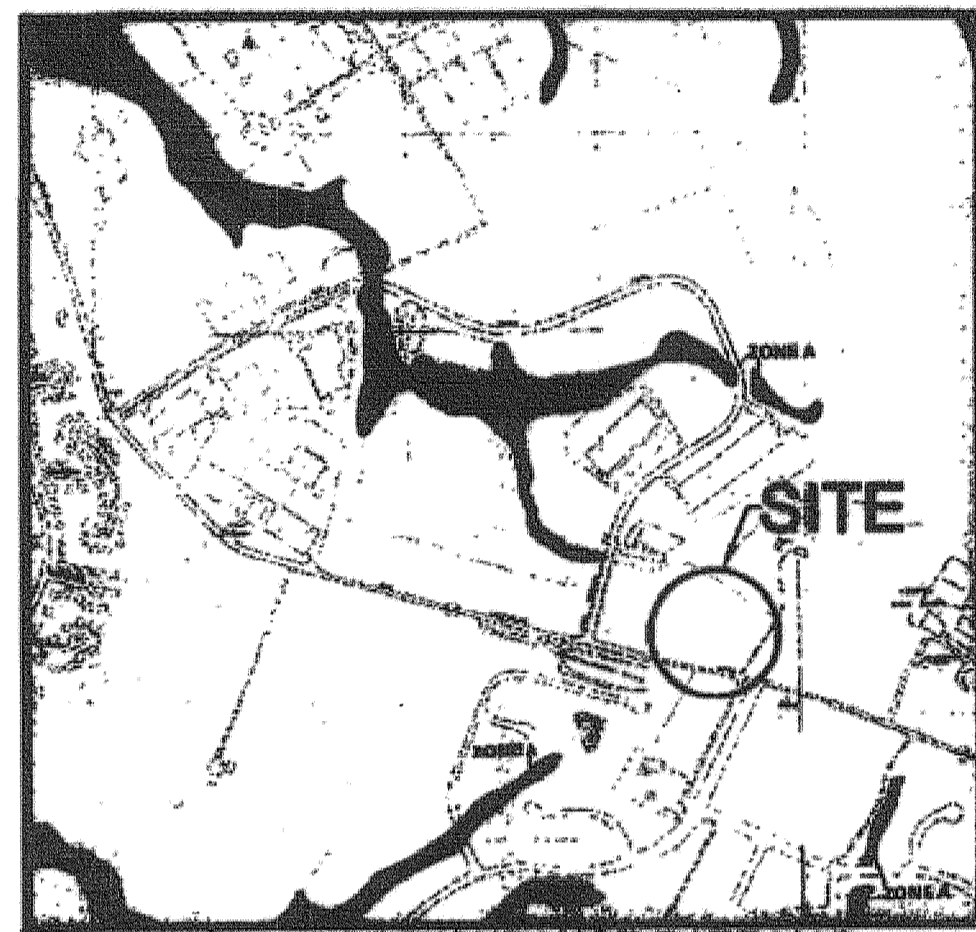


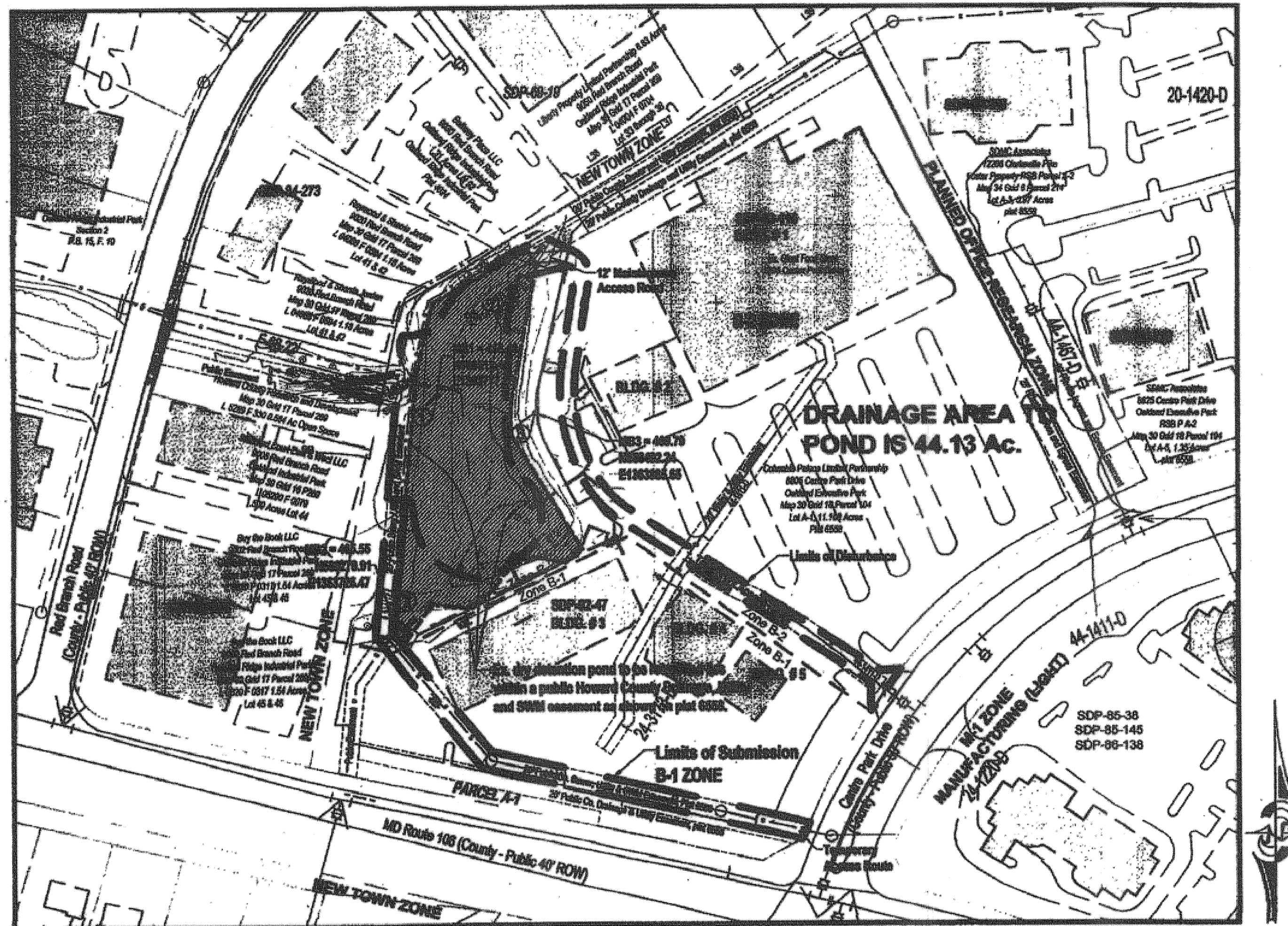
OAKLAND EXECUTIVE PARK POND RETROFIT



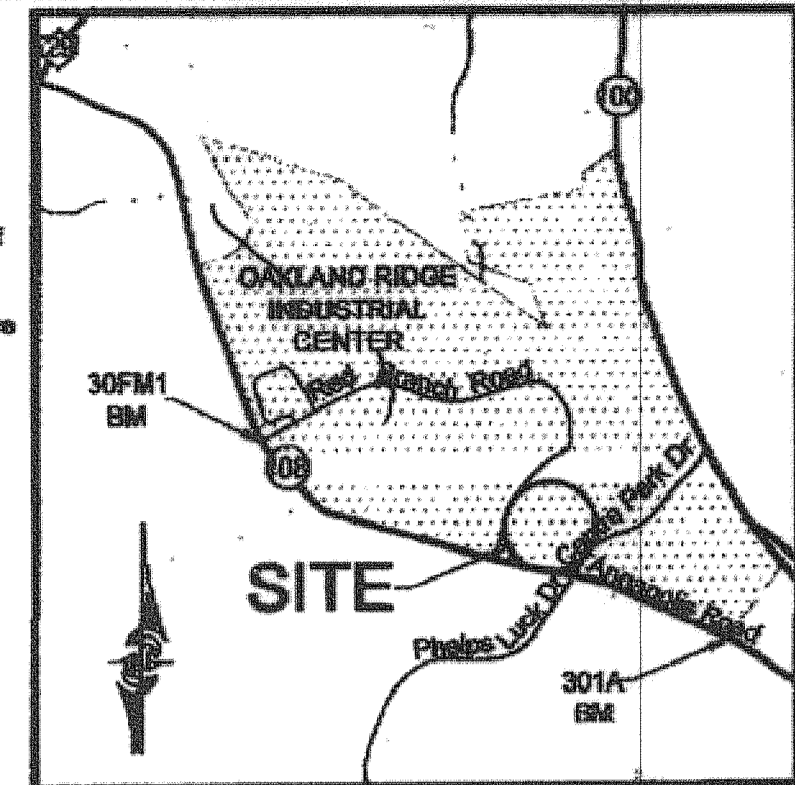
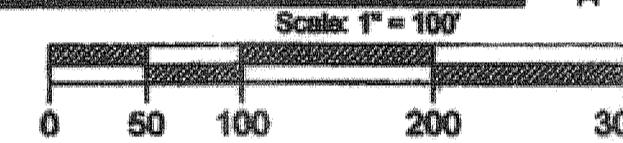
SOIL SURVEY MAP
Howard County, MD
Sheet 20
Dated: July 1988
Not To Scale



FEMA FLOOD INSURANCE RATE MAP
Howard County, MD
Community Panel Number
240044 0028C
Map Revised: April 2, 1997
Not To Scale



100 Scale Site Location Map



ADC Vicinity Map
Howard County, MD
22nd Edition Map 16, C3
Scale: 1" = 200'
Howard County Benchmark located on the North western quadrant of the intersection between 100 and the exit driveway from Senior High School

GENERAL NOTES NON-RESIDENTIAL SITE DEVELOPMENT PLAN

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA Standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1800 at least 8 (8) working days prior to the start of work.
- The contractor shall notify "MISS Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- All plan dimensions are to face of curb unless otherwise noted.
- The existing topography is taken from field raw survey with two foot contour intervals prepared by Levant Technologies, Inc. dated April 2006.
- The boundary lines shown hereon are based on recorded plats and limited field evidence found. A complete boundary survey was not performed.

SURVEY CONTROL

