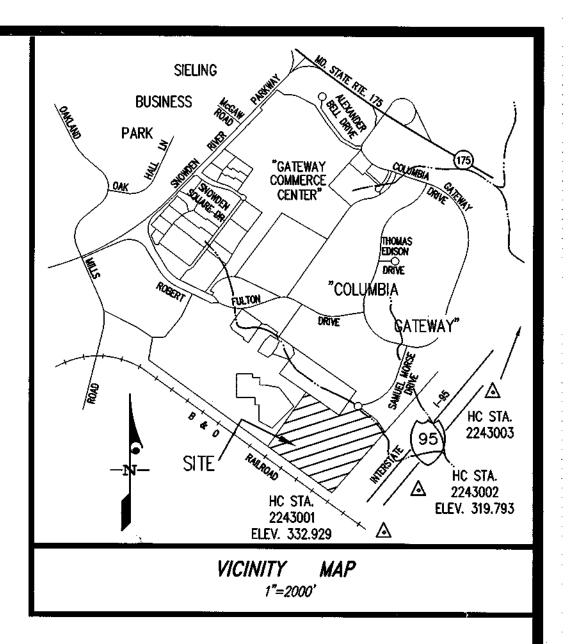
GENERAL NOTE

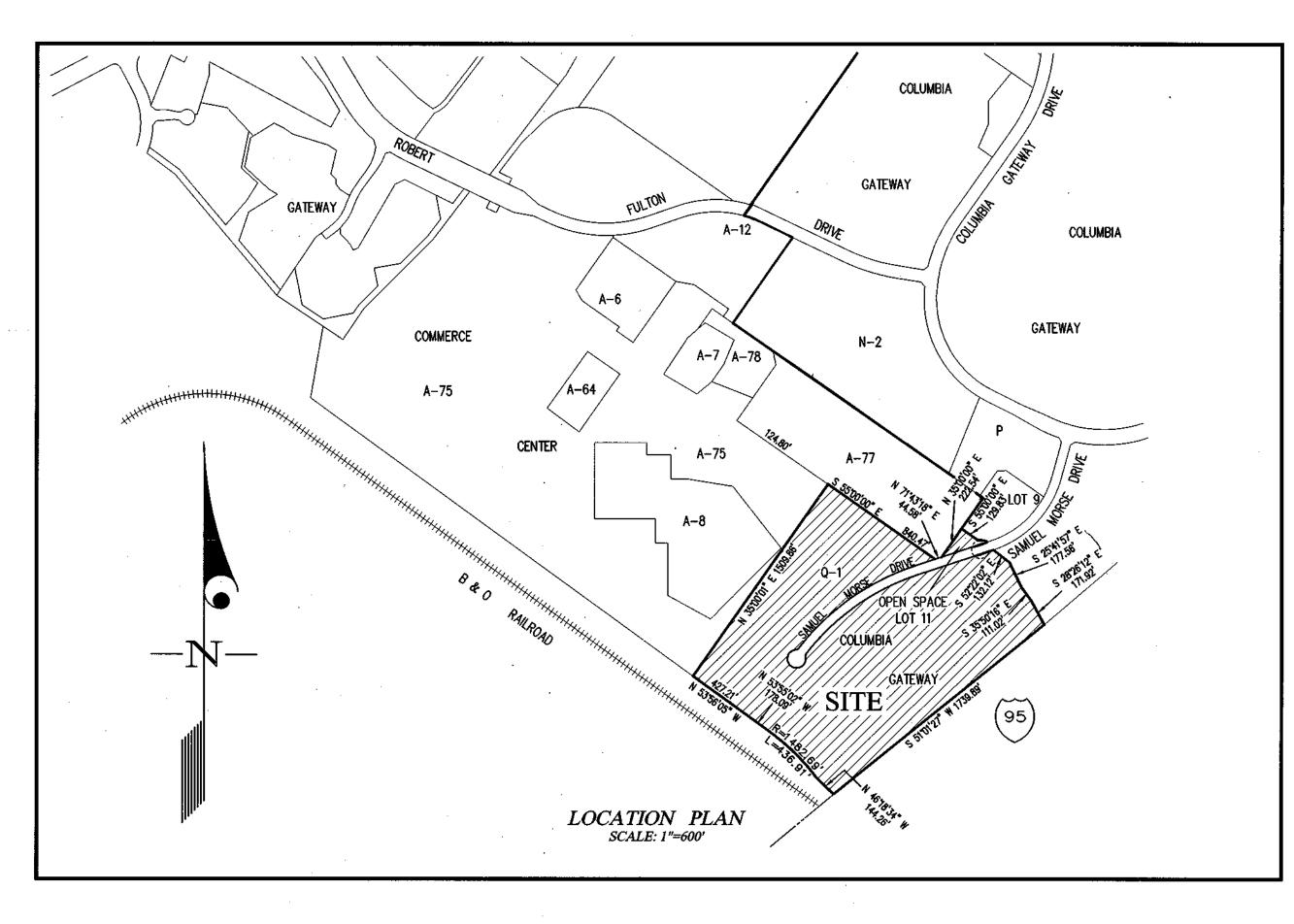
- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standard and specifications if applicable.
- 2. The contractor shall notify the Department of Public Works, Bureau of Engineering, Construction Inspection Division at (410) 313-1880 at least 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 working days prior to starting any excavation work.
- 5. Site area: ちゅっつ acres.
- 6. All plan dimensions are to face of curb unless otherwise
- 7. Existing topography is shown per mass grading plans GP-99-15 prepared by Gutschick, Little & Weber, P.A.
- 8. Coordinates and bearings are based upon the MD State plan system (NAD '27).
- 9. Water and sewer shown is public.
- 10. All existing water and sewer is per Contracts 24-1587-D and 20-1397-D.
- 11. All existing public storm drain is per F-87-63.
- 12. Use trench bedding class "C" for storm drains.
- 13. Project background: See Dept. of Planning & Zoning File Numbers: FDP-40, F-68-30, WP-98-49.
- 14. Recording reference: Plat Back -- Flut No.
- 15. Existing utilities are based on approved design plans for construction and field location by Gutschick, Little & Weber, P.A.
- 16. There is no floodplain on this site.
- 17. 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





