ROUTE 175 COMMERCIAL

SECTION 1 AREA 2

PARCELS B-D, AND LOTS 4 & 5

General Notes

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
2. The contractor shall notify the Department of Public Works, Bureau of Engineering, Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
4. The contractor shall notify the Howard County Department of Public Works, Bureau of Utilities at (410) 313-4900 at least five (5) working days prior to starting any excavation work.
5. Site area: Parcel B = 10.2514 acres
   Parcel C = 18.6192 acres.
   Parcel D = 6.2801 acres.
   Open Space Lot 4 = 8.9829 acres.
   Open Space Lot 5 = 0.4373 acres.
6. All plan dimensions are to face of curb unless otherwise noted.
7. Existing topography is shown per field run survey information by Gutschick, Little Weber, P.A. & by air-flown topography.
8. Coordinates and bearings are based upon the MD State plane system (NAD '83).
9. Water and sewer shown is public.
10. Stormwater management for this site is proposed by this plan. Modifications are proposed for existing Facility No.2 (Plat No. 12126/F96-41)
11. All existing water and sewer is per Contracts 20-3474-D, 24-3463-D and 24-3413-D.
12. All existing public storm drain is per F 90-59 & P 90-41
13. Use trench bedding class "C" for storm drains.
14. Project background: See Dept. of Planning & Zoning File Numbers: S 99-05, FDP 235, PB 337, WP 99-117, WP 00-24, WP 00-41, F-00-149.
15. Recording reference: Plat Nos. 14097 & 14098
16. Existing utilities are based on approved design plans for construction and field location by Gutschick, Little & Weber, P.A.
17. There is no floodplain on Parcel B-D.
18. There are no wetlands on Parcel B-D.
19. Building setbacks and building restrictions are per FDP 235.
20. Forest Stand Delineation is not required per section 16.1200 of the Subdivision Regulations.
21. Note: In cases of discrepancies between the plat & the plans, the plat shall govern.

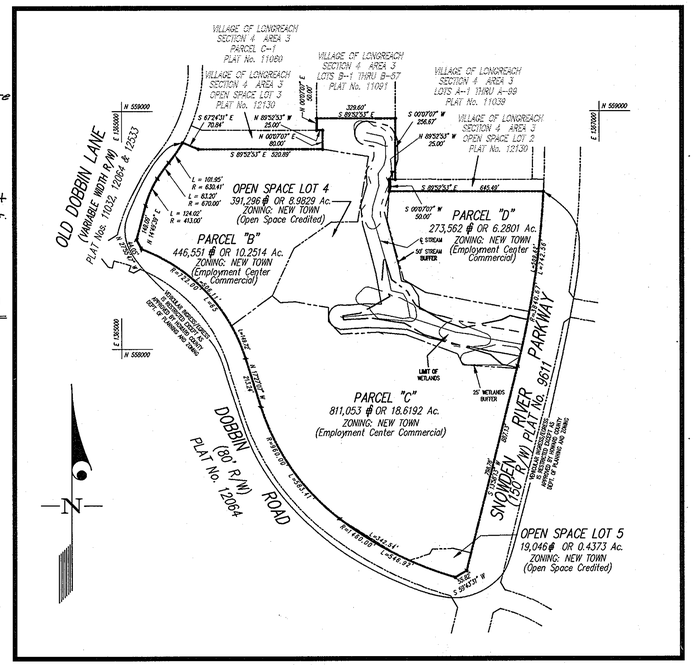
Sheet Index

1. Cover Sheet
2. Grading Plan Parcel B
ASBUILT 3. Grading Plan Parcel C and Open Space Lot 5
ASBUILT 4. Grading Plan Parcel D & SWM Plan.
5. Composite Grading and Sediment Control Plan
6. Sediment Control Plan Parcel B
7. Sediment Control Plan Parcel C and Open Space Lot 5
8. Sediment Control Plan Parcel D
9. Sediment Control Details
10. Sediment Control Details
ASBUILT 11. Stormwater Management Details Pond 2
ASBUILT 12. Stormwater Management Details Pond 2
ASBUILT 13. Stormwater Mamagement Details Pond 7
ASBUILT 14. Stormwater Mamagement Details Pond 8
15. Planting / Soils Boring Plan
16. Stormwater Mamagement / Sediment Control Notes
ASBUILT 17. Storm Drain Profiles & Schedules
18. Stormwater Management Perimeter Planting Plan
ASBUILT 19. Planting Notes, Schedules and Plant List

-On July 1, 1999, WP-99-117; waiver of section 16.144(f), was granted, to not be required to submit a preliminary plan, subject to various conditions in the approval letter.
-On October 1, 1999, WP-00-24; waiver of section 16.144, was granted, to reactivate sketch plan S-99-05 and grant a 45 day extension to submit the sketch plan for signature.
-On March 23, 1999, WP-99-41; waiver of section 16.116(f)(1), was approved to permit a private commercial driveway direct access to an arterial road, subject to various conditions in the approval letter.

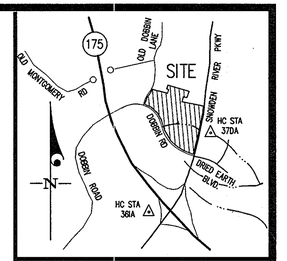
Flood Plain Table

Point or Line #	Bearing & Distance ○	Elevation □
1	○ N 77°02'48" E. ~ 75.77'	▫ 357.7
2	N. 64°51'00" E. ~ 42.57'	▫ 357.9
3	N. 78°15'48" E. ~ 100.31'	▫ 358.0
4	○ N 72°24'09" E. ~ 83.50'	▫ 359.0
5	○ N 59°58'16" E. ~ 130.91'	▫ 361.1
6	○ N 31°58'09" E. ~ 68.14'	▫ 364.0
7	○ N 5°45'41" E. ~ 81.11'	▫ 364.7
8	○ N 17°07'44" E. ~ 87.38'	▫ 365.8
9	N. 79°09'17" ○ ~ 7.15'	▫ 366.9
10	N. 05°15'10" E. ~ 89.78'	▫ 366.9
11	N. 36°14'10" W. ~ 67.59'	▫ 366.9
12	N. 66°15'42" E. ~ 143.89'	▫ 366.9
13	N. 86°42'24" E. ~ 72.77'	▫ 366.9
14	N. 09°23'26" W. ~ 15.26'	▫ 366.9
15	○ N 87°32'16" W. ~ 121.86'	▫ 366.9
16	N. 81°20'21" W. ~ 134.62'	▫ 366.9
17	N. 59°20'45" W. ~ 65.34'	▫ 364.2
18	N. 73°15'53" W. ~ 280.75'	▫ 362.4
19	N. 49°08'45" W. ~ 65.24'	▫ 358.1
20	N. 77°39'59" W. ~ 64.45'	▫ 357.8
21		▫ 357.7



KEY MAP

SCALE : 1" = 300'



VICINITY MAP
SCALE: 1"=2000'

Legend
(Mass Grading)

- 70 — Proposed Contour
- 374 — Existing Contour
- Existing Treeline
- Existing Paving
- SWB — Limit of 50' Stream Buffer
- 50' Stream Buffer
- 25' Wetland Buffer
- Existing Street Light
- LOD — Limit of Submission

Legend
(Sediment Control)

- SS — Super Silt Fence
- ED A-2 — Earth Dike
- S.C.E. — Stabilized Construction Entrance
- TS / A-1 — Temporary Swale
- GN — Gabion Mattress
- LOD — Limit of Disturbance
- Sump Pit
- TPF — Tree Protection Fence
- Phase I Grading

Lot/Parcel	Address Chart: street address
4	Snowden River Pkwy.
5	Dobbin Road
B	6701 Old Dobbin Lane & 6120 Dobbin Road
C	6100 DOBBIN ROAD/ 5050 Snowden River Pkwy
D	5000 SNOWDEN RIVER PARKWAY

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 5/23/01

Chief, Division of Land Development ~~and Research~~ — Date 5/23/01

Chief, Development Engineering Division MK — Date 5/15/01

AS-BUILT

ASBUILT SHEET 1 OF 9

WATER CODE:	SEWER CODE:
E06	3460000

SUBDIVISION NAME: ROUTE 175 COMMERCIAL — SECTION/AREA 1 / 2 — PARCELS B THRU D, Lots 4 & 5

PLAT	ZONE	TAX MAP	BLOCK	ELEC. DIST.	CENSUS TRACT
14097 & 14098	NT	36 & 37	13	6	6067.03

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL.: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\MAS-GRADIN\95003MCS | DES. | DRN. ROS | CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR :

THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD. 21044
ATTN: AL EDWARDS
(410)992-6027

COVER SHEET

ROUTE 175 COMMERCIAL
SECTION 1 AREA 2
PARCELS B-D AND LOTS 4 & 5
PLAT No.'s 14097 & 14098

ELECTION DISTRICT No.6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE ~~May 2001~~ SEPT. 2003	TAX MAP – GRID 36-18 37-13	SHEET 1 OF 19

SDP-01-09

Parcel E-1
Village of Longreach
Section 4 Area 3
Plat No. 110000

Open Space Lot 17
Village of Longreach
Section 4, Area 3
Plat No. 141150

Route 175 Commercial
Section 1 Area 2
Parcel "A"
Plat No. 141000

Lane (Minor Collector)

Old Dobbin Lane (Variable Width R/W)

Dobbin Road (Variable Width R/W) (Major Collector)

Open Space Lot 4

Ex. 20' Water & Utility Easement

Columbia Crossing Circle (Private)

Columbia Crossing Shopping Center
Rte. 175 Commercial
Section 1 Area 1
Plat No. 120004

For continuation see sheet 4 Open Space Lot 4 Proposed stormwater Facility No2

For continuation see sheet 3 Parcel C

Stormwater Management Facility No. 1 (Plat No. 14049)

Stormwater Management Facility No. 2 (Plat No. 21250)

N — MD STATE GRID NAD '83

E 1365000 N 558900

E 1363000 N 558250

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 5/23/01

Chief, Division of Land Development — Date 5/23/01

Chief, Development Engineering Division MK — Date 5/15/01

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL.: 301-421-4024 BALT: 410-880-1820 DC/Vic 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\BASE\95003BS4.DWG | DES. | DRN. WJ | CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

Parcel B, Grading Plan

ROUTE 175 COMMERCIAL

Section 1 Area 2
Parcels B and D and Lots 4 & 5
Plat No's 141000 & 141008

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-12&18	2 of 19

SDP 01-09

Note: For Flood Plain Elevations □ and Bearings & Distances ⬡ see sheet 1.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director	5/23/01 Date
Chief, Division of Land Development	5/23/01 Date
Chief, Development Engineering Division MK	5/15/01 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\BASE\95003BS5.DWG | DES. | DRN. WJ | CHK.

DATE	REVISION	BY	APP'R.
8-8-02	Rev. to add stormceptor notes & stormdrain profile (3)		

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

Parcel C, Grading Plan
ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B–D and Lots 4&5
Plat No.'s 14097 & 14098

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36–18 37–13	3 of 17

SDP 01-09

Summary Table Facility 1

Storm	Allowable Release Rate	Inflow	Discharge	Elev.	Storage
2 Yr.	9.27 cfs	29.87 cfs	3.01 cfs	371.71	0.59 Ac. ft.
100 Yr.	N/A	97.00 cfs	49.00 cfs	374.17	1.95 Ac. ft.
10 Yr.	16.24 cfs	109 cfs	17.74 cfs	373.56	1.10 Ac. ft.

Summary Table 2

Storm	Allowable Release Rate	Inflow	Discharge	Elev.	Storage
2 Yr.	9.44 cfs	109 cfs	2.0 cfs	379.16	8.12 Ac. ft.
100 Yr.	N/A	281 cfs	104 cfs	382.57	18.81 Ac. ft.
10 Yr.	18.80 cfs	207 cfs	5.13 cfs	379.52	11.21 Ac. ft.

Engineer's Certificate

"I certify that this plan for pond construction, erosion & sediment control represents a practical & 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 & provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Engineer's Signature — 10/6/00 Date

STATE OF MARYLAND — JAMES D. LITTLE — No. 10434 — PROFESSIONAL ENGINEER

Developer's/Builder's Certificate

"I/We certify that all development &/or construction will be done according to these plans & 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 & Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction & provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also will call for site scale and/or inspections by the Howard Soil Conservation District."

Signature of Developer/Builder — 10.10.00 Date

Pond 2 Notes:

A. Water Quantity control is provided by a hazard class A retension facility.

B. Water quality is provided by a wet pool.

C. This facility is to be publicly maintained.

Pond 7 Notes:

A. Water Quantity control is provided by a hazard class A retension facility.

B. Water quality is provided by a privately owned structural underground facility.

C. This facility is to be privately maintained.

Pond 8 Notes

A. Water Quantity control is provided by a hazard class A retension facility.

B. Water Quality is provided by a privately owned structural underground facility for Parcel C and a pocket wetland for the Right of Way improvements.

C. This facility is to be publicly maintained.

Note: For Flood Plain Elevs □ and bearings & distances ○ see chart 1.

Summary Table Facility 8

Storm	Allowable Release Rate	Inflow	Discharge	Elev.	Storage
2 Yr.	9.09 cfs	24.00 cfs	9.10 cfs	365.24	1.08 Ac. ft.
100 Yr.	N/A	71.00 cfs	44.00 cfs	366.55	1.57 Ac. ft.
10 Yr.	10.92 cfs	57.77 cfs	27.42 cfs	366.05	1.40 Ac. ft.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — 5/23/01 Date

Chief, Division of Land Development — 5/23/01 Date

Chief, Development Engineering Division — MK — 5/15/01 Date

Village of Longreach Section 4 Area 3 Lots A-1 thru A-19 Plat No. 11099

Village of Longreach Section 4 Area 3 Open Space Lot 2 Plat No. 12130

Parcel D

Parcel C

Wetland Open Space Lot 4

Wetland (Plat No. 12130)

Storm Water Management Easement By Howard County Plat No. 13126

Storm Water Management Easement By Howard County Plat No. 11099

Storm Water Facility 7

Storm Water Facility 8

Existing Paving

Grass Median

Parkway

Snowden River (150' R/W) (Arterial)

April Brook Circle (80' R/W) (Minor Collector)

Oakland Mills Road

Typical Swale Section N.T.S.

Maximum Depth = 1.24' 1' min. 0.25' min. 3' 5'

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

Jim Myers / GS. 5/3/01
Natural Resources Conservation Service Date

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

Howard Soil Conservation District Date 5/3/01

AS BUILT

AS BUILT SHEET 3 OF 9

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL.: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\BASE\95003BSE.DWG | DES. | DRN. WJJ | CHK.

DATE	REVISION	BY	APPR.
6-14-02	Rev. Pipe size E from 18" to 24" & alignment of pond 8	WJJ	MJK
2-12-03	Rev. water surface elevs & summary table, revise alignment of Facility 8	GLW	RDF

PREPARED FOR:
The Howard Research and Development Corp.
10275 Little Patuxent Pkwy.
Columbia, Maryland 21044
Attn: Al Edwards
(410) 992-6027

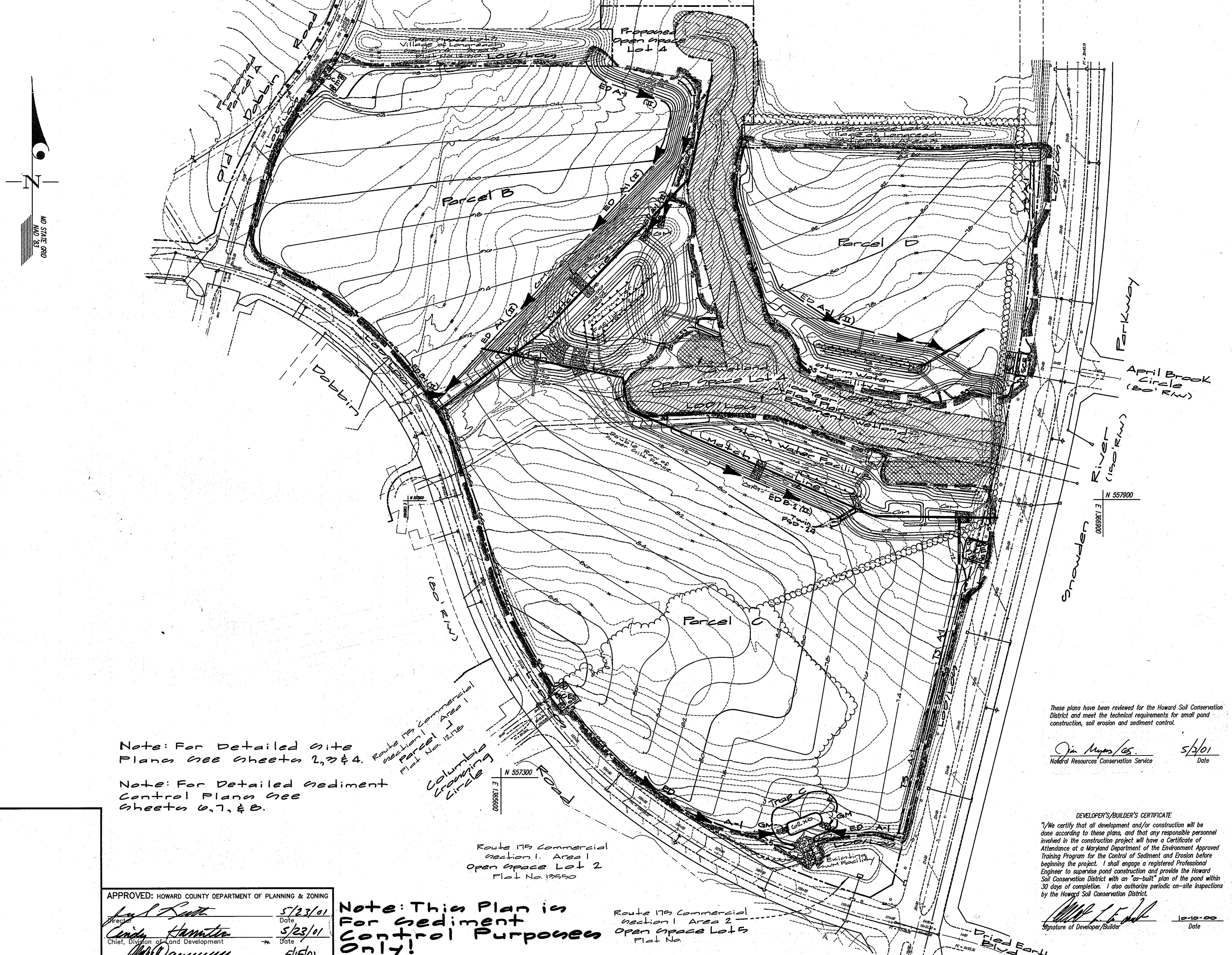
Parcel D Grading & Storm Water Management Plan

ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B-D and Lots 4 & 5
Plat No.'s 12129, 12130 & 12131

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP – GRID	SHEET
~~Monday~~ SEPT. 2003	36-18 37-13	4 of 19

SDP 01-09



Note: For Detailed Site Plans See Sheets 2, 3 & 4.

Note: For Detailed Sediment Control Plans See Sheets 6, 7, & 8.

Note: This Plan is For Sediment Control Purposes Only!

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.

Natural Resources Conservation Service — 5/3/01 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 — 5/3/01 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 — 10-10-00 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."

