

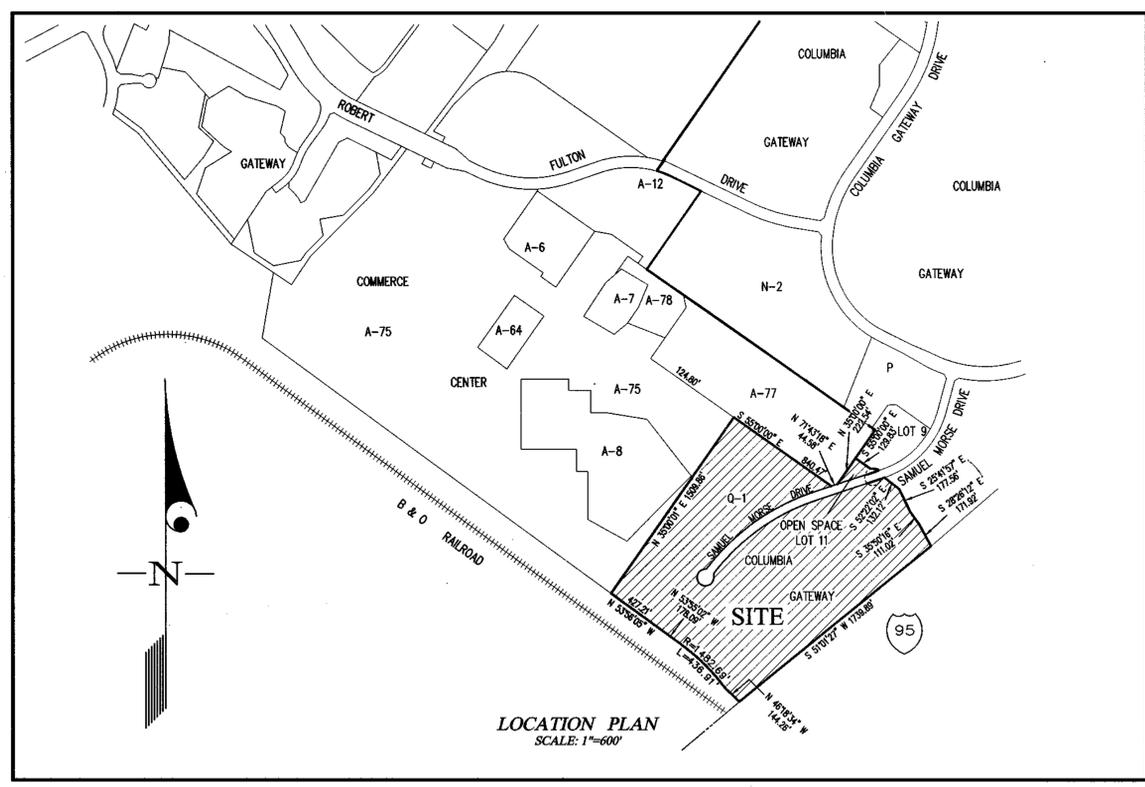
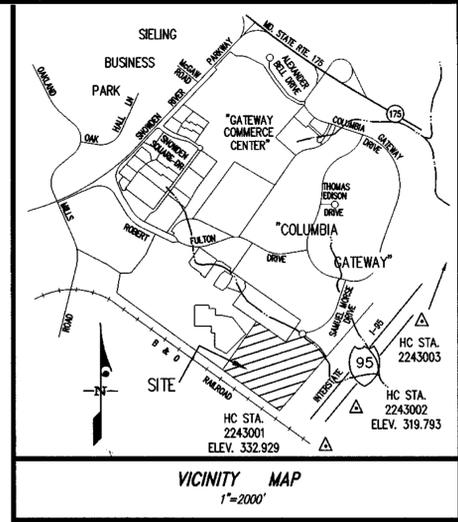
**GENERAL NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standard and specifications if applicable.
- 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.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
- The contractor shall notify the Howard County Department of Public Works, Bureau of Utilities at (410) 313-4900 at least five working days prior to starting any excavation work.
- Site area: 5.6 acres.
- All plan dimensions are to face of curb unless otherwise noted.
- Existing topography is shown per mass grading plans GP-99-15 prepared by Gutschick, Little & Weber, P.A.
- Coordinates and bearings are based upon the MD State plan system (NAD '27).
- Water and sewer shown is public.
- All existing water and sewer is per Contracts 24-1587-D and 20-1397-D.
- All existing public storm drain is per F-87-63.
- Use trench bedding class "C" for storm drains.
- Project background: See Dept. of Planning & Zoning File Numbers: FDP-40, F-68-30, WP-98-49.
- ~~Recording reference - Plat Book - Plat No.~~
- Existing utilities are based on approved design plans for construction and field location by Gutschick, Little & Weber, P.A.
- There is no floodplain on this site.
- There are no wetlands on this site.

# COLUMBIA GATEWAY PARCEL 'Q-1' AND OPEN SPACE LOT 11

# SAMUEL MORSE DRIVE

STATION 9+40 TO STATION 24+13.49



**Legend**

	Existing Contour
	Proposed Paving
	Existing Tree Line
	Proposed Tree Line
	Existing Street Light
	Proposed Street Light
	Top of Curb Elevation
	Existing Water Main
	Existing Sewer Main
	Existing Storm Drain
	Existing Curb & Gutter
	Existing Paving
	Existing Paving to be Removed
	Proposed Paving

**Sheet Index**

- Cover Sheet
- Plan & Profile
- Plan & Profile
- Typical Details
- Grading & SWM Plan
- Grading Plan
- Sediment Control
- Sediment Control
- Sediment Control Index
- Sediment Control Details
- SWM Details
- Sediment Control & SWM Notes
- Storm Drain Profiles
- Storm Drain Profiles
- Storm Drain Profiles
- Storm Drain D.A.M.
- SWM D.A.M.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Demko* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 3/17/99  
 Chief, Division of Land Development Date

*[Signature]* 3/12/99  
 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 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.
1-25-99	add stream to vicinity map		

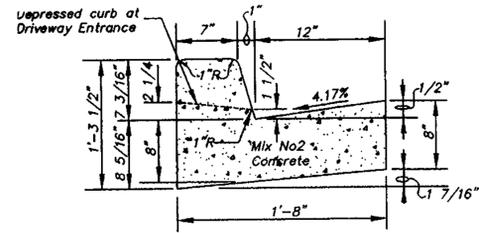
PREPARED FOR:  
**THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION**  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MD 21044  
 PH: 410-992-6370  
 ATTN: MR. GREG KLAR

**COVER SHEET**  
**COLUMBIA GATEWAY**  
 Parcels Q-1, Q-2, U and Lots 11 & 12  
 PLAT No.

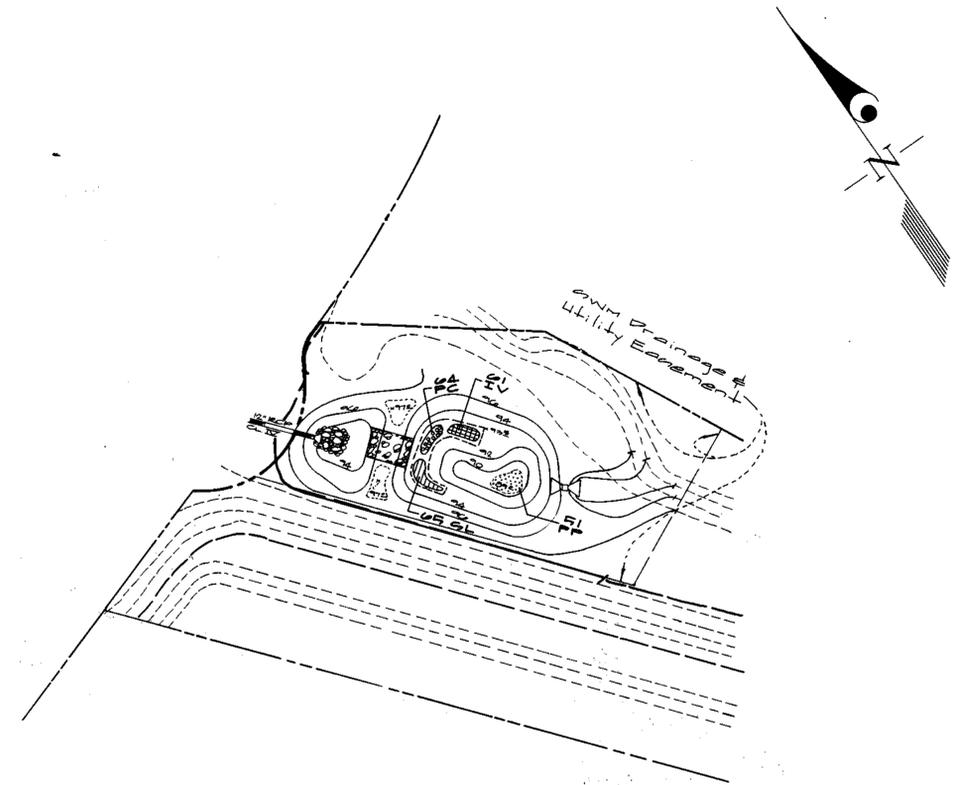
SCALE AS SHOWN	ZONING NT & M-1	G. L. W. FILE No. <b>97150</b>
DATE AUGUST, 1998	TAX MAP - GRID 43 / 7 & 42 / 12 & 18	SHEET 1 OF 17

Wetland Planting Notes

- Upon conversion of sediment control ponds to Stormwater Management Pond, and rough grading, the contractor shall remove any stones, debris, or construction material larger than two inches (2") in any dimension. The contractor shall then spread 4"-6" of topsoil on the entire basin of Ponds 1 and 3, and on the planting basin of Ponds 2 and 4. The topsoil for Ponds 1 and 3 shall be the wetland topsoil "saved" and stockpiled during mass grading. The ponds shall be flooded and left undisturbed for a period of 10 days. Drain prior to planting.
- To install potted plants, make a hole in the topsoil layer wide and deep enough that after planting, the topsoil in the pot is at or slightly below the top of the topsoil planting area.
  - Peat pots must be torn in two or three places to allow for unrestricted root growth.
  - All pots other than peat pots are to be removed right before planting.
- Bare-root plants shall be planted in holes wide enough to allow their existing roots to be spread in a natural manner radially from the root crown without bending or twisting.
- One ounce of 18-6-25 slow release fertilizer shall be incorporated into soil for each plant at the time of planting.
- Soil shall be saturated with water after planting. The pond shall be slowly flooded by natural or artificial means to the outfall level.
- 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 root specified) for a minimum of 12 months prior to installation and shall have been wet cultivated during the entire period.
- All plant material shall be guaranteed for a period of one year after formal acceptance, and an 80% survival guarantee after 3 .three years.
- Remove litter and debris as required during the first growing season and at the beginning of the second growing season.
- Wetland planting contractor shall submit resume and references of previous planting experience to owner or landscape architect for approval prior to planting.



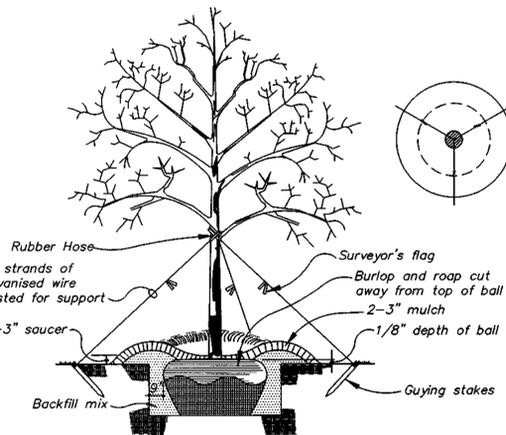
Standard 7" Combination Curb & Gutter  
N.T.S.



