Stormwater Management Notes

1. contractor shall place a removeable cap on the upstream end of the 3" pvc. cap should be removeable in order to dewater the permanent pool.
2. stormwater management quantity is being provided by detention and water quality is being provided by a wet pond / permanent pool.
3. pond to be privately owned and maintained.
4. hazard classification for proposed facility is 'A'.

Summary of S.W.M. Discharges					
Storm Frequ.	allowable rel. rate	Inflow Discharge	outflow Discharge	Elevation @discharge	Storage Volume
2 year	2.82 c.f.s.	7.43 c.f.s.	2.35 c.f.s.	172.79	0.16 Ac.Ft.
10 year	7.87 c.f.s.	9.20 c.f.s.	7.77 c.f.s.	173.91	0.26 Ac.Ft.
100 year		24.03 c.f.s.	20.77 c.f.s.	174.48	0.34 Ac.Ft.

Legend

- ---- 180 ---- existing contour
- —— 180 —— proposed contour
- existing treeline
- proposed treeline
- B —— B —— B 50' stream buffer
- limit of 100 yr floodplain
- SF —— SF silt fence
- SSF —— SSF "super" silt fence
- TF —— TF tree protection fence

Sheet Index

1 : site development plan
2 : sediment control / drainage area map
3 : land scaping plan
4 : stormdrain profiles & s.w.m. details
5 : notes & details
6 : s.w.m. notes, soils map & soil borings log.
7 : Forest Conservation Plan

Forest Conservation Note

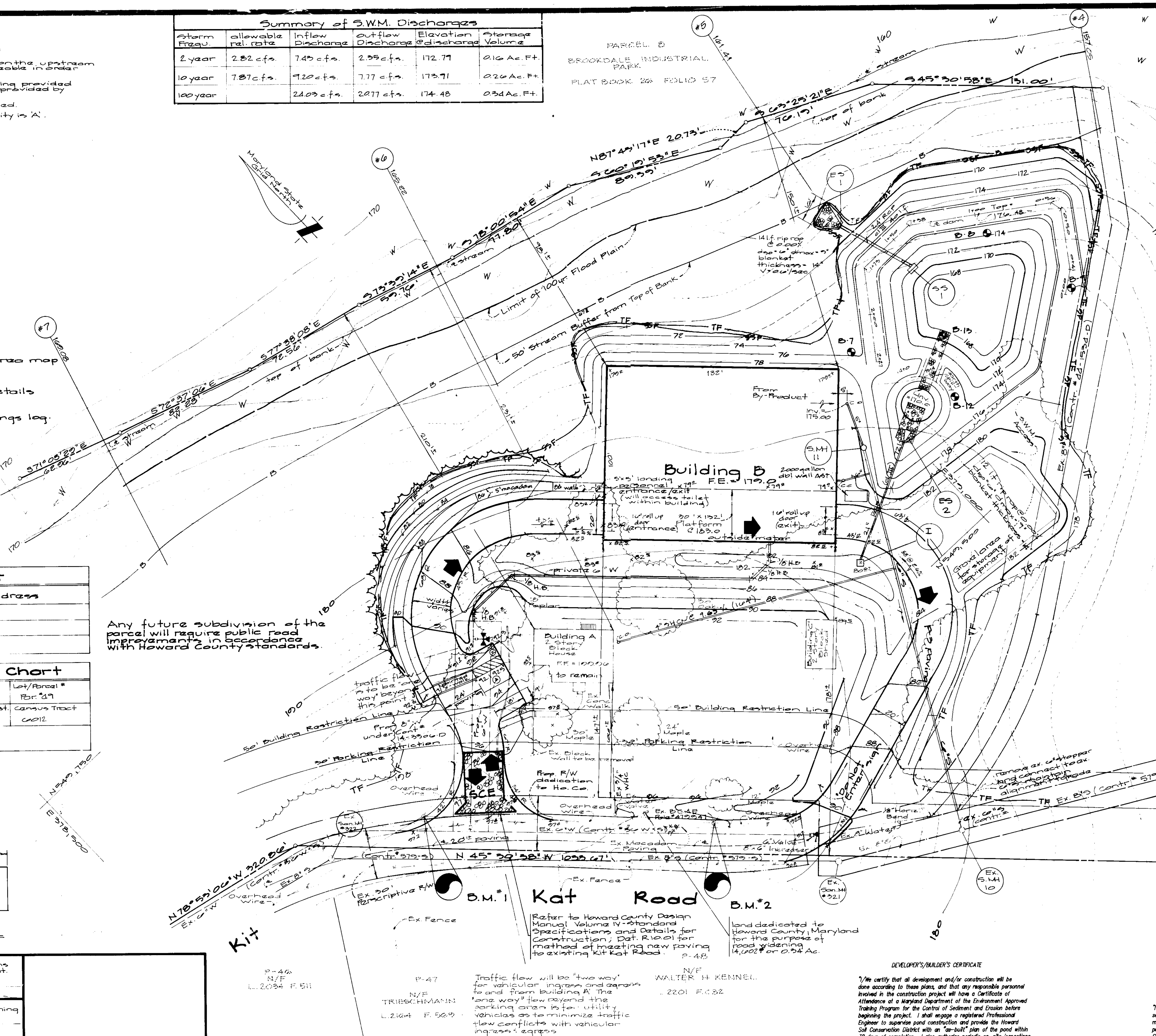
The Forest Conservation easement has been established to fulfill the requirements of Sect. 16.1200 of the Howard Co. Code Forest Conservation Act. No clearing, grading or construction is permitted within the forest conservation easement; however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.

Address Chart

Lot Number	Street Address
Par. 49 Bldg. "A"	7165 Kit Kat Rd.
Par. 49 Bldg. "B"	7175 Kit Kat Rd.

Permit Information Chart

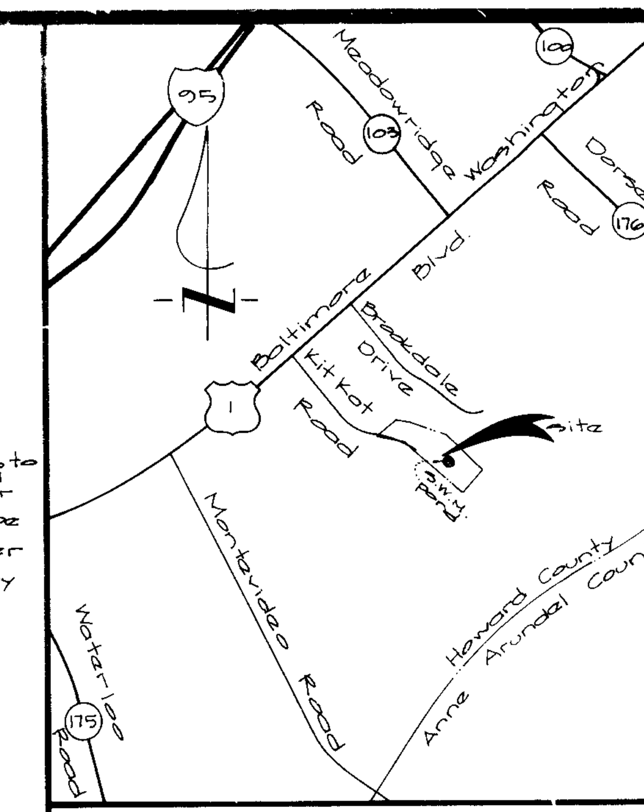
Subdivision Name			Section/Area		Lot/Parcel #
Property of Lee Ganey, Jr.			——		Par. #49
Plat # or L/F	Block #	Zone	tax Map	Elect. Dist.	Census Tract
L.2839 F.0451	11	M-2	43	first	6012
Water Code			Sewer Code		
B01			2370000		



Bench Marks

B.M. #1
R.R. Spike in B.G.&E pole # 272627
Elev. = 198.68

B.M. #2
Cut Nail in B.G.&E pole # 479947
Elev. = 199.98



Vicinity Map: scale: 1" = 1200'

SITE ANALYSIS

AREA OF PARCEL: [illegible] # OR 11.7461 Ac.±
PRESENT ZONING: M-2
PROPOSED USE OF STRUCTURE: WATER PURIFICATION
FLOOR SPACE: 13,[illegible] # (ALL DEDICATED TO WATER PURIFICATION PROCESS)
PROPOSED NUMBER OF EMPLOYEES: 1
PROPOSED NUMBER OF PARKING SPACES: 4
BUILDING COVERAGE ON SITE: 14,325 # OR 0.329 Ac.± AND 2.8% OF GROSS AREA
PAVED PARKING LOT/DRIVEWAY AREA ON SITE: 15,168 # OR 0.348 Ac.± AND 3.0% OF GROSS AREA
VEGETATED AREA ON SITE: 482,166 # OR 11.069 Ac.± AND 94.2% OF GROSS AREA
Building Use: Bldg. A: residence for employee; area = 1,125 #
Bldg. B: plant for purification process; area = 13,200 #

GENERAL NOTES

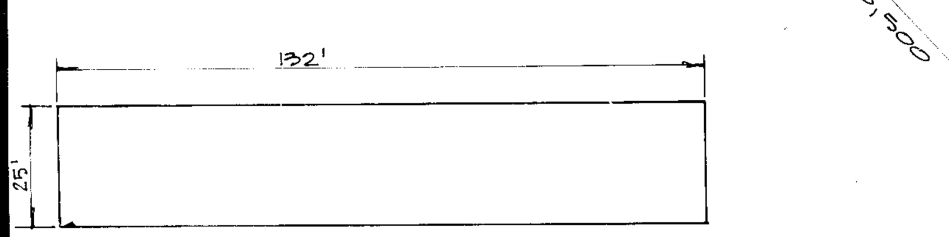
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIV. AT (410)313-1880 AT LEAST 5 WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. PROJECT BACKGROUND:
   LOCATION: KIT KAT ROAD TAX MAP: 43 PARCEL 49
   ZONING: M-2
   SITE AREA: 11.7461 Ac.±
   APPROVED, NAME AND DPZ REFERENCE #:
5. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
6. THE CONTOURS SHOWN HAVE 2 FOOT INTERVALS AND WERE DETERMINED BY FIELD RUN TOPOGRAPHY. THE TOPOGRAPHIC STUDY WAS PERFORMED BY: GUTSCHICK, LITTLE AND WEBER, P.A. ON MAY 11, 1993.
7. HORIZONTAL AND VERTICAL DATUM IS NAD (1983) PER HOWARD COUNTY CONTROL STATIONS 43 B2 AND 43 B6
8. THE WATER AND SEWER ON THIS SITE IS PUBLIC, THE CONTRACT NUMBER IS 14-3306-D
   THE DRAINAGE AREA IS THE LITTLE PATUXENT.
9. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PERFORMED BY GUTSCHICK, LITTLE AND WEBER, P.A. ON AUGUST, 1993 AND WAS APPROVED BY HOWARD COUNTY ON
10. STORMWATER MANAGEMENT AND WATER QUALITY WILL BE PROVIDED ON SITE. WATER QUALITY WILL BE OBTAINED THROUGH A PERMANENT POOL IN THE FACILITY AND QUANTITY MANAGEMENT WELL BE OBTAINED USING A DETENTION METHOD.
11. THERE ARE WETLANDS ON THE SITE BUT ARE ALL LOCATED WITHIN THE ENVIROMENTAL BUFFERS. THE PROPOSED DEVELOPMENT DOES NOT IMPACT THE WETLANDS.
12. DUE TO THE SMALL AMOUNT OF TRAFFIC THAT THIS SITE WILL GENERATE, A TRAFFIC STUDY WAS NOT PERFORMED.
13. THE STORMWATER MANAGEMENT FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED.
14. THE EXISTING UTILITIES WERE LOCATED BY FIELD RUN TOPO AND AS-BUILT PLANS.

