APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE SYSTEMS. HOWARD COUNTY HEALTH DEPARTMENT

Joyce M Boyd [signature] 5/3/90
County Health Officer — Date

APPROVED: HOWARD COUNTY DEPT OF PLANNING & ZONING

[signature] 5.23.90
Director — Date

[signature] 5/29/9.
Chief, Division of Community Planning and Land Development — Date

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

James [signature] 4/30/90
Director — Date

[signature]
Chief Bureau of Engineering — Date

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 2-28-90

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 must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

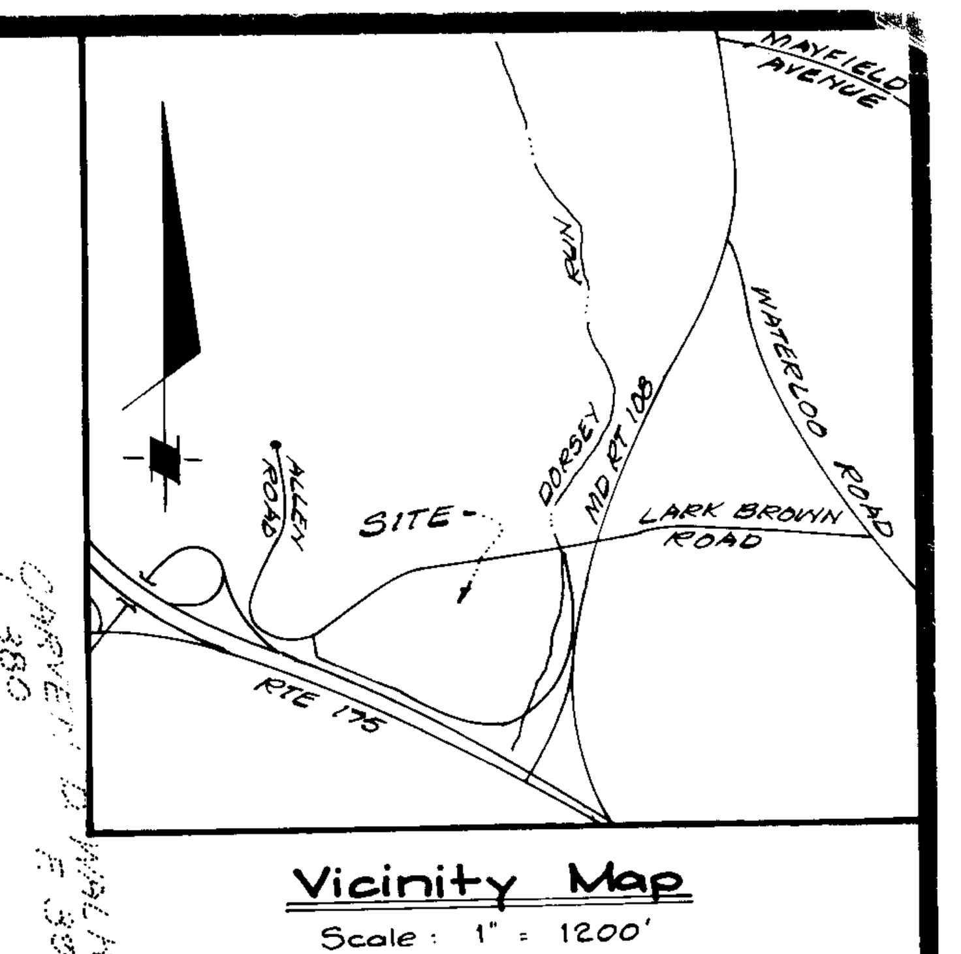
C.K. Gutschick [signature] 9-15-89
Date

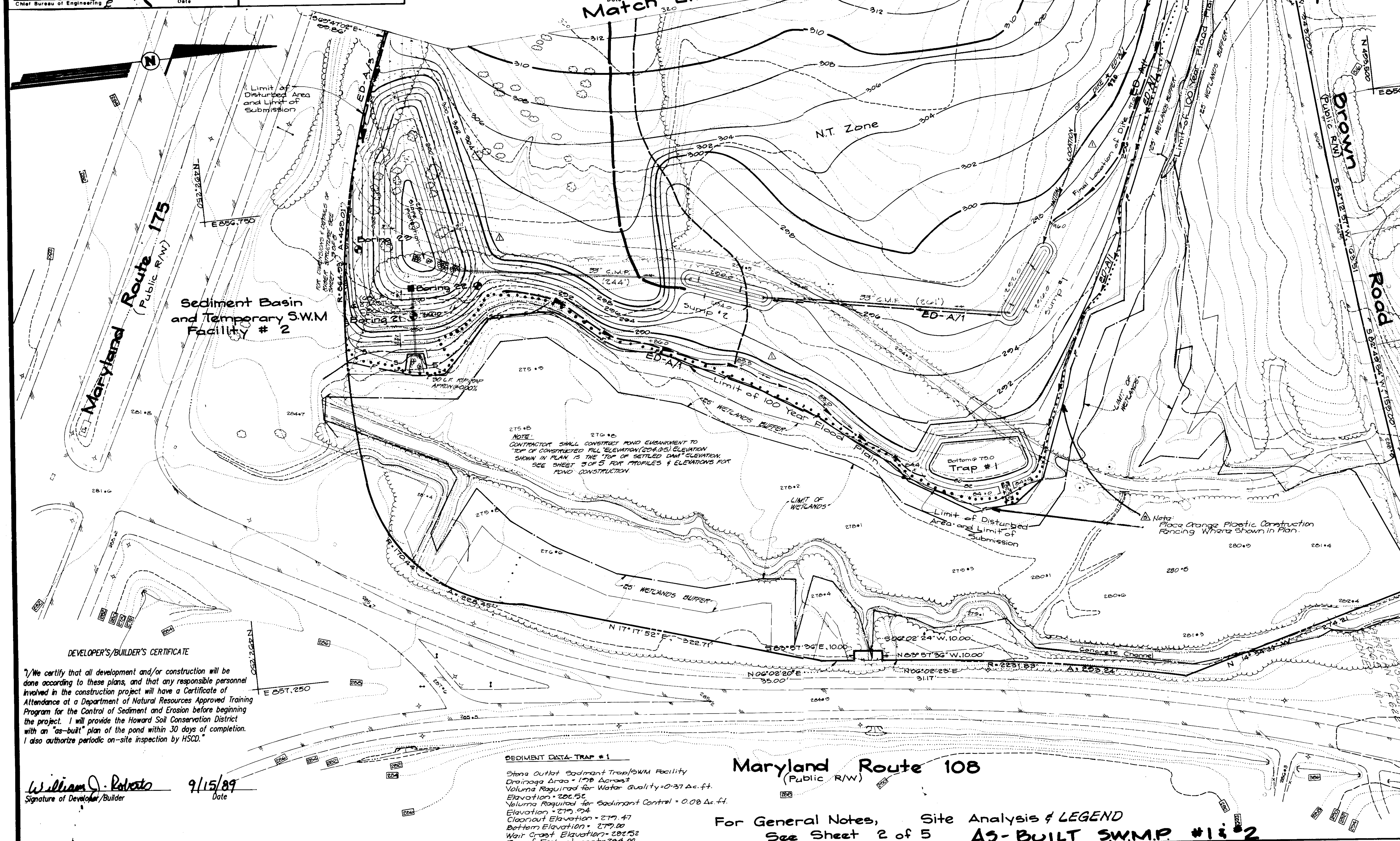
These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Zeker [signature] 4/2/90
Howard Soil Conservation District (C.S.) — 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.

James M. [signature] 4/2/90
U.S. Soil Conservation Service (C.S.) — Date





DEVELOPER'S/BUILDER'S CERTIFICATE

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William J. Roberts [signature] 9/15/89
Signature of Developer/Builder — Date

SEDIMENT DATA- TRAP #1

Stone Outlet Sediment Trap/SWM Facility
Drainage Area = 1.98 Acres±
Volume Required for Water Quality = 0.37 Ac.ft.
Elevation = 282.52
Volume Required for Sediment Control = 0.08 Ac.ft.
Elevation = 279.94
Cleanout Elevation = 279.47
Bottom Elevation = 279.00
Weir Crest Elevation = 282.52
Top of Embankment = 284.00

For General Notes, Site Analysis & LEGEND
See Sheet 2 of 5

AS-BUILT S.W.M.P. #1 & #2

SUBDIVISION NAME			SECT\AREA	LOT\PARCEL #
PLAT #	BLOCK #	ZONING	TAX MAP #	ELECT. DIST.	CENSUS TR.
WATER CODE			SEWER CODE	

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. C.K.G. — DRN. G.A.W. — CHK. C.K.G.