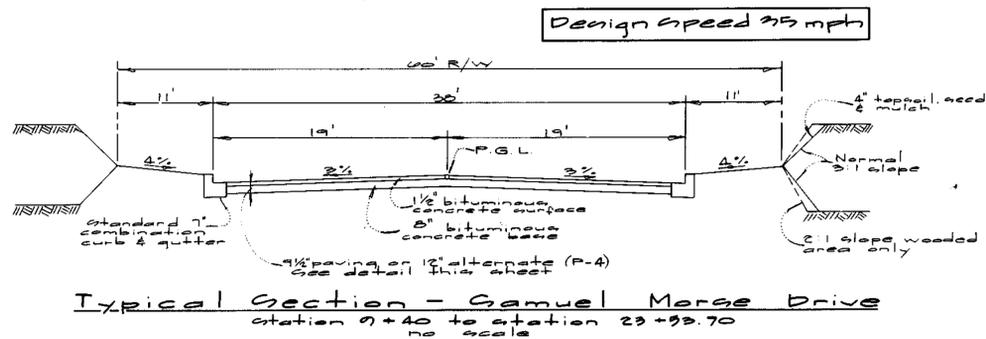
Wetlands Planting Plan  
1" = 50'

WETLANDS PLANTING FOR FACILITY #3

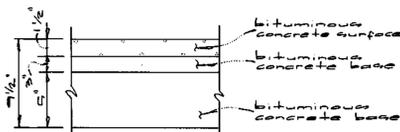
Key	Qty	Botanical/Common Name	Size
IV	01	Iris versicolor/Blue Flag	Tuber
PC	04	Pontederia cordata/Pickerelweed	Tuber
PP	01	Potamogeton pectinatus/Pondweed	1 Pt.
SL	05	Sagittaria latifolia/Duck Potato	Tuber



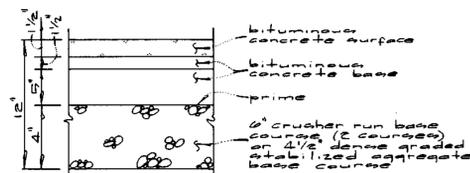
Typical Tree Guying Detail  
N.T.S.



Typical Section - Samuel Morse Drive  
station 2+40 to station 23+99.70  
no scale



P-4 Full Depth Bituminous Concrete



P-4 Granular Base (Alternate)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-11-99  
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Condy Hamilton* 3/11/99  
Chief, Division of Land Development  
*Mike Danvers* 3/11/99  
Chief, Development Engineering Division

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. 410-980-1820 DC/VA: 301-988-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.
1-16-99	REV PAVING PLAN AND WETLANDS PLANTING PLAN		

PREPARED FOR:  
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
THE ROUSE BUILDING  
10275 LITTLE PATRIOT PARKWAY  
COLUMBIA, MD. 21044  
(410) 992-6027

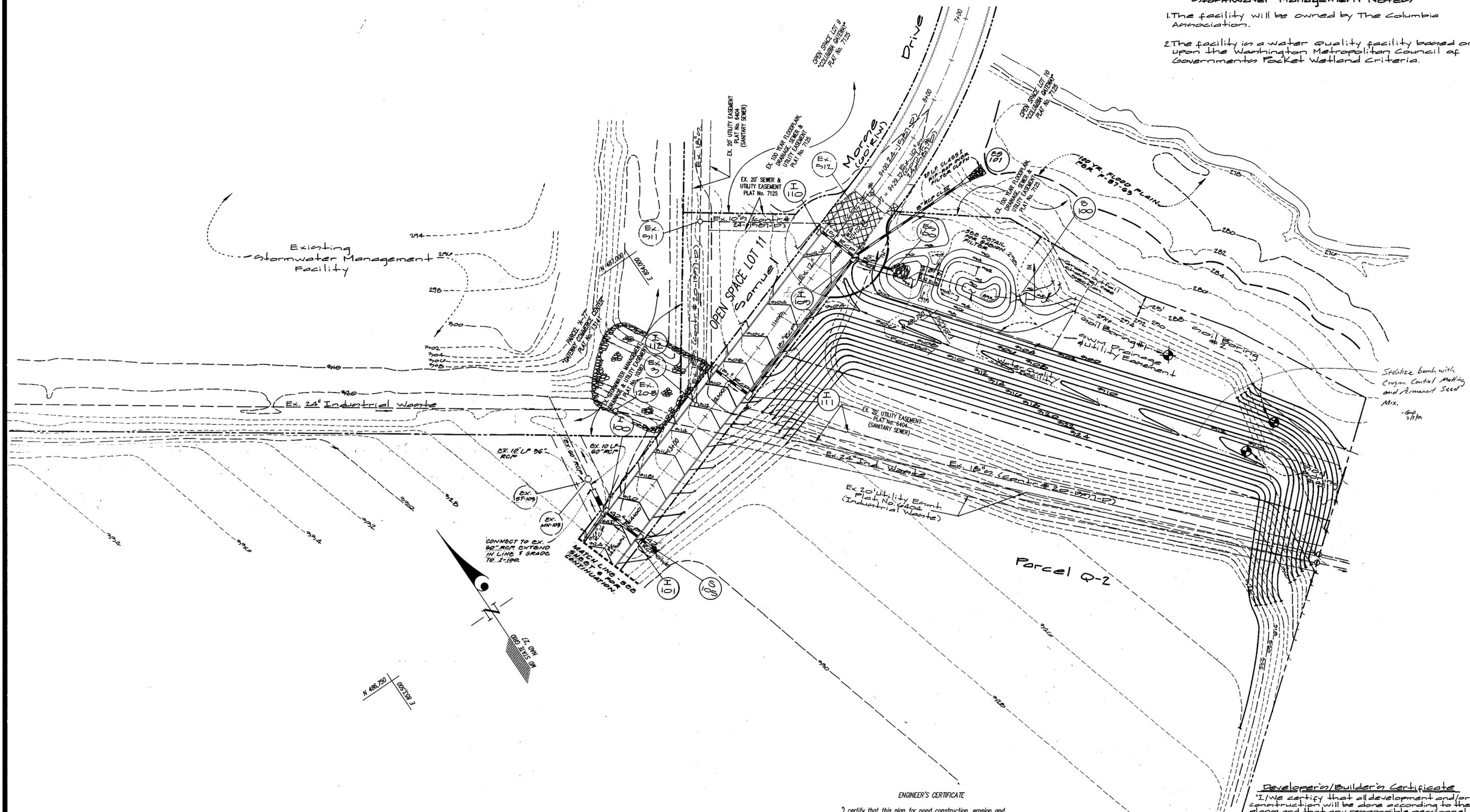
TYPICAL DETAILS  
COLUMBIA GATEWAY  
Parcels Q-1, Q-2, U and Lots 11 & 12  
PLAT NO.  
ELECTION DISTRICT No. 6  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NEW TOWN & M-1	97150
DATE	TAX MAP - GRID	SHEET
AUGUST 1998	43-7 42-12 & 18	4 OF 17



**Stormwater Management Notes**

1. The facility will be owned by The Columbia Association.
2. The facility is a water quality facility based on upon the Washington Metropolitan Council of Governments Pocket Wetland Criteria.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cathy Hamilton* 3/17/99  
 Chief, Division of Land Development Date

*Mark* 3/12/99  
 Chief, Development Engineering Division Date



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

*Carol Simmons* 3/12/99  
 Natural Resources Conservation Service Date

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

*Howard Soil Conservation District* 3/12/99  
 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."

*Ch...* 9-1-98  
 Date

**Developer/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."

*...* 9-1-98  
 Signature of Developer/Builder 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 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

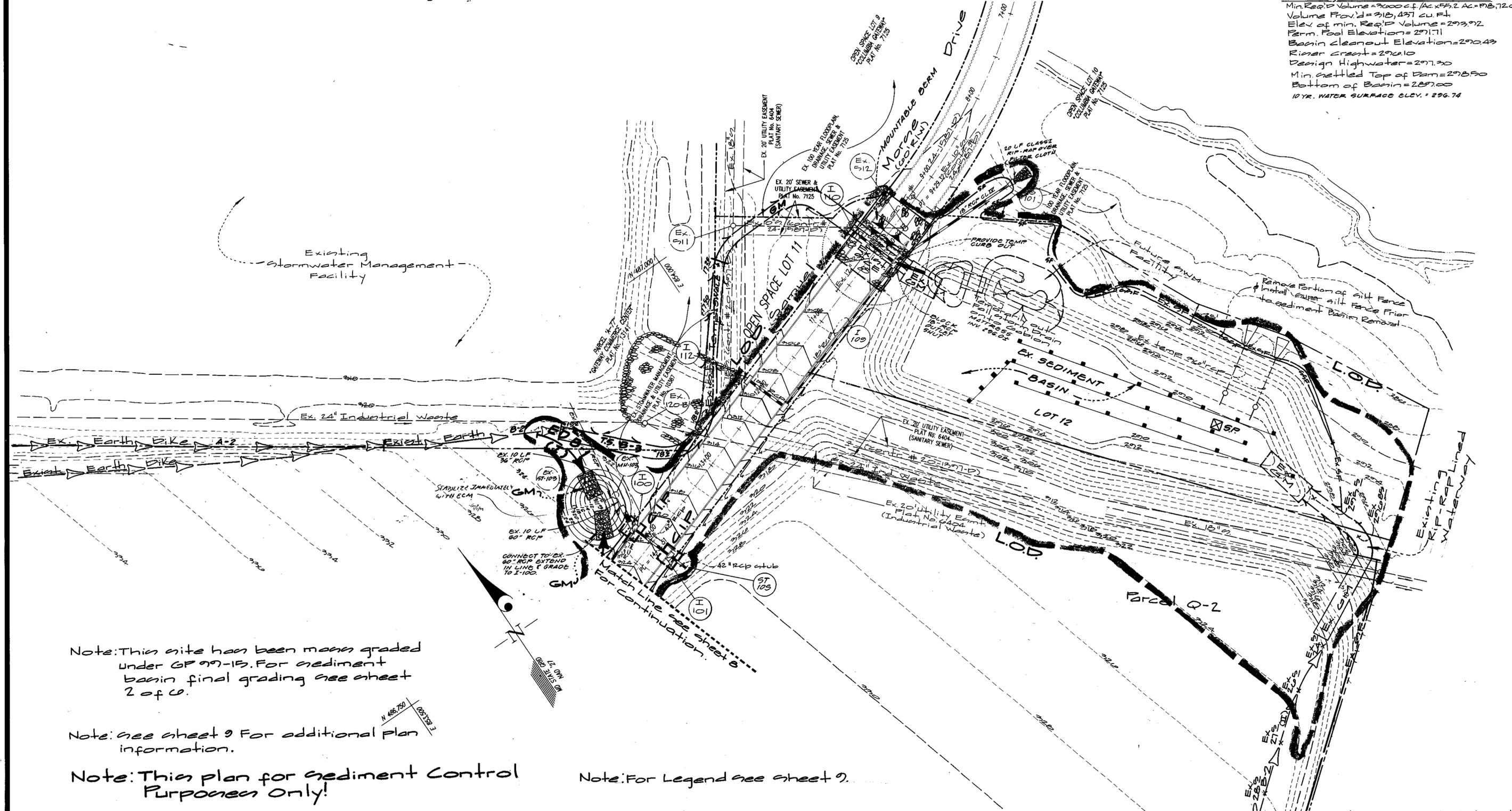
DATE	REVISION	BY	APPR.
1-26-99	REV. STRM. DRN. I-109-65101, SHOW EX. 60" RCP AND CONNECTION NEAR I-100.		
11-6-98	Revised storm drain and water quality		

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: GREG KLAR  
 PHONE: (410) 992-6370

Grading & Stormwater Management Plan  
**Columbia Gateway**  
 Parcels Q-1, Q-2, U and Lots 11 & 12  
 Plat No. \_\_\_\_\_  
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT/M1	97150
DATE	TAX MAP - GRID	SHEET
AUGUST, 1998	43-7 42-12&18	5 of 17

**Existing Sediment Basin Data**  
 Min. Req'd Volume = 9000 cu ft / AC x 75.2 AC = 676,720 cu ft  
 Volume Prov'd = 310,437 cu ft  
 Elev. of min. Req'd Volume = 299.92  
 Perm. Pool Elevation = 297.71  
 Basin Cleanout Elevation = 290.43  
 River Crest = 290.10  
 Design Highwater = 297.30  
 Min. Settled Top of Dam = 298.50  
 Bottom of Basin = 287.00  
 10 YR. WATER SURFACE CLEV. = 296.74



Note: This site has been major graded under GP 99-15. For sediment basin final grading see sheet 2 of 6.

Note: see sheet 9 for additional plan information.

Note: This plan for sediment control purposes only!

