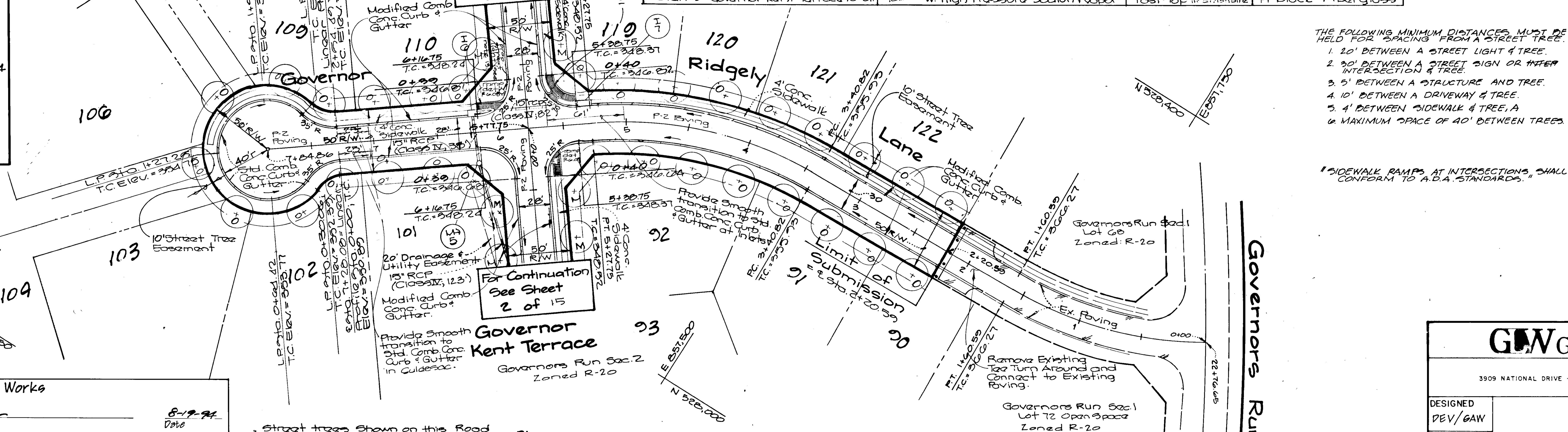
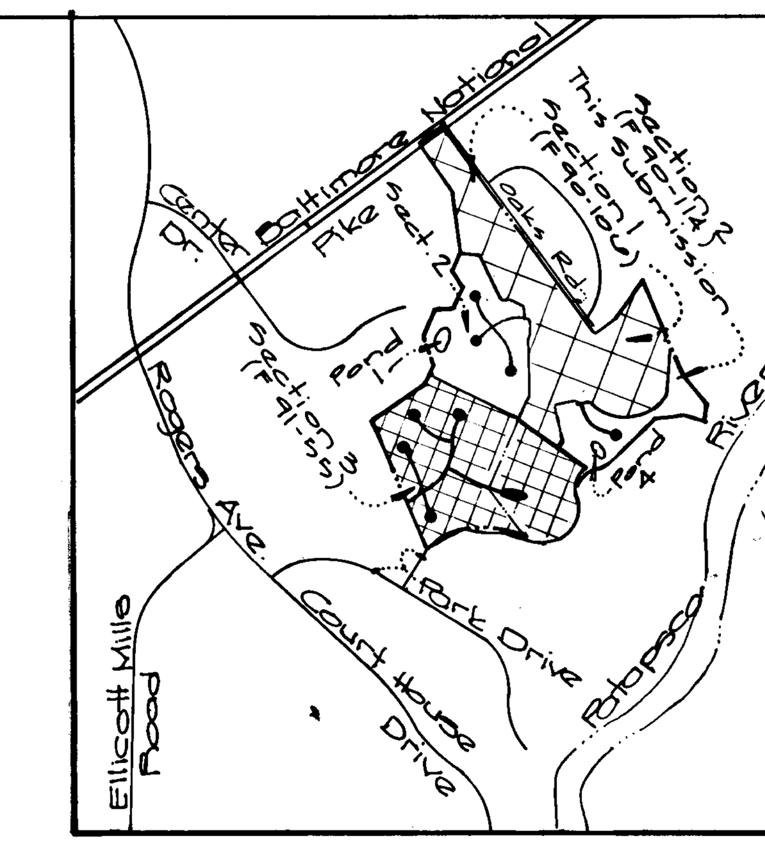
Benchmarks

B.M. # 1 (See Sheet 4 of 15)
Traverse Station 928
Rebar Set
N 528,151.476
E 856,639.196 Elev. = 295.23

B.M. # 2 (See sheet 6 of 15)
Traverse Station 907
Rebar Set
N 527,341.767
E 859,025.283 Elev. = 366.84

Street Light Schedule			
Location	Lamp Type	Mounting	Pole Type
℄ Sta. 38+00 Governors Run 18' Lt.	100 - Watt High Pressure Sodium Vapor	Post top traditionaire	14' Black - Fiberglass
℄ Sta 34+85 Governors Run 17 Rt.	100 - Watt High Pressure Sodium Vapor	Post top traditionaire	14' Black - Fiberglass
℄ Sta. 0+30 Governor Thomas Ln 18 Lt.	100 -W. High Pressure Sodium Vapor	Post-Top Traditionaire	14' Black - Fiberglass
℄ Sta. 3+7 Governor Thomas Ln 18' Lt.	100 -W. High Pressure Sodium Vapor	Post-Top Traditionaire	14' Black - Fiberglass
℄ Sta. 4+5 Governor Kent Terrace 18' Lt.	100 -W. High Pressure Sodium Vapor	Post-Top Traditionaire	14' Black - Fiberglass





THE FOLLOWING MINIMUM DISTANCES MUST BE HELD FOR SPACING FROM A STREET TREE:
1. 20' BETWEEN A STREET LIGHT & TREE.
2. 30' BETWEEN A STREET SIGN OR AFTER INTERSECTION & TREE.
3. 5' BETWEEN A STRUCTURE AND TREE.
4. 10' BETWEEN A DRIVEWAY & TREE.
5. 4' BETWEEN SIDEWALK & TREE, A
6. MAXIMUM SPACE OF 40' BETWEEN TREES.

"SIDEWALK RAMPS AT INTERSECTIONS SHALL CONFORM TO A.D.A. STANDARDS."

. Street trees shown on this Road Drawing are to be located within a 10' Easement along the Right-of-Way Established in a note on Record Plat# . This Easement is for the planting and Maintenance of Street trees.

Plan
1" = 50'

Approved: Department of Public Works

Chief, Bureau of Highways — 8-19-94 Date

Chief, Bureau of Engineering — 8/24/94 Date

Chief, Land Development — 8/24/94 Date

Approved: Howard County Department of Planning & Zoning

Chief, Division of Land Development & Research — 9/2/94 Date

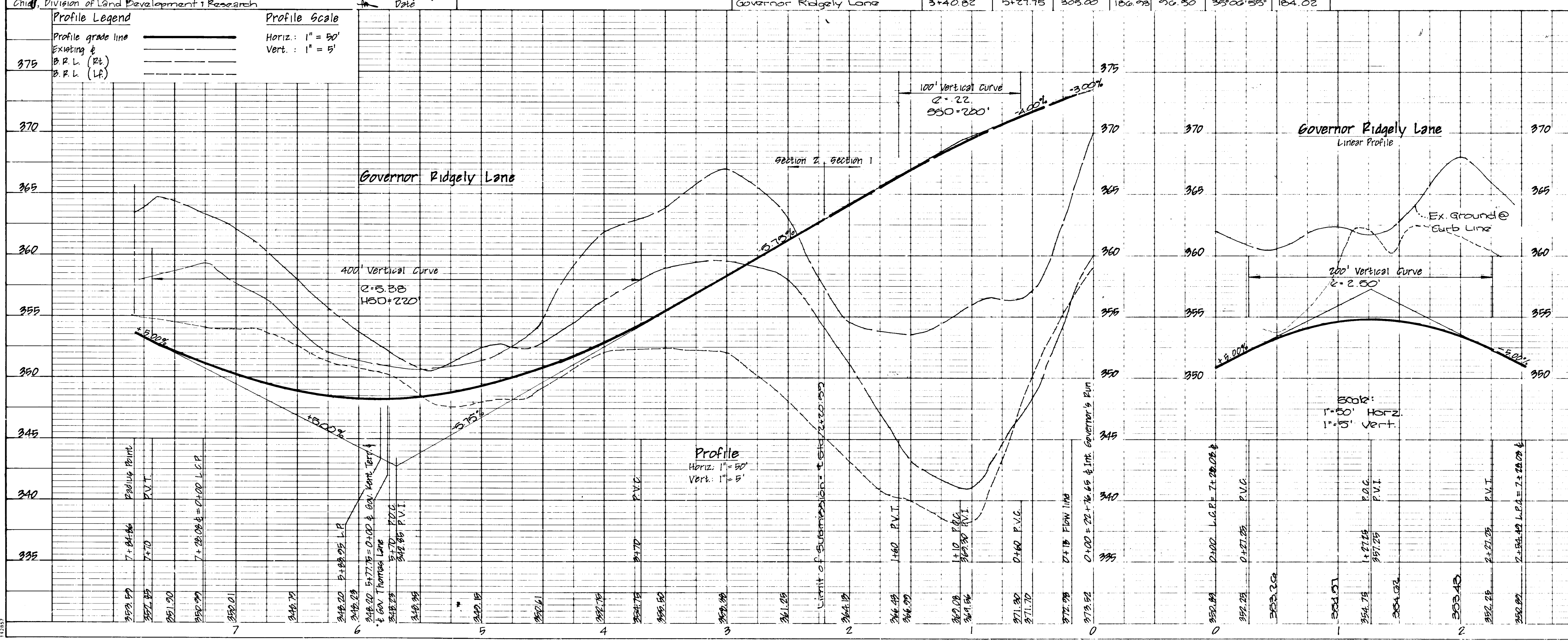
℄ Curve Data Chart							
Road Name	P.C. Sta.	P.T. Sta.	Radius	Arc	Tangent	Δ	Chord
Governor Ridgely Lane	3+40.82	5+27.75	305.00	186.98	96.50	35°06'55"	184.02

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

DESIGNED DEV/GAW	Road Construction Plans Governors Run Section 2 Lots 74-130 2ND Election District Howard County, Maryland	SCALE As Shown
DRAWN DLA/MCF		DRAWING 1 of 15
CHECKED CKG		
DATE July 1994	owner/developer: Governors Run Communities, Inc. % Greenebaum & Rose Asso., Inc. Suite 410 Woodholme Center 1829 Reisterstown Road Baltimore, Maryland 21208 (410) 484-4800	JOB NO. 86055

Profile Legend
Profile grade line
Existing ℄
B.R.L. (Rt.)
B.R.L. (Lf.)

Profile Scale
Horiz.: 1" = 50'
Vert.: 1" = 5'



Governors Run - Sheet Index

Note: The 404 permit # for this project is CENAB-OP-RP. (Governors Run) 89-02-266-3 and the 401 permit number is 90-WQ-0304R. The expiration date for the 404 permit is 2/8/96 and the expiration date for the 401 permit is 11/25/94.

1588

F-90-114

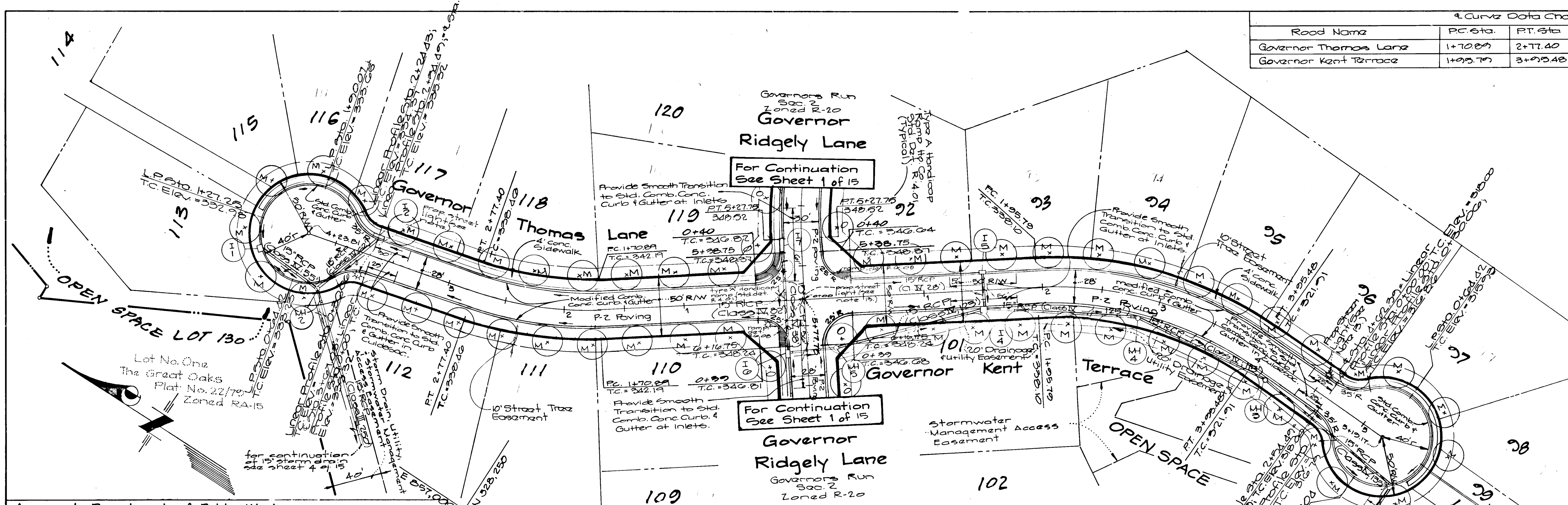
℄ Curve Data Chart							
Road Name	P.C. Sta.	P.T. Sta.	Radius	Arc	Tangent	Δ	Chord
Governor Thomas Lane	1+70.89	2+77.40	275.00'	106.15'	53.93'	22°11'30"	105.85'
Governor Kent Terrace	1+95.79	3+95.48	300.00'	199.69'	103.70'	38°08'18"	196.03'

THE FOLLOWING MINIMUM DISTANCES MUST BE HELD FOR SPACING FROM A STREET TREE.:

1. 20' BETWEEN A STREET LIGHT & TREE
2. 30' BETWEEN A STREET SIGN OR INTERSECTION & TREE.
3. 5' BETWEEN A STRUCTURE & TREE.
4. 10' BETWEEN A DRIVEWAY & TREE.
5. 4' BETWEEN SIDEWALK & TREE, AND.
6. MAXIMUM SPACE OF 40' BETWEEN TREES.

"SIDEWALK RAMPS AT INTERSECTIONS SHALL CONFORM TO A.D.A. STANDARDS."

Street trees shown on this Road Drawing are to be located within a 10' Easement along the Right-of-Way Established in a note on F-90-114 Record Plat* . This Easement is for the Planting and Maintenance of Street trees.



Approved: Department of Public Works

Chief, Bureau of Highways — Date 8-19-94

Chief, Bureau of Engineering — Date 8/24/94

Chief, Land Development Division — Date 8/24/94

Approved: Howard County Department of Planning & Zoning

Chief, Division of Land Development & Research — Date 9/2/94

Profile Legend

Profile grade line
Existing ℄
B.R.L. (Rt.)
B.R.L. (Lf.)

Profile Scale

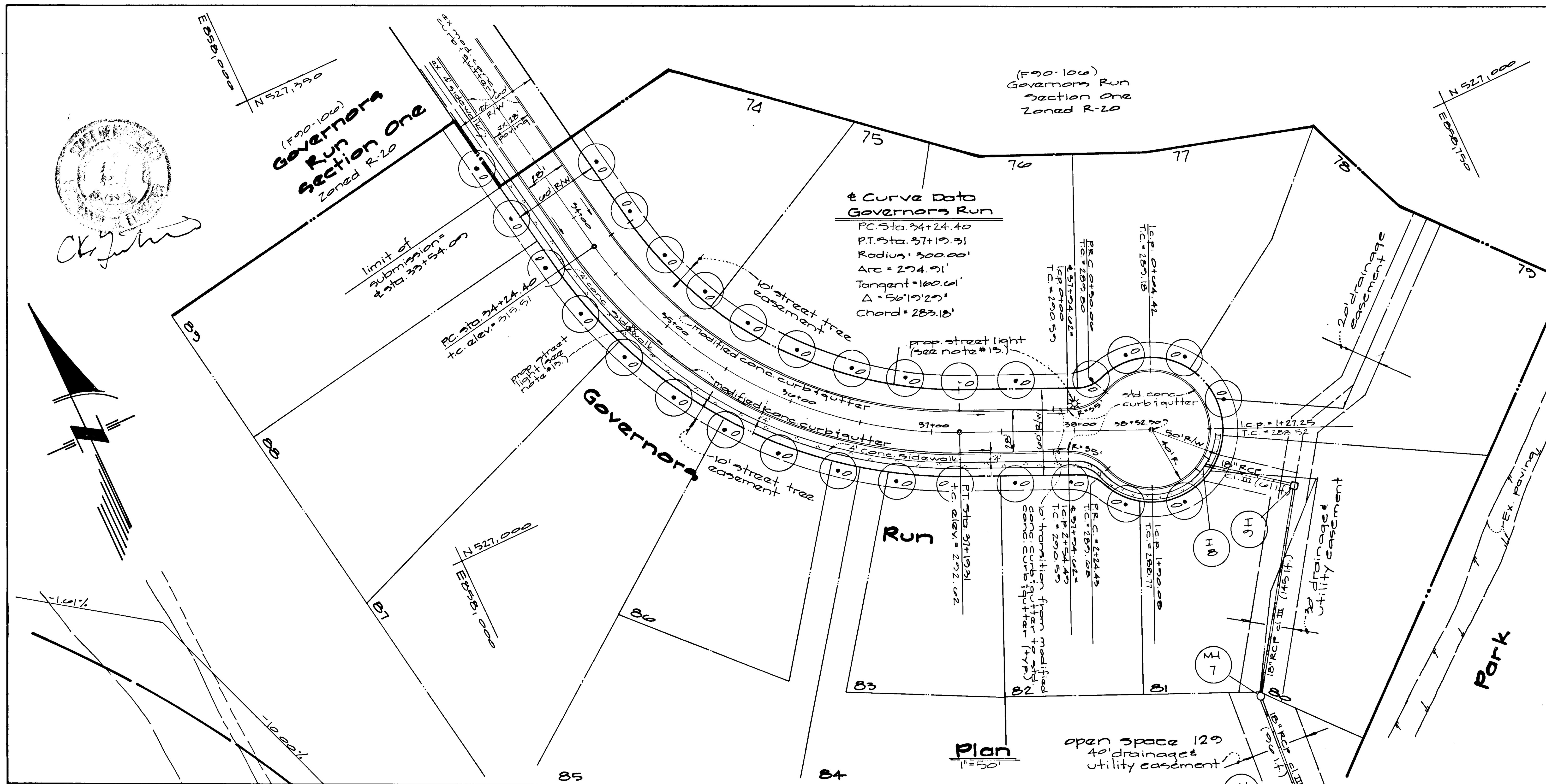
Horiz: 1" = 50'
Vert: 1" = 5'

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

DESIGNED		SCALE
DEV / GAW	Road Construction Plans	As Shown
DRAWN DLA	**Governors Run** Section 2 Lots 74-130	DRAWING 2 of 15
CHECKED CKG	2ND Election District Howard County, Maryland	
DATE July 1994	owner/developer: c/o Governors Run Communities, Inc. Greenebaum & Rose Asso., Inc. Suite 410 Woodholme Center 1829 Reisterstown Road Baltimore, Maryland 21208 (410) 484-8400	JOB NO. 86055

1588

F-90-114



street trees shown on this plan are to be located within a 10' easement along the right of way established in a note on Record plat* . This easement is for planting and maintenance of street trees.

THE FOLLOWING MINIMUM DISTANCES MUST BE HELD FOR SPACING FROM A STREET TREE.

1. 20' BETWEEN A STREET LIGHT AND TREE.
2. 30' BETWEEN A STREET SIGN OR INTERSECTION AND TREE.
3. 5' BETWEEN A STRUCTURE AND TREE.
4. 10' BETWEEN A DRIVEWAY AND TREE.
5. 4' BETWEEN SIDEWALK AND TREE, AND
6. MAXIMUM SPACE OF 40' BETWEEN TREES.

date	Revision	by
1/27/96	rev. drainage easements, add surface drainage esm't on lots 78-81, & rev. MH 8 to I 7	MCF

Approved: Dept. of Public Works

[signature] for — 8-19-94
Chief, Bureau of Highways

[signature] — 8/24/94
Chief, Bureau of Engineering

[signature] — 8/24/94
Chief, Land Development Division

Approved: Howard County Dept. of Planning & Zoning

[signature] — 9/2/94
Chief, Division of Land Development & Research

GLW GUTSCHICK LITTLE & WEBER, P.A.

ENGINEERS, PLANNERS, SURVEYORS

3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD 20866

TEL.: (301) 421-4024

DESIGNED		SCALE
DEV	Road Construction Plans **Governors Run** Section Two Lots 74-130 2nd Election District Howard County, Maryland	As Shown
DRAWN: MCF		DRAWING: 3 of 15
CHECKED: CKG		
DATE: July 1994	owner/developer: c/o Governors Run Communities, Inc, Greenebaum & Rose Asso., Inc. Suite 410 Woodholm Center, 1829 Reisterstown Road, Baltimore, Maryland 21208, (410) 484-8400	JOB NO. 86055

F-90-114

1588

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."