DATE	REVISION		BY	APP'R.
~~3/12/90~~	~~Add Slope Protection and Spot Shots and change 298 Contour~~	1	G.A.W.	
3/30/90	~~Shorten ... C-361 C-25 and Move Structure in S.W.M Facility #2~~	2	M.C.F.	
~~[illegible]~~	~~Add Orange Construction Fencing Note~~	3	M.C.F.	

PREPARED FOR:
Howard Research and Development Land Company
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044

~~Site Development Plan For Grading Only~~

Benson Business Center AS-BUILT
Section 1
Phase 202
6th Election District — Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1" = 50'	New Town & M-1	89-035
DATE	**TAX MAP No.**	**SHEET**
~~Sept. 1989~~	43/Par. 587 37/Par. 384 & 507	1 of 5

SDP-90-70

APPRO... WATER & PUBLIC SEWERAGE SYSTEMS.
HOWARD COUNTY HEALTH DEPARTMENT

Jorge M Buzaglo Lopez & Sr. — 5/3/90
County Health Officer — Date

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

5.23.90
Director — Date

5/2/90
Chief, Division of Community Planning and Land Development — Date

APPROVED: FOR PUBLIC WATER & PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

4/30/90
Director — Date

4-30-90
Chief Bureau of Engineering — Date

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 2-28-90

GENERAL NOTES:

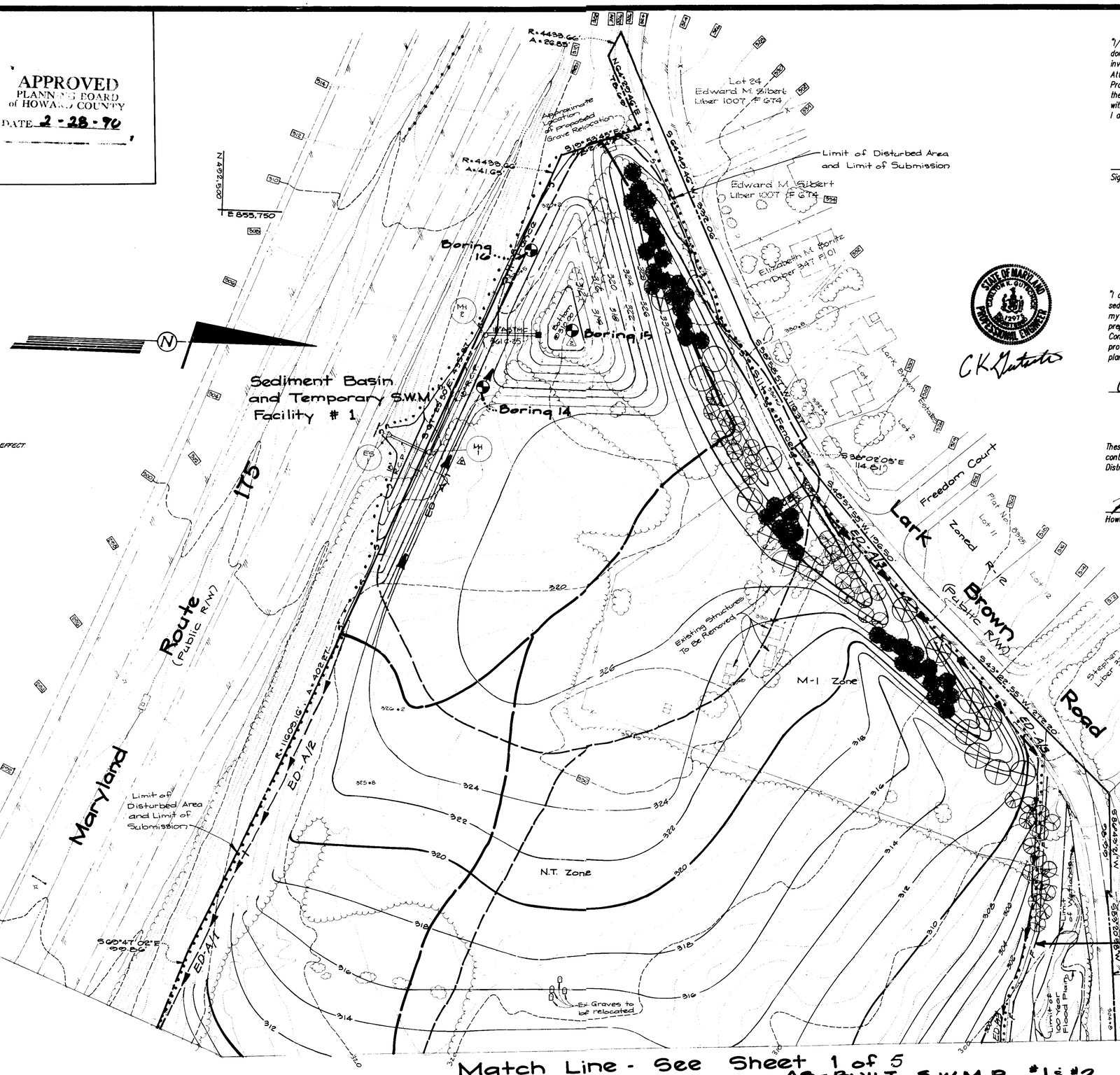
1. Zoning: New Town and M-1
2. Proposed Land Use: Open Space and Commercial
3. Topography shown hereon is from aerial maps flown in 1985 prepared by Photo-Science, Inc.
4. Minimum building setback restrictions from the property lines and right-of-way of any public road will be in accordance with the final development plan criteria phase 202.
5. Public water and public sewer will be utilized for future buildings.
6. Contours are at 2 foot intervals.
7. Floodplain shown hereon is from the Dorsey Run flood plain study developed by Whitman Requart & Associates, May 1989.
8. Wetlands shown hereon are as per ~~1987~~ delineation by Kidde Consultants, Inc. CHANGES FROM THE 11/87 DELINEATION ARE DUE TO NEW WETLAND ESTABLISHMENT CRITERIA NOW IN EFFECT.
9. See DPZ file: S-88-114, P.B. 242
10. DEED REFERENCE: L. 1935 F. 193.

SITE ANALYSIS:

1. Area of site: 28.7 Ac. (26.2 NT/2.5 M-1)
2. No structures are proposed on this plan.
3. Area of Limit of Submission = 18.8 Ac.

PLANT SCHEDULE

SYMBOL	NAME	SIZE	QTY.
	LIRIODENDRON TULIPIFERA/ TULIP POPULAR ALT. FRAXINUS ASH	2½"-3" CAL. 12'-14'	12
	PYRUS C. REDSPIRE REDSPIRE PEAR	2½"-3" CAL. 12'-14'	4
	PINUS STROBUS	10'-12'	37
	PINUS SYLVESTRIS/PINUS RESINOSA OR PICEA ABIES	10'-12'	37



Match Line - See Sheet 1 of 5

DEVELOPER'S/BUILDER'S CERTIFICATE

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William J. Roberts — 9/15/89
Signature of Developer/Builder — Date

ENGINEER'S CERTIFICATE

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C.K. Gutschick — 7-15-89
Date

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

Robert W. Zeiler (C.S.) — 4/2/90
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.

James M. Fitch (C.S.) — 4/6/90
U.S. Soil Conservation Service — Date

LEGEND

- EXIST. CONTOUR
- PROP. CONTOUR
- LIMIT OF DISTURBANCE
- S — S — S SILT FENCE
- EDA/2 EARTH DIKE
- S.C.E. STABILIZE CONSTRUCTION ENTRANCE
- PROP. DRAINAGE DIVIDE
- EXIST. DRAINAGE DIVIDE
- P CONSTRUCTION FENCING

GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866
TELEPHONE: (301) 421-4024 | DES. DEV. | DRN. G.A.W. | CHK. C.K.G.