Note: For Legend see sheet 9.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hancock* 3/17/99  
 Chief, Division of Land Development Date

*Michael...* 3/12/99  
 Chief, Development Engineering Division MK Date



These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~erosion~~ soil erosion and sediment control.  
*Cheryl Simon* 3/3/99  
 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.  
*Guy...* 3/3/99  
 Howard Soil Conservation District Date

ENGINEER'S CERTIFICATE  
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.  
*...* 9-1-98  
 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.  
*...* 9-1-98  
 Signature of Developer/Builder Date

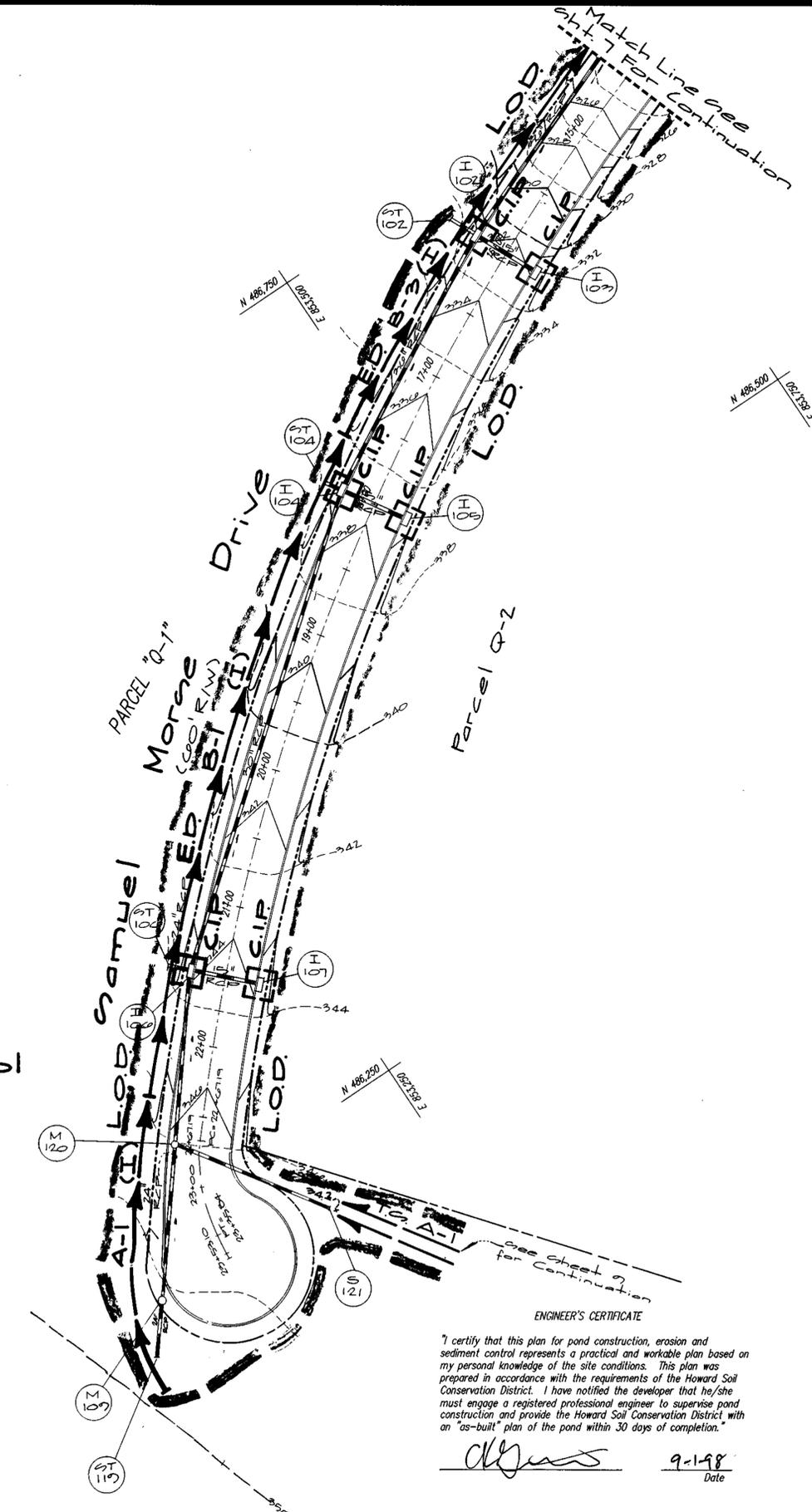
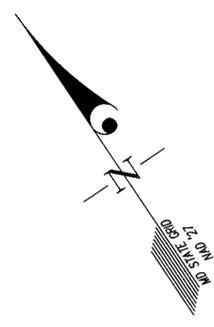
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REV.	BY	CHK.	APP.
1-25-99	REV. STRIP DRN. I-100 - E5101, SHOW EX. 60" RCP AND CONNECTION NEAR I-100, ADD 500' TRAP NEAR I-100			

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: GREG KLAR  
 PHONE: (410) 992-6370

Sediment Control Plan  
**Columbia Gateway**  
 Parcels Q-1, Q-2, U and Lots 11 & 12  
 Plat No.  
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT/M1	97150
DATE	TAX MAP - GRD	SHEET
AUGUST, 1998	43-7 42-12&18	7 of 17



Note: For Legend See Sheet 9

Note: This site has been mass graded under GP 99-15.

Note: This plan for sediment control purposes only!!

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~soil erosion~~ soil erosion and sediment control.  
*Cheryl Simmons* / 65 3/3/99  
 Natural Resources Conservation Service D.M.E.

These Plans for ~~soil erosion and sediment control~~ soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.  
*[Signature]* / 65 3/3/99  
 Howard Soil Conservation District D.M.E.

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]* 9-1-98  
 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]* 9-1-98  
 Signature of Developer/Builder Date



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Davelle* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 3/17/99  
 Chief, Division of Land Development Date

*[Signature]* 3/12/99  
 Chief, Development Engineering Division Date

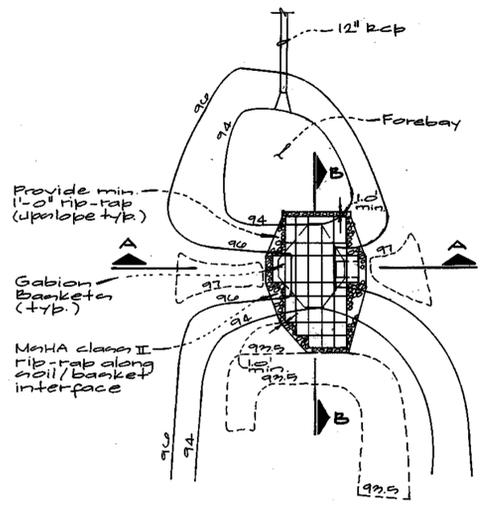
GLW GUTSCHICK LITTLE & WEBER, P.A.  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BALT. 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES.	DRN.	CHK.	DATE	REVISION	BY	APPR.
			1-25-99	add temp swales		

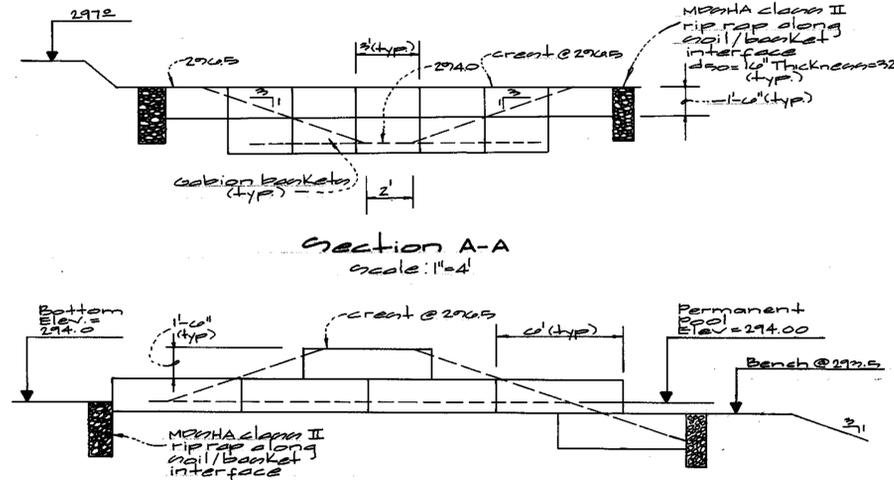
PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: GREG KLAR  
 PHONE: (410) 992-6370

Sediment Control Plan  
**Columbia Gateway**  
 Parcel 'Q-1', 'Q-2', 'U' and Lots 11 & 12  
 Plat No. \_\_\_\_\_  
 ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT\M1	97150
DATE	TAX MAP - GRID	SHEET
AUGUST, 1998	43-7 42-12&18	8 of 17

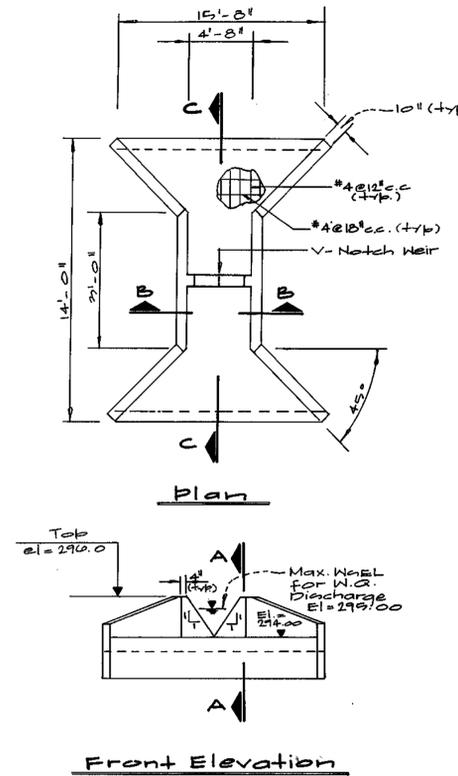


Plan - Gabion Basket Filter  
Scale 1" = 20'



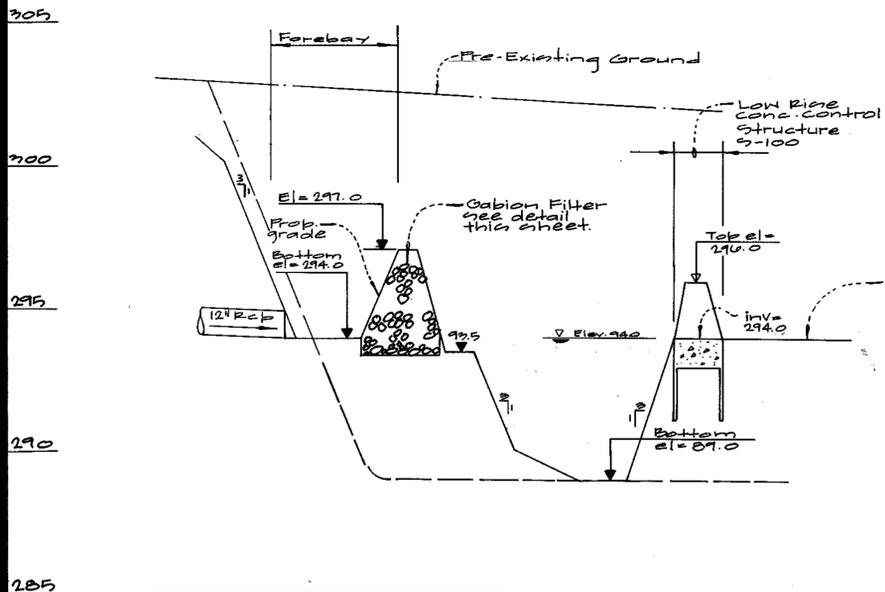
Section A-A  
Scale: 1" = 4'

Section B-B  
Scale: 1" = 4'

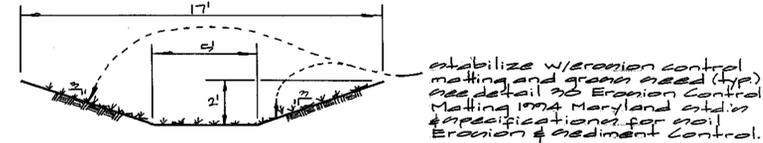


Details of Low Rise Concrete Control Structure  
N.T.S.

- Note:
- All exposed edges to have 3/4" x 3/4" chamfer as required.
  - Concrete shall be MSHA Mix. No. 3 (f<sub>c</sub> = 2500 Psi @ 28 days).
  - Reinforcing steel shall be ASTM A-615 grade 60.



Section 2-2 thru Water Quality Facility  
Scale: 1" = 20' (Horiz.), 1" = 3' (Vert.)



Typical section thru Grass Outfall Channel  
N.T.S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daniels* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamstra* 3/11/99  
 Chief, Division of Land Development Date

*Michael J. ...* 3/12/99  
 Chief, Development Engineering Division 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.

N/A  
 Natural Resources Conservation Service Date

N/A  
 Howard Soil Conservation District Date

STATE OF MARYLAND  
 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]* 9-1-98  
 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]* 9-1-98  
 Signature of Developer/Builder 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 20886  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP.
11.25.98	Removed wetland marsh elev		
11.16.98	Revised Water Quality Facility		

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MARYLAND 21044  
 ATTN: GREG KLAR  
 PHONE: (410) 992-6370

Stormwater Management Details & Soil Boring

**Columbia Gateway**  
 Parcels Q-1, Q-2, U and Lots 11 & 12  
 Plat No. ...

ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT\M1	97150
DATE	TAX MAP - GRID	SHEET
AUGUST, 1998	43-7 42-12&18	11 of 17

**POND 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.

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 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and 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. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

**Placement** - Area 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 in to the embankment.

**Compaction** - The movement of the hauling and spreading equipment over the fill shall be done so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture 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.