Engineer's Signature — 7/21/00 Date

STATE OF MARYLAND — DAVID L. LITTLE — No. 13454 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director	Date 5/23/01
Chief, Division of Land Development	Date 5/23/01
Chief, Development Engineering Division MK	Date 5/15/01

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\BASE\95003BS5.DWG	DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

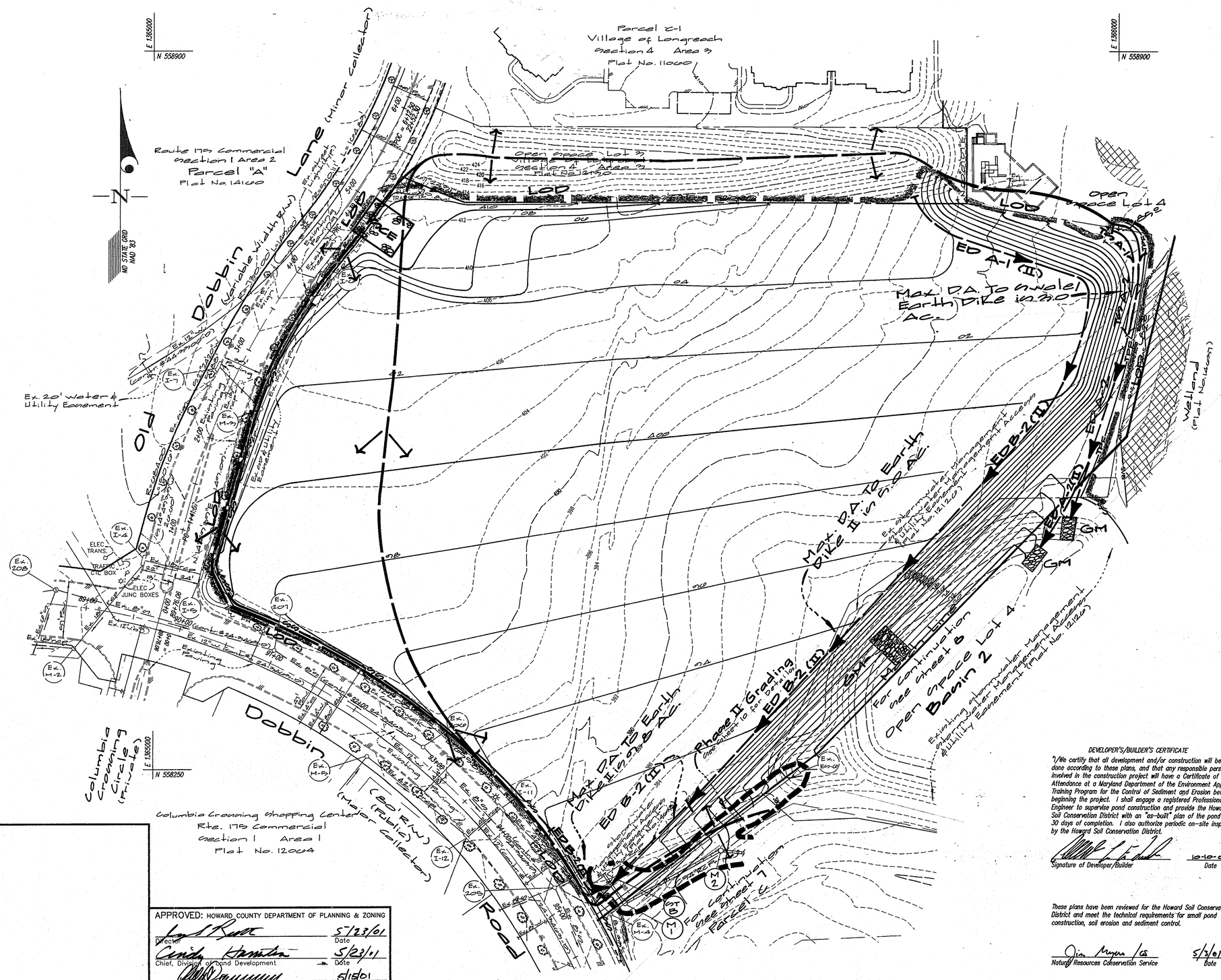
Composite Grading/Sediment Control Plan

ROUTE 175 COMMERCIAL
SECTION 1 AREA 2
PARCELS B-D AND LOTS 4 & 5
PLAT No.s 14037 & 14038

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-18 37-13	5 of 19

SDP 01-09



Sediment Basin Number 2

Pre-development Drainage Area: 30.9 Ac.
Post Development Drainage Area: 36.1 Ac.
Storage Required- Wet Volume: 36.1 Ac. x 1800 c.f./Ac = 64,980 c.f.
Storage Required- Dry Volume: 36.1 Ac. x 1800 c.f./Ac = 64,980 c.f.
Bottom elevation: 360.00
Drawdown orifice and permanent pool elevation: 360.33
Riser crest elevation: 375.49
Basin cleanout elevation: 364.70
Design high water elevation: 376.56
Limit of Storage Elevation: 376.50
Side Slopes: 2:1
Top of Embankment Elevation: 379.00
Dry Volume Provided = 990,185 c.f. @ 375.49
Wet Volume Provided = 140,449 c.f. @ 360.33

Sediment Basin Number 7

Pre-development Drainage Area: 7.15 Ac.
Post Development Drainage Area: 7.15 Ac.
Storage Required- Wet Volume: 7.15 Ac. x 1800 c.f./Ac = 25,740 c.f.
Storage Required- Dry Volume: 7.15 Ac. x 1800 c.f./Ac = 25,740 c.f.
Bottom elevation: 358.00
Drawdown orifice and permanent pool elevation: 360.33
Riser crest elevation: 369.54
Basin cleanout elevation: 359.36
Design high water elevation: 364.11
Limit of Storage Elevation: 363.54
Side Slopes: 2:1
Top of Embankment Elevation: 366.20
Dry Volume Provided = 233,773 c.f. @ 369.54
Wet Volume Provided = 12,874 c.f. @ 360.33

Sediment Basin Number 8

Pre-development Drainage Area: 10.2 Ac.
Post Development Drainage Area: 11.35 Ac.
Storage Required- Wet Volume: 11.35 Ac. x 1800 c.f./Ac = 20,430 c.f.
Storage Required- Dry Volume: 11.35 Ac. x 1800 c.f./Ac = 20,430 c.f.
Bottom elevation: 360.00
Drawdown orifice and permanent pool elevation: 363.31
Riser crest elevation: 365.20
Basin cleanout elevation: 362.17
Design high water elevation: 366.50
Limit of Storage Elevation: 366.50
Side Slopes: 2:1
Top of Embankment Elevation: 368.50
Dry Volume Provided: 32,548 c.f. @ 365.20
Wet Volume Provided: 28,925 c.f. @ 363.31

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 10-10-00

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."

Engineer's Signature — Date 7/21/00

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.

Natural Resources Conservation Service — Date 5/3/01

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

Howard Soil Conservation District — Date 5/3/01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 5/23/01
Chief, Division of Pond Development — Date 5/23/01
Chief, Development Engineering Division MK — Date 5/16/01

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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\DRAWINGS\95003\BASE\95003BS4.DWG | DES. | DRN. WJ | CHK.

DATE	REVISION	BY	APP'R.
5-16-01	Rev. Basin 2 & 7 data	GLW	

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

Parcel B, Sediment Control Plan

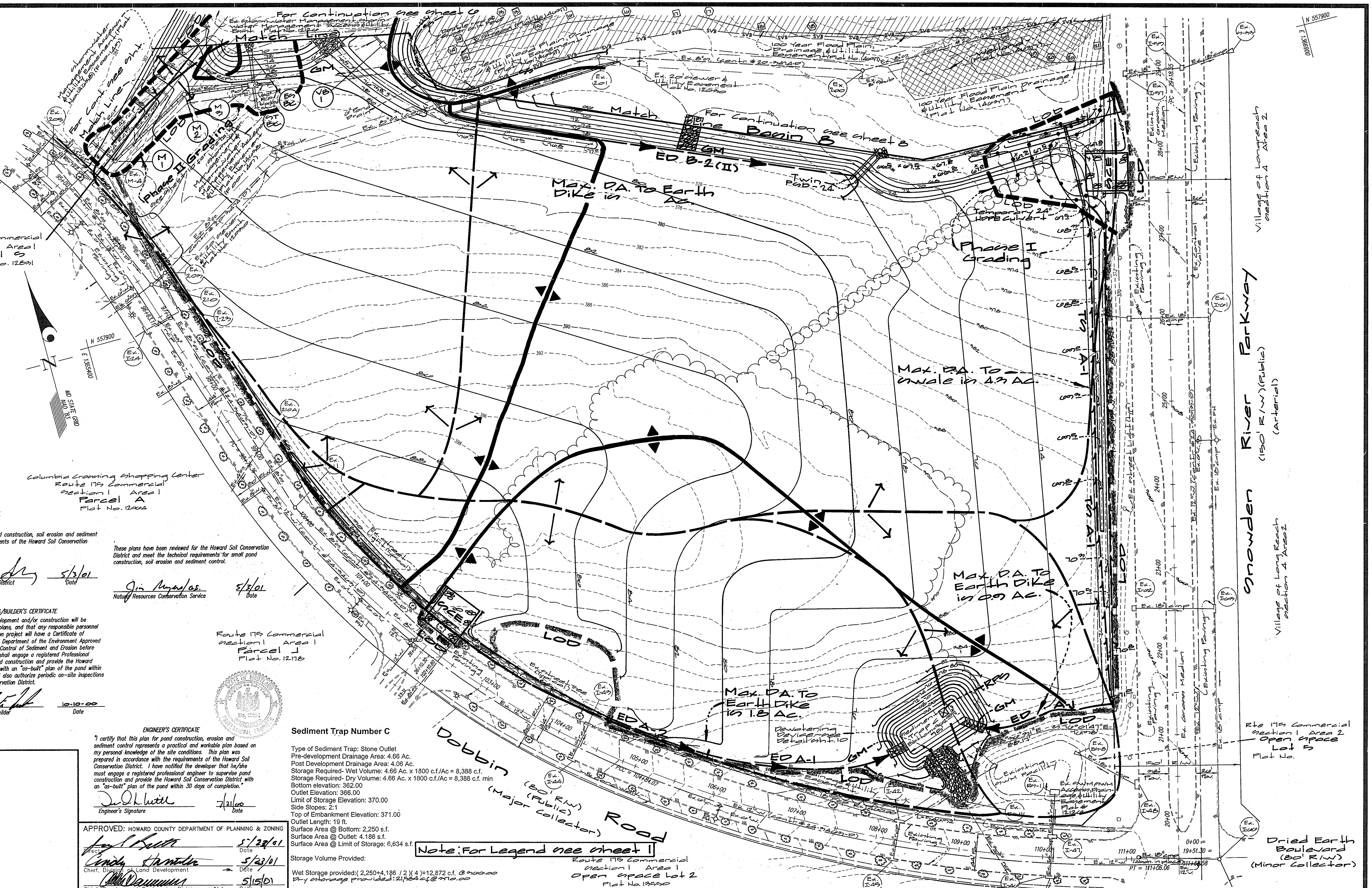
ROUTE 175 COMMERCIAL

Section 1 Area 2
Parcels B & D and Lots 4 & 5
Plat No's 14099 & 14100

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-12&18	6 of 17

SDP 01-09



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

Howard Soil Conservation District — Date 5/3/01

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.

Natural Resources Conservation Service — Date 5/3/01

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 10-10-00

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."

Engineer's Signature — Date 7/21/00

Sediment Trap Number C

Type of Sediment Trap: Stone Outlet
Pre-development Drainage Area: 4.66 Ac.
Post Development Drainage Area: 4.06 Ac.
Storage Required- Wet Volume: 4.66 Ac. x 1800 c.f./Ac = 8,388 c.f.
Storage Required- Dry Volume: 4.66 Ac. x 1800 c.f./Ac = 8,388 c.f. min
Bottom elevation: 362.00
Outlet Elevation: 366.00
Limit of Storage Elevation: 370.00
Side Slopes: 2:1
Top of Embankment Elevation: 371.00
Outlet Length: 19 ft.
Surface Area @ Bottom: 2,250 s.f.
Surface Area @ Outlet: 4.186 s.f.
Surface Area @ Limit of Storage: 6,634 s.f.

Storage Volume Provided:

Wet Storage provided:(2,250+4,186 / 2)(4)=12,872 c.f. @ 366.00
Dry storage provided: 21,584 cf @ 370.00

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 5/23/01
Chief, Division of Land Development — Date 5/23/01
Chief, Development Engineering Division MK — Date 5/15/01

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\BASE\95003BS5.DWG

DES.	DRN.	CHK.	DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

Parcel C, Sediment Control Plan

ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B-D and Lots 4 & 5
Plat No.'s 14037 & 14038

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP - GRID	SHEET
March, 2001	36-18 37-13	7 of 19

SDP 01-09

Engineer's Certificate

"I certify that this plan for pond construction, erosion & sediment control represents a practical & 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 & provide the Howard Soil Conservation District with an 'as-built' plan of the pond within 30 days of completion."

[signature] 7/21/00
Engineer's Signature — Date

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[signature] 10.10.00
Signature of Developer/Builder — Date

Note: For Legend see sheet 1

Note: For Basin Data see sheet 6

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

[signature] 5/3/01
Natural Resources Conservation Service / Date

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

[signature] 5/3/01
Howard Soil Conservation District / Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] Director	5/23/01 Date
[signature] Chief, Division of Land Development	5/23/01 Date
[signature] Chief, Development Engineering Division MK	5/15/01 Date

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CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

\DRAWINGS\95003\BASE\95003BS8.DWG | DES. | DRN. | CHK.

DATE	REVISION	BY	APP'R.
3.26.01	Rev. SD stubs to Facility 8	GLW	

PREPARED FOR:
The Howard Research and Development Corp.
10275 Little Patuxent Pkwy.
Columbia, Maryland 21044
Attn: Al Edwards
(410) 992-6027

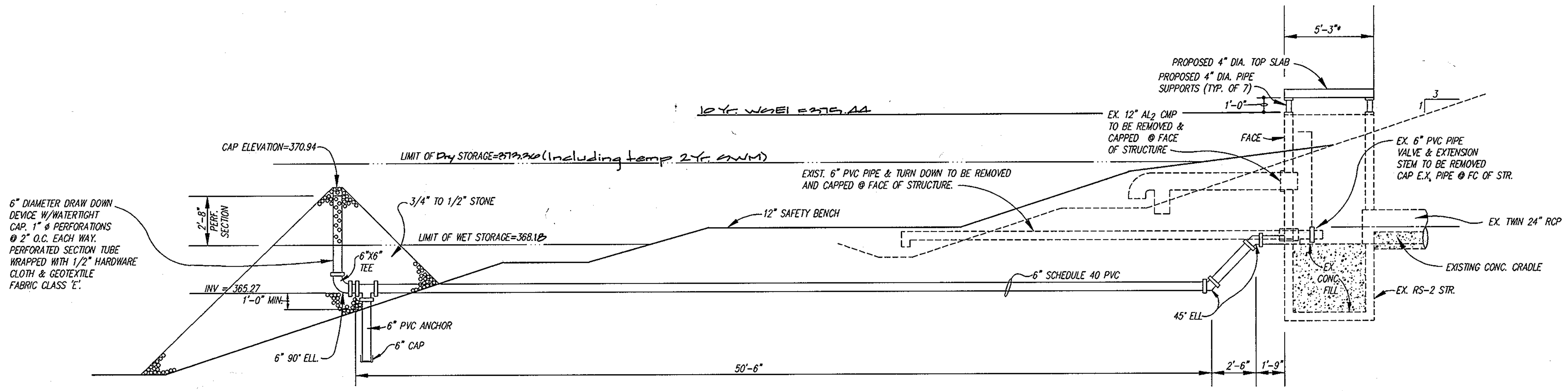
Parcel D Sediment Control Plan

ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B~D and Lots 4&5
Plat No.'s 14037 & 14038

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

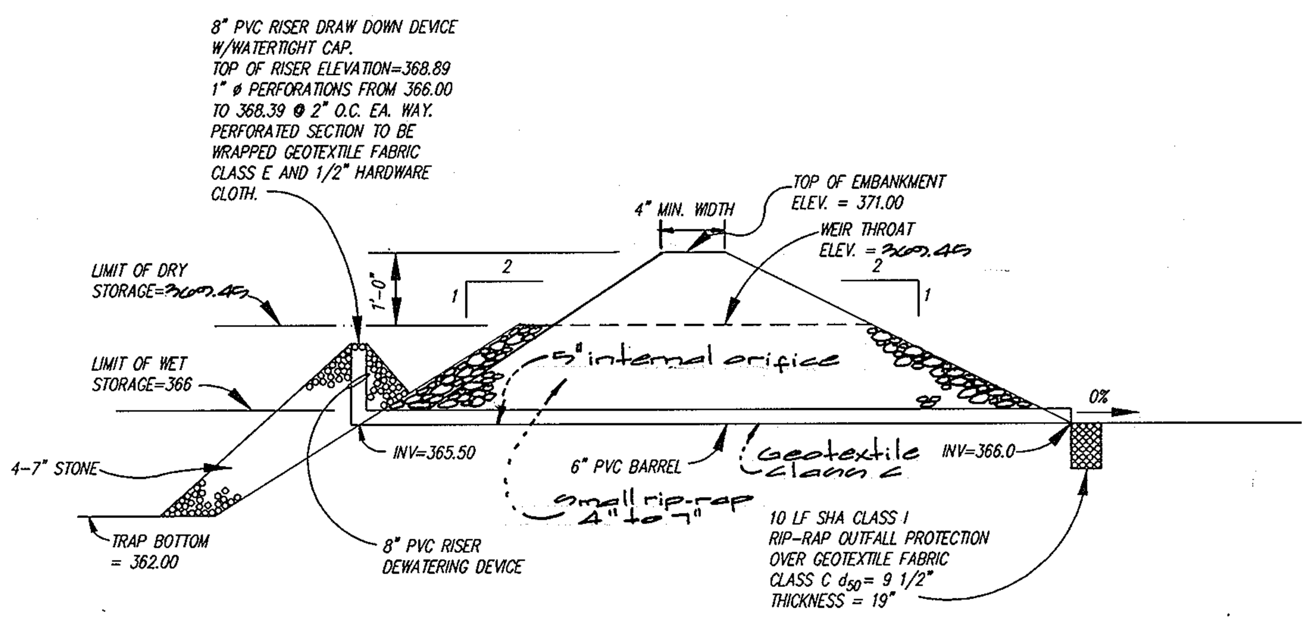
SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36–18, 37–13	8 of 19

SDP 01-09



POND No. 2 RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

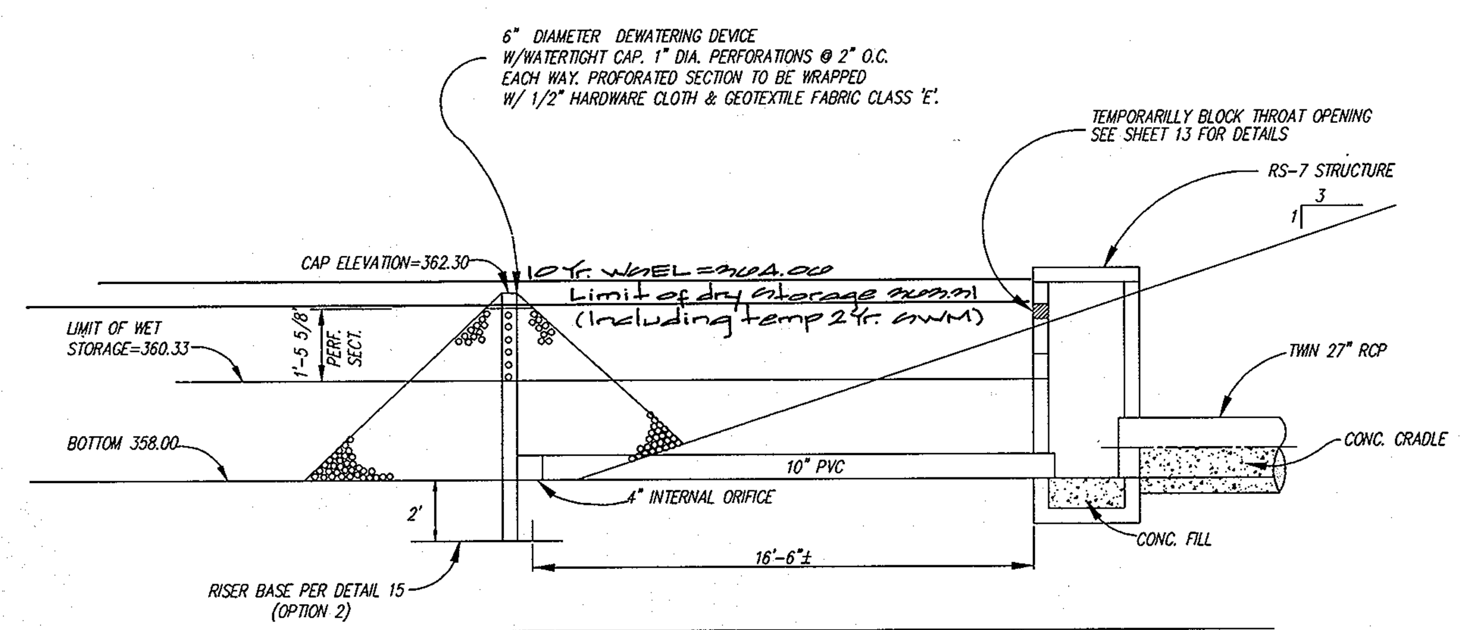
SCALE: 1" = 5'