Point	Number	Station	Elevation	Description	Point	Number	Station	Elevation	Description
BM	30FM1	0.00	200.20	Iron & Cap	BM	301A	0.00	200.20	Iron & Cap
BM	30FM1	1.00	200.20	Iron & Cap	BM	301A	1.00	200.20	Iron & Cap
BM	30FM1	2.00	200.20	Iron & Cap	BM	301A	2.00	200.20	Iron & Cap

SHEET INDEX

- Title Sheet
- Design Planview
- Sediment Control Planview
- SWM Retrofit Details
- Sediment Control Details
- Sediment Control Details
- Profiles
- SWM Notes
- Planting Plan, Notes, and Details
- Planting Specifications
- Drainage Area Map and Soils Exhibit
- Natural Resources Exhibit

PERMIT INFORMATION BLOCK

Subdivider Name: Oakland Executive Park	Section/Assessment Area: 03	Lot/Parcel: Parcel A-1
Plot # or L/F: Plot 6668	Block #: NA	Zone: B1, B2
Water Code: C07	Time/Zone Map: 30	Elev. Dist. Census Tract: 02 0023.02
		Sewer Code: 6657400

SITE ANALYSIS CHART

A Total project area is 11.108 acres
B Area of plan submission is the same as the limits of disturbance.
C Limit of disturbed area (LOD) is 49,868 square feet or 1.14 acres
D Present zoning is B-1 Business Local and B-2 Business General
E Proposed use of site is to remain B-1 and B-2.
F Floor space/number of units/employees/parking is not applicable.
G Building coverage is not applicable.
H Applicable DPZ file number: SDP-85-49; SDP-82-47; SDP-02-116
I This project is for SWM pond retrofit activities only.