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

**Cut Off Trench** - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment 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.

**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.

**Pipe Conduits**

All pipes shall be circular in cross section.

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

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

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

**Material** - (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 surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

3. **Connections** - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe & 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 band width. The following type connections are acceptable for pipes less than 24" in diameter: Flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with 0-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

Helically corrugated pipe shall have either continuously welded seams or have lock seams.

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 Designation C-361.
2. **Bedding** - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
3. **Laying pipe** - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. **Backfilling** shall conform to "Structure Backfill".
5. **Other details** (anti-seep collars, valves, etc.) shall be shown on the drawings.

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

1. **Materials** - PVC pipe shall be PVC - 1120 or PVC - 1220 conforming to ASTM D-1785 or ASTM D-2241.
2. **Joints and connections** to anti-seep collars shall be completely watertight.
3. **Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to 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.

**Concrete**

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

**Rock Riprap**

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

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

**Care of Water during Construction**

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

**Stabilization**

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

**Erosion and Sediment Control**

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

**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 redistribution, 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. C). 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 : 2,000 Acres  
Area Disturbed : 200 Acres  
Area to be roofed or paved : 1.5 Acres  
Area to be vegetatively stabilized : 4.2 Acres  
Total Cut : 2,000 Cu. Yds.  
Total Fill : 12,000 Cu. Yds.  
BORROW AREA LOCATION: SEE GP-09-15 REQUIRED MULCH HAS BEEN STOCKPILED IN SEDIMENT BASIN
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.

**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 800 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 (14 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, weed-free, 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 redistributed 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.

**OPERATION, MAINTENANCE AND INSPECTION**

1. THE COUNTY SHALL REMOVE SILT WHEN ACCUMULATION EXCEEDS 6" IN FOREBAY.
2. DURING THE MINIMUM ANNUAL INSPECTION, THE COUNTY SHALL REMOVE ACCUMULATED PAPER, TRASH, AND DEBRIS AS NECESSARY.
3. THE COUNTY SHALL MOW VEGETATION GROWING IN EMBANKMENT TOP AND 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 AND REPAIRS, IF ANY, SHALL BE DONE AT THAT TIME. COSMETIC AND LANDSCAPING WILL BE THE RESPONSIBILITY OF THE COSMETIC ASSOCIATION. STRUCTURAL AND SCHEDULED COSMETIC/AESTHETIC ITEMS WILL BE THE RESPONSIBILITY OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
5. INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY BY THE COUNTY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS, "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378)
6. THE STORMWATER MANAGEMENT FACILITY LOCATED ON AN OPEN SPACE LOT TO BE OWNED BY THE COLUMBIA ASSOCIATION. COSMETIC AND LANDSCAPING ITEMS NOT PERFORMED BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS WILL BE THE RESPONSIBILITY OF THE COLUMBIA ASSOCIATION. STRUCTURAL AND SCHEDULED COSMETIC/AESTHETIC ITEMS WILL BE THE RESPONSIBILITY OF THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

**SEQUENCE OF CONSTRUCTION**

1. Obtain grading permit. Arrange pre-construction meeting with the Sediment Control Inspector (1 day).
2. Inspect all existing sediment controls and repair, as necessary. If required, remove sediment from existing basin (1 week).
3. DAYLIGHT EXISTING STUB 109 (CONSTRUCTED UNDER #97-08 RECLINE) (1 DAY).
4. When area draining to EXISTING STUB 15 is stabilized, construct earth dike (1) to divert clean water away from construction area. Remove existing sediment controls when areas drainage to them are stabilized and permission is granted by the Sediment Control Inspector (NORTH OF SEMUEL MORSE DRIVE) (1 WEEK).
5. CONSTRUCT EMERGENCY SPILLWAY TO REGIONAL POND (#97-08 RECLINE). CONSTRUCT STORM DRAIN INSTALL CURB INLET PROTECTION TEMPORARILY OVERTALL STORM DRAIN I-109 TO EXISTING GABION MATRESS TO EXISTING SEDIMENT BASIN.
6. FINI GRADE SITE (1 WEEK).
7. INSTALL CURB AND GUTTER AND BASE PAVC. STABILIZE REMAINING AREAS. INSTALL STREET LIGHTS AND TREES (1 MONTH).
8. WHEN AREAS DRAINING TO THE SEDIMENT CONTROLS ARE STABILIZED AND PERMISSION IS GRANTED BY THE INSPECTOR, REMOVE SEDIMENT CONTROLS AND STABILIZE THESE AREAS. BACKFILL SEDIMENT BASIN AND REMOVE RELEASE STRUCTURES AND STABILIZE (2 MONTHS).
9. CONSTRUCT WATER QUALITY FACILITY AND STABILIZE (1 MONTH)
10. INSTALL SURFACE COURSE PAVING (1 WEEK)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Danke* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Kwanter* 3/12/99  
 Chief, Division of Land Development Date

*Chad Dammann* 3/12/99  
 Chief, Development Engineering Division Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3609 NATIONAL DRIVE - SUITE 250 - BIRTONSVILLE OFFICE PARK  
 BIRTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BALT. 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DRWINGS: 971501 DESIGN: 971505 MM DES. DRN. CHK.

1-29-99	REVISED SEDIMENT CONTROL NOTE AND SEQUENCE OF CONSTRUCTION NOTES				
11-16-99	REVISED SEQUENCE OF CONSTRUCTION TO ACCOMMODATE REVISION STORM DRAIN				
DATE	REVISION	BY	APPR.		

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.

*Chad Dammann* 9-1-98  
 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.

*John P. Allen* 9-1-98  
 Signature of Developer/Builder Date

These Plans for \_\_\_\_\_ soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

*John P. Allen* 3/3/99  
 Date  
 Howard Soil Conservation District

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for \_\_\_\_\_ soil erosion and sediment control.

*Cheryl Sumner/CS* 3/3/99  
 Date  
 Natural Resources Conservation Service

PREPARED FOR:  
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
 THE ROUSE BUILDING  
 10275 LITTLE PATUENT PARKWAY  
 COLUMBIA, MD. 21044  
 (410) 992-6027

ELECTION DISTRICT No. 6

**GENERAL NOTES**

**COLUMBIA GATEWAY**  
 Parcel 0-1, 0-2, U and Lots 11 & 12  
 PLAT NO.

SCALE: AS SHOWN  
 ZONING: NEW TOWN & M-1  
 G. L. W. FILE No. 97150

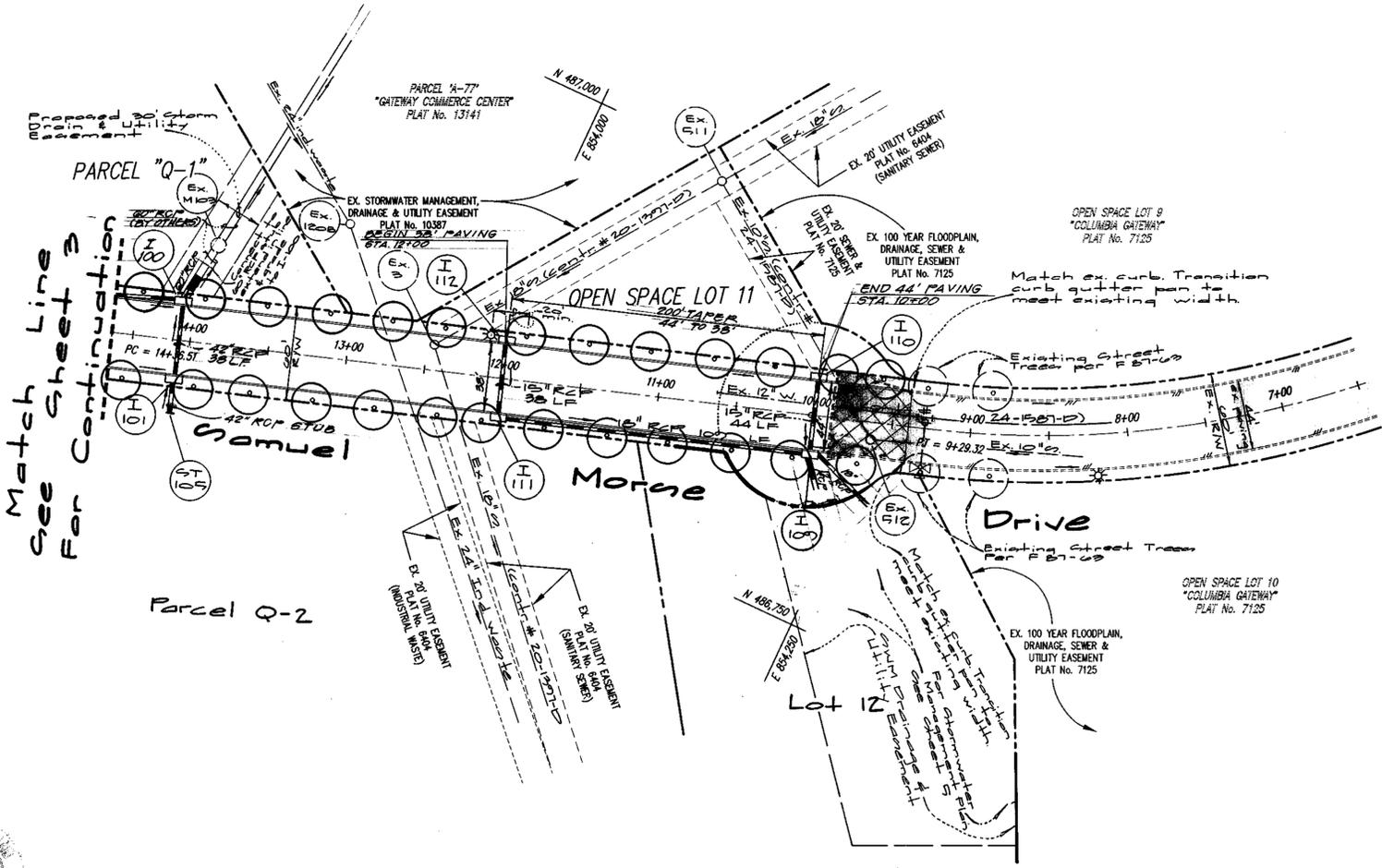
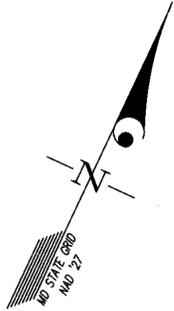
DATE: AUGUST 1998  
 TAX MAP - GRID 43-7 42-12 & 18  
 SHEET 12 OF 17

HOWARD COUNTY, MARYLAND





N 486,750  
E 883,280



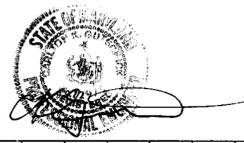
STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
⊙	Acer saccharum / Green Mountain Sugar Maple	2-2 1/2 cal.	75	8' x 8' Heavy Header

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
12+10.00 E RT 20'	250 Watt Mercury Vapor	Pendant	2 1/2" aluminum post (brass finish)
15+00.00 E LT 20'			
20+00.00 E RT 20'			
14+24.00 Linear Curve Profile 11' 6"			
8+20.00 E LT 20'			

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Thomas M. Daniels* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Linda Hamilton* 3/12/99  
 Chief, Division of Land Development Date

*MK* 3/12/99  
 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 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

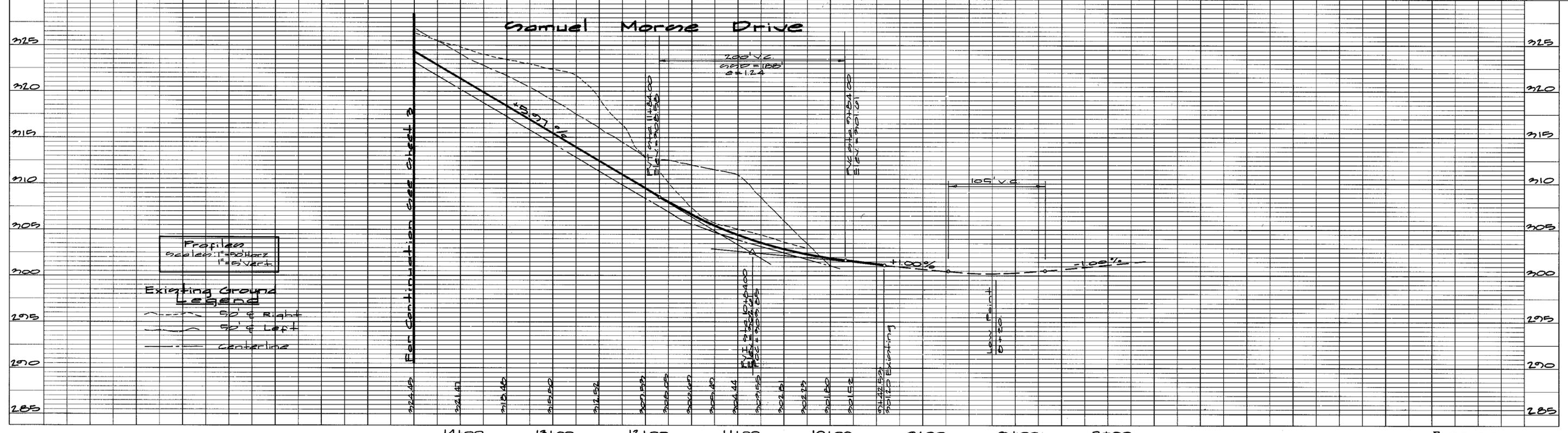
**ROAD CONSTRUCTION PLANS**  
**COLUMBIA GATEWAY**  
**SAMUEL MORSE DRIVE**  
 STATION 9+40.00 TO STATION 14+50.00