DATE	REVISION	BY	APP'R.
Jan. 1, '90	Redesign Pond #1 in order to Manage 10 Yr. Storm / Redesign Inlet Ex. Culvert	DEV/HK	
Feb. 5, '90	Relocate Pond #1 to Northwest Corner from Pond to Ex. Culvert, Revise Grading, Wetlands.	DEV/MCF	
Mar. 12, 90	Revise Landscaping Along Lark Brown Road. Revise Inlet Structure	G.A.W.	
~~Mar. 29, 90~~	Add Orange Construction Fencing Note	~~G.A.W.~~	

PREPARED FOR:
Howard Research and Development Land Company
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044

AS-BUILT S.W.M.P #1 & #2
~~Site Development Plan For Grading Only~~

Benson Business Center

Section 1
Phase 202
6th Election District
AS-BUILT
Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1" = 50'	New Town & M-1	89-035
DATE	TAX MAP No.	SHEET
~~Sept. 1989~~	43/Par. 587 37/Par. 384 & 577	2 of 5

SDP-90-70

Approved: Water And Public Sewerage Systems, Howard County Health Dept.

Jayne M Boyd Lindsay for 5/3/90
County Health Officer Date

Approved: Howard County Department of Planning & Zoning

5.23.90
Planning Director Date

5/24/90
Chief Division of Community Planning and Land Development Date

Approved: For Public Water And Public Sewerage, Storm Drainage Systems And Public Roads, Howard County Department of Public Works.

4/30/90
Director Date

4-30-90
Chief Bureau of Engineering Date

APPROVED
HOWARD SOIL CONSERVATION DISTRICT
DATE 2-28-90

DEVELOPER'S/BUILDER'S CERTIFICATE

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William J. Rouse Jr. 11-5-89
Signature of Developer/Builder Date

ENGINEER'S CERTIFICATE

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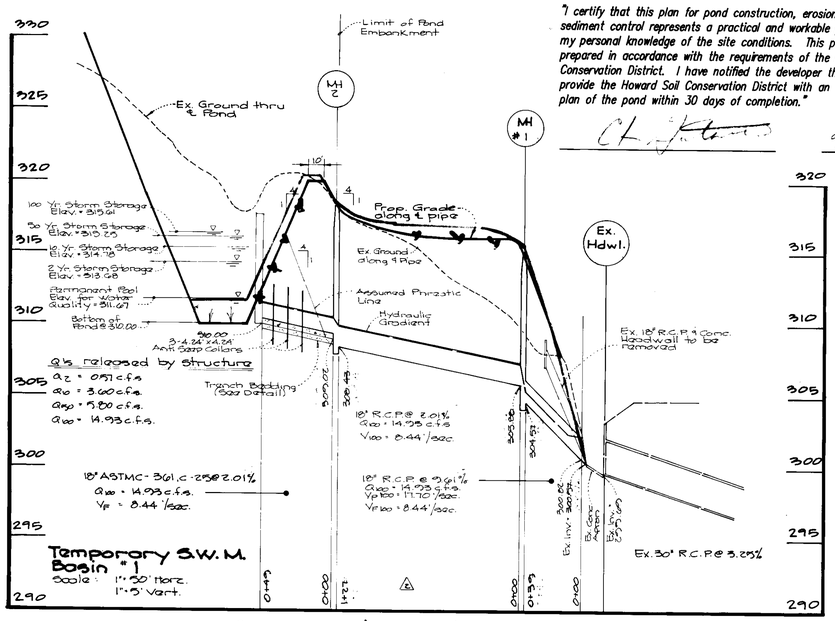
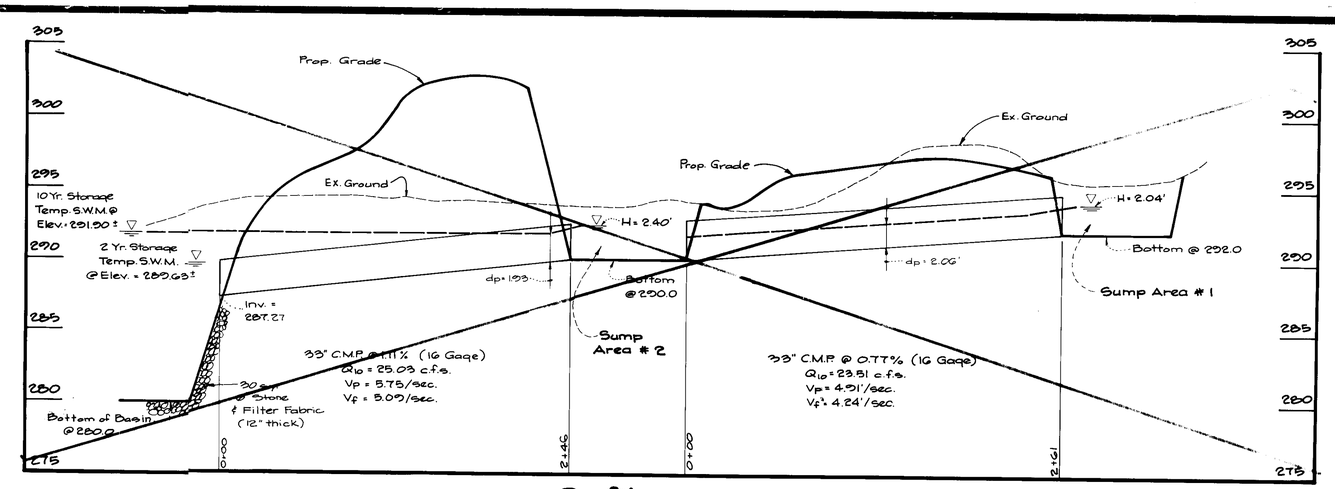
9-15-89
Date



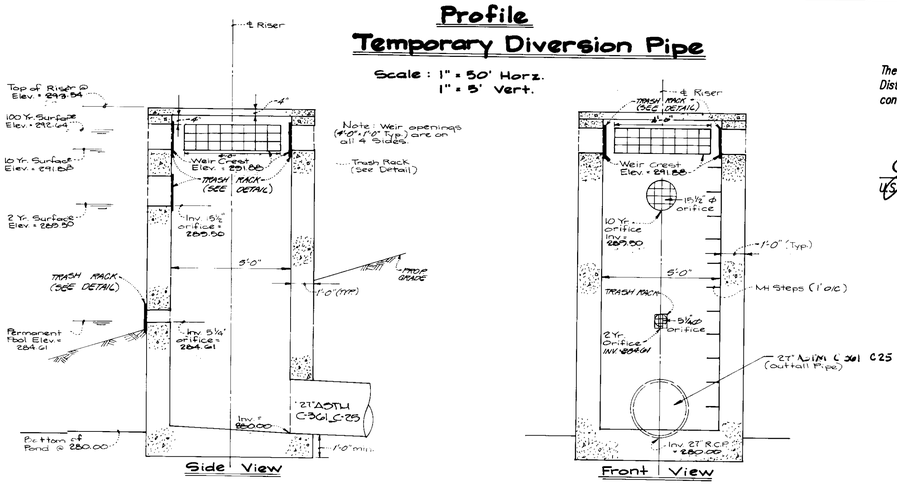


Profile
Temporary Diversion Pipe

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

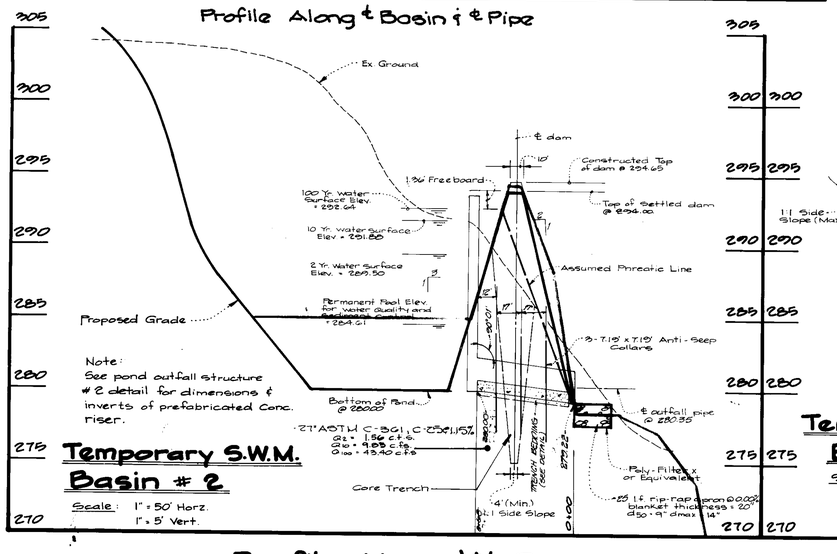
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