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.

J.G. Crapfield / GS. 6/2/94
U.S. Soil Conservation Service Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Zichmn / JKK 6/3/94
Howard Soil Conservation District Date



Building Elevation

Approved: For public water & sewerage systems Howard County Health Department.
N/A
County Health Officer Date

Approved: Howard County Dept. of Planning & Zoning
Director 6/17/94 Date
Chief, Division of Land Development & Research 6/17/94 Date

Approved: For public water & public sewerage, storm drainage systems & public roads. Howard County Dept. of Public Works.
Director 6-9-94 Date
Chief, Bureau of Engineering 6/8/94 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall 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.

Lee Ganey Jr.
Signature of Developer/Builder Date

ENGINEER'S CERTIFICATE

"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 site 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."

David S. Weber 10.25.93
Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
TELEPHONE (301)421-4024 NO VA (301)989-2524 BALTO (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APP'R
5/24/95	rev. driveway location, grading, building entrance & location of 5' mac. walkway	MCF	
5/15/95	show 4" SHC to Bldg "A"	MCF	

PREPARED FOR:
Lee Ganey, Jr.
5005 Powder Mill Rd
Beltsville, Maryland 20704
(301) 937-8611

Site Development Plan

Property of Lee Ganey, Jr.

Parcel 49
Construction of Building & Driveway
1st Election District Howard County, Maryland

DES.: d.e.v.	SCALE 1" = 30'	ZONING M-2	GLW FILE No. 93-004
DRN.: d.e.v. & h.l.c. CHK.:	DATE Oct, 1993	TAX MAP No 43	SHEET 1 of 7

SDP-94-18

Stormwater Management Notes

1. contractor shall place a removeable cap on the upstream end of the 3 pvc cap should be removable in order to dewater the parmanent pool.
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Summary of S.W.M. Discharges

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100 year		24.03 c.f.s.	20.77 c.f.s.	174.58	0.34 Ac. Ft.

Legend

- 180 existing contour
- 180 proposed contour
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- proposed treeline
- B 50' stream buffer
- limit of 100 yr floodplain
- SF silt fence
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- TF tree protection fence

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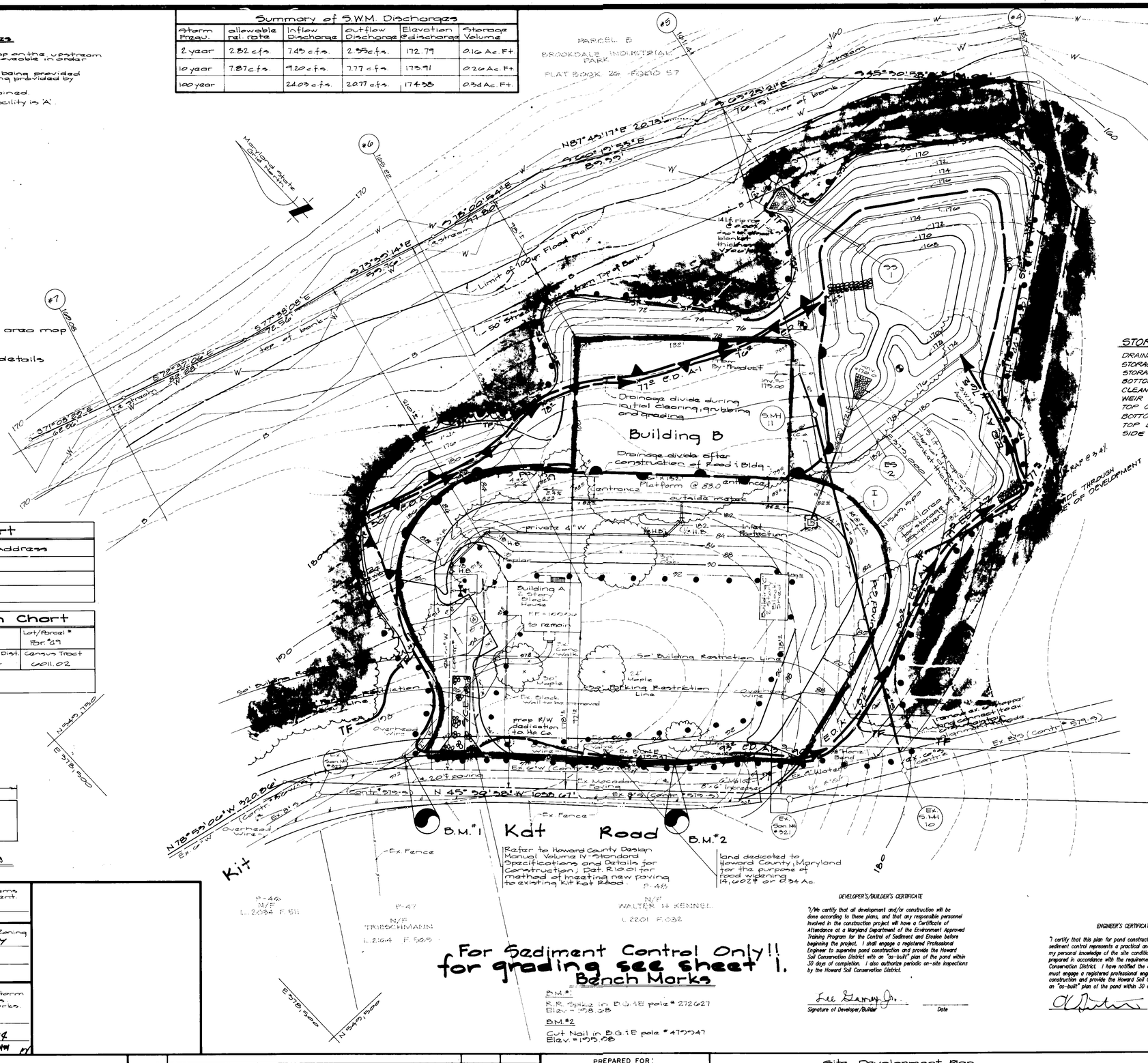
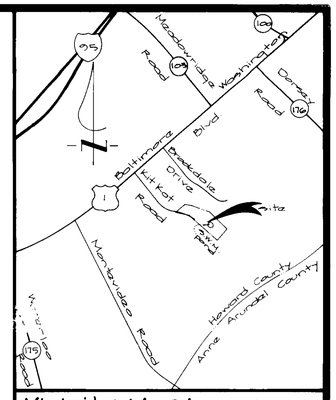


Bench Marks

B.M. #1
R.R. Spike in B.G.&E. pole # 272627
Elev. = 178.28

B.M. #2
Cut Nail in B.G.&E. pole # 470947
Elev. = 175.08



Vicinity Map : scale 1" = 1200'

STORM INLET SEDIMENT TRAP

DRAINAGE AREAS: 1.8 Ac.± (EX); 1.7 Ac.± (PROP)
STORAGE REQUIRED: 3,240 c.f.
STORAGE PROVIDED: 10,454 c.f. (@ WEIR CREST = 171.95)
BOTTOM ELEVATION: 168.0
CLEANOUT ELEVATION: 169.77
WEIR CREST ELEVATION: 172.47
TOP OF EMBANKMENT: 172 @ 5:1
BOTTOM DIMENSIONS: VARIES
TOP DIMENSIONS: VARIES
SIDE SLOPES: 3:1

Legend

- limit of disturbance
- C.D. earth dike
- SF silt fence
- drainage area to sediment trap
- drainage area to I-1
- S.C.E. stone construction entrance
- TF tree protection fence

Drainage Area Data to I-1:

Drainage Area = 1.39 ac.± c = 0.47
% Impervious = 21% % Pervious = 79%

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.

J.C. Wefelfel/GS. 6/2/94
U.S. Soil Conservation Service Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Zickos 6/3/94
Howard Soil Conservation District Date

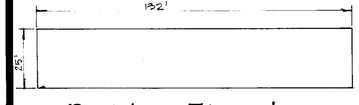
Address Chart

Lot Number	Street Address
Building 'A'	Kit Kat Rd.
Building 'B'	Kit Kat Rd.

Permit Information Chart

Subdivision Name		Section/Area		Lot/Parcel *
Property of Lee Ganey, Jr.		—		Parcel 49
Plat # or L/F	Block *	Zone	tax Map	Elect. Dist.	Census Tract
L.2859 F.0251		M-2	43	first	6011.02
Water Code		Sewer Code			

N 540,750
E 378,500



Building Elevation

Approved: For public water & sewerage systems
Howard County Health Department.
N/A
County Health Officer Date

Approved: Howard County Dept. of Planning & Zoning
Director: 6/17/94 Date
Chief, Division of Land Development & Research: 6/17/94 Date

Approved: For public water & public sewerage, storm drainage systems & public roads.
Howard County Dept. of Public Works.
Director: 6/8/94 Date
Chief, Bureau of Engineering: 6/8/94 Date

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Lee Ganey Jr. Date
Signature of Developer/Builder

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8-10-93
Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866
TELEPHONE: (301)421-4024 NO.VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:
Lee Ganey, Jr.
3005 Powder Mill Rd
Baltoville, Maryland 20704
(301) 937-8611

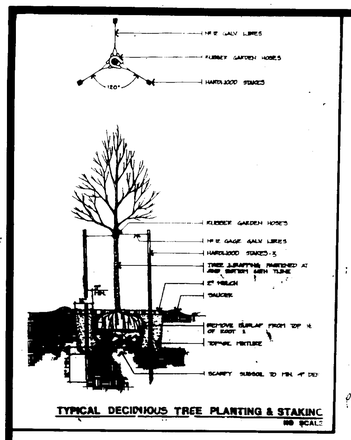
Site Development Plan

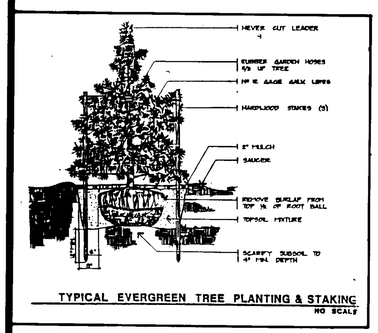
Property of Lee Ganey, Jr.