QUILFORD ELECTION DISTRICT No. 6  
 HOWARD COUNTY, MARYLAND

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MD 21044  
 ATTN: MR. GREG KLAR  
 PH: 410-992-6370

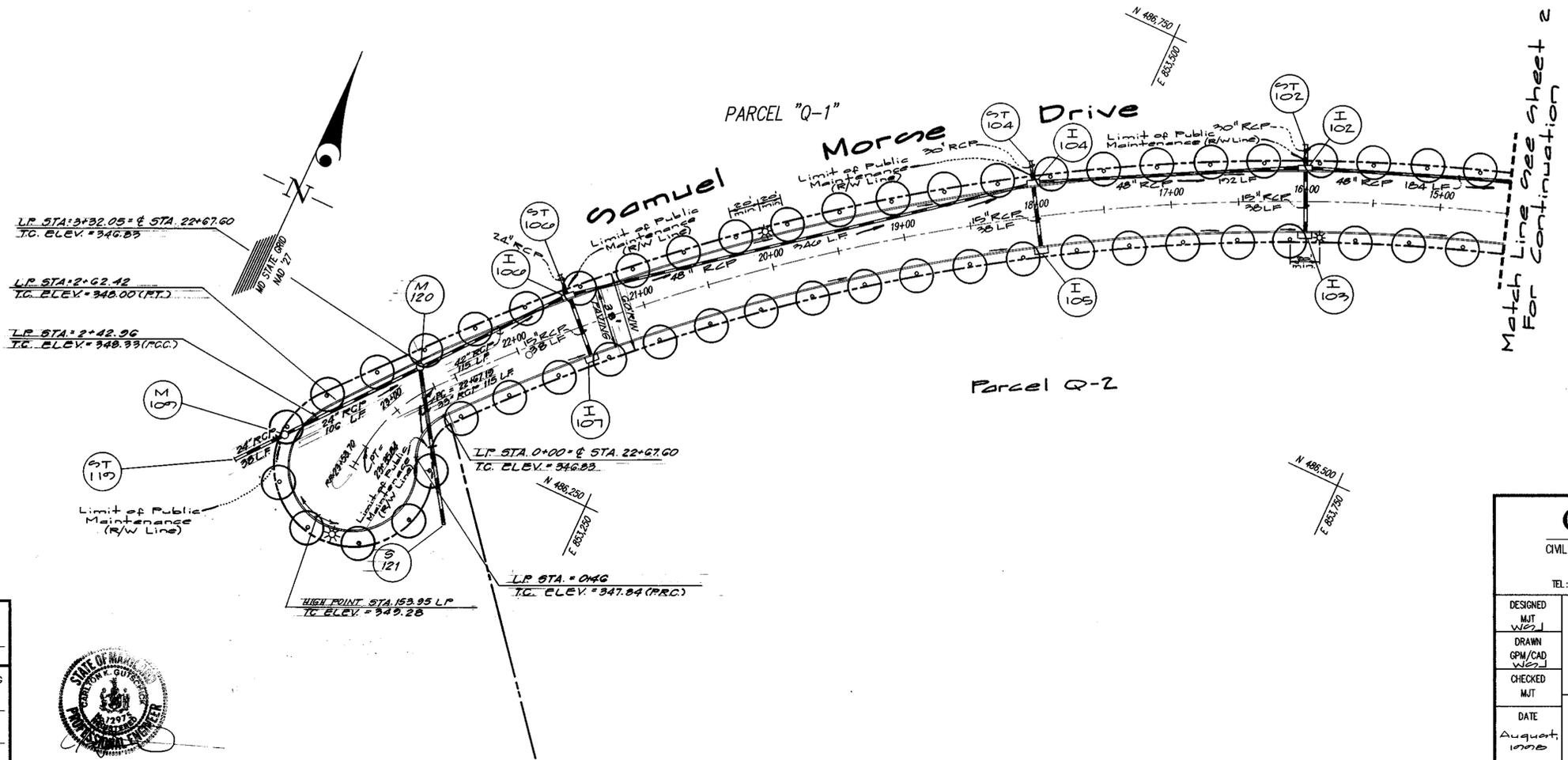
DESIGNED: MJT SCALE: 1"=50'  
 DRAWN: GPM/CAD DRAWING: Z OF 17  
 CHECKED: MJT ZONING: NT / M-1  
 DATE: August 1998 JOB No.: 97150

CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
SAMUEL MORSE DRIVE	14+36.51	22+24.47		1525.00'	607.70	402.42	685.04	254°51'11"W	77°44'14"
Samuel Morse Dr.			24+04.99	119.00'	60.92	70.00	68.72	82.11°00'	89°47'00"



Profile  
 scales: 1"=50' horz  
 1"=5' vert

Existing Ground  
 Legend  
 --- 50' Right  
 --- 50' Left  
 --- Centerline



Match Line see sheet 2  
For continuation

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daulton* 3/1/99  
 Chief, Bureau of Highways  
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Harvath* 3/1/99  
 Chief, Division of Land Development  
 Date

*Chris Dammann* 3/1/99  
 Chief, Development Engineering Division  
 Date



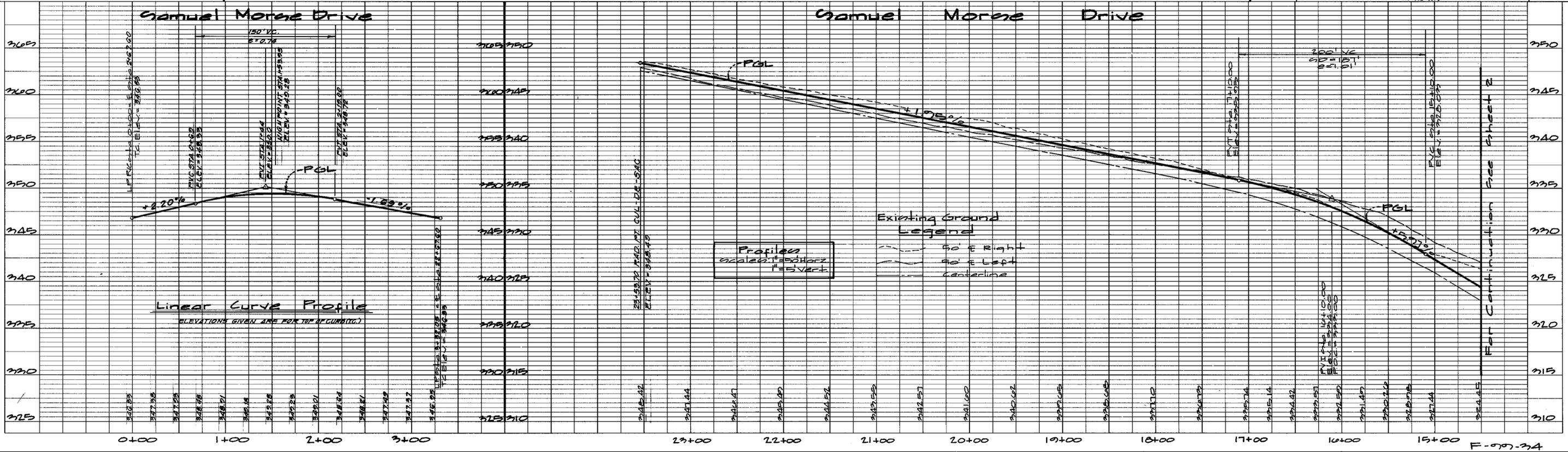
**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
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 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

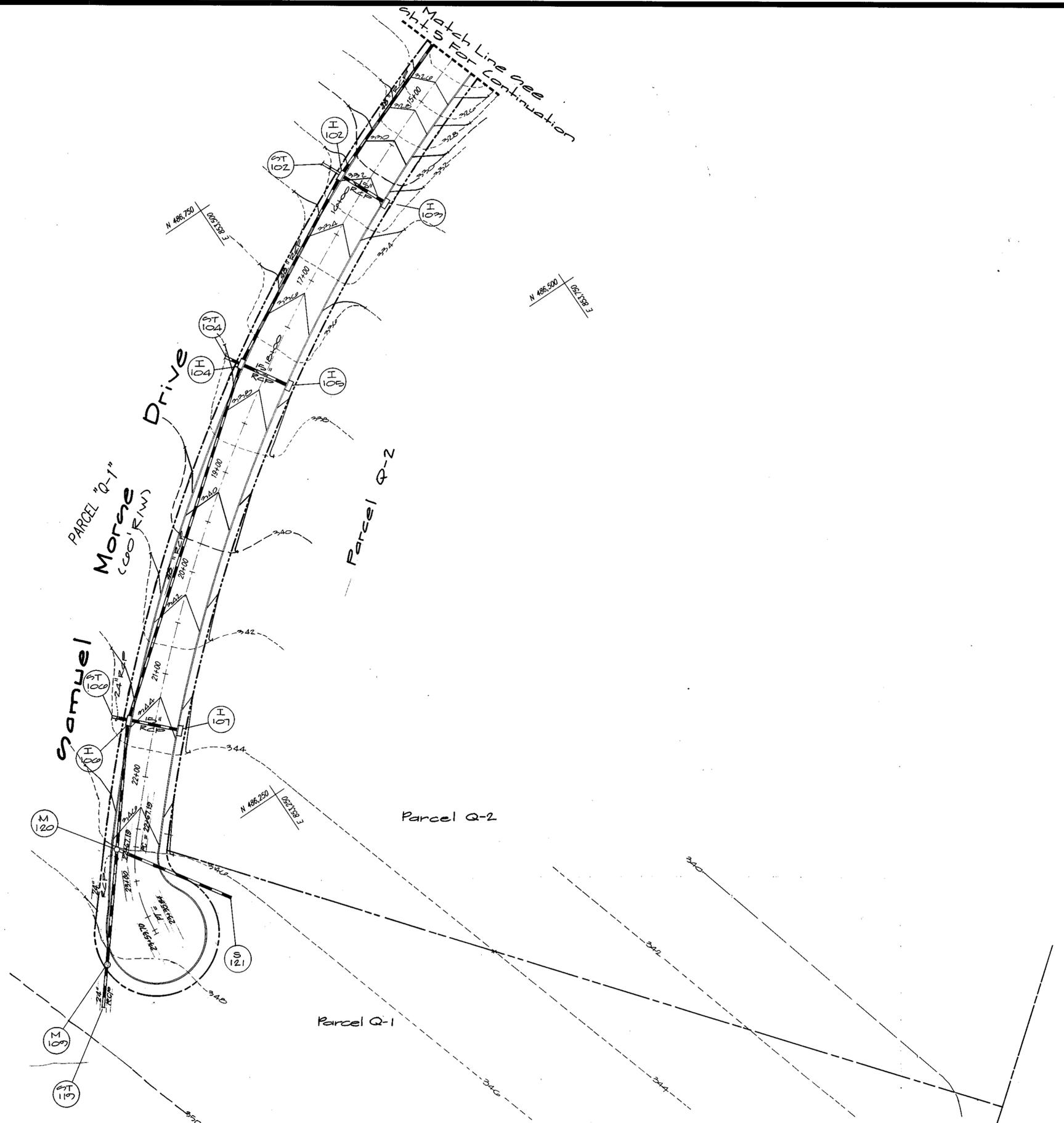
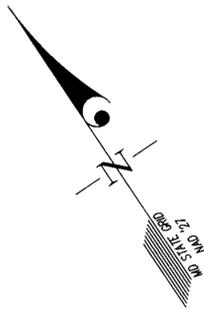
**ROAD CONSTRUCTION PLANS**  
**COLUMBIA GATEWAY**  
**SAMUEL MORSE DRIVE**  
 STATION 14+50.00 TO STATION 24+19.40

DESIGNED: MJT  
 DRAWN: WGL  
 CHECKED: MJT  
 DATE: August, 1998

SCALE: 1"=50'  
 DRAWING: 7 OF 17  
 ZONING: NT / M-1  
 JOB No.: 97150

PREPARED FOR:  
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION  
 10275 LITTLE PATRICK PARKWAY  
 COLUMBIA, MD 21044  
 ATTN: MR. GREG KLAR  
 PH: 410-992-6370





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Andrew M. Daniels* 3-11-99  
Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

*Cindy Hamilton* 3/12/99  
Chief, Division of Land Development Date

*Mark...* 3/12/99  
Chief, Development Engineering Division Date



**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONTOWN OFFICE PARK  
BURTONTOWN, MARYLAND 20866  
TEL: 301-421-4024 BALT. 410-890-1820 DC/VA 301-999-2524 FAX: 301-421-4186

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

PREPARED FOR:  
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
10275 LITTLE PATUXENT PARKWAY  
COLUMBIA, MARYLAND 21044  
ATTN: GREG KLAR  
PHONE: (410) 992-6370

**GRADING PLAN**  
**Columbia Gateway**  
Parcels Q-1, Q-2, U and Lots 11 & 12  
Plat No. \_\_\_\_\_  
ELECTION DISTRICT No. 6  
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT/M1	97150
DATE	TAX MAP - GRID	SHEET
AUGUST, 1998	43-7 42-12&18	0 of 17

**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]*

9-1-98  
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]*

9-1-98  
Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for erosion and sediment control.