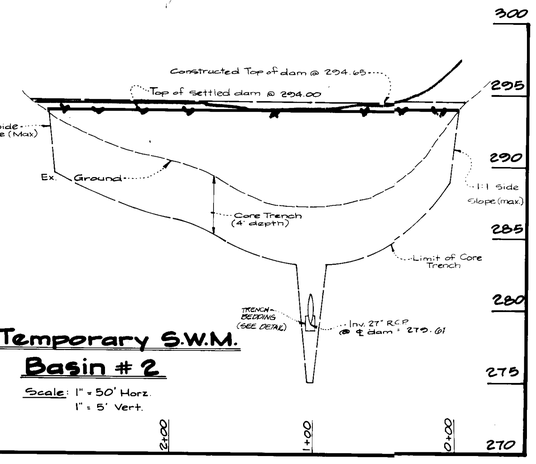
James M. Helm (GS) 4/2/90
U.S. Soil Conservation Service (G.S.) Date

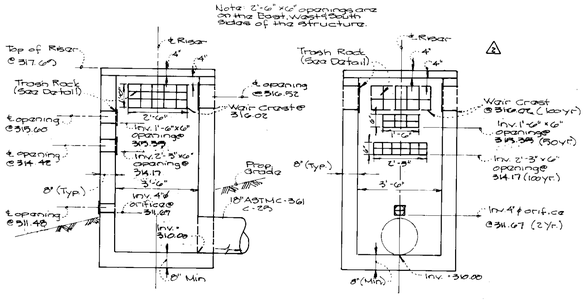


These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Zieber (GS) 4/2/90
Howard Soil Conservation District Date







AS-BUILT

Profile Along '℄' Basin

Profile Along '℄' Dam

GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD 20866
TELEPHONE (301) 421-4024 | DES. D.E.V. | DRN. G.A.W. | CHK. C.K.G.

DATE	REVISION	BY	APP'R.
Jan 4, '90	⚠ Redesign Pond #1 to Manage 10 Yr. Storm Redesign Structure #1 and Add trash Racks	DEV/HK	
Feb 5, '90	⚠ Relocated Pond #1 to Northwest corner, Design Storm Drain outfall & Riser Structure	DEV/MCP	

PREPARED FOR
Howard Research and Development Land Company
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044

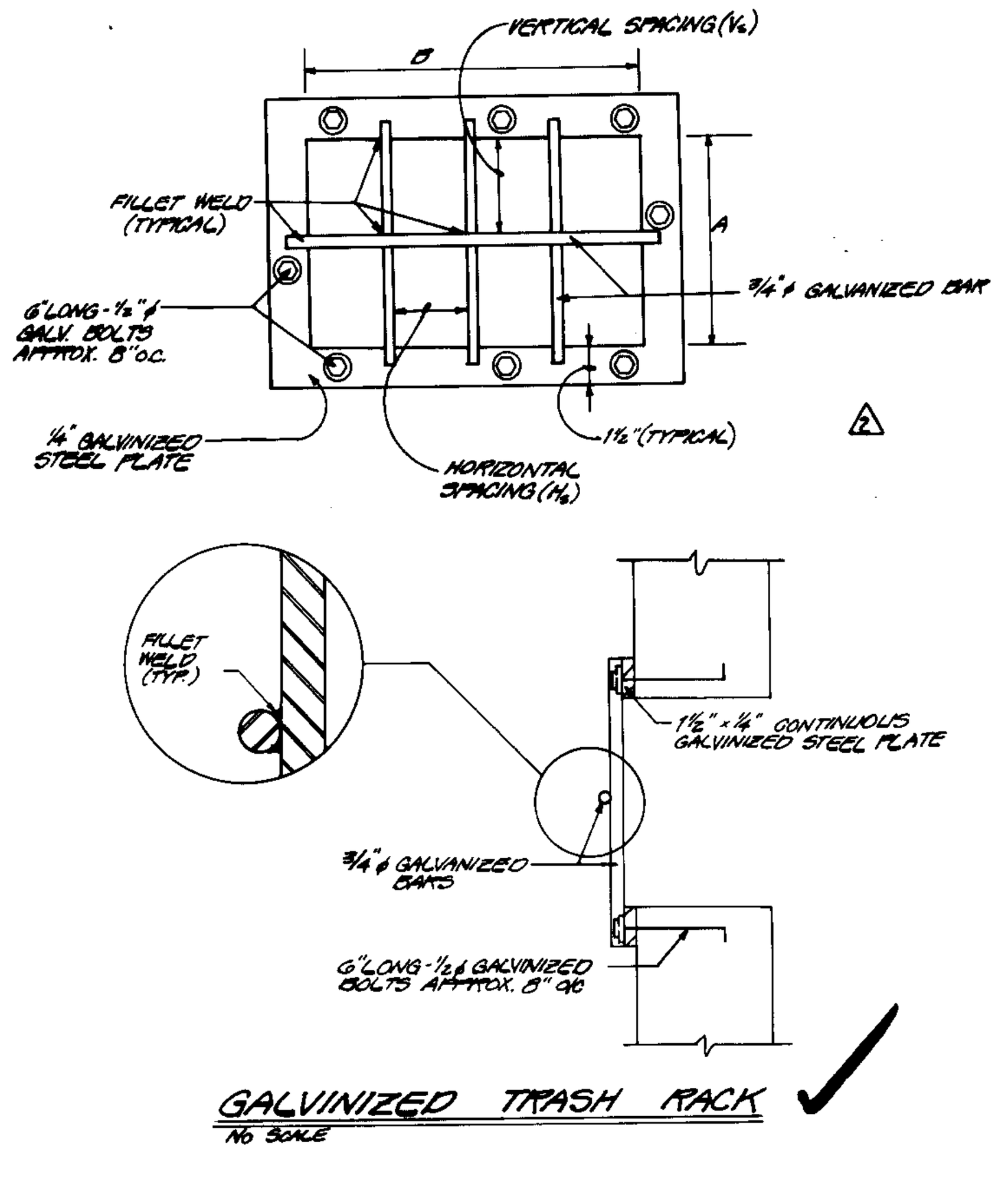
Storm Water Management Profiles and Details
Benson Business Center
Section 1
Phase 2&2 BUILT
6th Election District Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
AS SHOWN	New Town & M-1	89-035
DATE	TAX MAP No.	SHEET
Sept 1989	43/Par. 587 37/Par. 384 & 587	3 of 5