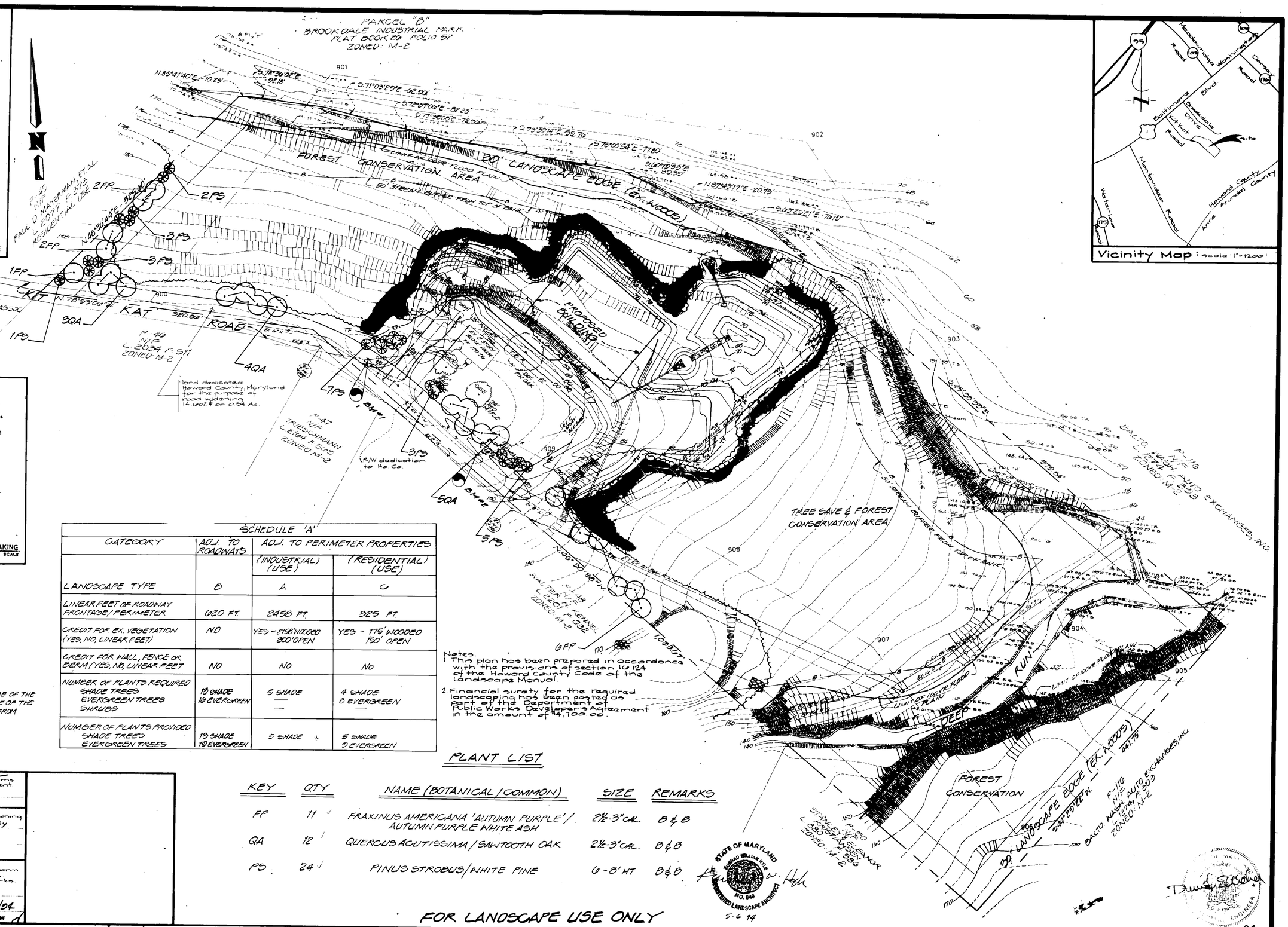
Parcel 49
Construction of Building & Driveway
1st Election District — Howard County, Maryland

DES.: d.e.v.	SCALE 1" = 30'	ZONING M-2	G.L.W. FILE No. 93-004
DRN.: d.e.v. & h.l.c.	DATE Oct. 1993	TAX MAP No. 43	SHEET 2 of 7
CHK.:			

SDP-94-18







LEGEND

- 92 — EX. CONTOUR
- 92 — PROP. CONTOUR
- SEVERE SLOPE (25%+)
- STEEP SLOPE (15-25%)
- LIMIT OF DISTURBANCE
- T.B.R. 'TO BE REMOVED'

NOTES: NO WETLANDS WERE OBSERVED OUTSIDE OF THE STREAM BUFFERS. ANY WETLANDS INSIDE OF THE STREAM BUFFERS WILL BE PROTECTED FROM DISTURBANCE.

- SF — SF silt fence
- SSF — SSF "super" silt fence
- TF — TF tree protection fence

SCHEDULE 'A'

CATEGORY	ADJ. TO ROADWAYS	ADJ. TO PERIMETER PROPERTIES (INDUSTRIAL (USE))	ADJ. TO PERIMETER PROPERTIES (RESIDENTIAL (USE))
LANDSCAPE TYPE	B	A	C
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	620 FT.	2498 FT.	325 FT.
CREDIT FOR EX. VEGETATION (YES, NO, LINEAR FEET)	NO	YES - 2198' WOODED 300' OPEN	YES - 175' WOODED 150' OPEN
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET	NO	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	18 SHADE 18 EVERGREEN	5 SHADE — —	4 SHADE 8 EVERGREEN —
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES	18 SHADE 18 EVERGREEN	5 SHADE	5 SHADE 9 EVERGREEN

Notes:
1. This plan has been prepared in accordance with the provisions of section 16.124 of the Howard County Code of the Landscape Manual.
2. Financial surety for the required landscaping has been posted as part of the Department of Public Works Developer's Agreement in the amount of $4,100.00.

PLANT LIST

KEY	QTY	NAME (BOTANICAL/COMMON)	SIZE	REMARKS
FP	11	FRAXINUS AMERICANA 'AUTUMN PURPLE'/ AUTUMN PURPLE WHITE ASH	2½-3" CAL.	B&B
QA	12	QUERCUS ACUTISSIMA/SAWTOOTH OAK	2½-3" CAL.	B&B
PS	24	PINUS STROBUS/WHITE PINE	6-8' HT	B&B

STATE OF MARYLAND — RUSSELL WILLIAM NYE — NO. 849 — REGISTERED LANDSCAPE ARCHITECT — 5-6-94

FOR LANDSCAPE USE ONLY

Approved: For public water + sewerage systems, Howard County Health Department
N/A
County Health Officer — Date

Approved: Howard County Dept. of Planning & Zoning
Director — Date 6/7/94
Chief, Division of Land Development & Research — Date 6/7/94

Approved: For public water + public sewerage, storm drainage systems + public roads. Howard County Dept. of Public Works
Director — Date 10.9.
Chief, Bureau of Engineering — Date 6/8/94

5-6-94

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
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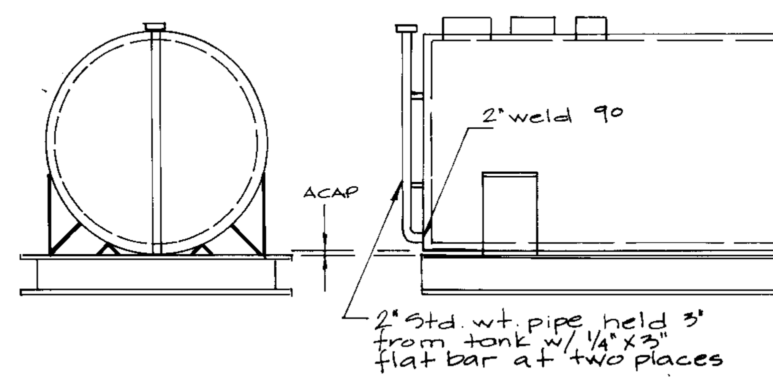
TELEPHONE: (301)421-4024 WO.VA. (301)980-2524 BALTO. (301)980-1820 FAX (301)421-4186

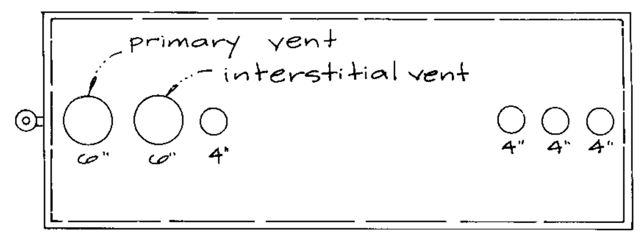
DATE	REVISION	BY	APP'D.

PREPARED FOR:
Lee Ganey, Jr.
3009 Powder Mill Rd.
Beltsville, Maryland 20704
(301) 937-8041

LANDSCAPE PLAN
PROPERTY OF LEE GANEY, JR.
PARCEL 49
CONSTRUCTION OF BUILDING & DRIVEWAY
HOWARD CO., MARYLAND
1st ELECTION DISTRICT

DES.: KWH	SCALE 1" = 50'	ZONING M-2	G.L.W. FILE No. 93-004
DRN.: ENB	DATE Oct., '93	TAX MAP No. 43	SHEET 3 OF 7
CHK.:			





Construction: Underwriters Laboratories UL 142 Tank

Double Wall Above Ground Tank

Double Wall Above Ground Tank

Capacity (Gal.)	Tank Dims (Dia. x L)	Wall thickness Inner Shell	Inner Heads	Outer Shell	Outer Heads	Weight (lbs.)
2000	5'4" x 12'0"	7ga	7ga	10ga	10ga	3,450

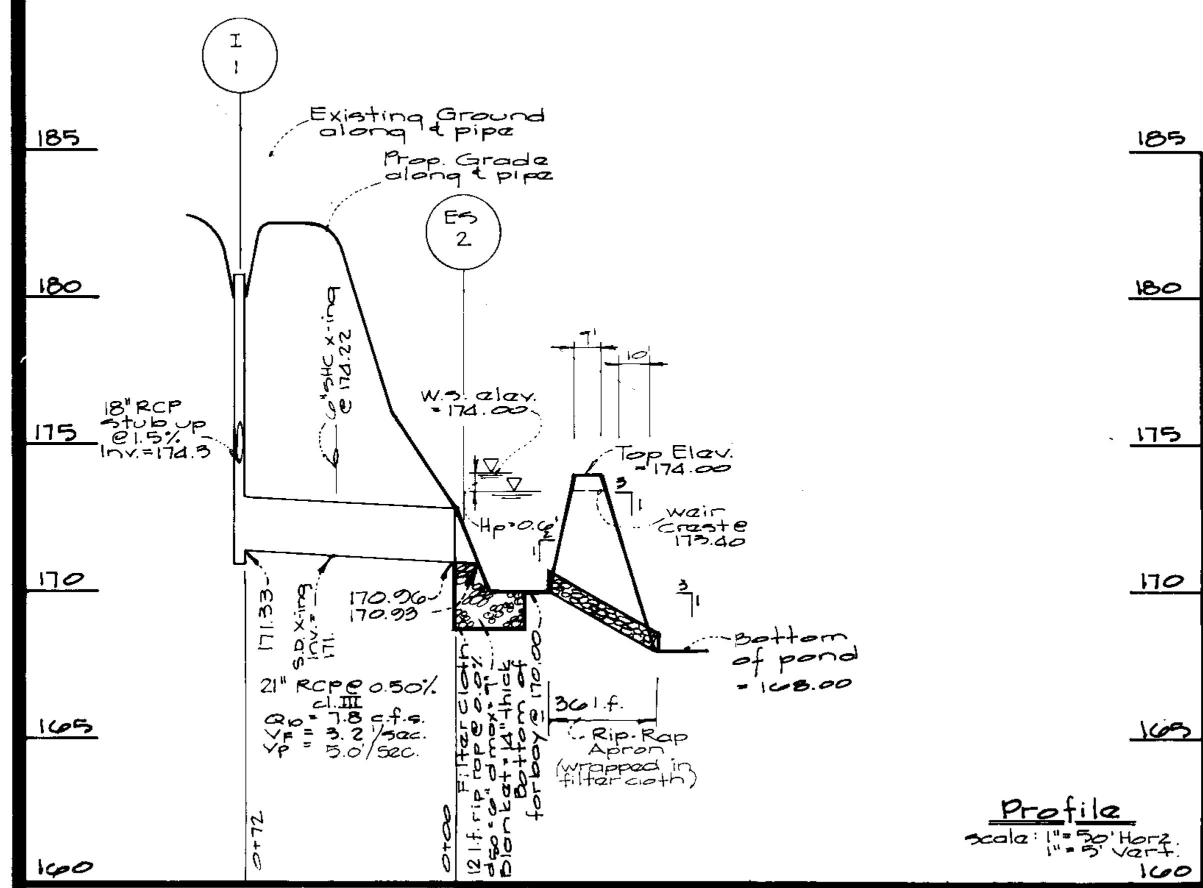
Leak detection sensor system will be the L series manufactured by Omnitech Manufacturing (part# ELP2LU1)