Existing Contour

Proposed Paving

Existing Treeline

Proposed Treeline

** Existing Street Light

A Top of Curb Elevation

Existing Water Main

Existing Gewer Main

Existing Gewer Main

Existing Gewer Main

Existing Curb & Gutter

Existing Paving

Existing Paving

Existing Paving

Existing Paving

Existing Paving

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NO AS-BUILT INFORMATION SHOWN ON THIS SHEET.

AS-BUILT

Sheets Labeled 1 thrue For Asbuilt Purposes only.

GLWGUTSCHICK 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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

ief, Development Engineering Division MK

DATE REVISION BY APP'R.

PREPARED FOR:

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

10275 LITTLE PATUXENT PARKWAY

COLUMBIA, MD 21044

PH: 410-992-6370

ATTN: MR. GREG KLAR

ELECTION DISTRICT No. 6

COVER SHEET

COLUMBIA GATEWAY

Parcelo Q-1, Q-2, U and Loto 11 \$12

PLAT No.

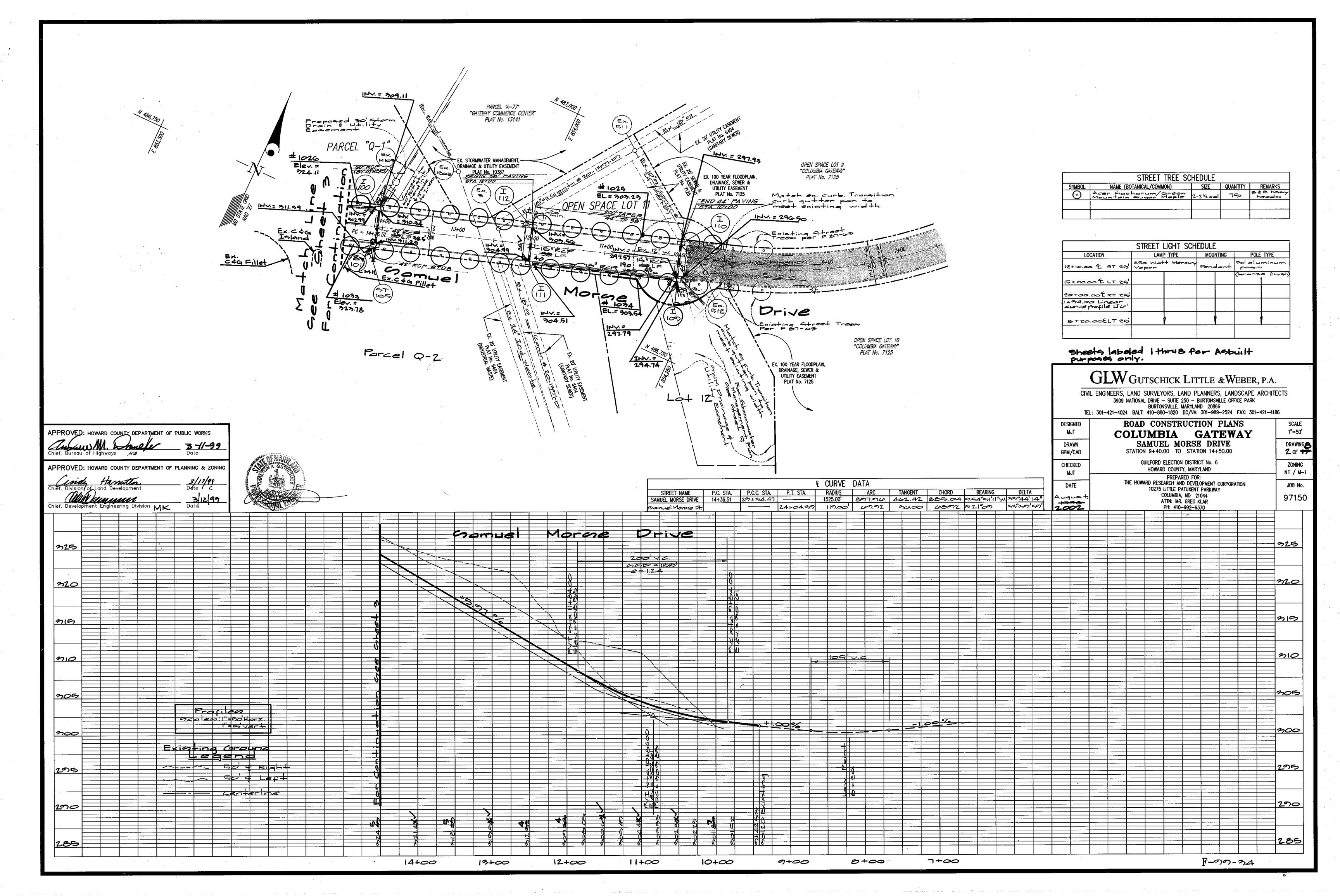
SCALE ZONING G. L. W. FILE No.

