF JAMES CITY, VIRGINIA

COPY

DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 11 day of April, 2002, between Scotts Pond Development LLC, and all successors in interest, ("COVENANTOR(S),") owner(s) of the following property: Scotts Pond Subdivision, project name, Scotts Pond Section Two, Document No. 970003951, Deed Book _____, Page No. _____; Instrument No. _____, and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

We, the COVENANTOR(S), with full authority to execute deeds, mortgages, other covenants, and all rights, titles and interests in the property described above, do hereby covenant with the COUNTY as follows:

1. The COVENANTOR(S) shall provide maintenance for the drainage system including any runoff control facilities, conveyance systems and associated easements, hereinafter referred to as the "SYSTEM," located on and serving the above-described property to ensure that the SYSTEM is and remains in proper working condition in accordance with approved design standards, and with the law and applicable executive regulations. The SYSTEM shall not include any elements located within any Virginia Department of Transportation rights-of-way.

2. If necessary, the COVENANTOR(S) shall levy regular or special assessments against all present or subsequent owners of property served by the SYSTEM to ensure that the SYSTEM is properly maintained.

3. The COVENANTOR(S) shall provide and maintain perpetual access from public right-of-ways to the SYSTEM for the COUNTY, its agent and its contractor.

4. The COVENANTOR(S) shall grant the COUNTY, its agent and its contractor a right of entry to the SYSTEM for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the SYSTEM.

5. If, after reasonable notice by the COUNTY, the COVENANTOR(S) shall fail to maintain the SYSTEM in accordance with the approved design standards and with the law and applicable executive regulations, the COUNTY may perform all necessary repair or maintenance work, and the COUNTY may assess the COVENANTOR(S) and/or all property served by the SYSTEM for the cost of the work and any applicable penalties.

Instrument # 020011074
Recorded May 8, 2002

6. The COVENANTOR(S) shall indemnify and save the COUNTY harmless from any and all claims for damages to persons or property arising from the installation, construction, maintenance, repair, operation or use of the SYSTEM.

7. The COVENANTOR(s) shall promptly notify the COUNTY when the COVENANTOR(S) legally transfers any of the COVENANTOR(S)' responsibilities for the SYSTEM. The COVENANTOR(S)' shall supply the COUNTY with a copy of any document of transfer, executed by both parties.

8. The covenants contained herein shall run with the land and shall bind the COVENANTOR(S) and the COVENANTOR(S)' heirs, executors, administrators, successors and assignees, and shall bind all present and subsequent owners of property served by the SYSTEM.

9. This COVENANT shall be recorded in the County Land Records.

IN WITNESS WHEREOF, the COVENANTOR(S) have executed this DECLARATION OF COVENANTS as of the date first above written.

COVENANTOR(S)

_____

Print Name/Title Peter V. Henderson
President

ATTEST:

Donna L. Chapman

COVENANTOR(S)

_____

Print Name/Title _____

ATTEST:

_____

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF Williamsburg

I hereby certify that on this 11 day of April, 2002, before the subscribed, a Notary Public of the State of Virginia, and for the City/County of Williamsburg, aforesaid personally appeared Peter V. Henderson and did acknowledge the aforegoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 11 day of April, 2002.

Donna A. Chapman
Notary Public

My Commission expires: 11/30/05

Approved as to form:

Leo P. Rogers
County Attorney

This Declaration of Covenants prepared by:

DONNA A. Chapman
(Print Name)

Project Administrator
(Title)

5800 Mooretown Rd.
(Address)

Williamsburg, Va. 23188
(City) (State) (Zip)

drainage.pre

Scott's Pond

COPY

COUNTY OF JAMES CITY, VIRGINIA

DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 6 day of October, 2003, between Scott's Pond Development LLC, and all successors in interest, ("COVENANTOR(S),") owner(s) of the following property: Scott's Pond Subdivision, project name, Scott's Pond Section 3, Document No. _____, Deed Book _____, Page No. _____; Instrument No. 020010103, and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

We, the COVENANTOR(S), with full authority to execute deeds, mortgages, other covenants, and all rights, titles and interests in the property described above, do hereby covenant with the COUNTY as follows:

1. The COVENANTOR(S) shall provide maintenance for the drainage system including any runoff control facilities, conveyance systems and associated easements, hereinafter referred to as the "SYSTEM," located on and serving the above-described property to ensure that the SYSTEM is and remains in proper working condition in accordance with approved design standards, and with the law and applicable executive regulations. The SYSTEM shall not include any elements located within any Virginia Department of Transportation rights-of-way.

2. If necessary, the COVENANTOR(S) shall levy regular or special assessments against all present or subsequent owners of property served by the SYSTEM to ensure that the SYSTEM is properly maintained.

3. The COVENANTOR(S) shall provide and maintain perpetual access from public right-of-ways to the SYSTEM for the COUNTY, its agent and its contractor.

4. The COVENANTOR(S) shall grant the COUNTY, its agent and its contractor a right of entry to the SYSTEM for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the SYSTEM.

5. If, after reasonable notice by the COUNTY, the COVENANTOR(S) shall fail to maintain the SYSTEM in accordance with the approved design standards and with the law and applicable executive regulations, the COUNTY may perform all necessary repair or maintenance work, and the COUNTY may assess the COVENANTOR(S) and/or all property served by the SYSTEM for the cost of the work and any applicable penalties.

Instrument # 030032285
Recorded on Oct. 21, 2003.

Revised 01/02

6. The COVENANTOR(S) shall indemnify and save the COUNTY harmless from any and all claims for damages to persons or property arising from the installation, construction, maintenance, repair, operation or use of the SYSTEM.

7. The COVENANTOR(s) shall promptly notify the COUNTY when the COVENANTOR(S) legally transfers any of the COVENANTOR(S)' responsibilities for the SYSTEM. The COVENANTOR(S)' shall supply the COUNTY with a copy of any document of transfer, executed by both parties.

8. The covenants contained herein shall run with the land and shall bind the COVENANTOR(S) and the COVENANTOR(S)' heirs, executors, administrators, successors and assignees, and shall bind all present and subsequent owners of property served by the SYSTEM.

9. This COVENANT shall be recorded in the County Land Records.

IN WITNESS WHEREOF, the COVENANTOR(S) have executed this DECLARATION OF COVENANTS as of the date first above written.

COVENANTOR(S)

Print Name/Title Bill Strack
MANAGING PARTNER

ATTEST:

COVENANTOR(S)

Print Name/Title

ATTEST:

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF Williamsburg

I hereby certify that on this 16 day of October, 2003, before the subscribed, a Notary Public of the State of Virginia, and for the City/County of Williamsburg, aforesaid personally appeared Bill Strack and did acknowledge the aforegoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 16 day of October, 2003.

Donna L. Chapman
Notary Public

My Commission expires: 11/30/05

Approved as to form:

County Attorney

This Declaration of Covenants prepared by:

DONNA Chapman
(Print Name)

Site Admin
(Title)

5800 Mooretown Rd.
(Address)

Wmbg Va 23188
(City) (State) (Zip)

drainage.pre

James City County, Virginia
Environmental Division

Stormwater Management/BMP Facilities
Record Drawing/Construction Certification
Review Tracking Form

County Plan No.: 5-8-96
Project Name: SCOTTS POND
Stormwater Management Facility: Large BMP @ Route 199 (NW Corner)
Phase: ☐ I ☐ II ☐ III

- ☑ Information Received. Date: July 29'02
- ☑ Administrative Check.
  - ☑ Record Drawing Date: 7/26/02 (12/23/96) CK TUDOR
  - ☐ Construction Certification Date: ~~NA TO PROJECT~~ Aug 2'00 TUDOR
  - ☐ RD/CC Standard Forms (Required after Feb 1st 2001Only)
  - ☑ Insp/Maint Agreement Info: IM BOOK 796 P.122
  - ☐ NO BMP Maintenance Plan Location: NO
  - ☐ Other:
- ☑ Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review file.
  ☐ Yes ☐ No Location: Comm #5 ENV DIV Comm 3/12/96
- ☑ Assign County BMP ID Code Code: PC178
- ☑ Log into Division's "As-Built" Tracking Log
- ☑ Add Location to GIS Database Map. Obtain GIS site information (GPIN, Owner, Site Area, Address, etc.)
- ☑ Preliminary Log into BMP Database (BMP ID #, Site Plan #, GPIN, Project Name)
- ☑ Active Project File Review (correspondence, H&H, etc.).
- ☑ Initial As-Built File setup (label, copy hydraulics, BMP information, etc.).
- ☑ Inspector Check of RD/CC.
- ☑ Pre-Inspection Drawing Review - Approved Plan (Quick look prior to field inspection).
- ☑ Final Inspection (FI) Performed Date: 4/3/03 SJT, MOW
- ☑ Record Drawing (RD) Review Date: 5/13/03
- ☑ Construction Certification (CC) Review Date: None necessary.
- ☐ Actions:
  - ☐ No comments.
  - ☑ Comments. Letter Forwarded. Date: MAY 13TH 2003
    - ☐ Record Drawing (RD)
    - ☐ Construction Certification (CC)
    - ☑ Construction-Related (CR)
    - ☐ Site Issues (SI)
    - ☐ Other : CR completed
- ☐ Second Submission: RD 6/30/03 (TUDOR)
- ☐ Third Submission:
- ☐ Acceptable for stormwater managment facility purposes (RD/CC/CR/Other). Proceed with bond release.
- ☐ Notify Darryl/Joan/Pat of acceptability using email (preferred), form or verbal.
- ☐ Check/Clean active file of any remaining material and finish "As-Built" file.
- ☑ Add to County BMP Inventory/Inspection schedule (Phase I, II or III).
- ☑ Copy Final Inspection Report into County BMP Inspection Program file.
- ☐ Digital Photographs obtained.
- ☐ Add to JCC Hydrology & Hydraulic database (optional).

BMP Certification Information Acceptable

Plan Reviewer: _____ Date: _____

C. K. TUDOR ENGINEERS, INC.
11524 JEFFERSON AVENUE
NEWPORT NEWS, VIRGINIA 23601
TELEPHONE 595-4634
FAX 591-2723

LAND SURVEYING
LAND PLANNING
CIVIL ENGINEERING

DESIGN
SUPERVISION
APPRAISALS
REPORTS

Aug.2,2000

5-8-96

Environmental Division
James City County
P.O.Box 8784
Williamsburg,VA 23187-8784

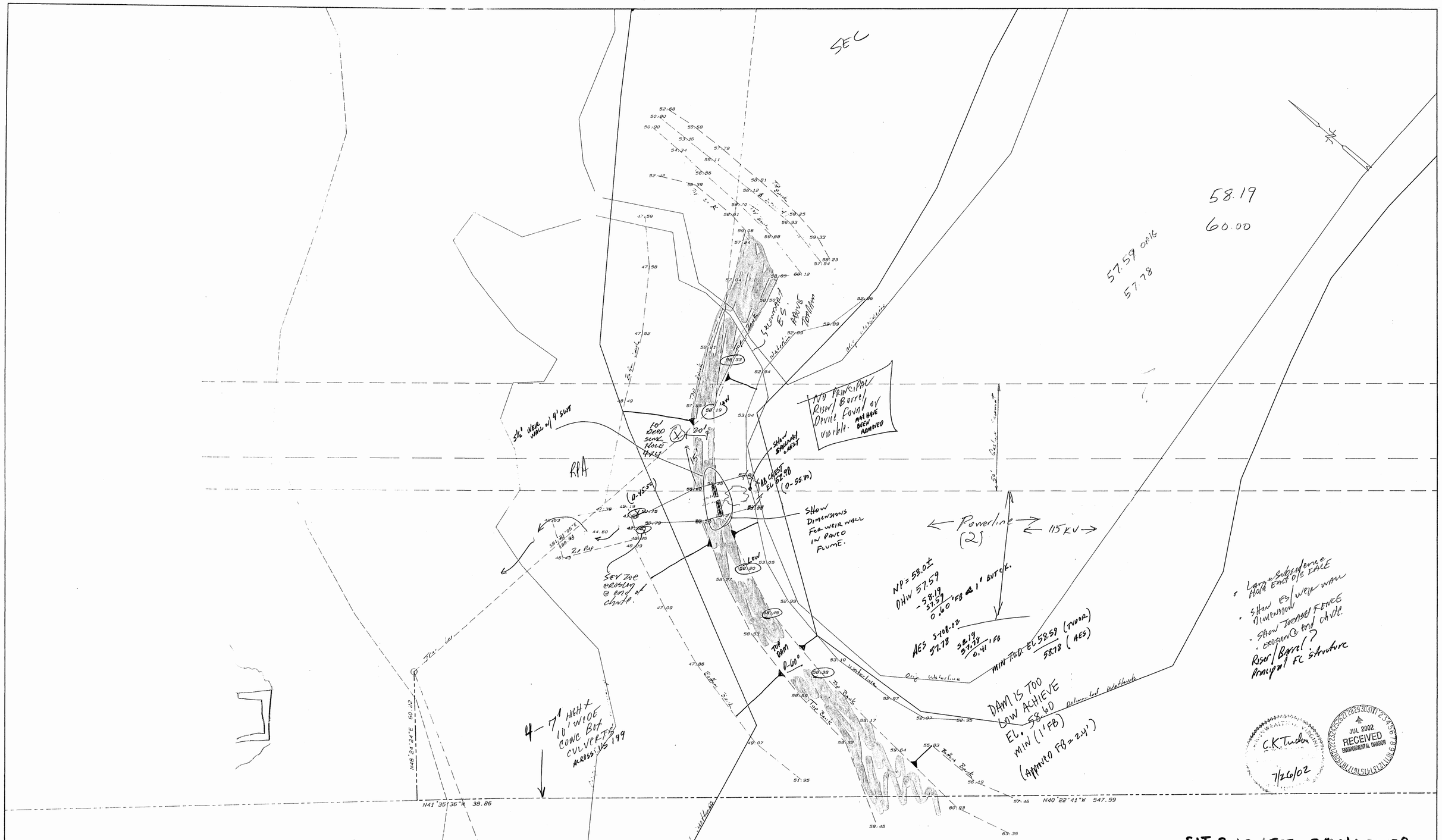
Attn;Darryl Cook

Gentlemen;

This to certify that the Scott's Pond dam was constructed between 8/31/96 and 11/30/96 and was constucted in accordance with the plan dated Feb. 16,1996.

C.K. Tudor

C.K.Tudor,P.E.



SJT REVIEW SET 5-8-96; PC178

SPILLWAY AS-BUILT

SCOTT'S POND

JAMES CITY CO., VIRGINIA

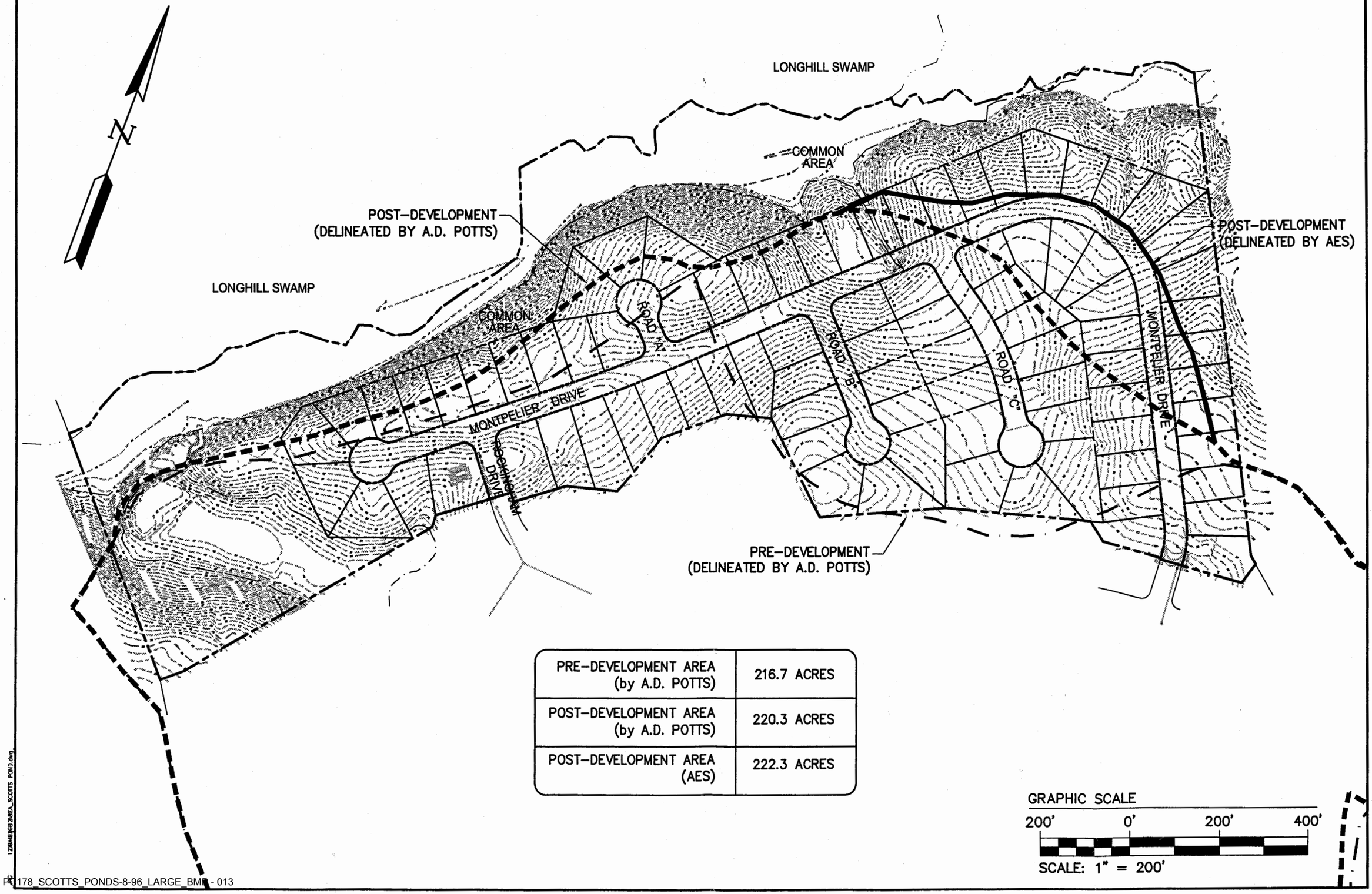
C.K. TUDOR ENGINEERS, INC. NEWPORT NEWS, VIRGINIA 595-4634			SCALE	DATE
			1"=20'	12/23/96
DESIGN BY	DRAWN BY	CHECKED BY	JOB NO.	SHEET
	ADP		95-074	1 OF 1

C.K. TUDOR ENGINEERS INC
595-4634 KEN TUDOR

F2 800 Pg 4

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 011

"ASBUILT"
RIPRAP
CONC.
(BASED ON JCC
PC178_SCOTTS_PONDS-8-96_LARGE_BMP_012



PRE-DEVELOPMENT AREA (by A.D. POTTS)	216.7 ACRES
POST-DEVELOPMENT AREA (by A.D. POTTS)	220.3 ACRES
POST-DEVELOPMENT AREA (AES)	222.3 ACRES

No.	DATE	REVISION / COMMENT / NOTE	BY

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
CONSULTING ENGINEERS

DRAINAGE AREAS TO SCOTT'S POND

SCOTT'S POND
SECTION 3

Designed AES	Drawn AES
Scale 1" = 200'	Date 12/4/02
Project No. 9178	
Drawing No. 1	

SCOTTS POND

C.K. Tudor
9/11/95

SITE DATA

61.75 Ac.-DRAINAGE AREA THROUGH BERKELEY COMMONS POND
158.55 Ac.-DRAINAGE AREA SCOTTS POND PROPERTY
220.3 Ac.-TOTAL DRAINAGE AREA TO SCOTTS POND
BASIN CN = 75

PEAK RUNOFF TO SCOTTS POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
88.9 CFS	285.3 CFS.	476.6 CFS

PEAK DISCHARGES FROM SCOTTS POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
15.6 CFS	73.9 CFS	207.2 CFS

POSTDEVELOPMENT DRAINAGE

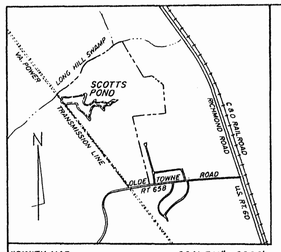
SCOTTS POND

JAMES CITY COUNTY, VIRGINIA

C.K. TUDOR ENGINEERS, INC. NEWPORT NEWS, VIRGINIA			SCALE	DATE
			1" = 200'	8/11/95
DESIGN BY	DRAWN BY	CHECKED BY	JOB NO.	SHEET
RC	RC	CKT	95-074	3 OF 5

FILE NO. 22-96B

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 014



VICINITY MAP SCALE: 1" = 2000'

SCOTT'S POND DAM IMPROVEMENTS

JAMES CITY COUNTY, VIRGINIA

C.K. TUDOR ENGINEERS, INC.
11524 JEFFERSON AVENUE
NEWPORT NEWS, VIRGINIA

LIST OF SHEETS

1. COVER SHEET
2. PREDEVELOPMENT DRAINAGE
3. POST DEVELOPMENT DRAINAGE
4. DAM IMPROVEMENTS - PLAN & DETAILS
5. SOILS MAP & EROSION CONTROL PLAN

ISSUED
SEP 15 1995
C. K. TUDOR ENGINEERS, INC.

C.K. Tudor 9/11/95

DRAWN BY	CHECKED BY	DATE	SHEET
ADP	CKT	8/11/95	1 OF 5

FILE NO. 22-968

PC 178; 5-8-96

C.K. Tudor
9/11/95

SITE DATA

61.75 Ac.-DRAINAGE AREA THROUGH BERKELEY COMMONS POND
155 Ac.-DRAINAGE AREA SCOTTS POND PROPERTY
216.75 Ac.-TOTAL DRAINAGE AREA TO SCOTTS POND
BASIN CN = 69

PEAK RUNOFF TO SCOTTS POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
71.3 CFS	228.9 CFS	374.5 CFS

PEAK DISCHARGES FROM SCOTTS POND

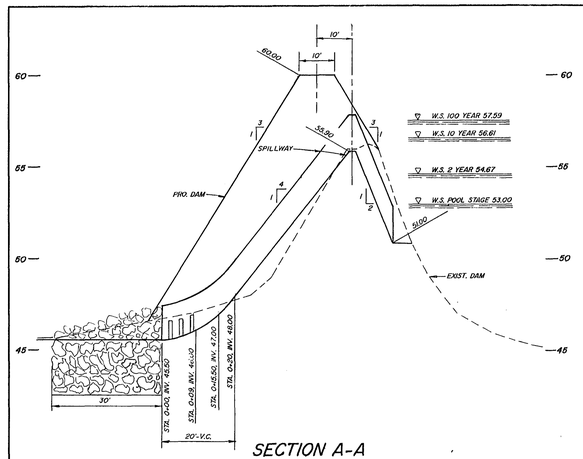
2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
33.9 CFS	146.1 CFS	254.1 CFS

PREDEVELOPMENT DRAINAGE

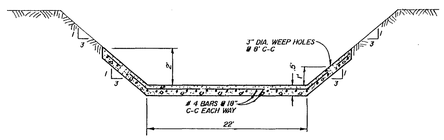
SCOTTS POND

JAMES CITY COUNTY, VIRGINIA

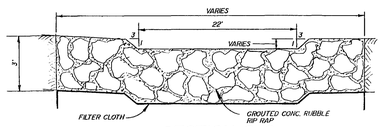
C.K. TUDOR ENGINEERS, INC. NEWPORT NEWS, VIRGINIA			SCALE	DATE
			1" = 200'	8/11/95
DESIGN BY	DRAWN BY	CHECKED BY	JOB NO.	SHEET
NATURE	RC	CKT	95-074	2 OF 5



SECTION A-A
SCALE 1" = 20' HORIZ.
1" = 4' VERT.



SECTION B-B
SCALE 1" = 10' HORIZ.
1" = 4' VERT.



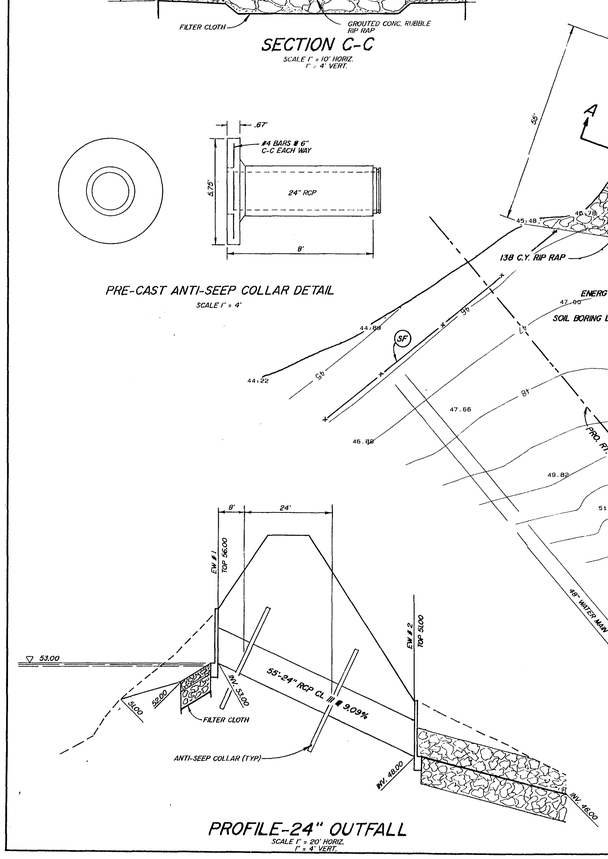
SECTION C-C
SCALE 1" = 10' HORIZ.
1" = 4' VERT.

PRE-CAST ANTI-SEEP COLLAR DETAIL
SCALE 1" = 4'

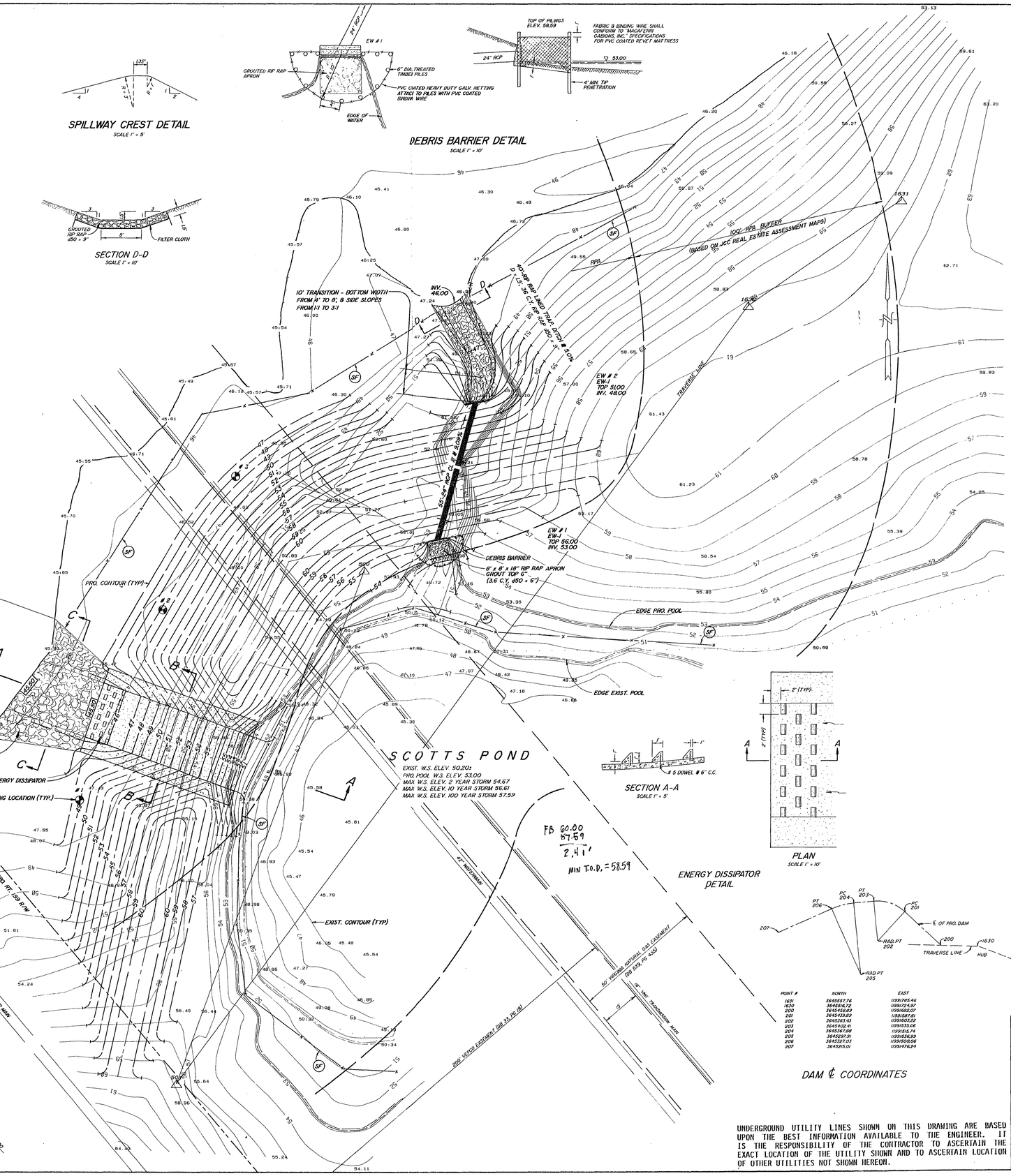
SPILLWAY CREST DETAIL
SCALE 1" = 5'

SECTION D-D
SCALE 1" = 10'

DEBRIS BARRIER DETAIL
SCALE 1" = 10'

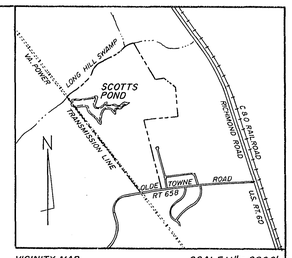


PROFILE-24" OUTFALL
SCALE 1" = 20' HORIZ.
1" = 4' VERT.