ADDRESS CHART

Lot Number: A-1	Street Address: 9018 Red Branch Road Columbia, MD 21045
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SUMMARY OF ENVIRONMENTAL IMPACTS

Restoration Design Area	Tree Removal (# of trees)	Stream Disturbance (lf)	Wetland Disturbance (sq ft)	Wetland Buffer Disturbance (sq ft)	LOD (sq ft)	LOD (acres)	Cut (cy)	Fill (cy)	Net (cy)
Total	13	50	0	0	49,868	1.14	1,650	80	1,470

MISS UTILITY

Call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work. The excavator must notify all public utility companies with underground facilities in the area of proposed excavation and have those facilities located by the utility companies prior to commencing excavation.

APPROVED DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION 11/1/07
CHIEF DIVISION OF LAND DEVELOPMENT 11/2/07
DIRECTOR 11/2/07

BY THE ENGINEER:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL, REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
ENGINEER/TIMOTHY SCHUELER (MD P.E. 20207) 12/7/06

Conditions and Management Practices for Working in Nontidal Wetlands and Buffers

- No excess fill, construction or debris are to be stockpiled or stored in the wetlands or buffers.
- Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of the nontidal wetland or buffer.
- Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material or any other deleterious substance.
- Place heavy equipment on mats, or suitably operate the equipment to prevent damage to the nontidal wetland or buffer.
- Repair and maintain any sensitive structure or fill so there is no permanent loss of nontidal wetland and buffer in excess of nontidal wetland and buffer lost under the original structure or fill.
- Conduct the activity so as not to cause or contribute to a degradation of water quality as determined by the Maryland Department of the Environment.
- All stabilization in the wetland and buffer shall be of the following recommended species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Sorghum bicolor*), Barley (*Hordeum sp.*), Ryegrass (*Lolium perenne*), Virginia Fescue (*Festuca ovina*), Dogfennel (*Matricaria inodora*), and/or Oats (*Avena sp.*). These species will allow for the stabilization of the site, while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by MDE Nontidal Wetlands and Waterways Division. Kentucky 31 shall not be utilized in the wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- To protect important aquatic species, in-stream work is prohibited as determined by the classification of the stream as follows:
a) Class I Wetlands. In-stream work may not be conducted during the period March 1 through June 15, inclusive, during any year.

SEQUENCE OF CONSTRUCTION

- Obtain Howard County grading permit. No in-stream work during the period of March 1 through June 15, inclusive.
 - Contractor to conduct a pre-construction meeting with owner, design engineer, contractor and Howard County Construction Inspector at least 48 hours prior to the start of construction. HC Construction Inspector and contractor to walk embankment and mark all burrows for repair by contractor. (1 day)
 - Clear and grub to install the stabilized construction entrance and silt fence. (1 day)
 - Install stabilized construction entrance and silt fence. (1 day)
 - Install sanding diversions, dewatering sump, and temporary dewatering device as well as silt pump arounds and engage system with the approval of the Construction Inspector. Note to contractor: no water from construction area to leave site without first passing through a filter device (filter bag). Clear and grub remaining areas. (2 day)
 - Install in-stream stone step pools while pumping diversion is employed, if needed. (1 day)
 - Final grade pond bottom, and construct forebays. (8 days)
 - Contractor shall test pit for depth of sewer as indicated on plan and forward test results to the HC project manager prior to proceeding to step 9. (1 day)
 - Once new barrel pipe and pre-cast riser are on-site, Contractor to excavate for removal of existing barrel, riser, cutoff and section and MH S-1 and remove said items offsite for legal disposal. Install temporary pipe diversion and cutoff dam. This step shall not commence until permission has been granted by the sediment control inspector. It requires that the contractor does not start this work until he has received a 5-day clear weather (no precipitation) forecast from the National Weather Service (NWS). (3 days)
 - Install core trench below new barrel location under supervision of the Construction Inspector. (1 day)
 - Install barrel on concrete blocking and pour concrete cradle and lower half of anti-seep collars. Having geotechnical engineer collect cylinders for strength testing. (2 days)
 - Install riser on subgrade approved by the Geotechnical Engineer. Install temporary dewatering device onto low flow opening in the riser. Pour remaining tops of anti-seep collars and 12" collar for riser/barrel connection. (1 day)
 - Backfill over new barrel under supervision of Geotechnical Engineer. Add fill to dam as shown on plan and stabilize. (2 days)
 - Stabilize areas upon reaching design grades. (1 day)
 - Permanently stabilize all disturbed areas per permanent seeding specifications. (1 day)
 - Install wetland plantings. (2 days)
 - With permission of the Construction Inspector, remove sediment control features and stabilize all areas disturbed by this process. (1 day)
 - Conduct "punch list" walk through with all parties mentioned in step 1. (1 day)
 - Note: contractor to provide as-built record drawing to HCSD.
- TOTAL = 30 days

I HEREBY CERTIFY THAT THESE PLANS ARE IN CONFORMANCE WITH OR WITHIN THE SCOPE OF THE APPROVED DESIGN PLANS, INCLUDING ADJUSTMENTS TO THE PLANS AS APPROVED BY DESIGN ENGINEER IN THE FIELD.
ENGINEER: TIMOTHY C. SCHUELER, MD PE NO 20207 DATE 12/4/06
MCKIM & CREED, P.A. EXPIRATION DATE 10/6/10

AS-BUILT
WILLIAM C. RICE, SR.
MD REGISTERED PROPERTY LINE SURVEYOR
LICENSE NO. 523
J.A. RICE, INC.
P.O. BOX 1288
MILLERSVILLE MD 21108
410.987.4286

Prepared for:
Howard County Dept. of Public Works
Bureau of Environmental Services
6751 Columbia Gateway Drive, #614
Columbia, MD 21046
Phone: (410) 313-6417
Attn: Mr. Richard Powell

Oakland Executive Park
Lot A-1 Plot 6668 Parcel 104
11.108 Acres
Election District #02
Howard County, Maryland
Tax Map 30 Grid 18