*[Signature]* /cs  
Natural Resources Conservation Section

3/3/99  
Date

These plans for [redacted] soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

*[Signature]*  
Natural Resources Conservation Section

3/3/99  
Date

**Legend**

- Existing Earth Dike
- Proposed Earth Dike
- Existing Super Silt Fence
- Existing Silt Fence
- Proposed Silt Fence
- Existing Temporary Swale
- Existing Gabion Mattresses
- Proposed Gabion Mattresses
- Proposed/Existing Stabilized Construction Entrance
- Limit of Disturbance
- Curb Inlet Protection

**Note:**  
This Plan for Sediment Control Purposes Only!

**Note:** This site has been mainly graded under GP 99-15. For sediment basin final grading see sheet 2 of 6.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 3-11-99  
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

*[Signature]* 3/12/99  
Date

*[Signature]* 3/12/99  
Date

**GLW GUTSCHICK LITTLE & WEBER, P.A.**

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK  
BURTNSVILLE, MARYLAND 20886  
TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

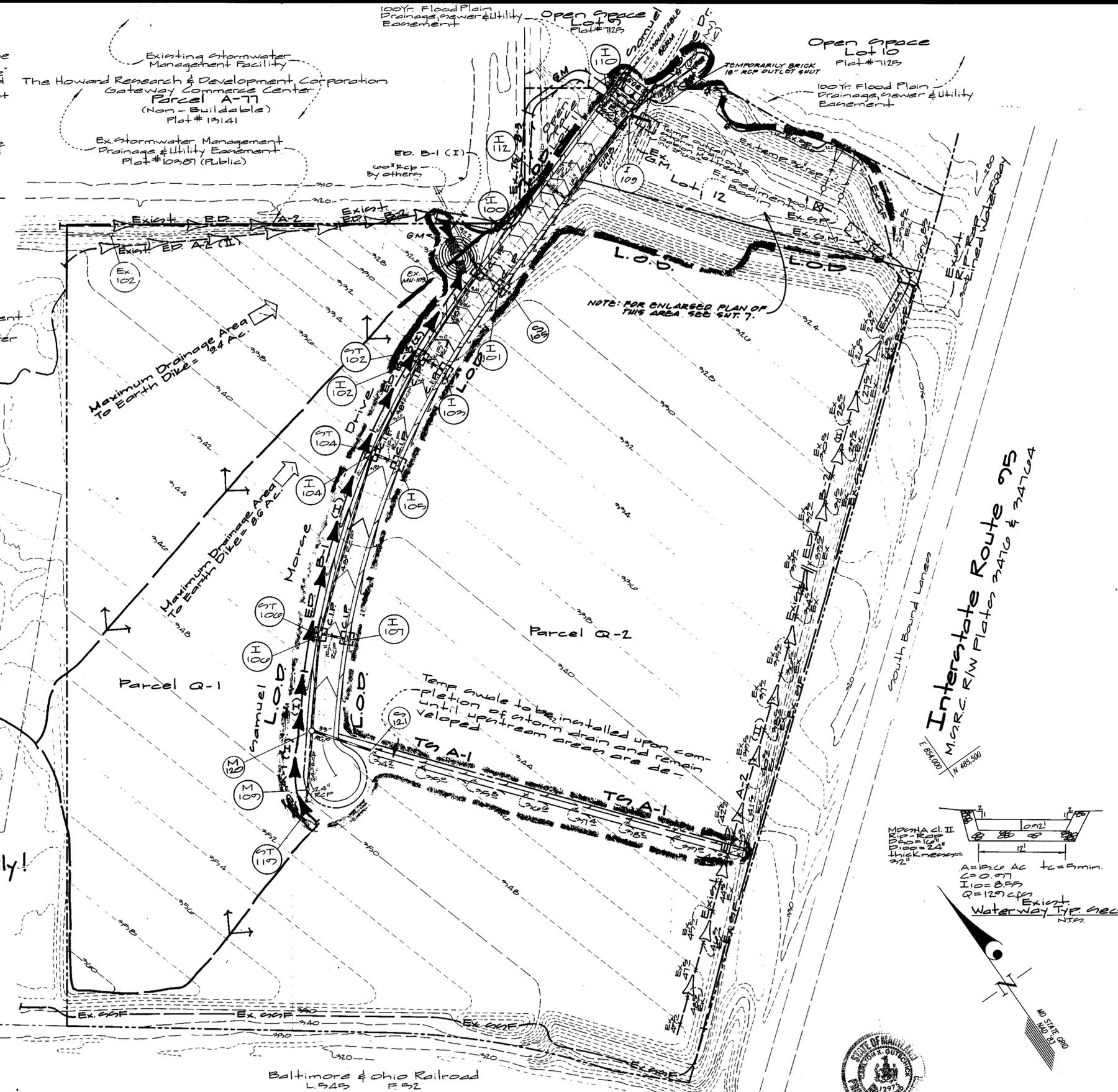
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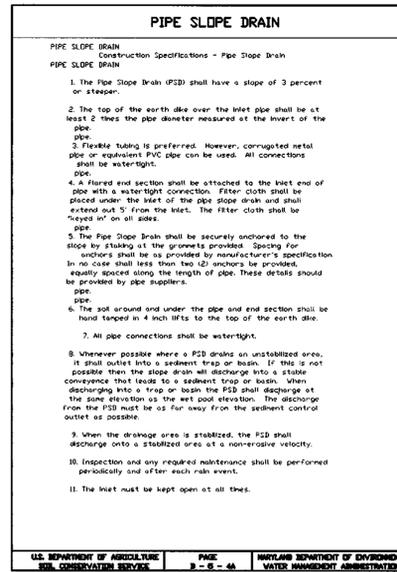
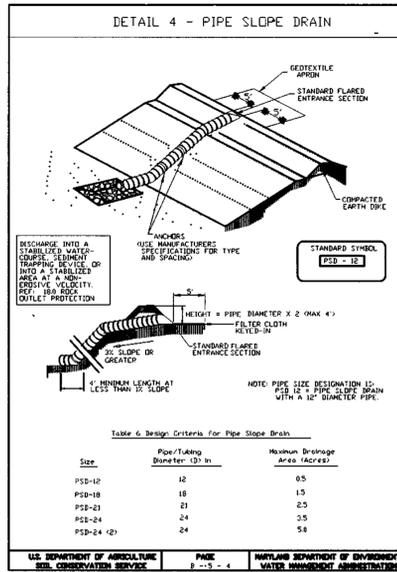
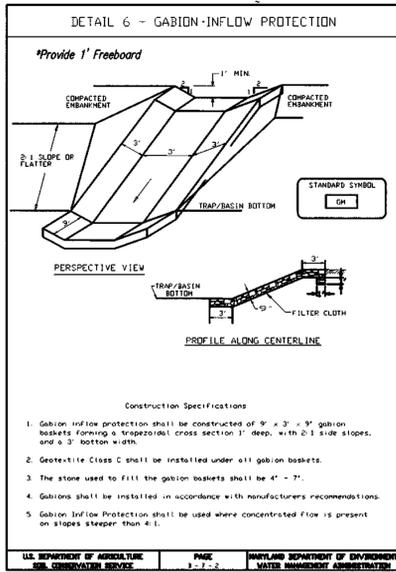
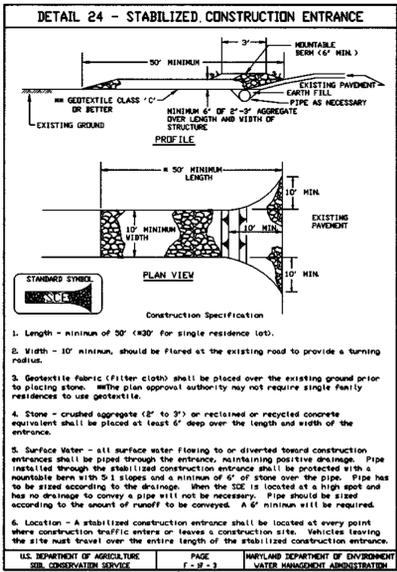
NO.	DATE	REVISION	BY	APPR.

PREPARED FOR:  
The Howard Research & Development Corporation  
Columbia, Maryland 21044  
Attn: Greg Klar  
(410) 992-6200

Sediment Control Plan (Overall)  
**Columbia Gateway**  
Parcels Q-1, Q-2, Q-4 and Lots 11 & 12  
Plot No. \_\_\_\_\_  
ELECTION DISTRICT No. 6

SCALE 1"=100'	ZONING New Town M-1	G. L. W. FILE No. 97150
DATE August, 1998	TAX MAP - GRID 42-12 & 13	SHEET 9 OF 17





**STANDARD SPECIFICATIONS FOR TOPSOIL DEFINITION**

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**PURPOSE**

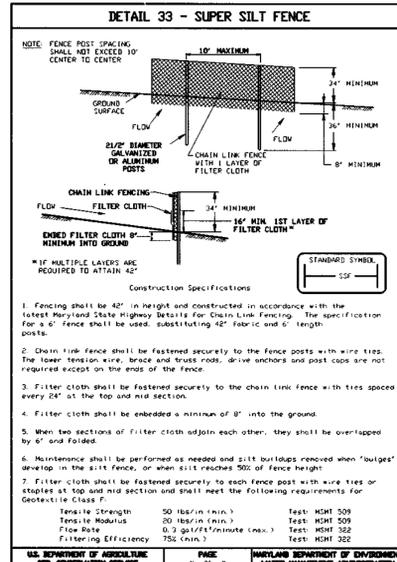
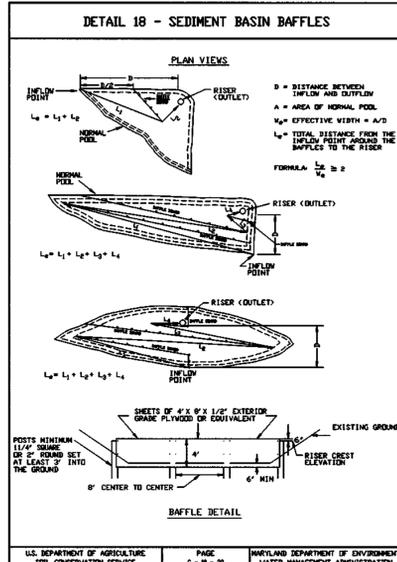
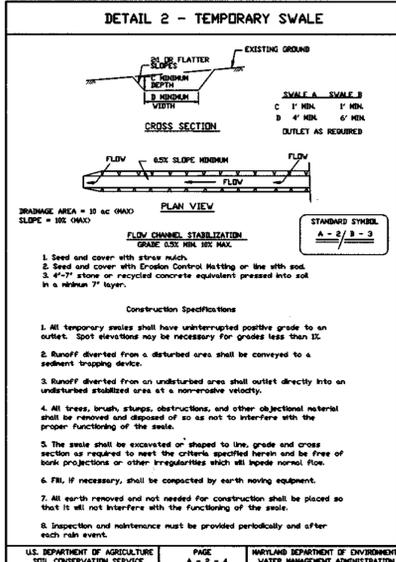
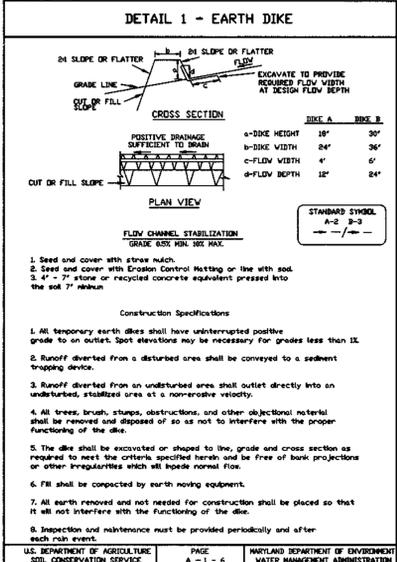
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**CONDITIONS WHERE PRACTICE APPLIES**