POINT #	NORTH	EAST
1631	364557.76	1139785.46
1630	364556.72	1139724.37
200	364458.89	1139682.07
201	364433.89	1139587.81
202	364363.43	1139603.22
203	364402.41	1139535.66
204	364367.88	1139516.74
205	364297.31	1139436.39
206	364332.73	1139500.06
207	364326.01	1139476.24

DAM ℄ COORDINATES



VICINITY MAP
SCALE: 1" = 2000'

NOTES

1. Owner/Developer: KT & BK, L.L.C.
   11524 Jefferson Ave.
   Newport News, VA 23601
   (804) 595-4610
2. Engineer: C. K. Tudor Engineers, Inc.
   11524 Jefferson Ave.
   Newport News, VA 23601
   (804) 595-4610
3. All construction shall conform to applicable James City County Standards and Specifications and in accordance with these Plans.
4. Prior to commencement of construction, the Contractor is directed to notify all applicable owners of utilites of the limits of impending construction in order that the utility companies may safeguard their facilities.
5. The Contractor shall be responsible for any and all damage to utilities, public or private,as a result of construction activities. The Contractor shall report any errors, omissions, conflicts or discrepancies to the Engineer for resolution before continuing with the work.
6. A Land Distrubing permit is required.
7. The Contractor is required to secure permits prior to any work being performed in the State's existing right-of-way.
8. Prior to any construction activities, install erosion and sediment control measures as shown on the Plans.
9. Clear and grubb all areas of construction. Any stumps to be removed to at least 2' below ground surface. All debris from clearing and grubbing operations shall be disposed of off-site at the Contractor's expense.
10. Strip topsoil from areas of proposed construction. Maintain stockpile in a location as directed by the Engineer.
11. Remove any remaining organic material from areas of proposed construction, and stockpile neatly on-site as directed by the Engineer.
12. Install 24" RCP principal spillway.
13. Till or disc to a minimum depth of 12" all areas of the existing dam embankment where new embankment is to be placed.
14. Place clean inorganic clay material from on-site sources in 6" - 12" layers and compact to 95% maximum theoretical density at optimum moisture. The Contractor shall take special care to get desired compaction around the anti-seepage collars by the use of hand operated vibratory equipment of mechanical tampers.
15. At the completion of the dam and spillway structions, fine grade all distrubed areas, spread topsoil from on-site stockpile and hydroseed.
16. All exposed concrete shall be Class A-3 air entrained (3000 psi).
17. 24" RCP shall conform to ASTM C-76 Class IIII, Wall B. Joints shall be confined o-ring gasket type conforming to ASTM C443. Exterior joints shall be sealed with cement mortar.

C. K. Tudor
8/11/95

UNDERGROUND UTILITY LINES SHOWN ON THIS DRAWING ARE BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THE EXACT LOCATION OF THE UTILITY SHOWN AND TO ASCERTAIN LOCATION OF OTHER UTILITIES NOT SHOWN HEREON.

PLAN & DETAILS

DAM IMPROVEMENTS AT SCOTTS POND

JAMES CITY COUNTY, VIRGINIA

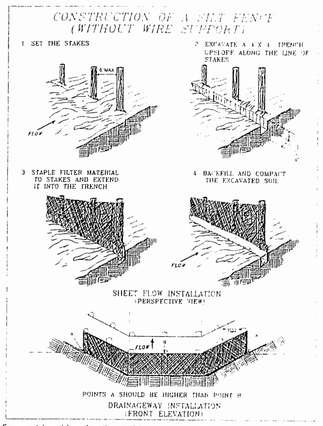
C.K. TUDOR ENGINEERS, INC. NEWPORT NEWS, VIRGINIA			SCALE	DATE
			1"=20'	8/11/95
DESIGN BY	DRAWN BY	CHECKED BY	JOB NO.	SHEET
RC	RC	CKT	95-074	4 OF 5

FILE NO. 22-968

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 017

SOIL NAME & MAP SYMBOL	DEPTH (INCHES)	EROSION FACTORS K	T	EROSION HAZARD
11C CRAVEN	0-9	0.37	3	SLIGHT
	9-30	0.32		
	30-72	0.32		
UCHEE	0-24	0.20	5	SLIGHT
	24-36	0.24		
	36-56	0.28		
	56-65	0.28		
14B EMPORIA	0-13	0.28	4	SLIGHT
	13-37	0.28		
	37-50	0.20		
	50-75	0.20		
15D EMPORIA	0-11	0.28	4	SLIGHT
	11-37	0.28		
	37-54	0.20		
	54-75	0.20		
15E EMPORIA	0-9	0.28	4	SLIGHT
	9-37	0.28		
	37-50	0.20		
	50-75	0.20		
17 JOHNSTON	0-8	0.20	5	SLIGHT
	8-49	0.17		
	49-60	0.17		
19B KEMPSVILLE	0-14	0.32	3	SLIGHT
	14-20	0.24		
	20-55	0.24		
	55-68	0.24		
EMPORIA	0-13	0.28	4	SLIGHT
	13-37	0.28		
	37-50	0.20		
	50-75	0.20		
20B KENANSVILLE	0-25	0.15	5	SLIGHT
	25-43	0.15		
	43-78	0.10		
29B SLAGLE	0-9	0.24	3	SLIGHT
	9-25	0.24		
	25-60	0.24		
34B UCHEE	0-24	0.20	5	SLIGHT
	24-36	0.24		
	36-56	0.28		
	56-65	0.28		

1992 3.05



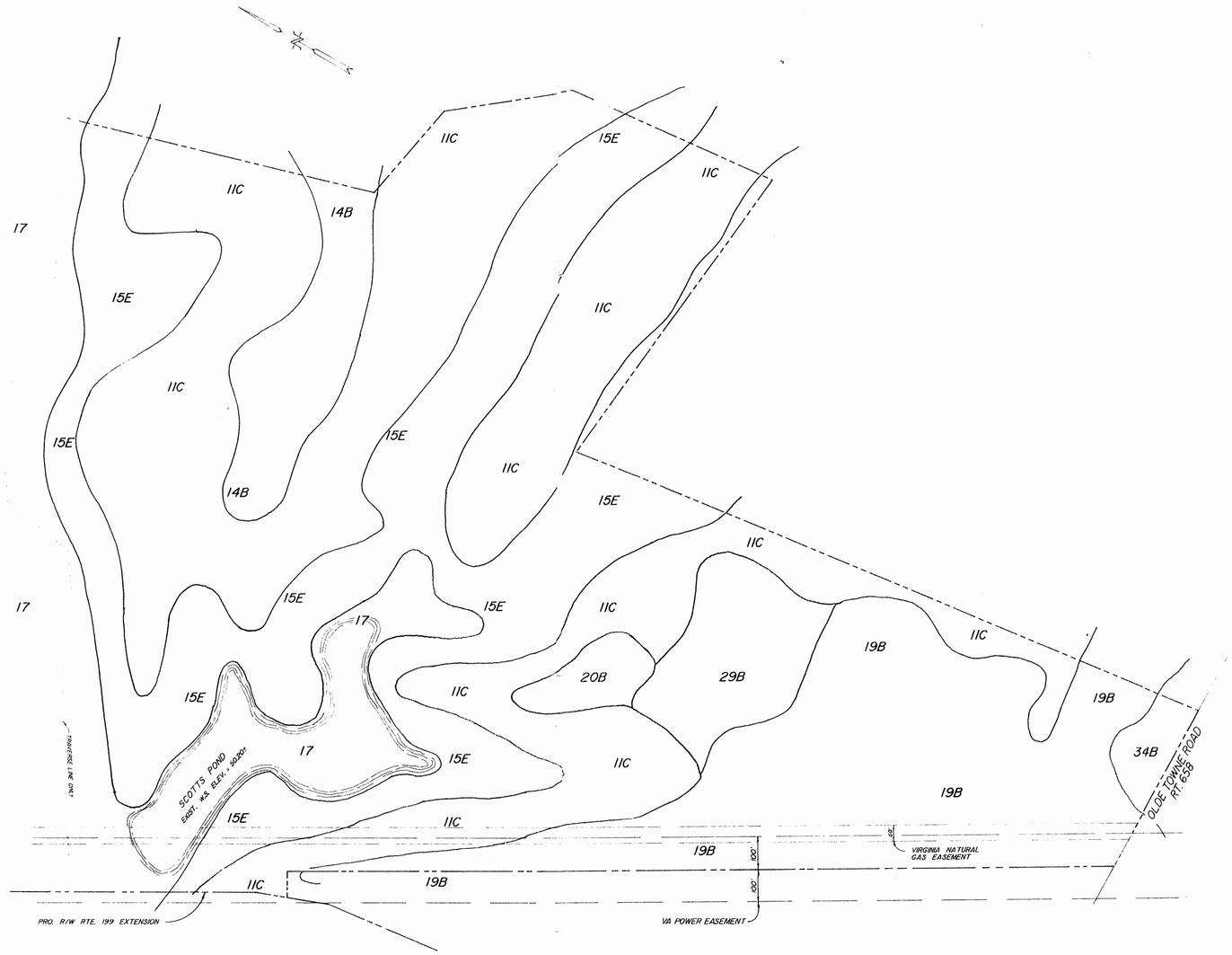
Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant

Plate 3.05-2

1992 3.05

Maintenance

1. Silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
2. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting.
3. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier still be necessary, the fabric shall be replaced promptly.
4. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier.
5. Any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform with the existing grade, prepared and seeded.



Erosion and Sediment Control Notes

The purpose of the erosion control measures shown on these plans shall be to preclude the transport of all waterborne sediments resulting from construction activities from entering onto adjacent properties or State waters. If field inspection reveals the inadequacy of the plan to contine sediment to the project site, appropriate modifications will be made to correct any plan deficiencies. In addition to these notes, all provisions of the Virginia Erosion and Sediment Control Regulations shall apply to this project.

1. All erosion and sediment control measures shall be installed and maintained in accordance with the "Virginia Erosion and Sediment Control Handbook". The contractor shall be thoroughly familiar with all applicable measures contained therein which may be pertinent to this project.
2. All points of construction ingress and egress shall be protected by a temporary construction entrance to prevent tracking of mud onto public right-of-ways. An entrance permit from VDOT is required prior to any construction activities within State right-of-ways.
3. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment on-site must be constructed as a first step in grading and be made functional before upslope land disturbance takes place. Earthen structures such as dams, dikes, and diversions must be seeded and mulched immediately after installation. An on-site pre-construction meeting will be held between the Office of Code Compliance and the contractor to identify those measures to be initially installed.
4. Maintenance of erosion and sediment control measures shall include the repair of measures damaged by any subcontractor including those of the public utility companies. At the preconstruction meeting, the contractor will supply Code Compliance with the name of the individual who will be responsible for ensuring maintenance of installed measures on a daily basis.
5. Surface flows over cut and fill slopes shall be controlled by either redirecting flows from transversing the slopes or by installing mechanical devices to safely lower water downslope without causing erosion. A temporary fill diversion (Std & Spec. 3.10) shall be installed prior to the end of each working day.
6. Sediment control measures may require minor field adjustments at time of construction to ensure their intended purpose is accomplished. Office of Code Compliance approval will be required for other deviations from the approved plans.
7. The contractor shall place soil stockpiles at the locations shown on this plan or as directed by the engineer. Soil stockpiles shall be stabilized or protected with sediment trapping measures.
8. The contractor shall complete drainage facilities within 30 days following completion of rough grading at any point within the project. The installation of drainage facilities shall take precedence over all underground utilities. Outfall inlets from drainage structures shall be stabilized immediately after construction of same. This includes installation of erosion control stone where required. Any drainage outfalls required for a street must be completed before street grading begins.
9. Permanent or temporary soil stabilization must be applied to all denuded areas within 7 days after final grade is reached on any portion of the site. Soil stabilization must also be applied to denuded areas which may not be at final grade but will remain dormant (undisturbed) for longer than 30 days. Soil stabilization measures include vegetative establishment, mulching and the early application of gravel base material on areas to be paved.
10. No more than 400 feet of sanitary sewer, storm sewer, waterlines, or underground utility lines are to be open at one time. Following installation of any portion of these items, all disturbed areas are to be immediately stabilized (i.e. the same day).
11. If disturbed area stabilization is to be accomplished during the months of December, January, or February, stabilization shall consist of mulching in accordance with Specification 3.35. Seeding will then take place as soon as the season permits.
12. The term Seeding, Final Vegetative Cover or Stabilization on this plan shall mean the successful germination and establishment of a stable grass cover from a properly prepared seedbed containing the specified amounts of seed, lime, and fertilizer in accordance with Specification 3.32, Permanent Seeding. Irrigation shall be required as necessary to ensure establishment of grass cover.
13. All slopes steeper than 3:1 shall require the use of erosion control blankets such as excelsior blankets to aid in the establishment of a vegetative cover. Installation shall be in accordance with Specification 3.35, Mulching and Manufacturer's Instructions.
14. Inlet protection in accordance with Specification 3.07 shall be provided for all storm drain inlets as soon as practical following construction of same.
15. Temporary liners, such as polyethylene sheets, shall be provided for all paved ditches until the permanent concrete liner is installed.
16. Paved ditches shall be required wherever erosion is evident. Particular attention shall be paid to those areas where grades exceed 3 percent.
17. Temporary erosion control measures are not to be removed until all disturbed areas are stabilized. After stabilization is complete, all measures shall be removed within 30 days. Trapped sediment shall be spread and seeded.
18. Off-site waste or borrow areas shall be approved by the Office of Code Compliance prior to the import of any borrow or export of any waste to or from the project site.
19. All paved and/or piped outfalls will be constructed before road grading and utility installation begins.

SOILS MAP & EROSION CONTROL PLAN

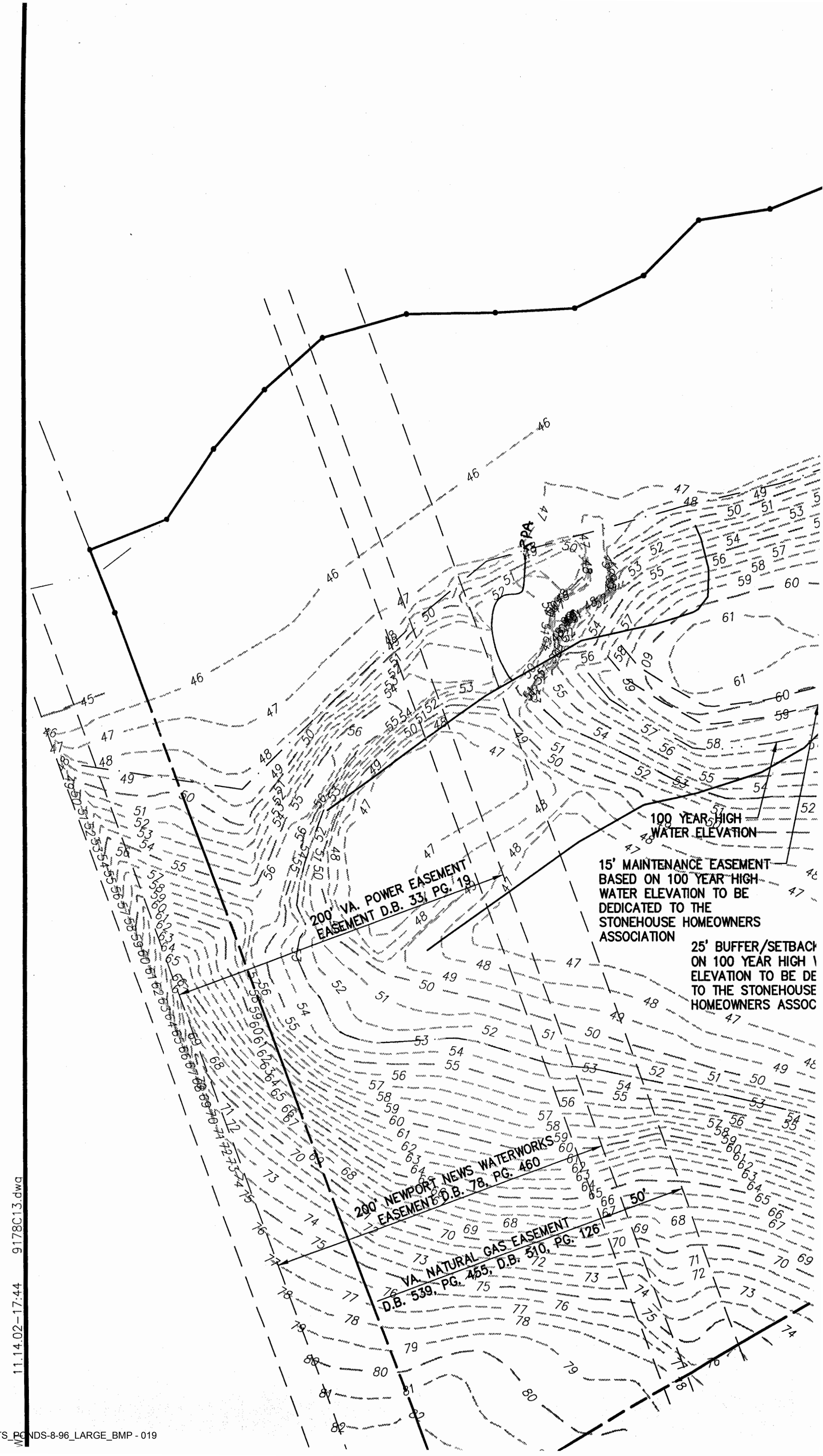
SCOTTS POND

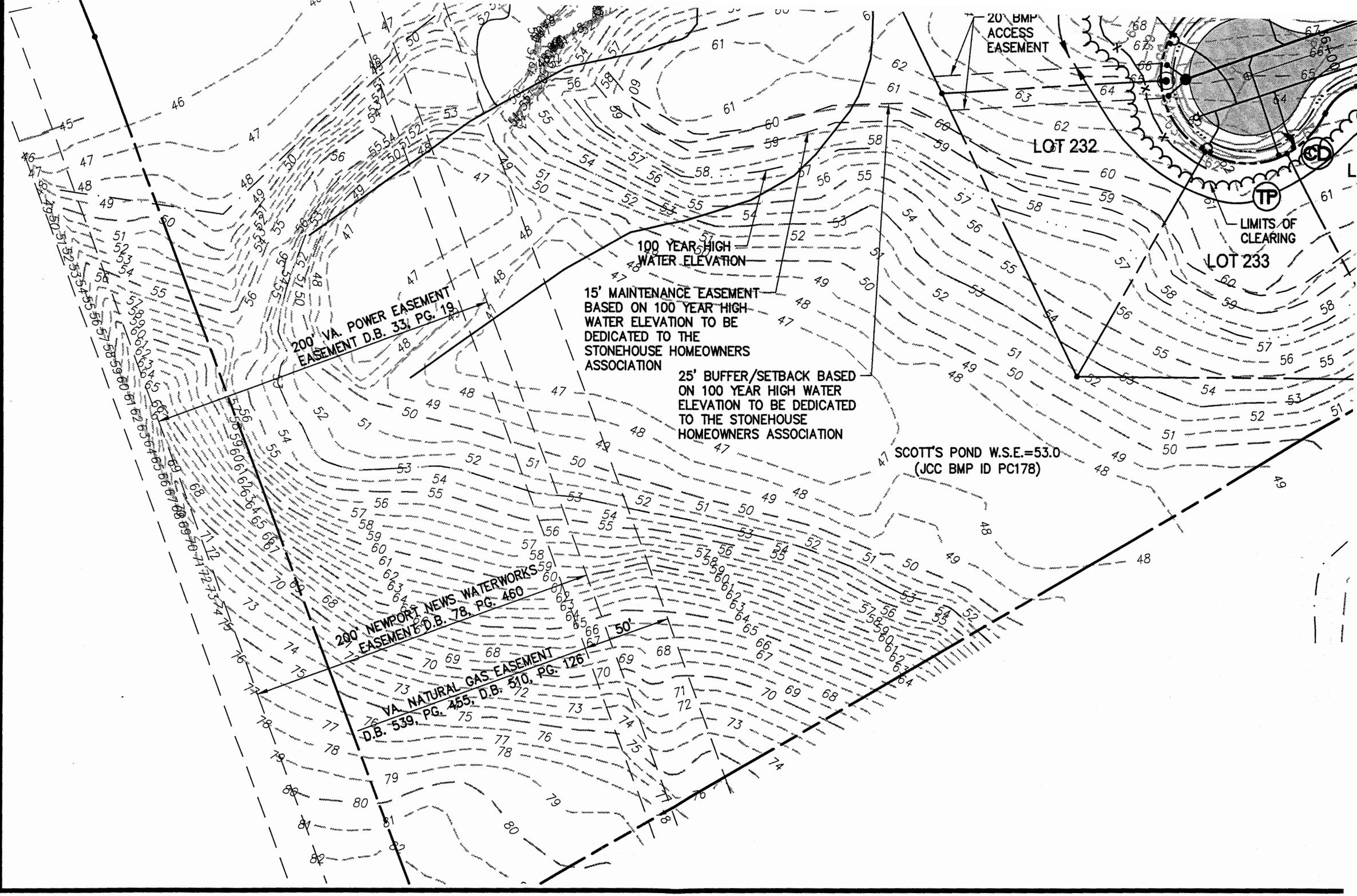
JAMES CITY CO., VIRGINIA

C.K. TUDOR ENGINEERS, INC. NEWPORT NEWS, VIRGINIA			SCALE 1"=200'	DATE 8/11/95
DESIGN BY	DRAWN BY ADP	CHECKED BY CKT	JOB NO. 95-074	SHEET 5 OF 5

FILE NO. 22-968

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 018


100 YEAR HIGH
WATER ELEVATION
15' MAINTENANCE EASEMENT
BASED ON 100 YEAR HIGH
WATER ELEVATION TO BE
DEDICATED TO THE
STONEHOUSE HOMEOWNERS
ASSOCIATION
25' BUFFER/SETBACK
ON 100 YEAR HIGH
ELEVATION TO BE DE
TO THE STONEHOUSE
HOMEOWNERS ASSOC
200' VA. POWER EASEMENT
EASEMENT D.B. 33, PG. 19
200' NEWPORT NEWS WATERWORKS
EASEMENT D.B. 78, PG. 460
VA. NATURAL GAS EASEMENT
D.B. 539, PG. 455, D.B. 510, PG. 126
50'
PPA
11.14.02-17:44 9178C13.dwg



AWT 11.14.02–17:44 9178C13.dwg

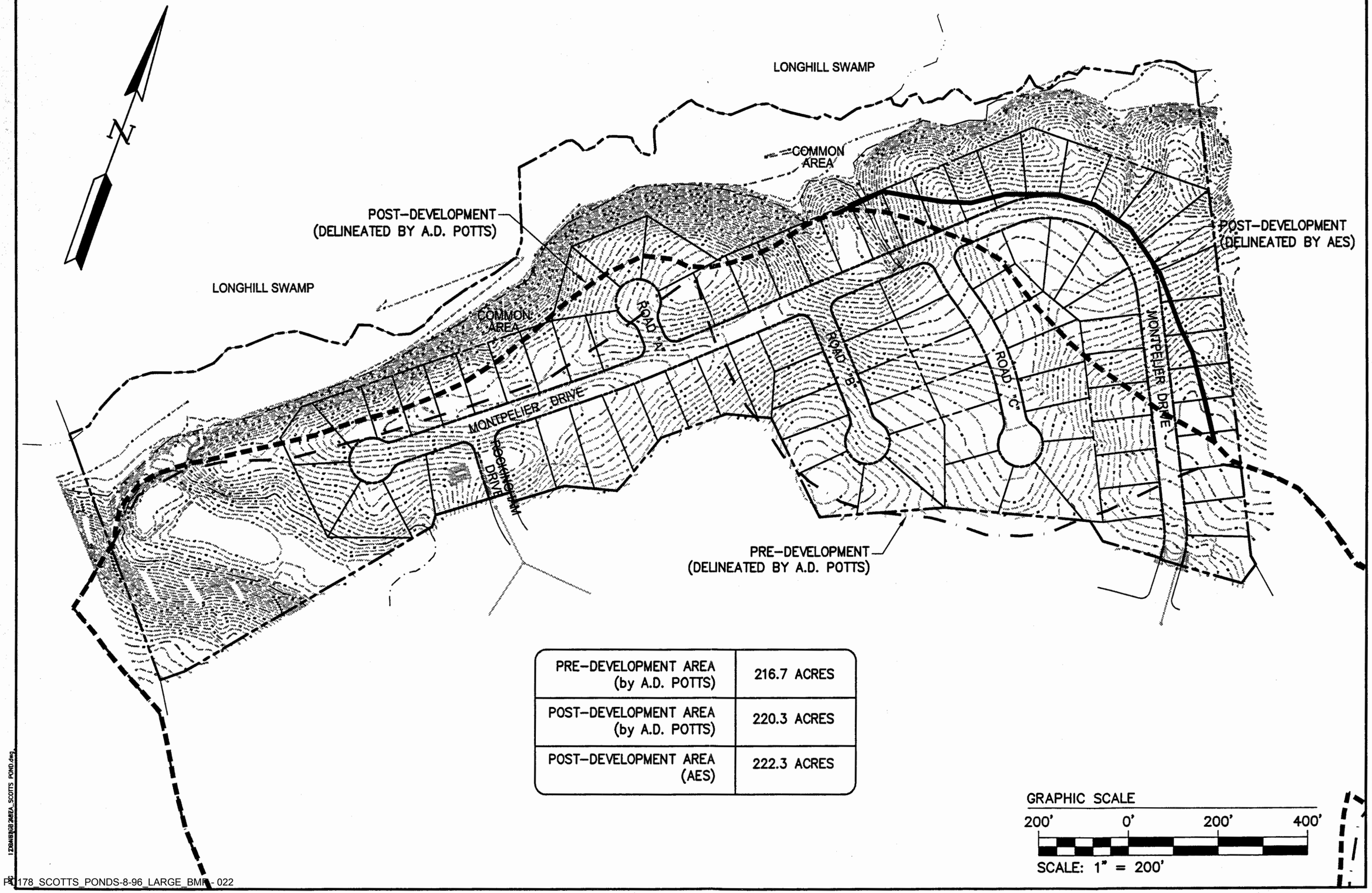
SPILLWAY AS-BUILT

SCOTT'S POND

JAMES CITY CO., VIRGINIA

C.K. TUDOR ENGINEERS, INC. NEWPORT NEWS, VIRGINIA			SCALE 1"=20'	DATE 12/23/96
DESIGN BY	DRAWN BY	CHECKED BY	JOB NO.	SHEET
	ADP		95-074	1 OF 1

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 021



PRE-DEVELOPMENT AREA (by A.D. POTTS)	216.7 ACRES
POST-DEVELOPMENT AREA (by A.D. POTTS)	220.3 ACRES
POST-DEVELOPMENT AREA (AES)	222.3 ACRES

No.	DATE	REVISION / COMMENT / NOTE	BY

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
(757) 253-0040
Fax (757) 220-8994
AES CONSULTING ENGINEERS