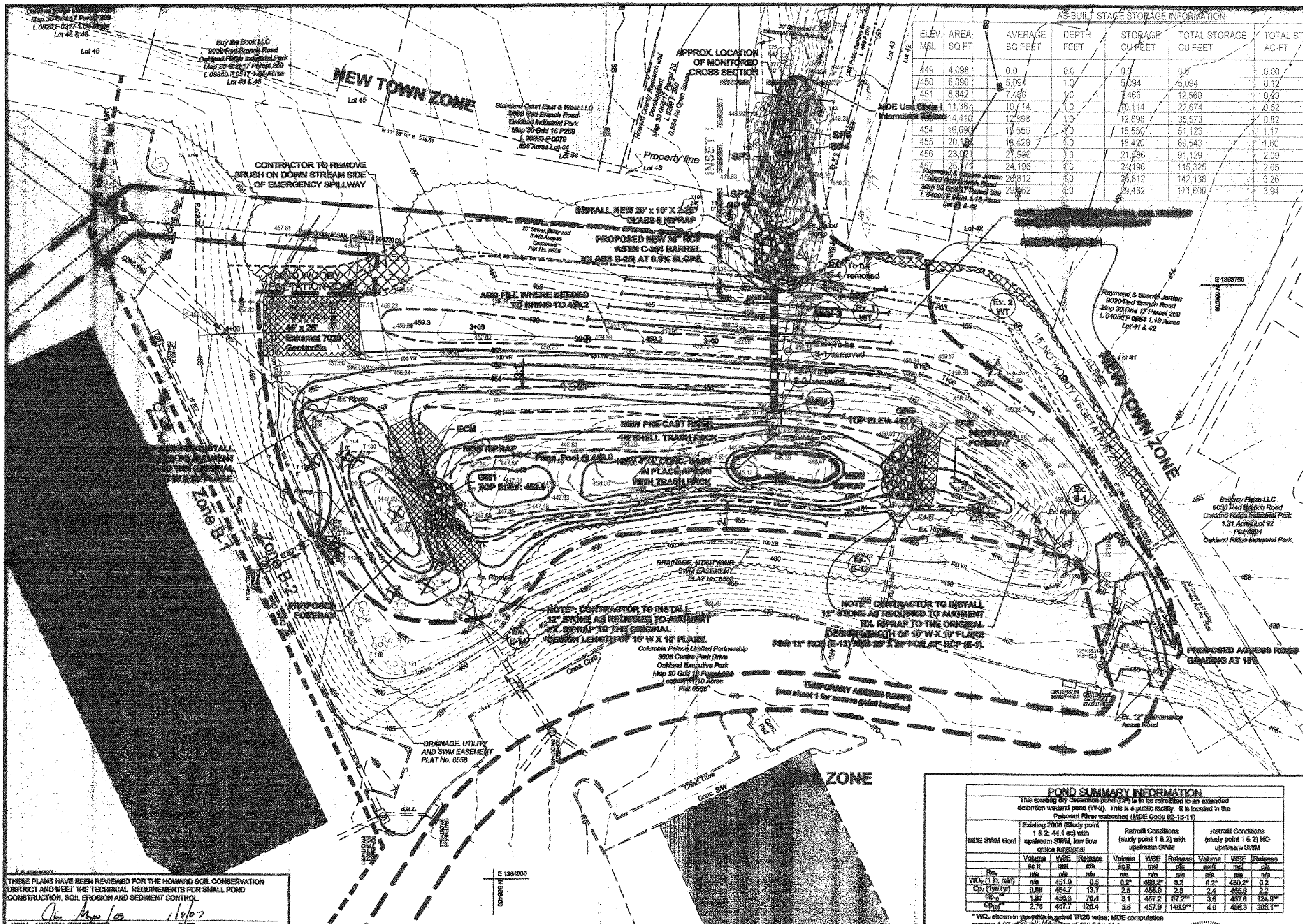
OAKLAND EXECUTIVE PARK POND RETROFIT
Columbia, Maryland
Title Sheet

DATE:	11/06				
DESIGNED:	TCS				
DRAFTED:	HT				
CHECKED:	TCS	2	REVIEWER COMMENTS	TCS	11/06
BASE DATA:	LTI	1	REVIEWER COMMENTS	TCS	09/06
		NO.	REVISIONS	BY	DATE

CPJ Associates
CPJ Environmental Services Division
STREAM RESTORATION - STORMWATER MANAGEMENT - INSPECTION
910 CLOPPER ROAD SUITE 200 GAITHERSBURG MARYLAND 20878
Phone: (301) 208-9275 E-mail: cpj@cpj.com Fax: (301) 208-9288
SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE As Shown
SHEET 1
OF 41 SHEETS
JOB NO. 35-665
SDP-85-101