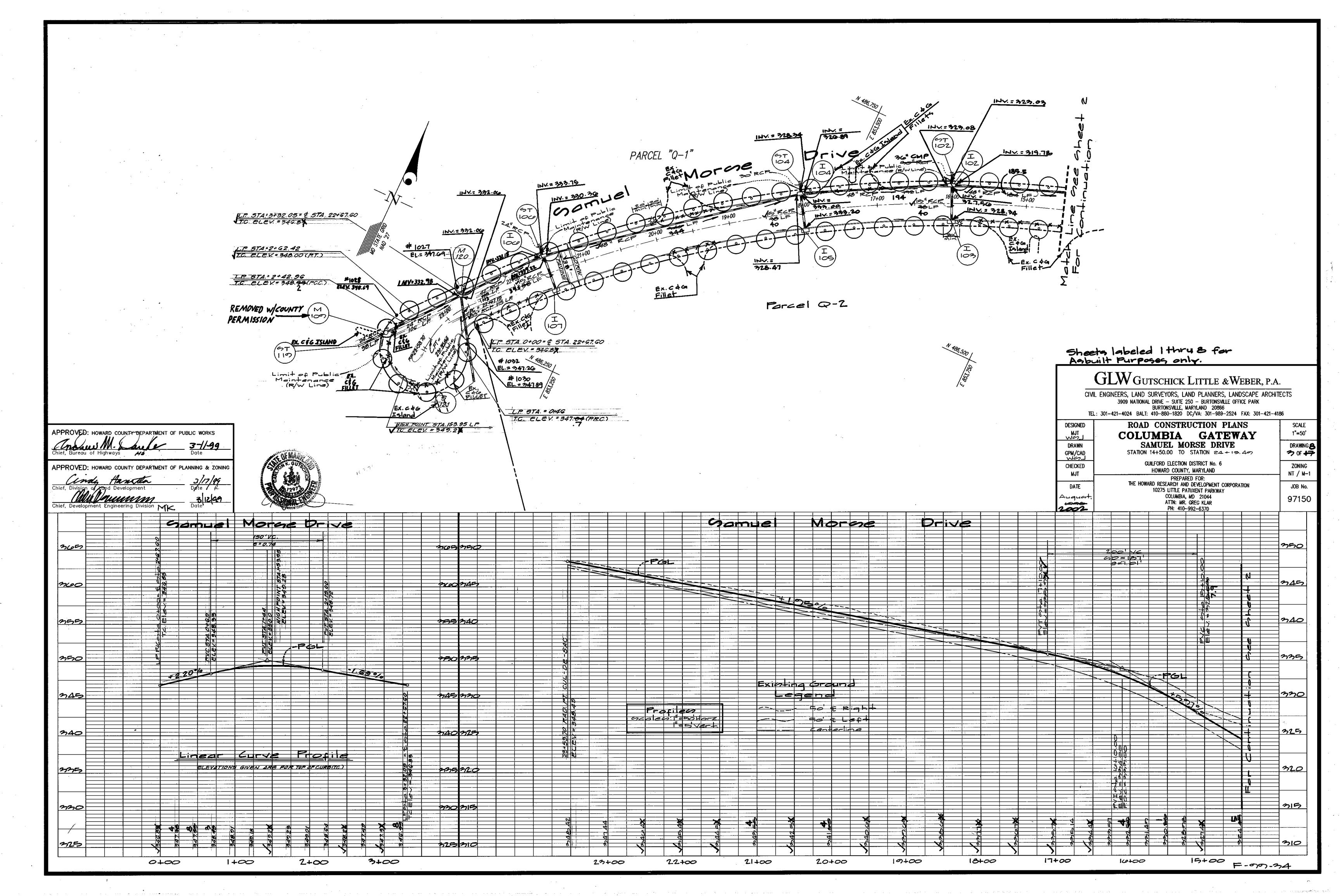
AS SHOWN M-1

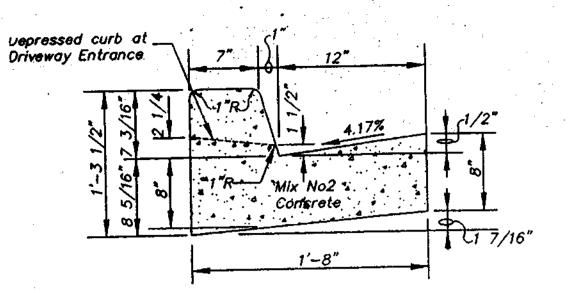
DATE TAX MAP - GRID SHEET

43 / 7 & 1 OF +4

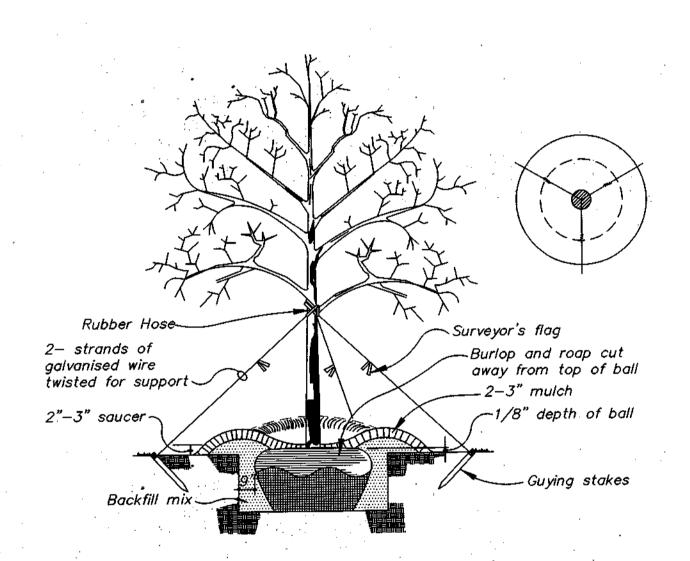
AUGUST, +998 42 / 12 & 18







Standard 7" Combination Curb & Gutter

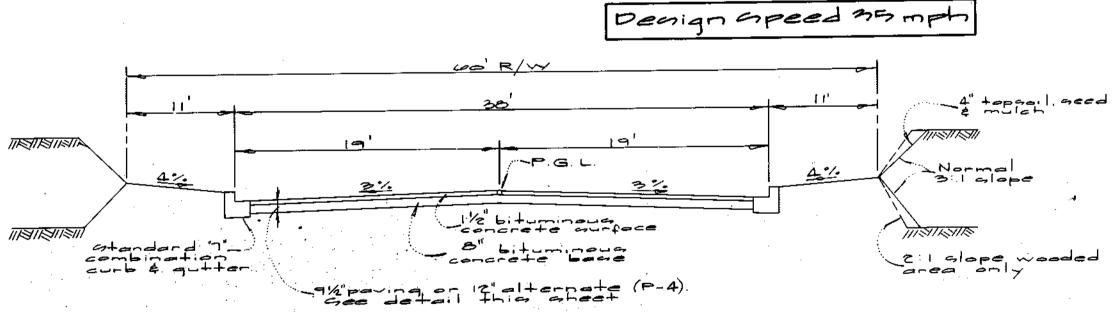


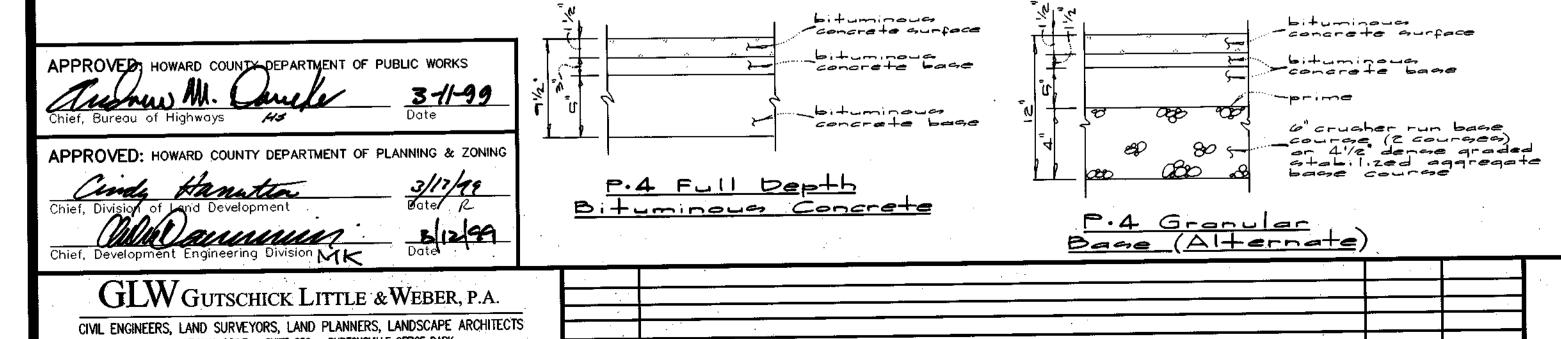
<u>Typical Tree Guying Detail</u>

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

F:\DRAWINGS\97150\DESIGN\97150DS.DWG

DES. MJT DRN. SDS CHK.





1-26-99 REV. PAYING PLAN AND WETCHNOS PLANTING PLAN

REVISION

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 stockpiles during mass grading. The ponds shall be flooded and left undisturbed for a period of 10 days. Drain prior to planting.
- 2. 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.
- 3. Bareroot plants shall be planted in ho? s 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.
- 5. 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.
- 7. All plant material shall be guaranteed for a period of one year after formal acceptance, and an 80% survial guarantee after 3 three, years.
- 8. Remove litter and debris as required during the fist growing season and at the beginning of the second growing
- 9. Wetland planting contractor shall submit resume and references of previous planting experience to owner or landscape architect for approval prior to planting.