Water & Sewer Notes

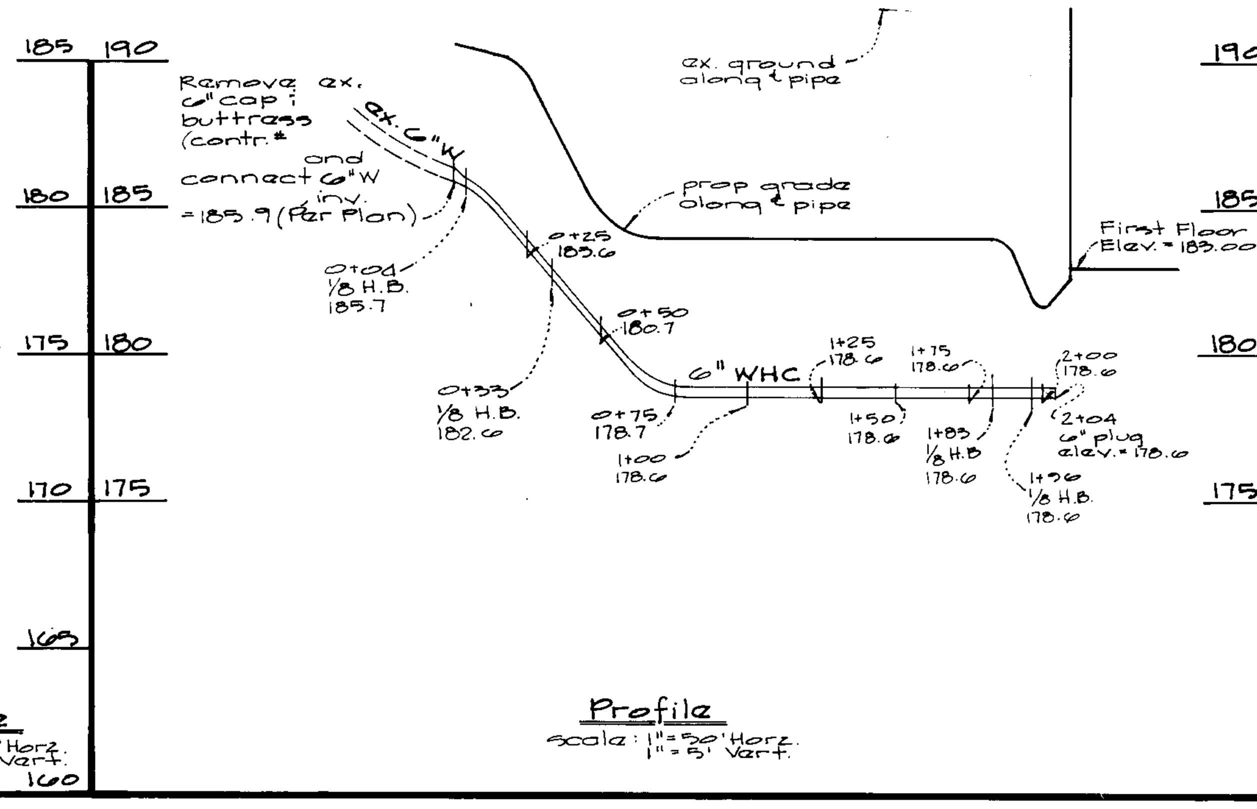
1. All construction methods and materials for private water and sewer mains and connections shall follow the current edition of the Howard County Plumbing Codes supplemented by the Howard County Standards, Details, and specifications where necessary
2. All sewer mains and connections shall be P.V.C.
3. All water mains shall be D.I.P. class 52.
4. Block all water fittings with concrete.
5. Water service are for inside meter settings.
6. Verify location of existing utilities prior to the start of construction of utilities shown on these plans.
7. Line and grade of existing sewer stubs shall be confirmed at stakeout. The engineer shall be notified of any discrepancies prior to construction.

Structure Schedule

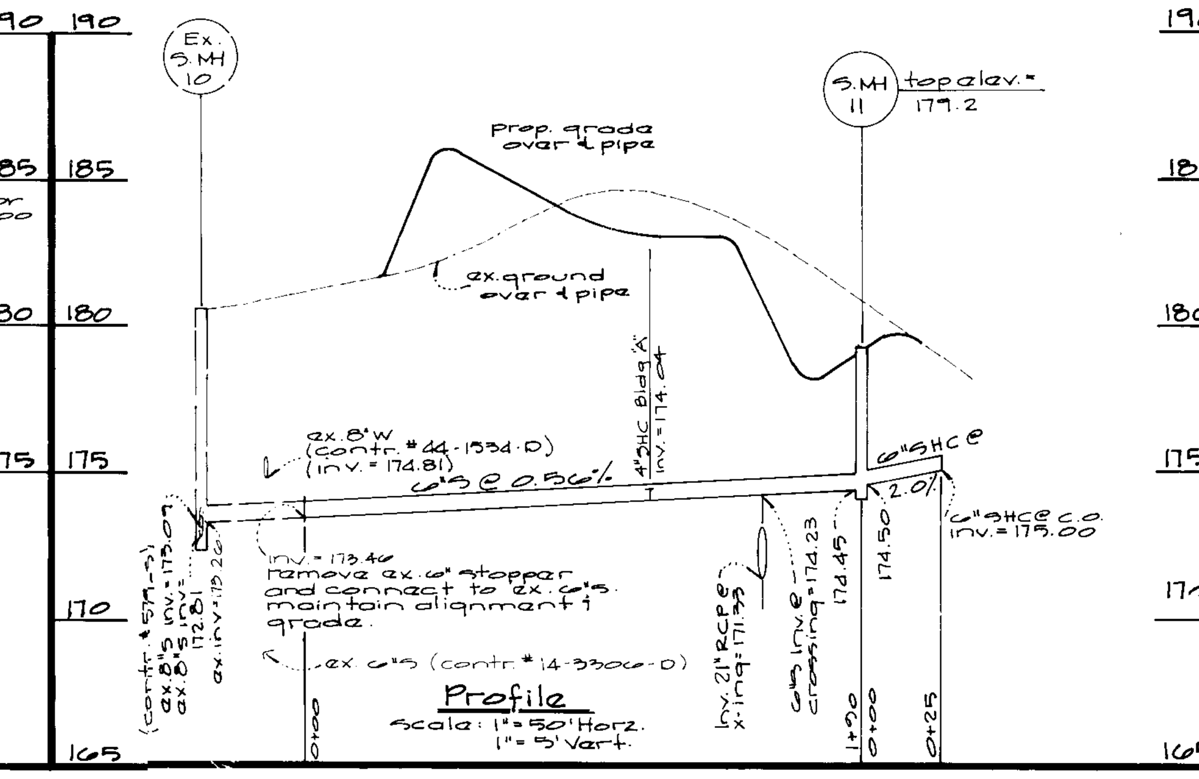
struct. number	struct. type	detail number	top of struct. upper	top of struct. lower	inverts upper	inverts lower
I-1	yard inlet	S.D.4.14	—	180.67	174.3	172.20
ES-1	End Sect.	S.D.5.51	—	169.30	167.30	167.20
ES-2	"	"	—	172.71	170.96	170.93
SS-1	modified A-5 Inlet		See details this sheet			
San MH-11	Manhole	G.5.01	—	179.20	174.50	174.45