[signature] 7-18-94
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.

[signature] 7/18/94
Signature of Developer/Builder Date

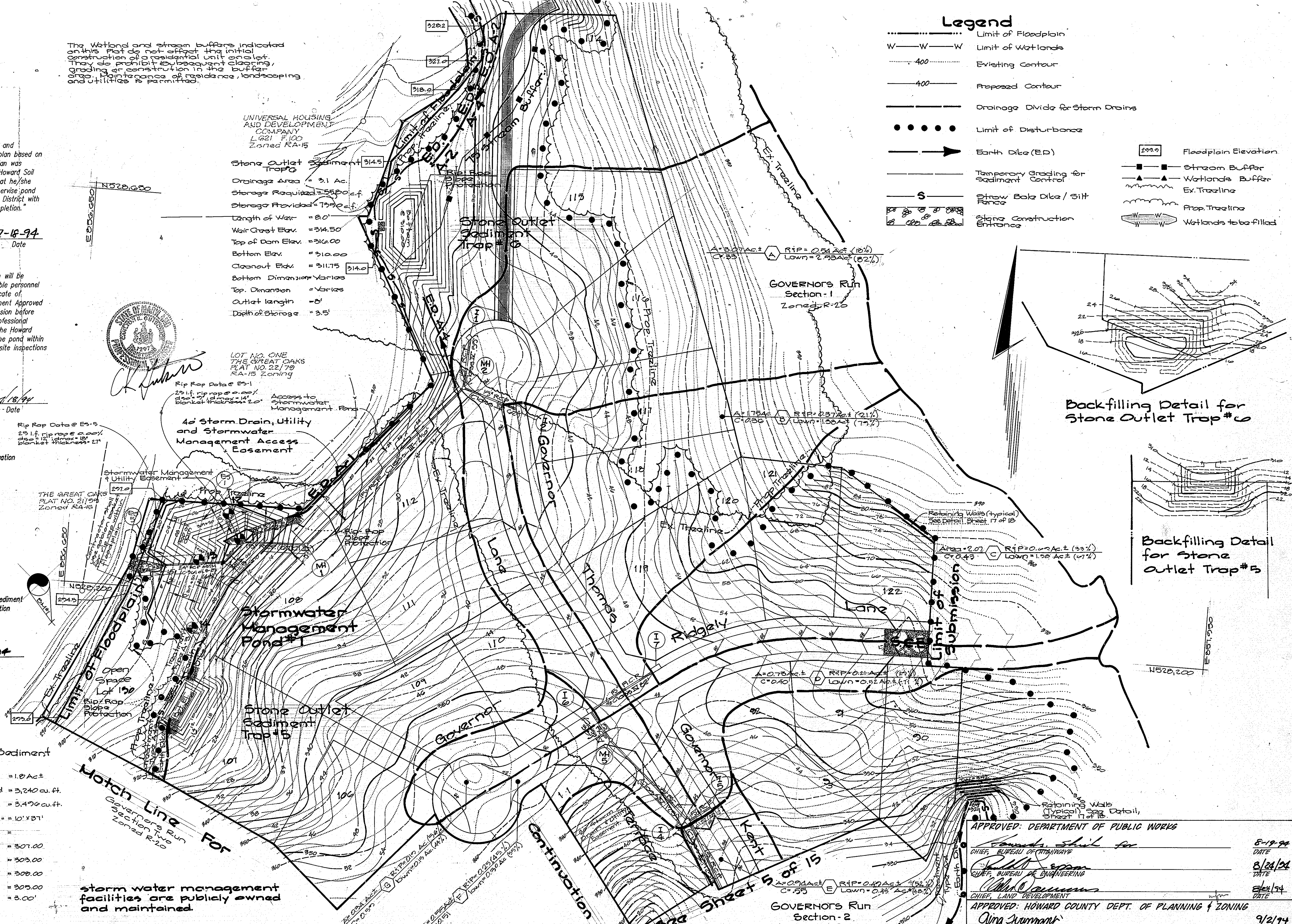
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

[signature] 8/29/94
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.

[signature] 8/29/94
Howard Soil Conservation District Date

The Wetland and stream buffers indicated on this Plat do not affect the initial construction of a residential unit on a lot. They do prohibit subsequent clearing, grading or construction in the buffer area. Maintenance of residence, landscaping and utilities is permitted.



Stone Outlet Sediment Trap #6

Drainage Area	= 3.1 Ac.
Storage Required	= 5580 c.f.
Storage Provided	= 7350 c.f.
Length of Weir	= 8.0'
Weir Crest Elev.	= 314.50
Top of Dam Elev.	= 316.00
Bottom Elev.	= 310.00
Cleanout Elev.	= 311.75
Bottom Dimension	= Varies
Top Dimension	= Varies
Outlet length	= 8'
Depth of Storage	= 3.5'

Rip Rap Data @ ES-1
25 l.f. rip rap @ 0.00% d50 = 12"; dmax = 18" blanket thickness = 2.0'

Rip Rap Data @ ES-5
25 l.f. rip rap @ 0.00% d50 = 12"; dmax = 18" blanket thickness = 2.0'

Stone Outlet Sediment Trap #5

Drainage Area	= 1.8 Ac.±
Storage Required	= 3,240 cu.ft.
Storage Provided	= 3,490 cu.ft.
Bottom Dimensions	= 10' X 37'
Top Dimension	=
Weir Crest Elev.	= 307.00
Bottom Elev.	= 303.00
Top of Dam Elev.	= 308.00
Cleanout Elev.	= 305.00
Depth of Storage	= 3.00'

storm water management facilities are publicly owned and maintained.

Legend

	Limit of Floodplain
W——W——W	Limit of Wetlands
400	Existing Contour
400	Proposed Contour
	Drainage Divide for Storm Drains
● ● ● ● ●	Limit of Disturbance
	Earth Dike (E.D)
	Temporary Grading for Sediment Control
——S——	Straw Bale Dike / Silt Fence
	Stone Construction Entrance
299.9	Floodplain Elevation
	Stream Buffer
	Wetlands Buffer
	Ex. Treeline
	Prop. Treeline
	Wetlands to be filled

Backfilling Detail for Stone Outlet Trap #6

Backfilling Detail for Stone Outlet Trap #5

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 8-19-94
CHIEF, BUREAU OF HIGHWAYS DATE
[signature] 8/24/94
CHIEF, BUREAU OF ENGINEERING DATE
[signature] 8/24/94
CHIEF, LAND DEVELOPMENT DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
[signature] 9/2/94
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

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/GAW | DRN. DLA | CHK. CKG

DATE	REVISION	BY	APP'R.
10-27-98	REV. GRADING LOTS 112 AND O.S. LOT 130 & 113 TO REMOVE RETAINING WALLS	HKJ	

PREPARED FOR:
Governors Run Communities, Inc.
c/o Greenebaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Mass Grading Plan
Governors Run
Section 2
Lots 74-130
Liber 3284 Folio 398
2nd Election District Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1" = 50'	R-20	86055
DATE	TAX MAP No.	SHEET
July 1994	18 / 25 PARCEL 2	4 of 15

F-90-114

1588

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."

C.K. Gutschick (signature) — 7-18-94
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.

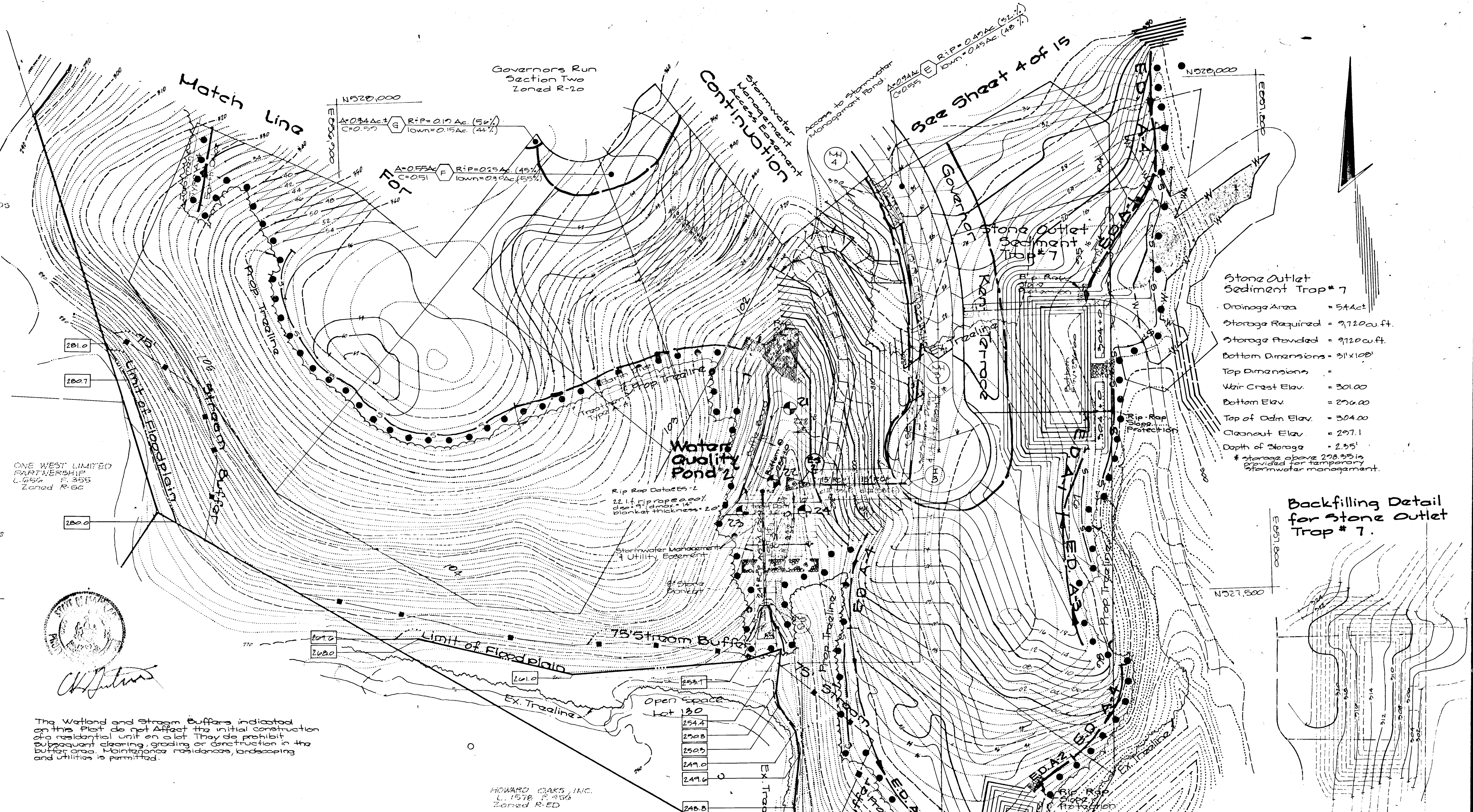
(signature), P.E. — 7/18/94
Signature of Developer/Builder — Date

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.

Patricia (signature) / G.S. — 8/29/94
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. Ziehm (signature) / as. — 8/29/94
Howard Soil Conservation District — Date



C.K. Gutschick (signature)

The Wetland and Stream Buffers indicated on this Plat do not Affect the initial construction of a residential unit on a lot. They do prohibit subsequent clearing, grading or construction in the buffer area. Maintenance residences, landscaping and utilities is permitted.

Legend

—— ··· —— ···	Limit of Floodplain
—W————W—	Limit of Wetlands
········ 400 ········	Existing Contour
—— 400 ——	Proposed Contour
——— —— ——	Drainage Divide for Storm Drains
● ● ● ● ●	Limit of Disturbance
——▶	Earth Dike (E.D.)
— — — —	Temporary Grading for Sediment Control
—— ——	Straw Bale Dike/Silt Fence
S.C.E.	Stone Construction Entrance
299.9	Floodplain Elevation
—■—■—	Stream Buffer
—▲—▲—	Wetlands Buffer
(wavy line)	Ex. Treeline
(scalloped line)	Prop. Treeline
—W—W—	Wetlands to be filled

water quality facilities are publicly owned and maintained.

contractor shall restore trap #8 back to ex. grade.

APPROVED: DEPARTMENT OF PUBLIC WORKS

Howard S. Shih (signature) for — CHIEF, BUREAU OF HIGHWAYS	8-19-94 DATE
(signature) — CHIEF, BUREAU OF ENGINEERING	8/24/94 DATE
(signature) — CHIEF, LAND DEVELOPMENT DIVISION	8/24/94 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Gina Tiemmanj (signature) — CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH	9/2/94 DATE

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/GAK | DRN. DLA | CHK. CKG

DATE	REVISION	BY	APP'R.
3-27-97	REMOVED RETAINING WALL ON LOT 102, TO REFLECT EX. FIELD CONDITION	HKJ	

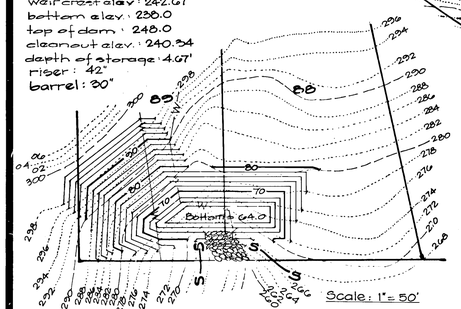
PREPARED FOR:
Governors Run Communities, Inc.
c/o Greenebaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Mass Grading Plan
Governors Run
Section 2
Lots 74-130
Liber 3284 — Folio 398
2nd Election District — Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1" = 50'	R-20	86055
DATE	**TAX MAP No.**	**SHEET**
July 1994	18/25 PARCEL 2	5 of 15

F-96-114

1588



Stone Outlet Sediment Trap #1 Data

Drainage Area = 2.5 Ac.
Storage Required = 4,500 cu.ft.
Storage Provided = 4,590 cu.ft.
Bottom Dimensions : 12'x70'
Top Dimensions : 24'x82'
Weir Crest Elev. = 267.0
Bottom Elev. = 264.0
Top of Dam = 268.0
Cleanout Elev. = 265.5
Depth of Storage = 2.0'

Stone Outlet Sediment Trap #2 Data

Drainage Area = 2.7 Ac.
Storage Required = 4,860 cu.ft.
Storage Provided = 5,696 cu.ft.
Bottom Dimensions = 12'x60'
Top Dimensions = 28'x76'
Weir Crest Elev. = 263.0
Bottom Elev. = 259.0
Top of Dam = 264.0
Cleanout Elev. = 261.0
Depth of Storage = 3.00'

Temporary Sediment Basin / Pond No. 4 Data

drainage area : 11.8 Ac.
storage required : 21,240 cu. ft.
storage provided : 21,998 cu. ft.
bottom dimensions : varies
top dimensions : varies
weir crest elev : 242.67
bottom elev. : 238.0
top of dam : 248.0
cleanout elev. : 240.34
depth of storage : 4.67'
riser : 42"
barrel : 30"

Grading for Initial Installation of Stone Outlet Sediment Trap No. 1

storm water management facilities are publicly owned and maintained.

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.

Patricia Engly S.C.S. 8/29/94
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. Zih... /CS 8/29/94
Howard Soil Conservation District 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."

7-18-94
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.

7/18/94
Signature of Developer/Builder Date

APPROVED: DEPARTMENT OF PUBLIC WORKS

Howard S. Shih for 8-19-94
CHIEF, BUREAU OF HIGHWAYS DATE

8/24/94
CHIEF, BUREAU OF ENGINEERING DATE

8/24/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

Gina Turnmary 9/2/94
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH DATE

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/GAH DRN. DLA/GAH CHK. CKG

DATE	REVISION	BY	APP'R.
1/27/95	eliminate parabolic channel, revise ex. & prop. contours at rear of lots 78 & 79 & open space lot 128. eliminate MH8 & add I-7, add Drainage easement on lot 78-81 & rev. & add drainage area 'M'	MCF	
4/27/95	remove retaining wall on lots 81, 88 & 89, revise grading	MCF	
8-7-98	REVISED GRADING ON LOT 75 TO ELIMINATE RETAINING WALL	HKJ	

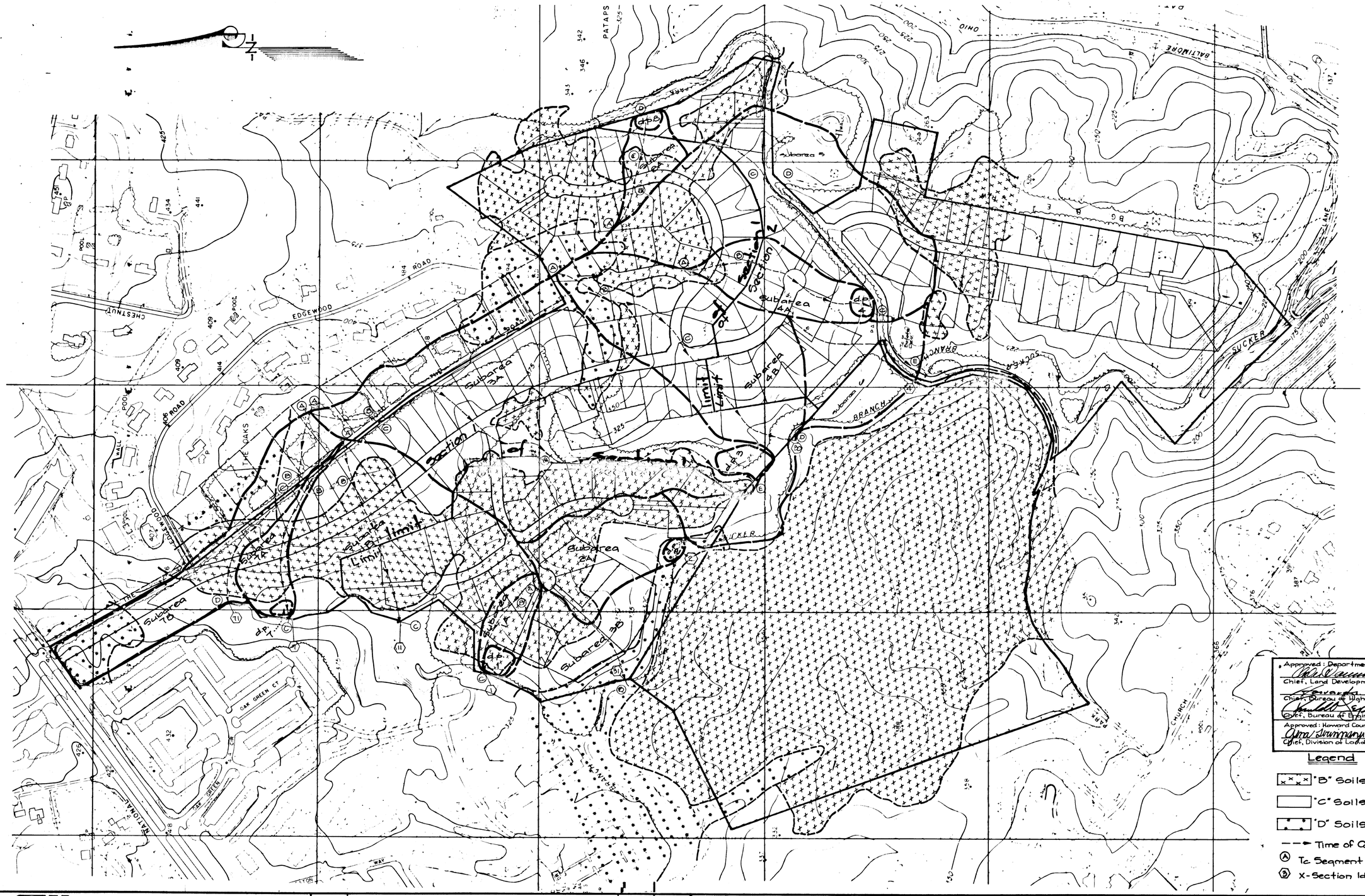
PREPARED FOR:
Governors Run Communities, Inc.
c/o Greenebaum & Rose Asso., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Mass Grading Plan
Governors Run
Section 2
Lots 74-130
Liber 3284 Folio 398
2nd Election District Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1" = 50'	R-20	86055
DATE	**TAX MAP No.**	**SHEET**
July 1994	18/25 PARCEL 2	6 of 15

F-90-114

1588



Note: Development shown south of Park Drive is no longer being proposed due to the State's acquisition of the property. The area will remain the same for the before and after development conditions.

Approved: Department of Public Works

Chief, Land Development Division — Date 8/24/94

Chief, Bureau of Highways — Date 8-19-94

Chief, Bureau of Engineering — Date 8/29/94

Approved: Howard County Dept. of Planning & Zoning

Chief, Division of Land Development & Research — Date 9/2/94

Legend

- "B" Soils
- "C" Soils
- "D" Soils
- Time of Concentration Path
- (A) Tc Segment Identification
- (2) X-Section Identification.

GLW GUTSCHICK LITTLE & WEBER, P.A.

ENGINEERS, PLANNERS, SURVEYORS

3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866

DES. DBV. | DRN. G.A.W. | CHK. CKG.