OAKLAND EXEC. PARK



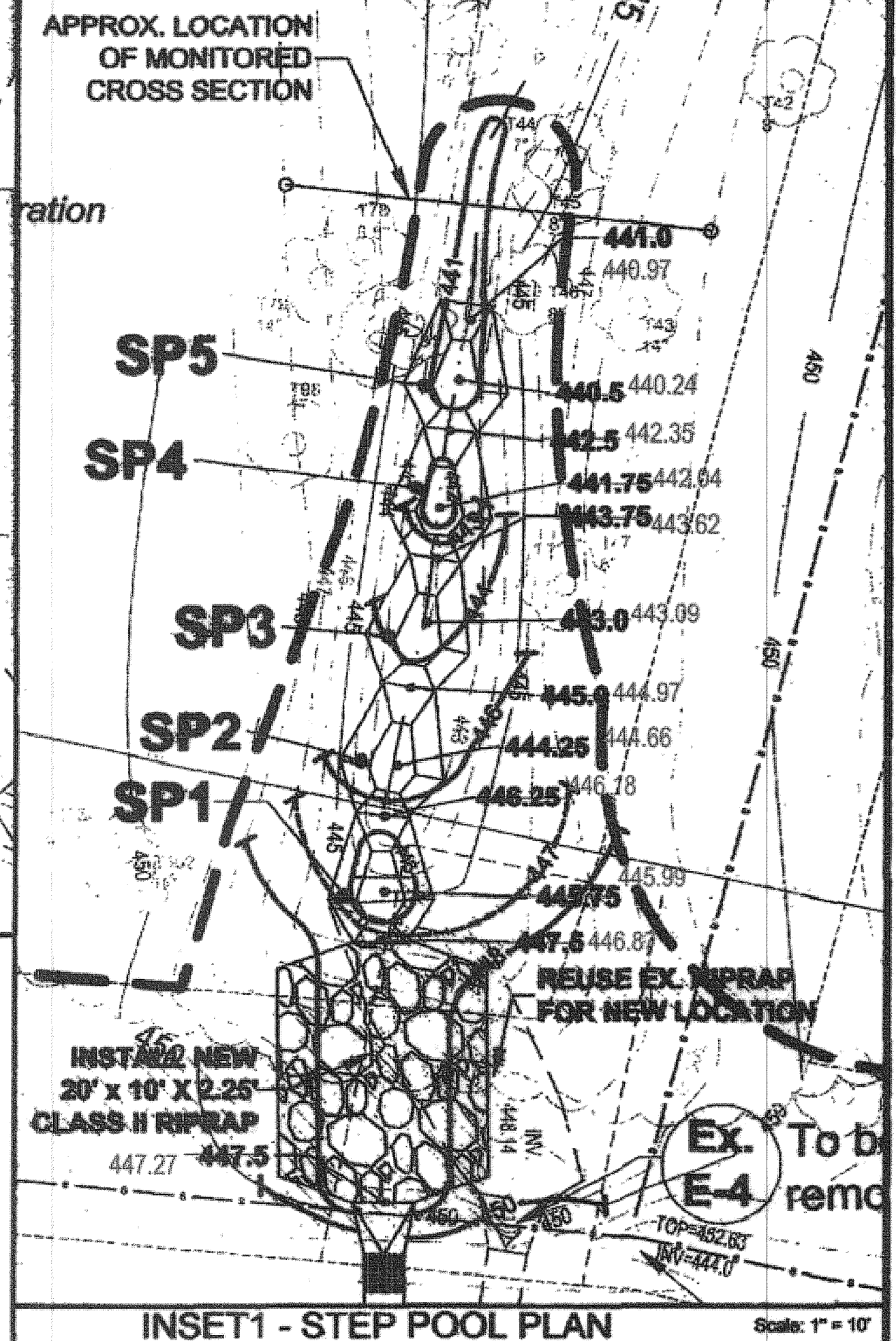
AS-BUILT STAGE STORAGE INFORMATION

ELEV. MSL	AREA: SQ FT	AVERAGE SQ FEET	DEPTH FEET	STORAGE CU FEET	TOTAL STORAGE CU FEET	TOTAL STORAGE AC-FT	ELEV. MSL
449	4,098	0.0	0.0	0.0	0.0	0.00	449
450	6,090	5,094	1.0	5,094	5,094	0.12	450
451	8,842	7,466	1.0	7,466	12,560	0.29	451
452	11,387	10,114	1.0	10,114	22,674	0.52	452
453	14,410	12,898	1.0	12,898	35,573	0.82	453
454	16,690	15,550	2.0	15,550	51,123	1.17	454
455	20,128	18,420	1.0	18,420	69,543	1.60	455
456	23,027	21,588	1.0	21,588	91,129	2.09	456
457	25,771	24,196	1.0	24,196	115,325	2.65	457
458	28,812	26,812	1.0	26,812	142,138	3.26	458
459	29,462	29,462	1.0	29,462	171,600	3.94	459

Legend

- Ex. Fence Line
- Existing Stream
- Property Line
- Easement
- Limits of Disturbance
- 100 Year Floodplain
- Tree Line
- Existing Contours
- Proposed Contours
- Proposed Pipe/Structure
- Ex. Riprap
- Soil Boring
- Step Pool
- 75' Stream Buffer
- Sanitary sewer line
- Erosion Control Matting

- General Notes:**
- 100 year floodplain for pond from CPJ TR-20 calculations for existing 2006 conditions calculations dated September, 2006.
 - Soil borings performed on September 5, 2005 by Penman and Browne, Inc.
 - Site visit by CPJ staff on January 12, 2006 could not verify existing riprap protection at storm drain inlet pipe due to sediment.
 - Existing rip rap outlet stone has been buried by sediment. contractor to remove sediment and re-work rip rap if necessary to as-built conditions.
 - Contractor to fill all animal burrows on the dam embankment with a 60/60 mixture of lean concrete and soil prior to placing fill, erosion control mat or seed on the embankment.



POND SUMMARY INFORMATION

This existing dry detention pond (DF) is to be retrofitted to an extended detention wetland pond (W-2). This is a public facility. It is located in the Patuxent River watershed (MDE Code 02-13-11)

MDE SWM Goal	Existing 2006 (Study point 1 & 2; 44.1 ac) with upstream SWM, low flow orifice functional			Retrofit Conditions (study point 1 & 2) with upstream SWM			Retrofit Conditions (study point 1 & 2) NO upstream SWM		
	Volume	WSE	Release	Volume	WSE	Release	Volume	WSE	Release
Red.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WQv (1 in. rain)	n/a	451.9	0.5	0.2*	450.2*	0.2	0.2*	450.2*	0.2
Cp (1 yr/yr)	0.08	454.7	13.7	2.5	455.9	2.5	2.4	455.8	2.4
Cp ₁₀	1.87	458.3	78.4	3.1	457.2	87.2**	3.6	457.6	124.9**
Cp ₂₅	2.75	457.7	128.4	3.8	457.9	148.9**	4.0	458.3	268.1**

* WQv shown in the table is actual TR20 value; MDE computation requires 1.97 x actual TR20 value for 44.1 ac.
 ** Assumes low flow orifice is blocked.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Chris M... 1/8/07