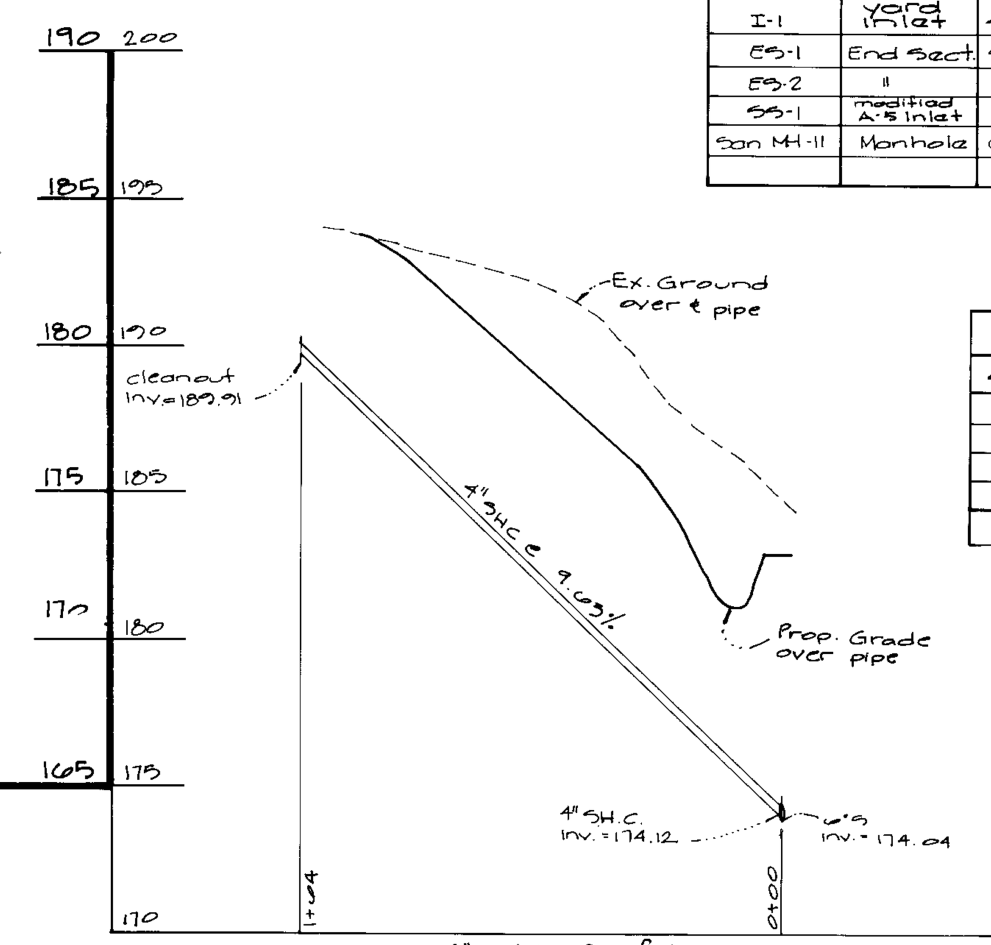
Stormdrain Profile



6" WHC Profile



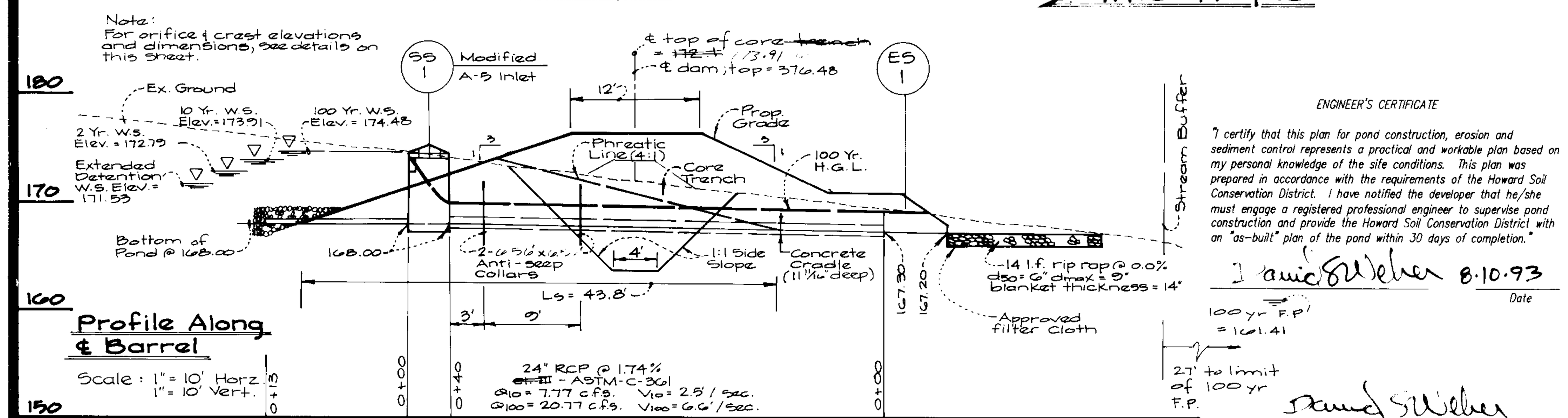
6" Sewer Profile



4"SHC Profile

Pipe Schedule

size & Type	class	length
21" RCP	III	72 l.f.
6"W (D.I.P.)	52	166 l.f.
6"S (P.V.C.)	——	214 l.f.
24" RCP	III	40 l.f.
4"S (PVC)	—	164 l.f.



Profile Along ¢ Barrel

Scale: 1" = 10' Horz. 1" = 10' Vert.

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Lee Ganey Jr
Signature of Developer/Builder — Date

ENGINEER'S CERTIFICATE

"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 site 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."

David S Weber 8.10.93
Date

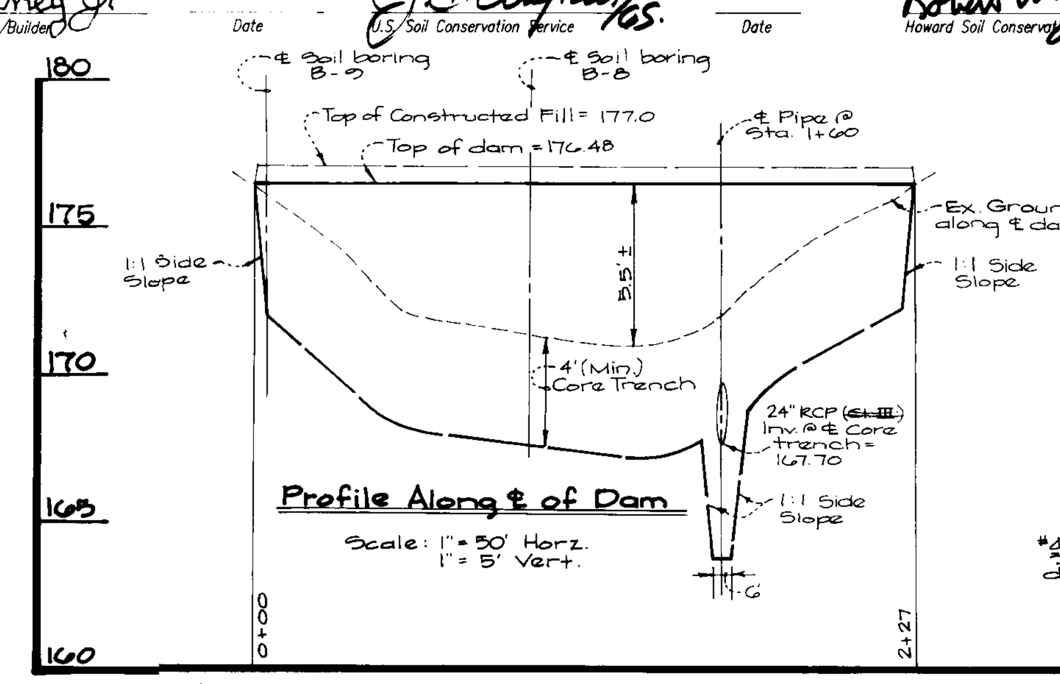
David S Weber

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.

U.S. Soil Conservation Service — Date

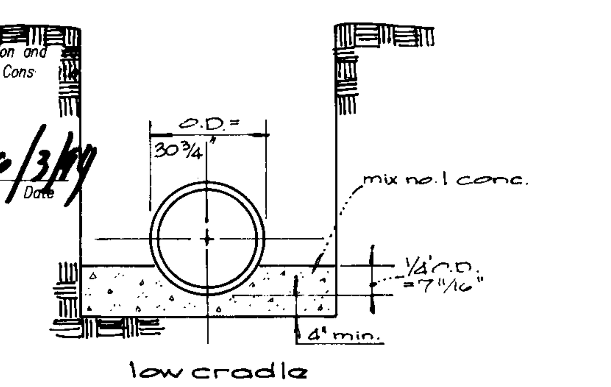
These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Cons District.

Robert W. ... 6/3/94
Howard Soil Conservation District — Date



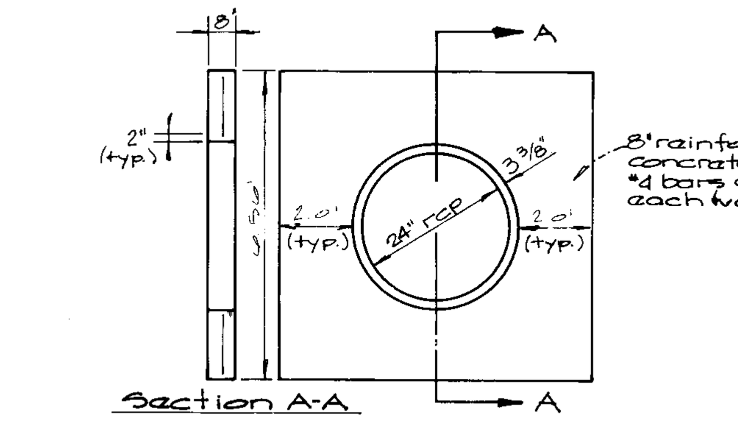
Profile Along ¢ of Dam

Scale: 1" = 50' Horz. 1" = 5' Vert.

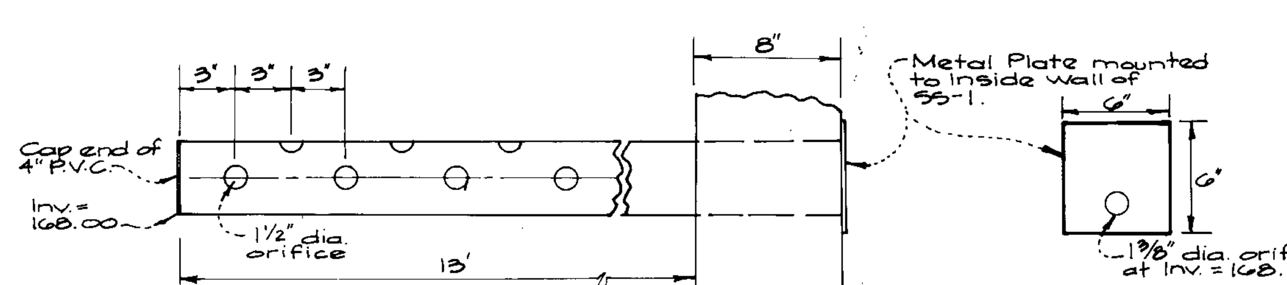


Conc. Cradle Detail
N.T.S.

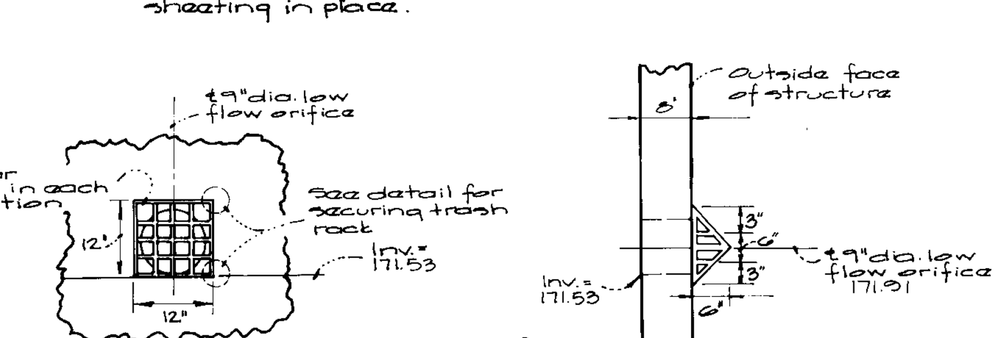
Notes: 1. pour concrete to undisturbed earth, remove sheeting before pouring concrete or leave lower portion of sheeting in place.



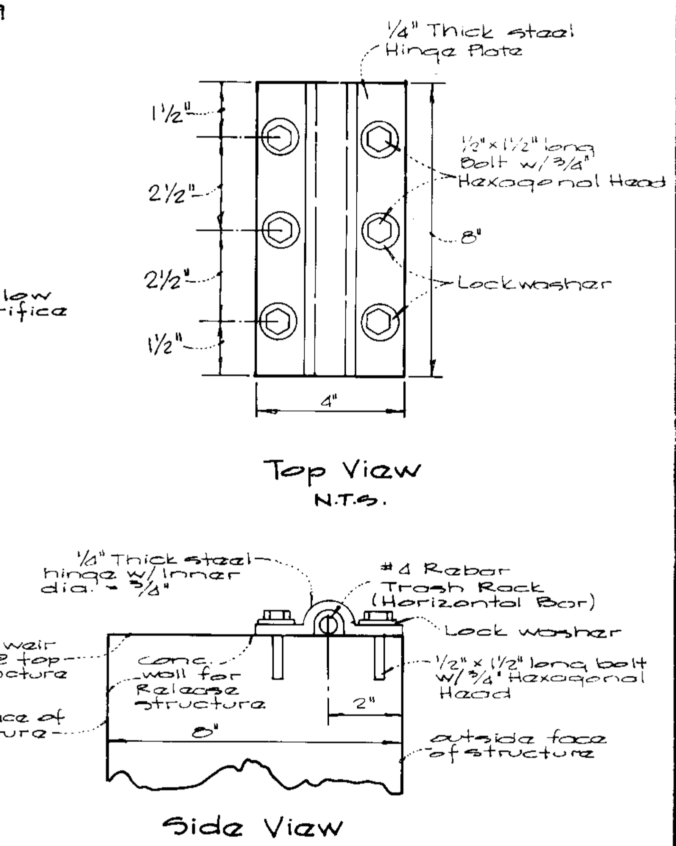
Anti-Seep Collar Detail N.T.S.