DATE	REVISION	BY	APP'R.

owner/developer
Gerzernors Run Communities, Inc.
% Greenebaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Before Development Drainage Area Map

Stormwater Management Ponds

Governors Run

Section 2
Lots 74-150

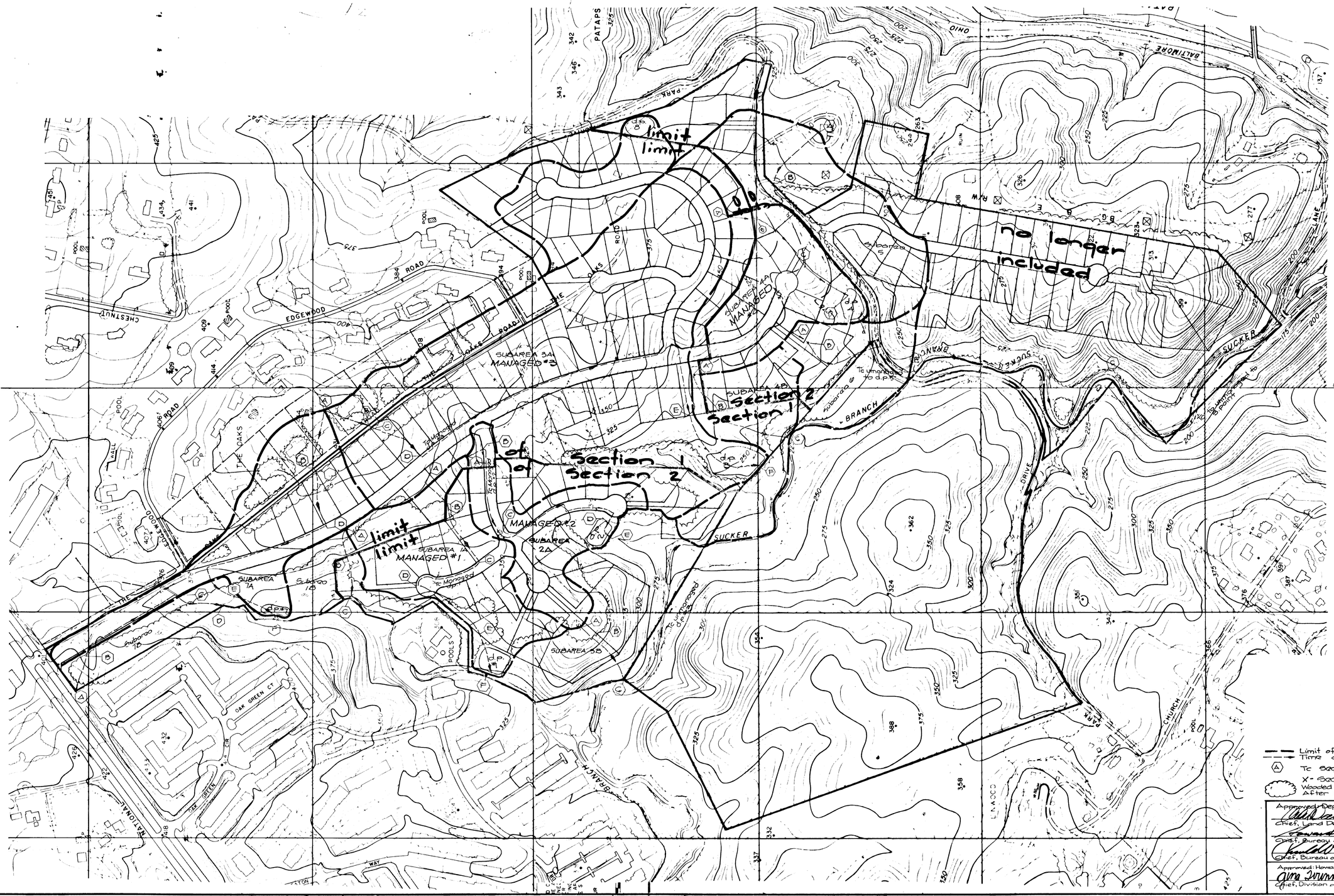
Election District No. 2 — Howard County, Maryland

SCALE	CONTOUR INTERVAL	G.L.W. FILE No.
1" = 200'	5'	86-055
DATE	TAX MAP No.	SHEET
July 1994	18/25 Parcel 2	7 of 15

1588

F-90-114

1588



Note: Development shown south of Park Drive is no longer being proposed due to the State's acquisition of the property. The area will remain the same for the before and after development conditions.

LEGEND

- ▬ ▬ Limit of Drainage Area
- – – → Time of Concentration Path
- Ⓐ Tc Segement Identification
- X-Section Identification
- Wooded Areas to Remain After Development

Approved: Department of Public Works

Chief, Land Development Division — Date 8/24/94

Howard S. Shih for — Chief, Bureau of Highways — Date 8-19-94

Chief, Bureau of Engineering — Date 8/24/94

Approved: Howard County Dept. of Planning & Zoning

Chief, Division of Land Development & Research — Date 9/2/94

GLW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866

DES. D.E.V. | DRN. M.C.F. | CHK. C.K.G.

DATE	REVISION	BY	APP'R.
1/27/95	rev. drainage area to subareas 4A & 5 & rev. time of concentration path	MCF	

owner/developer
Governors Run Communities, Inc.
c/o Greenebaum & Rose Asso., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

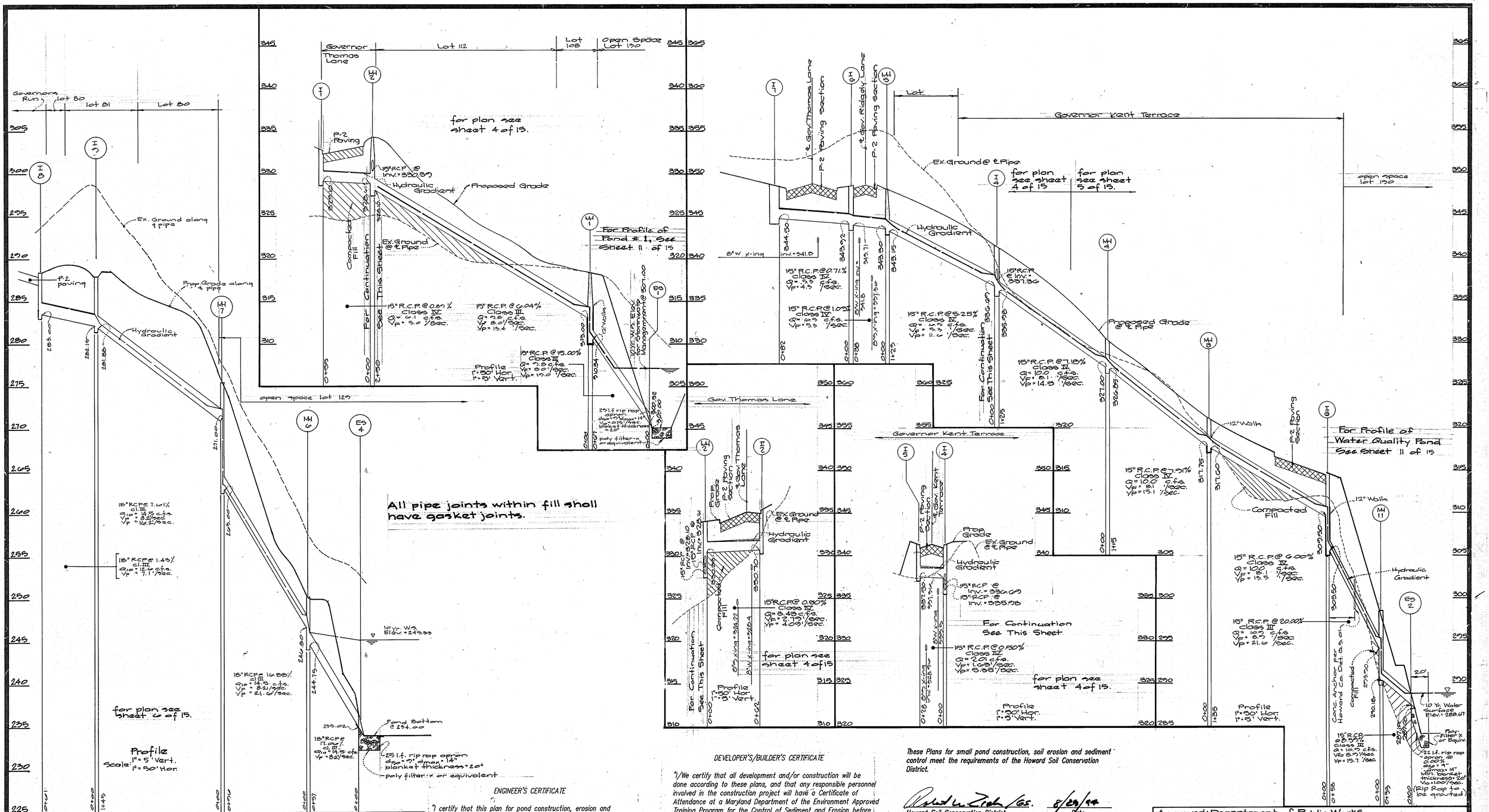
After Development Drainage Area Map

Governors Run
Section 2
Lots 74-130

Liber 3284 Folio 378
2nd Election District Howard County, Maryland

SCALE	CONTOUR INTERVAL	G.L.W. FILE No.
1" = 200'	5'	88-055
DATE	**TAX MAP No.**	**SHEET**
July 1994	18/25 Parcel 2	8 of 15

F-70-114



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."

C. K. Gutschick — 7-18-94 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.

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.

Howard Soil Conservation District — 8/29/94 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.

U.S. Soil Conservation Service — 8/29/94 Date

Approved: Department of Public Works

Chief, Bureau of Highways — for — 8-29-94 Date

Chief, Bureau of Engineering — 8/29/94 Date

Chief, Land Development — 8/24/94 Date

Approved: Howard County Department of Planning & Zoning

Chief, Division of Land Development & Research — 9/2/94 Date

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/G.A.W. DRN. M.C.F. CHK. C.K.G.

DATE	REVISION	BY	APP'R.
10-27-08	REV. PROPOSED GRADE OVER PIPE BETWEEN MH 1 & MH 2	HKJ	
1/27/95	rev. MH-8 to I-9, rev. Q's & velocities between I-9 & MH-7; MH-7 & MH-6, MH-6 & ES4	M.C.F	

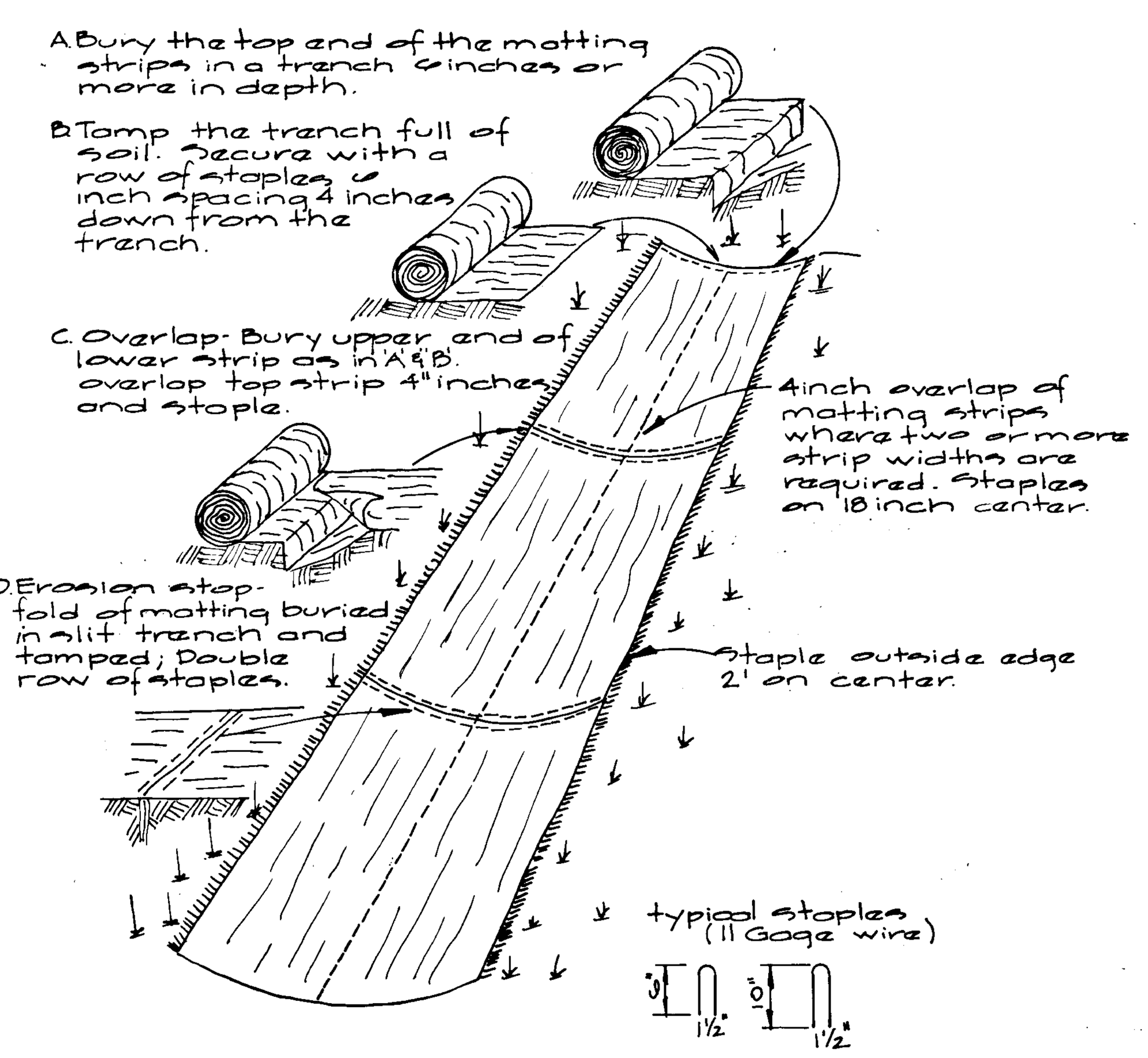
PREPARED FOR:
Governors Run Communities, Inc.
℅ Greenebaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Storm Drain Profiles
Governors Run
Section 2
Lots 14-132
Liber 3284, Folio 398
2nd Election District, Howard County, Maryland

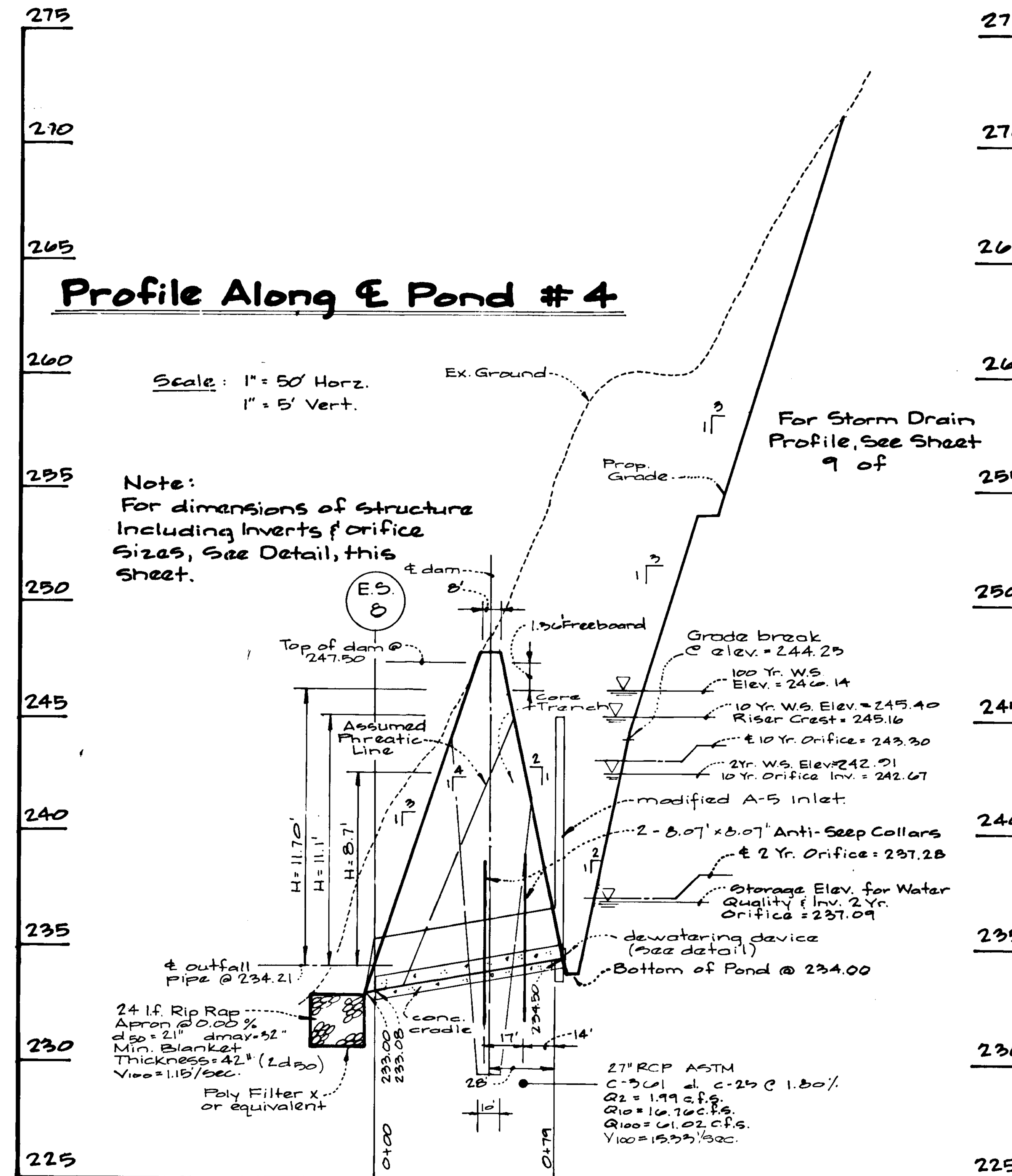
SCALE	ZONING	G.L.W. FILE No.
As Shown	R-20	86-055
DATE	TAX MAP No.	SHEET
July 1994	18/25 Parcel 2	9 of 15

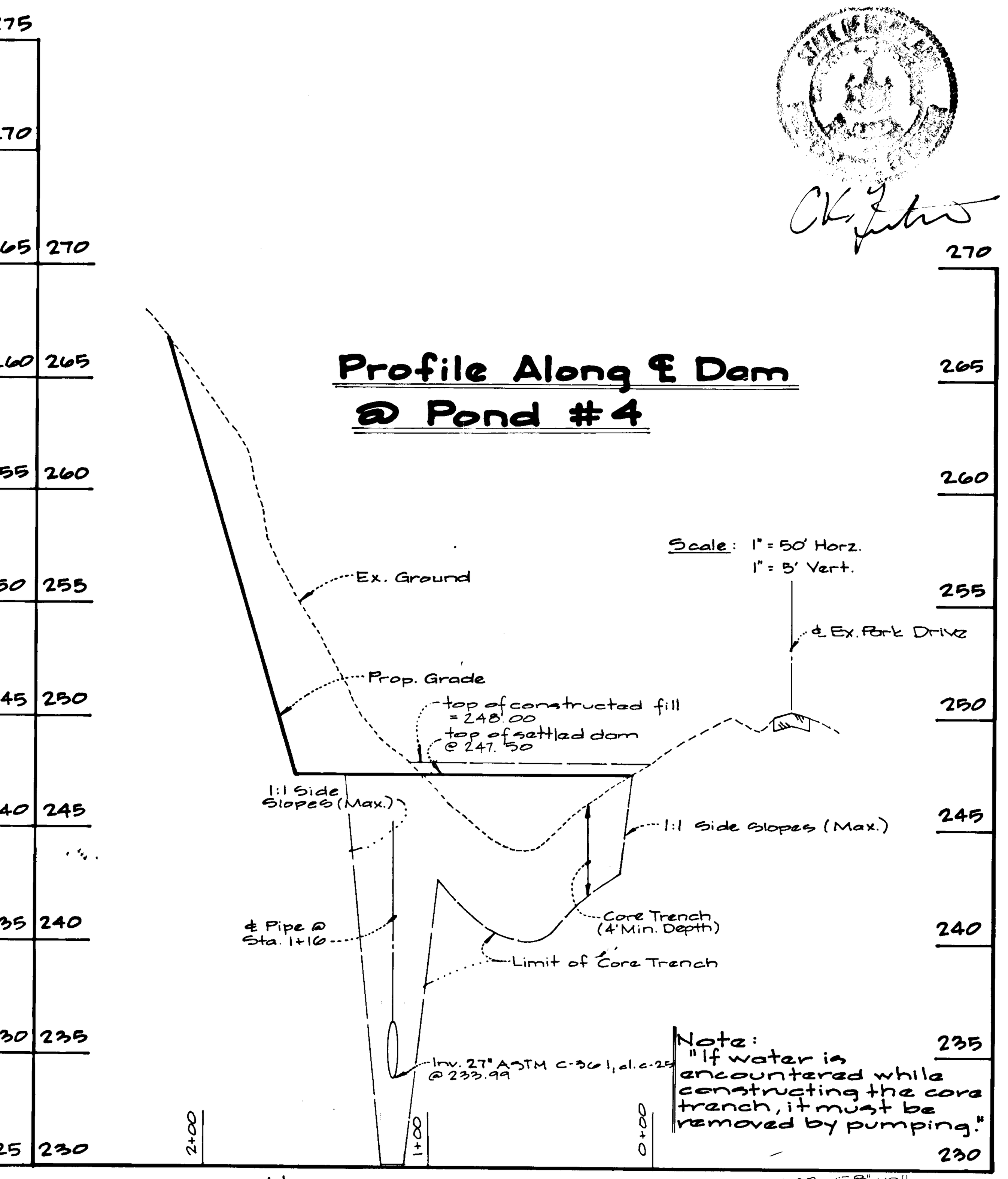
1588

F-90-114



Jute Stabilization Detail for Waterways





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7-18-94
Date

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Signature of Developer/Builder — 7/18/94 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.