USDA - NATURAL RESOURCES CONSERVATION SERVICE

DATE: 1/8/07

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION & DATE: 1/10/07

CHIEF DIVISION OF LAND DEVELOPMENT & DATE: 1/10/07

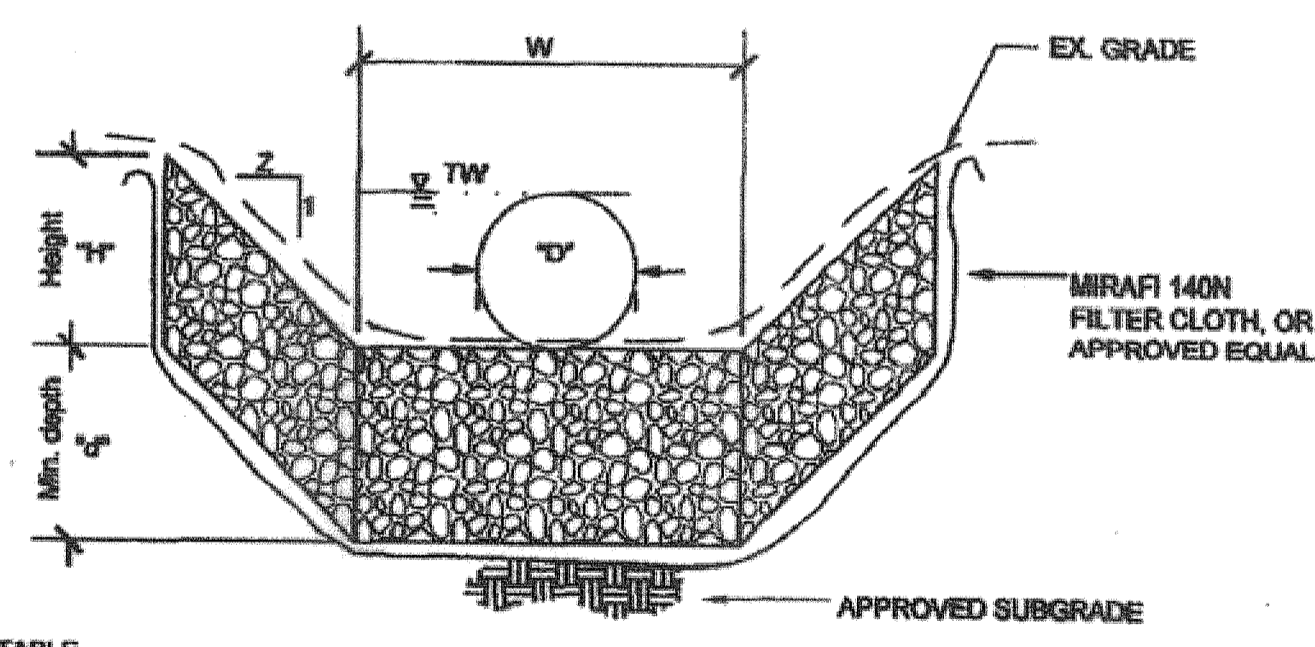
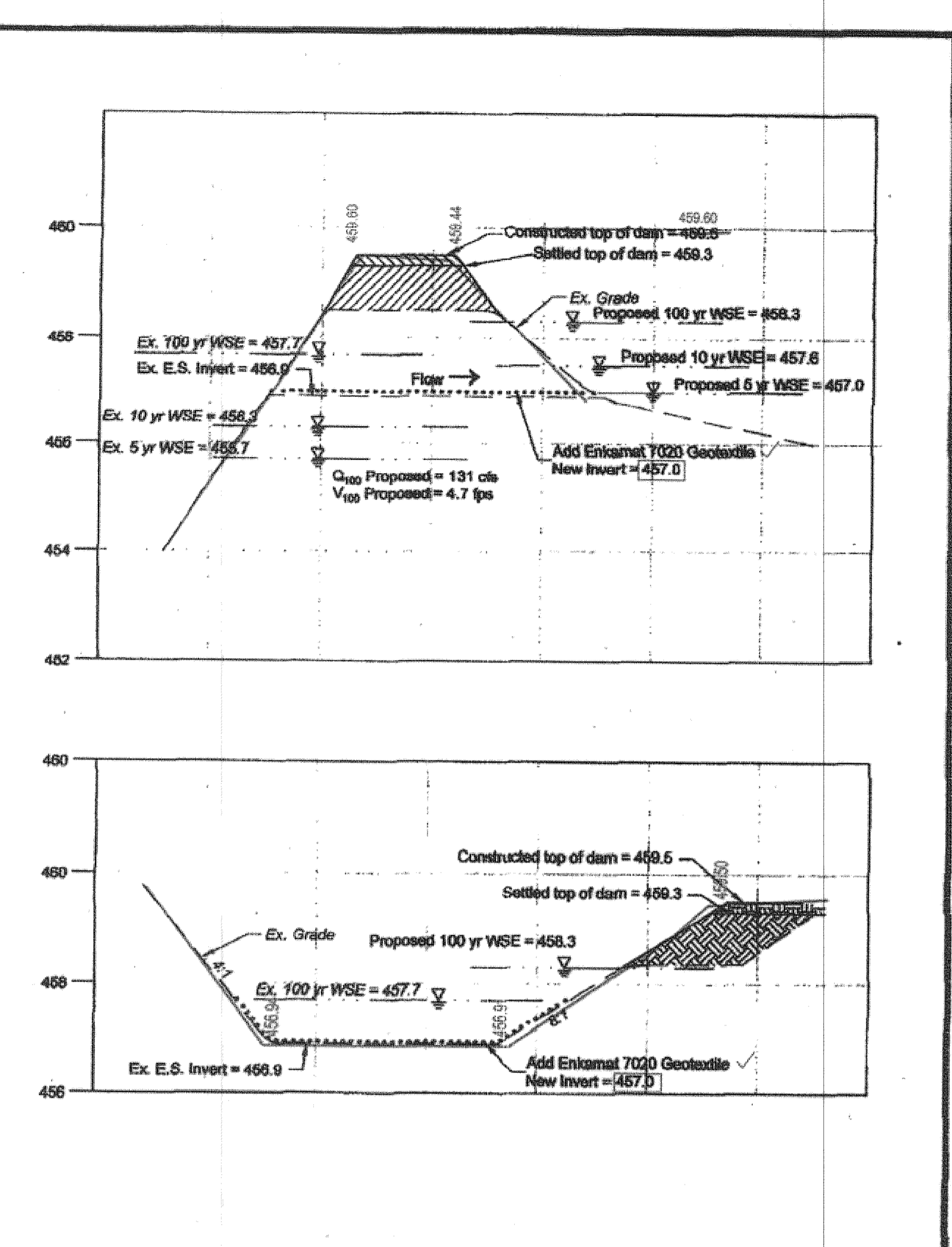
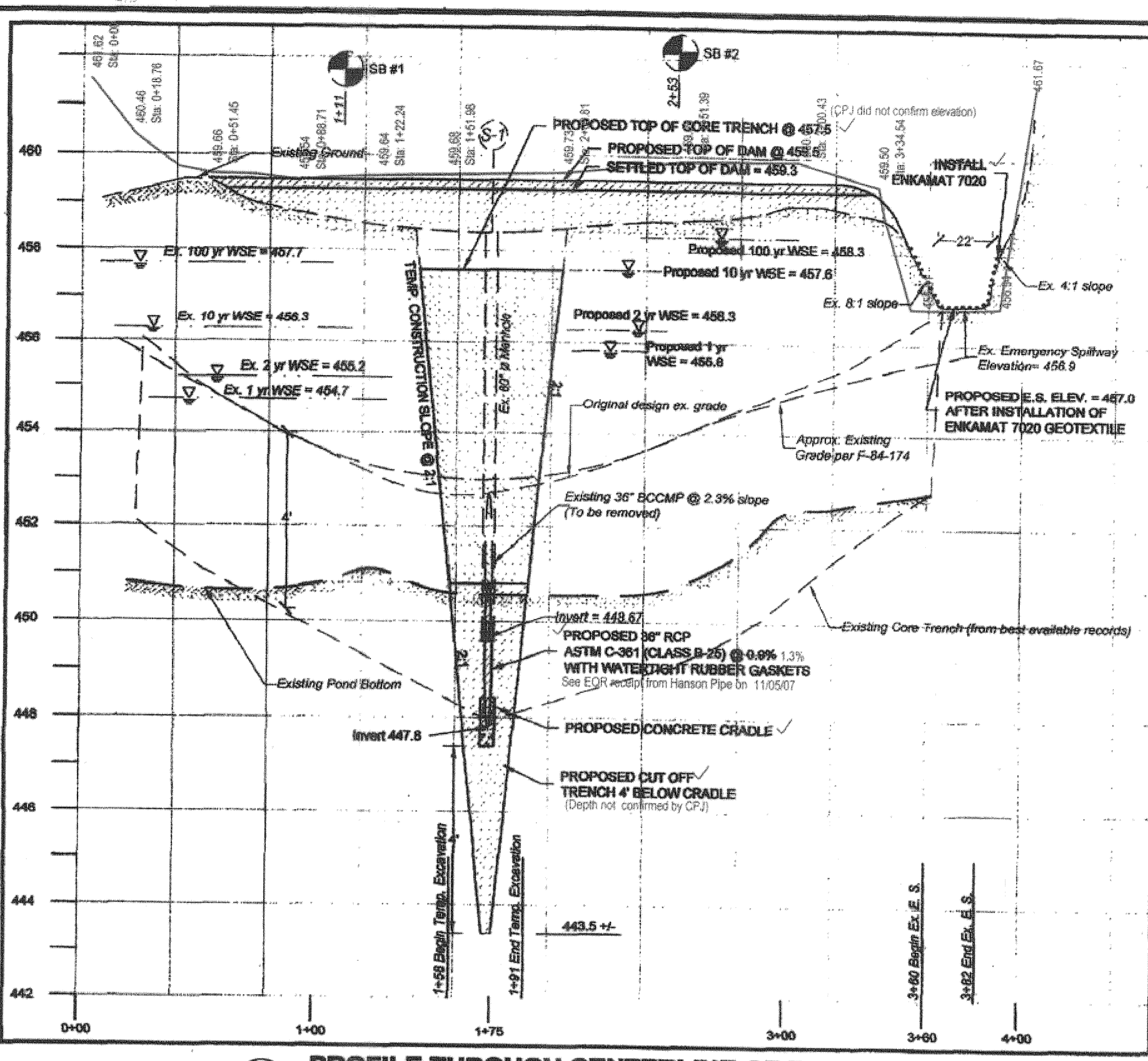
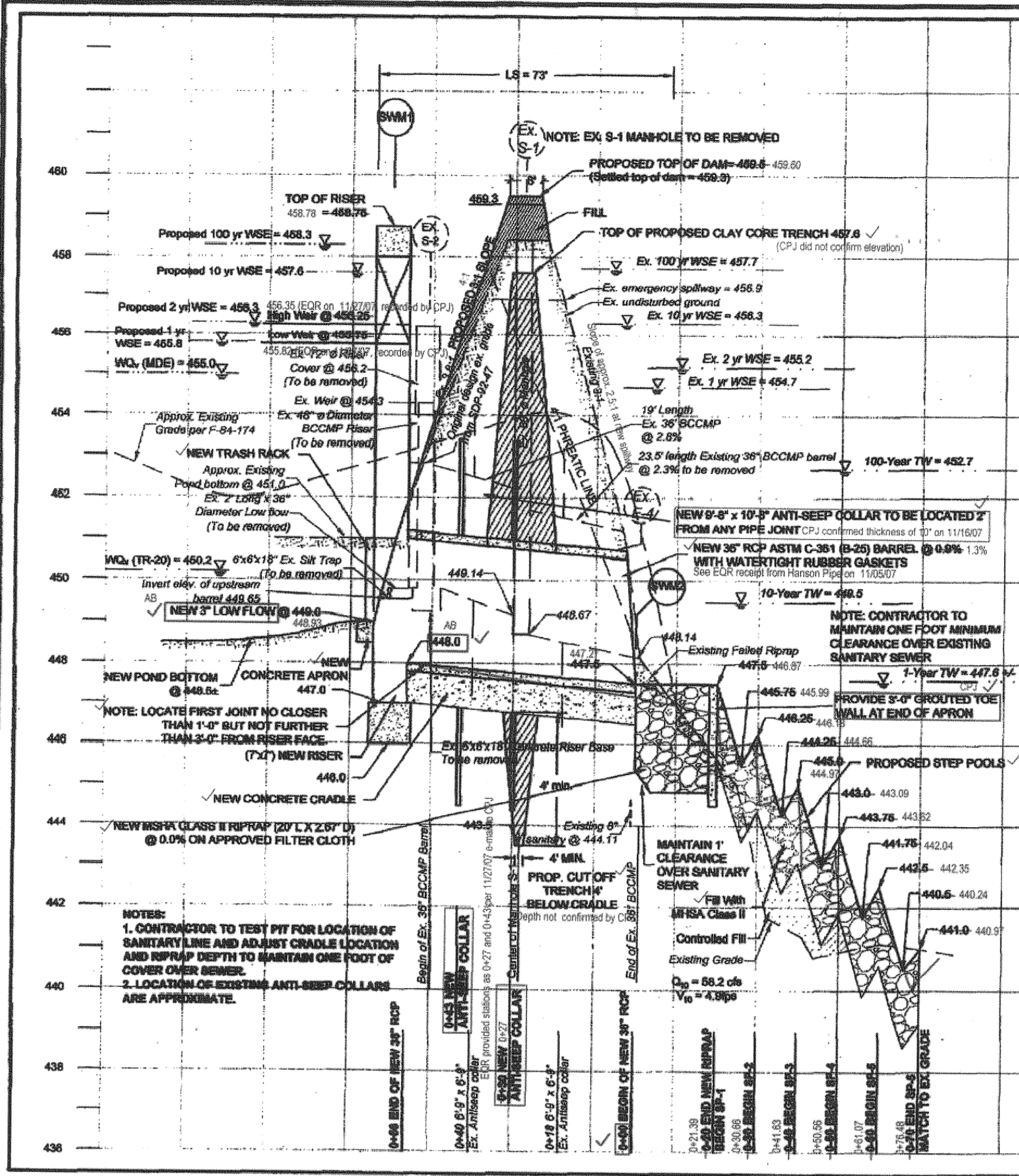
DIRECTOR: [Signature] DATE: 1/10/07