- This practice is limited to areas having 2:1 or better slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**CONSTRUCTION AND MATERIAL SPECIFICATIONS**

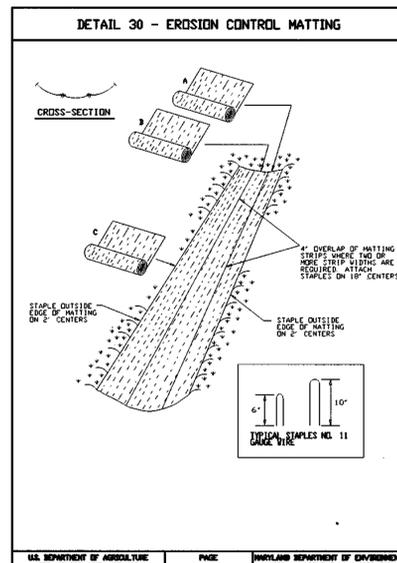
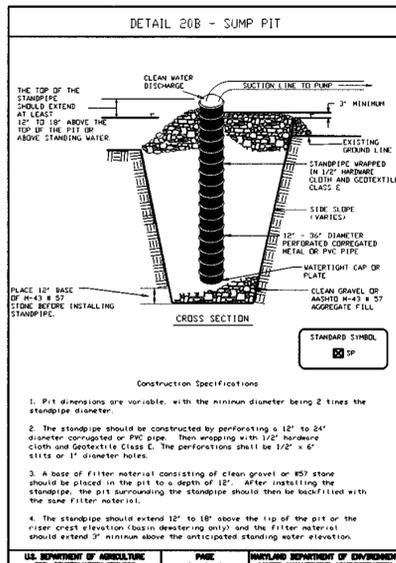
- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the respective soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
  - Topsoil shall be a loam, sandy loam, clay loam, all loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
  - Topsoil must be free of plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
  - Where the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-5 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
    - For sites having disturbed areas under 5 acres:
      - Place topsoil (if required) and apply soil amendments as specified in 2.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
      - For sites having disturbed areas over 5 acres:
        - On soil meeting Topsoil specifications, obtain test results disclosing fertilizer and lime amendments required to bring the soil into compliance with the following:
          - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
          - Organic content of topsoil shall be not less than 1.5 percent by weight.
          - Topsoil having soluble salt greater than 500 parts per mill shall not be used.
          - No soil or seed shall be placed on soil which has been with soil sterilants or chemicals used to weed control until sufficient time has elapsed (14 days min.) to permit dissipation of photo-toxic materials.
        - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
      - Place topsoil (if required) and apply soil amendments as specified in 2.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.



**ENGINEER'S CERTIFICATE**

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

*Signature* \_\_\_\_\_ 9-1-98  
Date



**DEVELOPER'S/BUILDER'S CERTIFICATE**

I/We certify that all development and/or construction will be done according to this plan, 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 also authorize periodic on-site inspection by the HSD.

*Signature* \_\_\_\_\_ 9-1-98  
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Signature* \_\_\_\_\_ 3-11-99  
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Signature* \_\_\_\_\_ 3/11/99  
Chief, Division of Land Development

*Signature* \_\_\_\_\_ 2/12/99  
Chief, Development Engineering Division MK

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
3909 NATIONAL DRIVE - SUITE 250 - BURTONTVILLE OFFICE PARK  
BURTONTVILLE, MARYLAND 20896  
TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-899-2524 FAX: 301-421-4186  
F:\DRAWINGS\97150\97150SC1.DWG DES: MJT DRN: SDS CHK:

DATE	REVISION	BY	APPR.

PREPARED FOR:  
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION  
THE ROUSE BUILDING  
10275 LITTLE PATENT PARKWAY  
COLUMBIA, MD 21044  
(410) 992-0370

**SEDIMENT CONTROL NOTES & DETAILS**  
**COLUMBIA GATEWAY**  
Parcels Q-1, Q-2, U and Lots 11 & 12  
PLAT NO.

SCALE	ZONING	G. L. W. FILE No.
N/A	NEW TOWN & M-1	97150
DATE	TAX MAP - GRID	SHEET
AUGUST 1998	43-7 42-12 & 18	10 OF 17

ELECTION DISTRICT No. 6  
HOWARD COUNTY, MARYLAND

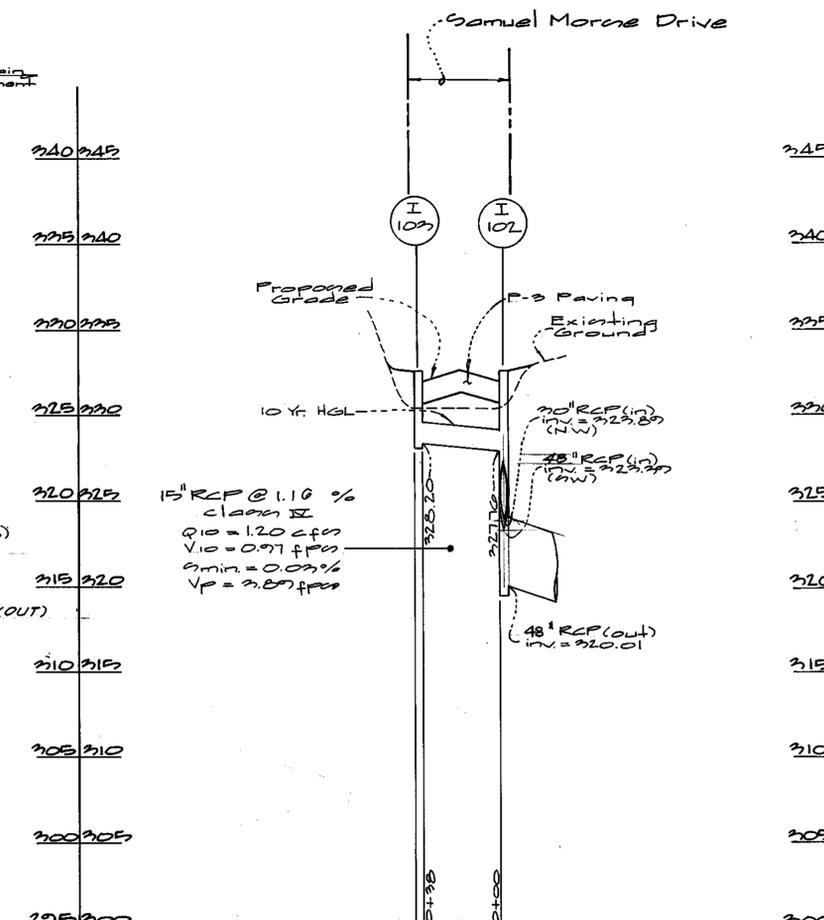
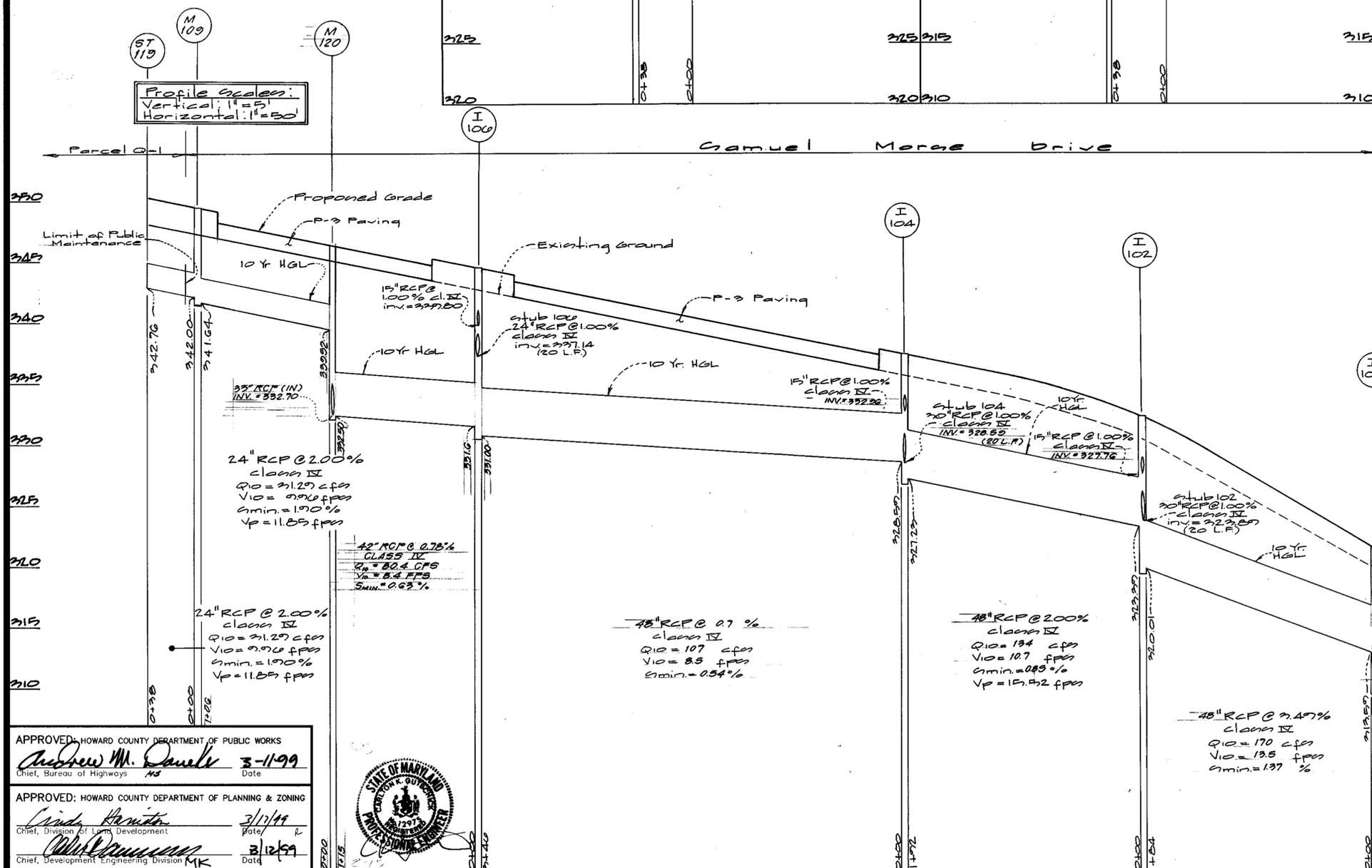
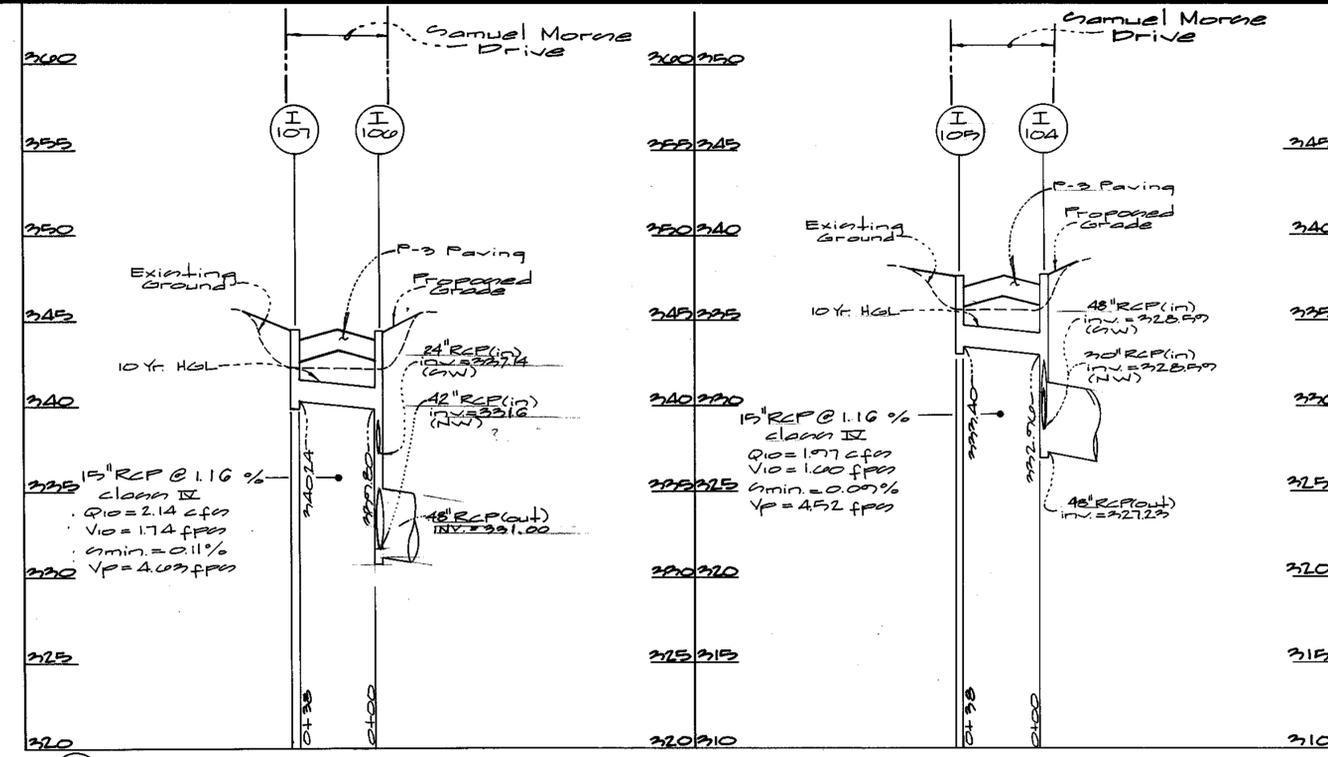
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Structure Schedule (this sheet)