SEDIMENT TRAP "C" RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

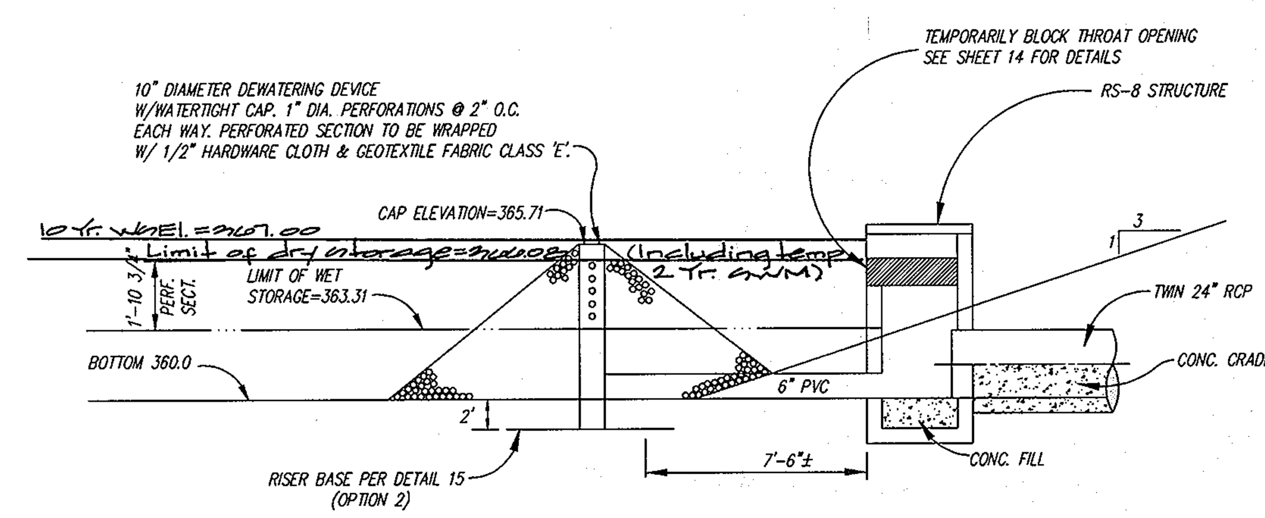
N.T.S.

Note: For Information not shown see std. Dtl. [illegible], sht. [illegible]



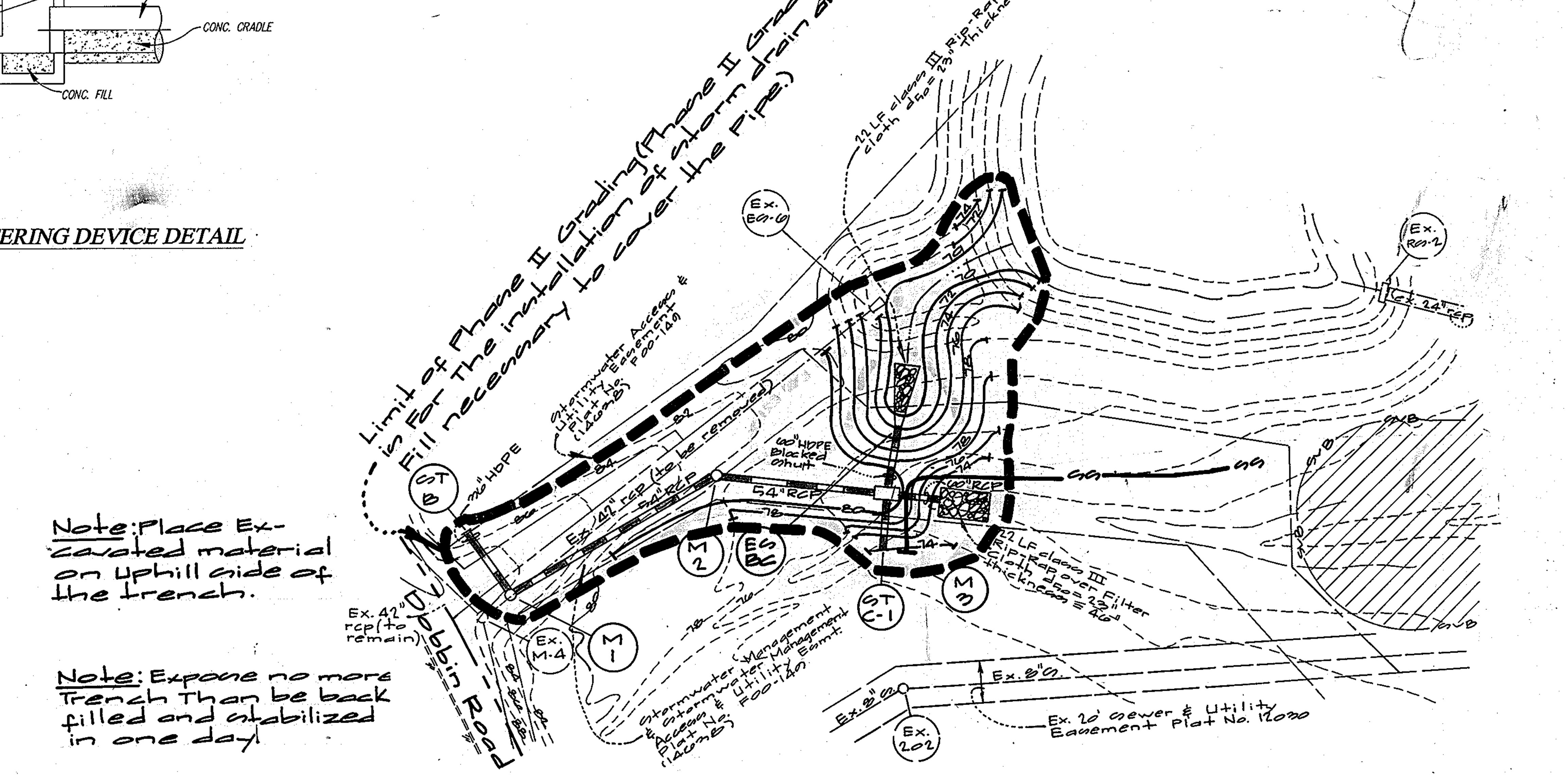
POND No. 7 RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

N.T.S.



POND No. 8 RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

N.T.S.



Note: Place Excavated material on uphill side of the trench.

Note: Expose no more Trench Than be back filled and stabilized in one day.

Note: After basin has been constructed and permission has been granted by The inspector un-block 60"RCP To basin and block 60"RCP To stream.

Phase II Grading Detail

scale: 1"=50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director	Date 5/23/01
Chief, Division of Land Development ~~and Research~~	Date 5/23/01
Chief, Development Engineering Division MK	Date 5/16/01

ENGINEER'S CERTIFICATE

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Date 10/9/00

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Signature of Developer/Builder — Date 10.10.00

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

Howard Soil Conservation District — Date 5/3/01

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.

Natural Resources Conservation Service — Date 5/3/01

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. | DRN. WSJ CAD | CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN: AL EDWARDS
(410) 992-6027

SEDIMENT CONTROL DETAILS

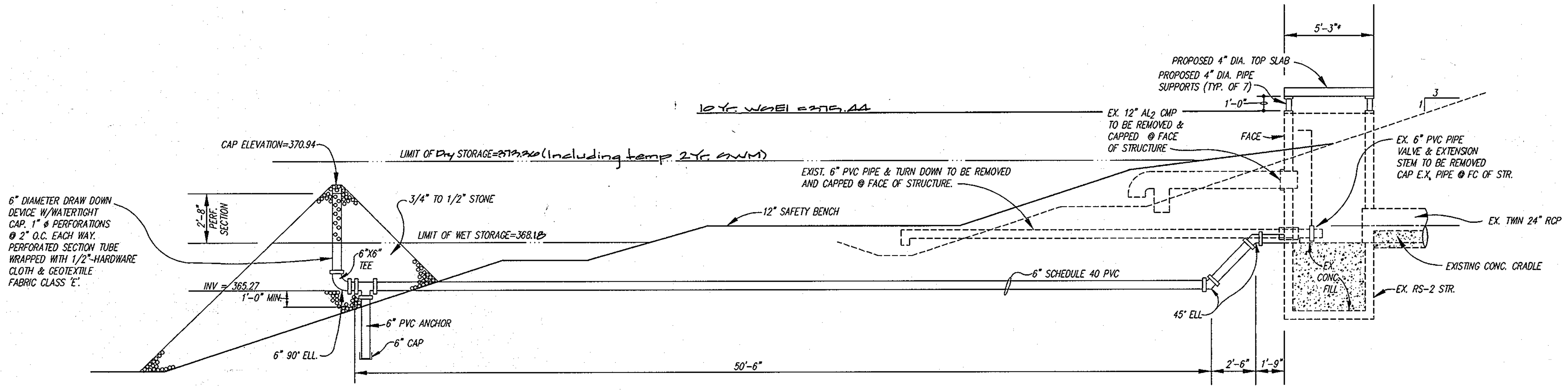
ROUTE 175 COMMERCIAL

SECTION 1 AREA 2
PARCELS B-D and LOTS 4&5
PLAT No.s 14037 & 14038

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

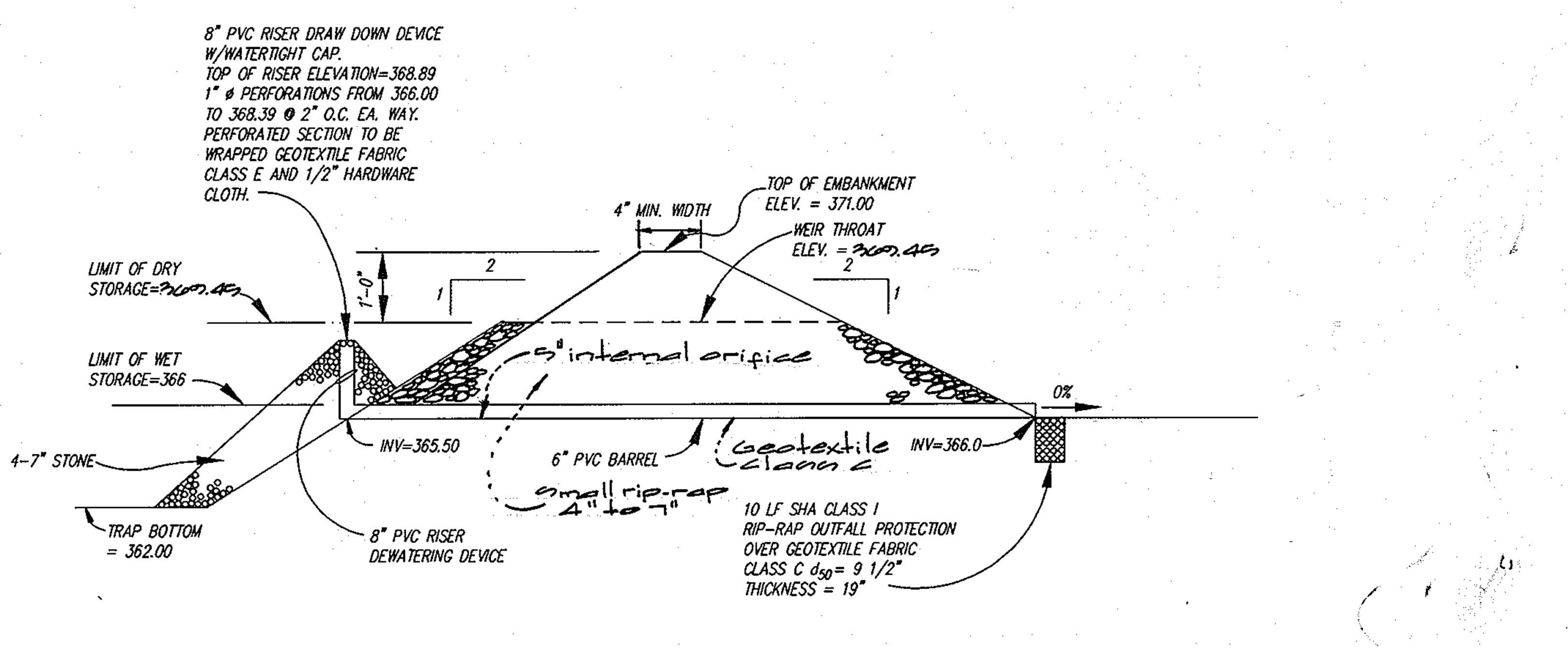
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-18 37-13	10 OF 19

SDP 01-09



POND No. 2 RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

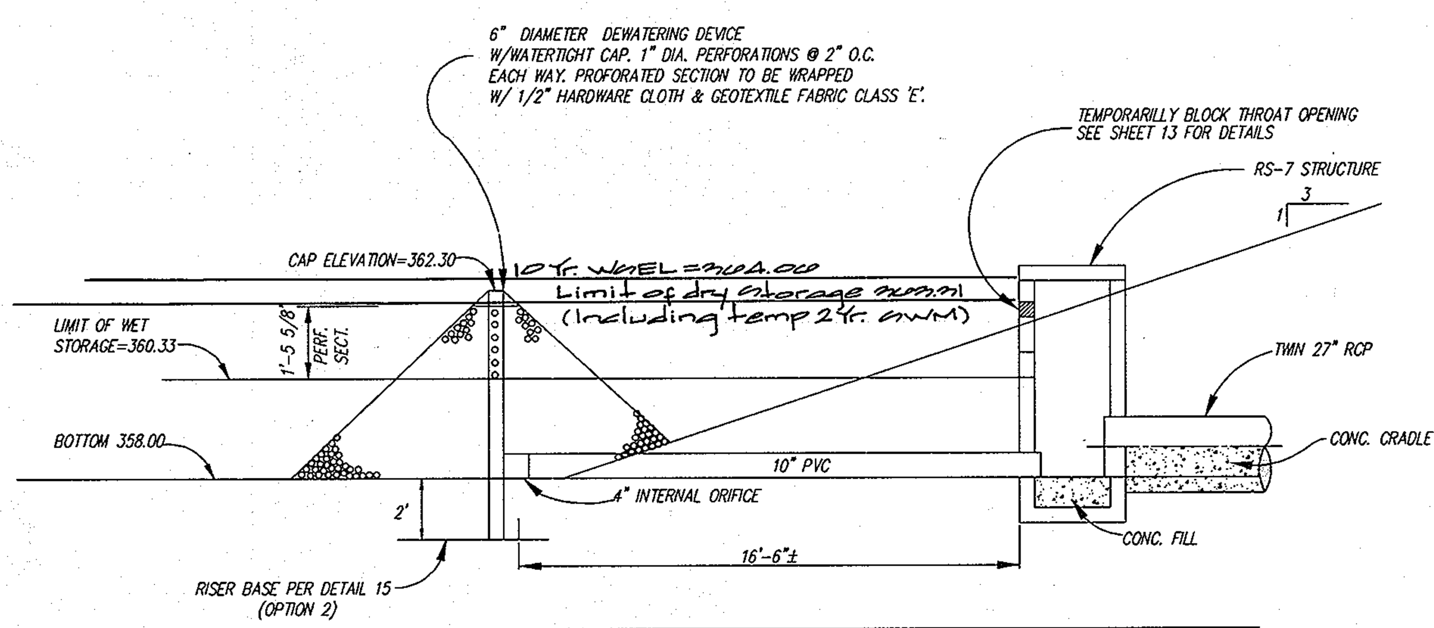
SCALE: 1" = 5'



SEDIMENT TRAP "C" RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

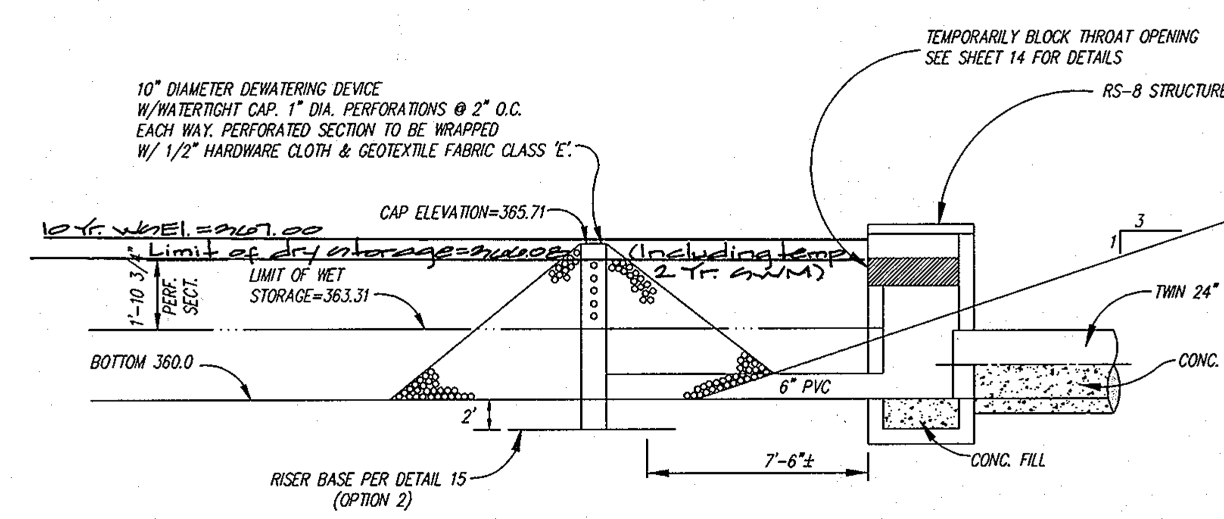
N.T.S.

Note: For Information not shown see std. Dtl..?, sht.?