U.S. Soil Conservation Service — 8/29/94 Date

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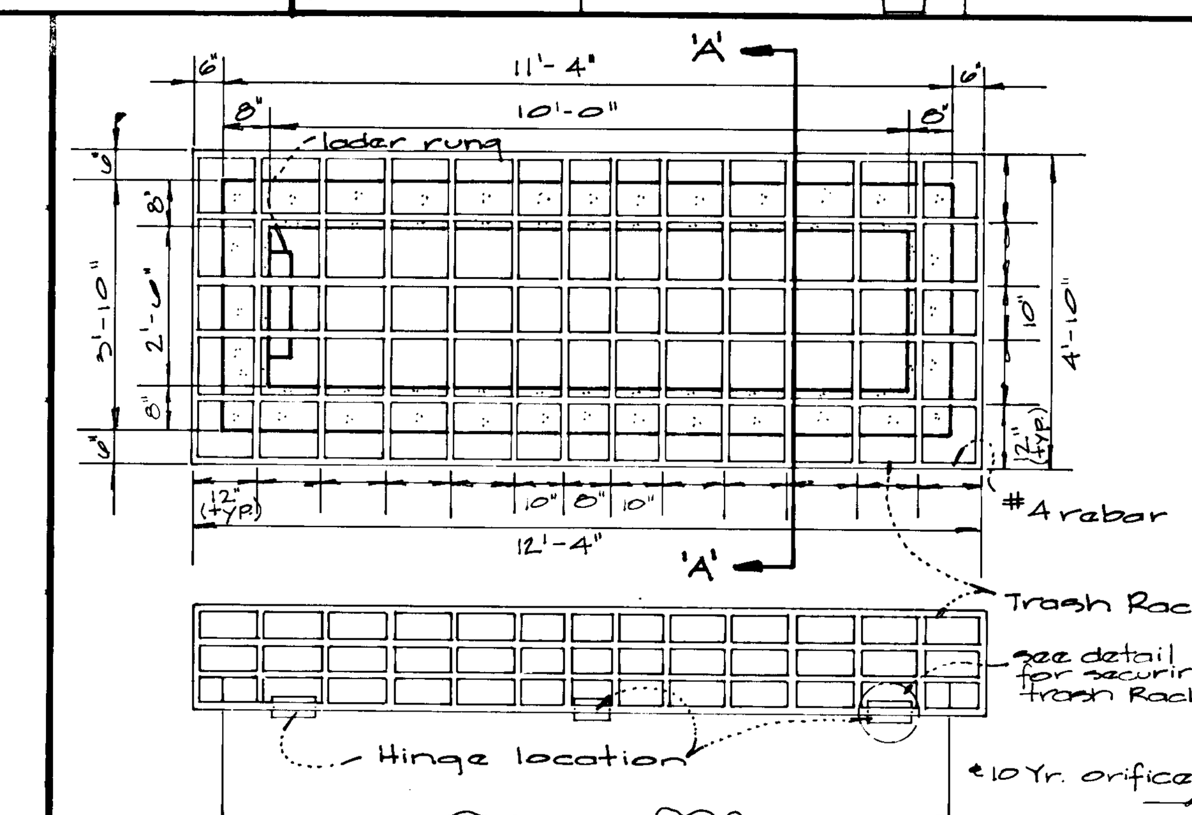
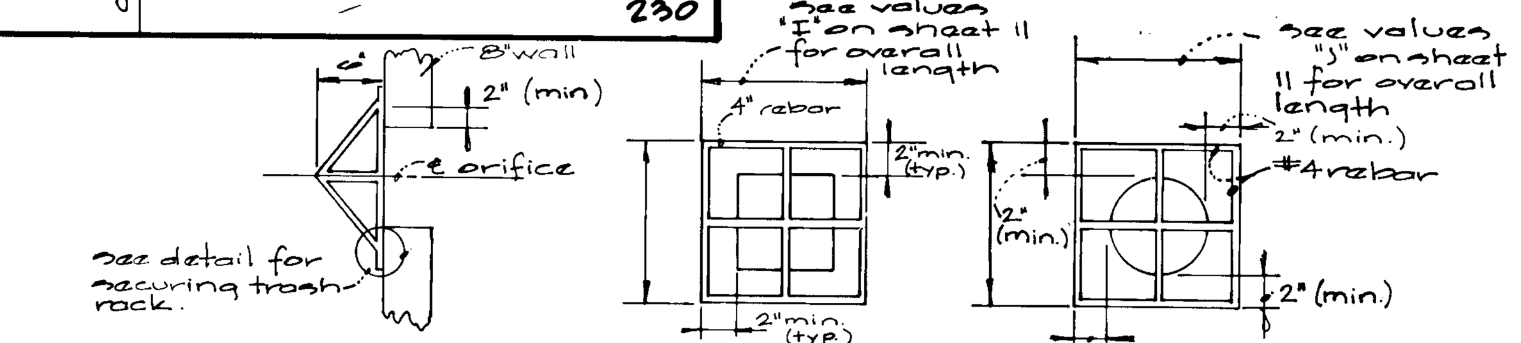
Howard Soil Conservation District — 8/29/94 Date



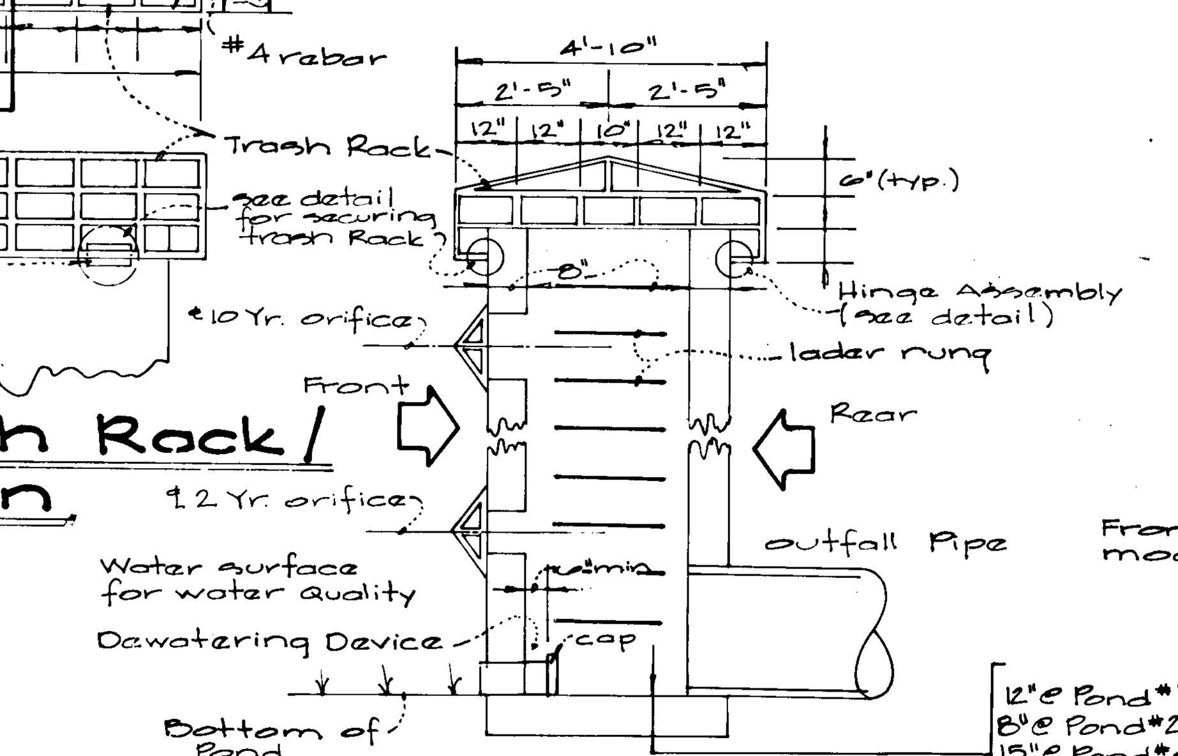
Detail for Trash Rack / Hinge Location

Note: "The trash rack and its components shall be galvanize after fabrication."



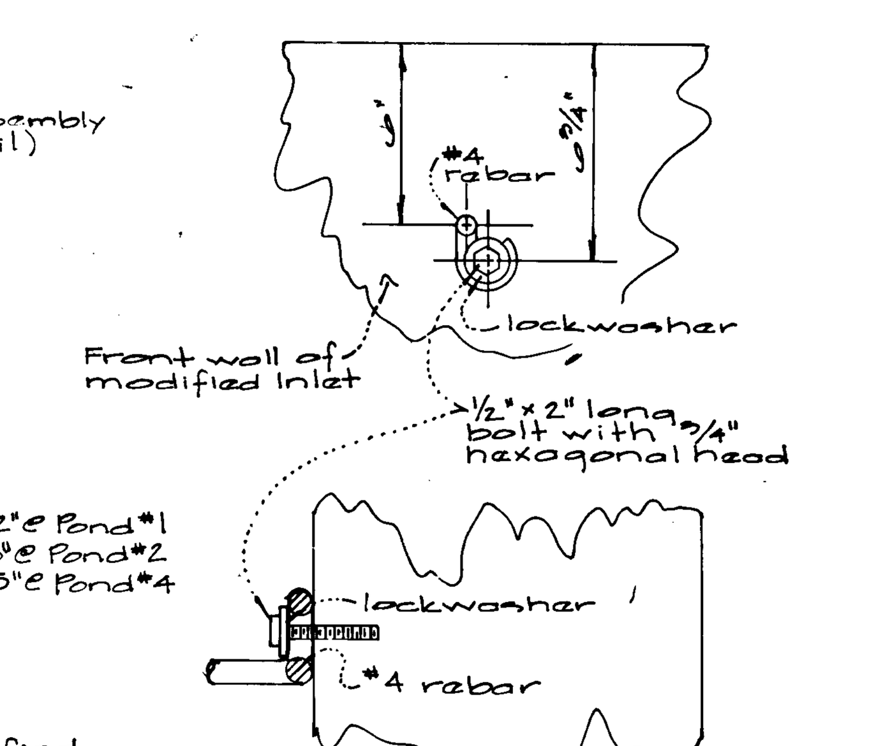
2 and 10 Year Orifice Blocking Detail

overall length	Pond #1	Pond #2	Pond #4
2 Yr. orifice	6"	N/A	5"
10 Yr. orifice	21"x14"	N/A	27"x21"

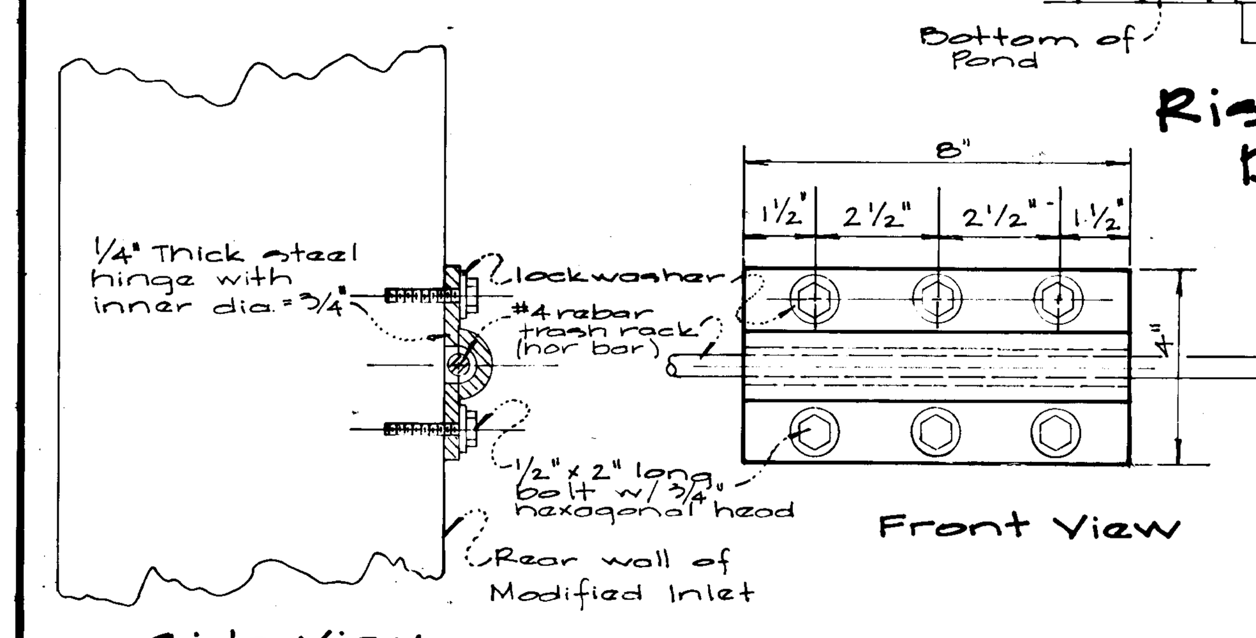


Riser Structure Detail - N.T.S.

(Riser struct. is a modified A-10 inlet - See Ho. Co. Standard Detail S.D 4.41 for Steel placement. See sheet 11 of 15 for Release structure Dimensions & Dewatering Device detail.)



Detail for Securing Trash Rack



Hinge Detail N.T.S.

Approved: Department of Public Works

Chief, Bureau of Highways	8-19-94 Date
Chief, Bureau of Engineering	8/24/94 Date
Chief, Land Development	8/24/94 Date

Approved: Howard County Department of Planning & Zoning
Chief, Division of Land Development & Research — 9/2/94 Date

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.
D.E.V.	G.A.W.	C.K.G.

DATE	REVISION	BY	APP'R.
1/27/95	eliminate parabolic channel along park drive	MCF	

PREPARED FOR
Governors Run Communities, Inc.
% Greenebaum & Rose Asso., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Stormwater Management Profiles and Details

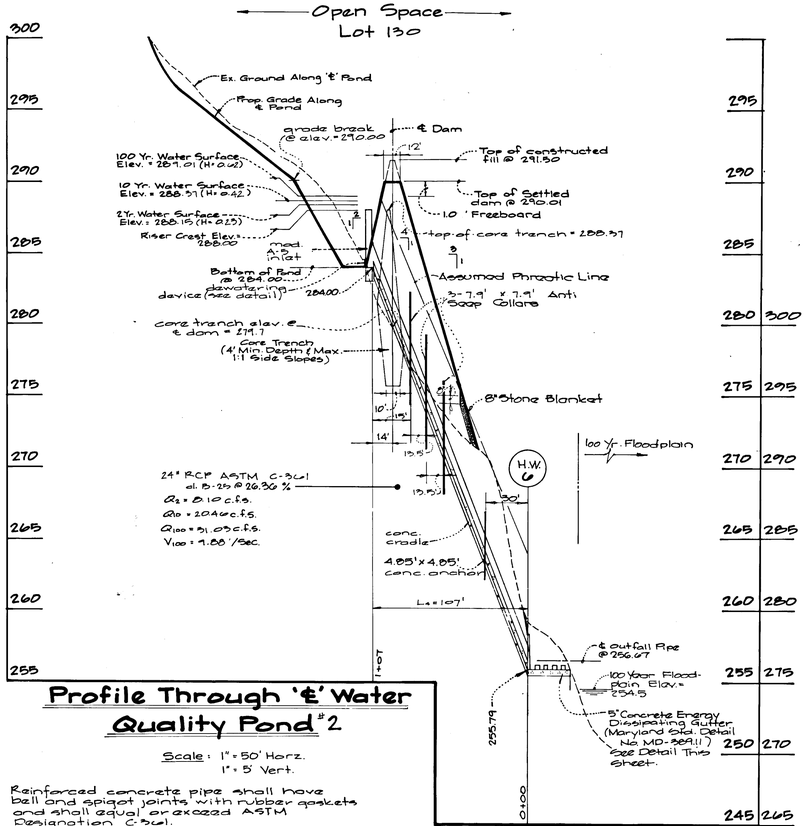
Governors Run

Liber 3284 — Section 2, Lots 74-130 — Folio 398
2nd Election District — Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
As-Shown	R-20	86-055
DATE	TAX MAP No.	SHEET
July 1994	18/25 Parcel 2	10 of 15

1588

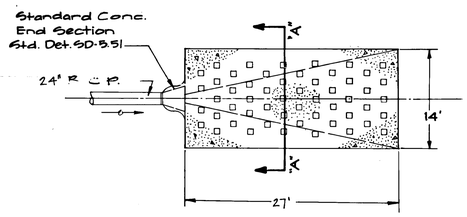
F-90-114



Profile Through '℄' Water Quality Pond #2

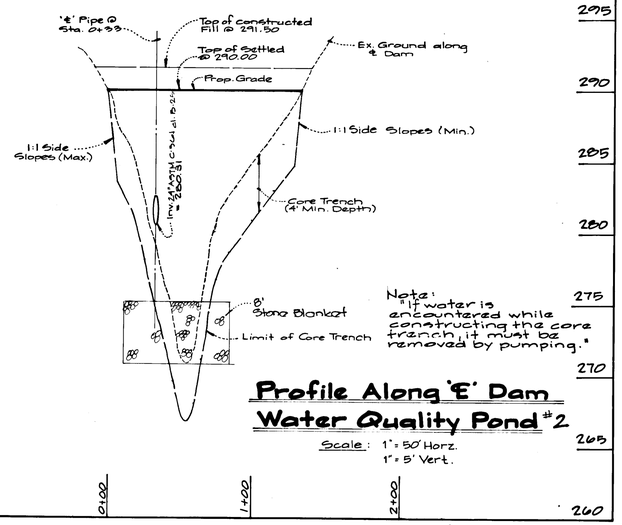
Scale: 1" = 50' Horz.
1" = 5' Vert.

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



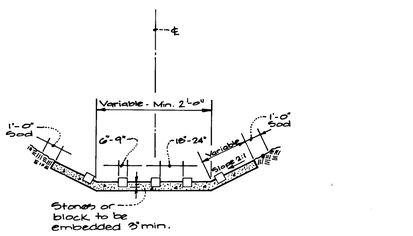
5" Concrete Energy Dissipating Gutter

℄ Pond #2
Scale: 1" = 10'



Profile Along '℄' Dam Water Quality Pond #2

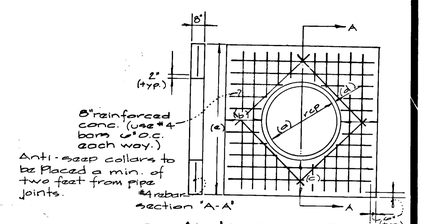
Scale: 1" = 50' Horz.
1" = 5' Vert.



(@ Pond #2)

Section A-A

Scale: 1" = 5'

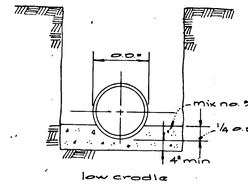


Anti-Seep Collar Detail

(All Ponds)

Letter	Description	Pond #1	Pond #2	Pond #4
a	Inside Pipe dia.	24"	24"	27"
b	Projection	3.0'	2.7'	2.0'
c	Projection	3.0'	2.7'	2.0'
d	Wall Thickness*	0.25'	0.25'	0.31'
e	Total Length	9.7'	7.9'	8.01'

*Note: The wall thickness, d, is based on ASTM C-361
24" = 3" = 0.25'
27" = 3 3/4" = 0.31'

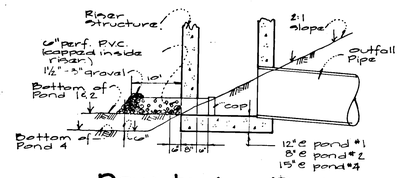


	Pond #1	Pond #2	Pond #4
o.d. 1/4 o.d.	30" 7 1/2"	30" 7 1/2"	34 1/2" 8 5/8"

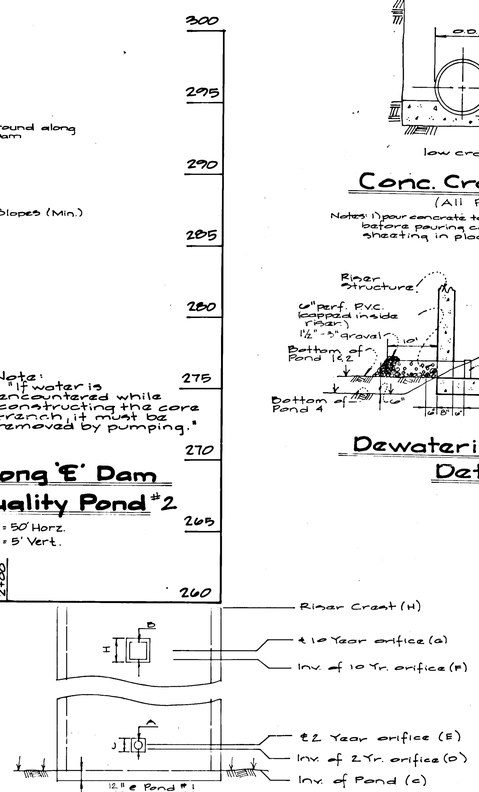
Conc. Cradle Detail

(All Ponds)

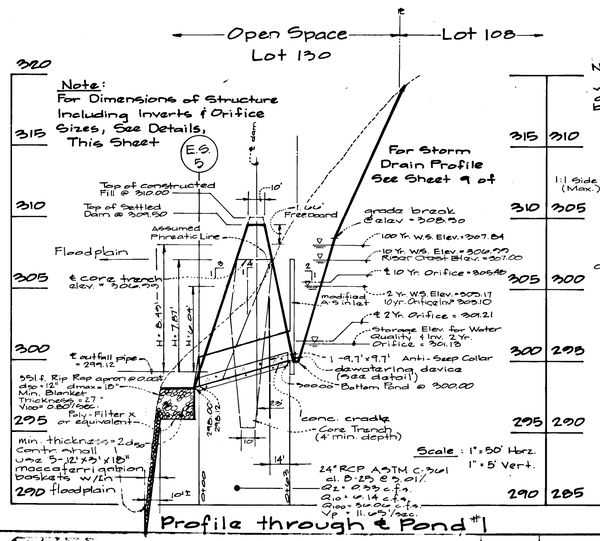
Notes: 1) pour concrete to undisturbed earth, remove sheating before pouring concrete or leave lower portion of sheating in place.