DRAINAGE AREAS TO SCOTT'S POND

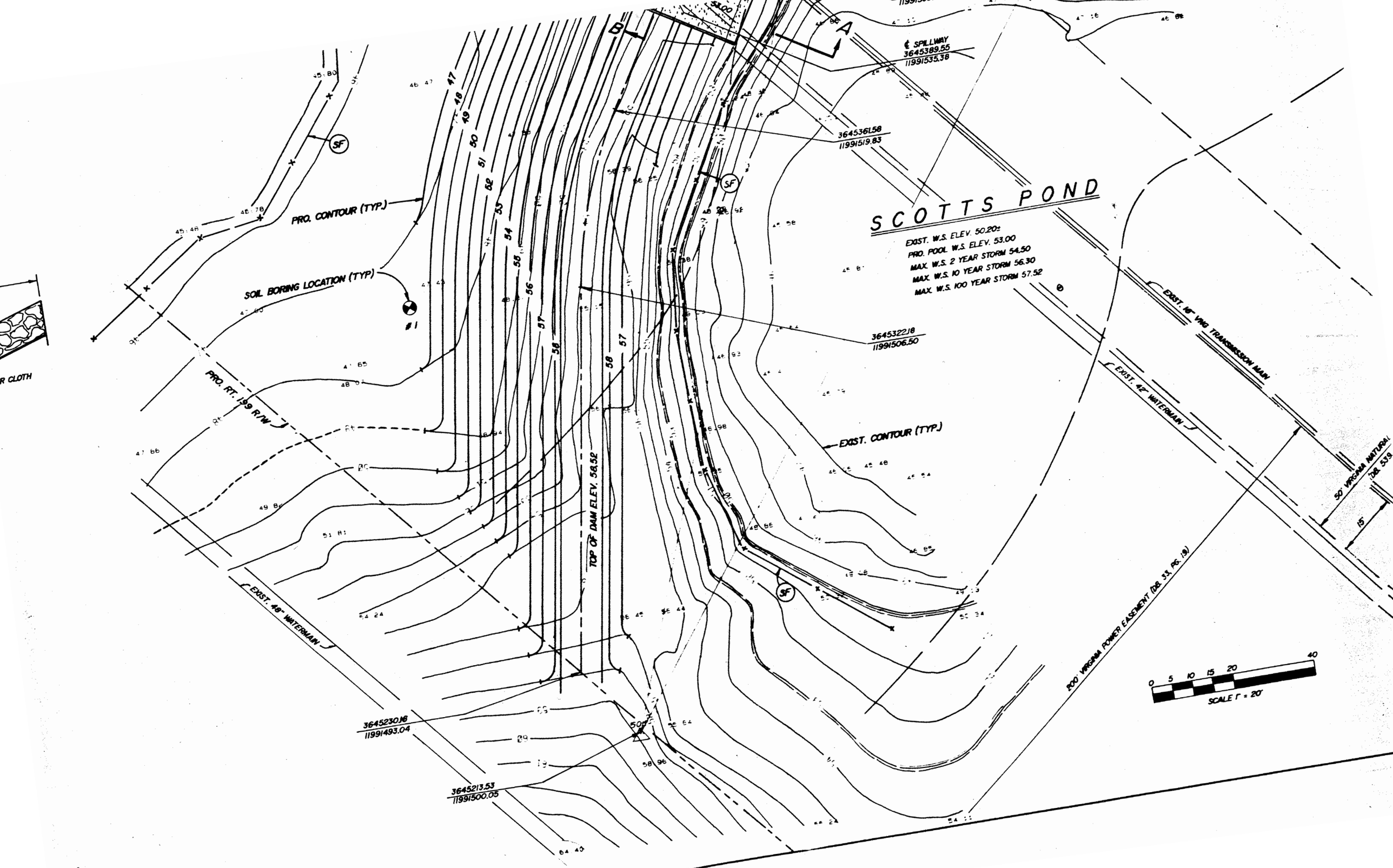
SCOTT'S POND
SECTION 3

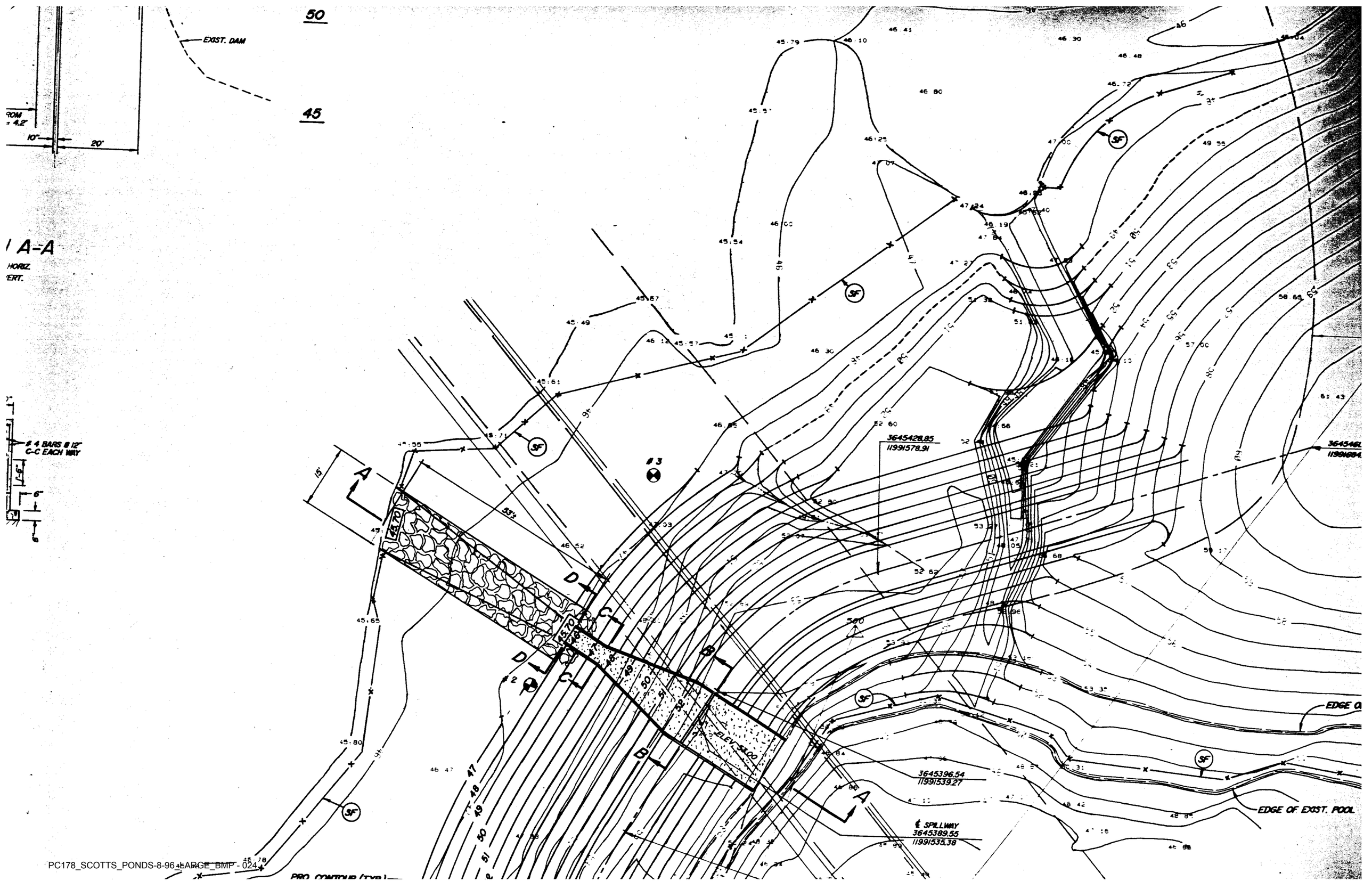
Designed	Drawn
AES	AES
Scale 1"= 200'	Date 12/4/02

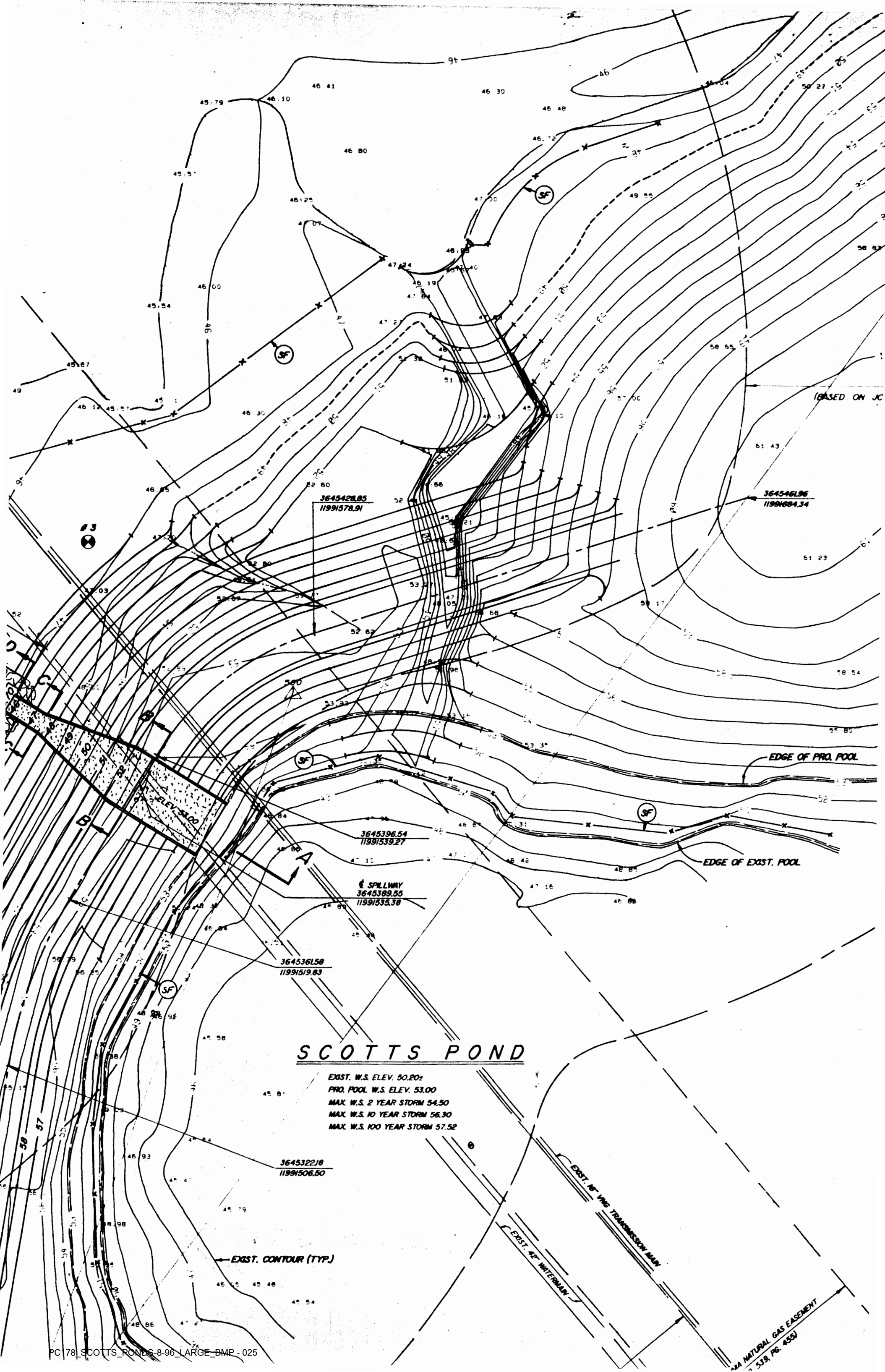
Project No. 9178

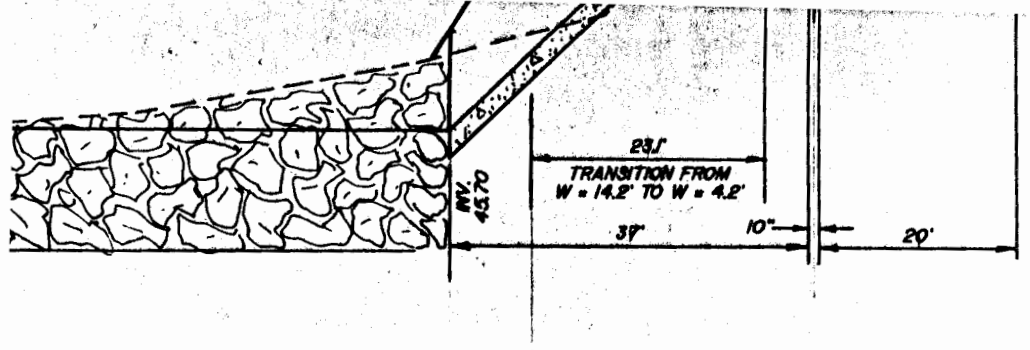
Drawing No. 1

12BMBER2AREA_SCOTTS_POND.dwg


SCOTTS POND
EXIST. W.S. ELEV. 50.20±
PRO. POOL W.S. ELEV. 53.00
MAX. W.S. 2 YEAR STORM 54.50
MAX. W.S. 10 YEAR STORM 56.30
MAX. W.S. 100 YEAR STORM 57.52
℄ SPILLWAY
3645389.55
1199153538
3645361.58
1199151983
3645322.18
1199150650
3645230.16
1199149304
3645213.53
1199150005
PRO. CONTOUR (TYP.)
SOIL BORING LOCATION (TYP)
#1
PRO. RT. 199 R/W
EXIST. CONTOUR (TYP.)
TOP OF DAM ELEV. 58.52
EXIST. 48" WATERMAIN
EXIST. 16" VMD TRANSMISSION MAIN
EXIST. 42" WATERMAIN
50' VIRGINIA NATURAL GAS
15'
200' VIRGINIA POWER EASEMENT (DB. 53, PG. 191)
SF
A
B
0 5 10 15 20 40
SCALE 1" = 20'

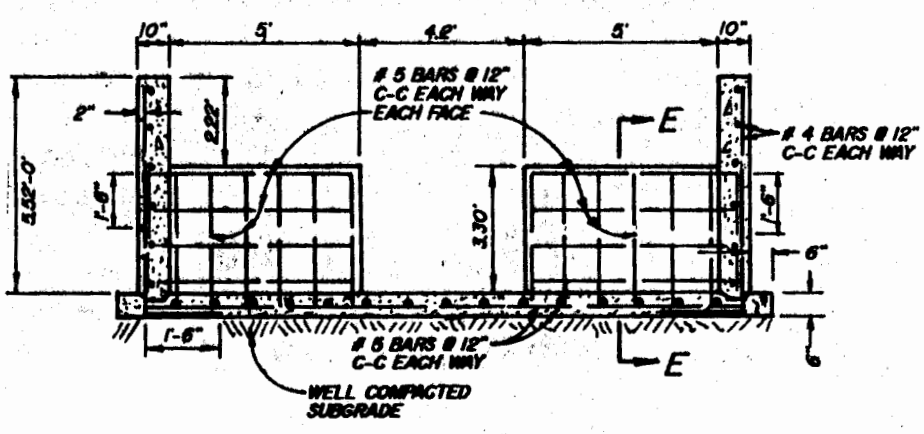

EXIST. DAM
50
45
10"
20'
A-A
HORIZ.
VERT.
4 BARS @ 12" C-C EACH WAY
1'-6"
6"
6"
15'
53½
45.70
ELEV. 54.00
3
2
3645428.85
11991578.91
3645396.54
11991539.27
℄ SPILLWAY
3645389.55
11991535.38
EDGE OF EXIST. POOL
PRO. CONTOUR (TYP.)


SCOTTS POND
EXIST. W.S. ELEV. 50.20±
PRO. POOL W.S. ELEV. 53.00
MAX. W.S. 2 YEAR STORM 54.50
MAX. W.S. 10 YEAR STORM 56.30
MAX. W.S. 100 YEAR STORM 57.52
EDGE OF PRO. POOL
EDGE OF EXIST. POOL
℄ SPILLWAY
3645389.55
1199535.38
3645396.54
1199539.27
3645428.85
1199578.91
3645461.96
1199684.34
3645361.58
1199519.83
3645322.18
1199506.50
ELEV. 54.00
EXIST. CONTOUR (TYP.)
EXIST. 16" VNG TRANSMISSION MAIN
EXIST. 42" WATERMAIN
(BASED ON JC
#3
A
B
C
SF



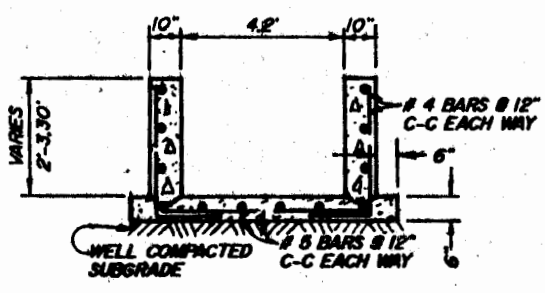
SECTION A-A

SCALE 1" = 20' HORIZ.
1" = 4' VERT.



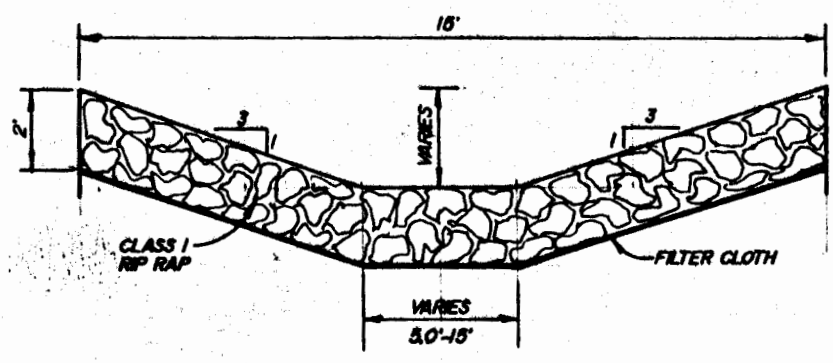
SECTION B-B

1" = 5'



SECTION C-C

1" = 5'



SECTION D-D

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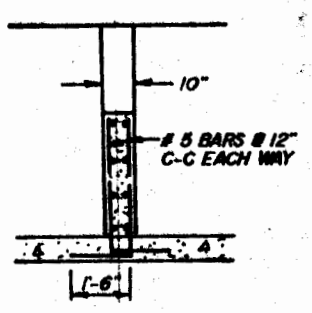

SECTION E-E

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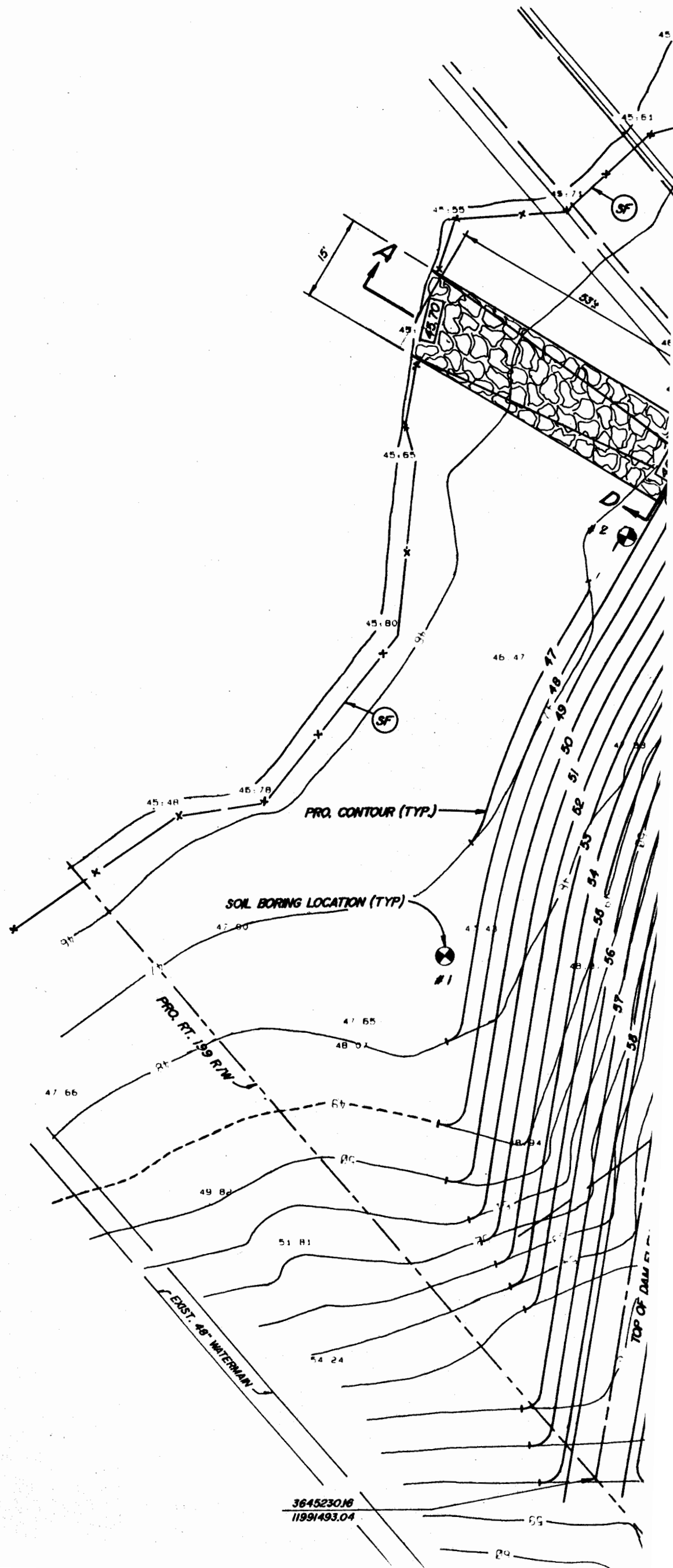
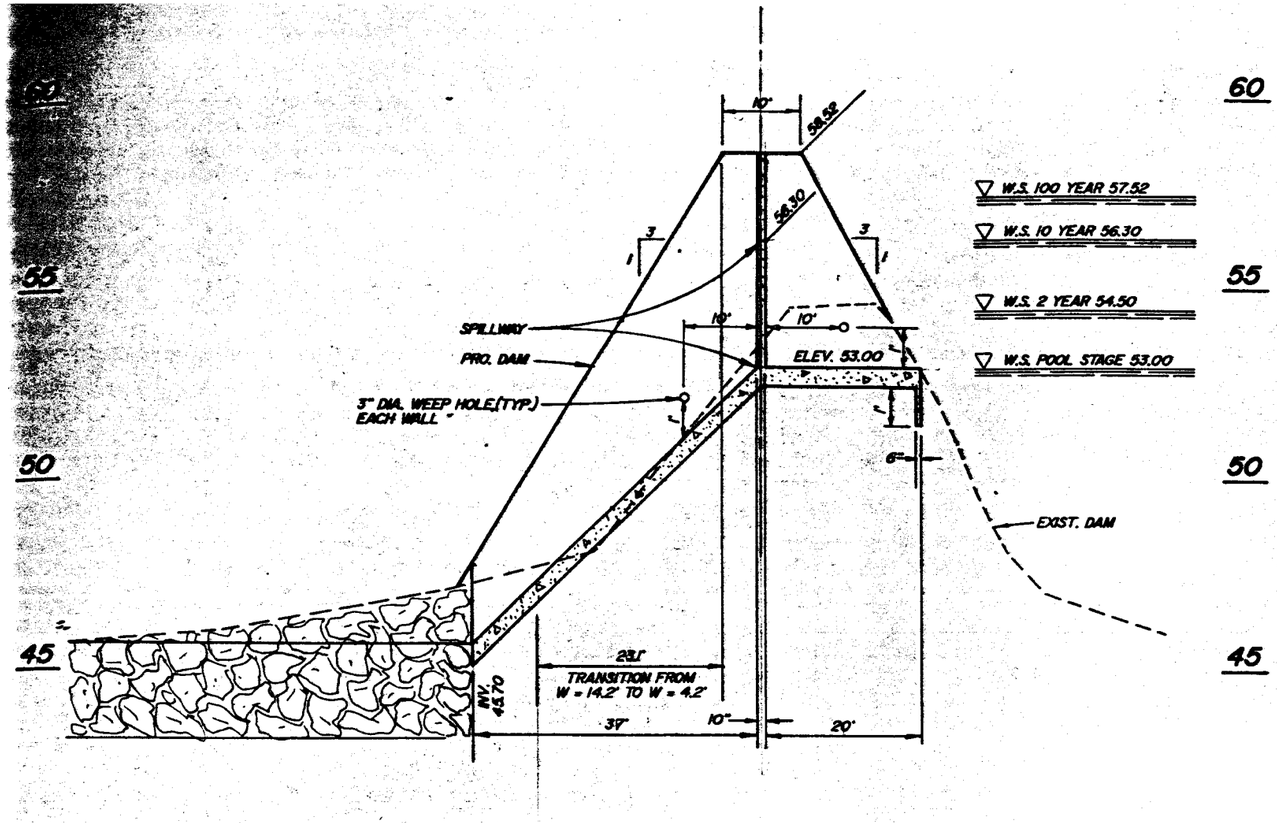
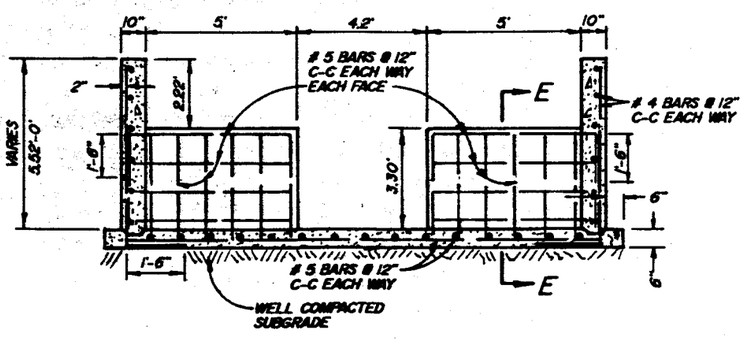




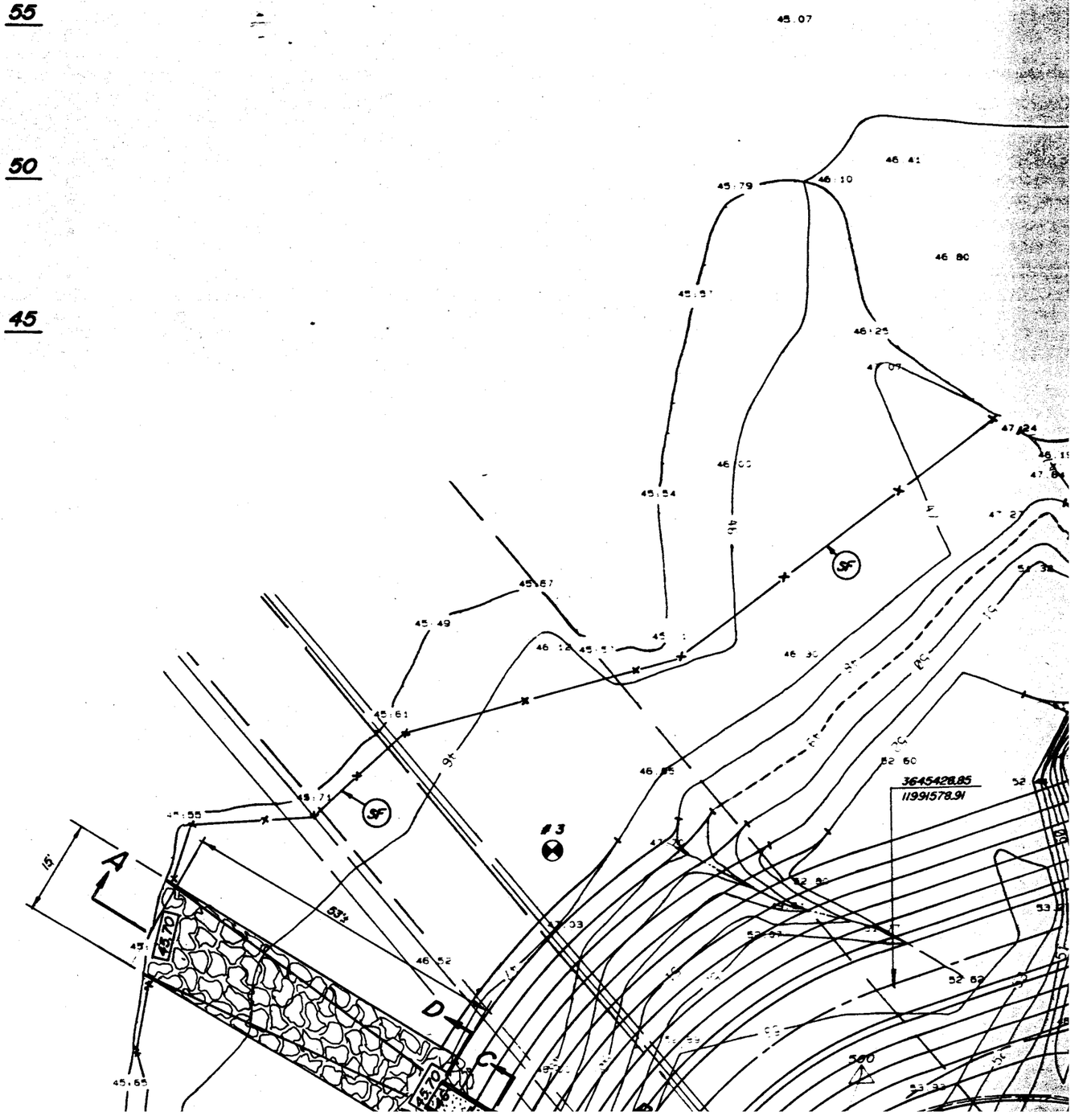
SECTION A-A

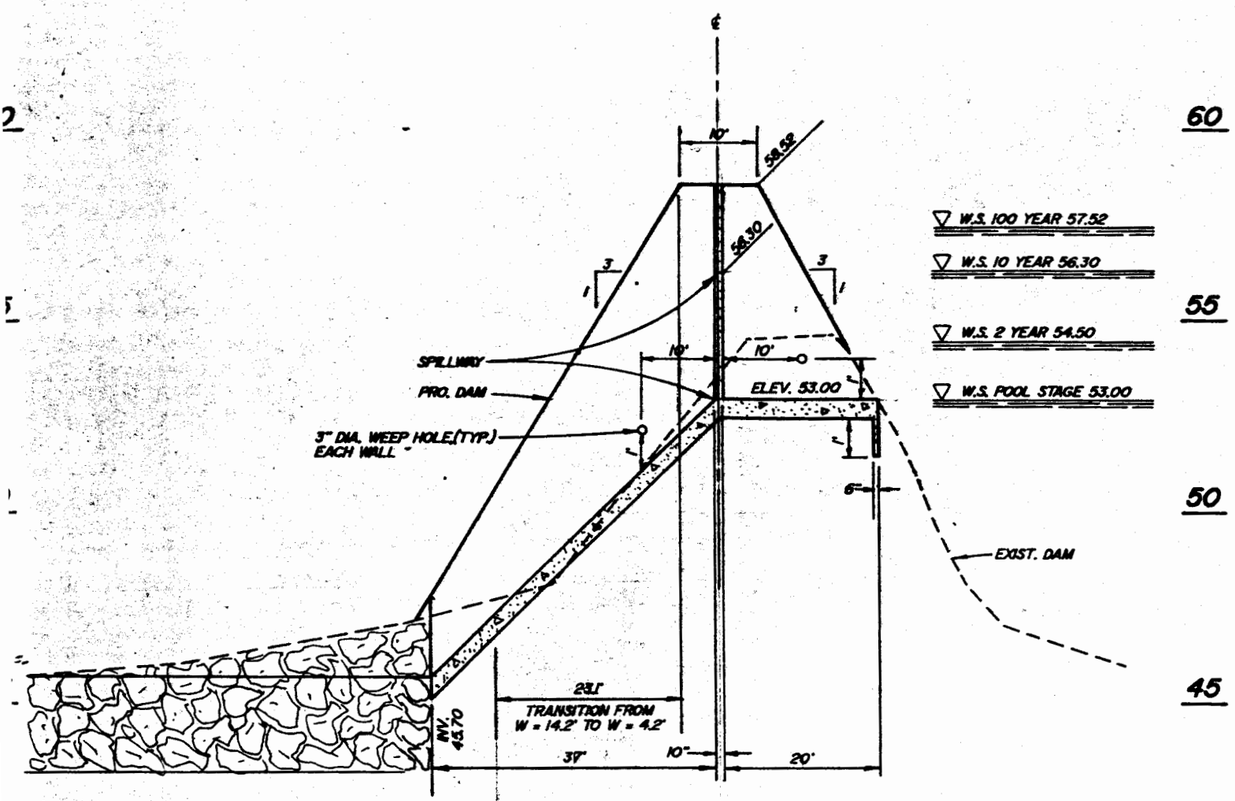
SCALE 1" = 20' HORIZ.
1" = 4' VERT.