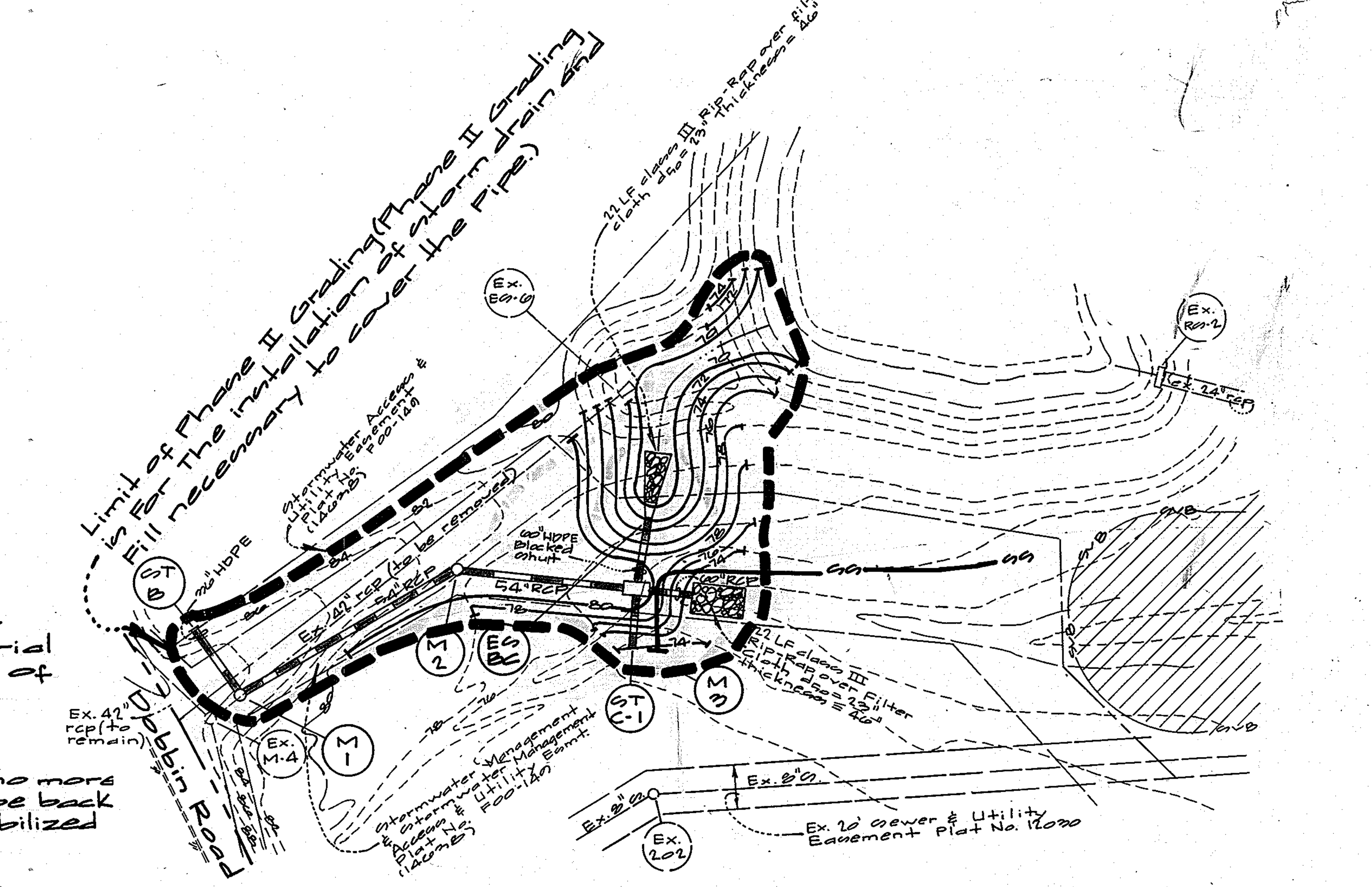
POND No. 7 RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

N.T.S.



POND No. 8 RISER TEMPORARY SWM DEWATERING DEVICE DETAIL

N.T.S.



Note: Place Excavated material on uphill side of the trench.

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Note: After basin has been constructed and permission has been granted by The inspector un-block 60"RCP To basin and block 60"RCP To stream.

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scale: 1"=50'

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[seal: State of Maryland, David E. Little, No. 12404, Professional Engineer] [signature] 10/9/00 Date

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[signature] Natural Resources Conservation Service — 5/3/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] Director — 5/23/01 Date

[signature] Chief, Division of Land Development ~~and Research~~ — 5/23/01 Date

[signature] Chief, Development Engineering Division MK — 5/16/01 Date

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DES.	DRN. WSJ CAD	CHK.	DATE	REVISION	BY	APP'R.

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COLUMBIA, MARYLAND 21044
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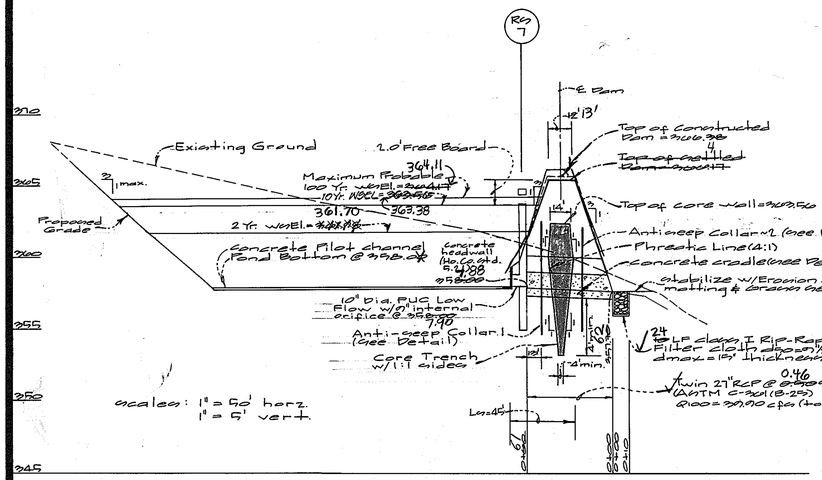
SEDIMENT CONTROL DETAILS

ROUTE 175 COMMERCIAL
SECTION 1 AREA 2
PARCELS B-D and LOTS 4&5
PLAT No.'s 14037 & 14038

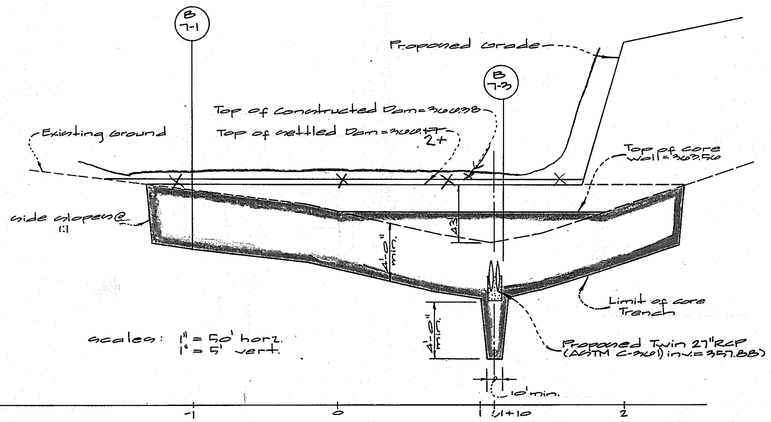
ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36–18 37–13	10 OF 19

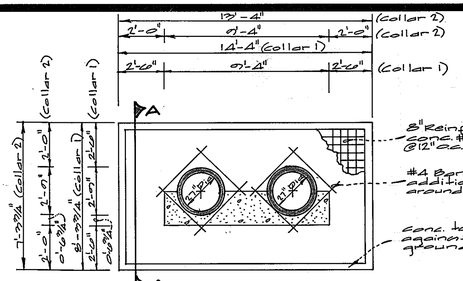
SDP 01-09



Profile Thru Pond No. 7 Principal Spillway



Profile Along ℄ Dam

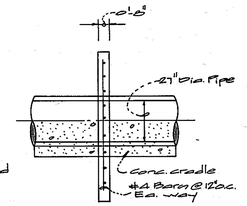


Elevation ~ Anti-seep Collar

N.T.S.

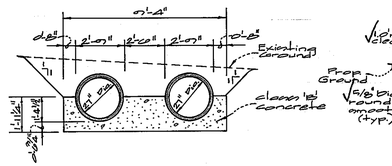
Notes For Anti-seep-Collar

1) Pour Conc. to undisturbed earth.
2) Remove sheeting before pouring concrete.
3) FC = 4000 psi @ 28 days.
4) Pour collars with pipe in place.
5) Backfill evenly on both sides of collars.
6) Locate collars a min. of 2' from pipe joints.



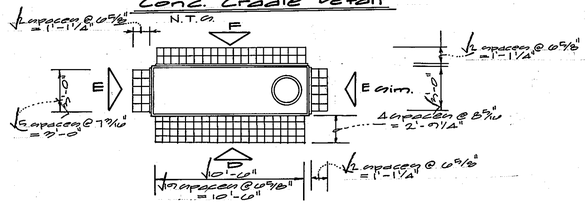
Section A A

N.T.S.



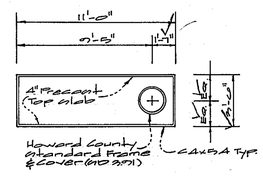
Conc. Cradle Detail

N.T.S.



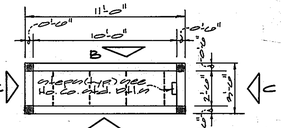
Plan ~ Trench Rock

scale: 1" = 5'



Plan ~ Top slab

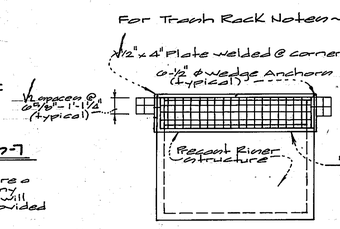
scale: 1" = 5'



Plan View ~ Structure No. 7

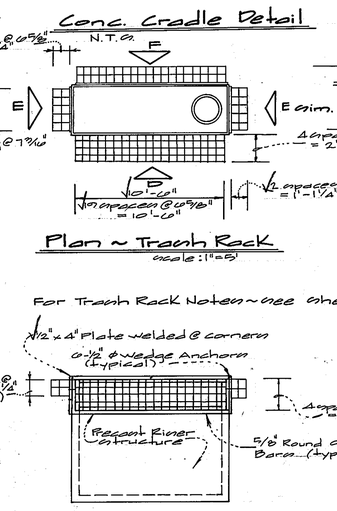
Pc Notes:
Structure has been designed to require a minimum finished weight of 17,140 lbs. Any deviation from the indicated details will require buoyancy computations be provided by the preparer.

For Trench Rock Notes ~ see sheet 7.



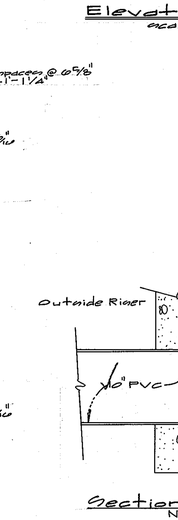
Elevation A

scale: 1" = 5'



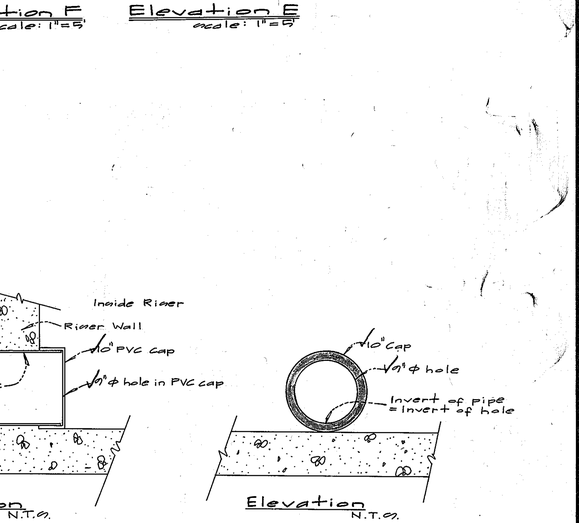
Elevation B

scale: 1" = 5'



Elevation C

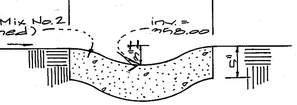
scale: 1" = 5'



Orifice Detail

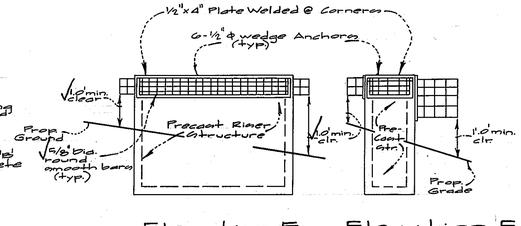
10" PVC Drain Pipe Trash Rack Details

N.T.S.



Pilot Channel Detail

N.T.S.

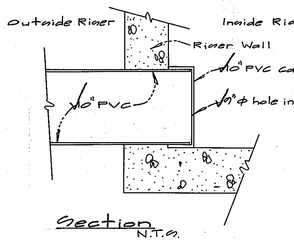


Elevation F

scale: 1" = 5'

Elevation E

scale: 1" = 5'



Section

N.T.S.

Elevation

N.T.S.

ENGINEER'S CERTIFICATE

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Engineer's Signature — 7/21/00 Date

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Signature of Developer/Builder — 10-10-00. Date

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Jim Myers for Natural Resources Conservation Service — 5/3/01 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 — 5/3/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — 5/23/01 Date

Chief, Division of Land Development — 5/23/01 Date

Chief, Development Engineering Division MK — 5/15/01 Date

AS-BUILT

ASBUILT SHEET 6 OF 9

GLW Gutschick Little & Weber, P.A.
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186
DES: not DRN. wej CHK. not

DATE	REVISION	BY	APP'R.
9-6-00	Revised details, anti-seep collars, details & bench elevs.	GLW	not

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
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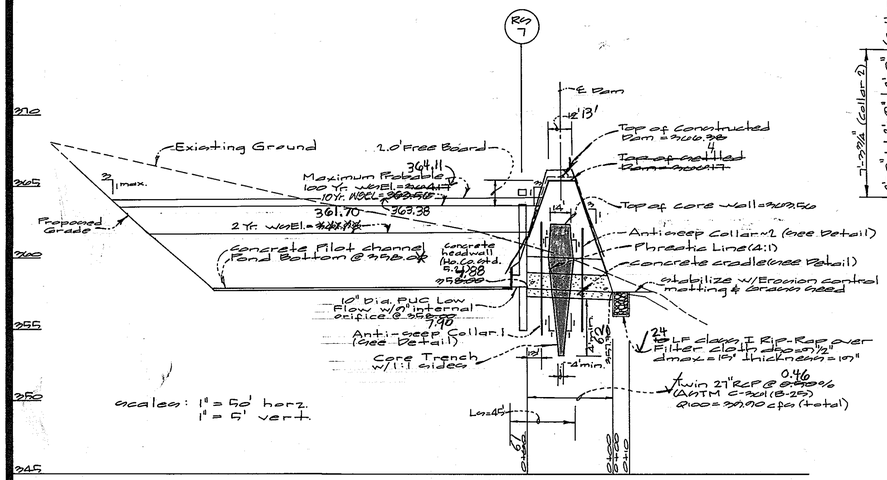
Storm Water Management Details Pond No. 7

ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B-D and Lots 4&5
Plat Nos. 14077 & 14078

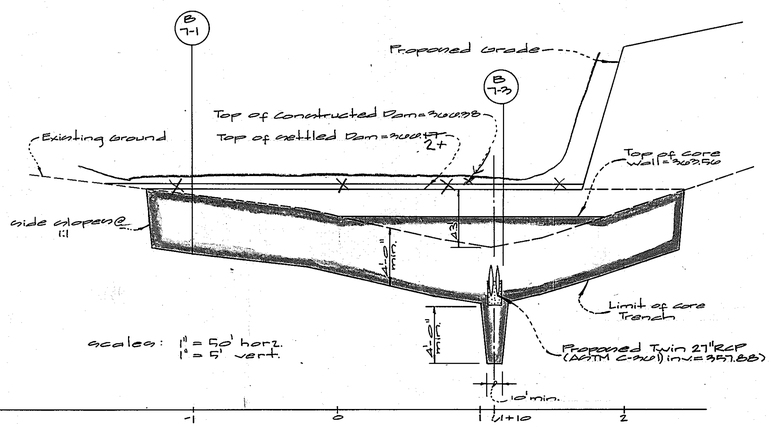
ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
~~March~~ SEPT. 2003	36-12&18	13 of 17

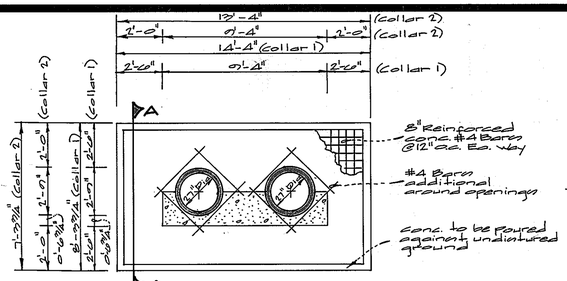
SDP 01-007



Profile Thru Pond No. 7 Principal Spillway



Profile Along ℄ Dam

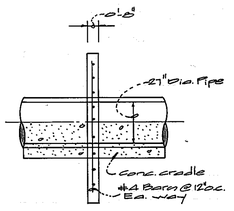


Elevation ~ Anti-Seep Collar

N.T.S.

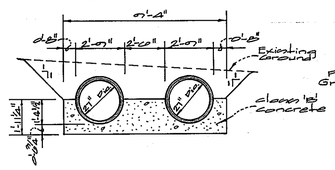
Notes For Anti-Seep-Collar

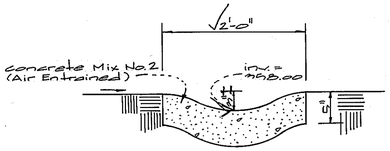
1) Pour Conc. to undisturbed earth.
2) Remove sheeting before pouring concrete.
3) $f'c = 4000$ psi @ 28 days.
4) Pour collars with pipe in place.
5) Backfill evenly on both sides of collars.
6) Locate collars a min. of 2' from pipe joints.



Section A A

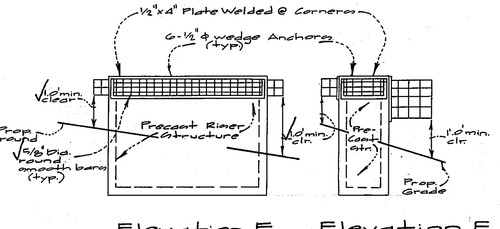
N.T.S.





Pilot Channel Detail

N.T.S.

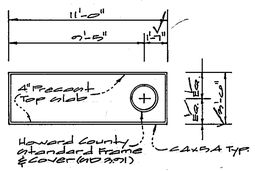


Elevation F

scale: 1" = 5'

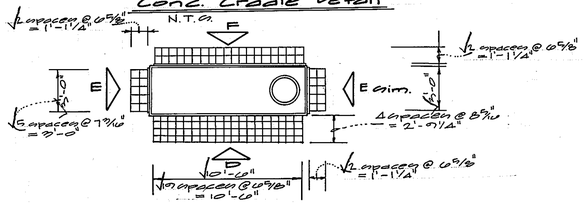
Elevation E

scale: 1" = 5'



Plan ~ Top Slab

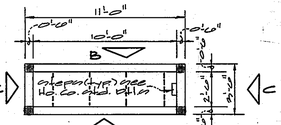
scale: 1" = 5'



Conc. Cradle Detail

Plan ~ Trash Rack

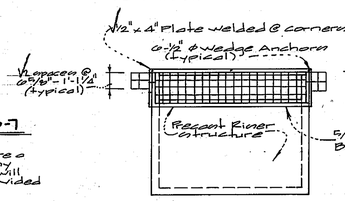
scale: 1" = 5'

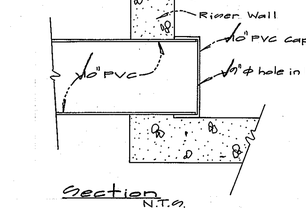


Plan View ~ Structure Rd 7

Pf. Notes:
Structure has been designed to require a minimum finished weight of 17,140 lbs. Any deviations from the indicated details will require buoyancy computations be provided by the presenter.

For Trash Rack Notes ~ see sheet 7.





Section

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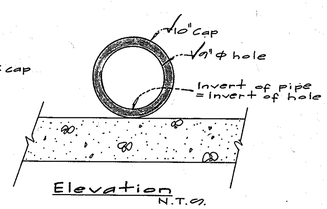
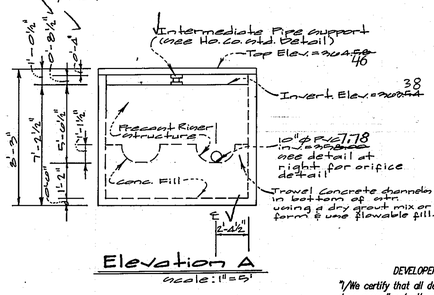


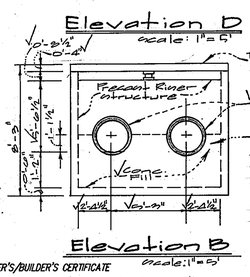
Elevation

N.T.S.