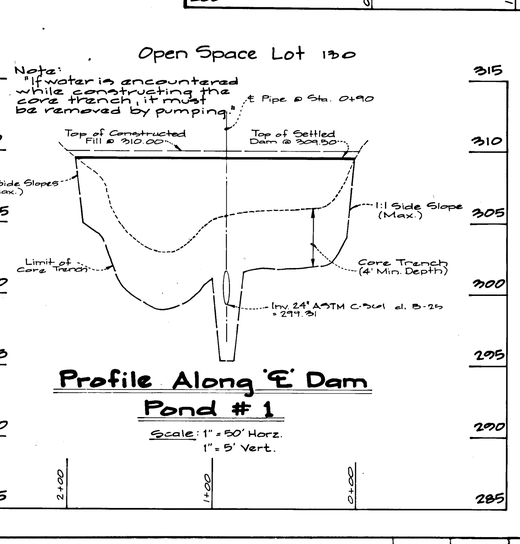


Dewatering Device Detail



Dimensions for Release Structures				
Letter	Description	Pond 1	Pond 2	Pond 4
A	Diameter of 2 Yr. orifice	2"	N/A	4 1/2"
B	Diameter of 10 Yr. orifice	15" x 9"	N/A	21" x 15"
C	Bottom of Pond	300.00	284.00	294.00
D	2 Yr. orifice Invert	301.13	N/A	297.09
E	℄ 2 Yr. orifice	301.21	N/A	297.28
F	10 Yr. orifice invert	305.10	N/A	242.67
G	℄ 10 Yr. orifice	305.48	N/A	243.50
H	Riser Crest elevation	307.00	288.00	249.16
I	overall length of 10 Yr. Trash Rack	21" x 14"	N/A	27" x 21"
J	overall length of 2 Yr. Trash Rack	6"	N/A	9"
	Inlet Type	A-10	A-10	A-10
	Inside Dimensions (L x W)	10'-0" x 2'-6"	10'-0" x 2'-6"	10'-0" x 2'-6"
	wall thickness	8"	8"	8"
	outside Dimensions (L x W)	11'-4" x 3'-10"	11'-4" x 3'-10"	11'-4" x 3'-10"
K	10 Yr. Trash Rack bar spacing	7" x 7"	N/A	9" x 7"
L	2 Yr. Trash Rack bar spacing	1"	N/A	2 1/4"





Profile Along '℄' Dam Pond # 1

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

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Howard Soil Conservation District — Date

Approved: Department of Public Works

8-19-94
Chief, Bureau of Highways — Date

8/24/94
Chief, Bureau of Engineering — Date

8/24/94
Chief, Land Development — Date

Approved: Howard County Department of Planning & Zoning

9/2/94
Chief, Division of Land Development & Research — Date

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DATE	REVISION	BY	APP'R.

PREPARED FOR:
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% Greenebaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Stormwater Management Profiles and Details

Governors Run
Section 2
Liber 3284 Lots 74-130 Folio 398
2nd Election District — Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
As Shown	R-20	86055
DATE	TAX MAP No.	SHEET
July 1994	18/25 Parcel 2	11 of 15

1583

F-90-117

Structure Schedule
– Section Two –

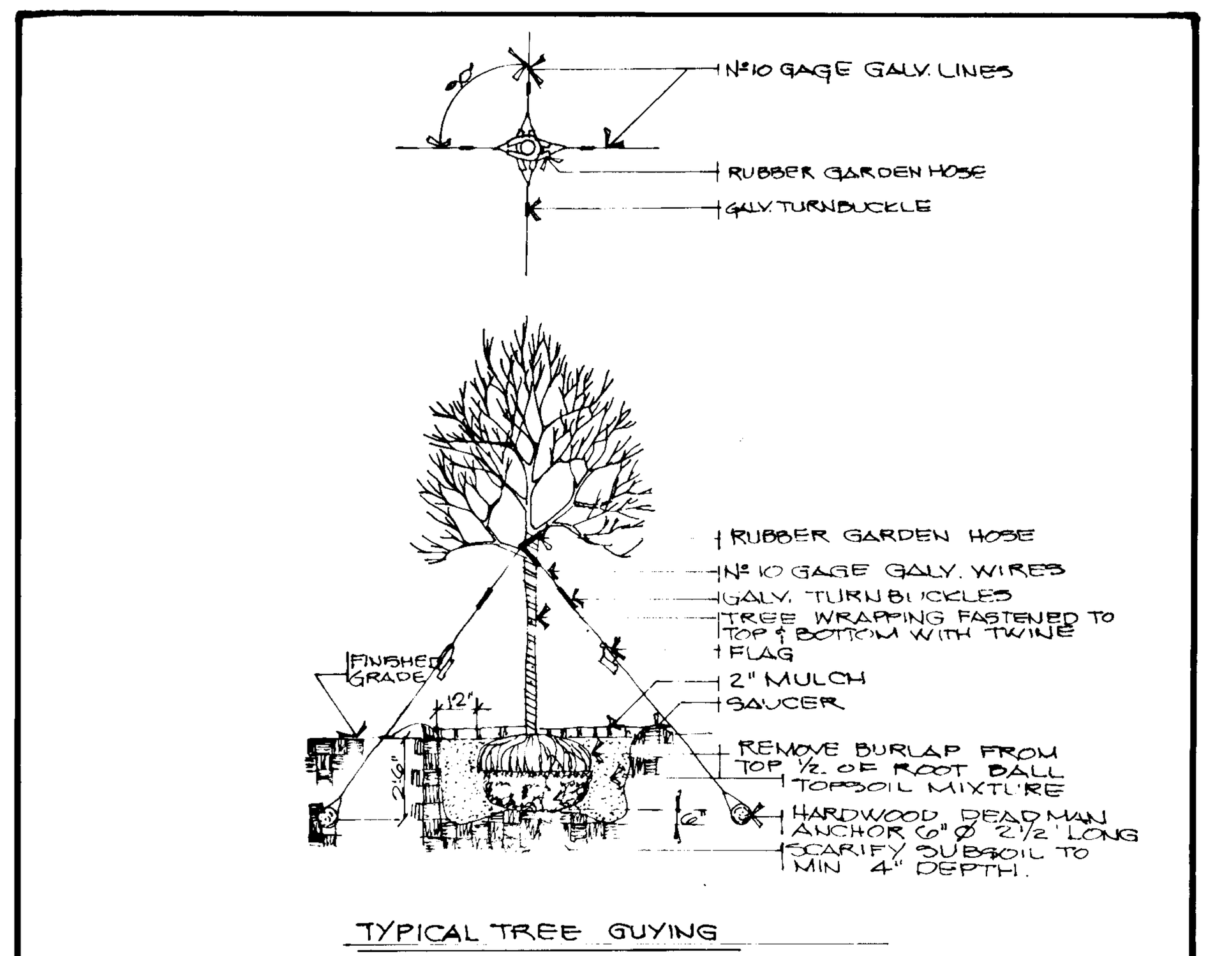
Struct.	Type	Inverts In	Inverts Out	Top Elevation Upper	Top Elevation Lower	Remarks	℄ Road Sta.
I-1	A-5	-	329.10	332.83		H.C. Std. S.D. 4.01	L.P. Sta. 1+00.00 Gov. Thomas Lane
I-2	A-10 w/deflectors	—	330.70	335.50	335.15	H.C. Std. 4.02 & S.D. 4.85	℄ Sta. 3+67.03 Gov. Thomas Lane 14.52' Rt.
I-3	A-5	309.50	305.50	314.89	—	H.C. Std. 4.01	L.P. Sta. 1+54.00 Gov. Kent Terrace
I-4	A-5 w/deflectors	336.69	335.98	341.38	341.07	H.C. Std. 4.01 & S.D. 4.85	℄ Sta. 1+50.00 Gov. Kent Terrace 14.52' Rt.
I-5	" "	—	337.50	341.38	341.07	" "	" " 14.52' Lt.
I-6	A-5	343.92	343.71	348.32	348.26	H.C. Std. 4.01	℄ Sta. 6+19.75 Gov. Ridgely Lane 14.52' Rt.
I-7	A-10	—	344.50	348.52	348.37	H.C. Std. 4.02	℄ Sta. 5+31.50 Gov. Ridgely Lane 14.52' Rt.
I-8	A-10	—	283.00	288.39	—	H.C. Std. 4.02	L.P. Sta. 1+50.50 Governors Run
I-9	yard inlet	282.13	281.88	288.00	—	H.C. Std. 4.14	see plan
MH1	Standard MH	313.00	310.34	318.45	—	H.C. Std. G.5.01	See Plan
MH2	" "	328.70	328.10	333.96	—	" "	L.P. Sta. 0+46.00 Gov. Thomas Lane 6' behind F.C.
MH3	" "	317.75	317.60	321.05	—	" "	℄ Std. 4+11.00 Gov. Kent Terrace 17.5' Rt.
MH4	" "	327.00	326.85	330.66	—	" "	℄ Sta. 2+85.50 Gov. Kent Terrace 17.5' Rt.
MH5	" "	343.30	343.15	348.68	—	" "	℄ Sta. 6+18.65 Gov. Ridgely Lane 24.5 Lt.
MH6	" "	246.13	244.75	250.50	—	" "	See Plan
MH7	" "	271.00	263.00	275.50	—	" "	See Plan
MH11	" "	293.50	290.18	298.50	—	" "	See Plan

Pipe Schedule

Type	Quantity
15" RCP Class III	408 l.f.
15" R.C.P. Class IV	703 l.f.
18" R.C.P. Class III	557 l.f.
24" ASTM C-361 cl. B-25	107 l.f.
27" ASTM C-361 cl. C-25	79 l.f.

Tree Schedule

Quantity	Key Plant Name & Symbol	Size	Remarks
51	(M) Acer Sacharum - Green Mountain Sugar Maple	2" - 2½" Cal.	B & B Heavyhead
59	(O) Quercus Rubra Northern Red Oak	2" - 2½" Cal.	B & B Heavyheads

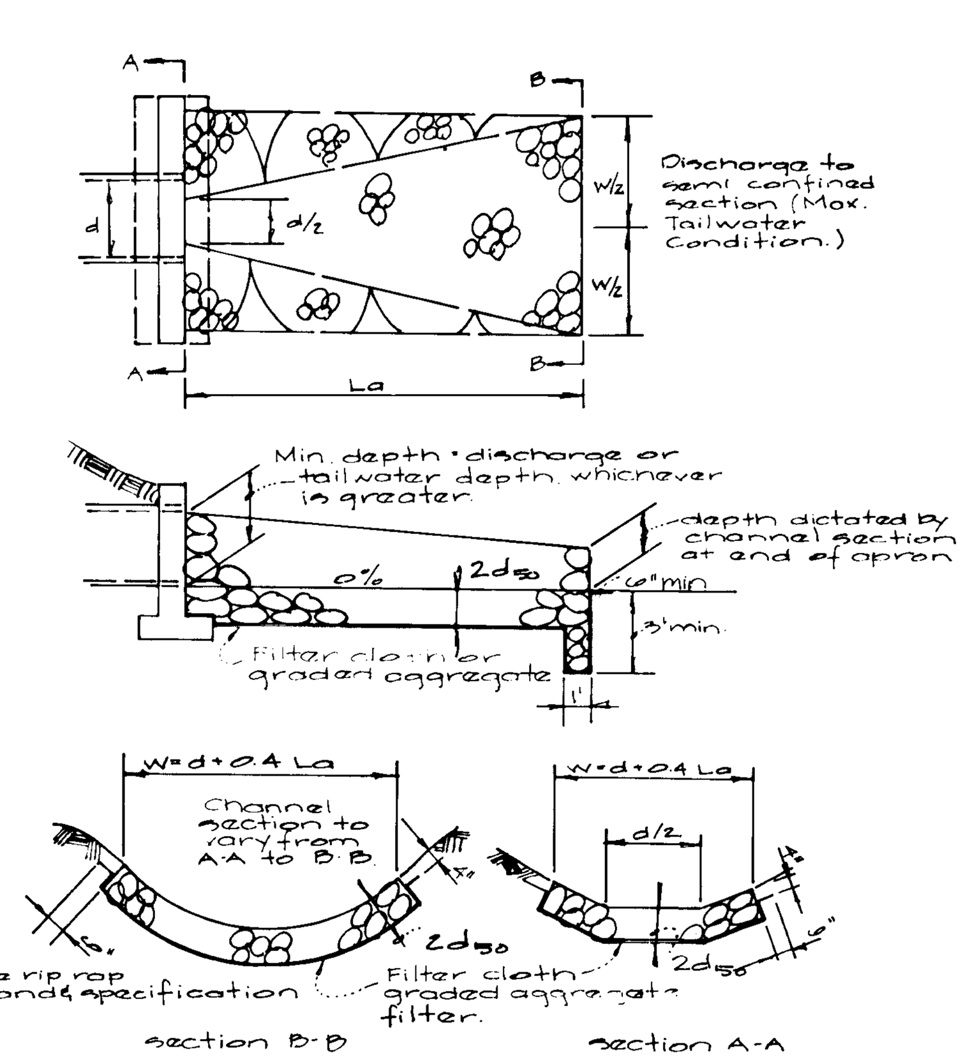


TYPICAL TREE GUYING

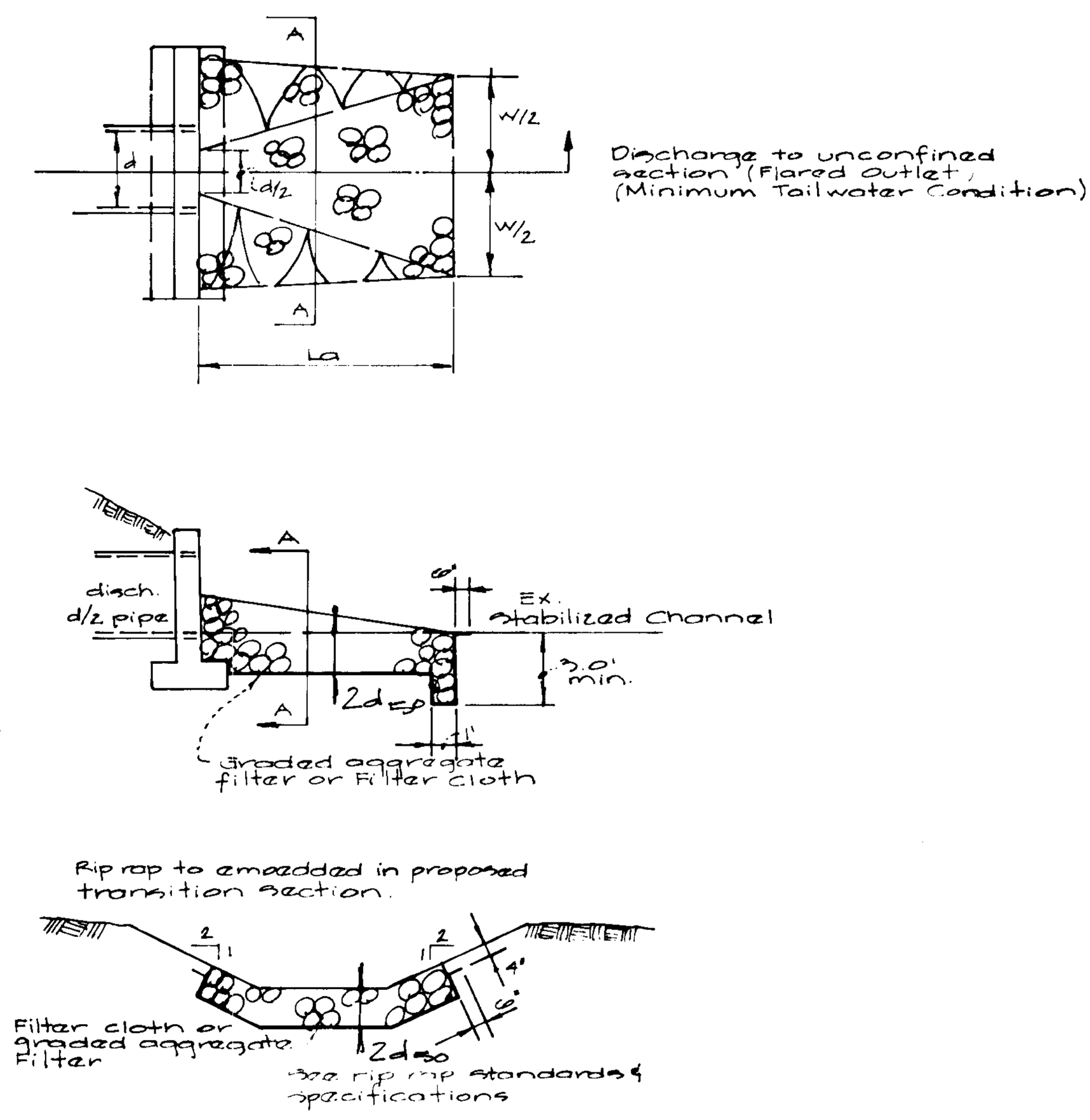
Note: Contractor shall verify location of underground utilities prior to digging. Final locations of trees may be ajusted slightly to accommodate field conditions. Planting procedures shall comply with "Landscape Specifications for the Baltimore-Washington Metropolitan Areas." Substitutions to the above species may be permitted, provided that the planting is in accordance with the Street tree and landscape requirements, as specified in section 16.131 of the Howard County Subdivision Regulations.

Tree Preservation Notes

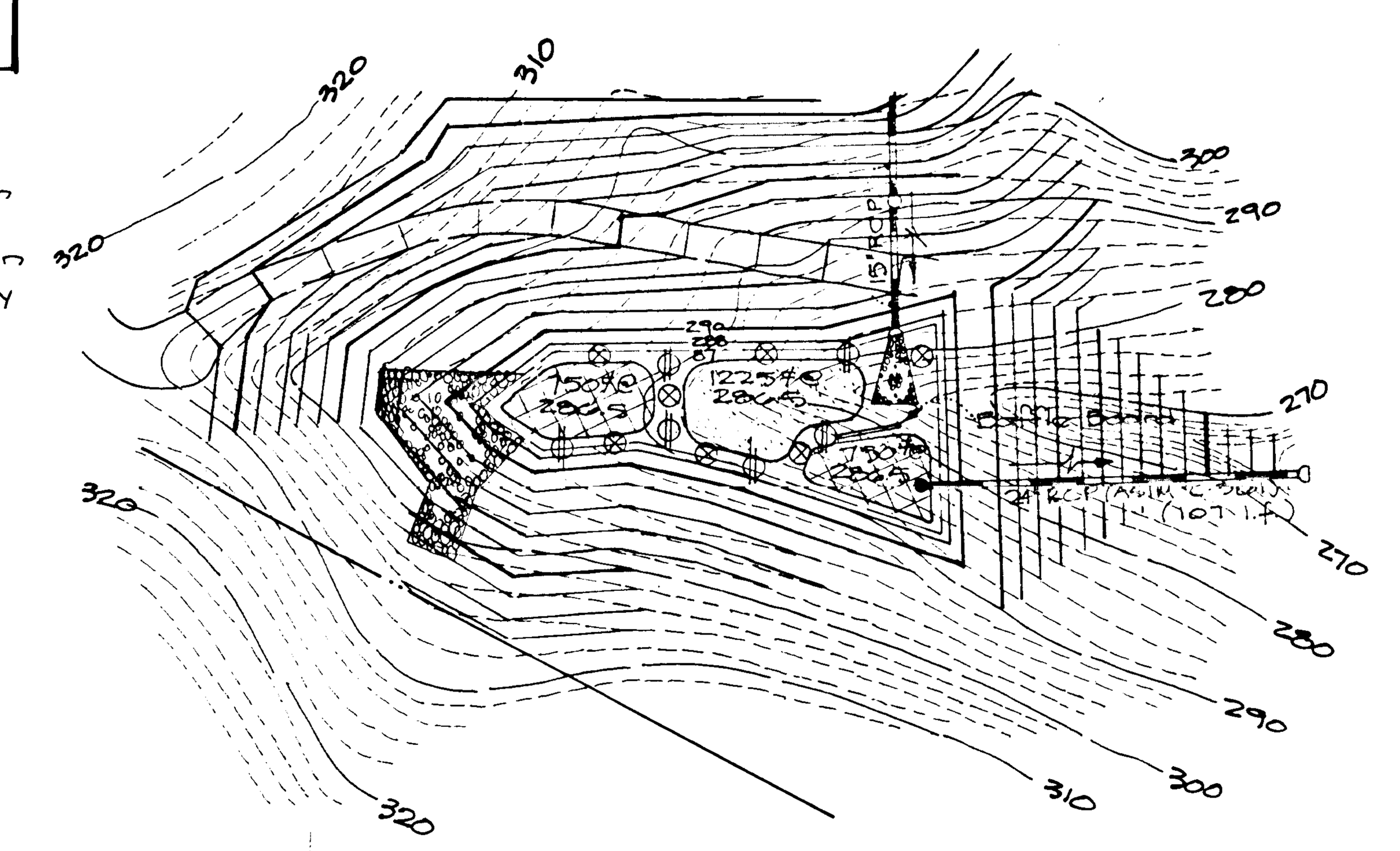
1. Clearing operations shall be confined to the limits shown on this plan.
2. Trees shall be harvested in such a manner and direction so that trees to be saved are not damaged, particularly the trunk bark.
3. Roots of trees to be saved are to be protected to the maximum extent possible. Where roots must be cut, the cut shall be clean.
4. Soil and other construction materials shall not be stockpiled over roots of trees outside the limits of clearing.
5. Washout from concrete trucks and other materials hazardous to trees shall not be discharged over the roots of the trees to be saved.