SECTION B-B

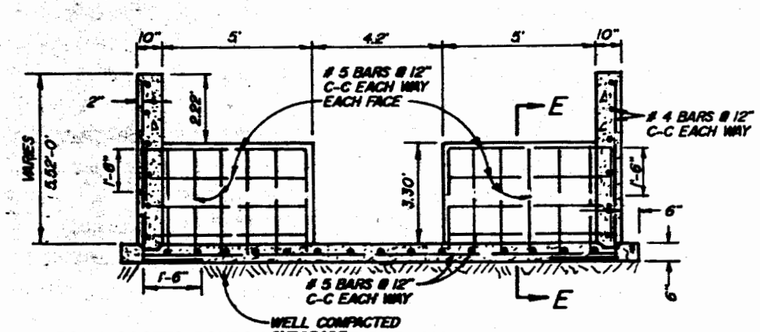
1" = 5'

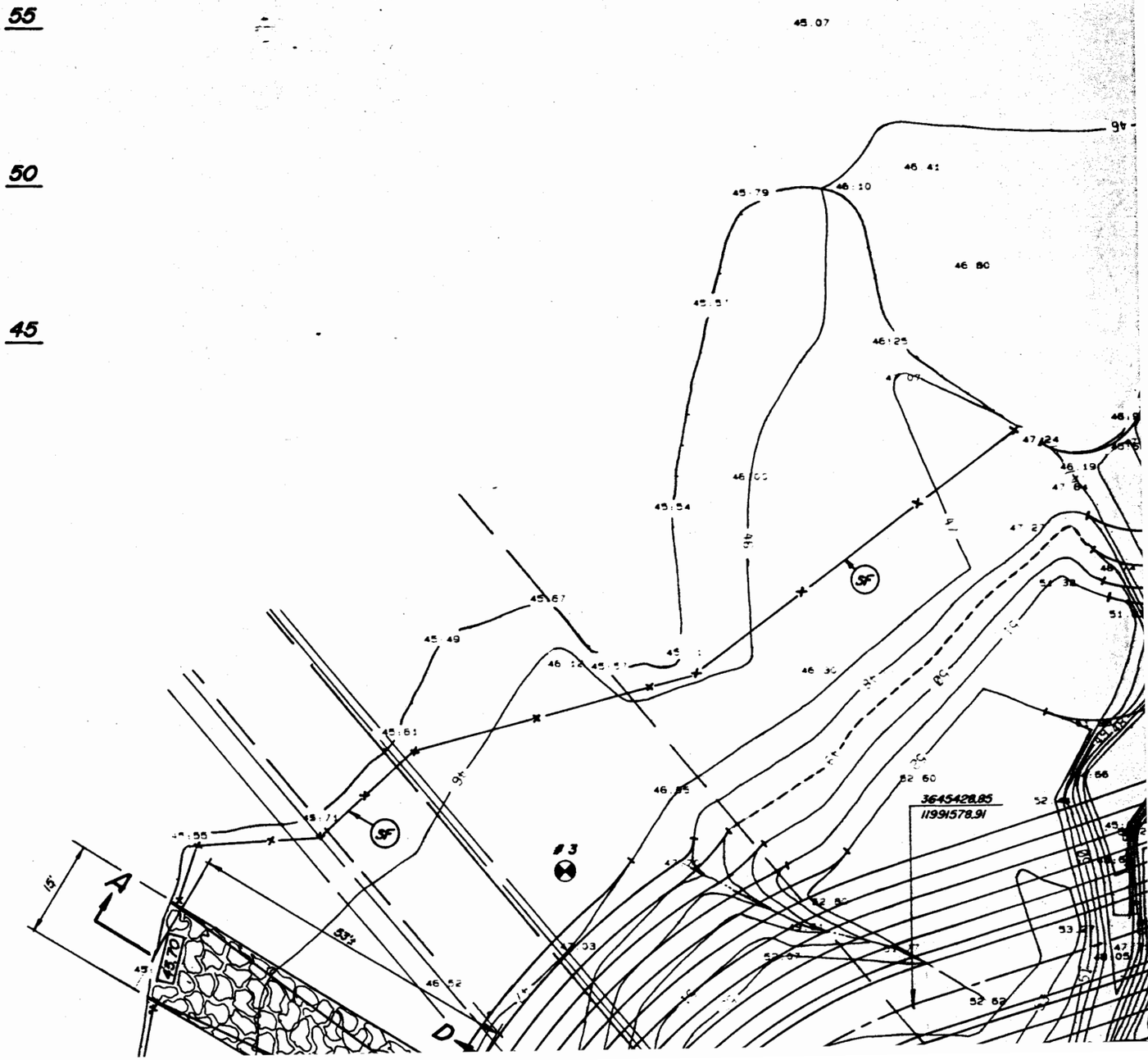


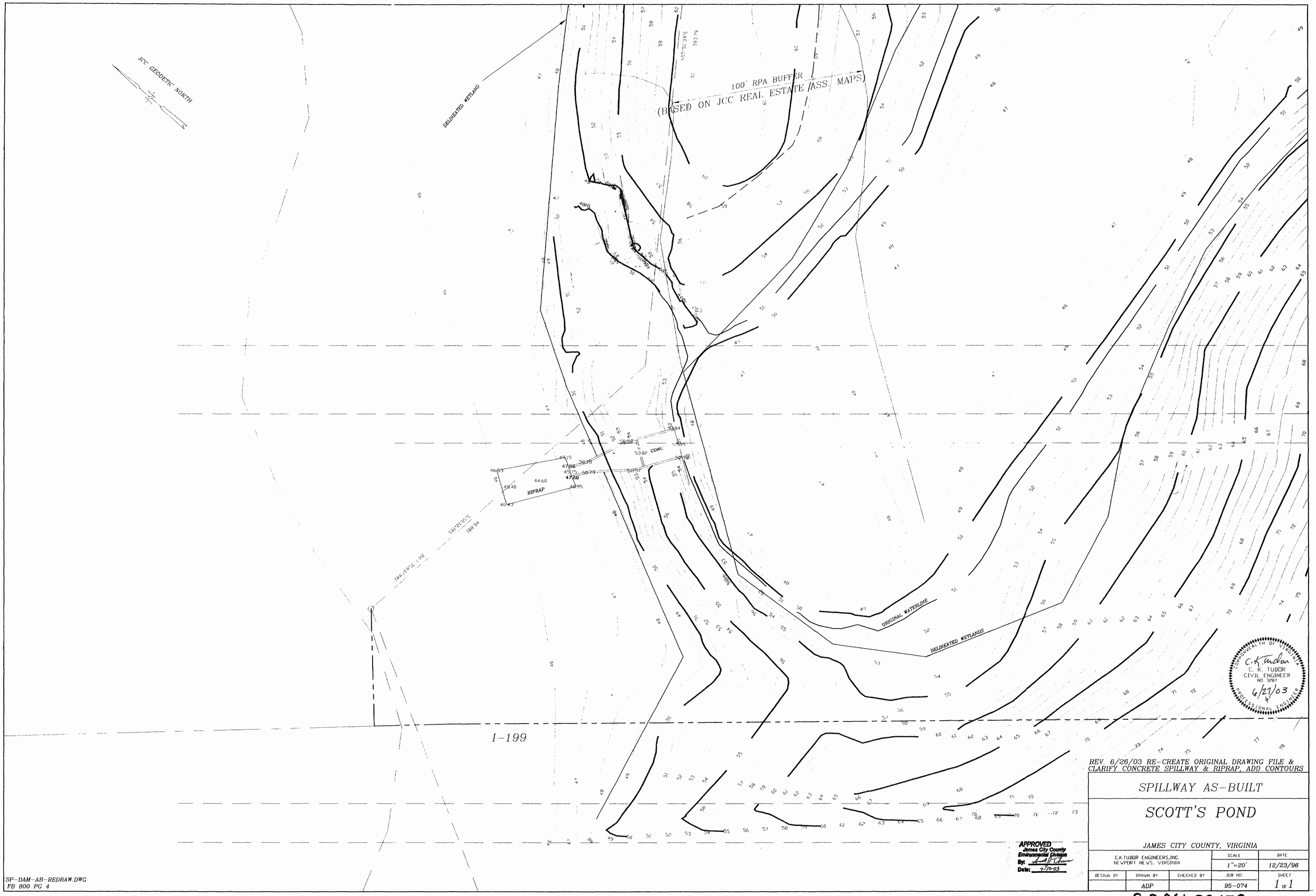


SECTION A-A

SCALE 1" = 20' HORIZ.
1" = 4' VERT.







REV. 6/26/03 RE-CREATE ORIGINAL DRAWING FILE & CLARIFY CONCRETE SPILLWAY & RIPRAP, ADD CONTOURS

SPILLWAY AS-BUILT

SCOTT'S POND

JAMES CITY COUNTY, VIRGINIA

C.K.TUDOR ENGINEERS,INC. NEWPORT NEWS, VIRGINIA			SCALE	DATE
			1"=20'	12/23/96
DESIGN BY	DRAWN BY	CHECKED BY	JOB NO.	SHEET
	ADP		95-074	1 OF 1

SP-DAM-AB-REDRAW.DWG
FB 800 PG 4

S-8-96; PC178

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 029

SITE DATA

61.75 Ac.-DRAINAGE AREA THROUGH BERKELEY COMMONS POND

155 Ac.-DRAINAGE AREA SCOTTS POND PROPERTY

216.75 Ac.-TOTAL DRAINAGE AREA TO SCOTTS POND

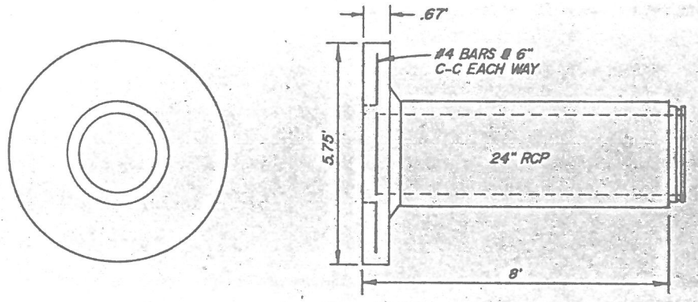
BASIN CN = 69

PEAK RUNOFF TO SCOTTS POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
71.3 CFS	228.9 CFS	374.5 CFS

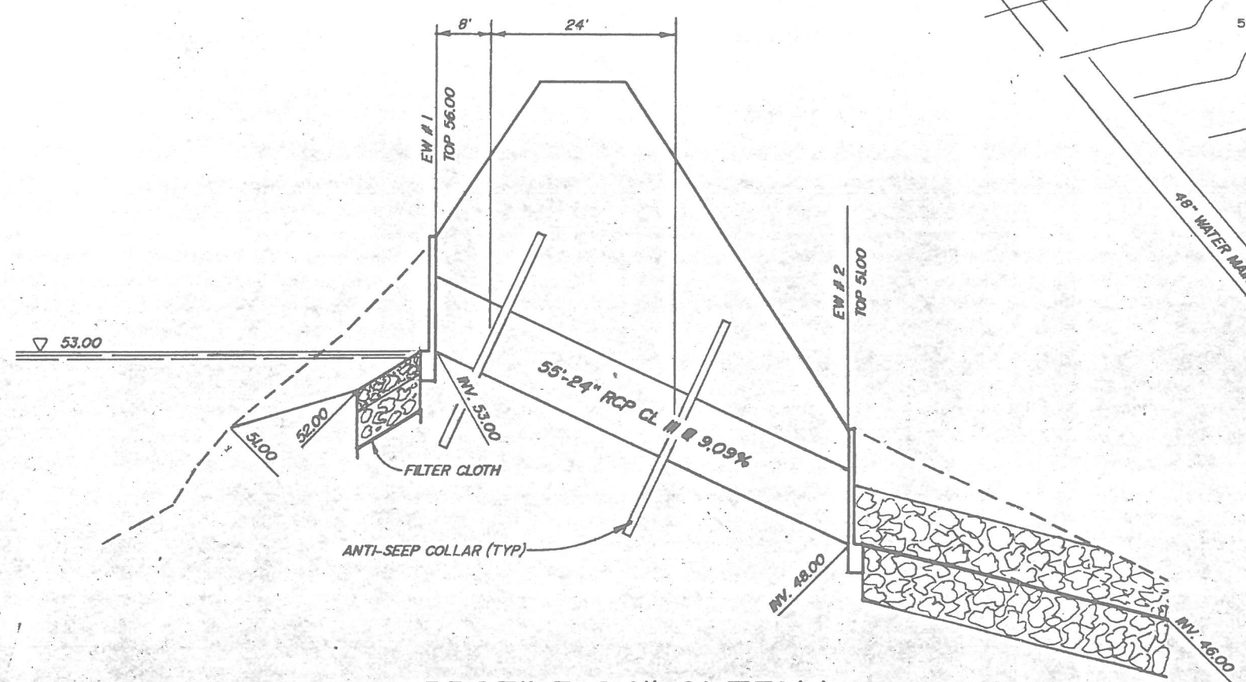
PEAK DISCHARGES FROM SCOTTS POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
33.9 CFS	146.1 CFS	254.1 CFS



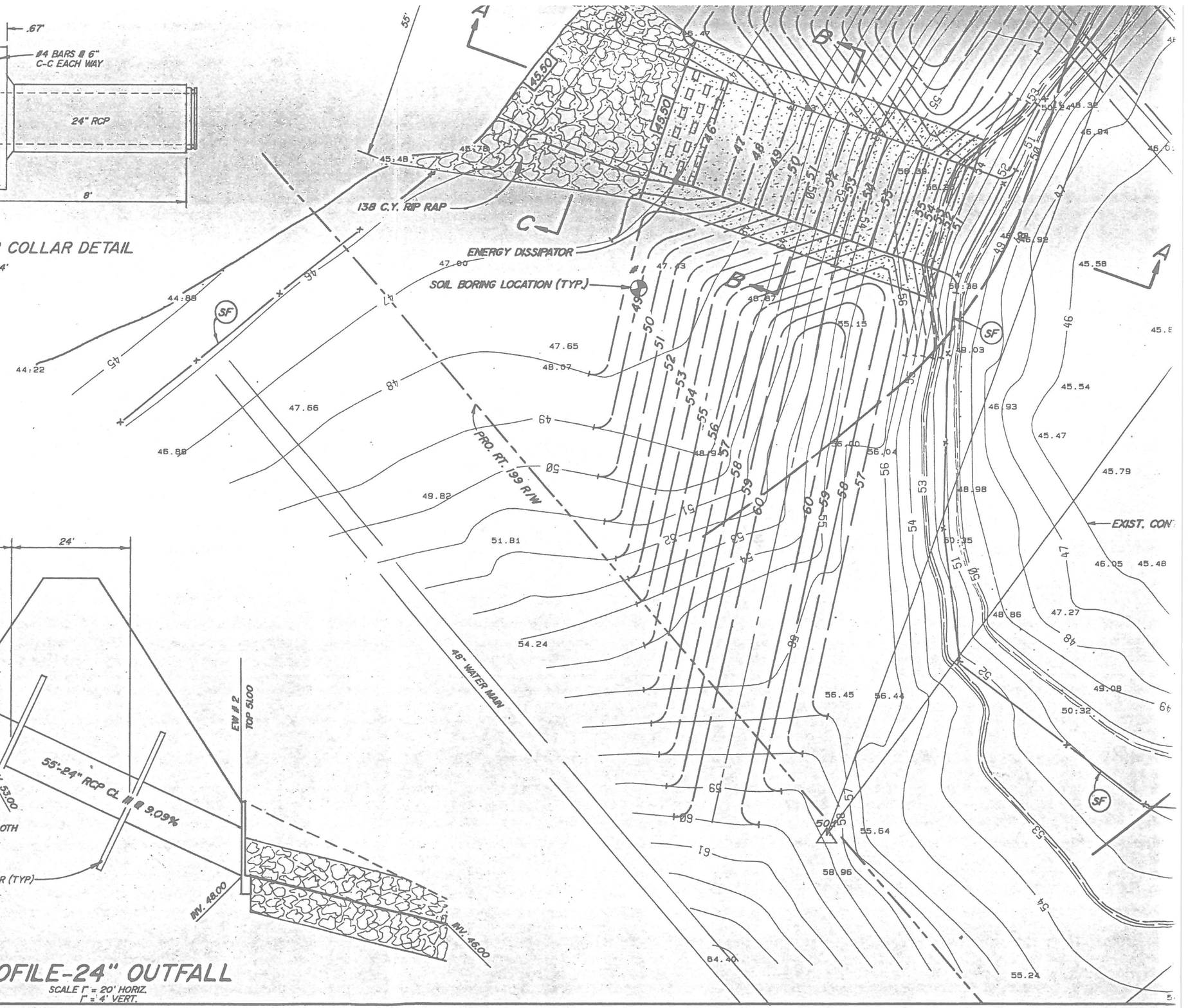
PRE-CAST ANTI-SEEP COLLAR DETAIL

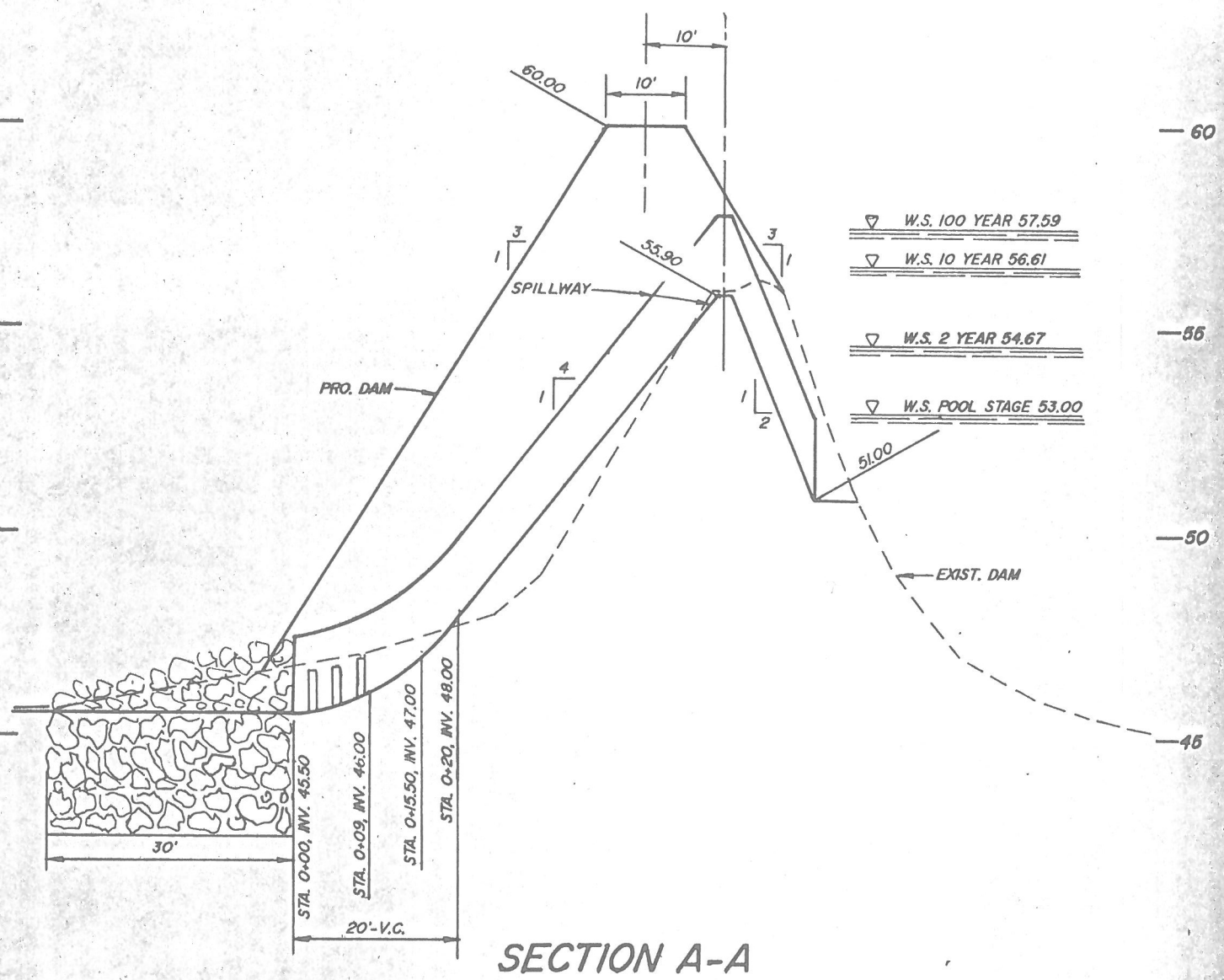
SCALE 1" = 4'



PROFILE-24" OUTFALL

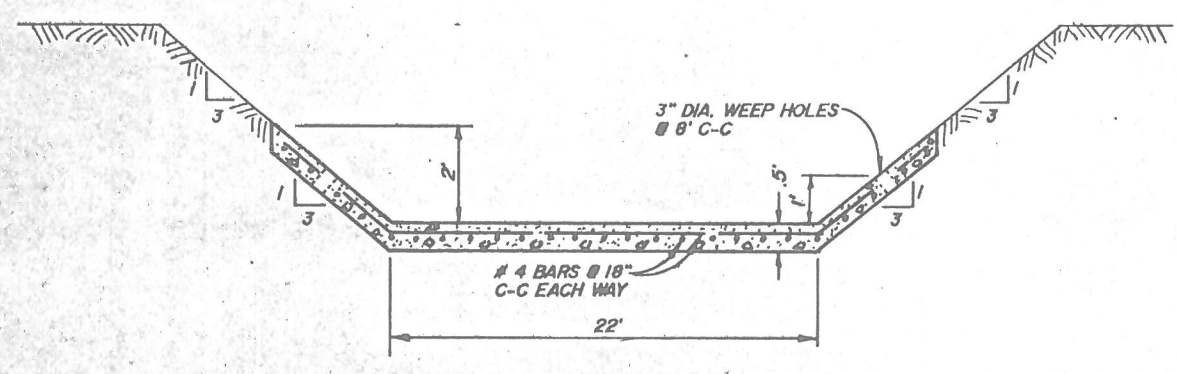
SCALE 1" = 20' HORIZ.
1" = 4' VERT.





SECTION A-A

SCALE 1" = 20' HORIZ.
1" = 4' VERT.