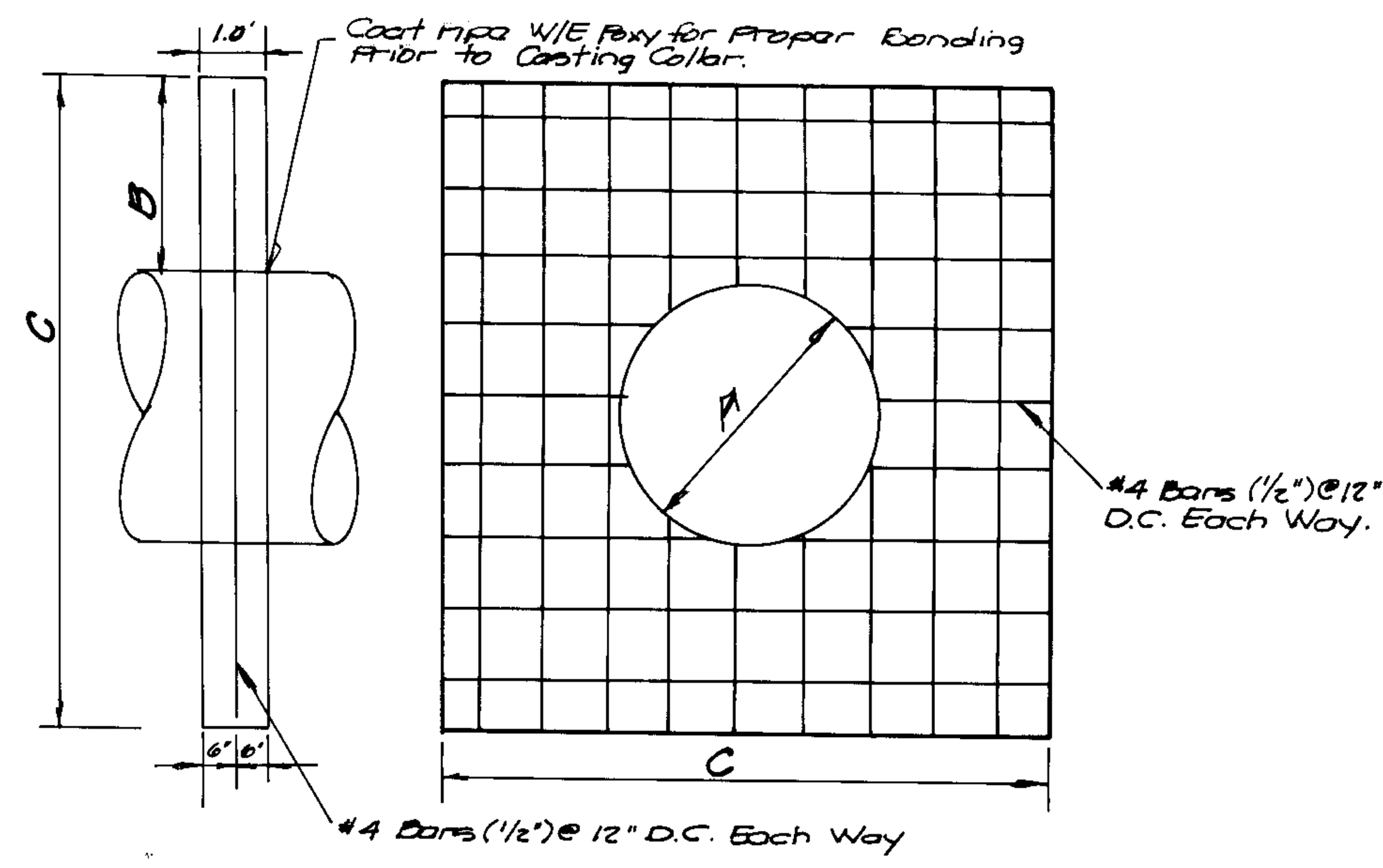
SDP-90-70

ANTI-SEEP COLLAR DATA

STORMWATER MANAGEMENT FACILITY	A	B	C
@ DESIGN POINT #1	18'	1.57'	4.24'
@ DESIGN POINT #2	27'	2.47'	7.19'



GALVINIZED TRASH RACK
NO SCALE



Anti Seep Collars
No Scale

TRASH RACK CHART

ORIFICE SIZE & TYPE	A	# OF BARS	V_s	B	# OF BARS	H_s	INNER FACE (I.F.) OUTER FACE (O.F.)	REMARKS
POND #1								
"Ø, LOW FLOW ORIFICE	4"	1	2"	4"	1	2"	O.F.	
2'-3"x6" 10-YR. ORIFICE	6"	1	3"	27"	5	4 1/2"	I.F.	
1-6"x6" 50 YR. ORIFICE	6"	1	3"	18"	2	6"	I.F.	
2'-6"x1'-0" 100 YR. ORIFICE	12"	2	4"	30"	4	6"	I.F.	3 REQUIRED
POND #2								
5 1/4" LOW FLOW ORIFICE	6"	2	2"	6"	2	2"	O.F.	
15 1/2" 10 YR. ORIFICE	16"	3	4"	16"	3	4"	I.F.	
4'x1' 100 YR. ORIFICE	12"	2	4"	48"	7	6"	I.F.	4 REQUIRED

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William J. Roberts 9/15/89
Signature of Developer/Builder — Date

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

Robert W. Zieker 4/2/90
Howard Soil Conservation District (GS) — Date

Approved: for Public Water And Public Sewerage Systems, Howard County Health Department.
5/3/90
County Health Officer — Date

Approved: Howard County Dept. of Planning & Zoning
5.23.90
Director — Date
5/21/9.
Chief, Division of Community Planning and Land Development — Date

Approved: for Public Water And Public Sewerage, Storm Drainage Systems And Public Roads Howard County Department of Public Works.
4/30/90
Director — Date
4.30.90
Chief Bureau of Engineering — Date

ENGINEER'S CERTIFICATE

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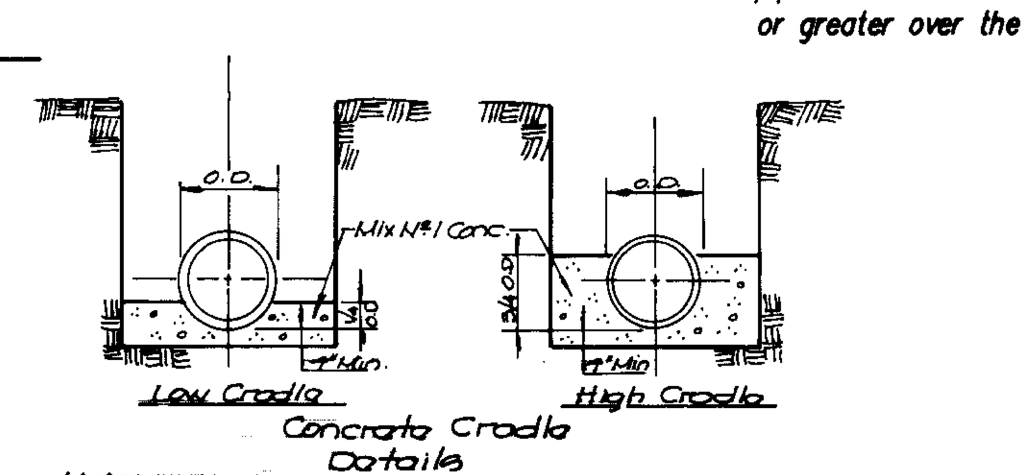
C K Sutton 9-15-89
Date

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.

James M. Uhler 4/2/90
U.S. Soil Conservation Service (GS) — Date

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 2-28-90



Concrete Cradle Details
Notes:
Pour Conc. to Undisturbed Earth Remove Sheeting Before Pouring Concrete or leave Lower Portion of Sheeting in Place.

CONCRETE CRADLE
NO SCALE

NOTE: LOW CRADLE TRENCH BEDDING IS TO BE USED FOR 15" & 21" RCP. SEE Ho. Co. DETAIL G 2.02 FOR SPECIFICATIONS

STORM WATER MANAGEMENT POND NOTES

I. SITE PREPARATION:

A. Areas designated 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 no steeper than 1:1.

B. Areas to be covered by pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, logs, and stumps shall be cut approximately level with the ground surface.

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

II. EARTH FILL

A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

B. PLACEMENT: Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

C. 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 not 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 material shall contain sufficient moisture so that the required degree of compaction can be obtained with the equipment used. Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer. It is recommended that the Core be constructed in 8" thick layers, each compacted to minimum of 95% of the maximum dry density determined by the standard moisture density relationship test (ASTM D-1557).

D. CUTOFF TRENCH: Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available on-site (or from an area designated on the plans) and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL:

Backfill material shall be of the type and quality 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 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 operate closer than four feet measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. PIPE CONDUITS: (all pipes shall be circular in cross-section)

A. 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 Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be placed with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Nexon, Plasti-Cote, Bloc-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.
MATERIALS: (Aluminized Steel Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-791 with watertight coupling bands or flanges.
MATERIALS: (Aluminum Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, and section, 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. 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 less than 9 and greater than 4.

2. CONNECTIONS: All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around where the pipe and riser are metal. Watertight coupling bands or flanges shall be used at all joints. 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.

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 provide adequate support.