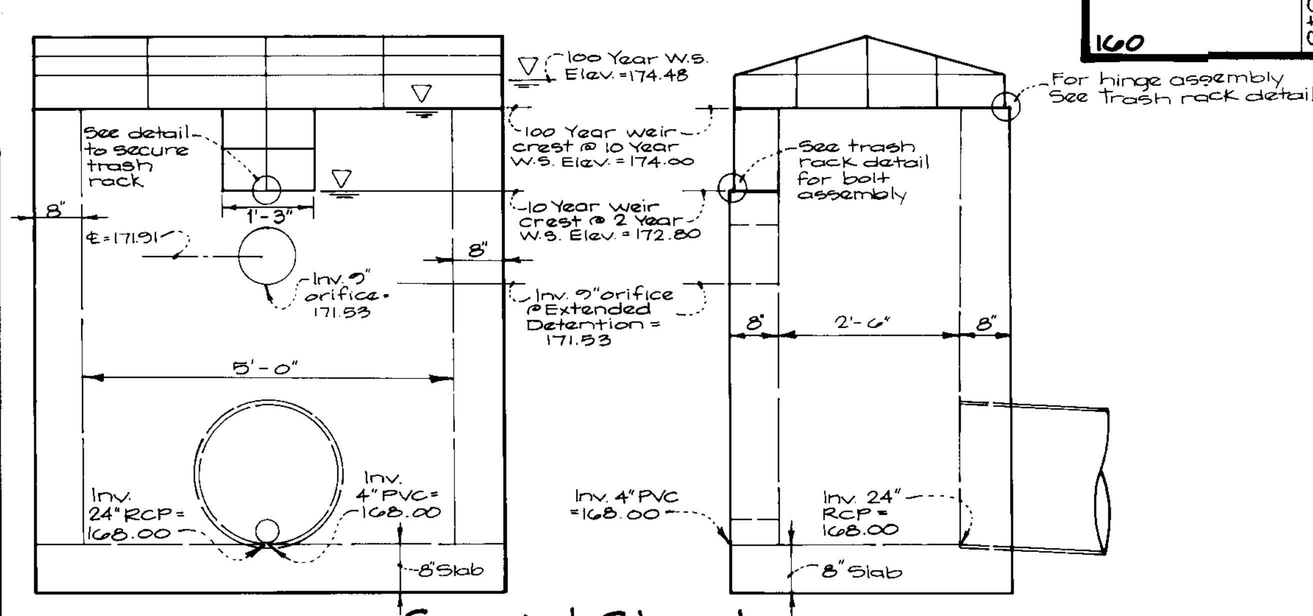
Detail for 4" Perforated P.V.C.



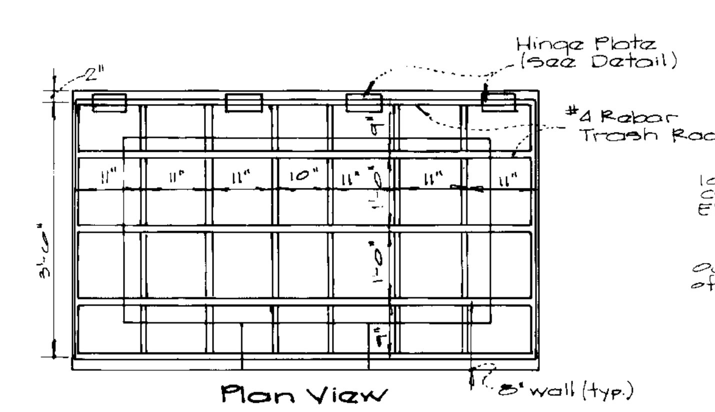
Low Flow Orifice Trash Rack N.T.S.



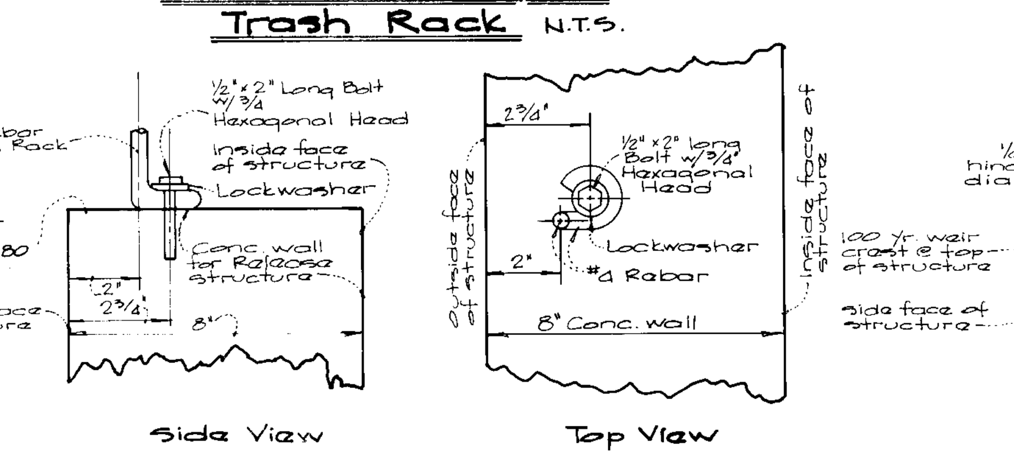
Hinge Detail
N.T.S.



Special Structure N.T.S.
(Modified A-5 Inlet)



Trash Rack N.T.S.



Detail to Secure Trash Rack
N.T.S.

Approved: For public water & sewerage systems Howard County Health Department

N/A
County Health officer — Date

Approved: Howard County Dept. of Planning & Zoning

Director — 6/17/94 Date

Chief, Division of Land Development & Research — 6/17/94 Date

Approved: For public water & public sewerage, storm drainage systems & public roads Howard County Dept. of Public Works.

Director — 6/10/94 Date

Chief, Bureau of Engineering — 6/8/94 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
TELEPHONE (301) 421-4024 NO.VA. (301) 989-2524 BALTO. (410) 880-1820 FAX (301) 421-4186

DATE	REVISION	BY	APP'R.
5/24/95	Above Ground tank Detail	MCF	
5/15/95	Add 4"SHC Profile	MCF	

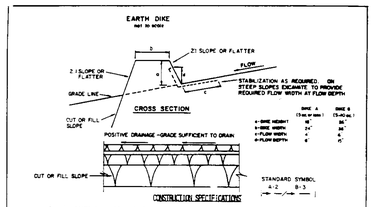
PREPARED FOR
Lee Ganey, Jr.
5005 Powder Mill Rd
Beltsville, Maryland 20704
(301) 937-8611

Stormdrain Profiles & S.W.M. Details

Property of Lee Ganey, Jr.
Parcel 49
Construction of Building & Driveway
1st Election District — Howard County, Maryland

DES.	SCALE	ZONING	G.L.W. FILE No.
d.e.v.	as shown	M-2	93-004
DRN. m.c.f.	DATE	TAX MAP No.	SHEET
CHK.	Oct. 1993	43	4 of 7

SDP-94-18



CONSTRUCTION SPECIFICATIONS

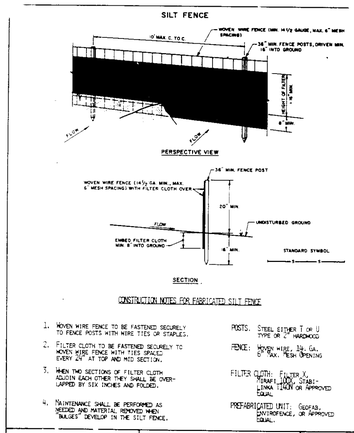
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITHOUT DAMAGE TO THE DIKE. FLAPPER SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE "C" SEGRAGATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL, AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1

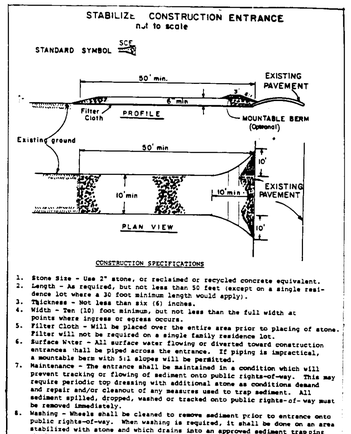


CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD.
FENCE: WOVEN WIRE, 14½ GA. 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X. MIRAFI 1000, STABILINKA T210N OR APPROVED EQUAL.
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

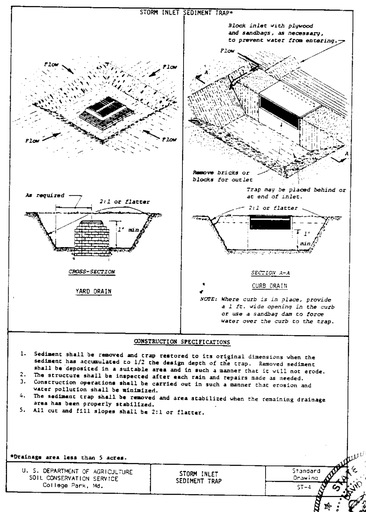
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) feet minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

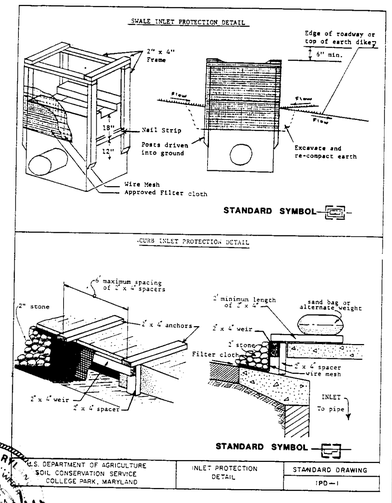


CONSTRUCTION SPECIFICATIONS

1. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The structure shall be inspected after each rain and repairs made as needed.
3. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
4. The sediment trap shall be removed and area stabilized when the remaining drainage area has been properly stabilized.
5. All out and fill slopes shall be 2:1 or flatter.

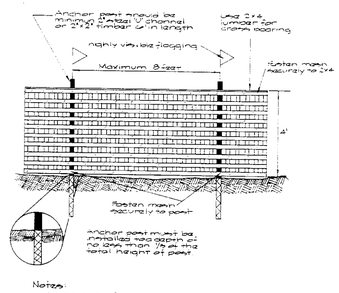
*Drainage area less than 5 acres.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STORM INLET SEDIMENT TRAP	Standard Drawing ST-1



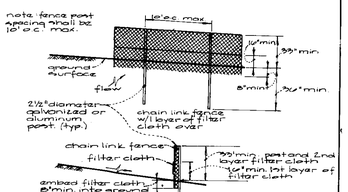
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	INLET PROTECTION DETAIL	STANDARD DRAWING IPD-1

Tree Protection Fence
Blaze Orange Plastic Mesh



Notes:
1. Boundaries of maximum area should be staked and flagged prior to installing device.
2. Flow damage should be avoided.
3. Device should be maintained throughout construction.

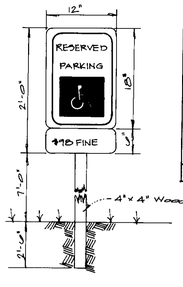
Super Silt Fence



Construction Specifications

Fence shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for chain link fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

1. The posts do not need to be set in concrete.
2. Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" the top rail and bottom section.
4. Filter cloth shall be embedded a min of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.