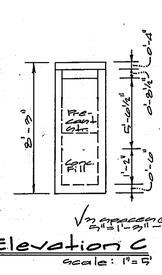
Elevation A

scale: 1" = 5'



Elevation B

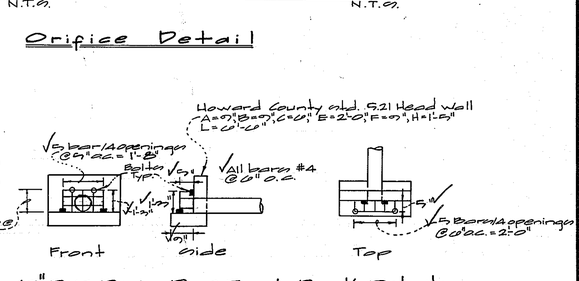
scale: 1" = 5'



Elevation C

scale: 1" = 5'

Orifice Detail



10" PVC Drain Pipe Trash Rack Details

N.T.S.

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."

Engineer's Signature — 7/21/00 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 — 10-10-00 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.

Jim Myers / GS — Natural Resources Conservation Service — 5/3/01 Date

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

G. W. Sh. — Howard Soil Conservation District — 5/3/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — 5/23/01 Date

Chief, Division of Land Development — 5/23/01 Date

Chief, Development Engineering Division MK — 5/16/01 Date

AS-BUILT

ASBUILT SHEET 6 OF 9

			GLW	APP'R.
DES. not	DRN. wej	CHK. not	DATE	REVISION

Revised Pond No. 7 Pond Outlet Structure, pilot channel & Trash Rack details

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

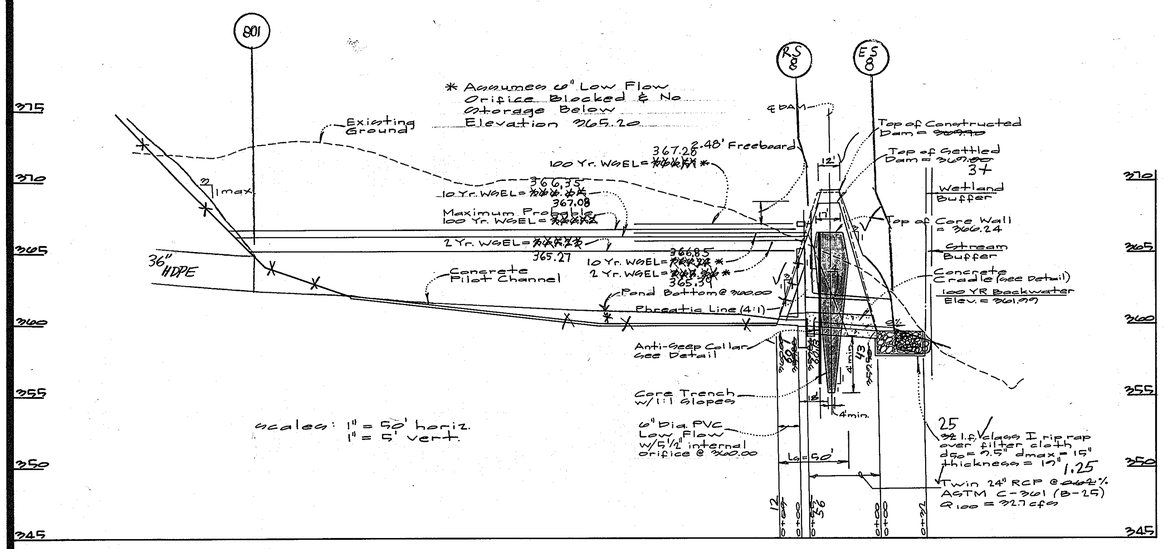
Storm Water Management Details Pond No. 7

ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B-D and Lots 4&5
Plat No.s 14077 & 14078

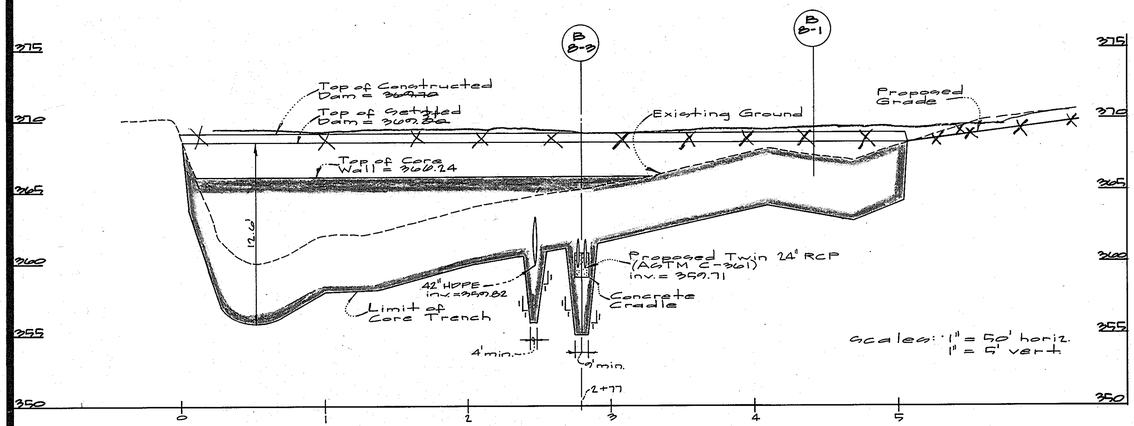
ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
~~March, 2003~~ SEPT. 2003	36-12&18	13 of 17

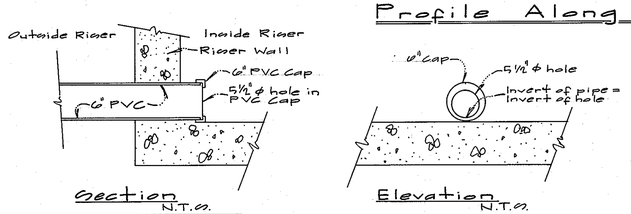
SDP 01-007



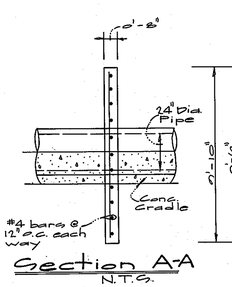
Profile Thru Pond No. 8 Principle Spillway



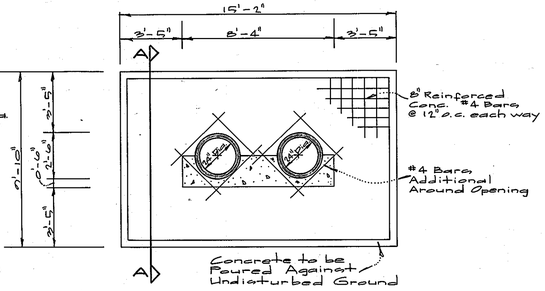
Profile Along ℄ Dam



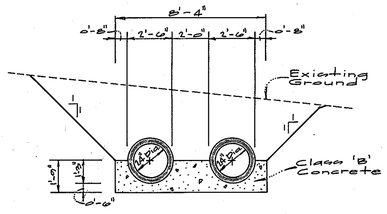
Orifice Detail



Section A-A
N.T.S.

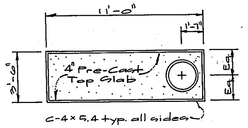


Elevation ~ Anti-Seep Collar
N.T.S.

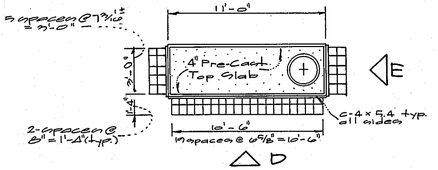


Concrete Cradle Detail
N.T.S. (see A-2 Concrete Cradle)

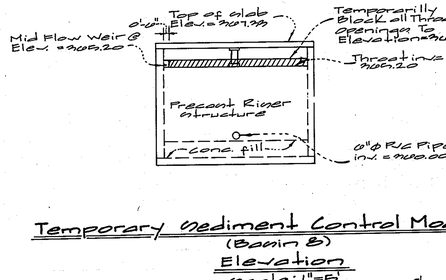
Notes For Anti-Seep Collar
1. Pour conc. to undisturbed earth.
2. Remove sheeting before pouring concrete.
3. Fc = 4000 psi @ 28 days.
4. Pour collars with pipe in place.
5. Backfill evenly on both sides of collars.
6. Locate collars a min. of 2' from pipe joints.



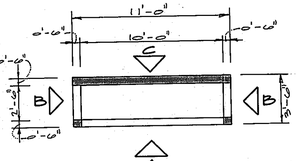
Plan ~ Top Slab
scale: 1" = 5'



Plan ~ Trash Rack
scale: 1" = 5'

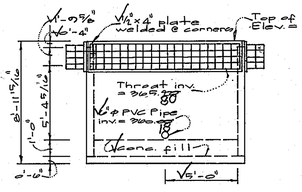


Temporary Sediment Control Modifications (Basin B)

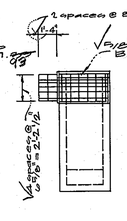


Plan View ~ Structure No. 8
scale: 1" = 5'

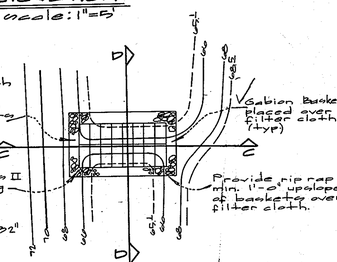
FC. Note: Structure has been designed to require a minimum finished weight of 19,700 lbs. Any deviations from the indicated details will require buoyancy computations provided by the precaster.



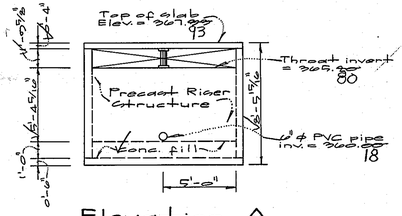
Elevation D
scale: 1" = 5'



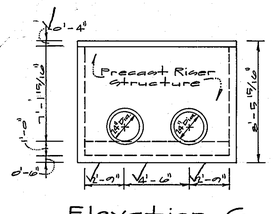
Elevation E
scale: 1" = 5'



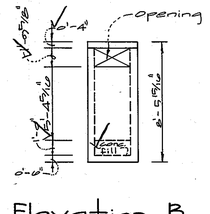
Gabion Basket Detail
scale: 1" = 20'



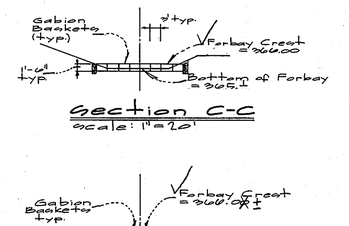
Elevation A
scale: 1" = 5'



Elevation C
scale: 1" = 5'



Elevation B
scale: 1" = 5'



Section C-C
scale: 1" = 20'

Section D-D
scale: 1" = 20'

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."

Engineer's Signature — 7/2/00 Date

STATE OF MARYLAND — No. 15624 — PROFESSIONAL ENGINEER

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 — 10-10-00 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.

Natural Resources Conservation Service — 5/3/01 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 — 5/3/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — 5/23/01 Date

Chief, Division of Land Development — 5/21/01 Date

Chief, Development Engineering Division MK — 6/15/01 Date

AS-BUILT

AS BUILT SHEET 7 OF 9

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. | DRN. WAJ | CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

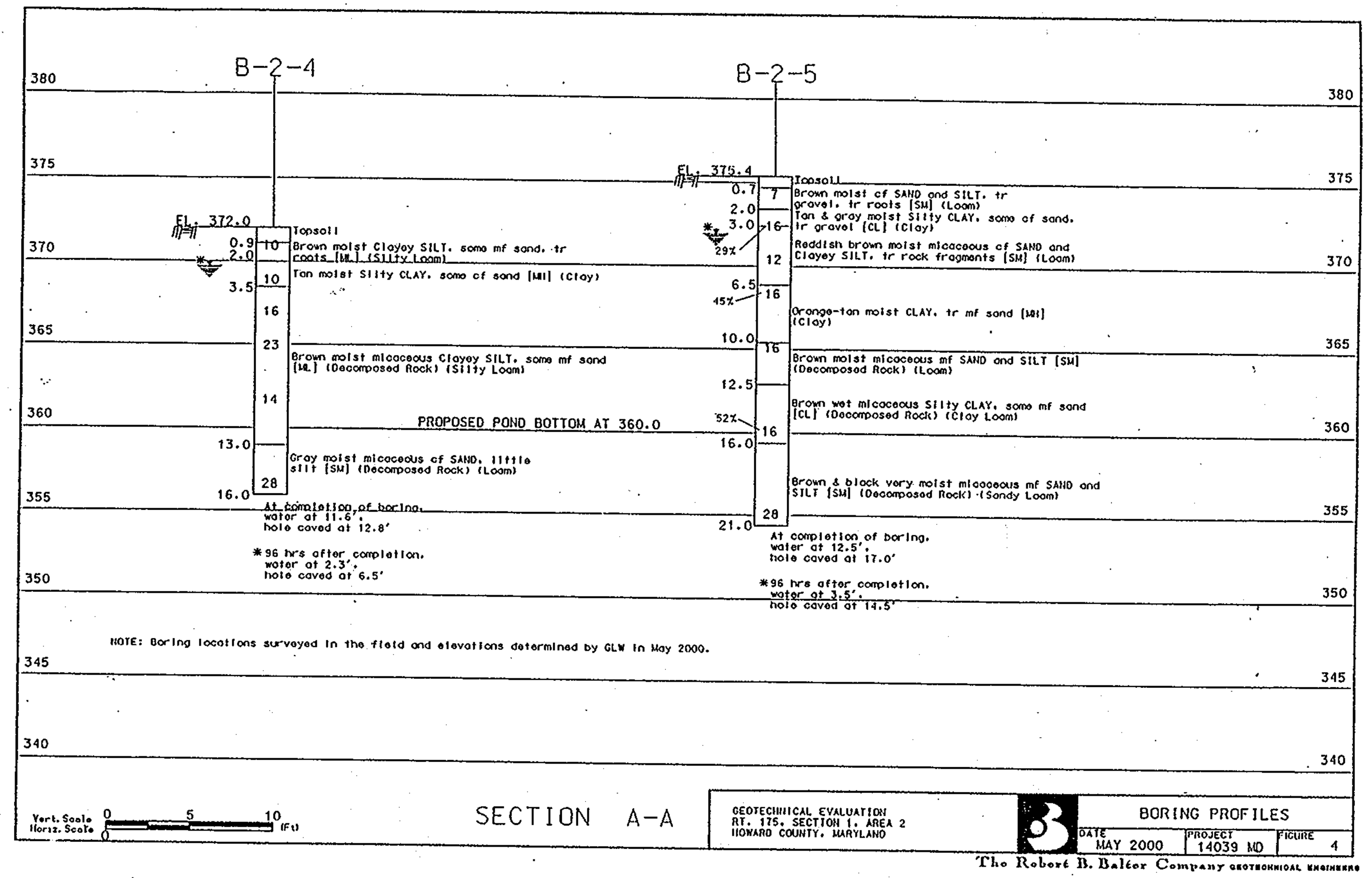
Storm Water Management Details Pond No. 8

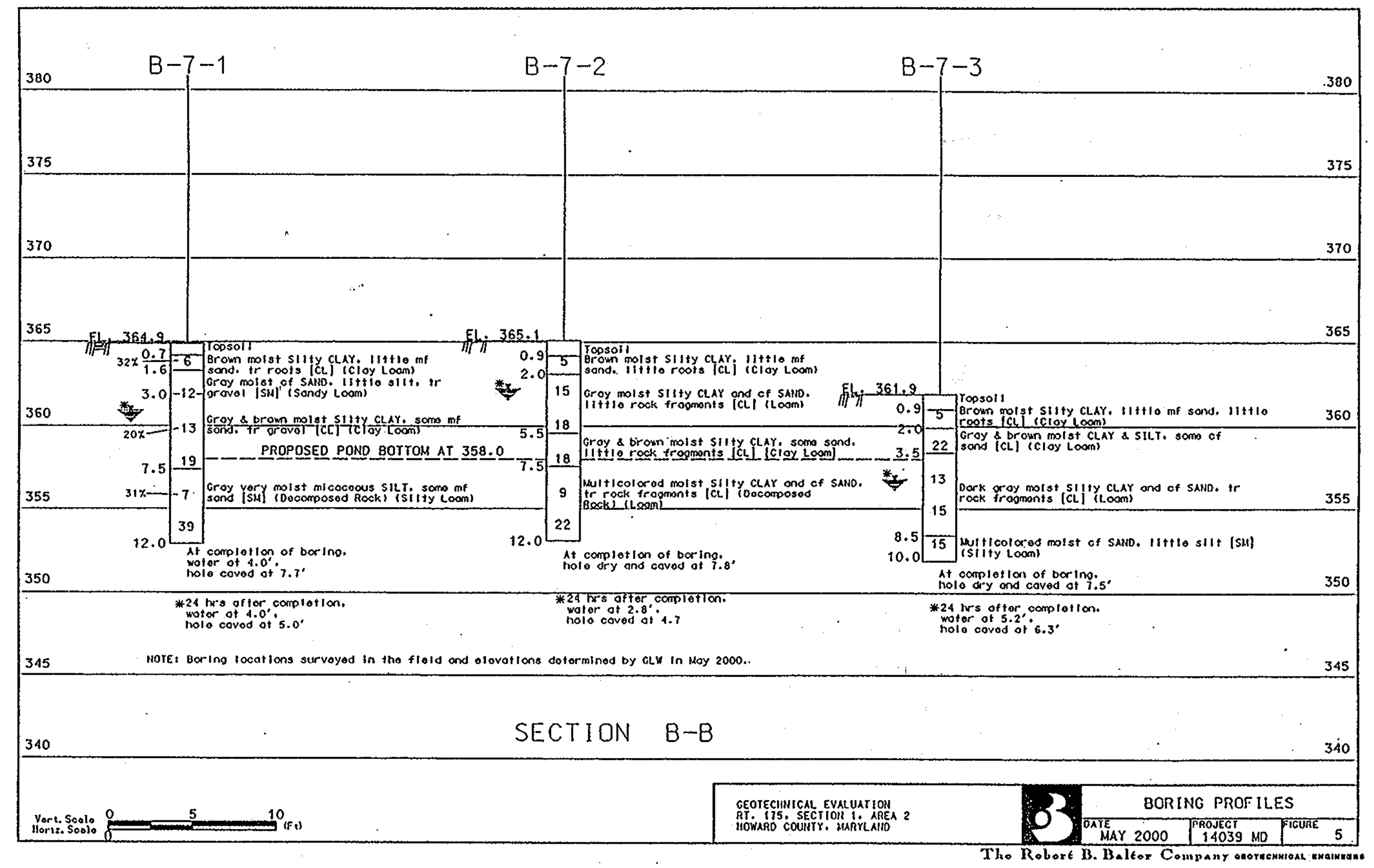
ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B-D and Lots 4&5
Plat No's 14099 & 14100