4. LAYING PIPE: The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.

5. Backfilling shall conform to structural backfill as shown above.

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

B. REINFORCED CONCRETE PIPE:

1. MATERIALS: Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. An approved equivalent is AWWA Specification C-301.

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", 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.

4. Backfilling shall conform to structural backfill as shown above.

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

C. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE:

A. MATERIALS:
1. CEMENT – Normal Portland cement shall conform to latest ASTM Specification C-150.
2. WATER – The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

V. A. (continued)
3. SAND – The sand used in concrete shall be clean, hard, strong, and durable, and shall be well graded with 100% passing a one quarter inch sieve. Limestone sand shall not be used.
4. COARSE AGGREGATE – The coarse aggregate shall be clean, hard, strong and durable, and free from clay and dirt. It shall be well graded with a maximum size of one-and-one-half (1-1/2) inches.
5. REINFORCING STEEL – The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

B. DESIGN MIX – The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U.S. Gals. of water/94-pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of the aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

C. MIXING – The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixture and of the introduction of the materials including water, into the mixer. Water shall be added prior to, during, and following the mixer-changing operations. Excessive overmixing requiring the addition of water to preserve concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

D. FORMS – The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They should be mortar-tight and constructed so they can be removed without hammering or prying against the concrete. The inside of the forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed. Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

E. REINFORCING STEEL – All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

F. CONSOLIDATION – Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners and around embedded items.

G. FINISHING – Defective concrete, honey combed areas, voids left by removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry patching mortar.

H. PROTECTION AND CURING – Exposed surfaces of the concrete shall be protected from the direct rays of the sun for at least three days. All concrete shall be kept continuously moist for at least ten days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compound may also be used.

I. PLACING TEMPERATURE – Concrete may not be placed at temperature below 37°F with temperature falling, or 34°F with the temperature rising.

VI. STABILIZATION

All borrow areas shall be graded to provide 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 (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

VII. 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.

DATE	REVISION	BY	APP'R.
Jan 4, '90	1 Add Trash Rack Detail & Dimensions	DEV/HK	
Feb 5, '90	2 Revised Trash Rack Dimensions And Pond #1 Anti-Seep Collar Dimensions.	DEV/MCF	

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. DEV | DRN. HK | CHK. CKG

PREPARED FOR:
Howard Research and Development Land Company
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044

STORMWATER MANAGEMENT NOTES & DETAILS
Benson Business Center
Section 1
Phase 202
AS-BUILT
6th Election District — Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
AS SHOWN	New Town 4 M-1	89-035
DATE	TAX MAP No.	SHEET
Sept. 1989	43/Par. 587 37/Par. 5644 507	4 OF 5

SDP-90-70

SEQUENCE OF CONSTRUCTION ⚠

1. Obtain Grading Permit.
2. Place orange plastic snow fencing along wetland buffer. Only the areas adjacent to proposed grading shall be fenced.
3. Arrange an on-site pre-construction meeting with a sediment control inspector on-site in order to check placement of snow fence.
4. Special care shall be used to insure that no grading or disturbances takes place within the wetlands buffer or 100 year floodplain, whichever is more restrictive.
5. Install stone construction entrance.
6. Before any clearing and/or grubbing takes place on the site, only the work necessary to install earth dikes going to Sumps 1 and 2, along with the excavation of Sumps 1 and 2 shall be performed. Silt fence shall be placed downgrade of any disturbed area at the end of each work day. Earth dikes along Lark Brown Road will be placed as shown on this plan as labeled "initial location of dike".
7. Begin the excavation and installation of Sediment Basin 2.
8. Install 33" CMP from Sump 1 to Sump 2, and 33" CMP from Sump 2 to Sediment Basin 2.
9. Install Trap 1 and earth dikes directing runoff to Trap 1 at this time. Also install earth dike along southern property line going to Sediment Basin 2.
10. Install Sediment Basin 1.
11. Construct earth dikes directing flow to Sediment Basin 1 and also install remaining silt fence along Lark Brown Road on the west side of the construction entrance.
12. Clear, grub and rough grade site according to these plans. The perimeter dike along the Dorsey Run (northeast property) shall be constructed in the "final location" as shown on Sheet 1 of 5.
13. Stabilize all contributing areas in accordance to the Standards and Specifications. Upon approval of the sediment control inspector, remove all sediment control devices. The sediment basins and sediment trap will remain.

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 Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will 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 inspection by HSCD."

William J. Roberts — 3/16/90
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 must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