SECTION B-B

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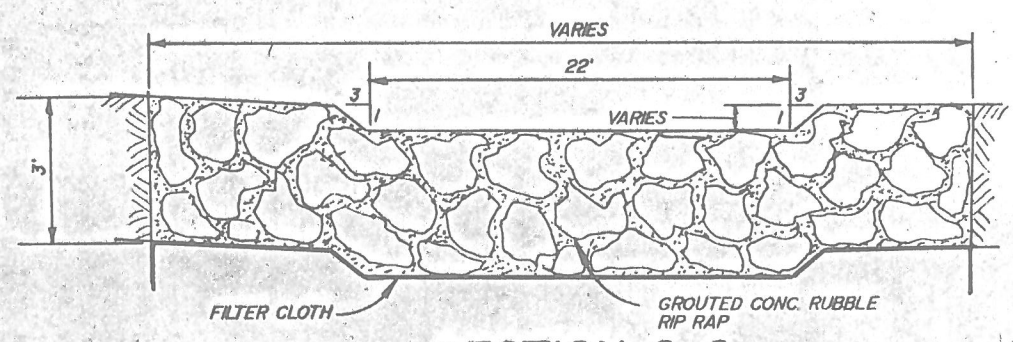
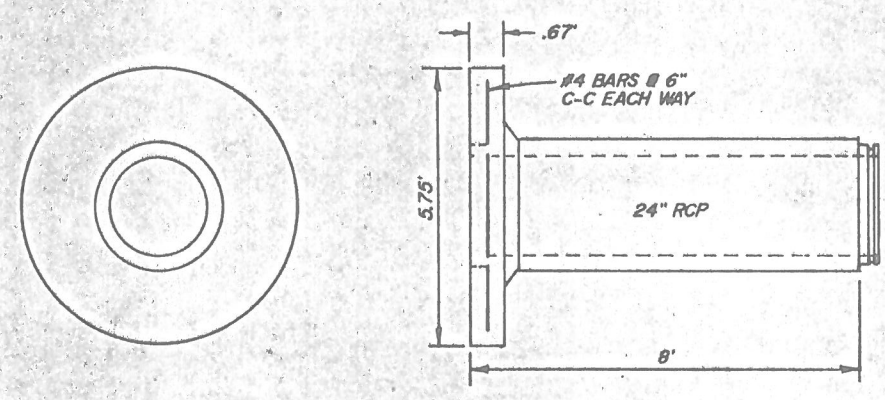


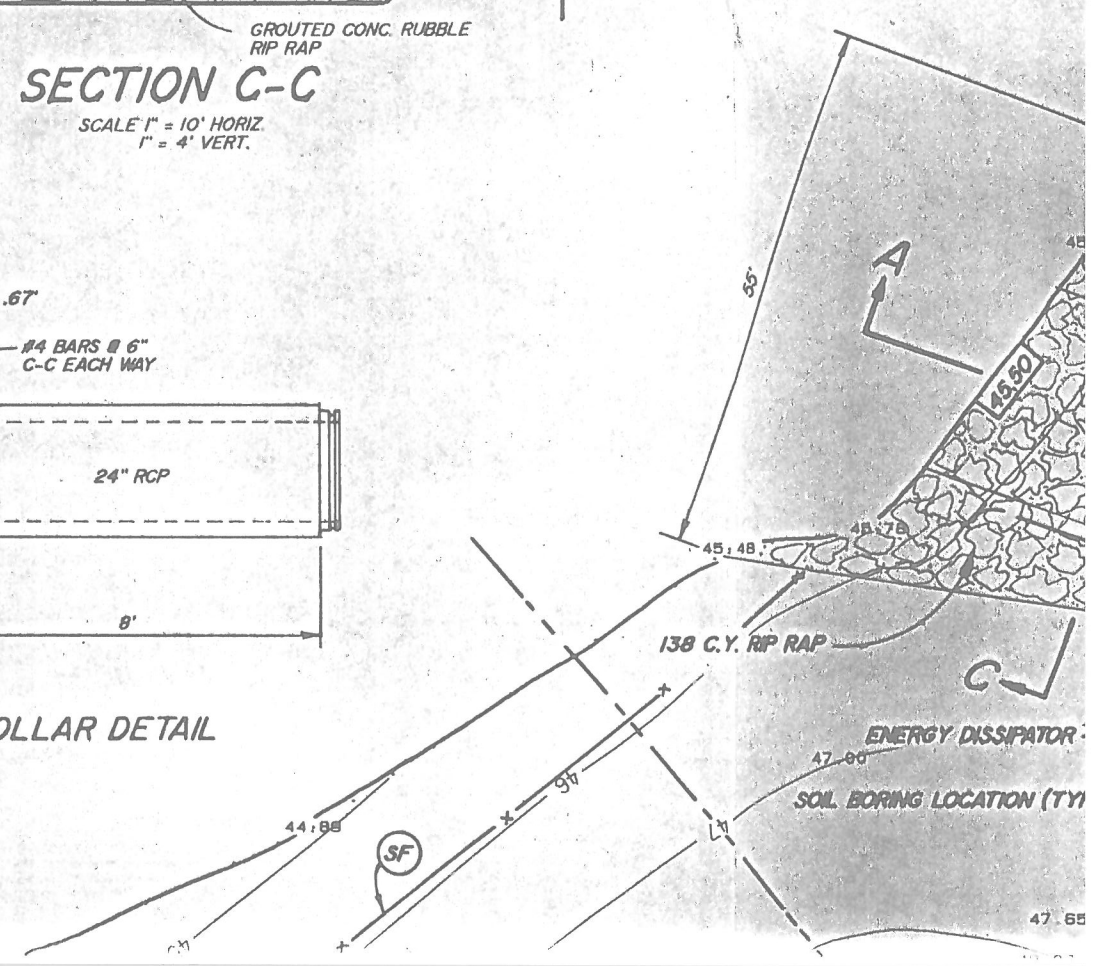
SECTION C-C

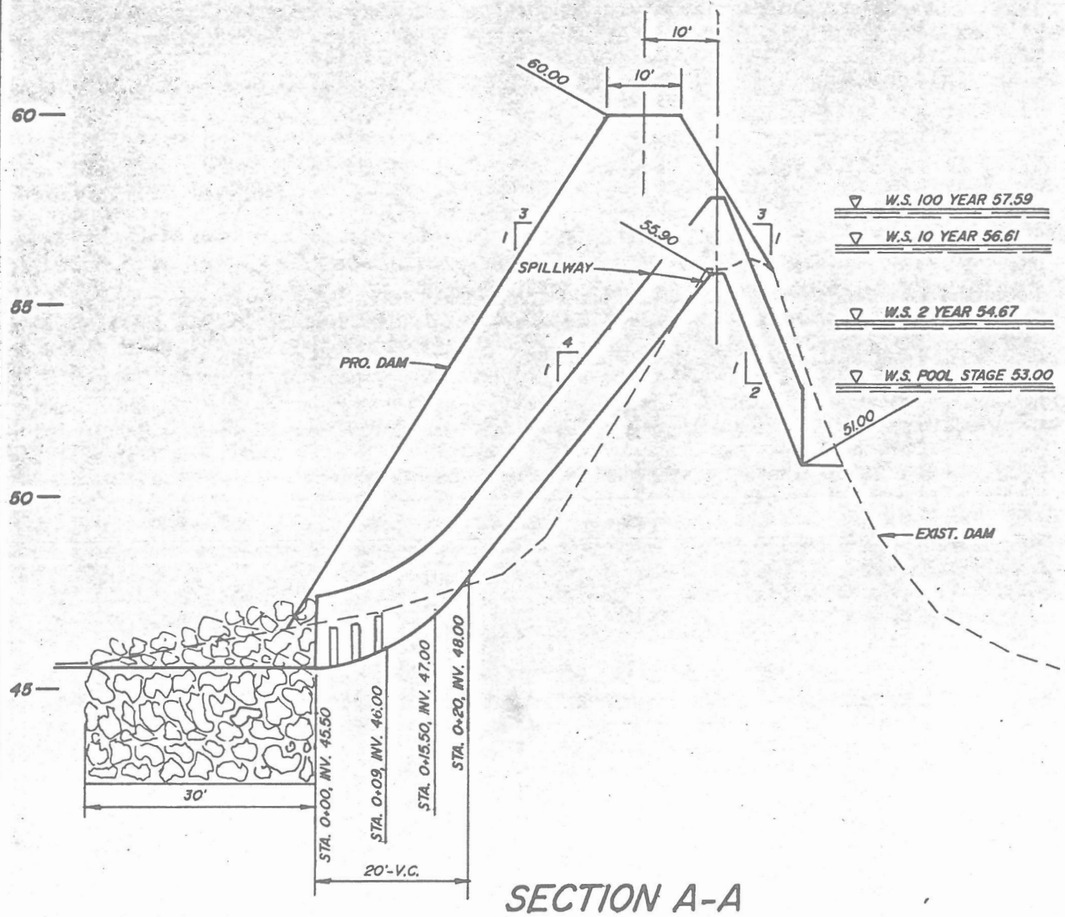
SCALE 1" = 10' HORIZ.
1" = 4' VERT.



PRE-CAST ANTI-SEEP COLLAR DETAIL

SCALE 1" = 4'





SECTION A-A

SCALE 1" = 20' HORIZ.
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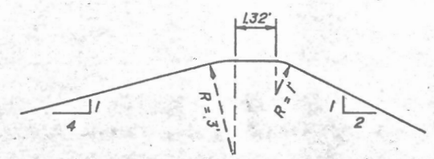
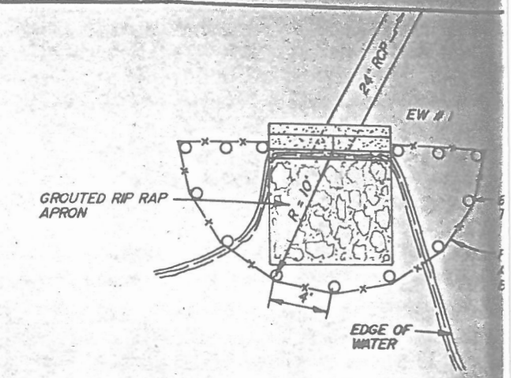
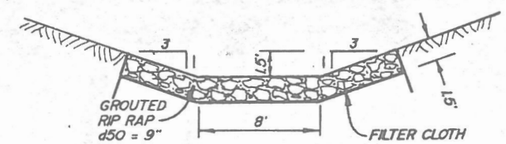


SPILLWAY CREST DETAIL

SCALE 1" = 5'





SECTION D-D

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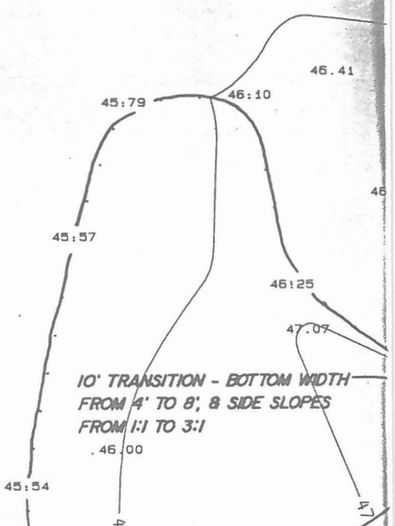
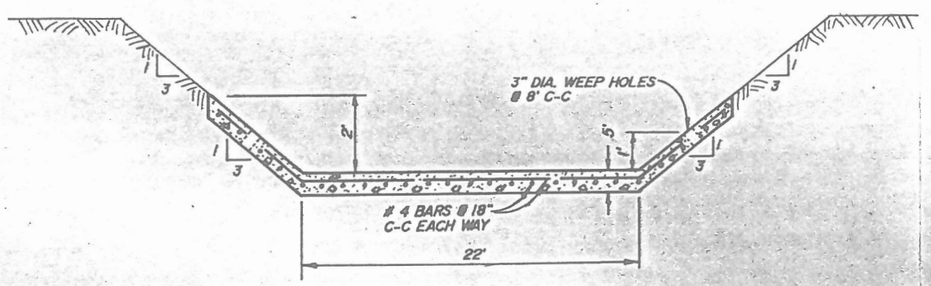
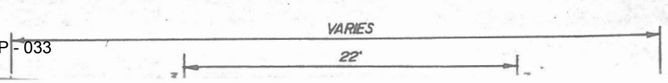
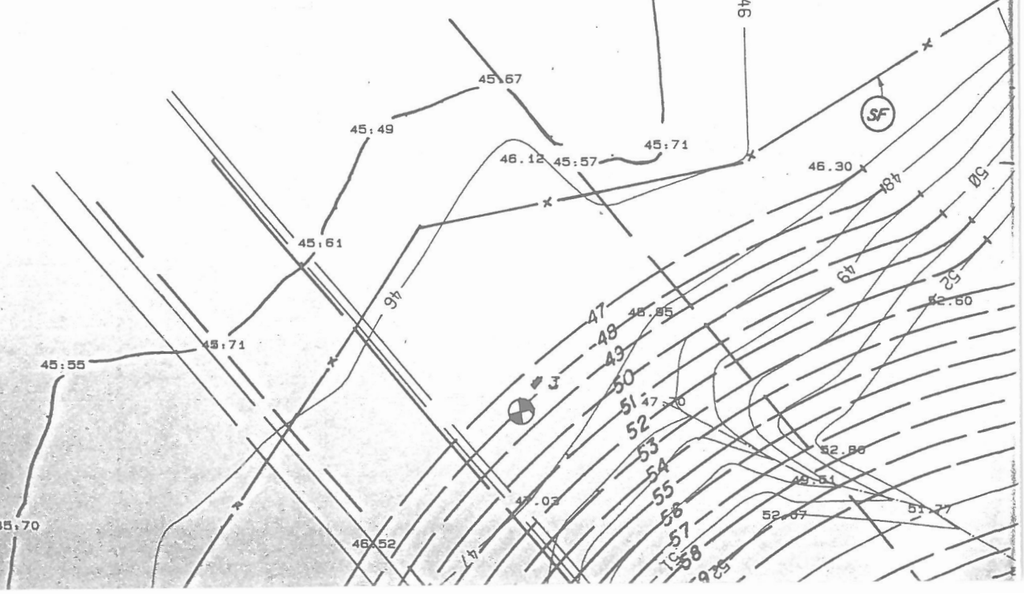


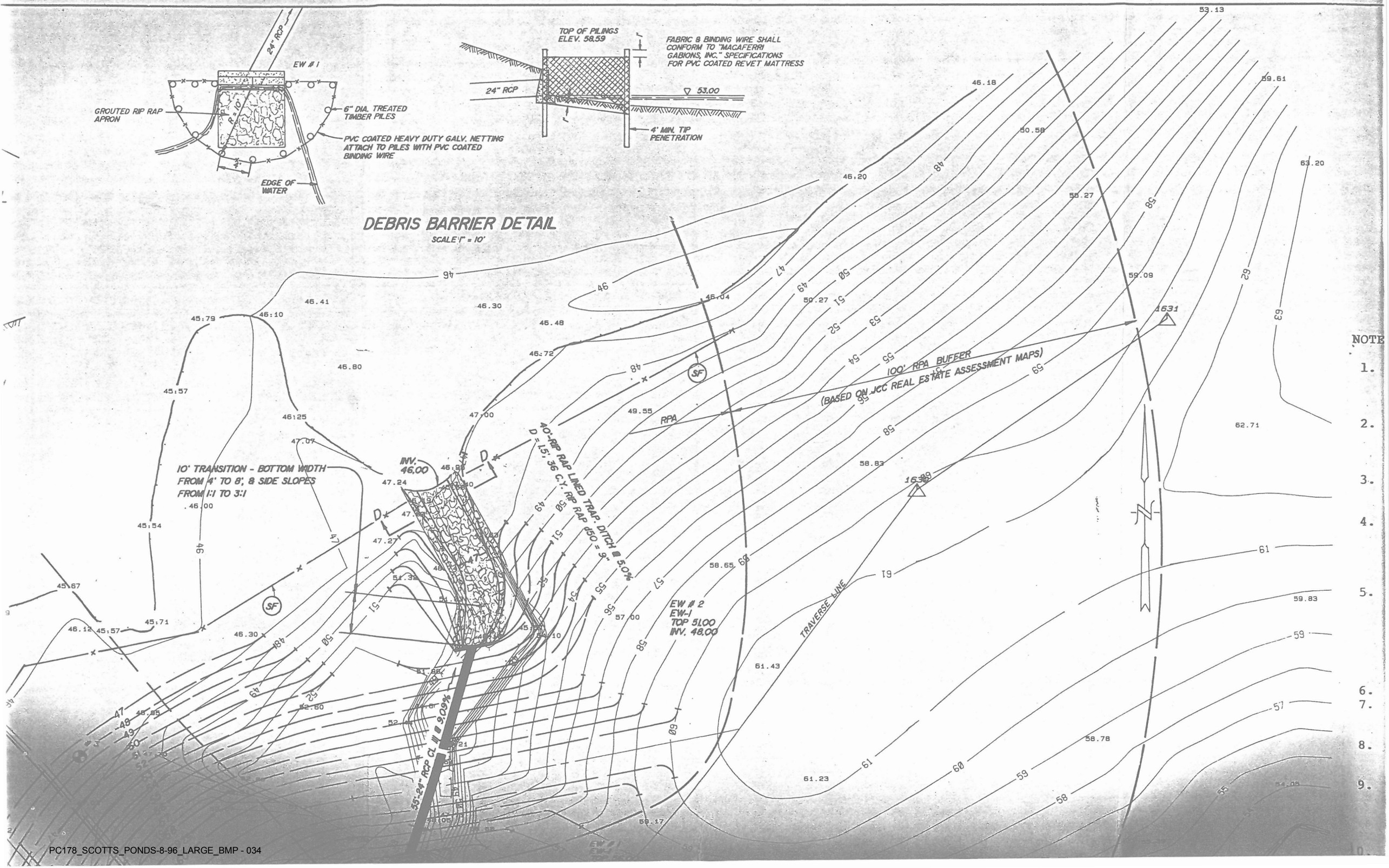


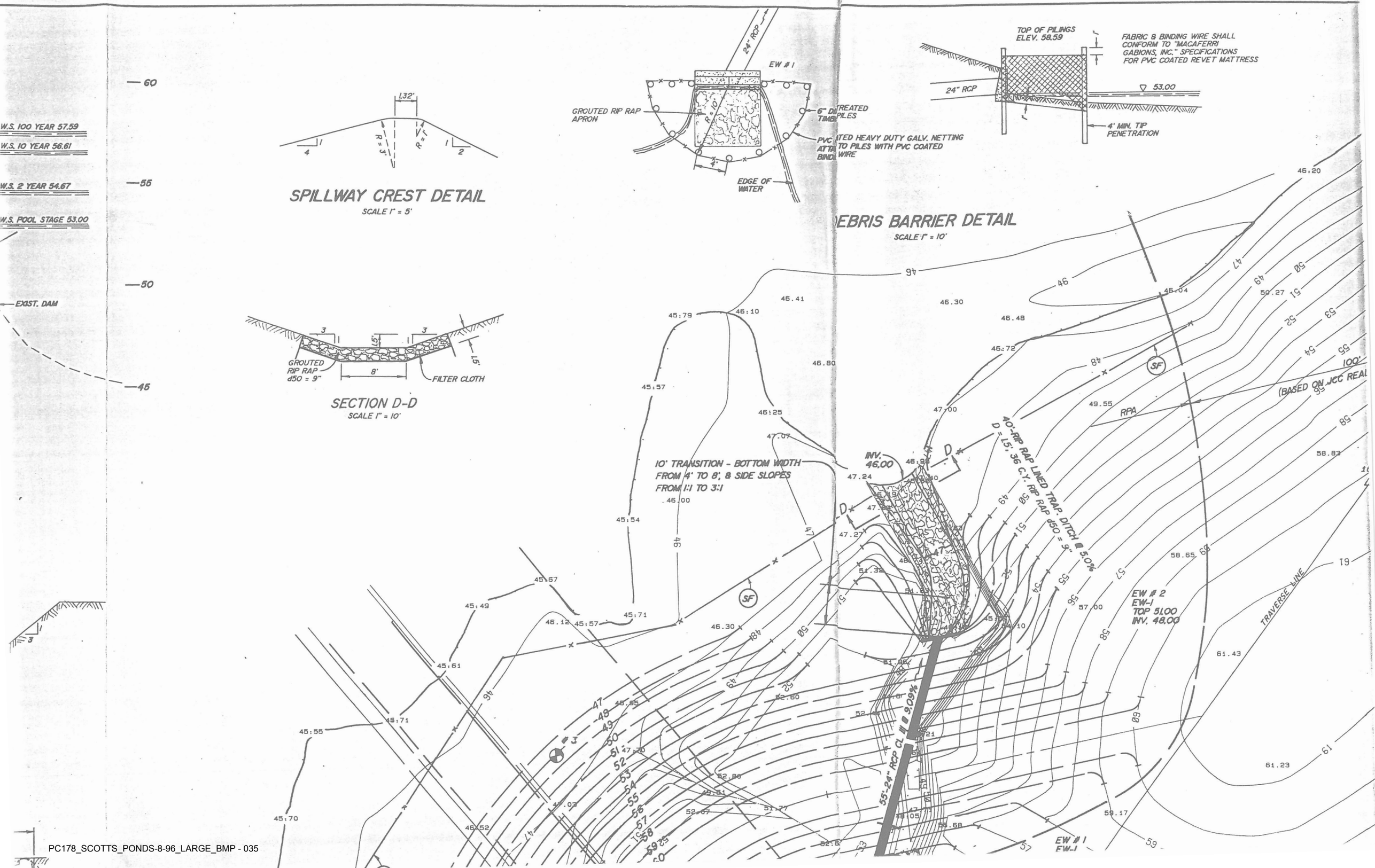
SECTION B-B

SCALE 1" = 10' HORIZ.
1" = 4' VERT.






24" RCP
EW # 1
GROUTED RIP RAP APRON
R = 10'
6" DIA. TREATED TIMBER PILES
PVC COATED HEAVY DUTY GALV. NETTING ATTACH TO PILES WITH PVC COATED BINDING WIRE
EDGE OF WATER
TOP OF PILINGS ELEV. 58.59
FABRIC & BINDING WIRE SHALL CONFORM TO "MACAFERRI GABIONS, INC." SPECIFICATIONS FOR PVC COATED REVET MATTRESS
24" RCP
53.00
4' MIN. TIP PENETRATION
DEBRIS BARRIER DETAIL
SCALE 1" = 10'
100' RPA BUFFER
(BASED ON JCC REAL ESTATE ASSESSMENT MAPS)
RPA
SF
10' TRANSITION - BOTTOM WIDTH FROM 4' TO 8', & SIDE SLOPES FROM 1:1 TO 3:1
INV. 46.00
40'-RIP RAP LINED TRAP. DITCH @ 5.0%
D = 1.5', 36 C.Y. RIP RAP d50 = 9"
EW # 2
EW-1
TOP 51.00
INV. 48.00
TRAVERSE LINE
35'-24" RCP CL @ 9.09%
1631
1639
NOTE
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.


W.S. 100 YEAR 57.59
W.S. 10 YEAR 56.61
W.S. 2 YEAR 54.67
W.S. POOL STAGE 53.00
EXIST. DAM
60
55
50
45
32'
R = 3'
R = 1'
4
1
1
2
SPILLWAY CREST DETAIL
SCALE 1" = 5'
3
1.5'
3
1.5'
GROUTED RIP RAP d50 = 9"
8'
FILTER CLOTH
SECTION D-D
SCALE 1" = 10'
24" RCP
EW # 1
GROUTED RIP RAP APRON
R = 10'
4'
6" DIA. TREATED TIMBER PILES
PVC COATED HEAVY DUTY GALV. NETTING ATTACHED TO PILES WITH PVC COATED BINDING WIRE
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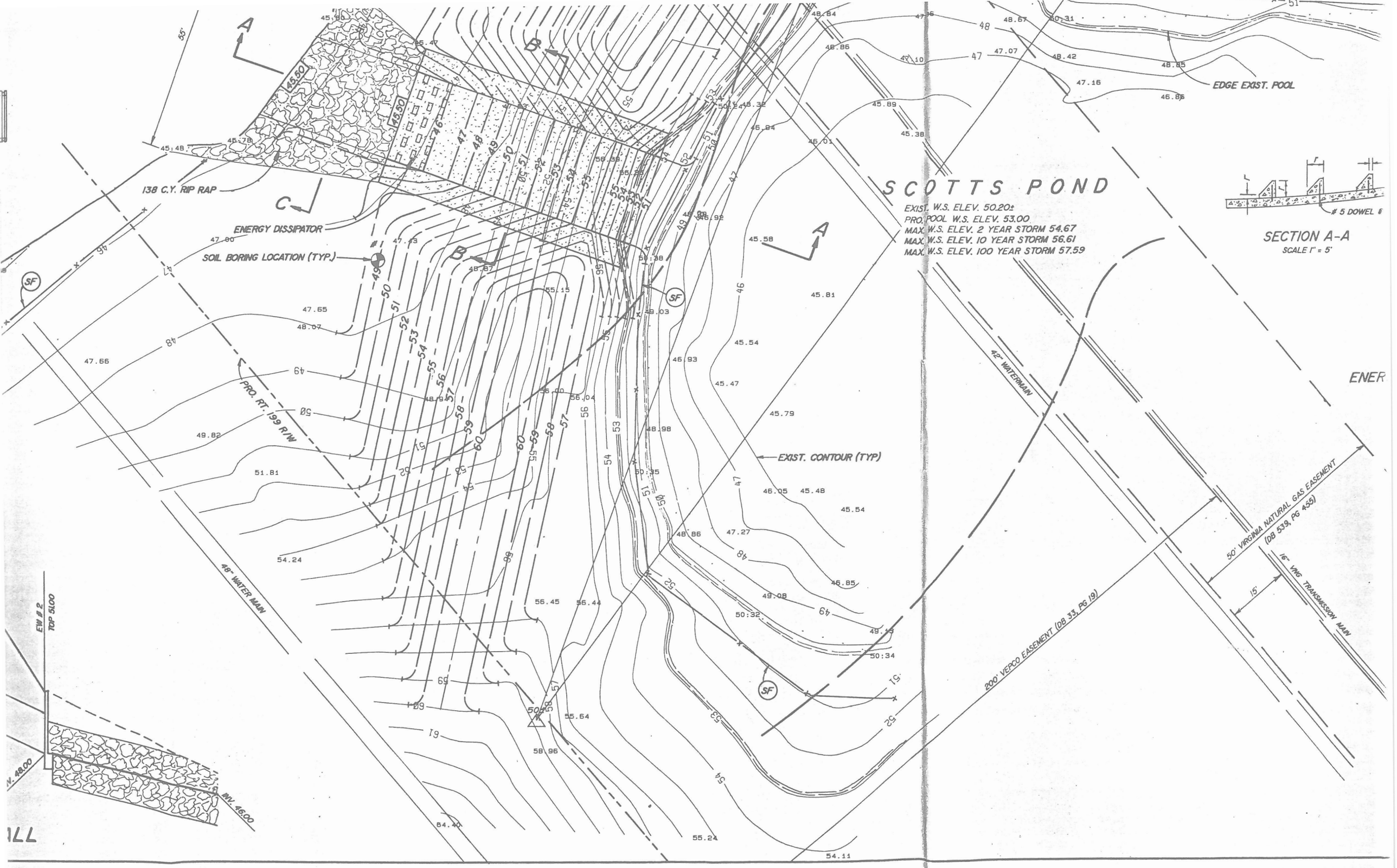
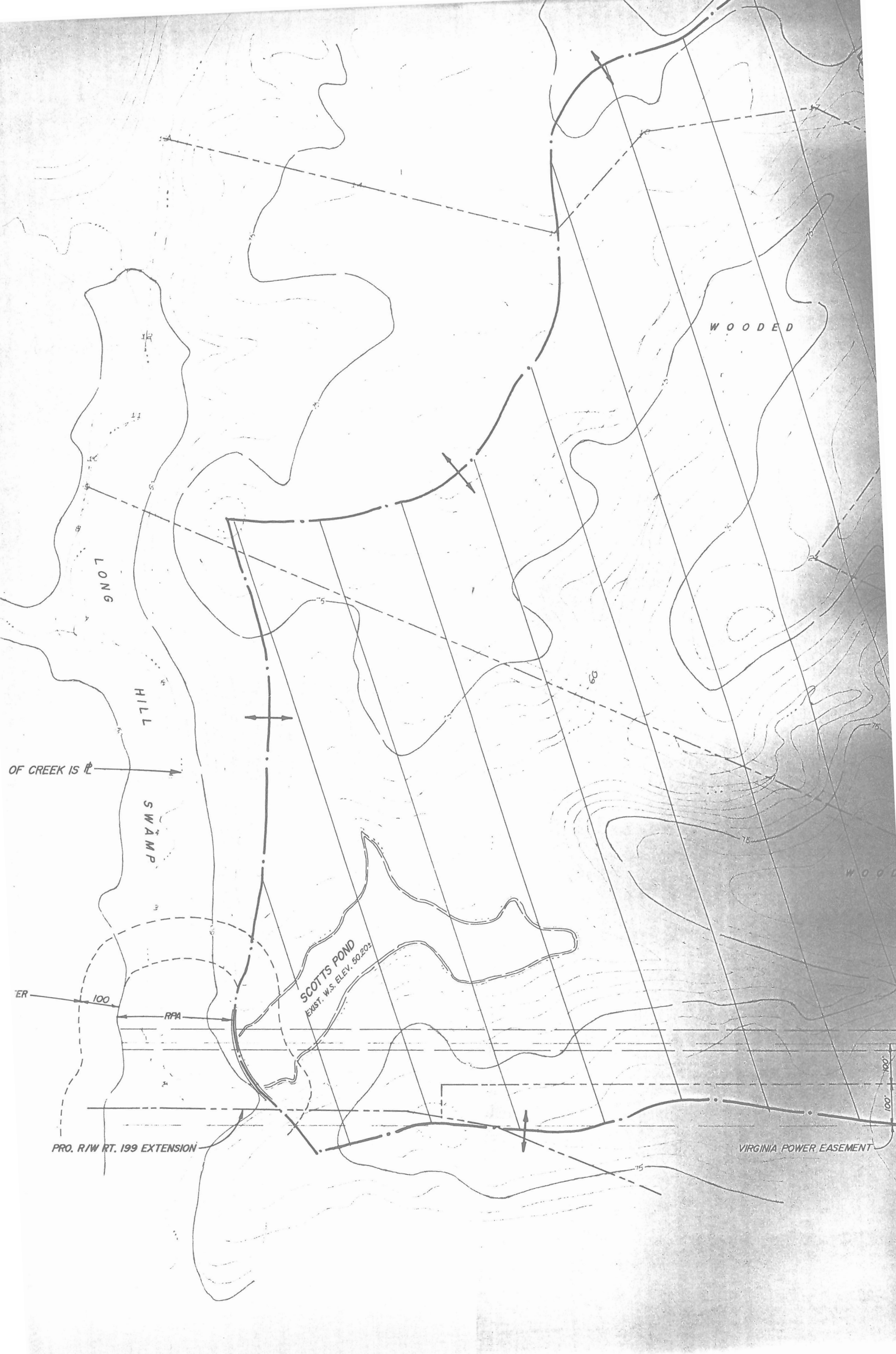
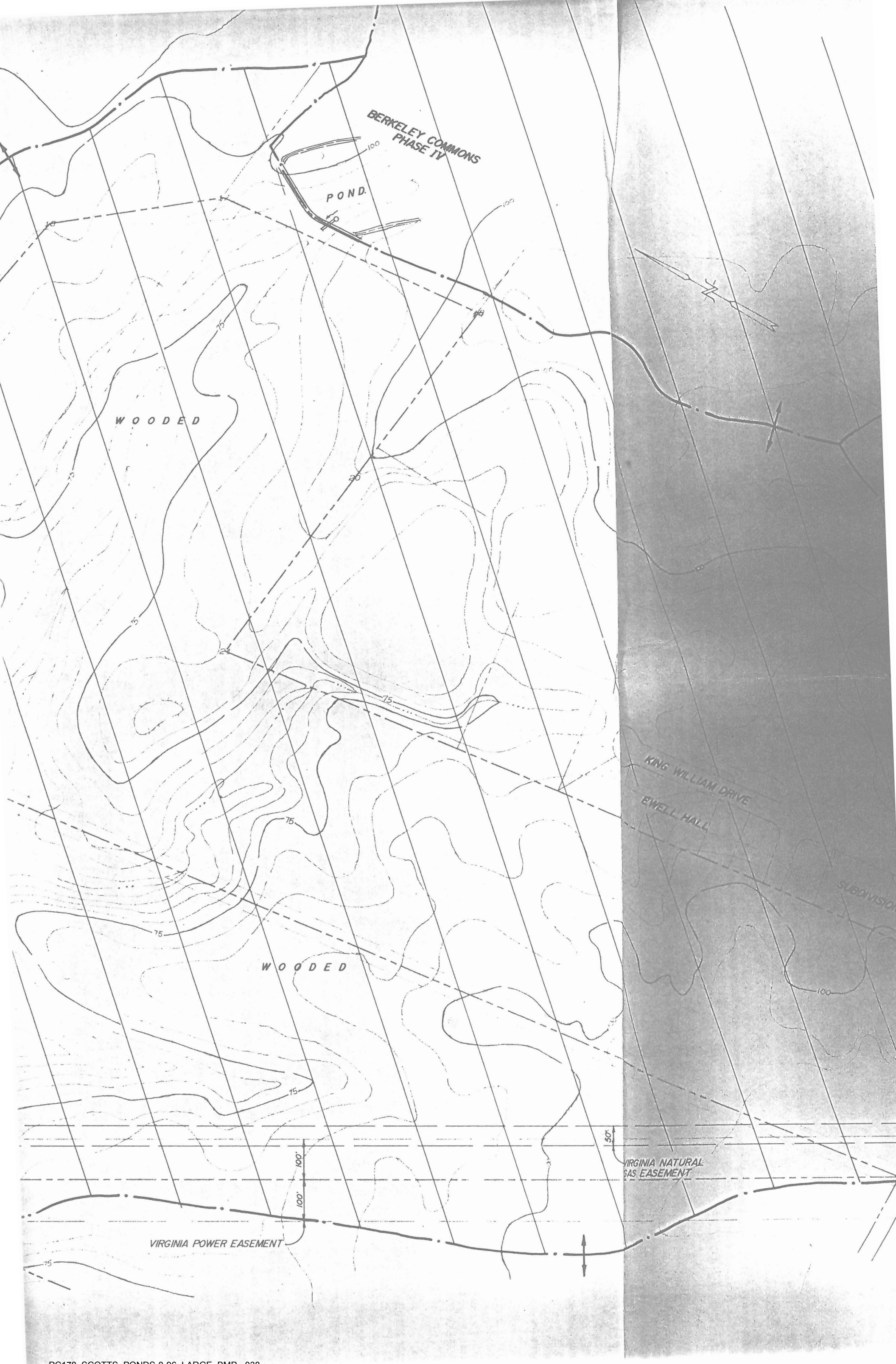
SCALE 1" = 10'
10' TRANSITION - BOTTOM WIDTH FROM 4' TO 8', & SIDE SLOPES FROM 1:1 TO 3:1
INV. 46.00
40'-RIP RAP LINED TRAP. DITCH @ 5.0%
D = 1.5', 36 C.Y. RIP RAP d50 = 9"
55'-24" RCP CL III @ 9.09%
EW # 2
EW-1
TOP 51.00
INV. 48.00
EW # 1
EW-1
TRAVERSE LINE
100'
(BASED ON JCC REAL
RPA
SF
46.20
46.41
46.30
46.48
46.72
45.79
46.10
45.80
45.57
46.25
47.07
47.00
49.55
47.24
46.00
45.54
45.67
45.49
45.71
46.12
45.57
46.30
45.61
45.55
45.71
45.70
46.52
45.95
52.60
51.77
52.87
51.32
58.83
58.65
57.00
61.43
61.23
59.17
59.27
46.04