Rip Rap Outlet Protection III
(for max. tailwater cond. @ ES 1, 2 & 4)



Rip Rap Outlet Protection I
(for min. tailwater condition @ ES 5 & 8)



Shallow Marsh @ Water Quality Pond # 2

Scale: 1"=50'

For Shallow Marsh Planting and Grading Notes See Sheet 14 of 15

ADDENDUM TO POND SPECIFICATIONS

APPENDIX "A"
EARTHWORK COMPACTION

A. EMBANKMENT SHALL BE CONSTRUCTED OF APPROVED MATERIALS FROM THE EXCAVATION OR FROM OTHER SOURCES. THE MATERIAL SHALL BE FREE FROM ORGANIC MATERIALS, TRASH, MUCK, ROOTS, LOGS, STUMPS AND OTHER DELETERIOUS SUBSTANCES.

B. BEFORE DEPOSITING FILLS, THE SURFACE OF THE GROUND SHALL BE CLEARED OF ALL REFUSE, BRUSH, LARGE STONES, GRASS AND ROOTS. ALL ORGANIC MATTER, MUD, MUCK AND OTHERWISE UNSUITABLE SOILS, SHALL BE REMOVED FROM THE SURFACES UPON WHICH FILLS ARE TO BE PLACED. THE SURFACE SHALL BE PLOWED OR SCARIFIED TO A DEPTH OF SIX INCHES. SURFACE SOILS SO SCARIFIED, OR WHICH HAVE BEEN DISTURBED BY GRUBBING AND STRIPPING OPERATIONS, SHALL BE COMPACTED TO UNDISTURBED SOIL BELOW BY DISCING, LEVELING, ROLLING AND COMPACTING AT THE MOISTURE CONTENT AND TO THE DENSITY SPECIFIED BELOW FOR COMPACTED EMBANKMENTS.

C. WHERE FILLS ARE MADE ON HILLSIDES OR SLOPES, THE SLOPE OF THE ORIGINAL GROUND UPON WHICH THE FILL IS TO BE PLACED SHALL BE PLOWED OR SCARIFIED DEEPLY, OR WHERE THE SLOPE RATIO OF THE ORIGINAL GROUND IS STEEPER THAN 5 HORIZONTAL ON 1 VERTICAL, THE BANK SHALL BE STEPPED OR BENCHED, WHEN CONSIDERED NECESSARY BY THE ENGINEER, IN ORDER THAT THE PLACEMENT OF THE FILL MAY BE ACCOMPLISHED IN HORIZONTAL LAYERS.

D. PLACING, SPREADING AND COMPACTING FILL MATERIALS:

1. THE FILL MATERIAL SHALL BE PLACED IN LAYERS WHICH BEFORE COMPACTION SHALL NOT EXCEED 8 INCHES. EACH LAYER SHALL BE SPREAD UNIFORMLY AND EVENLY AND SHALL BE THOROUGHLY BLADE MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER.
2. AFTER EACH LAYER HAS BEEN PLACED, MIXED AND SPREAD EVENLY, IT SHALL BE THOROUGHLY COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698 (AASHTO DESIGNATION T-99).
3. THE MOISTURE CONTENT OF THE FILL SHALL BE AS REQUIRED IN ORDER TO ATTAIN THE DEGREE OF COMPACTION SPECIFIED.
4. COMPACTION SHALL BE BY APPROVED MULTIPLE-WHEEL PNEUMATIC TIRED ROLLERS, VIBRATORY ROLLERS OR OTHER TYPES OF ACCEPTABLE ROLLERS.
5. THE FILLING OPERATION SHALL BE CONTINUED IN 8-INCH (AS DEPOSITED LOOSE) LAYERS, AS SPECIFIED ABOVE, UNTIL THE FILL HAS BEEN BROUGHT TO THE SLOPES AND GRADES AS SHOWN ON THE CONTRACT DRAWING, MAKING PROPER ALLOWANCES FOR THICKNESS OF TOPSOIL, PAVEMENT, FLOOR SLABS, ETC.
6. THE FILL SHALL BE CONSTRUCTED IN SUCH A MANNER THAT THE SURFACE WILL BE SLOPED TO DRAIN AT ALL TIMES, AND ALL FILL SHALL BE DEPOSITED TO PREVENT EXCESSIVE MOISTURE ACCUMULATION FROM RAINWATER.
7. WHEN THE WORK IS INTERRUPTED BY RAIN, FILL OPERATIONS SHALL NOT BE RESUMED UNTIL FIELD TESTS INDICATE THAT THE MOISTURE CONTENT AND DENSITY OF THE TOP 6 INCHES OF FILL ARE WITHIN THE LIMITS HEREINBEFORE SPECIFIED.

SITE PREPARATION

PRIOR TO THE CONSTRUCTION OF THE POND OR DAM EMBANKMENT, THE FOLLOWING MUST BE CONSIDERED:

A. A STABILIZED WORK AREA AND/OR TEMPORARY ACCESS ROAD SHALL BE CONSTRUCTED TO PERMIT EQUIPMENT MOVEMENT INTO EACH PROPOSED SWM AREA.

B. IN ORDER TO PROVIDE STABILITY TO THE DAM EMBANKMENT SUBSOILS, ANY PONDED WATER SHALL BE COMPLETELY DRAINED, AND ANY WATER INFILTRATION CONTROLLED BY THE USE OF MINOR DEWATERING TECHNIQUES COMPOSED OF LOCAL SUMPS, PUMPS, DIVERSION DIKES, PERIMETER DRAINS AND/OR INTERCEPTING TRENCHES.

UPON PROVIDING ACCESS AND STABILITY TO THE POND AND DAM EMBANKMENT AREAS THE FOLLOWING SUBGRADE PREPARATIONS SHALL BE ACCOMPLISHED IN THE AREA OF PROPOSED EMBANKMENT CONSTRUCTION:

A. ALL ORGANICS, TOPSOIL, AND OTHER SURFICIALLY UNSUITABLE SOILS, AS DISCUSSED BELOW, SHALL BE REMOVED.

B. THE SUBGRADE SHALL BE PROOFROLLED TO FORM A RELATIVELY UNYIELDING SURFACE. ANY EXCESSIVELY SOFT OR LOOSE AREAS SHALL BE UNDERCUT AND REPLACED WITH SUITABLE MATERIALS PLACED IN ACCORDANCE WITH APPENDIX "A", EARTHWORK COMPACTION. SPECIAL CARE SHALL BE EXERCISED AT PROPOSED SWM POND NO. 4, WHICH EXHIBITS VERY SHALLOW GROUNDWATER CONDITIONS. RELATIVELY LIGHT EARTHWORK AND COMPACTION EQUIPMENT SHOULD BE UTILIZED DURING THE CLEARING OPERATIONS AND INITIAL STAGES OF EMBANKMENT CONSTRUCTION. DUE TO THE PRESENCE OF SENSITIVE SOILS THROUGHOUT EACH OF THE PROPOSED SWM AREAS, IT IS RECOMMENDED THAT ALL EARTHWORK OPERATIONS BE MONITORED BY AN EXPERIENCED SOILS TECHNICIAN, WORKING UNDER THE SUPERVISION OF A SOILS ENGINEER, TO ENSURE THAT ALL EMBANKMENT CONSTRUCTION IS PROPERLY ACCOMPLISHED IN COMPLIANCE WITH THE RECOMMENDATIONS CONTAINED HEREIN.

THE ON-SITE SOILS ARE MOISTURE SENSITIVE AND MUST BE PROTECTED FROM EXCESSIVE CONSTRUCTION ACTIVITY IN THE PRESENCE OF HIGH MOISTURE AND FROM BECOMING SATURATED DUE TO SURFACE RUNOFF.

ON-SITE BORROW MATERIALS

IN GENERAL, THE BORING DATA INDICATES THAT THE PROPOSED ON-SITE BORROW MATERIALS ARE GENERALLY SUITABLE FOR EMBANKMENT AND CORE TRENCH CONSTRUCTION, WHEN THE CONSTRUCTION IS ACCOMPLISHED IN COMPLIANCE WITH APPENDIX "A" AND THE RECOMMENDATIONS PROVIDED.

CORE TRENCH CONSTRUCTION

ON-SITE MATERIALS ARE AVAILABLE FOR USE IN CORE TRENCH CONSTRUCTION. ACCEPTABLE ON-SITE CORE TRENCH MATERIALS ARE VISUALLY CLASSIFIED AS "SILT & CLAY" AND/OR UNIFIED SOIL CLASSIFICATION DESIGNATIONS. ACCEPTABLE MATERIALS, I.E. "SILT & CLAY", "CLAY & SILT", "ML" WERE DETECTED AT ANTICIPATED CUT AREAS AT BORING LOCATIONS B-11, B-13, B-22, B-31, B-32, B-41, B-72, AND B-82, AND WERE ALSO DETECTED AT THE GROUND SURFACE OF BORING LOCATIONS B-35, B-73 THROUGH B-75 AND B-83. BECAUSE OF THE TEXTURAL VARIABILITY OF THE ON-SITE MATERIALS, ANY ON-SITE MATERIALS PROPOSED TO BE UTILIZED IN CORE TRENCH CONSTRUCTION SHALL BE VISUALLY INSPECTED BY AN EXPERIENCED SOIL TECHNICIAN, AND TESTED PRIOR TO PLACEMENT AND COMPACTION, TO CONFIRM THEIR SUITABILITY FOR USE ON CORE TRENCH CONSTRUCTION. SHOULD ON-SITE SOILS BE CONSIDERED FOR USE AS CORE TRENCH MATERIALS, IT WOULD BE PRUDENT TO DISCUSS THE UTILIZATION OF ON-SITE "ML" SOILS WITH THE APPROPRIATE HOWARD COUNTY AGENCIES AND THE SCS DURING PREPARATION OF ANY SWM PLANS AND SPECIFICATIONS.

THE ON-SITE MATERIALS WHICH ARE JUDGED SUITABLE FOR CORE TRENCH CONSTRUCTION ARE VERY MOISTURE SENSITIVE AND WILL BE EASILY DISTURBED BY EXCESSIVE CONSTRUCTION ACTIVITY. CARE MUST BE EXERCISED TO PROTECT THE CORE TRENCH MATERIALS TO ENSURE THEY EXHIBIT IN-SITU MOISTURE CONTENTS BELOW PLASTIC LIMITS AND NEAR OPTIMUM MOISTURE.

THOSE MATERIALS THAT EXHIBIT SPT RESULTS OF LESS THAN 50 BLOWS PER 6-INCHES PENETRATION SHOULD GENERALLY BE REMOVED IN MASS EARTHWORK EXCAVATIONS BY CONVENTIONAL EXCAVATION METHODS, WITH LIMITED RIPPING REQUIRED IN THOSE ISOLATED AREAS WHERE ZONES OF RELATIVELY DENSE MATERIALS ARE ENCOUNTERED. THOSE MATERIALS THAT DISPLAY SPT RESULTS OF 50 BLOWS PER 3 TO 6 INCHES PENETRATION WILL PROBABLY REQUIRE RIPPING, AND POSSIBLE BLASTING IN ISOLATED REGIONS WHERE DENSE MATERIALS ARE ENCOUNTERED. MATERIALS EXHIBITING SPT RESULTS OF 50 BLOWS PER 1 TO 2-INCHES PENETRATION WILL REQUIRE RIPPING AND PERHAPS ISOLATED BLASTING ESPECIALLY IN TRENCH EXCAVATIONS. THOSE MATERIALS AT SPOON AND/OR AUGER REFUSAL LEVELS WILL PROBABLY REQUIRE BLASTING. IT MUST BE NOTED THAT THE PHYSICAL CHARACTERISTICS OF THE RESIDUAL MATERIALS, E.G JOINTING, FRACTURING, AND FOLIATION, ALONG WITH THE TYPE OF EXCAVATION EQUIPMENT USED, WILL INFLUENCE EXCAVATION DIFFICULTY. IT WOULD BE PRUDENT FOR THE EARTHWORK CONTRACTORS TO CAREFULLY REVIEW THE RESULTS OF THIS STUDY PRIOR TO MOBILIZING EQUIPMENT. COPIES CAN BE OBTAINED FROM THE CIVIL ENGINEER.

SWM EMBANKMENT CONSTRUCTION

IN LIGHT OF THE LOCATION OF THE PROPOSED SWM FACILITIES IN PROXIMITY TO STREAMS AND GROUNDWATER, THE ON-SITE SOILS WILL REQUIRE DISCING AND/OR MANIPULATION AND/OR AERATION TO REDUCE THE MOISTURE CONTENTS ADEQUATELY FOR EFFICIENT AND SATISFACTORY COMPACTION. FURTHERMORE, THE RELATIVELY HIGH PLASTICITY INDICES INDICATE THE ON-SITE SOILS ARE MOISTURE SENSITIVE AND WILL BE EASILY DISTURBED BY EXCESSIVE CONSTRUCTION ACTIVITY, AND WILL REQUIRE THE IMPLEMENTATION OF APPROPRIATE AND CAREFUL CONSTRUCTION PRACTICES TO ENSURE THE ON-SITE SOILS WILL PROVIDE SATISFACTORY ENGINEERING PROPERTIES FOR EMBANKMENT CONSTRUCTION. CONSTRUCTION PRACTICES COMPRISED OF PROTECTING SUBGRADE SOILS BY ROLLING AND SEALING THEM AT THE END OF EVERY WORK DAY, AND GRADING THE SUBGRADE SOILS TO FACILITATE POSITIVE DRAINAGE TO SEDIMENT CONTROL/TEMPORARY STORMWATER MANAGEMENT AREAS, AND ACCOMPLISHING EARTHWORK DURING THE WARMER AND DRIER SEASONS (E.G. LATE SPRING THROUGH EARLY FALL) ARE EXAMPLES OF CONSTRUCTION PRACTICES DEEMED IMPORTANT ON THIS PROJECT SITE.

SUBSEQUENT TO ACHIEVING ANY CUT AND PRIOR TO PLACING ANY FILL, THE SUBGRADE SHALL BE THOROUGHLY PROOFROLLED BY APPROVED METHODS TO DETECT ANY EXCESSIVELY SOFT OR YIELDING SOIL CONDITIONS. ANY EXCESSIVELY SOFT MATERIALS SHALL BE UNDERCUT AND REPLACED WITH CONTROLLED FILL OR, WHERE APPLICABLE, RELATIVELY MOIST SUBGRADE MATERIALS MAY BE DISCED, AERATED, AND RECOMPACTED TO THE SPECIFIC UNIT WEIGHT (I.E. AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR, ASTM D-698 OR AASHTO T-99). ALL FILL CONSTRUCTION SHALL BE CONTROLLED AND COMPACTED IN ACCORDANCE WITH APPENDIX "A". ALL EARTHWORK OPERATIONS SHOULD BE MONITORED BY A SOILS TECHNICIAN, TO ENSURE COMPLIANCE WITH THE SPECIFICATIONS.

IT IS RECOMMENDED THAT THE BORROW MATERIALS BE CONTINUOUSLY INSPECTED TO ENSURE THAT THEY ARE FREE OF ORGANICS, AND ARE ACCEPTABLE TO EMBANKMENT (AND CORE TRENCH CONSTRUCTION). REGARDING AREAS WHERE DECOMPOSED ROCK MATERIALS ARE TO BE EXCAVATED AND UTILIZED IN SWM FACILITY EMBANKMENT CONSTRUCTION, WEATHERED ROCK FRAGMENTS THAT DO NOT EXCEED THREE (3) INCHES IN LARGEST DIMENSION ARE SUITABLE FOR USE IN STRUCTURAL FILL. THE ROCK FRAGMENTS SHALL BE THOROUGHLY BLENDED WITH FINE-GRAINED SOILS AS NECESSARY TO YIELD A MATERIALS THAT CAN BE SATISFACTORILY COMPACTED TO 95% OF ITS MAXIMUM DENSITY, AS DETERMINED BY AASHTO T-99 (ASTM D-698). THE USE OF THE PREDOMINANTLY COARSE-GRAINED MATERIALS SHALL BE LIMITED TO THE DOWNSTREAM FACE OF EMBANKMENTS.

RELEASE STRUCTURES

IT IS RECOMMENDED THAT THE PROPOSED RELEASE STRUCTURES BE SUPPORTED ON A SHALLOW FOUNDATION SYSTEM FOUNDED IN UNDISTURBED ORIGINAL SOILS EXHIBITING SPT RESULTS OF AT LEAST 6 BLOWS PER FOOT PENETRATION AND/OR ON NEWLY PLACED CONTROLLED AND COMPACTED FILL. THE SHALLOW FOUNDATION SYSTEM SHALL BE DESIGNED FOR A 2000 PSF MAXIMUM ALLOWABLE BEARING CAPACITY. IMMEDIATELY PRIOR TO POURING FOUNDATION CONCRETE, THE FOUNDING MATERIALS SHALL BE VISUALLY INSPECTED AND TESTED TO CONFIRM THE AVAILABILITY OF THE REQUIRED BEARING CAPACITY. ISOLATED AREAS OF UNDERCUTTING OF WEAK MATERIALS, AND REPLACEMENT WITH CONTROLLED FILL, SHOULD BE ANTICIPATED.

SLOPE PROTECTION/STABILITY

IN AREAS WHERE PROPOSED GRADES RESULT IN REMOVAL OF THE EXISTING VEGETATIVE COVER AND/OR THE CREATION OF ADDITIONAL SLOPE AREAS, WE RECOMMEND THE FOLLOWING:

1. THE EARTHWORK OPERATIONS BE ACCOMPLISHED DURING THE GROWING SEASON, PREFERABLY DURING THE SUMMER MONTHS, WHEN RAINFALL IS TYPICALLY LESS.
2. CONSTRUCT EARTH BERMS ALONG THE TOP OF ANY EXISTING AND/OR NEWLY CREATED SLOPES, WHERE POSSIBLE, TO CONTROL SURFACE RUN-OFF AND MINIMIZE THE FORMATION OF GULLIES DOWN THE FACE OF THE SLOPE.
3. IMMEDIATELY AFTER FINAL GRADING, THE DISTURBED PORTIONS OF THE SLOPE SHOULD BE RE-SEEDED, FERTILIZED AND COVERED WITH AN APPROPRIATE ORGANIC MULCH AND BINDER.
4. UTILIZATION OF AN EROSION CONTROL TYPE FABRIC SUCH AS A BIODEGRADABLE MATTING (MAN-MADE OR NATURAL PRODUCT) IN THE STEEPER AREAS AND/OR WHERE SURFACE RUN-OFF WILL BE CONCENTRATED, TO PROVIDE EROSION CONTROL AND FACILITATE VEGETATION ESTABLISHMENT.
5. PERIODIC EXAMINATION OF THE SLOPE AREAS DURING CONSTRUCTION, AND UNTIL GROUND COVER IS ESTABLISHED, TO LOCATE AND REGULATE ANY SLOPE AREAS SUBJECTED TO SCOURING FROM EXCESSIVE SURFACE RUN-OFF.

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."

[signature] 7-18-94
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.

[signature] 7/18/94
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.

[signature] 8/29/94
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.

[signature] 8/29/94
Howard Soil Conservation District — Date

Approved: Department of Public Works
[signature] 8-19-94 — Chief, Bureau of Highways — Date
[signature] 8/24/94 — Chief, Bureau of Engineering — Date
[signature] 8/24/94 — Chief, Land Development — Date

Approved: Howard County Dept. of Planning & Zoning
[signature] 9/2/94 — Chief, Division of Land Development & Research — Date

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.
D.E.V.	M.C.F.	C.K.G.