Handicap Parking Sign Detail
no scale

OPERATIONS AND MAINTENANCE GUIDELINES

OPERATIONS:

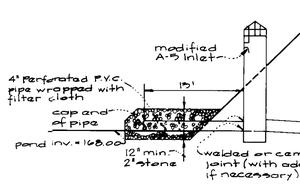
1. OWNER SHALL KEEP ACCURATE RECORDS OF INSPECTIONS AND MAINTENANCE TYPE REPAIRS. THESE RECORDS SHOULD ALSO INCLUDE A COPY OF THE "AS-BUILT" PLANS AND SMALL POND SUMMARY SHEET.
2. OWNER SHALL MAKE A VISUAL INSPECTION OF THE FACILITY AT LEAST TWICE A YEAR. ONCE IN THE SUMMER AFTER THE FACILITY HAS BEEN MOWED AND DURING THE WINTER WHEN THE VEGETATION IS INACTIVE. ADDITIONAL INSPECTIONS SHALL BE MADE DURING AND AFTER EXTREME RAINFALLS.
3. DURING THE EXTREME WEATHER OR RAINFALL EVENTS, THE OWNER SHALL CHECK FOR OVERTOPPING, SEEPAGE, OR DAM FAILURE. IN ORDER TO AVOID OVERTOPPING, EITHER PLACE SANDBAGS ON TOP OF THE EMBANKMENT OR LOWER THE WATER ELEVATION BY USING A DEWATERING DEVICE.
4. IF A SEVERE PROBLEM DEVELOPS, THE OWNER SHALL CONTACT A PROFESSIONAL ENGINEER TO ASSESS THE PROBLEM AND MAKE A SUGGESTION TO REMEDY THE SITUATION. THE HOWARD SOIL CONSERVATION DISTRICT OR MARYLAND DAM SAFETY DIVISION SHALL BE CONTACTED BEFORE MAJOR REPAIRS ARE MADE.

MAINTENANCE

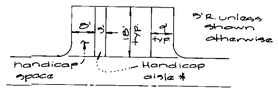
DURING THE SEMI-ANNUAL VISUAL INSPECTIONS, THE FOLLOWING ITEMS MUST BE CHECKED AND DOCUMENTED BY THE OWNER:

I. SPILLWAYS AND OUTLET DEVICE
   1. PIPES - CHECK FOR SAGGING, MISALIGNMENT, GAPS AT JOINTS, CRACKS, LEAKS, AND WEAR ALONG INSIDE SURFACE OF PIPES. ALSO REMOVE ANY BLOCKAGES.
   2. TRASH RACKS - INSPECT AND REPLACE IF NECESSARY. ACCTUAL TIME FOR REMOVAL OF TRASH RACKS SHOULD BE LIMITED. TRASH RACKS SHALL BE PAINTED ONCE A YEAR.
   3. CONCRETE SURFACES - CHECK FOR CRACKS OR ANY OTHER SIGNS OF FAILURE.
   4. FORBAY AND SPILLWAY - CHECK FOR STONE DETERIORATION OR LOSS AND SPILLWAY FAILURE.
   5. RIP RAP OUTLET - CHECK FOR STONE DETERIORATION OR STONE LOSS.
   6. DEWATERING DEVICE - REMOVE BLOCKAGES.

II. EMBANKMENTS
   1. VEGETATION - PROPER VEGETATIVE COVER IS REQUIRED ON ALL EMBANKMENTS. THE OWNER SHALL FOLLOW PROPER SEEDING SPECIFICATIONS FOR RESEEDING.
   2. TREES AND BRUSH - TREES AND BRUSH SHALL BE REMOVED FROM THE EMBANKMENT. STUMPS CAN BE REMOVED USING SILVICIDE.
   3. MOWING - MOWING IS NECESSARY TO CONTROL THE ESTABLISHMENT OF WOODY GROWTH AND TO MAINTAIN THE VEGETATIVE COVER. THE EMBANKMENT, A 25-FOOT WIDE (EXCEPT IN WETLAND/STREAM BUFFERS) STRIP ADJACENT TO THE TOE, UPSTREAM AND DOWNSTREAM OF THE EMBANKMENT, AND THE AREA WITHIN 50 FEET OF THE CONTROL STRUCTURES NEED TO BE MOWED. MOWING SHALL BE DONE AT LEAST ONCE A YEAR (MID TO LATE SUMMER) BUT MAY BE DONE MORE OFTEN.
   4. SEEPAGE - THE FOLLOWING WARNING SIGNS SHOULD BE LOOKED FOR WHEN INSPECTING FOR SEEPAGE PROBLEMS: CRACKS (LONGITUDINAL AND VERTICAL), SOFT SPOTS OR BOGGY AREAS ON DOWNSTREAM EMBANKMENT, SEEPAGE ALONG DOWNSTREAM TOE OF EMBANKMENT.
   5. STABILITY - LARGE CRACKS, SLIDES, SLOUGHING AND EXCESSIVE SETTLEMENT ARE SIGNS OF EMBANKMENT INSTABILITY AND A NEED FOR REPAIR. REPAIRS MUST BE APPROVED BY HOWARD SOIL CONSERVATION DISTRICT.
   6. RODENTS - CHECK FOR BURROWS, WHICH CAN LEAD TO PIPEPACKS, AND REMOVE RODENTS WHEN ENCOUNTERED.



Low Flow Blocking Detail



*two 8' handicap spaces may share one 5' aisle

Typical Parking
no scale

SEDIMENT CONTROL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSIONS AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization, with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis:
Total Area of Site: 11.75 Acres
Area Disturbed: 2.00 Acres
Area to be roofed or paved: 0.53 Acres
Area to be vegetatively stabilized: 1.53 Acres
Total Cut 3,000 Cu. Yds.
Total Fill 2,711 Cu. Yds.
Off-Site waste/borrow area location

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

Construction Sequence

1. Obtain grading permit.
2. Arrange on-site meeting with the Sediment Control Inspector.
3. Install stone construction entrance, silt fence, and earth dikes and tree protection fence as shown on these plans.
4. Excavate storm inlet sediment trap as shown on Sheet 2 of 2. Construct outfall structure and pipe spillway with rip rap, and wrap perforated 4" PVC with stone.
5. Begin clearing and grubbing.
6. Bring site to grade and install storm drains and utilities.
7. As fill progresses and road is set to grade, the earth dike running through the back of the proposed building may be removed. This area will now be managed by the silt fence already in place. I-1 to ES 2 must be functioning.
8. Fine grade site.
9. Construct proposed building.
10. Install base pavement except in area of the stone construction entrance.
11. After all areas draining to the sediment control devices have been stabilized and permission has been obtained from the Sediment Control Inspector, remove those devices and stabilize any disturbed areas.
12. Construct remainder of base pavement.
13. Install surface course paving.
14. Install rip rap apron and complete embankment between forbay and permanent pool. Stabilize the stormwater management facility.
15. Remove stone from around perforated 4" PVC.

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).

2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall 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.

Lee Goney — Signature of Developer/Builder — Date

ENGINEER'S CERTIFICATE

"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 site 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."

David W. Wicher — B-10-93 — Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Zulkey — 6/3/94 — Howard Soil Conservation District — Date

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.

J. C. Crisfield — 6/2/94 — U.S. Soil Conservation Service — Date

Approved: For public water & sewerage systems, Howard County Health Department.
N/A — County Health Officer — Date

Approved: Howard County Dept. of Planning & Zoning
Director — Date 6/17/94
Chief, Division of Land Development & Research — Date 6/17/94

Approved: For public water & public sewerage, storm drainage systems & public roads, Howard County Dept. of Public Works.
Director — Date
Chief, Bureau of Engineering — Date 6/8/94

GLW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866
TELEPHONE: (301) 421-4024

DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
Lee Goney, Jr
5003 Powder Mill Rd
Beltsville, Maryland 20704
(301) 937-8611

Notes and Details

Property of Lee Goney, Jr.
Parcel 49
Construction of Building & Driveway
1st Election District — Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
as shown	M-2	93-004
DATE	TAX MAP No.	SHEET
Oct. '93	49	5 of 7

SDP-94-18

ENGINEER'S CERTIFICATE

"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 site 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."

David S. Weber 8-10-93
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall 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.

Lee Haney Jr. _____
Signature of Developer/Builder Date

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.

J.C. Whitehead 6/2/94
U.S. Soil Conservation Service Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

_____ _____
Howard Soil Conservation District Date

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designate for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservior will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservior as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in suitable location for use on the embankment and other designated areas.

Earth Fill

Material – The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankement and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankement if design and construction are supervised by a geotechnical engineer.

Placement – Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction – The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by no less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill maerial shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed in a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench – The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment being used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with the construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality of conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operated closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe – All of the following criteria shall apply for corrugated metal pipe:

1. Materials – (Steel Pipe) – This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Stee pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials – (Aluminum Coated Steel Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials – (Aluminum Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 and M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections – All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled and adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

   Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with such suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe – All of the following criteria shall apply for reinforced concrete pipe:

1. Materials – Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.

2. Bedding – All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe – Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill"

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe – All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provided adequate support.

4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications or Construction and Materials, Section 608, Mix No. 3

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

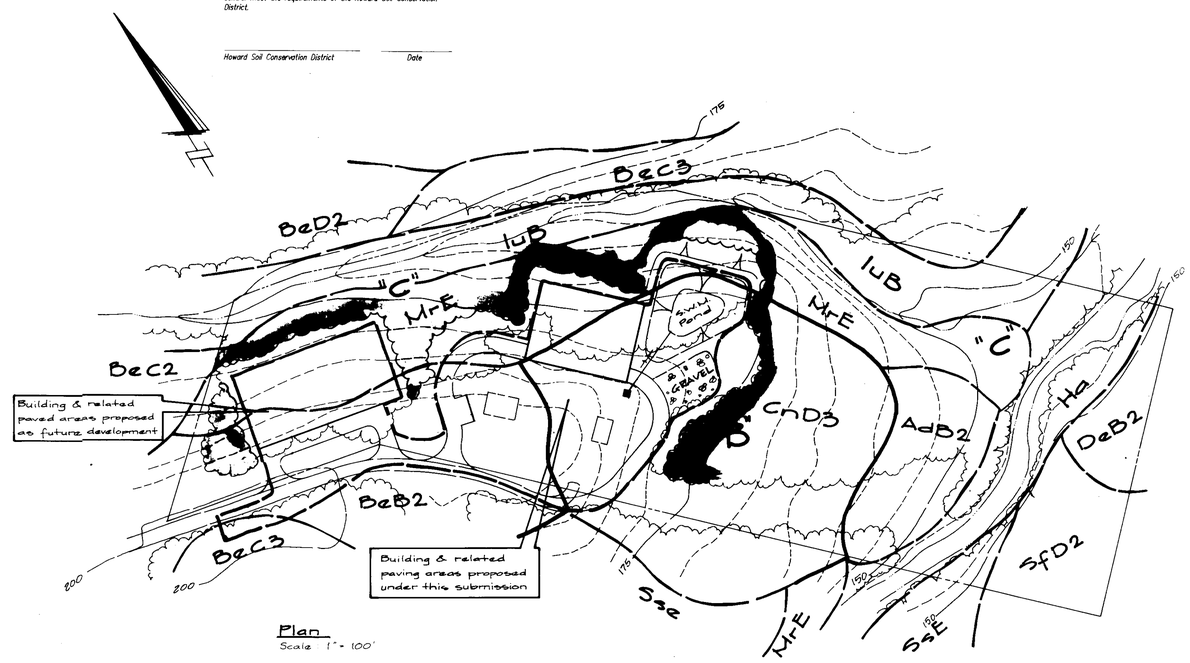
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect th areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavtions, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