C. K. Gutschick — 3/16/90
Date

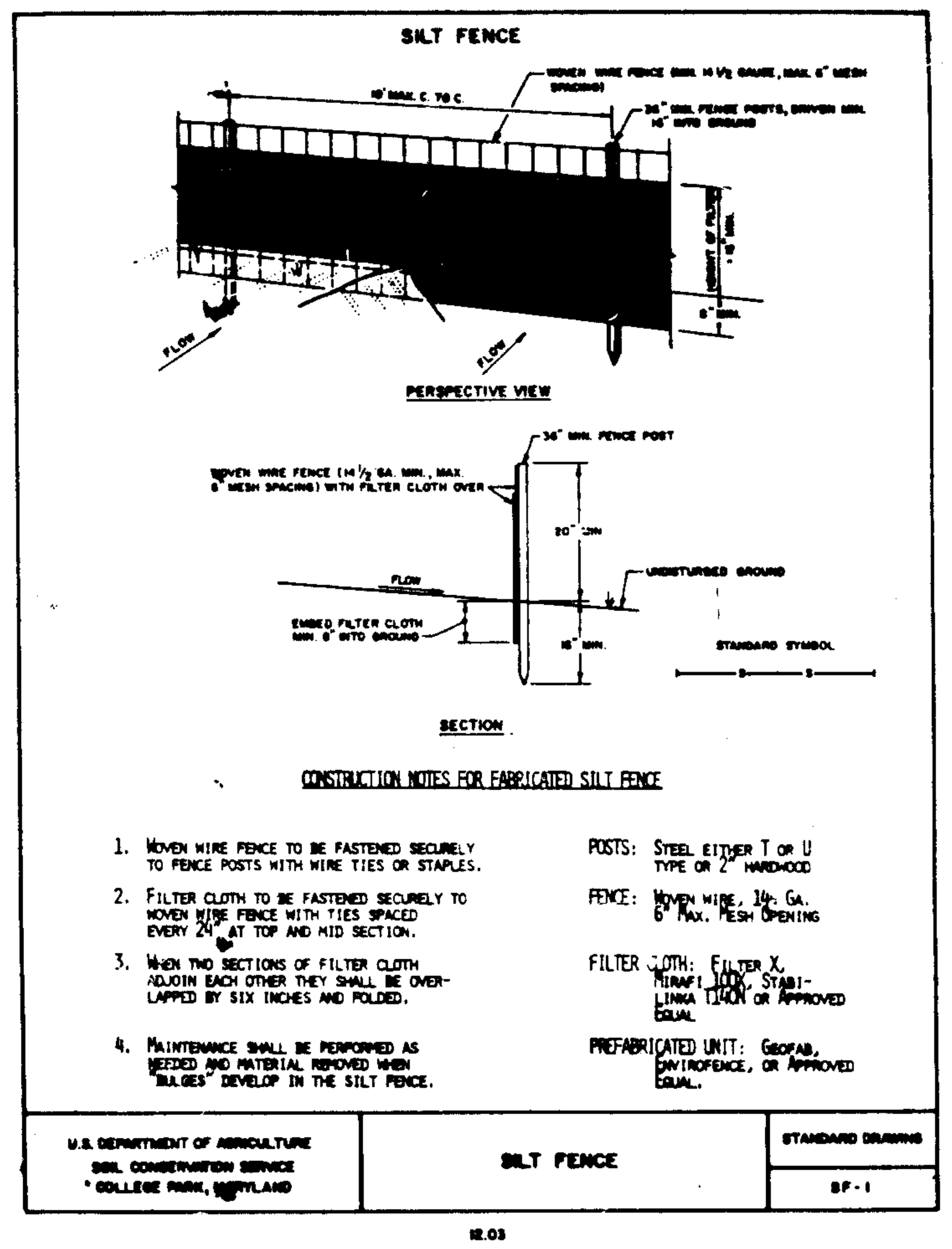
3-16-90

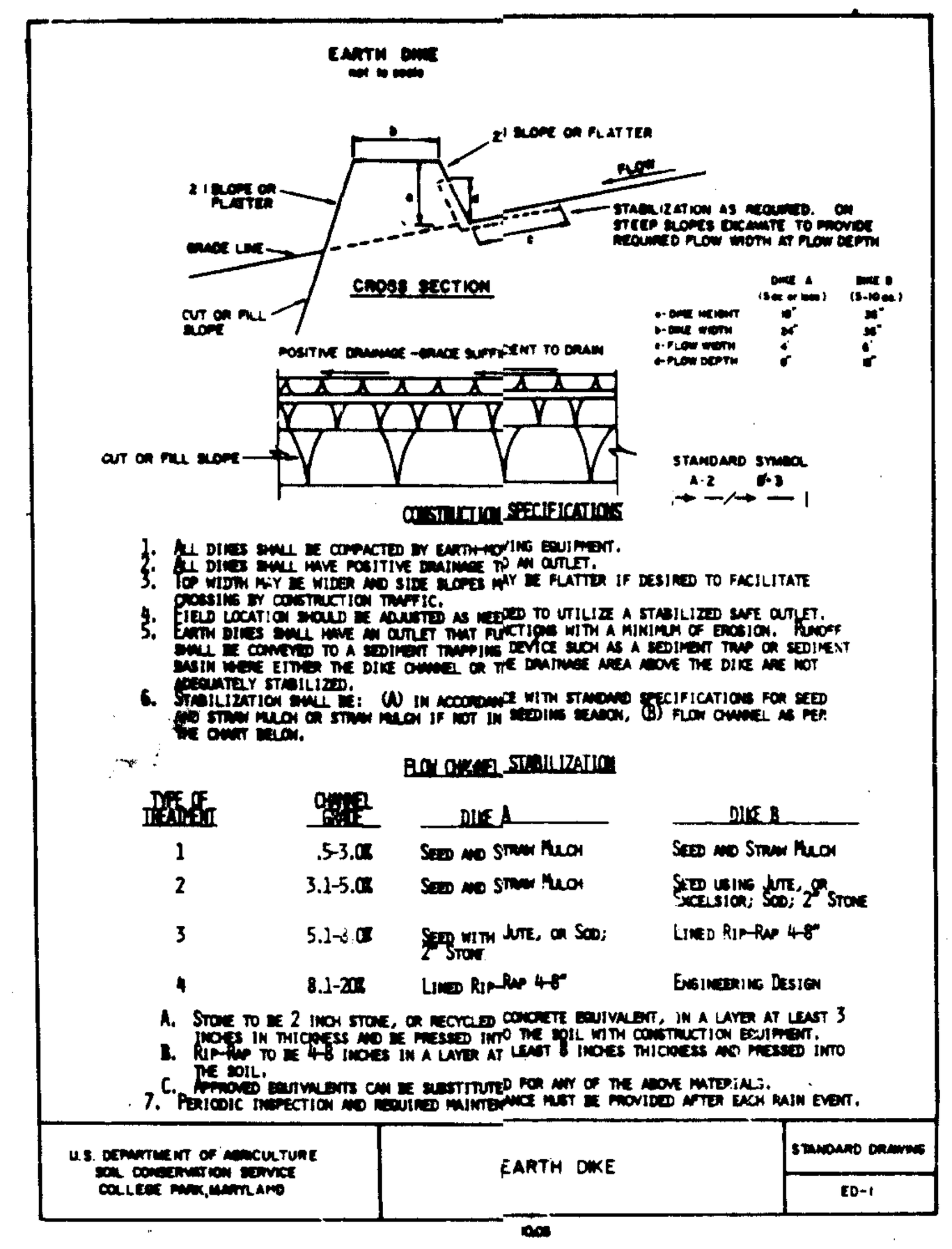
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

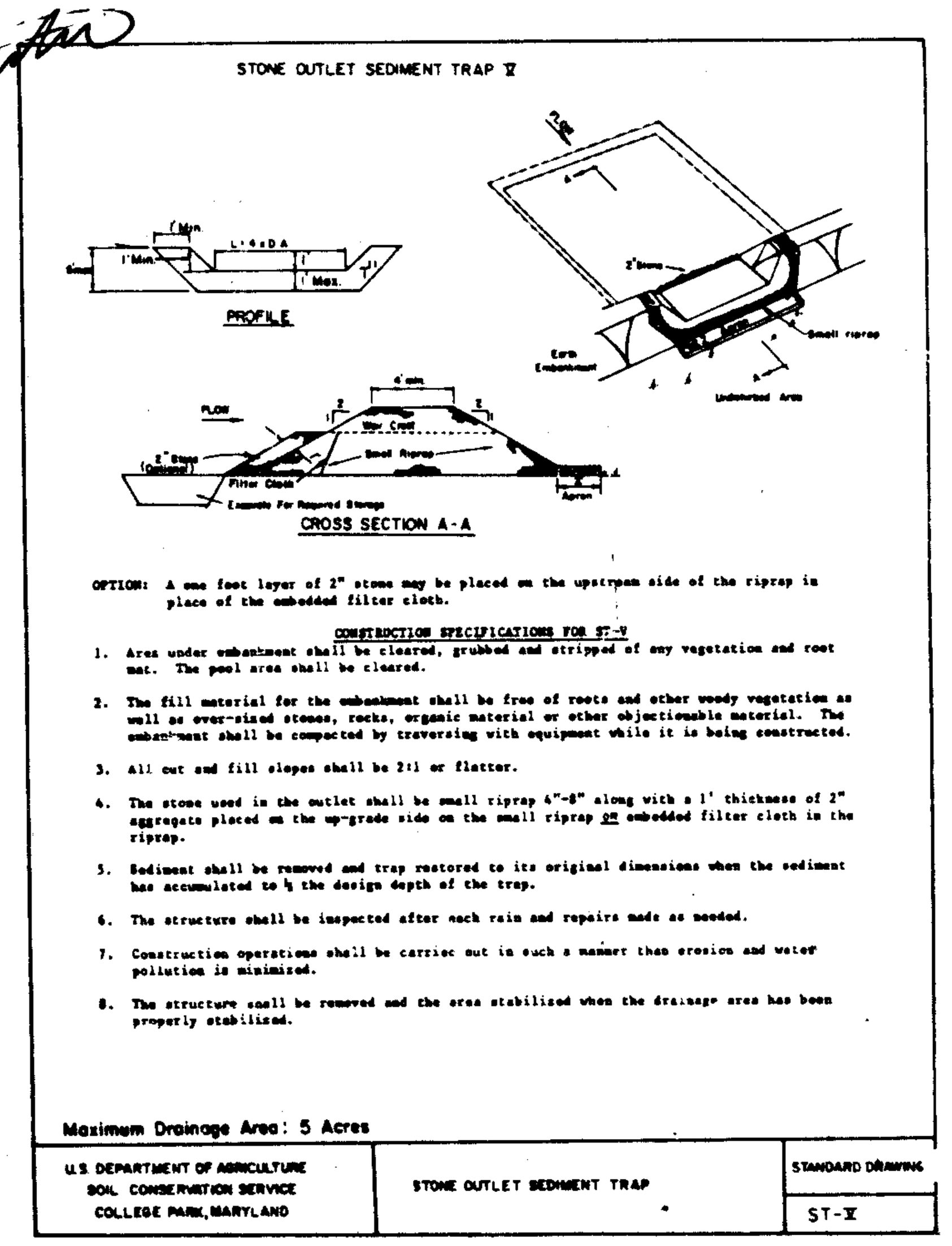
James M. Hiller (S.C.S.) — 4/2/90
US Soil Conservation Service — Date