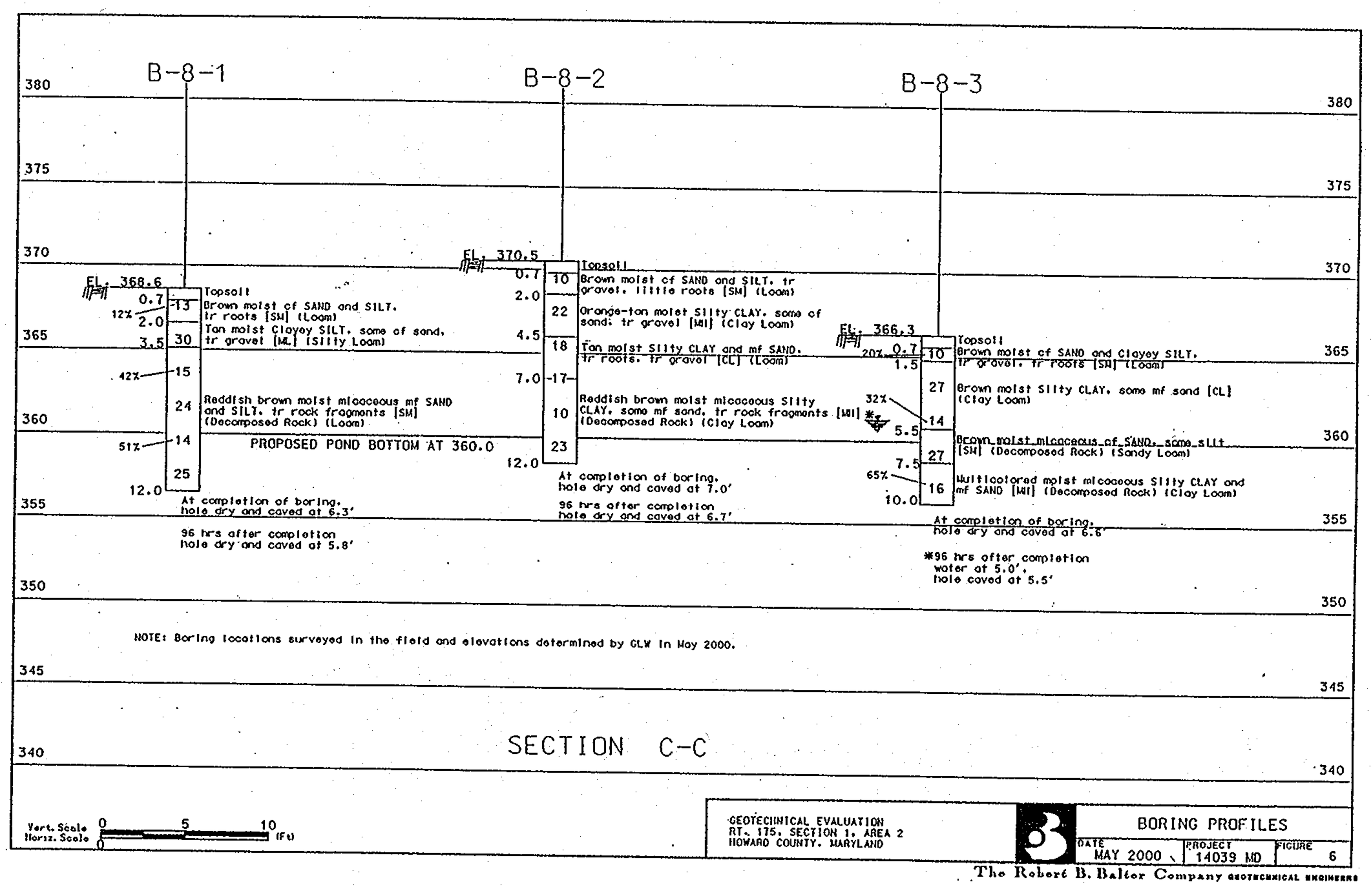
ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

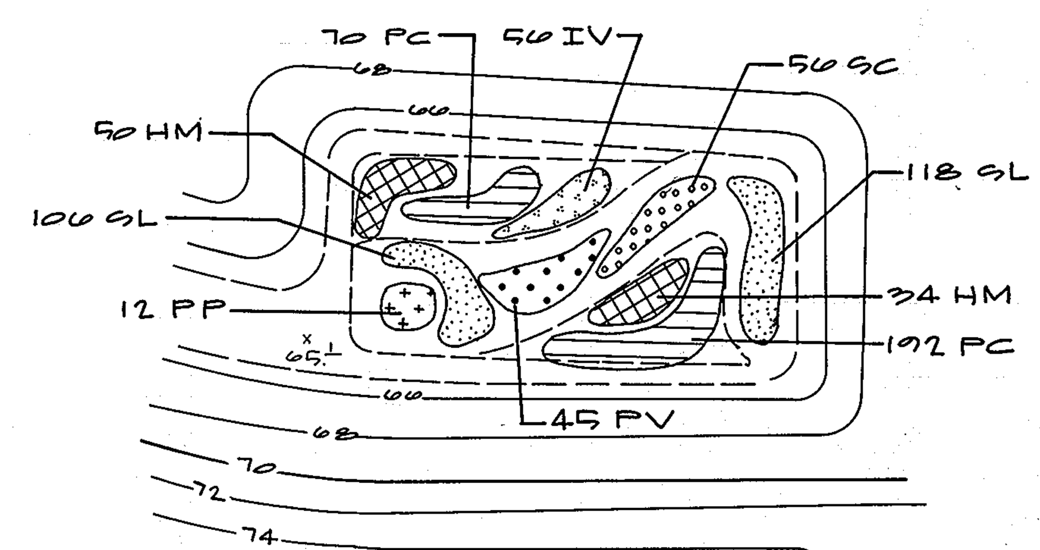
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
~~March, 2003~~ SEPT. 2003	36-12&18	14 of 19

SDP 01-09









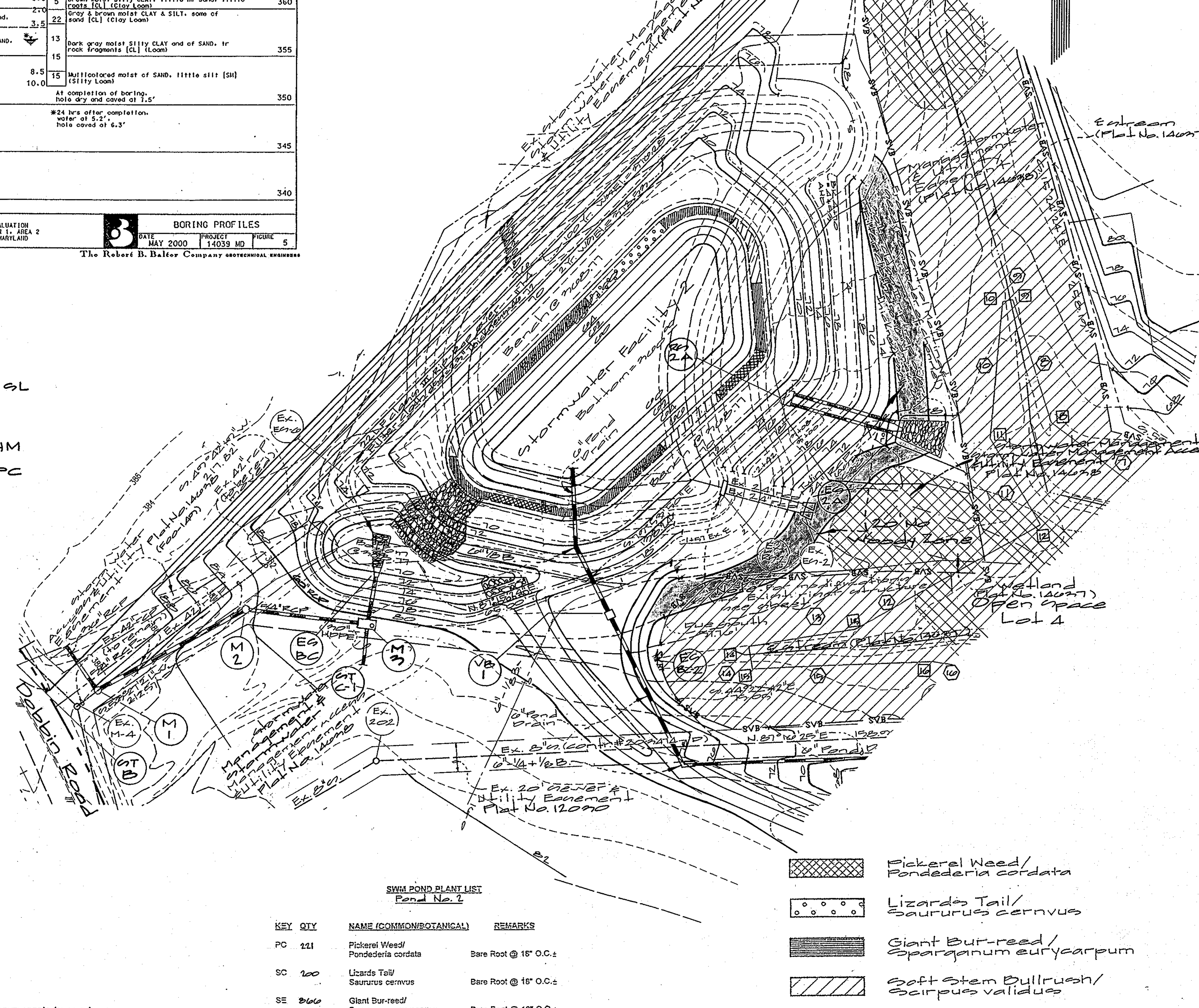
SWM Planting Detail Pond No. 8
scale: 1" = 20'

WETLANDS PLANTING FOR POND No. 8

Key	Qty	Name (Botanical/Common Name)	Remarks
IV	56	Iris versicolor/Blue Flag	Tuber
PC	262	Pontederia cordata/Pickerelweed	Tuber
PP	12	Potamageton pectinatus/Pondweed	1 Pt.
SL	224	Sagittaria latifolia/Duck Potato	Tuber
SC	56	Saurums cernuus/Lizard's Tail	Tuber
PV	45	Peltandra virginicum/Arrow Arum	Tuber
HM	85	Hibiscus moschelitos/Marsh Hibiscus	1 3/4" Plug

SWM POND PLANTING NOTES

1. Upon conversion of sediment control pond to stormwater management pond, the contractor shall remove any stones, debris, or construction material larger than two inches (2") in any dimension. The ponds shall be flooded and left undisturbed for a period of 10 days prior to planting.
2. One once of 18-6-25 slow release fertilizer shall be incorporated into the soil for each plant at the time of planting.
3. Soil shall be saturated with water during and after planting, or the planting area may be completely flooded at this time (wet planting). Planting soil shall be firmly pressed around each to prevent flotation.
4. The source of all aquatic and emergent plants shall be approved by the owner or landscape architect prior to ordering. These plants shall be grown in pots (container specified) or nursery growing beds (bare rood specified) for a minimum of 12 months prior to installation and shall have been wet cultivated during the entire period.
5. All plant material shall be guaranteed for a period of one year after formal acceptance. Plants which have greater and 33% dieback or have not grown so as to emerge from the water surface shall be replaced at the next planting season.
6. Remove litter and debris as required during the first growing season and at the beginning of the second growing season.



SWM Planting Detail POND № 2.
scale: 1" = 50'

SWM POND PLANT LIST
Pond No. 2

KEY	QTY	NAME (COMMON/BOTANICAL)	REMARKS
PC	221	Pickerel Weed/ Pondederia cordata	Bare Root @ 18" O.C.±
SC	200	Lizards Tail/ Saururus cernvus	Bare Root @ 18" O.C.±
SE	866	Giant Bur-reed/ Sparganum eurycarpum	Bare Root @ 18" O.C.±
SV	367	Soft Stem Bullrush/ Scirpus validus	Bare Root @ 18" O.C.±

Note: For Flood Plain Elevations □ and Bearings & Distances ⬡ see sht. 1.

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] 7/21/00
Engineer's Signature Date

STATE OF MARYLAND · DAVID L. LITTLE · No. 12484 · REGISTERED PROFESSIONAL ENGINEER

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] 10-10-00
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] 5/3/01
Natural Resources Conservation Service Date

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

[signature] 5/3/01
Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] 5/23/01
Director Date

[signature] 5/23/01
Chief, Division of Land Development Date

[signature] MK 5/15/01
Chief, Development Engineering Division Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES.	DRN. KLP	CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

Planting Plan/Soil Boring Profiles

ROUTE 175 COMMERCIAL
SECTION 1 AREA 2
PARCELS B~D LOTS 4&5
PLAT No.'s 14037 & 14038

ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-12&18	15 of 19

SDP 01-09

CONSTRUCTION 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 designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir 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 25-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 reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

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 embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30 % passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

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 heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture 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 into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density 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 (Standard Proctor).

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 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 construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core – The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10-year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other 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 operate 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.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil 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 shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

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 –(Polymer Coated steel pipe) – Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

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. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials – (Aluminum Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. 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 and coatings 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 or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

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 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 C-361.

2. Bedding – Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

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 4 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.

Plastic Pipe – The following criteria shall apply for plastic pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" – 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

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 provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

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

Drainage Diaphragms – When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile 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 921.09, Class C.

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 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 in 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 required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, 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 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 Natural Resources 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.

OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

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. (410) 313-1855

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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, sod, temporary seedings and mulching (Sec. G). 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	:	44.1 Acres
Area Disturbed	:	39.6 Acres
Area to be roofed or paved	:	0 Acres
Area to be vegetatively stabilized	:	39.6 Acres
Total Cut	:	180,000 Cu. Yds.
Total Fill	:	180,000 Cu. Yds.
Off-site waste/borrow area location:		N/A

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

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

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

11. Trenches for the construction of utilities is limited to 3 pipe lengths or that which shall be backfilled and stabilized within 1 working day, whichever is shorter.

Operation Maintenance & Inspection

1. The County shall remove silt when accumulation exceeds 6" in forebay.
2. During the min. annual inspection, the County shall remove accumulated paper, trash & debris as necessary.
3. The County shall mow vegetation growing in embankment top & faces of the forebay or basin at least once per year.
4. Annual inspection shall be made by the County on or about June of each year & repairs, if any, shall be done at that time. Cosmetic & landscaping items not performed by Howard County Department of Public Works will be the responsibility of the Columbia Association. Structural & scheduled cosmetic/aesthetic items will be the responsibility of the Howard County Department of Public Works.
5. Inspection of the pond(s) shown hereon shall be performed at least annually by the county, in accordance with the checklist & requirements contained within USDA.SCS, "Standards and Specifications for Ponds" (MD-378).

PERMANENT SEEDING NOTES

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

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

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

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

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

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

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

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

TEMPORARY SEEDING NOTES

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

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

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

Seeding: For periods March 1 thru April 30 and from August 15 thru October 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, weed-free, 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

Sequence of Construction

1. Obtain grading permit and arrange on site meeting with the Sediment Control Inspector (1-day).

Phase I:

2. Install super silt fence, stabilized construction entrance for Parcel B and the stabilized construction entrance for Parcel C from Dobbin Road. Construct the stabilized construction entrances and associated Phase I grading and culverts from Snowden River Parkway for Parcels C and D (1 week).

   Note: Only the grading indicated for Phase I of the project is to occur during this portion of the sequence.

3. Construct Sediment Basins 7and 8 and Sediment Trap 9 and the associated perimeter sediment controls (earth dike and temporary swales) (2 months)

Phase II:

4. Construct storm drain M-1 through M-3, Stub B to M-1, Stub C-1 to M-3, M-3 to ES-BC, and M-3 to ES-BC2. Temporarily block shut M-3 to ES-BC. Only construct as much storm drain as can be backfilled and stabilized in one day. Only Phase II grading for this portion of the sequence is to be performed. Obtain permission from the inspector prior to proceeding to construct Sediment Basin 2(1 week).

   Note: The temporary flow from M-3 must be through an undisturbed area until Sediment Basin 2 is completed.

   Note: Only the grading indicated for Phase II of the project is to occur during this portion of the sequence.

5. Construct Sediment Basin 2 and the associated perimeter sediment controls (earth dike and temporary swales) Obtain permission from the inspector prior to proceeding to diverting the flows from M-3 into Sediment Basin 2.

6. Unblock storm drain structure M-3 to ES-BC and block the temporary stub from M-3 permanently shut with a masonry bulkhead (2 months).

* Phase III:

6.✱ Grade remaining portions of the site. Use dust controls as necessary (6 months).

7.✱ Install earth dike (II) with associated pipe slope drains to protect newly graded slopes(1 week).

8.✱ Stabilize the site with grass seed and mulch (2 weeks).

9.✱ Once the site has been stabilized and permission has been granted by the Sediment Control Inspector, convert the Sediment Basins to permanent stormwater management facilities. Backfill the sediment trap and remove all remaining sediment controls and stabilize with grass seed and mulch (3 weeks).

Note: Earth dikes with a roman numeral in parenthesis are generally intended for construction after fill slopes have been completed (to protect the slope).

* PHASE III (mass grading) shall not begin until permission is granted by the Sediment Control Inspector. 4/5/01

STATE OF MARYLAND — DENNIS L. LYNVILLE — No. 13484 — REGISTERED PROFESSIONAL ENGINEER

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."

Daniel L. Lutts — 4/25/01 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 — 4-25-01 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 — 5/3/01 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.

Natural Resources Conservation Service — 5/5/01 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — 5/23/01 Date

Chief, Division of Land Development ~~and Records~~ — 5/22/01 Date

Chief, Development Engineering Division MK — 5/10/01 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DRAWINGS\95003\BASE\95003SW | DES. | DRN. WMJ CAD | CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN: AL EDWARDS
(410) 992-6027