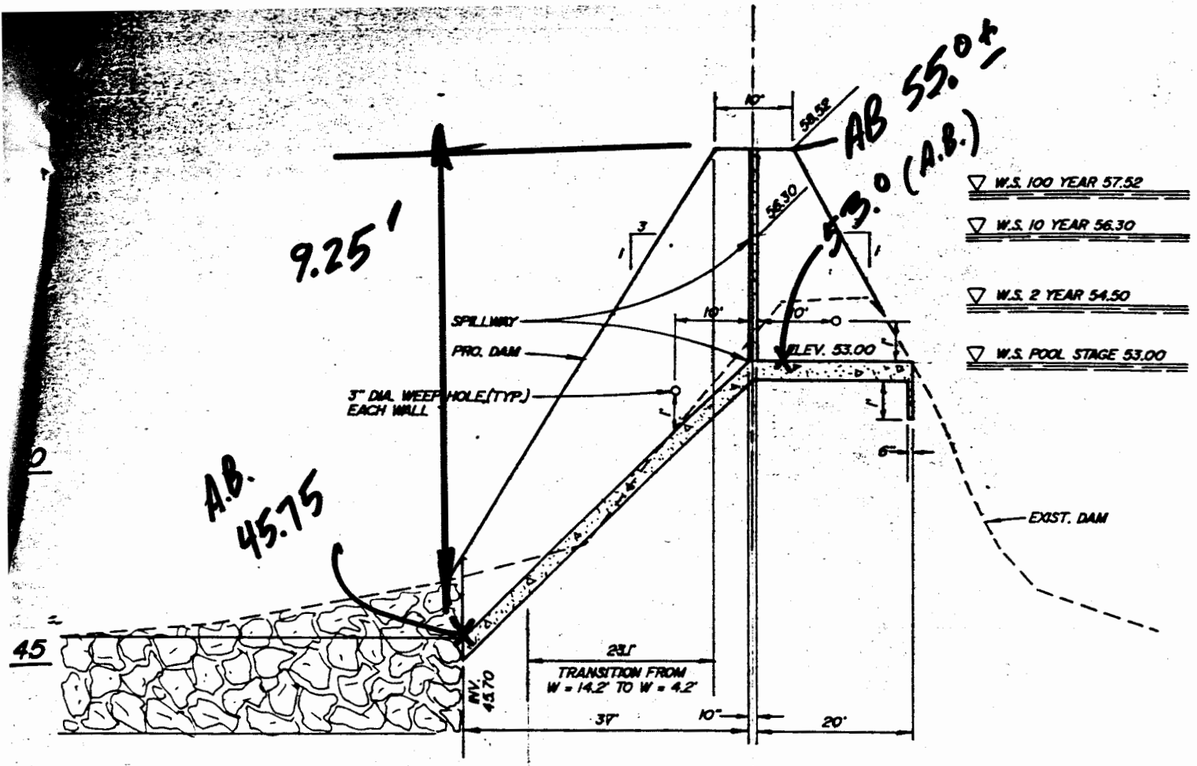


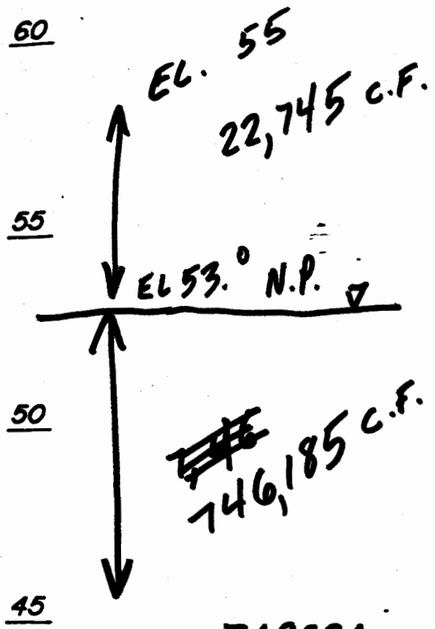
PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 036


WOODED
LONG
HILL
SWAMP
OF CREEK IS
SCOTTS POND
EXIST. W.S. ELEV. 50.20±
100
RPA
PRO. R/W RT. 199 EXTENSION
VIRGINIA POWER EASEMENT
100'
100'


BERKELEY COMMONS
PHASE IV
POND
WOODED
WOODED
KING WILLIAM DRIVE
BYELL HALL
SUBDIVISION
VIRGINIA NATURAL
GAS EASEMENT
VIRGINIA POWER EASEMENT
100'
100'
50'
75
100

BERKELEY COMMONS
PHASE IV
POND
100
KING WILLIAM DRIVE
EWELL HALL
SUBDIVISION
DRAINAGE RIDGE LINE
OLDE TOWNE ROAD RT. 658
VIRGINIA NATURAL
GAS EASEMENT
50'
C.K. Tudor
9/11/95

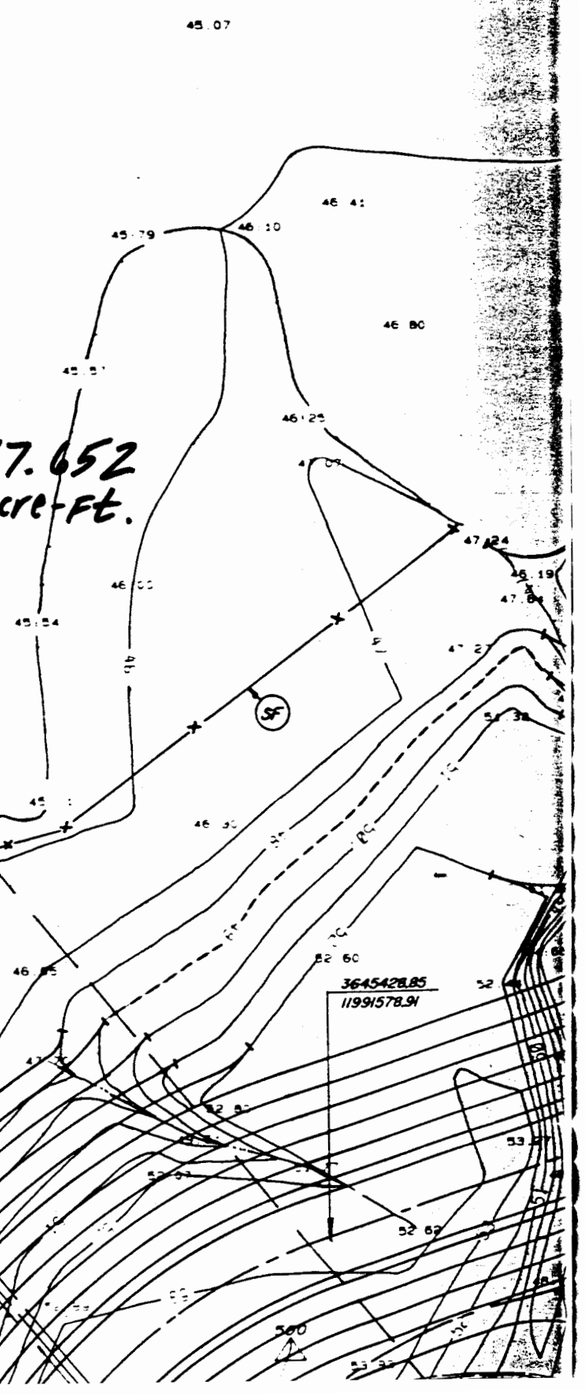




746185 CF
22745 CF

768,930 c.f.

768930 c.f. × 1 Acre / 43560 s.f. = 17.652 Acre-Ft.

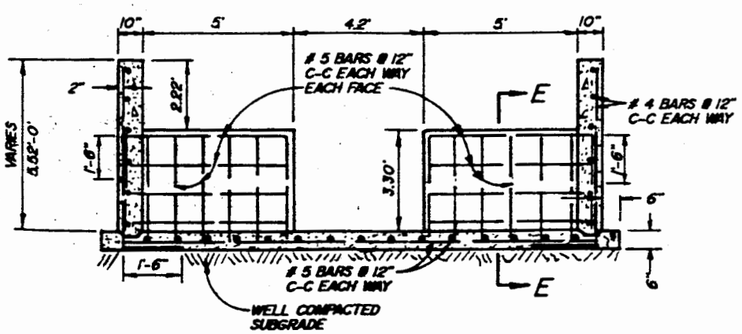


SECTION A-A

SCALE 1" = 20' HORIZ.
1" = 4' VERT.

>6 ft. Yes > 50 acre-ft. NO ~ NO

>25 ft. NO > 15 acre-ft. YES ~ NO



SECTION B-B

1" = 5'

SCOTT'S POND PC 178 WOULD NOT FALL UNDER REVISED 2001-02 DAM SAFETY REGS.

S-108-02
1ST SUBMISSION

Scott's Pond, Section 3

S-108-02
1ST SUB

Calculations
For
James City County Environmental Division

Prepared for
Henderson, Inc.

Prepared by

AES CONSULTING ENGINEERS
AES Consulting Engineers
5248 Olde Towne Road. Suite 1
Williamsburg, VA 23188
(757) 253-0040 Fax: (757) 220-8994
http://www.aesva.com

Hydrology and Hydraulics

Topographic information used in the engineering calculations was provided by the landowner through a previous consultant. It is believed the topographic information was generated in the last 6-10 years (prior to recent land development in the area).

Hydrology and hydraulic modeling was performed using computer spreadsheets generated in-house, and compute modeling for hydrology by Hydraflow. SCS methodology was used in all runoff calculations.

Storm sewer modeling was performed by another module of the Hydraflow software. 10-year storm events were evaluated in storm sewer calculations.

Precipitation data for James City County was obtained from Technical Paper No. 40 of the U.S. Department of Commerce. The values of SCS Type II rainfall distributions used are as follows:

Design Storm Frequency (in years)	Rainfall, in inches (for 24-hr. period)
1	2.8
2	3.5
5	4.7
10	5.8
100	8.0

Hydrologic Modeling Results

Scott's Pond Section 3 will add approximately 2 acres of drainage to Scott's Pond and reduce the total dry storage volume of the pond by approximately 3 percent or 50,500 cu. ft (through the bulkhead added along the rear of 232-234). In an effort to model the changes to pond, AES contacted JCC Environmental and the design engineer for Scott's Pond and were unable to obtain data on pond routing or previous storage volumes. AES estimated the runoff and pond routing using Scott's Pond as-builts, topography provided by the developer and supplementary aerial topography. AES was unable to mimic the routing results achieved in the original model. (It was our opinion that a 24" RCP outfall pipe included in the original model that was never installed but remained in the pond modeling used to generate the original routing results provided. It is our belief that this error is what is causing the discrepancies between the original results and those we are providing.) AES has prepared a routing of the pond based on current conditions and a routing based on the addition of 2 acres of drainage and loss of 3% of the dry storage volume. In addition the original routing results have been provided for comparison:

(*CN and Tc values were extracted from the original design calculations. The additional drainage area was considered in the updated design but did not warrant changing the original CN or Tc as indicated in the attached calculations.)

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 042

Scott's Pond (original design results provided by A.D. Potts)

Post Development Flow to Scott's Pond

Storm Freq.	CN	Tc (min)	Flow (cfs)
2	75*	95*	88.9
10	75*	95*	285.3
100	75*	95*	476.6

Routing Results as provided by A.D. Potts

ORIG DESIGN

Storm Freq.	Routed Flow (cfs)	Water Surface Elev. (ft)
2	23.1	54.50
10	75.5	56.30
100	161.7	57.52

Scott's Pond (current design by AES Consulting Engineers)

Post Development Flow to Scott's Pond

Storm Freq.	CN	Tc (min)	Flow (cfs)
2	75	95	103.74
10	75	95	261.91
100	75	95	428.89

AES CALIBRATION

Routing Results

Storm Freq.	Routed Flow (cfs)	Water Surface Elev. (ft)
2	29.69	54.65
10	89.58	56.44
100	210.42	57.71

Scott's Pond (updated design by AES Consulting Engineers)

Post Development Flow to Scott's Pond:

Storm Freq.	CN	Tc (min)	Flow (cfs)
2	75	95	105.16
10	75	95	265.48
100	75	95	434.73

FINAL ROUTING

Routing Results (based upon 3% reduction in dry storage and 2 acres of added drainage)

Storm Freq.	Routed Flow (cfs)	Water Surface Elev. (ft)
2	30.76	54.69
10	96.77	56.52
100	222.8	57.78

CALCULATIONS FOR SCS HYDROGRAPH GENERATION FOR SCOTT'S POND
SCOTT'S POND, SECTION 3

AES Project No.: 9178
November 22, 2002

Note: AES Consulting Engineers was not able to obtain orginial design documents from the design engineer and only calculation results from JCC Environmental division. Calculations are based on original results and best available information. Scott's Pond was modified to accept runoff from the entire Scott's Pond Subdivision (including section 3) and adjacent properties. Based on previous calculations, the Scott's Pond subdivision earned 15.8 points on the 10-point JCC scale (assuming Scott's Pond was rated a 9 point BMP).

I. POST-DEVELOPMENT CONDITIONS TO SCOTT'S POND (BASED ON EXISITING DESIGN)

A. Post-Development Drainage Area to Point of Concern = 220.30 Acres
B. Post-development Composite Curve Number CN= 75
C. Post-Development Time of Concentration Tc= 95 min

II. POST-DEVELOPMENT CONDITIONS TO SCOTT'S POND (CURRENT DESIGN/SUBDIVISION LAYOUT)

A. Post-Development Drainage Area to Point of Concern = 222.30 Acres
B. Post-development Land Use, Soil Classification and Calculation of Composite Curve Number

	Soil Type	Soil Hydrologic Group	Post-Development Land Use	Area of Land Use (In Acres)	Curve Number for Land Use (CN)	Adjusted (CN)
1)	EXISTING DRAINAGE	-	-	220.30	75	16,523
2)	11-C Craven-Uchee	A/ C	Residential (1/4 Acre lots)	1.50	74	111
3)	11-C Craven-Uchee	C	Roadway	0.30	91	27
4)	15-E Emporia Complex	C	Residential (1/4 Acre lots)	0.20	74	15
5)	15-E Emporia Complex	C	Roadway	0.00	91	0
	Total Adjusted CN =			222.30		16,676
	Composite CN =					75

Scott. would this change the calc's significantly?

CN 83 TR55
74 per ORIGINAL PUTTS DESIGN

C. Post-Development Time of Concentration Tc= 95 min

III. EXISITING POND VOLUME ABOVE NORMAL POOL BY ELEVATION (ESTIMATED FROM ARIAL TOPOGRAPHY)

Note: AES Consulting Engineers was not able to obtain orginial design documents from the oringial design engineer and only calculation results from JCC Environmental division.

Elevation	Depth	Area (sq. ft.)	Incremental Volume (cu. ft.)	Inc. Volume (cu. yd.)	Sum Volume (cu. ft.)	Sum Volume (cu. yd.)
53.0		261,360	0	0	0	0
54.0	1.0	303,794	282577	10466	282577	10466
55.0	1.0	359,256	331525	12279	614102	22745
56.0	1	411,991	385624	14282	999726	37027
57.0	1	445,077	428534	15872	1428260	52899
57.5	0.5	457,363	225610	8356	1653870	61254

NET STORAGE VOLUME = 1653870 cu.ft.

PROPOSED POND VOLUME ABOVE NORMAL POOL BY ELEVATION (VOLUME LESS FROM BULKHEAD)

Elevation	Depth	Area (sq. ft.)	Incremental Volume (cu. ft.)	Inc. Volume (cu. yd.)	Sum Volume (cu. ft.)	Sum Volume (cu. yd.)
53.0		261,336	0	0	0	0
54.0	1.0	296,222	278779	10325	278779	10325
55.0	1.0	349,046	322634	11949	601413	22275
56.0	1	398,098	373572	13836	974985	36111
57.0	1	426,578	412338	15272	1387323	51382
57.5	0.5	438,199	216194	8,007	1603517	59390

NET STORAGE VOLUME = 1603517 cu.ft.

STORAGE VOLUME LOST = 50352 cu.ft.
3 %

WALL LOT 232-234
50,353 CF LESS STORAGE VOLUME.

FOREBAY ADD 30,000+

NET LOSS 20,000 CF

SCOTT'S POND

SECTION ONE

STORM WATER CONSIDERATIONS

TABLE OF CONTENTS

1. Pre & Post-Development Runoff/Routing Summary
2. Pre-Development Runoff Curve Number Worksheet
3. Pre-Development Runoff Hydrograph Data, 2,10, & 100-Year Storm
4. Pre-Development Stage/Discharge Existing Pond Spillway
5. Pre-Development Stage/Storage/Discharge
6. Pond Routing Data, 2,10, & 100-Year Storm
7. Post-Development Runoff Curve Number Worksheets
8. Post Development Runoff Hydrograph Data, 2, 10, & 100-Year Strom
9. Post-Development Stage/Storage/Discharge
10. Pond Routing Data, 2,10, & 100-Year Storm
11. BMP Calculations
12. Flow to 48"Ø Culvert At East Grace Court
13. Culvert Calculations
14. Drainage Ditch Calculations
15. Sediment Trap and Basin Calculations
16. Ewell Hall Drainage System Analysis

3/13/96

SCOTT'S POND - DAM & POND

DESIGN CONSTRAINTS

1. ELEV. OF DAM OVER 42" WATER PIPELINE NOT TO EXCEED 53'
2. REQUESTED OUTFLOWS FROM UCC: 25 CFS (2 YR.) 75 CFS (10 YR)
3. PERMANENT STORAGE VOLUME LARGE ENOUGH TO SERVE AS BMP POND.

(A) ORIGINAL DAM PLAN SUBMITTAL MEETS UCC DISCHARGE REQUIREMENTS AND BMP PERMANT STORAGE VOLUME. IT DOES EXCEED N.N.P.U. REQ'MT OF MAX. ELEV. 53.

(B) 2ND DAM PLAN SUBMITTAL MEETS N.N.P.U. HEIGHT REQUIREMENTS AND BMP PERMANENT STORAGE VOLUME. IT EXCEEDS UCC DISCHARGE REQUIREMENTS.

IF WE LOWER PERM. POOL ELEV. WE CAN MEET UCC DISCHARGE REQUIREMENTS AND NNPU HEIGHT REQUIREMENTS. WE DO NOT HAVE BMP PERM. STORAGE VOLUME.

MIN. W.S. ELEV. TO OBTAIN BMP VOLUME IS ~~52.1 ±~~ 52.4 ±

RISER & BARREL OUTLET STRUCTURE WOULD REQUIRE DRAINING POND.

C.K. TUDOR ENGINEERS, INC.	SUBJECT BMP CALCULATIONS	SHEET 1 OF ___
BY RC DATE ___	SCOTTS POND	JOB NO. 95-074
CHKD BY ___ DATE ___	JAMES CITY COUNTY, VIRGINIA	SCALE —

1. STORAGE VOLUME OF EXIST. POND

NOTE: AREAS PLANIMETERED FROM EXIST. CONTOURS

STAGE	ELEV.	SURFACE AREA (FT^2)	STORAGE (FT^3)	Σ STORAGE (FT^3)
0 (BOTTOM)	45.50±	19602	—	—
1	46	19602	9801	9801
2	47	34848	27225	37026
3	48	53579	44214	81240
4	49	77537	65558	146798
5 (EX. W.S.)	50	100624	89081	235879
6	51	141570	121097	356976
7	52	187744	164657	521633
8 (PRO. W.S.)	53	261360	224552	746185

2. TOTAL POST-DEVELOPMENT DRAINAGE AREA TO SCOTTS POND

A. SCOTTS POND DEVELOPMENT - 104 Ac. (TOTAL AREA OF DEVELOPMENT = 125 Ac.)

B. BERKELEY COMMONS - 61.75 Ac.

C. OTHER SURROUNDING OFF-SITE AREAS - 54.55 Ac.

220.3 Ac. TOTAL (9596268 FT^2)

3. BMP OPTIONS

OPTION	BMP POINTS	FRACTION OF SITE SERVED	WEIGHTED BMP POINTS
WET POND-DESIGN 7	9	$\frac{220.3}{125}$ = 176%	15.84 - O.K.

4. VOLUME OF STORAGE REQUIRED FOR DESIGN 7

RM = VOLUME OF MEAN STORM = .45"

BASIN IMPERVIOUSNESS = 40%

RV (RAINFALL COEFFICIENT) = .05 + (.009 × 40) = .41

VOLUME REQUIRED = $4\left[\frac{(RM)(RV)}{12}\right]A = 4\left[\frac{(.45)(.41)}{12}\right]9596268\ FT^2 = 590{,}170\ FT^3$

VOLUME PROVIDED (746,185 FT^3) > VOLUME REQUIRED (590,170 FT^3) - O.K.

Worksheet 2: Runoff curve number and runoff

Project SCOTTS POND By RC Date 4/24/95

Location JAMES CITY COUNTY Checked ______ Date ______

Circle one: (Present) Developed PRE-DEVELOPMENT
SCOTTS POND DRAINAGE BASIN

1. Runoff curve number (CN)

Soil name and hydrologic group & MAP NO. (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area ☑ acres ☐ mi^2 ☐ %	Product of CN x area
CRAVEN/ C UCHEE A (11C)	MOSTLY WOODED, 5% IMP, GOOD HYD. COND.	52	58		60.07	3123.64
EMPORIA C (14B)	WOODED, GOOD COND. 0% IMP.	70	72		3,92	274.40
EMPORIA C (15D)	WOODED, GOOD COND. 0% IMP.	70	72		5.0	350.00
EMPORIA C (15E)	WOODED, GOOD COND. 0% IMP.	70	72		33.29	2330.3
JOHNSTON D (17)	44% IMP. (POND) - REMAINDER BRUSH/WEED, GRASS MIXTURE - FAIR CONDITION	86	✓		6.5	559
KEMPSVILLE/ B EMPORIA C (9B)	10 AC (R/W) - BRUSH, WEEDS, POOR COND. REMAINDER WOODED - GOOD COND.	65	✓		33.78	2195.7
KENANSVILLE A (20E)	WOODED, GOOD COND, 0% IMP.	30	32		1.52	45.6
SLAGLE C (29B)	WOODED, GOOD COND. 0% IMP.	70	72		6.96	487.20
UCHEE A (34B)	3.79 AC - DEVELOPED - 25% IMP. REMAINDER WOODED, GOOD COND.	47			4.0	188

1/ Use only one CN source per line. Totals = 155.04 9553.24

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{9553.24}{155.04} =$ ______; Use CN = 62

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency	yr	2	10	100
Rainfall, P (24-hour)	in	3.5	5.8	7.70
Runoff, Q (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)	in			

C.K. TUDOR ENGINEERS, INC.	SUBJECT SCOTT'S POND	SHEET ____ OF ____
BY RC DATE REV. 4/17/96	PRE & POST DEVELOPMENT	JOB NO. 95-074
CHKD BY ____ DATE ____	RUNOFF / ROUTING SUMMARY	SCALE ____

PRE DEVELOPMENT

DRAINAGE AREA THROUGH BERKELEY COMMONS POND - 61.75 Ac.
DRAINAGE AREA - SCOTT'S POND & ADJACENT PROPERTY - 155 Ac.
TOTAL DRAINAGE AREA TO SCOTT'S POND - 216.75 Ac.
BASIN CN = 69

PEAK RUNOFF TO SCOTT'S POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
71.3 CFS	228.9 CFS	374.5 CFS

PEAK DISCHARGES FROM SCOTT'S POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
49.7 CFS	203.7 CFS	351.2 CFS

POST DEVELOPMENT

DRAINAGE AREA THROUGH BERKELEY COMMONS POND - 61.75 Ac.
DRAINAGE AREA - SCOTT'S POND & ADJACENT PROPERTY - 158.55 Ac.
TOTAL DRAINAGE AREA TO SCOTT'S POND - 220.3 Ac.
BASIN CN = 75

PEAK RUNOFF TO SCOTT'S POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
88.9 CFS	285.3 CFS	476.6 CFS

PEAK DISCHARGES FROM SCOTT'S POND

2 YEAR STORM	10 YEAR STORM	100 YEAR STORM
23.1 CFS	75.5 CFS	161.7 CFS

Worksheet 2: Runoff curve number and runoff

Project SCOTTS POND By RC Date 4/24/95

Location JAMES CITY COUNTY Checked ____ Date ____

Circle one: (Present) Developed PRE-DEVELOPMENT
SCOTTS POND DRAINAGE BASIN

1. Runoff curve number (CN)

Soil name and hydrologic group & MAP No. (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Fig. 2-3	CN 1/ Fig. 2-4	Area ☑ acres ☐ mi^2 ☐ %	Product of CN x area
CRAVEN/ C UCHEE A (11C)	MOSTLY WOODED, 5% IMP, GOOD HYD. COND.	52	5%		60.07	3123.64
EMPORIA C (14B)	WOODED, GOOD COND. 0% IMP.	70	72		3.92	274.40
EMPORIA C (15D)	WOODED, GOOD COND, 0% IMP.	70	72		5.0	350.00
EMPORIA C (15E)	WOODED, GOOD COND. 0% IMP.	70	72		33.29	2330.3
JOHNSTON D (17)	44% IMP. (POND) - REMAINDER BRUSH/WEED, GRASS MIXTURE - FAIR CONDITION	86	✓		6.5	559
KEMPSVILLE/ B EMPORIA C (19B)	10 AC (R/W) - BRUSH, WEEDS, FAIR COND. REMAINDER WOODED - GOOD COND.	65	✓		33.78	2195.7
KENANSVILLE A (20E)	WOODED, GOOD COND., 0% IMP.	30	32		1.52	45.6
CRAGLE C (29B)	WOODED, GOOD COND. 0% IMP.	70	72		6.96	487.20
UCHEE A (34B)	2.19 AC - DEVELOPED - 25% IMP. REMAINDER WOODED, GOOD COND.	47			4.0	188
				Totals =	155.04	9553.84

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{9553.84}{155.04} =$ ________; Use CN = 62

2. Runoff

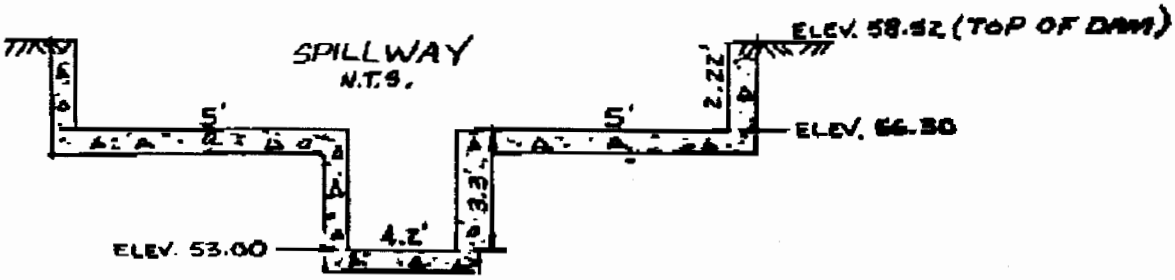
		Storm #1	Storm #2	Storm #3
Frequency	yr	2	10	100
Rainfall, P (24-hour)	in	3.5	5.8	7.70
Runoff, Q .... (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)	in			

C.K. TUDOR ENGINEERS, INC.