WETLANDS PLANTING FOR FACILITY #3

PREPARED FOR :

THE HOWARD RESEARCH & DEVELOPMENT CORPORATION

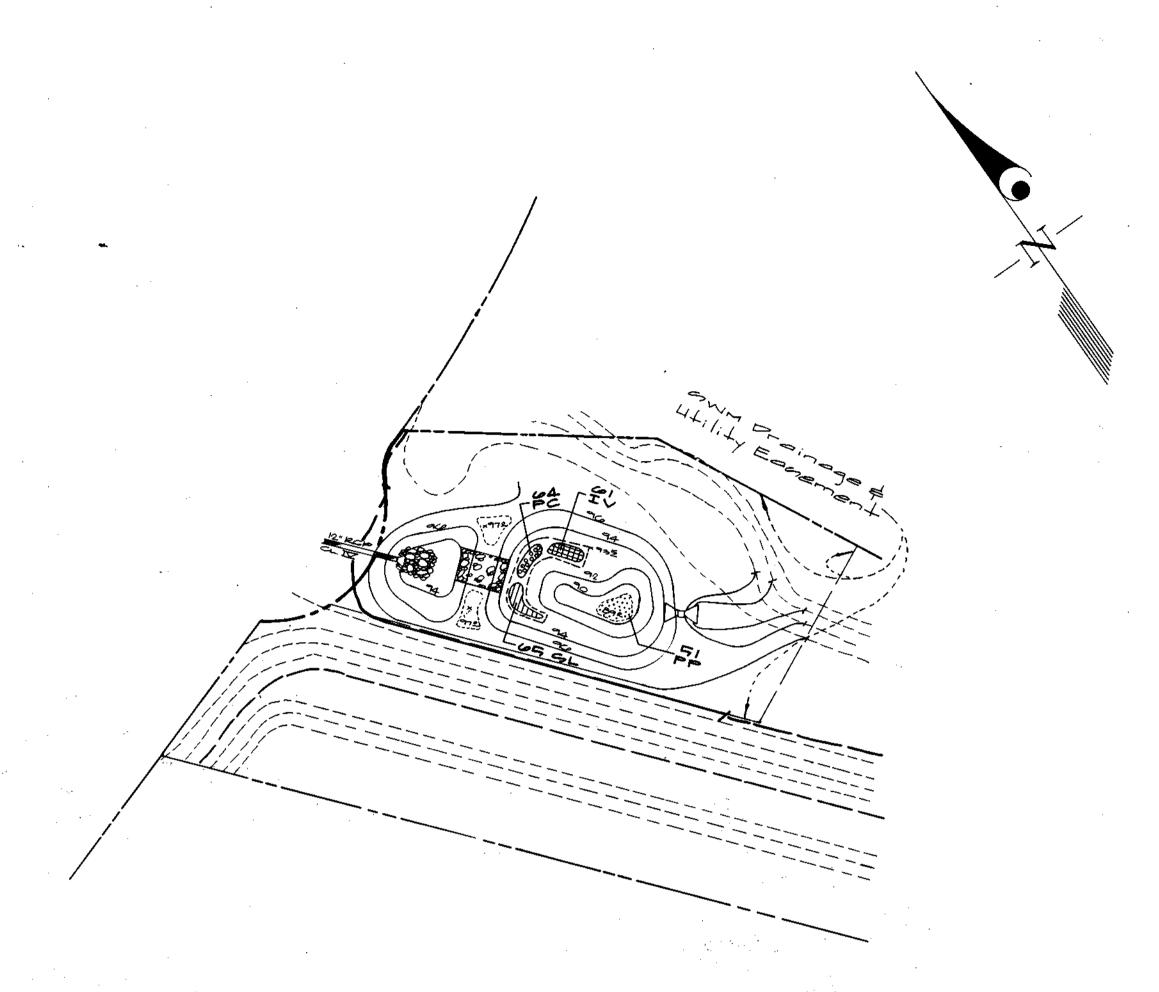
THE ROUSE BUILDING

10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21044

(410) 992-6027

ELECTION DISTRICT No. 6

Кеу	Qty	Botanical/Common Name	Size
IV PC PP SL	61 64 51	Iris versicolor/Blue Flag Pontederia cordata/Pickerelweed Potamogeton pectinatus/Pondweed Sagittaria latifolia/Duck Potato	Tuber Tuber 1 Pt. Tuber