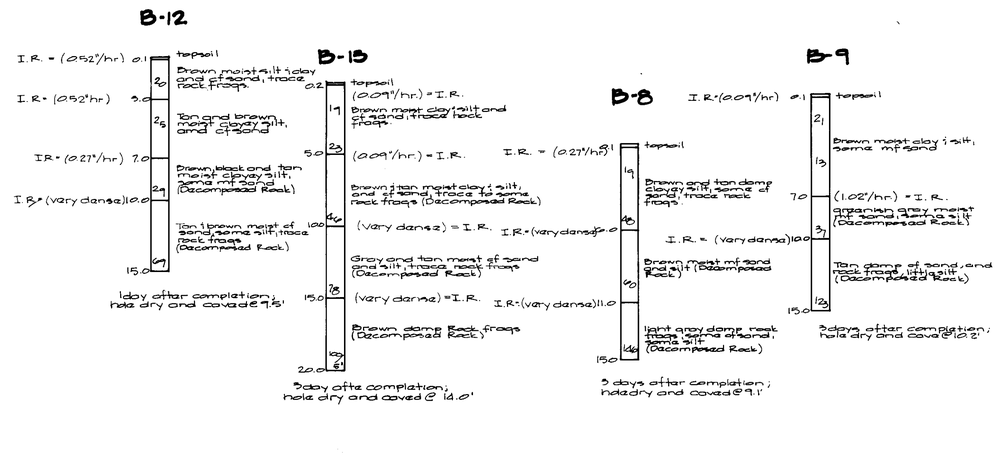
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.



Plan
Scale 1" = 100'



I.R. = Infiltration Rate

Soil Boring Profiles in SWM Facility

Approved: For public water & sewerage systems Howard County Health Department.
N/A
County Health Officer Date

Approved: Howard County Dept. of Planning & Zoning
Director: 6/17/94 Date
Chief, Division of Land Development & Research: 6/17/94 Date

Approved: For public water & public sewerage storm drainage systems & public roads. Howard County Dept. of Public Works.
Director: 6/10/94 Date
Chief, Bureau of Engineering: 6/8/94 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
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TELEPHONE (301)421-4024 NO.VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

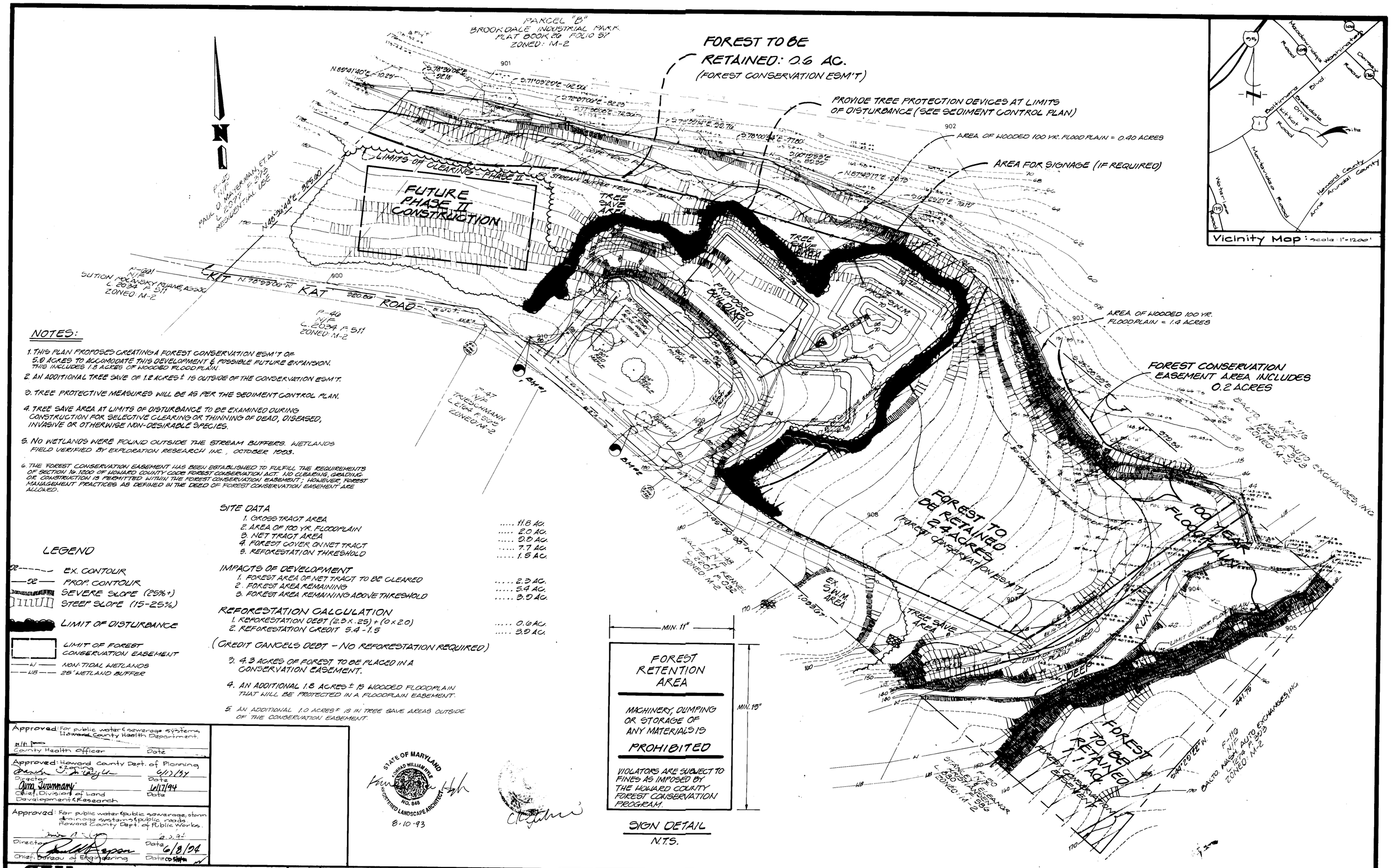
DATE	REVISION	BY	APP'R.

PREPARED FOR:
Lee Goney, Jr
5005 Powder Mill Rd.
Beltsville, Maryland 20704
(301) 937-8611

S.W.M. Notes, Soils Map & Soil Boring Log
Property of Lee Goney, Jr.
Parcel 49
Construction of Building & Driveway
1st Election District Howard County, Maryland

DES.: d.e.v.	SCALE as shown	ZONING M-2	G.L.W. FILE No. 93-004
DRN.: m.e.f.	DATE Oct. '93	TAX MAP No. 43	SHEET 6 of 7
CHK.:			

SDP-94-19



NOTES:

1. THIS PLAN PROPOSES CREATING A FOREST CONSERVATION ESM'T OF 5.0 ACRES TO ACCOMODATE THIS DEVELOPMENT & POSSIBLE FUTURE EXPANSION. THIS INCLUDES 1.8 ACRES OF WOODED FLOOD PLAIN.
2. AN ADDITIONAL TREE SAVE OF 1.2 ACRES ± IS OUTSIDE OF THE CONSERVATION ESM'T.
3. TREE PROTECTIVE MEASURES WILL BE AS PER THE SEDIMENT CONTROL PLAN.
4. TREE SAVE AREA AT LIMITS OF DISTURBANCE TO BE EXAMINED DURING CONSTRUCTION FOR SELECTIVE CLEARING OR THINNING OF DEAD, DISEASED, INVASIVE OR OTHERWISE NON-DESIRABLE SPECIES.
5. NO WETLANDS WERE FOUND OUTSIDE THE STREAM BUFFERS. WETLANDS FIELD VERIFIED BY EXPLORATION RESEARCH INC., OCTOBER 1993.
6. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF HOWARD COUNTY CODE FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

LEGEND

- EX. CONTOUR
- PROP. CONTOUR
- SEVERE SLOPE (25%+)
- STEEP SLOPE (15-25%)
- LIMIT OF DISTURBANCE
- LIMIT OF FOREST CONSERVATION EASEMENT
- NON-TIDAL WETLANDS
- 25' WETLAND BUFFER

SITE DATA

1. GROSS TRACT AREA	..... 11.8 AC.
2. AREA OF 100 YR. FLOODPLAIN	..... 2.0 AC.
3. NET TRACT AREA	..... 9.8 AC.
4. FOREST COVER ON NET TRACT	..... 7.7 AC.
5. REFORESTATION THRESHOLD	..... 1.5 AC.

IMPACTS OF DEVELOPMENT

1. FOREST AREA OF NET TRACT TO BE CLEARED	..... 2.3 AC.
2. FOREST AREA REMAINING	..... 5.4 AC.
3. FOREST AREA REMAINING ABOVE THRESHOLD	..... 3.9 AC.

REFORESTATION CALCULATION

1. REFORESTATION DEBT (2.3 x .25) + (0 x 2.0)	..... 0.6 AC.
2. REFORESTATION CREDIT 5.4 - 1.5	..... 3.9 AC.

(CREDIT CANCELS DEBT - NO REFORESTATION REQUIRED)

3. 4.3 ACRES OF FOREST TO BE PLACED IN A CONSERVATION EASEMENT.
4. AN ADDITIONAL 1.8 ACRES ± IS WOODED FLOODPLAIN THAT WILL BE PROTECTED IN A FLOODPLAIN EASEMENT.
5. AN ADDITIONAL 1.0 ACRES ± IS IN TREE SAVE AREAS OUTSIDE OF THE CONSERVATION EASEMENT.

MIN. 11"

MIN. 15"

FOREST RETENTION AREA

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS

PROHIBITED

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION PROGRAM.

SIGN DETAIL
N.T.S.

Approved: For public water & sewerage systems, Howard County Health Department.

N/A
County Health Officer — Date

Approved: Howard County Dept. of Planning & Zoning

Director — Date 6/17/94
Chief, Division of Land Development & Research — Date 6/17/94

Approved: For public water & public sewerage, storm drainage systems & public roads. Howard County Dept. of Public Works.

Director — Date 6.3.94
Chief, Bureau of Engineering — Date 6/8/94

STATE OF MARYLAND
LONRAD WILLIAM HYKE
No. 948
REGISTERED LANDSCAPE ARCHITECT
8-10-93

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3908 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866
TELEPHONE: (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APP'R.
10-22-93	REVISED PER DPZ COMMENTS	KWH	
10-27-93	REVISED PER DPZ COMMENTS	KWH	

PREPARED FOR:
Lee Ganey, Jr.
5005 Powder Mill Road
Baltimore, Maryland 20704
(301) 037-5011

FOREST CONSERVATION PLAN

PROPERTY OF LEE GANEY, JR.

CONSTRUCTION OF BUILDING & DRIVEWAY

HOWARD CO., MARYLAND — 1st ELECTION DISTRICT

DES.: KWH	SCALE 1" = 50'	ZONING M-2	G.L.W. FILE No. 93-004
DRN.: ENB	DATE AUG. 1993	TAX MAP No. 43	SHEET 1 OF 1
CHK.:			

SDP-94-18