SUBJECT: SCOTT'S POND
DAM IMPROVEMENTS
LCC

SHEET 1 OF 1
JOB NO. 95-074
SCALE

BY RC DATE 3/29/96
CHKD BY DATE



POND DISCHARGES

2 YEAR	10 YEAR	100 YEAR
Q = 23.1 cfs	Q = 75.50	Q = 161.7 cfs
W.S. = 54.50	W.S. = 56.30	W.S. = 57.52

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To DARRYL E. COOK	From BOB CRICKENBERGER
Co. LCC	Co. C.K. TUDOR ENGS INC
Dept. CODES COMPLIANCE	Phone # 595-4610
Fax # 253-6663	Fax # 591-2723

C.K. TUDOR ENGINEERS, INC.	SUBJECT TEMP. SEDIMENT TRAPS	SHEET 1 OF 2
BY RC DATE REV. 4/22/96	SCOTTS POND - SECTION ONE	JOB NO. 95-074
CHKD BY ____ DATE ____	JAMES CITY COUNTY, VA.	SCALE ____

TRAP "A" (OUTFALL FROM GINGER CT.)

D.A. = 0.64 Ac.

VOL. REQ'D. - TOTAL STORAGE = .64 Ac. x 134 c.y. x 27 = 2316 FT^3

PERM. POOL VOL. = 2316 FT^3 ÷ 2 = 1158 FT^3

AREA @ BOTTOM (50' x 20') = 1000 FT^2

PERIMETER @ BOTTOM = 140'

@ 2:1 SLOPES ; .5' x 140' = 70 FT^2 ADD'L. AREA PER .25' RISE IN ELEV.

STAGE (FT)	ELEV.	SURFACE AREA (FT^2)	STORAGE (FT^3)	Σ STORAGE (FT^3)	
0	97.09	1000	—	—	
.25	97.34	1070	259	259	
.50	97.59	1140	276	535	
.75	97.84	1210	294	829	
1.0	98.09	1280	311	1140	← PERM. POOL / INV. OUTLET 1158 FT^3 @ ELEV. 98.10
1.25	98.34	1350	329	1469	
1.50	98.59	1420	346	1815	
1.75	98.84	1490	364	2179	← TOTAL STORAGE / TOP OUTLET 2316 FT^3 @ ELEV. 98.93
2.0	99.09	1560	381	2560	TOP EMBANKMENT 99.93

LENGTH OUTLET = .64 x 6 = 3.84'

TRAP "B" (OUTFALL FROM THOMAS CT)

D.A. = 0.78 Ac.

VOL. REQ'D. - TOTAL STORAGE = 0.78 Ac. x 134 x 27 = 2822 FT^3

PERM. POOL VOL. = 2822 FT^3 ÷ 2 = 1411 FT^3

AREA @ BOTTOM (20' x 45') = 900 FT^2

PERIMETER @ BOTTOM = 130'

@ 2:1 SLOPES ; .5 x 130' = 65 FT^2 ADD'L. AREA PER .25' RISE IN ELEV.

STAGE (FT.)	ELEV.	SURFACE AREA (FT^2)	STORAGE (FT^3)	Σ STORAGE (FT^3)	
0	80.16	900	—	—	
.25	80.41	965	233	233	
.50	80.66	1030	249	482	
.75	80.91	1095	266	748	
1.0	81.16	1160	282	1030	
1.25	81.41	1225	298	1328	← PERM. POOL / INV. OUTLET 1411 FT^3 @ ELEV. 81.54
1.50	81.66	1290	314	1642	
1.75	81.91	1355	331	1973	
2.0	82.16	1420	347	2320	
2.25	82.41	1485	363	2683	← TOTAL STORAGE / TOP OUTLET 2822 FT^3 @ ELEV. 82.54
2.50	82.66	1550	379	3062	
					TOP EMBANKMENT 83.54

LENGTH OUTLET = .78 Ac. x 6 = 4.68'

G.K. TUDOR ENGINEERS, INC.	SUBJECT TEMP. SEDIMENT TRAPS	SHEET 2 OF 2
BY RC DATE REV. 4/22/96	SCOTT'S POND - SECTION ONE	JOB NO. 95-074
CHKD BY ____ DATE ____	JAMES CITY COUNTY, VA.	SCALE ____

TRAP "C" (OUTFALL FROM WEST GRACE CT.)

D.A. = 0.59 Ac.

VOL. REQ'D. - TOTAL STORAGE = .59 Ac. × 134 c.y. × 27 = 2135 FT^3

PERM. POOL VOL. = 2135 FT^3 ÷ 2 = 1068 FT^3

AREA @ BOTTOM (30' × 30') = 900 FT^2

PERIMETER @ BOTTOM = 120'

@ 2:1 SLOPES; .5' × 120' = 60 FT^2 ADD'L. AREA PER .25' RISE IN ELEV.

STAGE (FT)	ELEV	SURFACE AREA (FT^2)	STORAGE (FT^3)	Σ STORAGE (FT^3)	
0	69.65	900	—	—	
.25	69.90	960	233	233	
.50	70.15	1020	248	481	
.75	70.40	1080	263	744	
1.0	70.65	1140	278	1022	← PERM POOL/INV. OUTLET 1068 FT^3 @ ELEV. 70.69
1.25	70.90	1200	293	1315	
1.50	71.15	1260	308	1623	
1.75	71.40	1320	323	1946	TOTAL STORAGE/TOP OUTLET
2.0	71.65	1380	338	2284	← 2135 FT^3 @ ELEV. 71.52

TOP EMBANKMENT 72.52

LENGTH OUTLET = .59 Ac. × 6' = 3.54'

TRAP "D" (TEMP. OUTFALL FROM SCOTT'S POND DR.)

D.A. = 1.10 Ac.

VOL. REQ'D. - TOTAL STORAGE = 1.10 Ac. × 134 c.y. × 27 = 3980 FT^3

PERM. POOL VOL. = 3980 FT^3 ÷ 2 = 1990 FT^3

AREA @ BOTTOM (35' × 35') = 1225 FT^2

PERIMETER @ BOTTOM = 140'

@ 2:1 SLOPES; .5' × 140' = 70 FT^2 ADD'L. AREA PER .25' RISE IN ELEV.

STAGE (FT)	ELEV.	SURFACE AREA (FT^2)	STORAGE (FT^3)	Σ STORAGE (FT^3)	
0	69.94	1225	—	—	
.25	70.19	1295	315	315	
.50	70.44	1365	333	648	
.75	70.69	1435	350	998	
1.0	70.94	1505	368	1366	
1.25	71.19	1575	385	1751	← PERM. POOL/INV. OUTLET 1990 ft^3 @ ELEV. 71.34
1.50	71.44	1645	403	2154	
1.75	71.69	1715	420	2574	
2.00	71.94	1785	438	3012	
2.25	72.19	1855	455	3467	
2.50	72.44	1925	473	3940	TOTAL STORAGE/TOP OUTLET
2.75	72.69	1995	490	4430	← 3980 ft^3 @ ELEV. 72.46

TOP EMBANKMENT 73.46

LENGTH OUTLET = 1.10 Ac. × 6' = 6.6'

Calculated By: RC Date
Checked By: Date
N = GRASS LINED - N VARIES (.013 CONC.)
Storm Frequency 10 YEAR

STORM SEWER COMPUTATION SHEET

C. K. TUDOR ENGINEERS

Job No.
Project
SECTION ONE
Sheet 1 of 2 Sheets

"N" VALUES FOR FLEXABLE LININGS COMPUTED BASED ON FLOW DEPTH, RETARDANCE & CHANNEL GEOMETRY

LINE	LOCATION		RUN-OFF										PIPE - CHANNEL DESIGN									
			Increment (Acres)	Total (Acres)	RUNOFF COEF.	CXA	ACCUM. CXA	To Inlet (Mins.)	In Channel (Mins.)	Time of Concl. (Mins.)	INTENSITY (Inches per Hr.)	DISCHARGE (cfs)	Pipe Size (Inches) Channel Size (ft.)	SLOPE (ft/ft)	CAPACITY FULL (cfs)	VELOCITY FULL (fps)	DESIGN VELOCITY (fps)	LENGTH OF REACH (ft)	INVERT ELEV. UPPER END (ft)	INVERT ELEV. LOWER END (ft)	~~FRICTION SLOPE (ft/ft)~~	~~COVER ELEV. (ft)~~
NO	FROM	TO	A	A	C	CA	CA	T	T	T_c	i	Q	D or W	S_o	Q_f	V_f	V_o	L	E_i	E_o	S_f	
OUTFALL @ GINGER CT.			3	3	.35	1.05	1.05	25.24		25.24	4	4.2	$V^{1/3}$ N=.0854	.0081	dN= 1'		VN= 1.05	203'	100.29	98.65	RETARDANCE D	
			1.32	4.32	.35	.46	1.51		1.29	26.53	3.9	5.89	$V^{1/3}$ N=.0682	.0365	dN= .70		VN= 2.35	100'	98.65	95	RETARDANCE D (EL 3)	
OUTFALL @ THOMAS CT.	✓		0.78	0.78	.35	.27	.27	15.47		15.47	5	1.37	$V^{1/3}$ D=6" N=.013	.0912	dN=.24'		8.06	94'	89.57	81.00	CONC.	
												"	$V^{1/3}$ RIP RAP N=.1510	.0286	dN=.74		VN= 1.49	28'	81.0	80.2		
OUTFALL @ J. GRACE CT.	✓		0.59	.59	.35	.21	.21	11.9		11.9	5.6	1.16	$V^{1/3}$ N=.1154	.0195	dN= .68'		VN= 0.84	62	84.21	83	~~RETARDANCE D~~	
												"	$V^{1/3}$ N=.013	.0556	dN= .25'		VN= 6.43	54	83	80	CONC.	
												"	$V^{1/3}$ N=.013	.1538	dN= .20'		VN= 9.41	39'	80	74	CONC.	
												"	$V^{1/3}$ N=.013	.1200	dN= .21'		VN= 8.58	25'	74	71	CONC.	
15" ACROSS DE TOUR RD	SOUTH SIDE TOUR	CDI #1	1.65	1.65	.35	.58	.58	15.5		15.5	5	2.96	EXIST. 15"	.0185	8.76	7.14		64'	106.22	105.04		
	CDI #1	CDI #2	"	"	"	"	"	"	"	"	"	"	15" RCP	.0096	6.31			100'	105.04	104.08		
DITCH "A"	0+00 CDI #2	2+00	0.41	2.06	.35	.14	.72			16.77	4.9	3.52	$V^{1/3}$ N=.0874	.0100	dN= 1.05'		VN= 1.07	200'	104.0	102.0	RETARDANCE D	
	2+00	4+15	.46	2.52	.35	.16	.88		3.11	19.88	4.5	3.96	$V^{1/3}$ N=.0762	.0279	dN= .86'		VN= 1.79	215'	102.0	96.0	RETARDANCE D	
	4+15	4+73 DI #1	.28	2.8	.35	.10	.98		2	21.88	4.4	4.31	$V^{1/3}$ N=.013	.0517	dN= .41		VN= 8.68	58'	96.0	93.0	CONC.	
DITCH "B"	0+00	DI #1	0.78	0.78	.35	.27	.27	13.9		13.9	5.3	1.43	$V^{1/3}$ N=.1126	.0129	dN= .78'		VN= .78	90'	94.16	93.0	RETARDANCE D	
	DI #1	EXIST D.I.	2.8 .78	3.58 ✓	.35		1.25			21.88	4.4	5.5	15" ØRCP	.0160	6.44			26'	89.32	89.12		
	EXIST. D.I	EXIST CDI	—									"	EXIST. 15" RCP	.0268	10.54			140'	89.32	85.37		

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	68.42	5	775	750,573	---	-----	-----	Pre Development (AES)
3	SCS Runoff	103.74	5	775	1,041,036	---	-----	-----	Ex. Post Development (AES)
5	Reservoir	29.69	5	870	1,040,563	3	54.65	498,509	Ex. Pond Routed (AES)
7	SCS Runoff	105.16	5	775	1,055,213	---	-----	-----	Prop. Post Development
9	Reservoir	30.76	5	870	1,054,778	7	54.69	501,806	Prop Scott's Pond

HYDROGRAPH DESCRIPITIONS:

Ex. Post Development (AES) -SCS Runoff Hydrograph:
This hydrograph is calculated based on the post development curve number and drainage area as delineated by A.D. Potts. The time of concentration was estimated based upon the results presented in previous calculations by Potts.

Ex. Pond Routed (AES) -Reservoir:
This pond routing is for Scott's Pond with the current dry storage capacity as estimated based on topography provided by the developer. The outlet structure (dual weir concrete spillway) was modeled according to design calculations.

Prop Post Development -SCS Runoff Hydrograph:
This hydrograph is calculated based on the post development time of concentration and curve number recalculated based on changes from the original design layout of the subdivision. The drainage area was based upon the drainage area delineated by A.D. Potts and adjusted for the submitted lot layout for Scott's Pond Section 3.

Prop. Scott's Pond (AES) -Reservoir:
This pond routing is for Scott's Pond with the modified dry storage capacity due to the proposed bulkhead. The outlet structure (dual weir concrete spillway) was modeled according to design calculations.

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	207.00	5	775	2,012,125	---	----	----	Pre Development (AES)
3	SCS Runoff	261.91	5	770	2,488,902	---	----	----	Ex. Post Development (AES)
5	Reservoir	89.58	5	855	2,488,344	3	56.44	1,189,510	Ex. Pond Routed (AES)
7	SCS Runoff	265.48	5	770	2,522,794	---	----	----	Prop. Post Development
9	Reservoir	96.77	5	855	2,522,285	7	56.52	1,189,157	Prop Scott's Pond

HYDROGRAPH DESCRIPITIONS:

Ex. Post Development (AES) -SCS Runoff Hydrograph:
This hydrograph is calculated based on the post development curve number and drainage area as delineated by A.D. Potts. The time of concentration was estimated based upon the results presented in previous calculations by Potts.

Ex. Pond Routed (AES) -Reservoir:
This pond routing is for Scott's Pond with the current dry storage capacity as estimated based on topography provided by the developer. The outlet structure (dual weir concrete spillway) was modeled according to design calculations.

Prop Post Development -SCS Runoff Hydrograph:
This hydrograph is calculated based on the post development time of concentration and curve number recalculated based on changes from the original design layout of the subdivision. The drainage area was based upon the drainage area delineated by A.D. Potts and adjusted for the submitted lot layout for Scott's Pond Section 3.

Prop. Scott's Pond (AES) -Reservoir:
This pond routing is for Scott's Pond with the modified dry storage capacity due to the proposed bulkhead. The outlet structure (dual weir concrete spillway) was modeled according to design calculations.

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	360.61	5	770	3,422,306	---	----	----	Pre Development (AES)
3	SCS Runoff	428.89	5	770	4,031,765	---	----	----	Ex. Post Development (AES)
5	Reservoir	210.42	5	840	4,031,165	3	57.71	1,755,036	Ex. Pond Routed (AES)
7	SCS Runoff	434.73	5	770	4,086,671	---	----	----	Prop. Post Development
9	Reservoir	222.80	5	835	4,086,125	7	57.78	1,728,806	Prop Scott's Pond

HYDROGRAPH DESCRIPITIONS:

Ex. Post Development (AES) -SCS Runoff Hydrograph:
This hydrograph is calculated based on the post development curve number and drainage area as delineated by A.D. Potts. The time of concentration was estimated based upon the results presented in previous calculations by Potts.

Ex. Pond Routed (AES) -Reservoir:
This pond routing is for Scott's Pond with the current dry storage capacity as estimated based on topography provided by the developer. The outlet structure (dual weir concrete spillway) was modeled according to design calculations.

Prop Post Development -SCS Runoff Hydrograph:
This hydrograph is calculated based on the post development time of concentration and curve number recalculated based on changes from the original design layout of the subdivision. The drainage area was based upon the drainage area delineated by A.D. Potts and adjusted for the submitted lot layout for Scott's Pond Section 3.

Prop. Scott's Pond (AES) -Reservoir:
This pond routing is for Scott's Pond with the modified dry storage capacity due to the proposed bulkhead. The outlet structure (dual weir concrete spillway) was modeled according to design calculations.

Proj. file: Scott's Pond.gpw	Return Period: 100 yr	Run date: 11-22-2002

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 3 - Prop. Scott's Pond

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	53.00	261,336	0	0
1.00	54.00	296,222	278,779	278,779
2.00	55.00	349,046	322,634	601,413
3.00	56.00	398,098	373,572	974,985
4.00	57.00	426,578	412,338	1,387,323
5.00	58.00	449,819	438,199	1,825,522

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.013
Orif. Coeff.	= 0.00	0.00	0.00	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 4.20	14.20	0.00	0.00
Crest El. ft	= 53.00	56.30	0.00	0.00
Weir Coeff.	= 3.33	3.00	0.00	0.00
Weir Type	= Rect	Rect	—	—
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0	53.00	—	—	—	—	0.00	0.00	—	—	—	0.00
1.00	278,779	54.00	—	—	—	—	13.99	0.00	—	—	—	13.99
2.00	601,413	55.00	—	—	—	—	39.56	0.00	—	—	—	39.56
3.00	974,985	56.00	—	—	—	—	72.67	0.00	—	—	—	72.67
4.00	1,387,323	57.00	—	—	—	—	111.89	24.95	—	—	—	136.84
5.00	1,825,522	58.00	—	—	—	—	156.37	94.42	—	—	—	250.79

PROPOSED SECT 3

Reservoir Report

Hydraflow Hydrographs by Intelisolve

Reservoir No. 1 - Ex. Scott's Pond

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	53.00	261,360	0	0
1.00	54.00	303,794	282,577	282,577
2.00	55.00	359,256	331,525	614,102
3.00	56.00	411,991	385,624	999,726
4.00	57.00	445,077	428,534	1,428,260
5.00	58.00	469,648	457,363	1,885,622

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 0.0	0.0	0.0	0.0
Span in	= 0.0	0.0	0.0	0.0
No. Barrels	= 0	0	0	0
Invert El. ft	= 0.00	0.00	0.00	0.00
Length ft	= 0.0	0.0	0.0	0.0
Slope %	= 0.00	0.00	0.00	0.00
N-Value	= .000	.000	.000	.000
Orif. Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 4.20	14.20	0.00	0.00
Crest El. ft	= 53.00	56.30	0.00	0.00
Weir Coeff.	= 3.33	3.33	0.00	0.00
Weir Type	= Rect	Rect	---	---
Multi-Stage	= No	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0	53.00	---	---	---	---	0.00	0.00	---	---	---	0.00
1.00	282,577	54.00	---	---	---	---	13.99	0.00	---	---	---	13.99
2.00	614,102	55.00	---	---	---	---	39.56	0.00	---	---	---	39.56
3.00	999,726	56.00	---	---	---	---	72.67	0.00	---	---	---	72.67
4.00	1,428,260	57.00	---	---	---	---	111.89	27.69	---	---	---	139.58
5.00	1,885,622	58.00	---	---	---	---	156.37	104.81	---	---	---	261.18

EXIST Before Sec 3

McCALLUM
TESTING LABORATORIES INC.
Subsurface Exploration • Geotechnical Engineering

August 4, 1995

C.K. Tudor Engineers, Inc.
11524 Jefferson Avenue
Newport News, VA 23601

Subject: Laboratory Test Results
Scott's Pond Subdivision
James City County, Virginia
MTL Project 953465

Gentlemen:

Attached are the results of Percent Finer Than #200 Sieve Tests (ASTM D 1140), Atterberg Limits Tests (ASTM D 4318) and Moisture Content Tests performed on the subgrade material delivered to this office on 7/19/95 form the above referenced project.

Should you have any questions concerning this report, please contact this office at your convenience.

Very truly yours,

McCALLUM TESTING LABORATORIES, INC.

COMMONWEALTH OF VIRGINIA
DOUGLAS S. KINLOCH
No. 7960
CERTIFIED PROFESSIONAL ENGINEER

Douglas S. Kinloch, P.E.
Chief Engineer

1808 HAYWARD AVENUE P.O. BOX 13337 CHESAPEAKE, VIRGINIA 23325-0337
TELEPHONE (804) 420-2520 • FAX (804) 424-2874

08/07/95 10:13 FAX

1808 HAYWARD AVENUE
P.O. Box 13337
CHESAPEAKE, VIRGINIA 23325-0266
(804) 420-2520

Client's Order No. _____
Client's Req'n No. _____
Date _____

REPORT ON SOIL

Lab. No. 081-1 Chesapeake, Va. _____
Sample of Subgrade Material Proposed Use _____
Sample No. 1 From Scott's Pond, James City Co.
Depth Taken _____ Depth From _____ to _____
Depth of Cut _____ Height of Fill _____ Represents _____
Submitted by C.K. Tudor
Sampled _____ Received 7-19-95

MECHANICAL ANALYSIS (ASTM D 1140)

COARSE AGGREGATE				SOIL MORTAR			
SIEVE ANALYSIS		TOTAL % PASSING		SIEVE ANALYSIS		TOTAL % PASSING	
3"-2"	%	3"	%	Coarse Sand #4-#10	%	# 4	%
2"-1½"	%	2"	%	Medium Sand #10-#40	%	# 10	%
1½"-1"	%	1½"	%	Fine Sand #40-#200	%	# 40	%
1"-¾"	%	1"	%	Silt #200—0.005 mm	%	#100	%
¾"-½"	%	¾"	%	Clay-Smaller than 0.005 mm	%	#200	53.0 %
½"-3/8"	%	½"	%	Colloids-Smaller than 0.001 mm	%		
3/8"-#4	%	3/8"	%				
Passing #4	%	#4	%				

OTHER TEST DATA

Liquid Limit 33 (ASTM D 4318) Water Content as Received 17.1 (ASTM D 2216) %
Plastic Limit 15 (ASTM D 4318) Plasticity Index 18 (ASTM D 4318) Loss on Ignition (corrected) %
Specific Gravity _____ Coefficient of permeability _____ Ft. per day
Classification CL (ASTM D 2487 H.R.B. _____

Remarks: Sample Contained Brown, silty fine sandy clay with traces of root matter.

Lab. No. _____

Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not necessarily indicative of the qualities of apparently identical or similar products.

FORM L-111

McCallum Testing Laboratories, Inc.
1808 HAYWARD AVENUE
P.O. Box 13337
CHESAPEAKE, VIRGINIA 23325-0266
(804) 420-2520

Client's Order No.
Client's Req'n No.
Date

REPORT ON SOIL

Lab. No. 081-2 Chesapeake, Va.
Sample of Subgrade Material Proposed Use
Sample No. 2 From Scott's Pond, James City Co.
Depth Taken Depth From to
Depth of Cut Height of Fill Represents
Submitted by C.K. Tudor
Sampled Received

MECHANICAL ANALYSIS (ASTM D 1140)

COARSE AGGREGATE

SIEVE ANALYSIS		TOTAL % PASSING	
3"-2"	%	3"	%
2"-1½"	%	2"	%
1½"-1"	%	1½"	%
1"-¾"	%	1"	%
¾"-½"	%	¾"	%
½"-3/8"	%	½"	%
3/8"-#4	%	3/8"	%
Passing #4	%	#4	%

SOIL MORTAR

SIEVE ANALYSIS		TOTAL % PASSING	
Coarse Sand #4-#10	%	# 4	%
Medium Sand #10-#40	%	# 10	%
Fine Sand #40-#200	%	# 40	%
Silt #200—0.005 mm	%	#100	%
Clay-Smaller than 0.005 mm	%	#200 32.2	%
Colloids-Smaller than 0.001 mm	%		

OTHER TEST DATA

Liquid Limit 23 (ASTM D 4318) Water Content as Received 24.7 (ASTM D 2216) %
Plastic Limit 19 (ASTM D 4318) Plasticity Index 4 (ASTM D 4318) Loss on Ignition (corrected) %
Specific Gravity Coefficient of permeability Ft. per day
Classification SM-SC (ASTM D 2487) H.R.B

Remarks: Sample Contained Grayish brown, clayey silty fine sand with traces of root matter.

Lab. No.

Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not necessarily indicative of the qualities of apparently identical or similar products.

FORM L-111

McCallum Testing Laboratories, Inc.
1808 HAYWARD AVENUE
P.O. Box 13337
CHESAPEAKE, VIRGINIA 23325-0266
(804) 420-2520

Our File Number 95-3465
Client's Order No.
Client's Req'n No.
Date

REPORT ON SOIL

Lab. No. 081-3 Chesapeake, Va.
Sample of Subgrade Material Proposed Use
Sample No. 3 From Scott's Pond, James City Co.
Depth Taken Depth From to
Depth of Cut Height of Fill Represents
Submitted by C.K. Tudor
Sampled Received 7-19-95

MECHANICAL ANALYSIS (ASTM D 1140)

COARSE AGGREGATE				SOIL MORTAR			
SIEVE ANALYSIS		TOTAL % PASSING		SIEVE ANALYSIS		TOTAL % PASSING	
3"-2"	%	3"	%	Coarse Sand #4-#10	%	# 4	%
2"-1½"	%	2"	%	Medium Sand #10-#40	%	# 10	%
1½"-1"	%	1½"	%	Fine Sand #40-#200	%	# 40	%
1"-¾"	%	1"	%	Silt #200—0.005 mm	%	#100	%
¾"-½"	%	¾"	%	Clay-Smaller than 0.005 mm	%	#200 11.8	%
½"-3/8"	%	½"	%	Colloids-Smaller than 0.001 mm	%		
3/8"-#4	%	3/8"	%				
Passing #4	%	#4	%				

OTHER TEST DATA

Liquid Limit NA (ASTM D 4318) Water Content as Received 30.2 (ASTM D 2216) %
Plastic Limit NP (ASTM D 4318) Plasticity Index NP (ASTM D 4318) Loss on Ignition (corrected) %
Specific Gravity Coefficient of permeability Ft. per day
Classification SP-SM (ASTM D 2487) H.R.B.