DATE	REVISION	BY	APP'R.
1/27/95	eliminate MH8 & add I-9 to structure schedule	MCF	

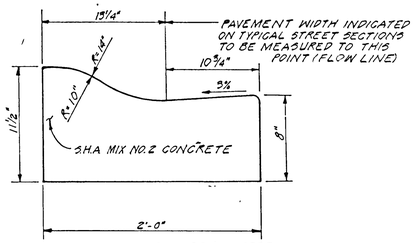
PREPARED FOR:
Governors Run Communities, Inc.
c/o Greenebaum & Rose Asso., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Detail Sheet
Governors Run
Section 2
Lots 74-130
Liber 3284 — Folio 598
2nd Election District — Howard County, Maryland

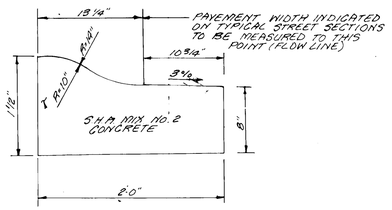
SCALE	ZONING	G.L.W. FILE No.
—	R-20	86055
DATE	**TAX MAP No.**	**SHEET**
July 1994	18/25 Parcel 2	12 of 15

F-70-114

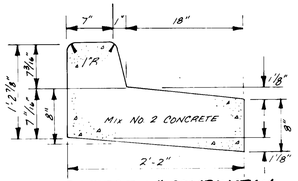
1583



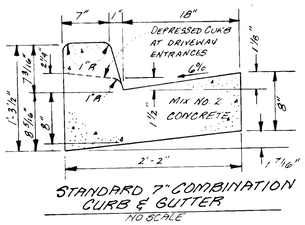
MODIFIED COMB. CURB & GUTTER



REVERSE MODIFIED COMBINATION CURB & GUTTER



REVERSE 7" COMBINATION CURB & GUTTER
NO SCALE



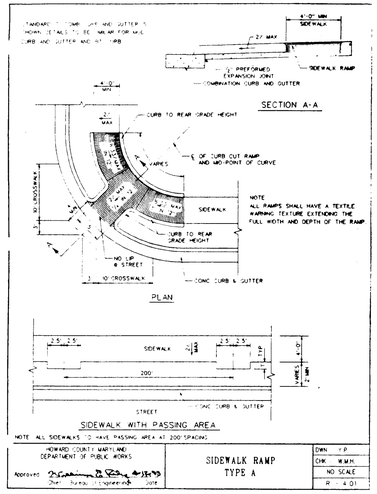
STANDARD 7" COMBINATION CURB & GUTTER
NO SCALE

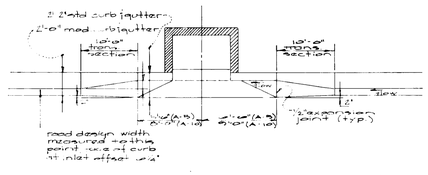
BITUMINOUS CONCRETE	1 1/2"
BITUMINOUS CONCRETE BASE	5"

P-2 PAVING SECTION FOR PUBLIC ROADS
NO SCALE

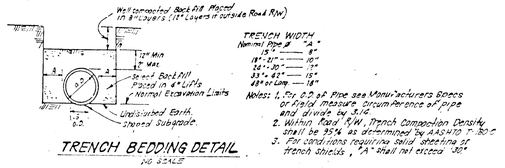
BITUMINOUS CONC. SURFACE	1 1/2"
BITUMINOUS CONC. BASE	2 1/2"
PRIME	
8" CRUSHER RUN BASE (PLACED IN 2 COURSES) OR 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE	8" OR 6"

ALTERNATE PAVING SECTION (P-2) FOR PUBLIC ROADS
NO SCALE

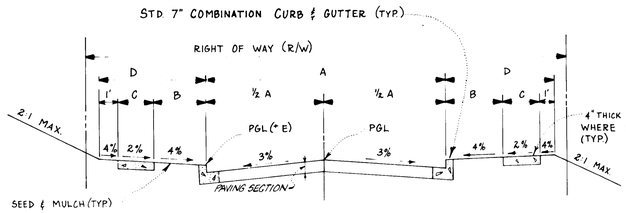




modified combination curb & gutter transition curb section at 'A' type inlets
n.t.s.



TRENCH BEDDING DETAIL
NO SCALE



TYPICAL PAVING SECTION - PUBLIC ROADS
NO SCALE
* SEE ALTERNATE PAVING SECTIONS THIS SHEET

STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	℄	DESIGN SPEED	*PAVING SECTION
Governors Run	33+54.09 to 38+52.30	cul-de-sac	28'	4'	4'	9'	60'	R-20	-10	30	P-2
Governor Ridgely Lane	2+20.59 to 5+77.75	Local Road	30'	4'	4'	9'	50'	R-20	-19	30	P-2
Governor Ridgely Lane	5+77.75 to 7+28.08	Cul-de-sac	28'	4'	4'	9'	50'	R-20	-10	30	P-2
Governor Thomas Lane	0+14.50 to 3+67.03	Cul-de-sac	28'	4'	4'	9'	50'	R-20	-10	30	P-2
Governor Kent Terrace	0+14.50 to 4+62.39	Cul-de-sac	28'	4'	4'	9'	50'	R-20	-10	30	P-2

General Notes

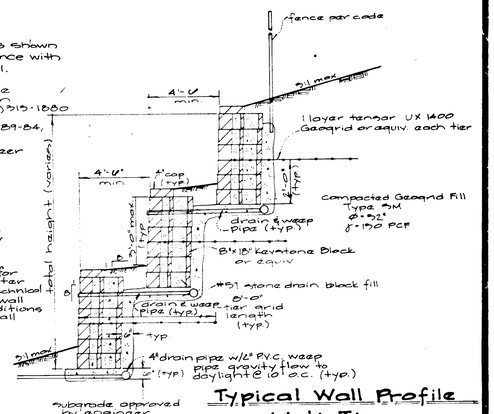
1. All storm drain and paving shall be constructed in accordance with the latest details and specifications of Howard County and Maryland S.H.A.
2. Types of storm drain structures refer to the standard details of Howard County and Maryland S.H.A.
3. Trench compaction for storm drains within road or street right-of-way limits shall be in accordance with Howard County Design Manual Vol. IV (Class "C" trench bedding to be used for all storm drain unless shown otherwise. See detail this sheet.
4. Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of the mains by digging test pits by hand at all utility crossings well in advance of construction.
5. All utility companies shall be notified 24 hours in advance of construction.
6. All traffic control devices, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices", 1988 Edition.
7. Sag and crest vertical curves were designed in accordance with Howard County Design Manual Volume III.
8. Provide concrete sidewalk ramps, Howard County Standard Type "A" R-4.01 where shown on plan.
9. Design Speed: See chart this sheet.
10. Zoning: R-20
11. Contractor or developer shall contact the construction inspection/survey division, 24 hours before commencing work, at 792-7272.
12. For tree schedule, see sheet of
13. Street lights shall be provided at the locations shown in the schedule on sheet 10 of 15 and in accordance with Volume III of the Howard County Design Manual.
14. The developer or contractor shall contact the Construction Inspection Division 24 hours in advance of commencement of work. at (410) 313-1880
15. Other county file numbers: S 81-29, P 89-42, WP 89-84, F 90-114.
16. Developer must provide a geotechnical engineer to monitor & certify the construction of the retaining walls.
17. All materials used in the construction of the retaining walls shall be Approved by the Geotechnical engineer on site.
18. Fill areas shall achieve 95% compaction in accordance with a method determined by AASHTO T-180.

Note: Drain system is suitable for wall sites where ground water seepage do not exist. A geotechnical engineer shall evaluate all wall sites for ground water conditions and provide alternative wall drain details as required.

Sodded Ditch Detail

GENERAL SODDING NOTES

1. Apply 10-10-10 Fertilizer @ 1000 lbs. /acre (23 lbs/1000 s.f.
2. Apply Ground Agricultural Limestone @ 2 tons/acre (90 lbs/1000 s.f.)
3. Incorporate both Lime and Fertilizer into Soil by discing Firm up after Incorporation.
4. Lay Sod to a tight fit. Roll to insure Contact with Underlying Soil. Water As Necessary for 1st 2 Weeks, in Summer, to ensure establishment.
5. All Sod Used must be Certified by the State of Maryland.
6. Sod to be pegged and Stapled



Typical Wall Profile
Muti-Tier
N.T.S.

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.

Patricia Engler 8/29/94
U.S. Soil Conservation Service/U.S. — Date

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

Robert W. Zirkle 8/29/94
Howard Soil Conservation District — 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."

7-18-94
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

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7/18/94
Signature of Developer/Builder — Date

Approved: Department of Public Works
Chief, Land Development Division — Date 8/24/94
Chief, Bureau of Highways — Date 8-19-94
Chief, Bureau of Engineering — Date 8/24/94
Approved: Howard County Dept. of Planning & Zoning
Chief, Division of Land Development & Research — Date 9/2/94

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. DEV | DRN. MCF | CHK. CKG

DATE	REVISION	BY	APP'R.

OWNER
Governors Run Communities, Inc.
% Grzenabaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Storm Drain and Paving Details
Governors Run
Section 2
Lots 74-130
Liber 3284 Folio 398
2nd Election District — Howard County, Maryland

SCALE	DES.	QUANTITY
As Shown	R-20	86 LOTS
DATE	TAX MAP No.	SHEET
July 1994	18/25 Parcel 2	13 of 15

F-90-114

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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."

[signature] 7-18-94
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.

[signature] 7/13/94
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.

[signature] 8/29/94
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.

[signature] 8/29/94
Howard Soil Conservation District — Date

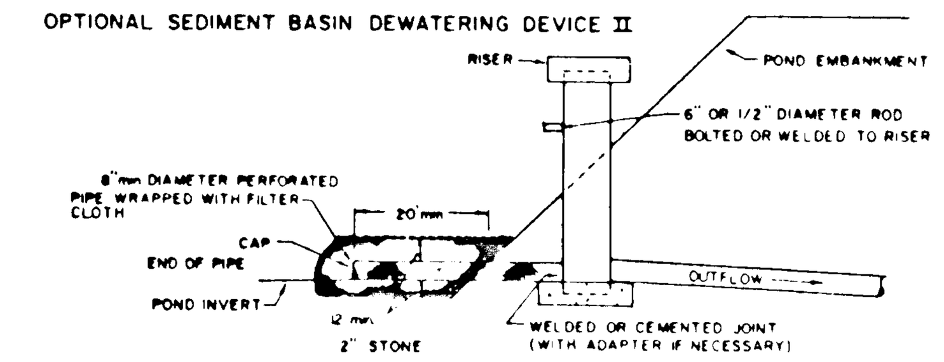
MARSH GRADING AND PLANTING NOTES:

1. This detail shows the work to be done below the permanent pool elevations.
2. The excavation shown below permanent pool may be limited by existing rock. If rock is encountered, the proposed excavation shall be modified to avoid rock excavation.
3. If an area to be planted is bare rock after excavation, those plants shall be placed in an approved alternate location.
4. Areas designated by shall be planted with one of the three species from the list below. Areas designated by shall be planted with one of the other two species. For both species, plants shall be placed in a grid pattern, three feet apart. In addition to the major planting areas, locations designated by shall be planted with a clump of at least two individual plants. Each clump shall contain only one species but both species shall have approximately the same number of clumps. The additional clumps represent a coverage of approximately 40 clumps per acre of wetland.
   a. Sagittaria latifolia (duck potato);
   b. Scirpus americanus (common three square);
   c. Scirpus validus (softstem bulrush).
5. In addition to the areas and species designated above, three of the species from the list below are to be selected and planted in clumps of five individuals at locations designated by ⊠. Each clump shall be planted within six feet of the edge and be monospecific, with the number of clumps being divided as evenly as possible between the three species selected. This coverage is approximately 50 individuals per acre of wetland.
   a. Acorus calamus (sweet flag);
   b. Leersia oryzoides (rice cutgrass);
   c. Peltandra virginica (arrow-arum);
   d. Pontederia cordata (pickerel weed);
   e. Saururus cernuus (lizards tail).
6. If, due to time of year or availability constraints, planting can not be accomplished after grading operations are completed, the area below ELEVATION 472.00 shall be temporarily seeded with annual rye grass and the straw-mulched. Final planting according to the plan shall be accomplished as soon as constraints are gone.
7. **Plant Material** - Plants shall be obtained from Environmental Concern, Inc., St. Michaels, Maryland, or from an alternate source approved by Howard County. Plants shall be in peat pots if possible. Bare root plants are an acceptable alternate. In either case, nursery instruction shall be followed for the proper time of year for planting.
8. **Care of Delivered Plant Material** - Once at the site, plants shall be cared for properly. While awaiting planting, they must be kept out of direct sunlight. Potted plants must be kept moist and bare rooted plants must be kept in their moisture retaining bags or in their water filled tubs, depending on how they were shipped from the nursery. All plants are to be planted as quickly as possible after delivery.
9. **Site Preparation** - If the site has been recently graded, no further preparation is necessary. If the soil is packed or if a good stand of grass (from temporary seeding) is present, the areas to be planted shall be loosened to a depth of six (6) inches by disking.
10. **Planting**

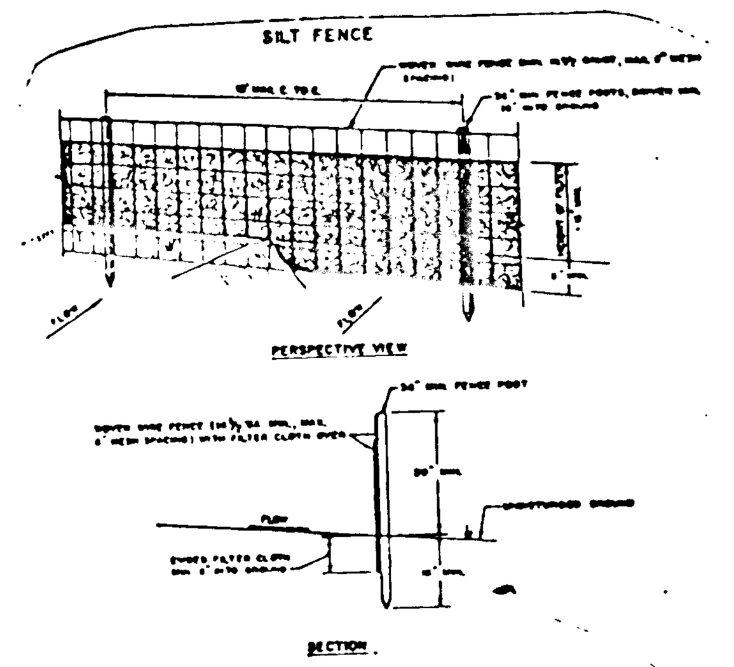
Peat-Pot Plants - Dig hole just wide enough to accept the pot and deep enough so that the grade around the plant is the same as the level of soil in the pot. The pot is to be torn in several places, inserted into the hole and then hand tamped.

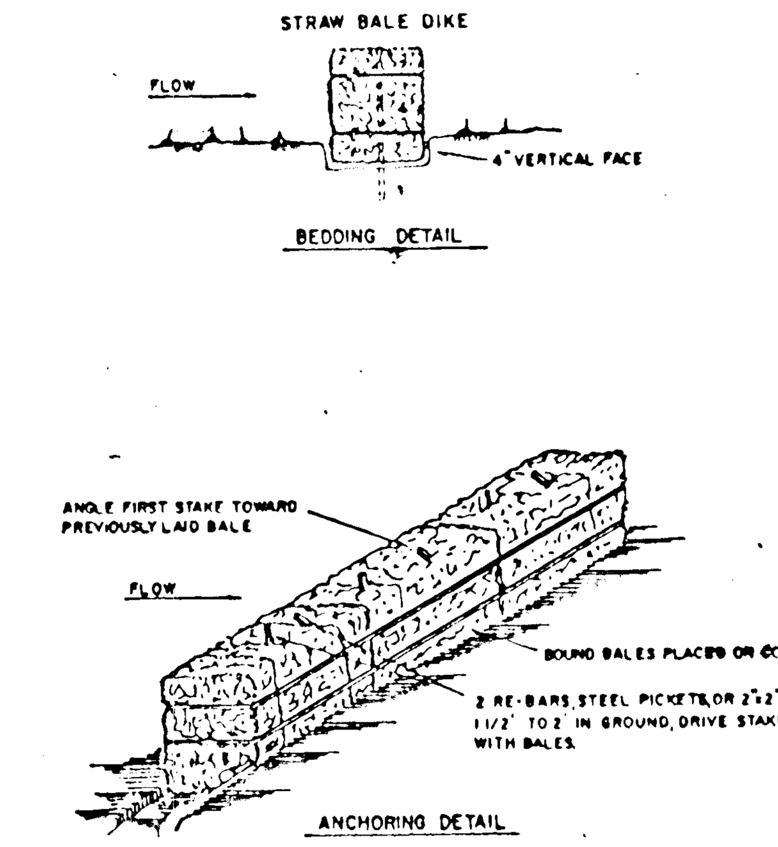
Bare-Root Plants - Dig hole wide enough to accommodate the spread-out roots. Hole should be deep enough so that the point where the stem becomes a root is at grade. The resultant arrangement must be a spread out, shallow root system.

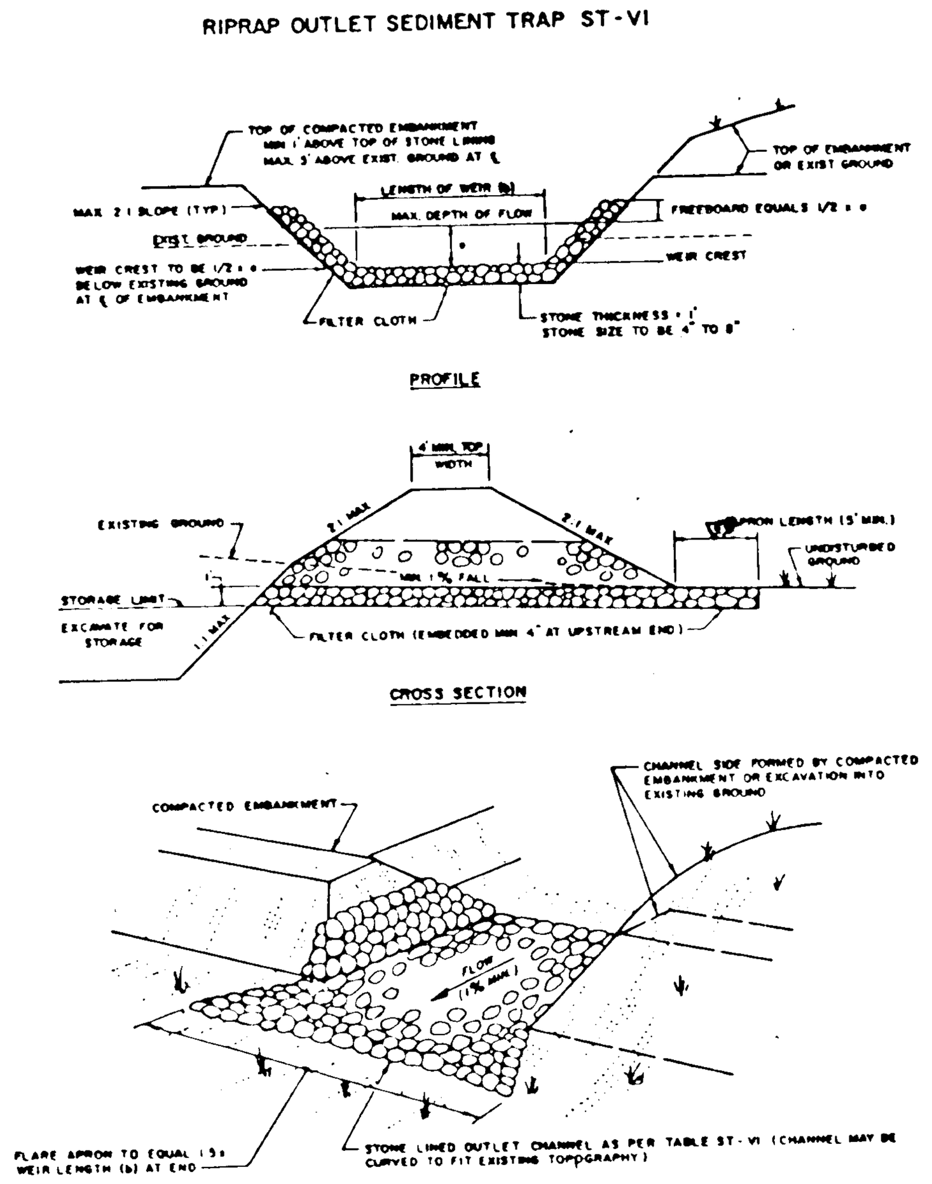
Post-Planting - If bare-root plants are used, the planted area must be flooded within 24 hours of planting. If only potted plants are used, the time can be lengthened to 72 hours. If these time frames can not be met, the plants must be kept wet by artificial means.