STORMWATER MANAGEMENT NOTES /SEDIMENT CONTROL NOTES

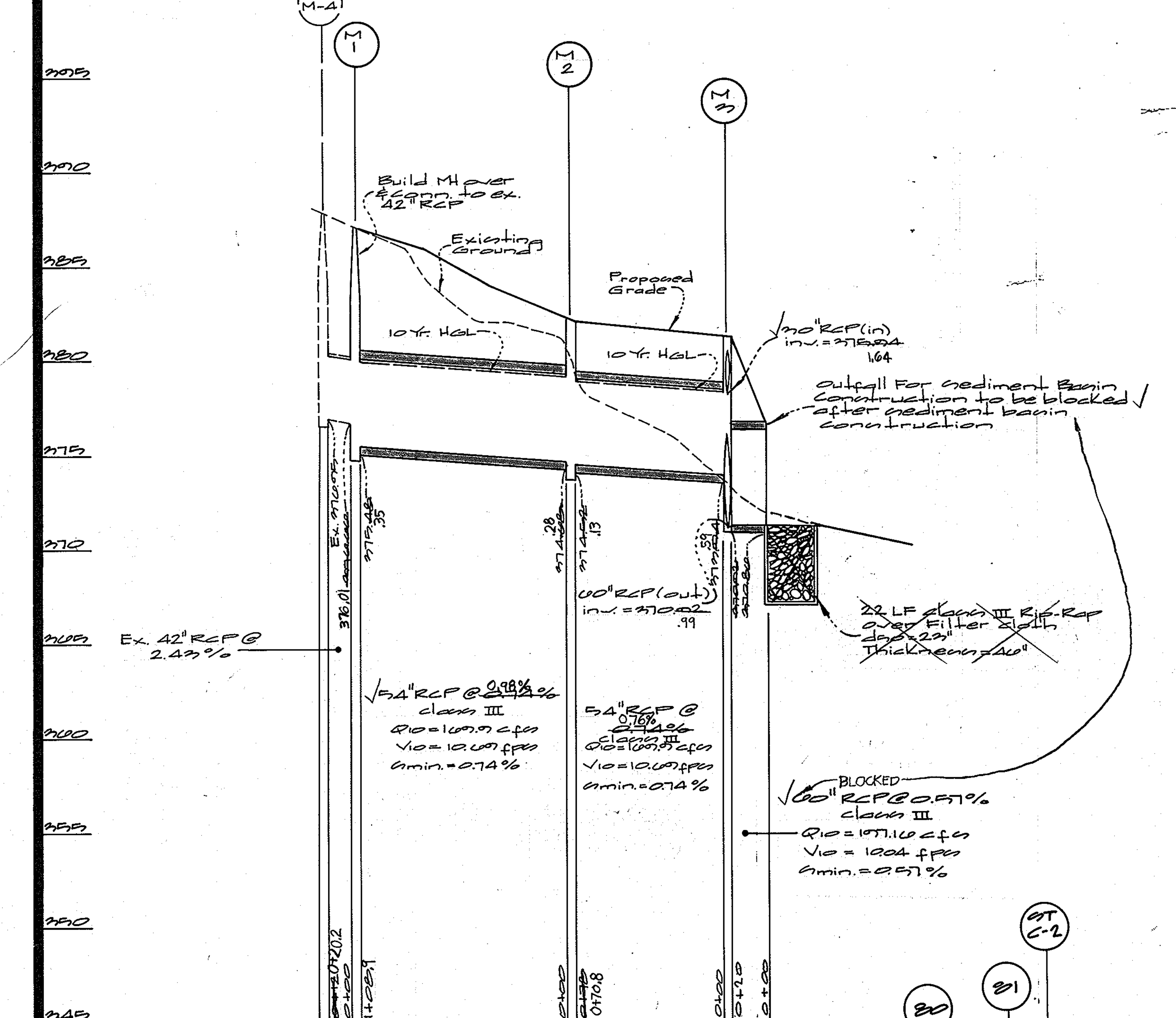
ROUTE 175 COMMERCIAL

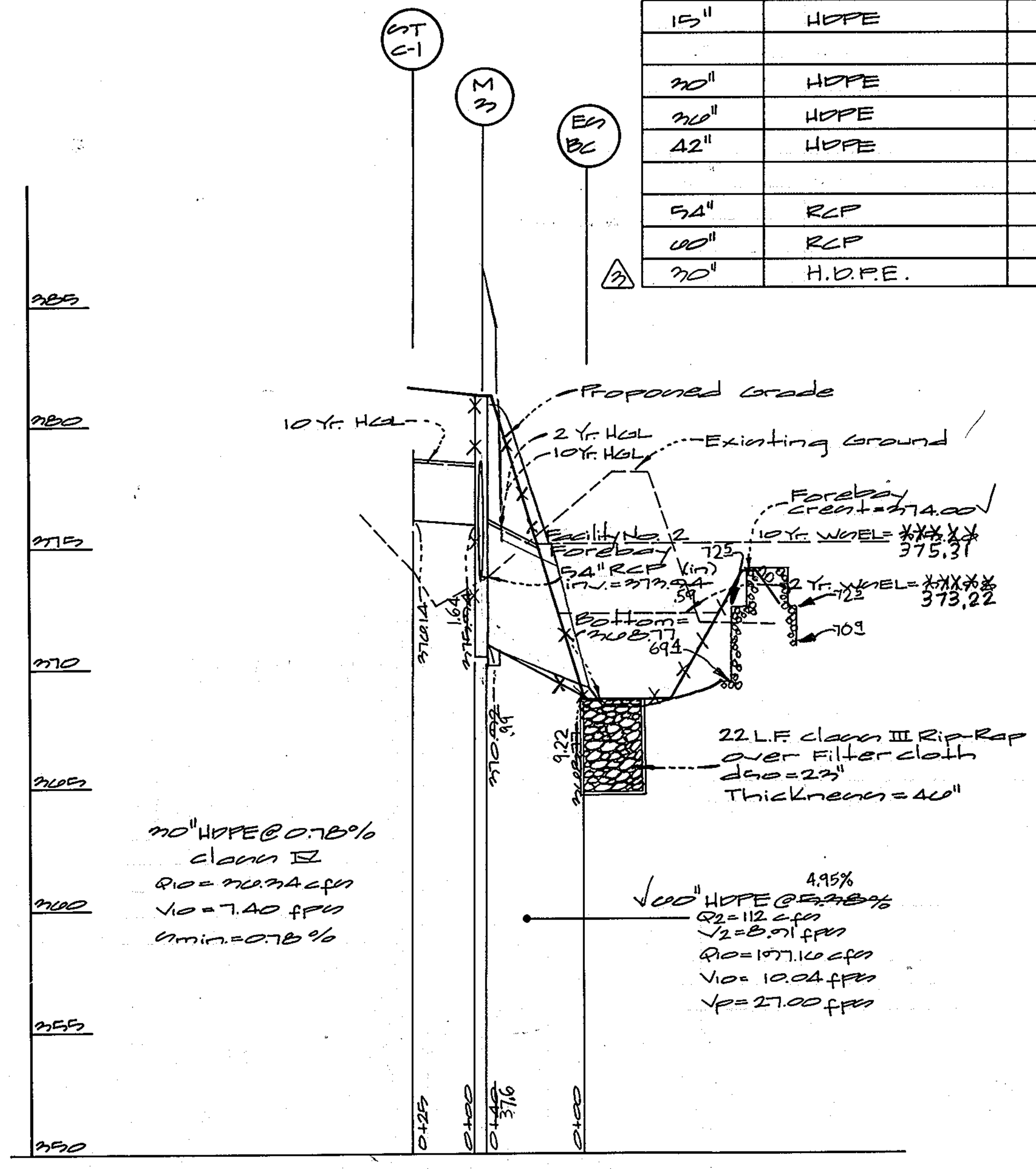
SECTION 1 AREA 2
PARCELS B-D and LOTS 4 & 5
PLAT No.'s 14637 & 14638

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-18 37-13	16 OF 19

SDP 01-09



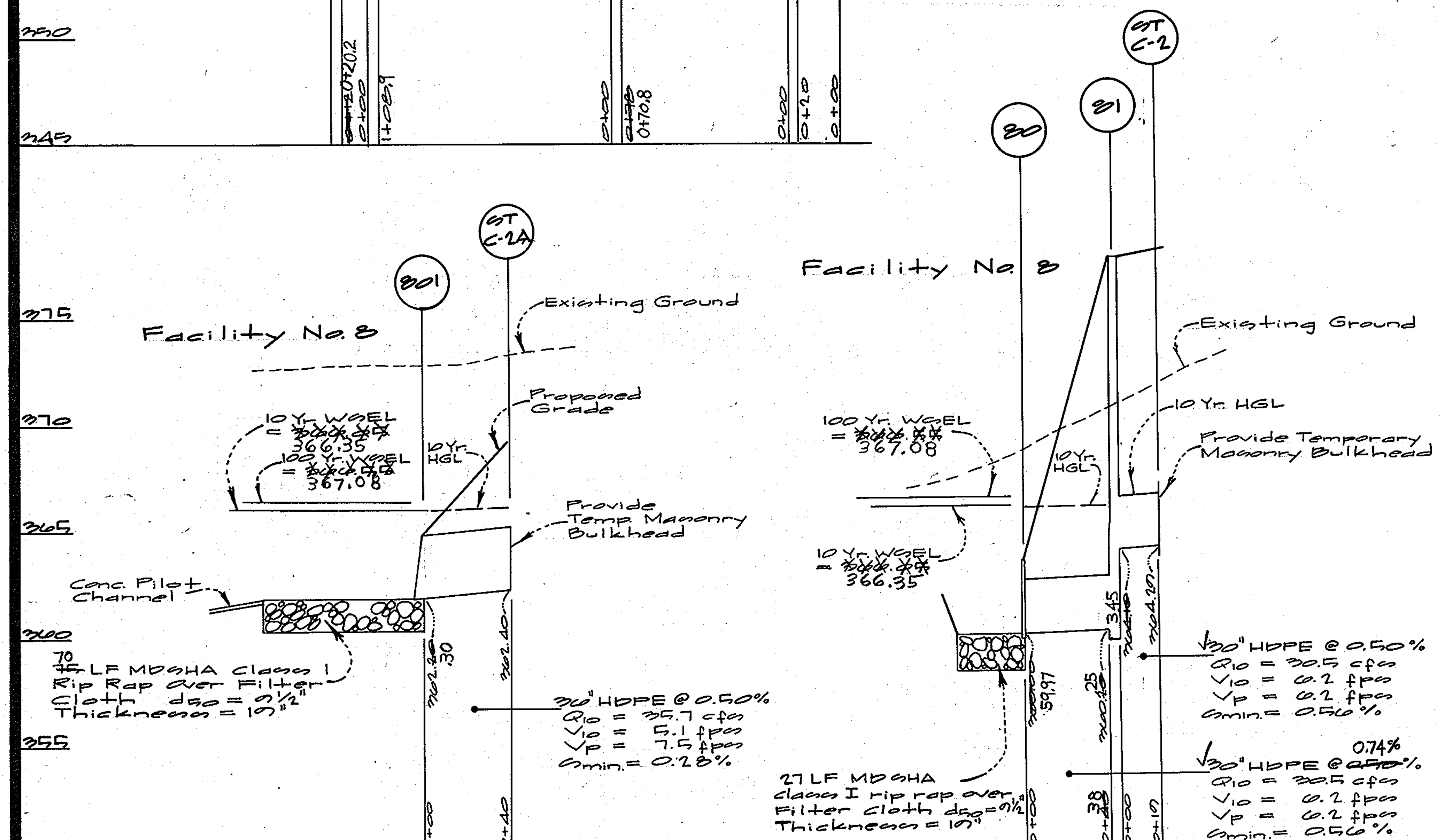


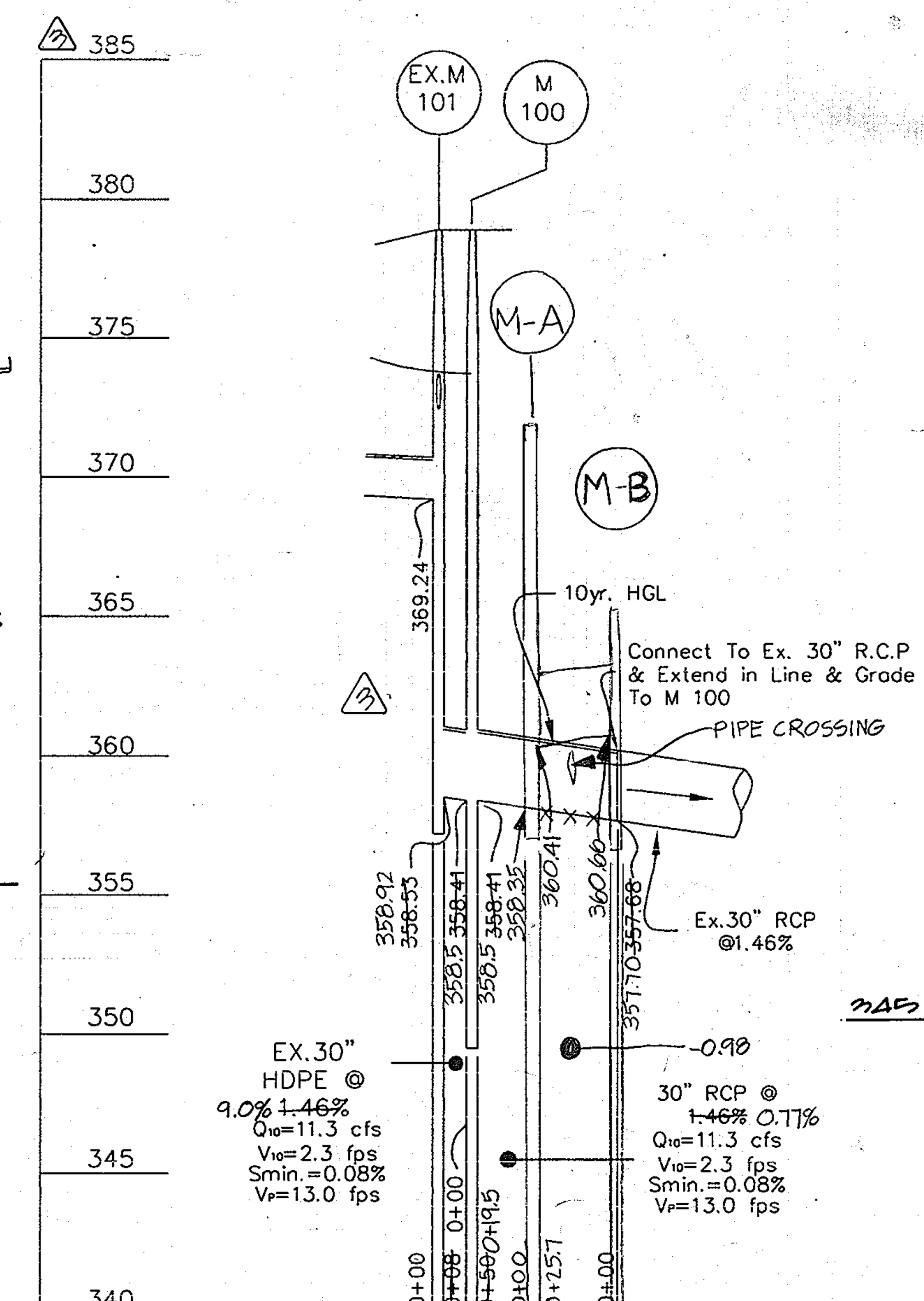
PIPE SUMMARY

SIZE	TYPE	LENGTH
10"	PVC	58
15"	HDPE	17
30"	HDPE	25'
36"	HDPE	47'
42"	HDPE	73'
54"	RCP	180
60"	RCP	40'
30"	H.D.P.E.	50'

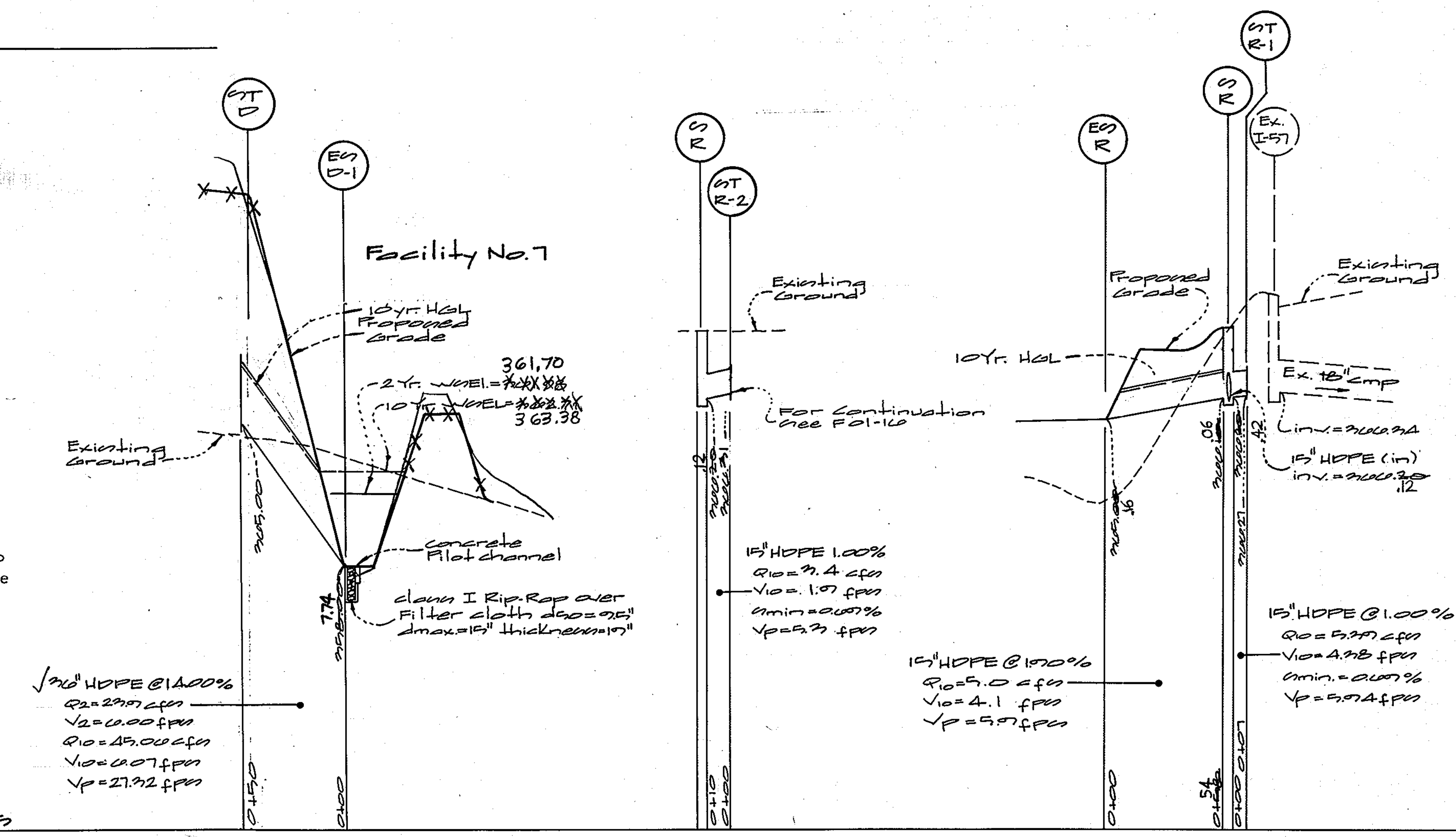
STRUCTURE SCHEDULE

NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION UPPER	TOP ELEVATION LOWER	INVERT ELEVATION UPPER	INVERT ELEVATION LOWER	STD. DETAIL	LOCATIONS	REMARKS
M-3	A-10	6'	380.80 .84		373.94 .59	370.02 .99	SD 4.41	see Plan	
S-R	Manhole	4'	366.92 .42		366.20 .12	366.10	G 5.12		
81	Manhole	5'	378.00 .15		366.10 3.45	366.12 .25	G 5.13		
M-1	Manhole	7'	387.50 .45		376.00 .01	375.48 .35	MDSHA MD-384.07		
M-2	↓	7'	382.00 .18		374.66 .28	374.52 .13	"		
ES-BC2	End section	60"	—	—	—	368.77 9.22	SD 5.52		
801		36"				360.00 2.30			
ES-D1	↓	36"	—	—	—	358.00 7.74	↓		
80	Endwall	30"	—	—	—	360.00 59.99	SD 5.21		
M-100	Stormceptor	96" Diam.	378.92		358.41	358.41	See Detail	See Plan	
VB	Valve Box	—	378.50 9.61		360.00 .61		W 3.02		





STORM DRAIN PROFILE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director	5/23/01 Date
Chief, Division of Land Development	5/21/01 Date
Chief, Development Engineering Division MK	5/15/01 Date

ASBUILT

ASBUILT SHEET 8 OF 9

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES.	DRN. WSJ	CHK.

DATE	REVISION	BY	APPR.
~~3-8-02~~	~~Rev. to add stormceptor notes & storm drain profile~~		
~~8-14-02~~	~~Rev. ...~~	~~WSJ~~	
~~3-26-02~~	~~Remove Profile ... & add profiles ...~~	~~GLW~~	

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

Storm Drain Profiles & Schedules

ROUTE 175 COMMERCIAL
SECTION 1 AREA 2
PARCELS B~D and LOTS 4&5
PLAT No. 14097 & 14098

ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
~~March~~ 2001	36-18 37-13	17 OF 19

SDP 01-09

Note: This plan has bee prepared in accordance with The Provisions of The Section 16.124 of The Howard County Code and The Landscape Manual.

Note: For Flood Plain Elevations □ and Bearing & Distances ⬡ see sht. 1.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director	Date 5/23/01
Chief, Division of Land Development	Date 5/23/01
Chief, Development Engineering Division MK	Date 5/15/01

For Landscape Purposes Only!!

GLW GUTSCHICK LITTLE & WEBER, P.A.
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DES. | DRN. WSJ | CHK.

DATE	REVISION	BY	APPR.
8.14.02	Rev. Pipe size From SR To ESR & Alignment of ST-R2	WSJ	MJT
7.26.02	Rev. landscaping adj. to Facility 8 & Rev. SD stubs Facility 8	GLW	mjh

PREPARED FOR:
The Howard Research and Development Corp.
10275 Little Patuxent Pkwy.
Columbia, Maryland 21044
Attn: Al Edwards
(410) 992-6027

Stormwater Management Perimeter Planting Plan

ROUTE 175 COMMERCIAL
Section 1 Area 2
Parcels B~D and Lots 4&5
Plat No.'s 14037 & 14038

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	95003
DATE	TAX MAP – GRID	SHEET
March, 2001	36-18 37-13	18 of 19

SDP 01-09

PLANT MATERIALS AND PLANTING METHODS

A. Plant Materials

The landscape contractor shall furnish and install and/or dig, ball, burlap and transplant all of the plant materials called for on drawings and/or listed in the Plant Schedule.

1. *Plant Names*

   Plant names used in the Plant Schedule shall conform with "Standardized Plant Names," latest edition.

2. *Plant Standards*

   All plant material shall be equal to or better than the requirements of the "USA Standard for Nursery Stock" latest edition, as published by the American Association of Nurserymen (hereafter referred to as AAN Standards). All plants shall be typical of their species and variety, shall have a normal habit of growth and shall be first quality, sound, vigorous, well-branched and with healthy, well-furnished root systems. They shall be free of disease, insect pests and mechanical injuries.

   All plants shall be nursery grown and shall have been grown under the same climate conditions as the location of this project for at least two years before planting. Neither heeled-in plants nor plants from cold storage will be accepted.