Remarks: Sample Contained Brown, silty fine to medium sand with traces of root matter.

Lab. No.

Our letters and reports are for the exclusive use of the client to whom they are addressed. The use of our name must receive our prior written approval. Our letters and reports apply only to the sample tested and/or inspected, and are not necessarily indicative of the qualities of apparently identical or similar products.

DEC

EXHIBIT "D"

GEOTECHNICAL REPORT ON SCOTT'S POND DAM

History - This earth dam is reported to have been constructed about 1910 for agricultural purposes. It is shown on the USGS Map (Williamsburg Quadrangle), 1952 edition. Since construction two underground piplines have been installed beneath the dam: a 42" waterline (1960) and a 16" gas line (1992). The integrity of the dam was apparently good until the installation of the gas line when the overflow pipe was relocated. At some time subsequent to its relocation the overflow pipe failed and the dam breached at that location. The overflow now flows through that breach and the level of the lake is now at about 50' elevation which is about 3 feet below its historical level.

Description - The dam is approximately 200 feet long and 10 feet high (base elevation 46'±, top elevation 56'±). The pool stage of the lake at present is approximately 50' elevation due to the breach and has a surface area of about 2.5 acres. The historical and proposed pool stage is 53'± and at that level will have a surface area of about 6 acres. The dam discharges into Longhill Swamp. In the event of failure of the dam no downstream damage is likely.

Geotechnical Data - The foundation lies on a sandy clay part of the Yorktown formations, which in this location is brown and grayish-brown silty fine sandy clay. The dam itself is apparently constructed of clay from the Beacons Castle formation at a location directly to the north of the dam. Soil for the dam construction will come from two locations in the proposed subdivision area: the soil for the top and lake side CL Classified (CBR #7); the soil for the downstream side SM Classified (CBR #4). Placement of the additional dirt on the dam should be under supervision of the Engineer in accordance with the following instructions:

1. Clear and grubb all areas of construction. Any stumps to be removed to a least 2' below ground surface. All debris from clearing and grubbing operations shall be disposed of off-site at the contractor's expense.
2. Strip topsoil from areas of proposed construction. Maintain stockpile in a location as directed by the Engineer.
3. Remove any remaining organic material from areas of proposed contruction, and stockpile neatly on-site as directed by the Engineer.
4. Till or disc to a minimum depth of 12" all areas of the existing dam embankment where new embankment is to be placed.
5. Place clean inorganic material from on-site sources as directed by the Engineer in 6"-12" layers and compact to 95% maximum theoretical density at optimum moisture. (Sandy material on face, clay on lake side)
6. At the completion of the dam and spillway structures, fine grade all disturbed areas, spread topsoil

from on-site stockpile and hydroseed.

7. All exposed concrete shall be Class A-3 air entrained. (3000 psi).

AB File

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) 253-2620

May 13, 2003

Ken Tudor
KT & BK, L.L.C.
11524 Jefferson Avenue
Newport News, Va. 23601

Re: Scott's Pond Section 1 & Scott' Pond Dam Improvements
County Plan No. S-8-96
Scott's Pond
County BMP ID Code: PC 178

Dear {Mr/Ms. Name}:

In response to your recent request concerning release of surety and closing out the above referenced project, the Environmental Division has reviewed active file information and a record (asbuilt) drawing as submitted to our office. The record drawing provides as-built information for modifications performed to the Scott's Pond Dam, a large lake situated in the northwest corner of the project near U.S. Route 199.

Based on our review of the project and a concurrent field inspection as performed on April 3rd 2003, the following items must be addressed prior to release of the developer's surety instrument for the stormwater management/BMP facility at the site and to proceed with closing out the project:

Construction Certification:

1. Based on a review of the plans and active file for the project, there appears to be no construction certification requirement imposed for this BMP.

Record Drawing:

2. Certification of the record drawing (asbuilt) is required. Refer to Section 4, Page 3 of the *James City County, Stormwater Management/BMP Facilities, Record Drawing and Construction Certification, Standard Forms & Instructions* (packet). The Environmental Division began use of the forms in this packet effective February 1st 2001.

3. Show asbuilt data (dimensions, elevations, etc.) for the concrete weir wall situated within the concrete flume spillway.

4. According to the "Scott's Pond Dam Improvements Plan" dated September 11th 1995 (C.K. Tudor Engineers, Inc.) in addition to the concrete flume spillway, the plan showed provisions for a single 24-inch diameter pipe barrel through the dam at the east abutment. The plans called for a 8' x 8' x 18" grouted riprap apron and debris barrier on the upstream side of the pipe culvert and

a riprap-lined channel on the downstream end of the barrel. This proposed feature was not shown on the record drawing and could not be found in the field. Provide information as to why the pipe barrel arrangement was not constructed per the approved plans and specifications.

5. If possible add the following County identifiers to the lower right hand corner of the record drawing: County Plan Number S-8-96 and BMP ID Code: PC 178.

Construction - Related Items:

6. The approved plan showed a 100-year design high water elevation at El. 57.59 and minimum top of dam at El. 60.0. Therefore, approved freeboard from design high water to top of dam was about 2.4 feet. Based on minimum standards, for dams with emergency spillways usually one (1) ft. of freeboard is required. Therefore, minimum top of dam elevation should be about 58.5. Based on asbuilt drawing data, top of dam elevations along the east and west side of the dam were considerably below approved top of dam elevation and below the minimum required for 1 ft. of freeboard. Spot elevations ranged from 58.19 and 58.33 on the east side to 58.20 to 58.38 on the west side. Using the lowest elevation along top of dam at El. 58.19, only 0.6 ft. of freeboard is provided, compared to 2.4 ft. per the approved plan and 1 ft. minimum. Therefore, minimum top of dam elevations were not achieved during construction of the facility. Either add compacted fill to the top of dam to achieve minimum elevation 58.60 or provide a hydraulic model of the basin using asbuilt data to show a minimum of 1 ft. freeboard is achieved.

7. Remove trees and woody vegetation along top of dam and the downstream embankment slope on on the west (US 199) side of the dam. Usually trees, shrubs and woody vegetation are not permitted to grow on any part of pond embankments constructed using engineered (compacted) fills. DO NOT EXTEND CLEARING OPERATIONS BEYOND THE TOE OF DAM FILL INTO RESOURCE PROTECTION (RPA) AREA ALONG LONGHILL SWAMP-POWHATAN CREEK.

8. A large subsidence hole (4' long x 4' wide x 8' deep) was present on the downstream face of the dam approximately 15 ft. east of the concrete principal spillway. Fill the subsidence hole with compacted fill material and seed and mulch the disturbed area.

9. Repair erosion areas present along both sides of the downstream end of the concrete principal spillway. Erosion is cutting back from the downstream toe of dam at the spillway along both sides of the concrete spillway walls. This erosion could result in failure of the dam if not corrected.

10. If possible, stabilize with seed and mulch or matting the interior side slope of the basin at the southwest corner of the pond. This slope area is about 100 ft. long and 50 ft. wide in size and is situated directly south (across) the water pool from the concrete spillway and is situated under the transmission power line.

11. Clean and remove all litter, debris, trash and organic material from the wire fence trash rack on the upstream side of the concrete emergency spillway. Repair damaged fence sections as necessary.

12. Refer to Comment # 4 above as it may also be a field-related item.

Once this work is satisfactorily completed, contact our office appropriately for reinspection. We can then proceed with final release of the surety and/or closing out the project. One reproducible and one blue/black line set of the record drawings will be required once the above items are adequately addressed.

Please contact me at 757-253-6639 or the assigned Environmental Division inspector, Beth Davis at 757-253-6702 if you have any further comments or questions.

Sincerely,

Scott J. Thomas, P.E.
Civil Engineer
Environmental Division

cc: Beth Davis - JCC Environmental Division Inspector

G:\AsBuilts\S896.pc178

C. K. TUDOR ENGINEERS, INC.
11524 JEFFERSON AVENUE
NEWPORT NEWS, VIRGINIA 23601
TELEPHONE 595-4610
FAX 591-2723

LAND SURVEYING
LAND PLANNING
CIVIL ENGINEERING

DESIGN
SUPERVISION
APPRAISALS
REPORTS

September 14, 1995

SEP 1995
RECEIVED
PLANNING DEPARTMENT

Mr. Gary Pleskac
Planner
Department of Development Management
James City County
P.O. Box 8784
Williamsburg, VA 23187-8784

Re: Stormwater Management Dam
Scott's Pond Subdivision
Olde Towne Road

Dear Gary:

Attached please find 3 prints of our drawing #22-968 (5 sheets of 5) for reconstruction of this dam together with one complete set of the BMP and routing calculations as we discussed on the telephone Sept. 13, 1995. We would hope you would go ahead with the review of the dam plans even though we have not submitted development plans for the subdivision. We wish to ascertain VDOT entrance requirements before completing the development plan.

If you have any questions, please let me know.

Very Truly Yours;

C. K. Tudor

C. K. Tudor, P.E.
C. K. TUDOR ENGINEERS, INC.

CKT/bgt

encls.

November 29, 1995

Mr. Bryan M. Bradish, P.E.
Department of Public Utilities-Waterworks
2600 Washington Ave.
Newport News, VA 23607

Re: Rehabilitation of Scott's Pond Dam
Olde Towne Road
James City County

Dear Bryan:

Thank you for meeting with me, Monday, November 27, 1995 regarding this project. My understanding is that Newport News Public Utilities will agree to placement of the reinforced concrete spillway over the existing 42"Ø waterline at an elevation of 53.00' (pool stage) in order to avoid an increase of the elevation of the existing dam (54.00') over the pipeline. Also, the owner agrees that Newport News Public Utilities will have the right to relocate the 42"Ø waterline anywhere on their property within the existing Virginia Power 200' easement.

If this is not in accord with your understanding or if there is anything additional please let me know. As usual, it was a pleasure to meet with you.

Very Truly Yours;

Ken Tudor

C. K. Tudor, P.E.
C. K. TUDOR ENGINEERS, INC.

CKT/bgt

Virginia Natural Gas

A CNG COMPANY

5100 East Virginia Beach Blvd.
Norfolk, Virginia 23502-3488
(804) 466-5400

October 16, 1995

C. K. Tudor Engineers, Inc.
Attn: C.K. Tudor, P.E.
11524 Jefferson Ave.
Newport News, VA 23601

RE: ENCROACHMENT REQUEST

Dear Mr. Tudor:

Virginia Natural Gas, Inc., (VNG) is in receipt of your Application for Encroachment dated September 5, 1995 wherein you propose the crossing of our Joint-Use natural gas pipeline for the purpose of dam repair. A description of the proposed installation is included in the application, and there is attached thereto a "Site Plan".

Virginia Natural Gas, Inc., insofar as its rights and interests are concerned, hereby grants permission for the encroachment described in your application, subject to the following representations, covenants and conditions ("the Requirements"). Your acceptance of the Requirements will be indicated by your return of a duplicate original of this letter properly executed by an authorized representative of the applicant.

(1) The installation of the proposed encroachment will be performed consistent with the application dated September 5, 1995 and the attached "Site Plan".

(2) Miss Utility shall be notified 48 hours prior to beginning excavation, consistent with Virginia statutes and regulations.

(3) Hand excavation is required with three feet horizontal distance from the natural gas pipeline.

(4) C.K. Tudor Engineers, Inc. must maintain a minimum 12 inches vertical separation from the natural gas pipeline.

C. K. Tudor Engineers, Inc.
October 16, 1995
Page Two

(5) Suitable padding (e.g. timber mats) must be placed on undisturbed ground over the natural gas pipeline where construction equipment in excess of 15,000 pounds must cross the pipeline.

(6) Upon completion of the proposed installation, applicant shall provide VNG with as-built drawings sufficient to describe the actual physical location of the encroachment in relationship to known physical monuments.

The permission granted herein by Virginia Natural Gas for the use of its natural gas pipeline easement shall in no way be construed as permission or consent from the affected landowners(s). Applicant must secure written or verbal permission from each affected landowner in such manner as may be required.

Should any questions arise in the completion of your project, please notify the following representatives of Virginia Natural Gas immediately.

Mike Knox (804) 798-0095
Matt Knepper (804) 455-2044

Sincerely,

Kad Raman, P.E.
General Manager
Engineering & Operations

Attachment

\tudor.mgk

Virginia Natural Gas

A CNG COMPANY

5100 East Virginia Beach Blvd.
Norfolk, Virginia 23502-3488
(804) 466-5400

October 16, 1995

C. K. Tudor Engineers, Inc.
Attn: C.K. Tudor, P.E.
11524 Jefferson Ave.
Newport News, VA 23601

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C. K. Tudor Engineers, Inc.
October 16, 1995
Page Two

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Should any questions arise in the completion of your project, please notify the following representatives of Virginia Natural Gas immediately.

Mike Knox	(804) 798-0095
Matt Knepper	(804) 455-2044

Sincerely,

Kad Raman, P.E.
General Manager
Engineering & Operations

Attachment

\tudor.mgk

Permission is acknowledged and the Requirements of the foregoing letter are accepted this 19TH day of OCTOBER, 1995

APPLICANT: C. K. TUDOR ENGINEERS, INC.

BY: C.K. Tudor P.E

TITLE: Res.

C. K. TUDOR ENGINEERS, INC.
11524 JEFFERSON AVENUE
NEWPORT NEWS, VIRGINIA 23601
TELEPHONE 595-4610
FAX 591-2723

LAND SURVEYING
LAND PLANNING
CIVIL ENGINEERING

DESIGN
SUPERVISION
APPRAISALS
REPORTS

June 21, 1996

Mr. Gary Pleskac
Planner
James City County
P.O. Box 8784
Williamsburg, VA 23187-8784

Re: Scott's Pond, Section One
Case No. S-9-96

Dear Gary:

Under protest we have revised our plans to include an earthen bench to comply with Code Compliance review comment No. 5. We object to this on the following grounds:

1. Safety: The bench will provide an obscure step off that can throw off-balance an unsuspecting wader. The bench will become quickly obscured by weeds due to the shallow depth.

2. Environmentally: It will be necessary to destroy established plants, trees, ferns and bushes in order to access the bench locations with construction equipment and trucks. Due to the close proximity to the water's edge no amount of silt fence can prevent some siltation of the lake from the construction activity.

The premise that a person coming (rolling?) down the contiguous slope would continue on into deep water is not valid in this location. The underwater bottom slope immediately adjoining the shoreline varies gradually from 5:1 to 10:1. The ground above the shoreline and below the shoreline is heavily vegetated. Any attempt to roll would be very difficult.

In view of the above concerns we ask the County to assume any liability which might be caused by this bench.

Very Truly Yours;

Ken Tudor

C. K. Tudor, P.E.
C. K. TUDOR ENGINEERS, INC.

CKT/bgt

C. K. TUDOR ENGINEERS, INC.
11524 JEFFERSON AVENUE
NEWPORT NEWS, VIRGINIA 23601
TELEPHONE 595-4610
FAX 591-2723

LAND SURVEYING
LAND PLANNING
CIVIL ENGINEERING

DESIGN
SUPERVISION
APPRAISALS
REPORTS

September 14, 1995

SEP 1995
RECEIVED
PLANNING DEPARTMENT

Mr. Gary Pleskac
Planner
Department of Development Management
James City County
P.O. Box 8784
Williamsburg, VA 23187-8784

Re: Stormwater Management Dam
Scott's Pond Subdivision
Olde Towne Road

Dear Gary:

Attached please find 3 prints of our drawing #22-968 (5 sheets of 5) for reconstruction of this dam together with one complete set of the BMP and routing calculations as we discussed on the telephone Sept. 13, 1995. We would hope you would go ahead with the review of the dam plans even though we have not submitted development plans for the subdivision. We wish to ascertain VDOT entrance requirements before completing the development plan.

If you have any questions, please let me know.

Very Truly Yours;

C. K. Tudor

C. K. Tudor, P.E.
C. K. TUDOR ENGINEERS, INC.

CKT/bgt

encls.

C. K. TUDOR ENGINEERS, INC.
11524 Jefferson Avenue
NEWPORT NEWS, VIRGINIA 23601

Phone 595-4610 FAX 591-2723

LETTER OF TRANSMITTAL

DATE	JOB NO.
6/27/03	
ATTENTION	
RE: Scott's Pond	

JUN 2003
RECEIVED
ENVIRONMENTAL DIVISION

TO Scott J. Thomas, P.E.

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	6/23/03		Scott's Pond Dam As-built

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO _____

SIGNED: C. K. Tudor, P.E.

40% Pre-Consumer Content • 10% Post-Consumer Content

If enclosures are not as noted, kindly notify us at once.

C. K. TUDOR ENGINEERS, INC.
11524 Jefferson Avenue
NEWPORT NEWS, VIRGINIA 23601

Phone 595-4610 FAX 591-2723

LETTER OF TRANSMITTAL

DATE	JOB NO.
12-21-95	95-074

ATTENTION: Brian Bradish

RE: Scott's Pond

TO Department of Public Utilities
2600 Washington Ave.
Newport News, VA 23607

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	12-18-95	22968	Dam Improvements

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☒ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Revised as discussed.

COPY TO _____

SIGNED: C. K. Tudor Engineers, Inc.

40% Pre-Consumer Content • 10% Post-Consumer Content

If enclosures are not as noted, kindly notify us at once.

Stormwater Management / BMP Inspection Report
Detention and Retention Pond Facilities

S-8-96

County BMP ID Code (if known): PC 178

Name of Facility: Scotts Pond BMP No.: 1 of 1 Date: 4/3/03

Location: (NW corner of site near Route 199.)

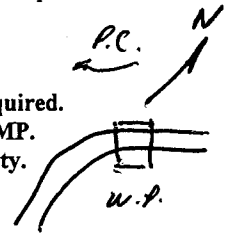
Name of Owner:

Name of Inspector: Scott, Thomas, MD Woolson

Type of Facility: Wet Pond Large Pond

Weather Conditions: Sunny, Hot, 80's Type: ☒ Final Inspection ☐ County BMP Inspection Program ☐ Owner Inspection

If an inspection item is not applicable, mark NA, otherwise mark the appropriate column.



O.K. - The item checked is in adequate condition and the maintenance program is currently satisfactory. No action required.
Routine - The item checked requires attention, but does not present an immediate threat to the function/integrity of the BMP.
Urgent - The item checked requires immediate attention to keep the BMP operational and to prevent damage to the facility.

Provide an explanation and details in the comment column, if routine or urgent are marked.

Facility Item	O.K.	Routine	Urgent	Comments
Embankments and Side Slopes:				3H:1V D/S & U/S SLOPES; 12-14' HIGH DAM; 10' TOP WIDTH
Grass Height	✓			
Vegetation Condition		✓	✓	Pines, Brush, Willows 6-8' HIGH
Tree Growth	✓	✓		" " " "
Erosion			✓	10' deep subsidence hole, 4x4'
Trash & Debris				15' EAST OF CONC SPILLWAY center of d/s face of dam
Seepage		✓		Possible @ Subsidence hole above
Fencing or Benches				Note: center part of dam is MOWED
Interior Landscaping/Planted Areas:	☐ None	☐ Constructed Wetland/Shallow Marsh	☑ Naturally Established Vegetation	
Vegetated Conditions	✓			Bare soil slope @ SE corner
Trash & Debris	✓			of dam along Powerline
Floating Material	✓			easement. Grade, seed +
Erosion	✓			mulch
Sediment	✓			
Dead Plant	✓			
Aesthetics				
Other				
Notes: Serves SF Lots, Roads + Offsite Area. Powerline/GAS Easements cross dam.				

Water Pools: ☑ Permanent Pool (Retention Basin) ☐ Shallow Marsh (Detention Basin) ☐ None, Dry (Detention Basin)

Shoreline Erosion	✓			Sparse but ok
Algae	✓			None
Trash & Debris	✓			
Sediment	✓			Water is turbid due to u/s const.
Aesthetics	✓			
Other	✓			Pickerelweed present along EAST/NORTH SHORES.

Inflows (Describe Types/Locations): Did not investigate; considerably u/s from DAM

Condition of Structure				
Erosion				
Trash and Debris				
Sediment				
Outlet Protection				
Other				Phase 1 & 2 active.

Principal Flow Control Structure - Riser, Intake, etc. (Describe Type): 14' WIDE CONC CHUTE with new wall

Condition of Structure	✓			
Corrosion	✓			
Trash and Debris		✓	✓	clean & remove sediment, veg
Sediment		✓	✓	woody debris from u/s side
Vegetation		✓	✓	of conc. spillway. clean &
Other				remove trash along fence

Principal Outlet Structure - Barrel, Conduit, etc. : Conc. Chute/Flume

Condition of Structure	✓			
Settlement	✓			
Trash & Debris		✓	✓	See Above
Erosion/Sediment		✓	✓	See Above
Outlet Protection	✓			20x15 stilling basin
Other		✓	✓	Repair eroded areas along END OF SPILLWAY

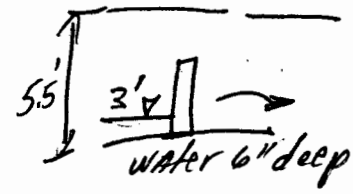
Emergency Spillway (Overflow): Primary = Principal

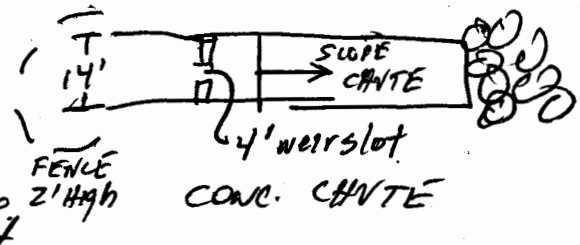
Vegetation				See notes above.
Lining				Note: Secondary earth-lined ES
Erosion				East end of dam. Crest is higher
Trash & Debris				than Top of dam; therefore;
Other				non-functional

Notes: Large Surface Area; depth unknown (4' deep at shore near ES)

Nuisance Type Conditions:				
Mosquito Breeding	✓			
Animal Burrows	✓			
Graffiti	✓			
Other				
Surrounding Perimeter Conditions: North UT of Pow Creek (RPA), West US199; EAST/SOUTH WOODS				
Land Uses	✓			
Vegetation	✓			
Trash & Debris	✓			
Aesthetics	✓			
Access /Maintenance Roads or Paths				Easy walk from US199. Future road thru Sect 3
Other	✓			Powerline / GAS Easement, across east waterpool + center dam.

Remarks:
- Mow the west end of the dam. Clear + remove small trees + brush (DO NOT EXTEND NORTHWARD BEYOND TOE OF DAM FILL – RPA!!)
- Repair 8' deep, 4x4' SIZE SUBSIDENCE HOLE IN Center of D/S FACE OF DAM, 15' EAST OF CONC. CHUTE SPILLWAY.
- Clean ES of trash, sed, debris, veg. clean fine trash. Repair fence as necessary.
- Repair erosion areas which are cutting back into the dam along both sides of the D/S end of the chute spillway
- ? Stabilize eroded pond interior slope @ SE corner of pond pool. Situated on Powerline easements. (if possible) (100x 50' size Approx.)





Overall Environmental Division Internal Rating: 2
Due to dam emb. erosion + subsidence, Possible threat.

Signature: Scott J Thrume P.E. **Date:** 4/3/03 11:00 AM

Title: Civil Engineer ENV Div.

SWMProg\BMP\CoInspProg\DetRet.wpd

JAMES CITY COUNTY
ENVIRONMENTAL DIVISION
POST OFFICE BOX 8784
WILLIAMSBURG, VIRGINIA 23187-8784
(757) 253-6670

869-0155 mobile Bill Strack

INSPECTION REPORT – EROSION AND SEDIMENT CONTROL

Date:	July 23, 2002	Permittee:	KT & BK, L.L.C.
Project:	Scott's Pond, Section 1 (S-8-96)		11524 Jefferson Avenue
Phone/Fax:	(757) 595-4634 Office		Newport News, Virginia 23601
	(757) 591-2723 Fax		

An inspection of the above referenced project was conducted on July 18, 2002, the following represents an evaluation of that projects compliance with James City County's Environmental Regulations. Items below are deficiencies that must be corrected in order to release surety.

Erosion and Sediment Control:

- Remove inlet protection from yard inlet at the entrance by the white fencing. 9-5-02
- Repair erosion, stabilize, and remove sediment and debris from paved ditch behind lot 6. 8-7-02
- Install and stabilize 155' earth v-ditch behind lot 11.
- Repair erosion and stabilize around the paved ditch behind lot 12. 8-7-02
- Remove sediment and debris from paved ditch in the roadside ditch in between lots 12 and 13.
- Remove trash and debris from outfall and paved ditch in 20' drainage easement between lots 80 and 81.
- Remove silt fence and stabilize perimeter of paved ditch behind lots 18-19. 9-5-02
- Install 150'-Mod. PG-2A on Thomas Court as shown on the approved plan. sod/matting
- Remove sediment from pipe at the intersection of Scott's Pond Drive and East Grace Court.
- Remove temporary 31'-Temp. PG-2A as shown on the approved site plan at the end of Scott's Pond Drive.
- Remove silt fence from driveway culvert pipe on lot 33.
- Remove Sediment Trap "C". Letter dated 5-2-02.
- Stabilize perimeter of paved ditch at the end of West Grace Court.
- Remove trash and debris from riprap in 20' drainage easement behind lot 58.
- Remove sediment and debris throughout paved ditch behind lot 59.
- The outfall pipe is crushed in drainage easement in between lots 58 and 59. Repair pipe and riprap.
- Remove sediment, trash, and debris from pave ditch at the end of Thomas Court.
- Install riprap at end of paved ditches throughout project as shown on the approved site plan.
- Repair riprap channel in drainage easement behind lots 19 and 32. (H) 9-5-02
- Temporary sediment basin "B" is covered under the Scott's Pond, Section 1 erosion and sediment control bond and must remain due to East Grace Court currently being developed. (H)
- Submit as-builts (record drawings) for the BMP modifications per Environmental Division comment #5 dated March 12, 1996. Submitted 7-29-02.

Remove SF

5/5/97

(H)

If erosion problem work w/ Henderson

Notice is hereby given that those deficiencies listed shall be corrected in accordance with James City County's Environmental Requirements on or before July 26, 2002. The site will be reinspected at that time and you are invited to accompany the inspector on that date. Failure to comply with this report will result in Enforcement Actions.

Beth Davis
JCC Environmental Division Inspector
757-253-6670

Ken Tudor
Project Representative Notified
595-2634

3/00

(H) = Henderson

WATERSHED	PC	MAINTENANCE PLAN	No	CTRL STRUC DESC	RCP Culv
BMP ID NO	178	SITE AREA acre		CTRL STRUC SIZE inches	24
PLAN NO	S-8-96	LAND USE	Gen Residential	OTLT BARRL DESC	RCP Culv
TAX PARCEL		old BMP TYP	Wet Pond	OTLT BARRL SIZE inch	24
PIN NO	3220100107	JCC BMP CODE			
CONSTRUCTION DATE	1/1/1997	POINT VALUE		EMERG SPILLWAY	Yes
PROJECT NAME	Scotts Pond			DESIGN HW ELEV	57.59
FACILITY LOCATION	Northwest corner of tract			PERM POOL ELE	53.00
CITY-STATE	Williamsburg, Va. 23188	SVC DRAIN AREA acres	220.3	2-YR OUTFLOW cfs	23.10
CURRENT OWNER	KT & BK LLC			10-YR OUTFLOW cfs	75.50
OWNER ADDRESS	11524 Jefferson Avenue			REC DRAWING	No
OWNER ADDRESS 2		SERVICE AREA DESCRI	SF Lots various sections		
CITY-STATE-ZIP CODE	Newport News, Va. 23601	IMPERV AREA acres	0.00	CONSTR CERTI	No
OWNER PHONE		RECV STREAM	UT of Longhill Swamp		
MAINT AGREEMENT	Yes	EXT DET-WQ-CTRL	Yes	LAST INSP DATE	
EMERG ACTION PLAN	No	WTR QUAL VOL acre-ft		INTERNAL RATING	
		CHAN PROT CTRL	No	MISC/COMMENTS	
		CHAN PROT VOL acre-ft		Existing pond modified as BMP. Large conc ES. Pond over gas line. 14' dam ht.	
		SW/FLOOD CONTROL	Yes		
		GEOTECH REPORT	No		

Get Last BMP No

Return to Menu

PC178_SCOTTS_PONDS-8-96_LARGE_BMP - 085

GPIN 3220100107

5461 Olde Towne Road

KT + BK LLC
11524 Jeff Ave
NN VA 23601
R2