OAKLAND EXECUTIVE PARK POND RETROFIT
Columbia, Maryland
Design Planview

DATE:	1/10/07
DESIGNED:	TCS
DRAFTED:	HT
CHECKED:	TCS
BASE DATA:	LTI
NO.	NO.
REVIEWER COMMENTS	TCS 1/10/07
REVISIONS	TCS 09/06
BY	DATE

CPJ Associates
CPJ Environmental Services Division
STREAM RESTORATION • STORMWATER MANAGEMENT • INSPECTION
90 CLOPPER ROAD SUITE 202N GAITHERSBURG, MARYLAND 20878
Phone: (301) 208-9975 E-mail: cpj@cpj.com Fax: (301) 208-4651
SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE As Shown
SHEET 2 OF 44 SHEETS
JOB NO. 35-585
SDP # 06-101



RIP RAP OUTFALL TABLE

Location	Pipe Diam. "D"	Invert of pipe	Tailwater "TW" Q10	Flow "Q"	Velocity At Riprap Flare	Type of riprap	D50	D100	Length of Riprap	Slope "Z"	Width at end of Pipe	Width at end of Riprap "W"	H	d
SWM2	36	447.5	451.0	98.0	4.6	MSHA II	16	24	20	3	3	10	3.5	2.67

- Notes:
- Begin at the top of the slope and anchor fiber matting in a 12" deep initial anchor trench. Backfill trench and tamp earth firmly.
 - Unroll fiber matting down slope in the direction of water flow.
 - Overlap edges of adjacent parallel rolls 6" and anchor at 12" centers.
 - When fiber mat must be applied, place end over end (shingle style) with 12" overlap and anchor using two staggered rows of stakes at 6" centers.
 - Lay fiber mat loosely and anchor sufficiently to maintain direct contact with the soil - DO NOT STRETCH.
 - For slopes 2:1 and steeper use a minimum of 3 stakes per square yard and for slopes flatter than 2:1 use a minimum of 2 stakes per square yard.
 - Anchor, fill, and compact end of fiber matting in 12"x6" terminal anchor trench (minor image of initial trench).

Professional Engineer stamps and signatures, including dates like 11/10/07 and 7/2/10.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

APPROVER: DEPARTMENT OF PLANNING AND ZONING
CHIEF DEVELOPMENT ENGINEERING DIVISION
CHIEF DIVISION OF LAND DEVELOPMENT
DIRECTOR

Prepared for:
Howard County Dept. of Public Works
Bureau of Environmental Services
6751 Columbia Gateway Drive, #614
Columbia, MD 21046
Phone: (410) 313-6417
Attn: Mr. Richard Powell

Oakland Executive Park
Lot A-1 Plat 8559 Parcel 104
11.108 Acres
Election District #02
Howard County, Maryland
Tax Map 30 Grid 18

OAKLAND EXECUTIVE PARK POND RETROFIT
Columbia, Maryland
Profiles

DATE:	11/06		
DESIGNED:	TCS		
DRAFTED:	HT		
CHECKED:	TCS	2	REVIEWER COMMENTS
BASE DATA:	LTI	1	REVIEWER COMMENTS
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			BY DATE

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910 CLOPPER ROAD SUITE 202N GAITHERSBURG MARYLAND 20878
Phone (301) 928-9575 E-mail env@cpj.com Fax: (301) 928-4598
SILVER SPRING, MD PRINCETON, NJ FAIRFAX, VA

SCALE	As Shown
SHEET	47
OF 44 SHEETS	
JOB NO.	36-683