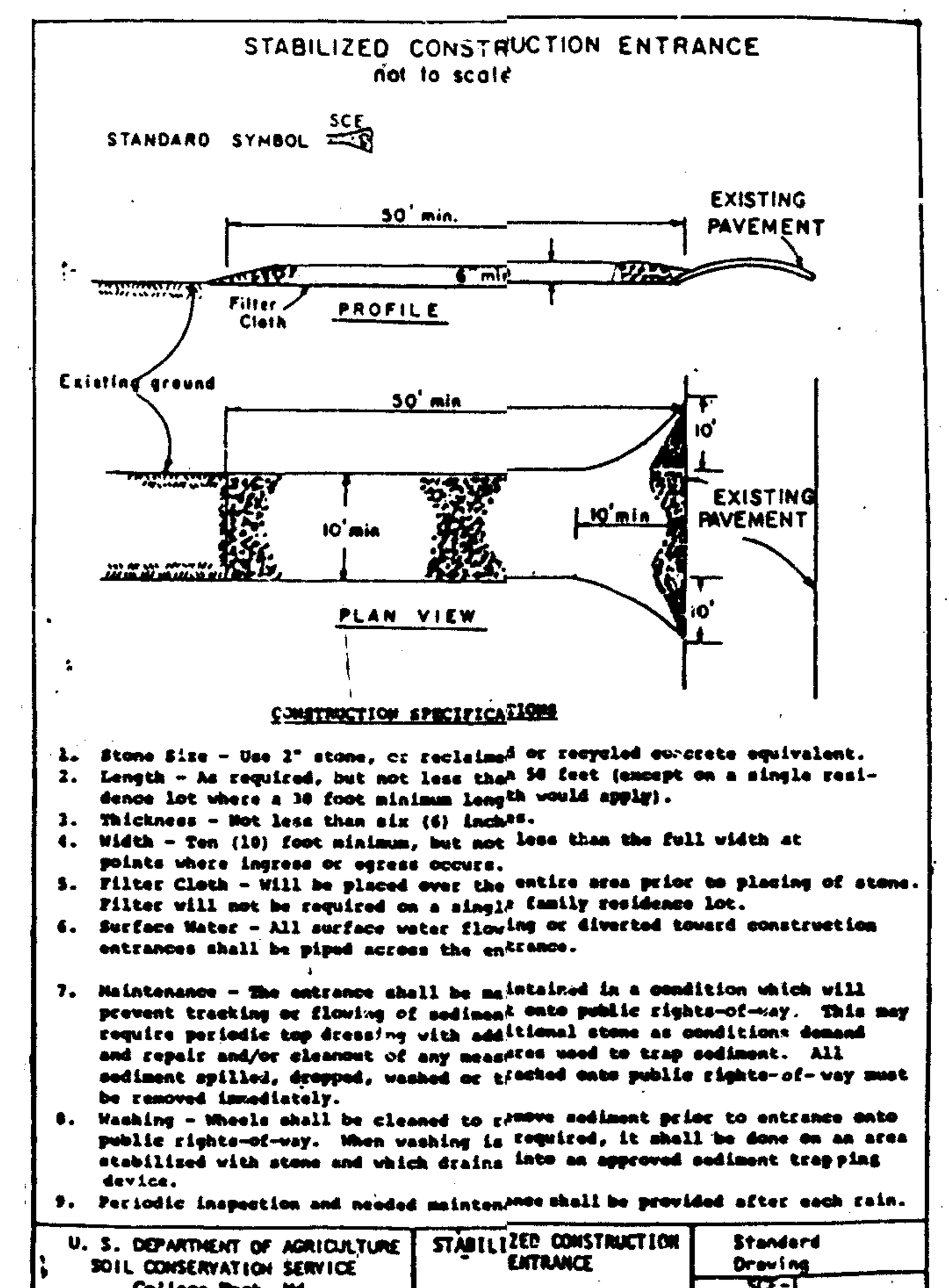
These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Ziehm — 4/2/90
Howard Soil Conservation District — Date









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: 28.7 Acres
   Area Disturbed: 18.8 Acres
   Area to be roofed or paved: 0 Acres
   Area to be vegetatively stabilized: 18.8 Acres
   Total Cut 74,000 Cu. Yds.
   Total Fill 74,000 Cu. Yds.
   Off-Site waste/borrow area location - N/A
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.

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 unreaform 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.

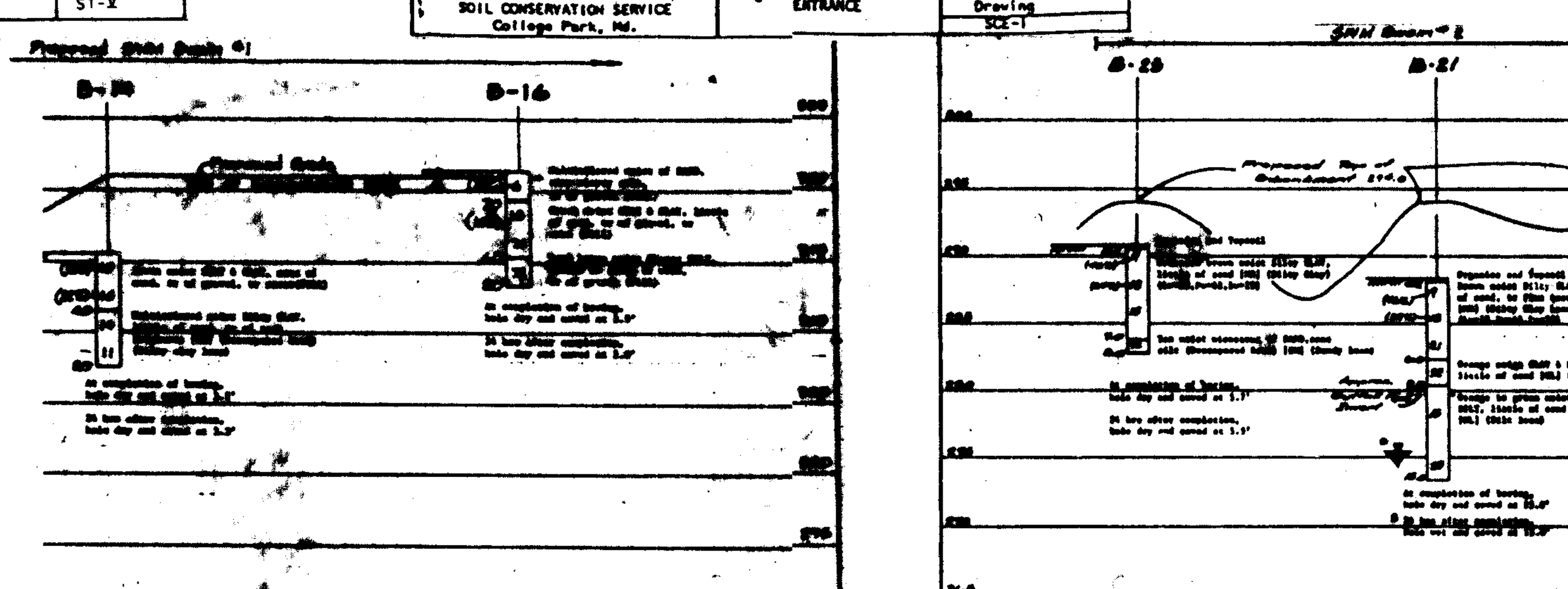
Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use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

Note: NO AS-BUILT INFORMATION SHOWN ON THIS SHEET.

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT
County Health Officer — 5/3/90 — Date
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING
Director — 5.28.90 — Date
Chief, Division of Community Planning & Land Development — 5/21/90 — Date
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Director — 4/30/90 — Date
Chief, Bureau of Engineering — 4-30-90 — Date

APPROVED
PLANNING BOARD
of HOWARD COUNTY
DATE 2-28-90



Section B-B

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. D.E.V DRN. HK CHK. C.K.G

DATE	REVISION	BY	APP'R.
Jan. 4, 90 ⚠	Revise Construction Sequence according to County comment	DEV	

PREPARED FOR
Howard Research and Development Land Company
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044

CONSTRUCTION SEQUENCE, SEDIMENT & EROSION NOTES & DETAILS

Benson Business Center
Section 1
Phase 202
AS-BUILT
6th Election District — Howard County, Maryland

SCALE: AS SHOWN
ZONING: New Town & M-1
G.L.W. FILE No.: 89-035
DATE: MAY 1992
TAX MAP No.: 43/Par 551
SHEET: 5 OF 5

SDP-90-70