No.	Type	Width (inside)	Top Elevation		Invert Elevation		St'd Detail	Locations		Remarks
			Upper	Lower	Upper	Lower				
I-102	A-10 Inlet	6'-0"	322.70	322.20	327.70	322.21	SD 2.41	E 16+00.00	LT 22.00'	Modified Std.
I-103		2'-0"	322.70	322.20		322.20		E 16+00.00	RT 22.00'	none
I-104		6'-0"	327.71	327.51	327.00	327.23		E 18+00.00	LT 22.00'	Modified Std.
I-105		6'-0"	327.71	327.51		327.42		E 18+00.00	RT 22.00'	none
I-106		6'-0"	344.53	344.33	339.20	341.00		E 21+50.00	LT 22.00'	Modified Std.
I-107		2'-0"	344.53	344.33		340.24		E 21+50.00	RT 22.00'	none
M-100	manhole	4'-0"	340.10		342.00	341.04	S 5.12	See Plan		
M-120	MANHOLE	8'-0"	342.34		339.32	332.80	MO 384.05	E 22+60.00	RT 16.00'	

Pipe Schedule (this sheet)

size	type	quantity (L.f.)	Remarks
15"	RCP CL II	114	none
24"	RCP CL II	726	
30"	RCP CL II	340	
42"	RCP CL II	715	
48"	RCP CL IV	722	

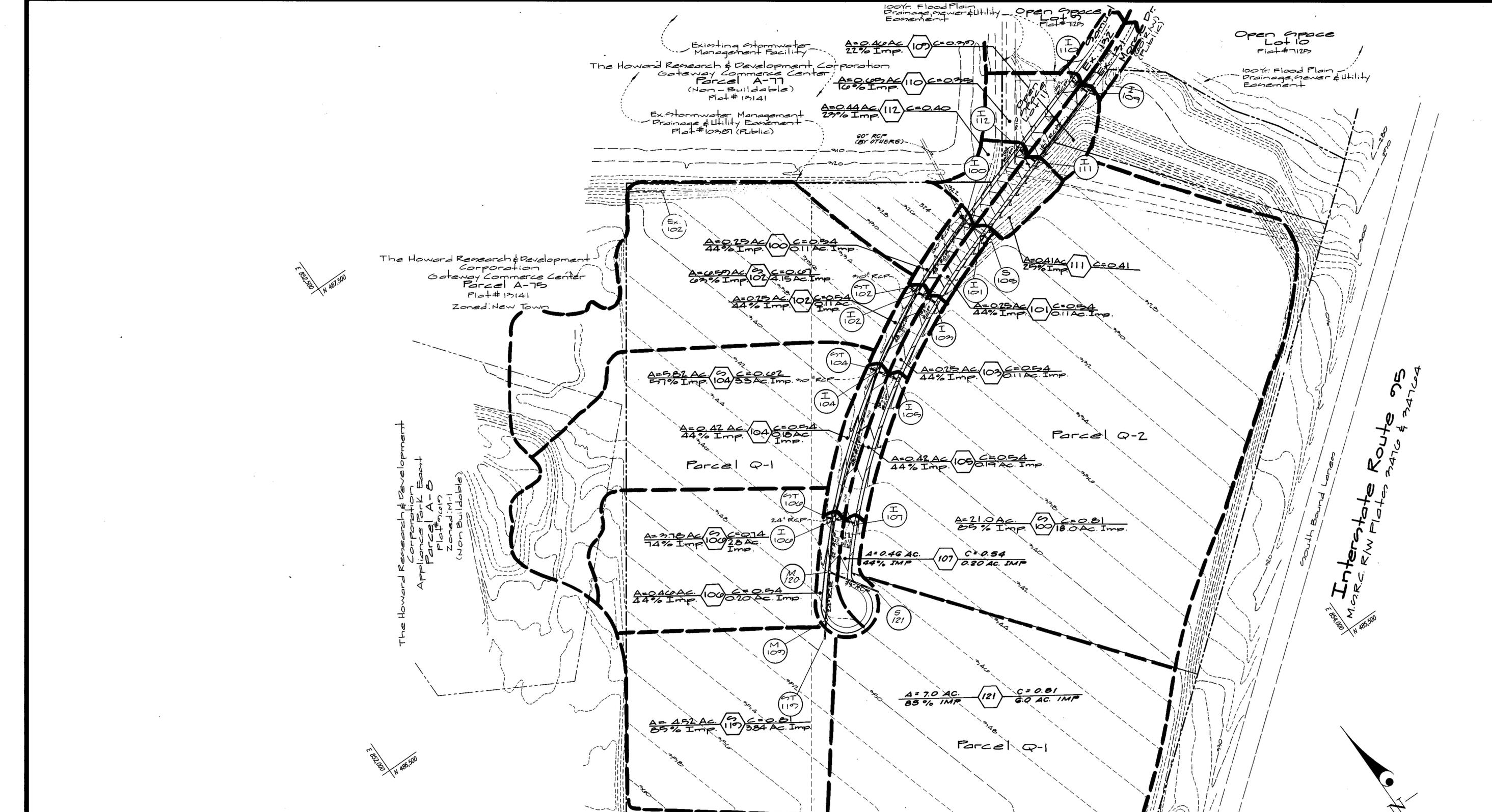


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Andrew M. Daniels 3-11-99  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
 Cindy Hamilton 3/11/99  
 Chief, Division of Land Development

APPROVED: [Signature] 3/12/99  
 Chief, Development Engineering Division





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Decker* 3-11-99  
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy Hamilton* 3/10/99  
 Chief, Division of Land Development

*Michael...* 3/12/99  
 Chief, Development Engineering Division

**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20886  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2324 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

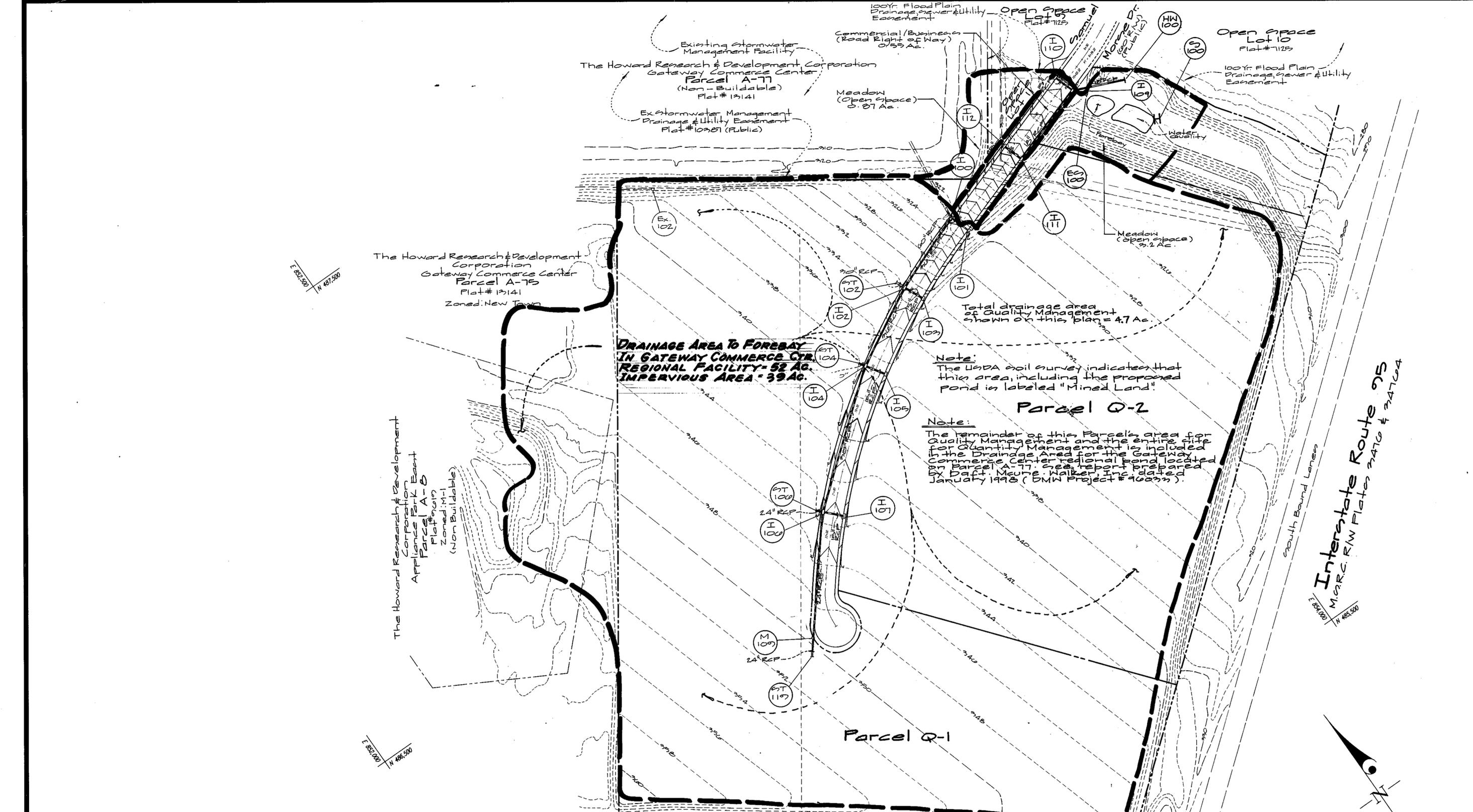
PREPARED FOR:  
 The Howard Research & Development Corporation  
 Columbia, Maryland 21044  
 Attn: Greg Klar  
 (410) 992-0370

storm Drain  
**DRAINAGE AREA MAP**  
**Columbia Gateway**  
 Parcels Q-1, Q-2, U and Lots 11 & 12  
 Plat No. \_\_\_\_\_  
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=100'	New Town M-1	97150
DATE	TAX MAP - GRID	SHEET
August, 1998	42-7 42-12 & 18	16 OF 17

Interstate Route 95  
 M.G.R.C. RW Plats 2476 & 2476A  
 E 854,000 N 488,500





APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Jankov* 3-11-99  
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Candy Hamilton* 3/17/99  
 Chief, Division of Land Development Date

*Michael...* 3/12/99  
 Chief, Development Engineering Division MK Date



**GLW GUTSCHICK LITTLE & WEBER, P.A.**  
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS  
 3009 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK  
 BURTONSVILLE, MARYLAND 20866  
 TEL: 301-421-4024 BAL: 410-880-1820 DC/WA: 301-989-2524 FAX: 301-421-4106

DATE	REVISION	BY	APPR.

PREPARED FOR:  
 The Howard Research & Development Corporation  
 Columbia, Maryland 21044  
 Attn: Greg Klar  
 (410) 992-6000

STORMWATER MANAGEMENT  
**DRAINAGE AREA MAP**  
**Columbia Gateway**  
 Parcels Q-1, Q-2, U and Lots 11 & 12  
 Plot No. \_\_\_\_\_  
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=100'	New Town M-1	97150
DATE	TAX MAP - GRID	SHEET
August, 1998	42-7 42-12 & 13	17 OF 17