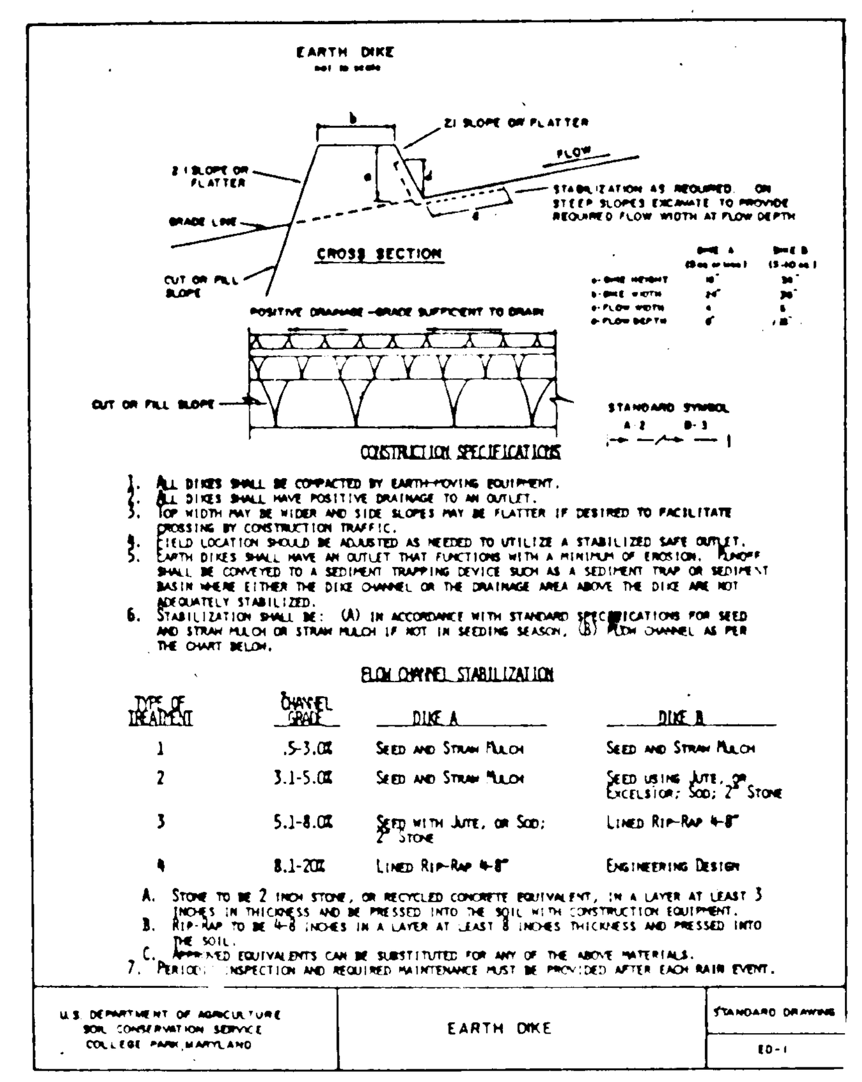


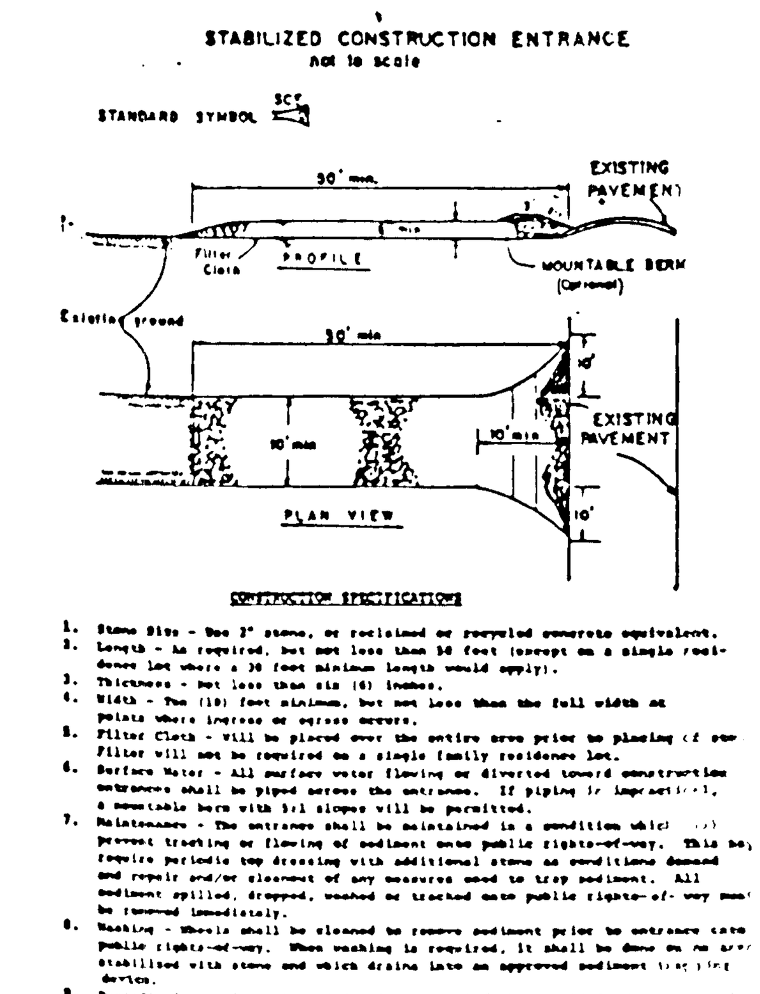
TEMPORARY DEWATERING DEVICE @ DESIGN POINT #8







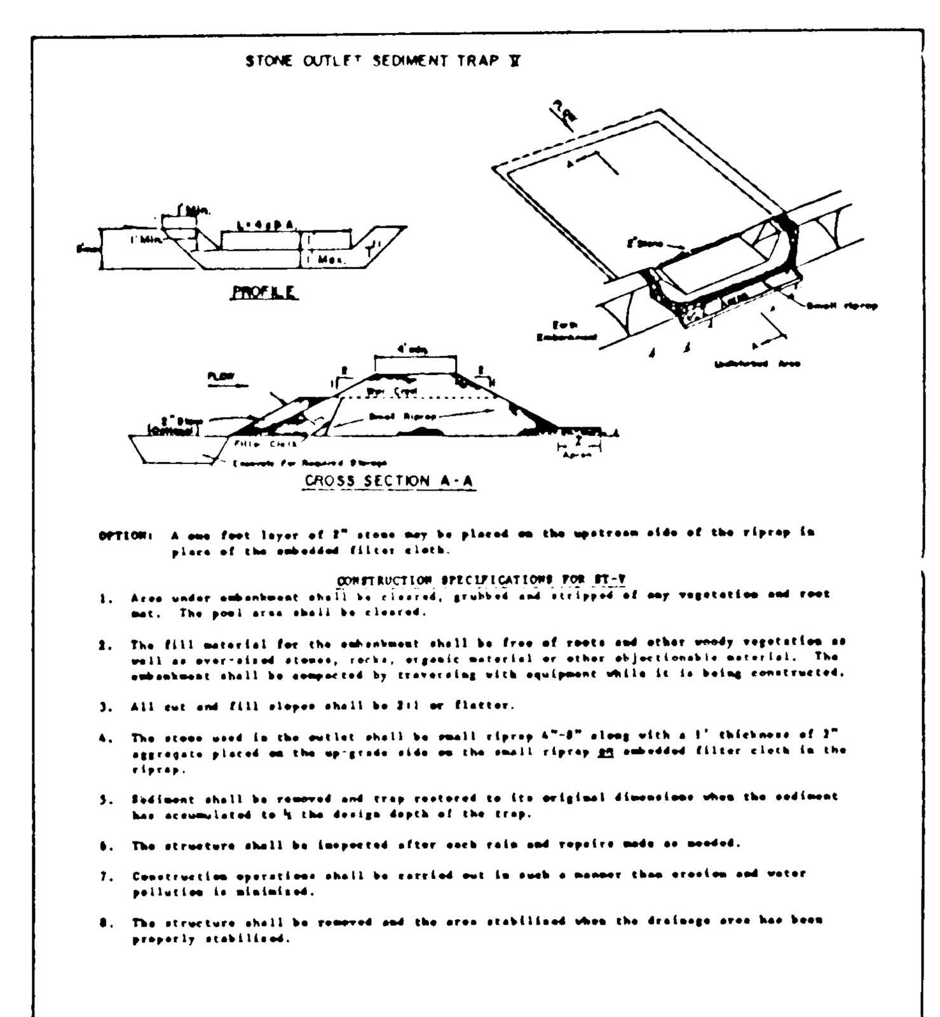


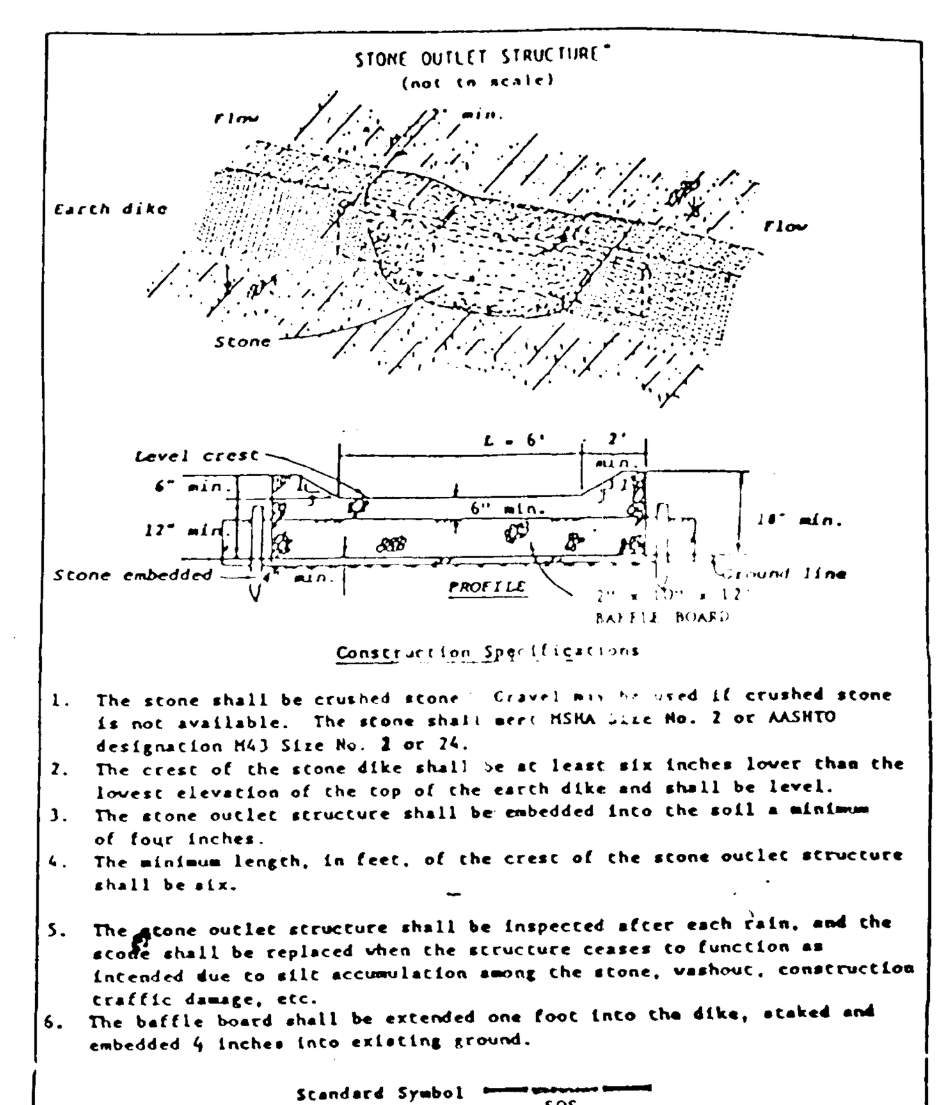


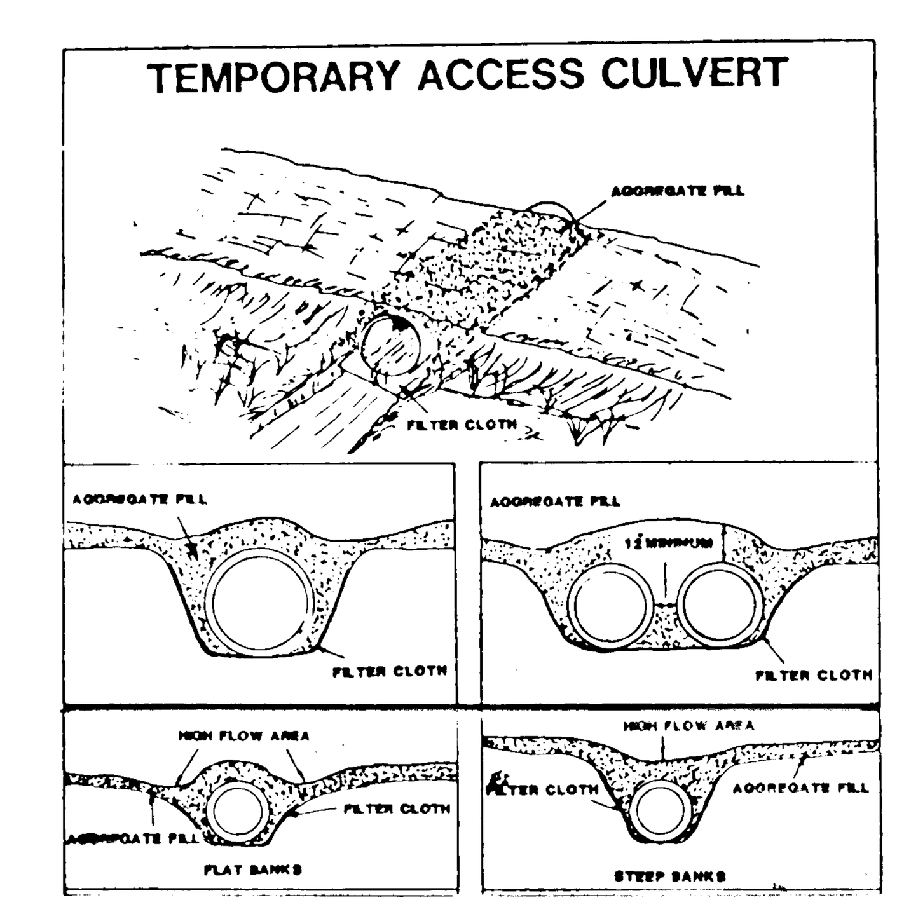
Construction Sequence

1. Obtain grading permit.
2. Arrange for an on-site meeting with County Sediment Control Inspector.
3. Install stone construction entrances as shown on Sheets 4 and 6 of 15.
4. Construct sediment basin 1,2 & 4 with bottom elevations equal to the two-year orifice invert. The contractor is to wrap the two-year orifice with filter cloth and place 2" stone over the orifice for dewatering the basins. Also construct sediment traps 1 and 2, and 5 through 8 as shown on Sheet 4-6 of 15. Give special attention to insets for initial installation.
5. Install earth dikes, silt fence, and/or straw bale dikes as shown on Sheets 4-6 of 15.
6. Clear and grub site.
7. Rough grade site except in areas of sediment traps. Construct storm drains and other utilities. Construct retaining walls as shown on Sheets 4-6 of 15 in order to finish the rough grading, except in areas of sediment traps.

   The contractor shall inspect and repair sediment control devices as necessary on a daily basis. For details of retaining walls, see Sheet 12 of 15.
8. Fine grade site, install base paving, and curb and gutter.
9. Stabilize all disturbed areas in accordance with the permanent seeding notes. Flush all storm drains and install rip-rap aprons at storm drain outfalls.
10. After all areas draining to the sediment traps have been stabilized and permission has been granted by the Sediment Control Inspector, remove those traps and grade as shown on Sheet 4-6 of 15. Install any remaining retaining walls and stabilize disturbed area according to permanent seeding notes.
11. Install surface course paving.
12. Begin conversion of sediment basin to permanent stormwater management pond using the following procedures only after permission has been granted by the Inspector:
    a. Pump out the impounded water from the basins;
    b. Remove all the sediment from the sediment basins and place it as per the direction of the Sediment Control Inspector;
    c. Regrade the ponds to conform to the final grading shown on the Sheets 4-6 of 15. Remove low flow blocking;
    d. stabilize all remaining disturbed areas in accordance with the permanent seeding notes.
13. With permission from the Inspector, remove all remaining sediment control devices.







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: 40.0 Acres
   Area Disturbed: 29.2 Acres
   Area to be roofed or paved: 1.9 Acres
   Area to be vegetatively stabilized: 27.3 Acres
   Total Cut 211 Cu. Yds.
   Total Fill 145 Cu. Yds.
   Off-Site waste/borrow area location Section 1

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 sq ft) 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 3 to 4 tons per acre (140 to 180 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. Areas which experience repeated problems with seeding and mulch stabilization must be stabilized in with sod, excelsior matting and seed, or another method approved by the sediment control inspector.

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.

Approved: Department of Public Works
[signature] 8/24/94
Chief, Land Development Division — Date
[signature] 8-19-94
Chief, Bureau of Highways — Date
[signature] 8/24/94
Chief, Bureau of Engineering — Date
Approved: Howard County Dept. of Planning & Zoning
[signature] 9/2/94
Chief, Division of Land Development & Research — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866

DES. DEV. DRN. G.A.W. CHK. CKG.

DATE	REVISION	BY	APP'R
4-11-95	REVISE CONSTRUCTION SEQUENCE	HKJ	

PREPARED FOR
Governors Run Communities Inc
c/o Greenebaum & Rose Asso., Inc
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Sediment and Erosion Control Notes and Details

Governors Run
Section 2 — Lots 74-130
Liber 5284 — Folio 398
Howard County, Maryland — 2nd Election District

SCALE	ZONING	G.L.W. FILE No
—	R-20	86-055
DATE	**TAX MAP No**	**SHEET**
July 1994	18/25 Par. 2	14 of 15

POND 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 Bleth-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 requirments of Maryland Department of Transportation, State Highway Administration Standard Spedifications 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

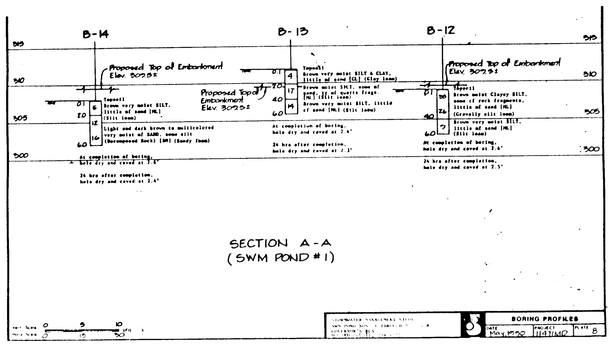
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also 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.

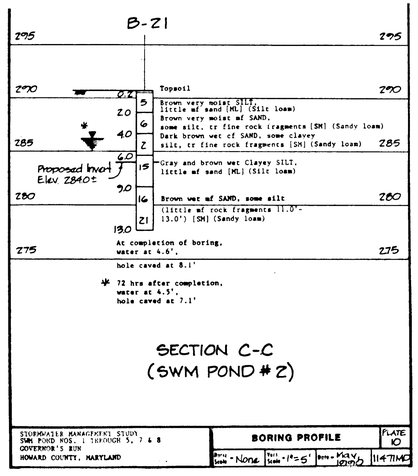
Stabilization

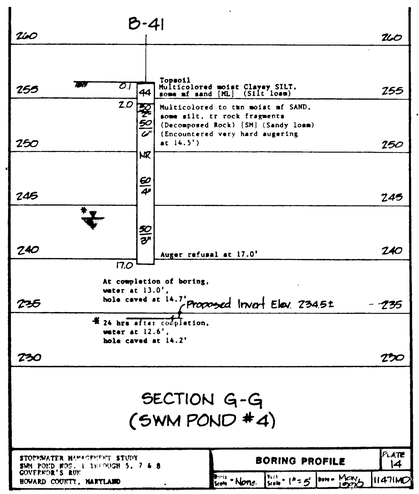
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards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

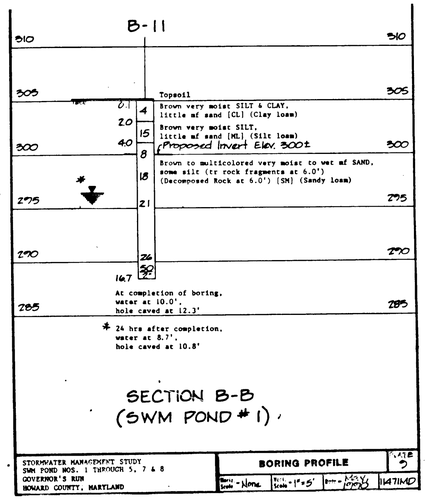
Erosion and Sediment Control

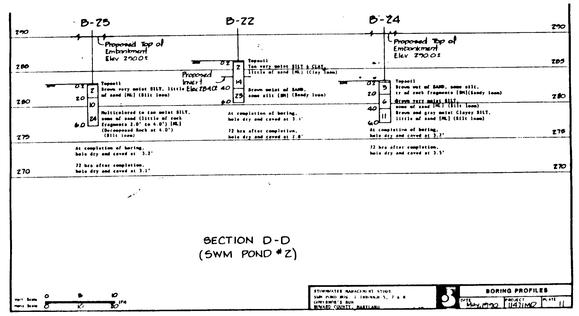
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction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

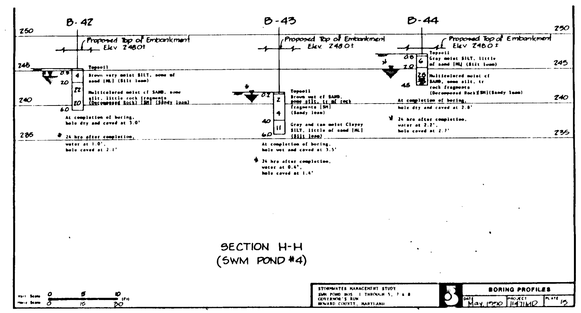












ENGINEER'S CERTIFICATE

"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 this 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."

7-18-94
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.

7/18/94
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. Zirk 8/29/94
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.

Patricia Engler 8/29/94
U.S. Soil Conservation Service — Date

Approved: Dept. of Public Works

Chief, Bureau of Highways — Date 8-19-94

Chief, Bureau of Engineering — Date 8/24/94

Chief, Land Development Division — Date 8/24/94

Approved: Howard County Dept. of Planning & Zoning

Chief, Division of Land Development/Research — Date 9/2/94

* SEE SHEET 12 FOR ADDITIONAL SPECIFICTIONS

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS

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DATE	REVISION	BY	APP'R.

PREPARED FOR:
Governors Run Communities, Inc.
% Greenbaum & Rose Assoc., Inc.
Suite 410 Woodholme Center
1829 Reisterstown Road
Baltimore, Maryland 21208
(410) 484-8400

Stormwater Management Notes
Goverors Run
Section Two
lots 74-150
liber 5284 folio 398
2nd Election District — Howard County, Maryland

DES.:	SCALE	ZONING	G.L.W. FILE No.
DRN.:	——	R-20	86055
CHK.:	DATE	TAX MAP No.	SHEET
	July 1994	18/25 Par. 2	15 of 15

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