Wetlands Planting Plan 1" = 50'



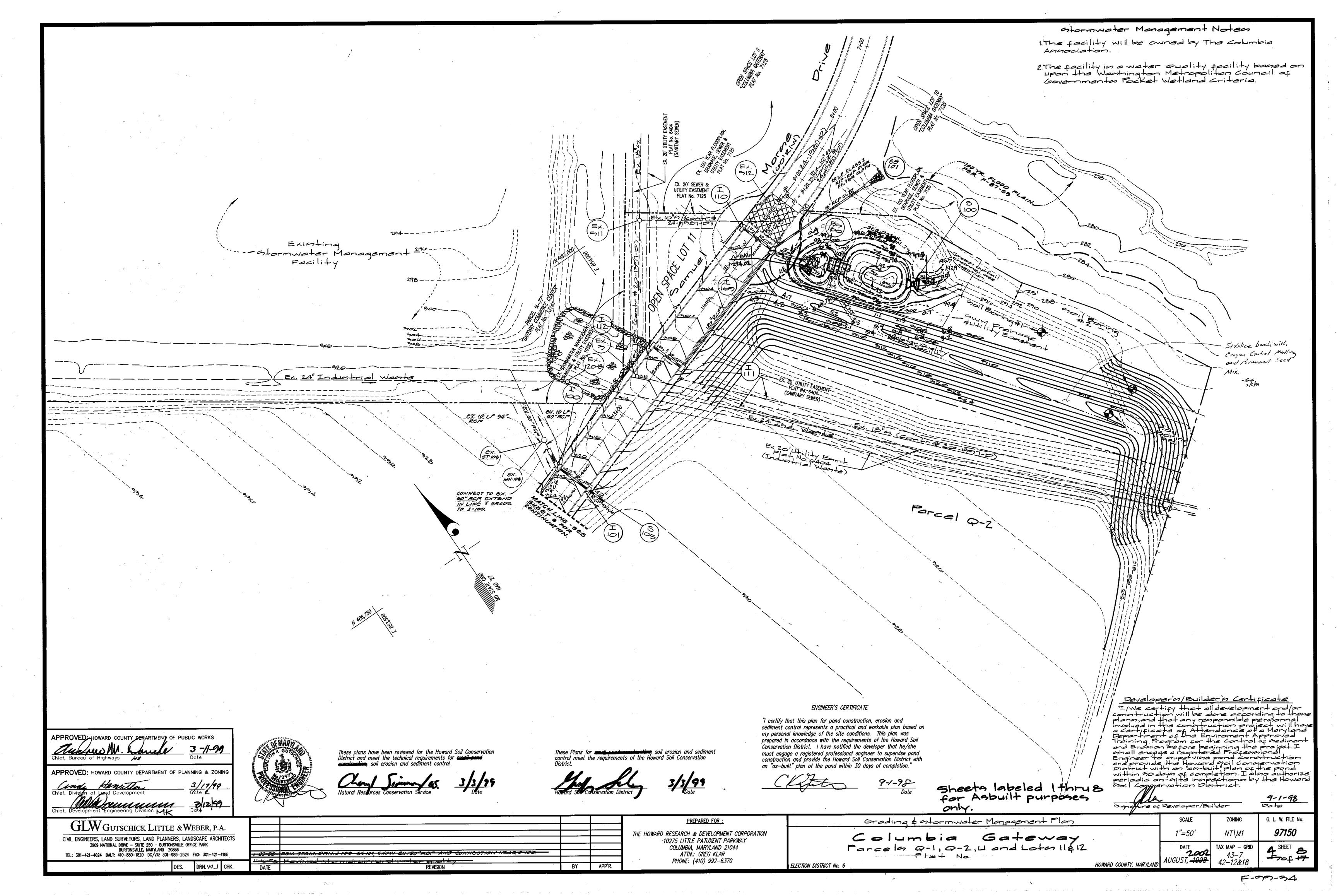
G. L. W. FILE No.