3. *Plant Measurements*

   All plants shall conform to the measurements specified in the Plant Schedule as approved by the ARC.

   a. Caliper measurements shall be taken six inches (6") above grade for trees under four-inch (4") caliper and twelve (12") above grade for trees four inches (4") in caliper and over.

   b. Minimum branching height for all trees shall be six feet (6'), maximum eight feet (8').

   c. Minimum size for planting shade trees shall be 3-3 1/2" caliper, 14'-16' in height.

   d. Minimum size for planting minor or intermediate focus trees (pines, crabapples, etc.) shall be 3"-3 1/2" caliper, 10'-12' in height.

   e. Minimum size for planting shrubs shall be 18" - 24" spread unless noted otherwise.

   f. Caliper, height, spread and size of ball shall be generally as follows:

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
3" – 3 1/2"	14'-16'	6'-8'	32" diameter
3 1/2"– 4"	14'-16'	8'-10'	36" diameter
4" – 4 1/4"	16'-18'	8'-10'	40" diameter
4 1/2"– 5"	16'-17'	10'-12'	44" diameter
5" – 5 1/2"	16'-20'	10'-12'	48" diameter
5 1/2"– 6"	18'-20'	12'-14'	52" diameter

All plant material shall generally average the median for the size ranges indicated above as indicated in the "AAN Standards".

4. *Plant Identification*

   Legible labels shall be attached to all shade trees, minor trees, specimen shrubs and bundles or boxes of other plant material giving the botanical and common names, size and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.

5. *Plant Inspection*

   The ARC may, upon request by the builder or developer, at least ten (10) days prior to the installation of any proposed plant material, inspect all proposed plant material at the source of origin.

B. Planting Methods

All proposed plant materials that meet the specifications in Section A are to be planted in accordance with the following methods during the proper planting seasons as described in the following:

1. *Planting Seasons*

   The planting of deciduous trees, shrubs and vines shall be from March 1st to June 15th and from September 15th to December 15th. Planting of deciduous material may be continued during the winter months providing there is no frost in the ground and frost-free topsoil planting mixtures are used.

   The planting of evergreen material shall be from March 15th to June 15th and from August 15th to December 1st. No planting shall be done when ground is frozen or excessively moist. No frozen or wet topsoil shall be used at any time.

2. *Digging*

   All plant material shall be dug, balled and burlapped (B+B) in accordance with the "AAN Standards".

3. *Excavation of Plant Pits*

   The landscaping contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds in accordance with the following schedule:

   a. Locations of all proposed plant material shall be staked and approved in the field by the landscape architect before any of the proposed plant material is installed by the landscape contractor.

   b. All pits shall be generally circular in outline, vertical sides; depth shall not be less than 6" deeper than the root ball, diameter shall not be less than two times the diameter of the root ball as set forth in the following schedule.

   c. If areas are designated as shrub beds or hedge trenches, they shall be excavated to at least 18" depth minimum. Areas designated for ground covers and vines shall be excavated to at least 12" in depth minimum.

   d. Diameter and depth of tree pits shall generally be as follows:

PLANT SIZE	ROOT BALL	PIT DIAMETER	PIT DEPTH
3" – 3 1/2" cal.	32"	64"	28"
3 1/2"– 4" cal.	36"	72"	32"
4" – 4 1/2" cal.	40"	80"	36"
4 1/2"– 5" cal.	44"	88"	40"
5" – 5 1/2" cal.	48"	98"	44"
5 1/2"– 6" cal.	52"	104"	48"

A 20% compaction figure of the soil to be removed is assumed and will be allowed in calculation of extra topsoil. The tabulated pit sizes are for purposes of uniform calculation and shall not override the specified depths below the bottoms of the root balls.

4. *Staking, Guying and Wrapping*

All plant material shall be staked or guyed, and wrapped in accordance with the following specifications:

   a. Stakes: Shall be sound wood 2" x 2" rough sawn oak or similar durable woods, or lengths, minimum 7'-0" for major trees and 5'-0" minimum for minor trees.

   b. Wire and Cable: Wire shall be #10 ga. galvanized or bethanized annealed steel wire. For trees over 3" caliper, provide 5/16" turn buckles, eye and eye with 4" take-up. For trees over 5" caliper, provide 3/16", 7 strand cable cadmium plated steel, with galvanized "eye" thimbles of wire and hose on trees up to 3" in caliper.

   c. Hose: Shall be new, 2 ply reinforced rubber hose, minimum 1/2" I.D. "Plastic Lock Ties" or "Paul's Trees Braces" may be used in place of wire and hose on trees up to 3" in caliper.

   d. All trees under 3" in caliper are to be planted and staked in accordance with the attached "Typical Tree Staking Detail". All trees over 3" in caliper are to be planted and guyed in accordance with the attached "Typical Tree Guying Detail".

5. *Plant Pruning, Edging and Mulching*

   a. Each tree, shrub or vine shall be pruned in an appropriate manner to its particular requirements, in accordance with accepted standard practice. Broken or bruised branches shall be removed with clean cuts flush with the adjacent trunk or branches. All cuts over 1" in diameter shall be painted with an approved antiseptic tree wound dressing.

   b. All trenches and shrub beds shall be edged and cultivated to the lines shown on the drawing. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit. Sod which has been removed and stacked shall be used to trim the edges of all excavated areas to the neat lines of the plant pit saucers, the edges of shrub areas, hedge trenches and vine pockets.

   c. After cultivation, all plant materials shall be mulched with a 2" layer of fine, shredded pine bark, peat moss, or another approved material over the entire area of the bed or saucer.

6. *Plant Inspection and Acceptance*

   The ARC shall be responsible for inspecting all planting projects on a periodic basis to assure that all work is proceeding in accordance with the approved plans and specifications.

7. *Plant Guarantee*

   All plant material shall be guaranteed for the duration of one full growing season, after final inspection and acceptance of the work in the planting project. Plants shall be alive and in satisfactory growing condition at the end of the guarantee period.

   a. For this purpose, the "growing season" shall be that period between the end of the "Spring" planting season, and the commencement of the "Fall" planting season.

   b. Guarantee for planting performed after the specified end of the "Spring" planting season, shall be extended through the end of the next following "Spring" planting season.

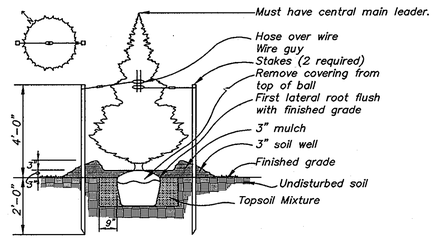
Sodding

All sodding shall be in accordance to the "Landscape Specification Guidelines for Baltimore-Washington metropolitan Areas" latest edition, approved by the Landscape Contractors Association of Metropolitan Washington and the American Society of Landscape Architects.

All sod shall be strongly rooted sod, not less than two years old and free of weeds and undesirable native grasses. Provide only sod capable of growth development when planted and in strips not more than 18" wide x 4" long. Provide sod composed principally of improved strain Kentucky bluegrass, such as, Columbia, Victa, or Escort.

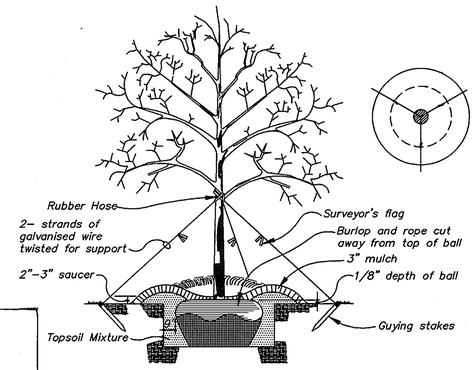
LANDSCAPING NOTES

1. Contractor shall notify all utilities at least (5) five days before starting work. All General Notes, especially those regarding utilities, on Sheet 1 shall apply.
2. Field verify underground utility locations and existing conditions before staring planting work. Contact owner or his representative if any relocations are required.
3. Plant quantities shown on Plant List are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
4. All plant material shall be full, heavy, well formed, and symmetrical, and conform to the A.A.N. Specifications, and be installed in accordance with project specifications.
5. No substitution shall be made without written consent of the owner or his representative.
6. All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with project specifications.
7. The contractor shall notify the owner in writing if he/she encounters soil drainage conditions which may be detrimental to the growth of the plants.
8. All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per Planting Details.



Evergreen Planting Detail

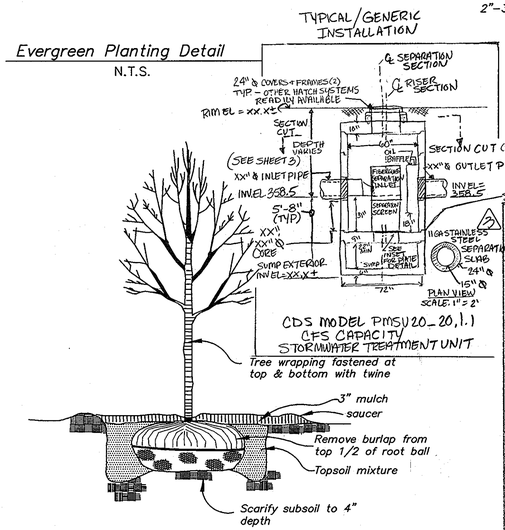
N.T.S.



Typical Tree Guying Detail

N.T.S.

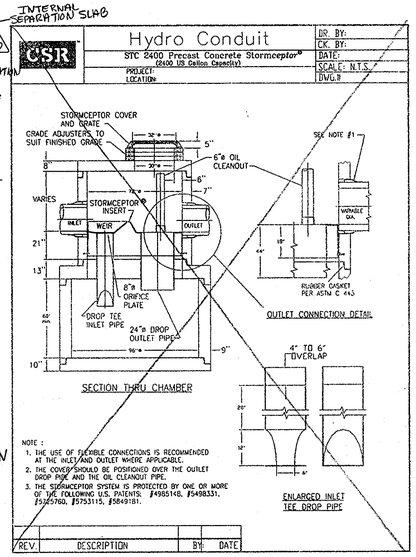
TYPICAL/GENERIC INSTALLATION



Typical Deciduous Tree Planting

N.T.S.

NOTE:
CDS MODEL PMSU20 USED IN PLACE OF STC 2400



PLANT LIST				
SYMBOL	QTY.	NAME BOTANICAL/COMMON	SIZE	REMARKS
SHADE TREES				
L	8	Liquidambar Styraciflua/ Sweet Gum	2–2 1/2 cal.	B&B
Q	11	Quercus Palustris/ Pin Oak	2–2 1/2 cal.	B&B
ORNAMENTAL TREES				
AC	9	Amalanchier Canadensis/ Service Berry	10'–12' HT.	B&B
EVERGREEN TREES				
PA	20	Picea Abies/Norway Spruce	10'–12' HT	B&B
PN	17	Pinus Nigra\Black Pine	10'–12' HT	B&B*
AR	4	Acer Rubrum/Red sunset/ Red sunset Maple	2'–2½' cal.	B & B
PS	10	Pinus strabus/White Pine	10'–12' HT.	B & B

Schedule D Stormwater Management Area Landing	
Linear Feet Of Perimeter	1,520 Feet
Number of trees required (Type B) Shade Trees (1:50) Evergreen Trees (1:40)	 31 38
Credit for existing vegetation (No, Yes and %)	 No
Credit for other landscaping (No, Yes and %)	 No
Number of trees provided Shade trees Evergreen Trees Other trees (2:1 substitution)	 23 53 9
Landscape Surity for Schedule-D Required Plantings: Financial surety for the 69 required trees has been posted as part of the Developer's Agreement in the amount of $15,000.00	

CONTRACTOR INSTALLATION PROCEDURE FOR INLET STORMCEPTOR

1. STAKE-OUT THE LOCATION OF THE INLET STORMCEPTOR AND EXCAVATE HOLE.. EXCAVATE ADEQUATE SPACE TO CONNECT INLET AND OUTLET PIPES TO UNIT. INSTALL OF EXCAVATION.
2. CHECK ELEVATION OF UNIT BY MEASURING ITS SECTIONS FROM THE BASE OF THE STORAGE CHAMBER (BOTTOM OF BASE SLAB) TO THE INVERT OF THE UNIT BYPASS CHAMBER OUTLET ELEVATION (FIBERGLASS INSERT). SUBTRACT THIS DISTANCE FROM DESIGN OUTLET ELEVATION TO DETERMINE TOP OF SUBBASE ELEVATION. CHECK ELEVATION OF INSTALLED SUBBASE AND ADJUST AS NEEDED.
3. SECURE INSPECTOR APPROVAL OF SUB GRADE AND SUBBASE.
4. INSTALL STORAGE CHAMBER. ATTACH CABLES OR CHAINS TO THE THREE PULLING IRONS ON THE BASE SLAB. USING LARGE EQUIPMENT OR CRANE, LIFT AND PLACE THE BASE SECTION OF THE STORAGE CHAMBER IN THE EXCAVATED HOLE ON THE SUBBASE. MAKE SURE THE BASE IS LEVEL. SPECIFIC ALIGNMENT OF THIS PART IS NOT REQUIRED. INSTALL RUBBER GASKET ON THE BASE UNIT AND APPLY LUBRICATING SOAP (PROVIDED IN SHIPMENT).
5. INSTALL BYPASS CHAMBER OF INLET STORMCEPTOR WITH FACTORY INSTALLED INSERT. LIFT BYPASS SECTION, LUBRICATE BELL, AND INSTALL WHILE CHECKING ALIGNMENT AND GRADE OF OUTLET DRAINAGE PIPE. CHECK AND MAKE SURE BYPASS CHAMBER IS SET FLUSH, LEVEL, AND IS AT THE PROPER ELEVATION. INSTALL RUBBER GASKET ON TOP OF BYPASS RISER AN LUBRICATE.
6. INSTALL INLET AND OUTLET STORM DRAIN PIPES. CONNECT PIPE WITH FLEXIBLE BOOTS (WHEN PROVIDED) AND WITH NON-SHRINK GROUT WHEN FLEXIBLE BOOTS ARE NOT PROVIDED. THE INVERT OF THE OUTLET PIPE IS TO MATCH THE INVERT OF THE STORMCEPTOR INSERT. FLEXIBLE BOOT INSTALLATION PROCEDURES: CENTER THE PIPE IN THE BOOT OPENING. LUBRICATE THE OUTSIDE OF THE PIPE AND/OR THE INSIDE OF THE BOOT. POSITION THE PIPE CLAMP IN THE GROOVE OF THE BOOT WITH THE SCREW AT THE TOP. TIGHTEN THE PIPE CLAMP WHILE ENSURING EVEN CONTRACTION OF THE RUBBER.
7. INSTALL INLET DOWN PIPE WITH HANDLE AND 4" VENT PIPE ACCORDING TO INSTALLATION INSTRUCTIONS FOR INLET STORMCEPTOR MODEL STC450i.
8. INSTALL RISER SECTION. ALIGN STEPS ABOVE INLET(12") DOWN PIPE. NOTE, FOR SHALLOW INSTALLATIONS THIS SECTION MAY NOT BE REQUIRE.
9. INSTALL FLATTOP WITH OPENING FOR STORMCEPTOR FRAME AND GRATE ORIENTED ABOVE THE STORMCEPTOR 12" INLET DOWN PIPE.
10. BACK FILL STORMCEPTOR WITH APPROVED BACK FILL MATERIAL (NO ORGANIC OR TOP SOIL IS TO BE USED FOR BACK FILL). BACK FILL AND COMPACT IN 8" LIFTS. BACK FILL SHOULD BE COMPACTED TO LOCAL/STATE REQUIREMENTS.
11. INSTALL AND SET GRADE ADJUSTING RINGS, AS NEEDED.
12. INSTALL AND SET FRAME AND GRATE.
13. THE STORMCEPTOR SHOULD BE PUMPED OUT WHEN SEDIMENT CONTROL MEASURES ARE REMOVED (SITE PERMANENTLY STABILIZED).
14. FINAL INSPECTION.

FOR TECHNICAL INFORMATION CALL CSR HYDRO CONDUIT AT 301-698-7373

PROCEDURE TO SEAL LIFT HOLES

1. LIFT HOLES IN THE TANK SECTION ARE TO BE PLUGGED WITH A TAPPERED FLEXIBLE PLUG AND KNOCKED INTO THE HOLE WITH A HAMMER. (PLUG MAY BE PLACED IN THE INSIDE OR OUTSIDE OF THE TANK)
2. ONCE THE PLUG IS SET IN PLACE, THE INSIDE AND OUTSIDE OF THE LIFT HOLES MUST BE COVERED WITH CEMENT GROUT.
3. CEMENT GROUT SEAL SHOULD EXTEND FOR 2 TO 3 INCHES BEYOND THE LIFT HOLE OPENING.
4. LIFT HOLES WHICH ARE NOT PART OF THE TANK SECTION NEED ONLY BE SEALED WITH THE FLEXIBLE PLUG KNOCKED INTO PLACE.

STORMCEPTOR DROP PIPE INSTALLATION PROCEDURE

1. DROP PIPES ARE TO BE INSTALLED ONCE THE RISER SECTION CONTAINING THE INSERT HAS BEEN INSTALLED ON THE STORAGE CHAMBER.
2. ENTER THE STORAGE CHAMBER AND INSTALL THE INLET DROP PIPE FROM UNDERNEATH THE INSERT. THE INLET DROP PIPE IS EASILY IDENTIFIABLE BY THE T-SECTION FITTING. THE TEE IS ORIENTED SUCH THAT IT IS PERPENDICULAR TO THE DIRECTION OF FLOW IN THE UPSTREAM STORM SEWER. FOR THE SMALLER MODELS (LESS THAN 2000) THE INLET DROP PIPE IS CEMENTED INTO THE COUPLING THAT IS PROVIDED USING THE SUPPLIED PVC CEMENT. FOR THE LARGER MODELS (GREATER THAN 2000) THE INLET DROP PIPE IS CONNECTED INTO A GASKETTED COUPLING USING THE SUPPLIED PIPE LUBRICANT.

   ONCE THE INLET DROP PIPE HAS BEEN INSTALLED, THE CONNECTION SHOULD ALSO BE CAULKED USING THE SUPPLIED (CHEMREX 948 OR BULLDOG PREMIUM PL) SEALANT TO ENSURE AN OIL/WATER TIGHT CONNECTION.
3. THE LARGE 24" (610 mm) RISER PIPE IS INSERTED INTO THE PROVIDED OUTLET SLEEVE FROM ABOVE WHILE STANDING ON THE INSERT. A FLANGE IS PROVIDED ON THE OUTLET RISER PIPE TO PREVENT IT FROM FALLING INTO THE STORAGE CHAMBER. THE UNDERSIDE OF THE FLANGE MUST BE CAULKED WITH THE PROVIDED CHEMREX 948 SEALANT TO ENSURE AN OIL/WATER TIGHT CONNECTION.
4. A 6" (150 mm) COUPLING IS PROVIDED ON THE INSERT FOR THE SUPPLIED 6" (150mm) PVC VENT PIPE. THE VENT PIPE SHOULD BE ATTACHED TO THE COUPLING USING THE SUPPLIED PVC CEMENT. ONCE THE CEMENT HAS SET, THE CONNECTION SHOULD ALSO BE CAULKED USING THE SUPPLIED CHEMREX 948 SEALANT TO ENSURE AN OIL/WATER TIGHT CONNECTION.

The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in goof growing condition, and where necessary, replaced with new material to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director — Date 5/23/01

Chief, Division of Land Development — Date 5/21/01

Chief, Development Engineering Division MK — Date 5/15/01

ASBUILT

ASBUILT SHEET 9 OF 9

GLW GUTSCHICK LITTLE & WEBER, P.A.
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\DRAWINGS\95003\BASE\95003LD	DES.	DRN.	CHK.

DATE	REVISION	BY	APP'R.
8-2-01	Rev to add stormceptor notes & stormdrain profile	GLW	
5-21-01	Rev Plant List		

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: AL EDWARDS
(410) 992-6027

PLANTING NOTES, SCHEDULES, PLANT LIST & STORMCEPTOR NOTES

ROUTE 175 COMMERCIAL
SECTION 1 AREA 2
PARCELS B-D and LOT 4 & 5
PLAT No's. 14007 & 14008

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	95003
March, 2001	36-18 37-13	19 OF 19

SDP 01-09