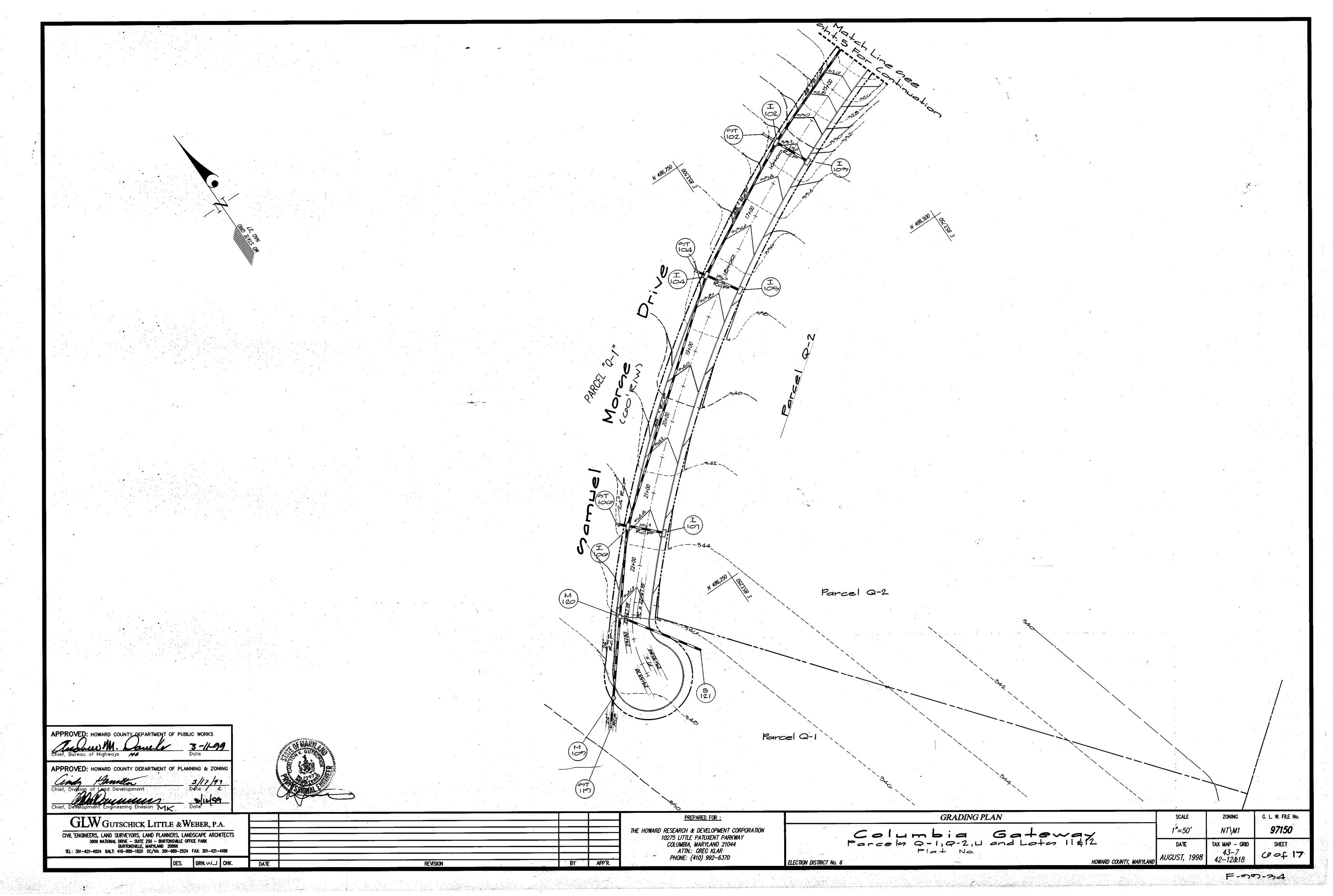
TYPICAL DETAILS COLUMBIA GATEWAY Parcelo Q-1,Q-2, U and Loto 11412 AUGUST 1998 HOWARD COUNTY, MARYLAND

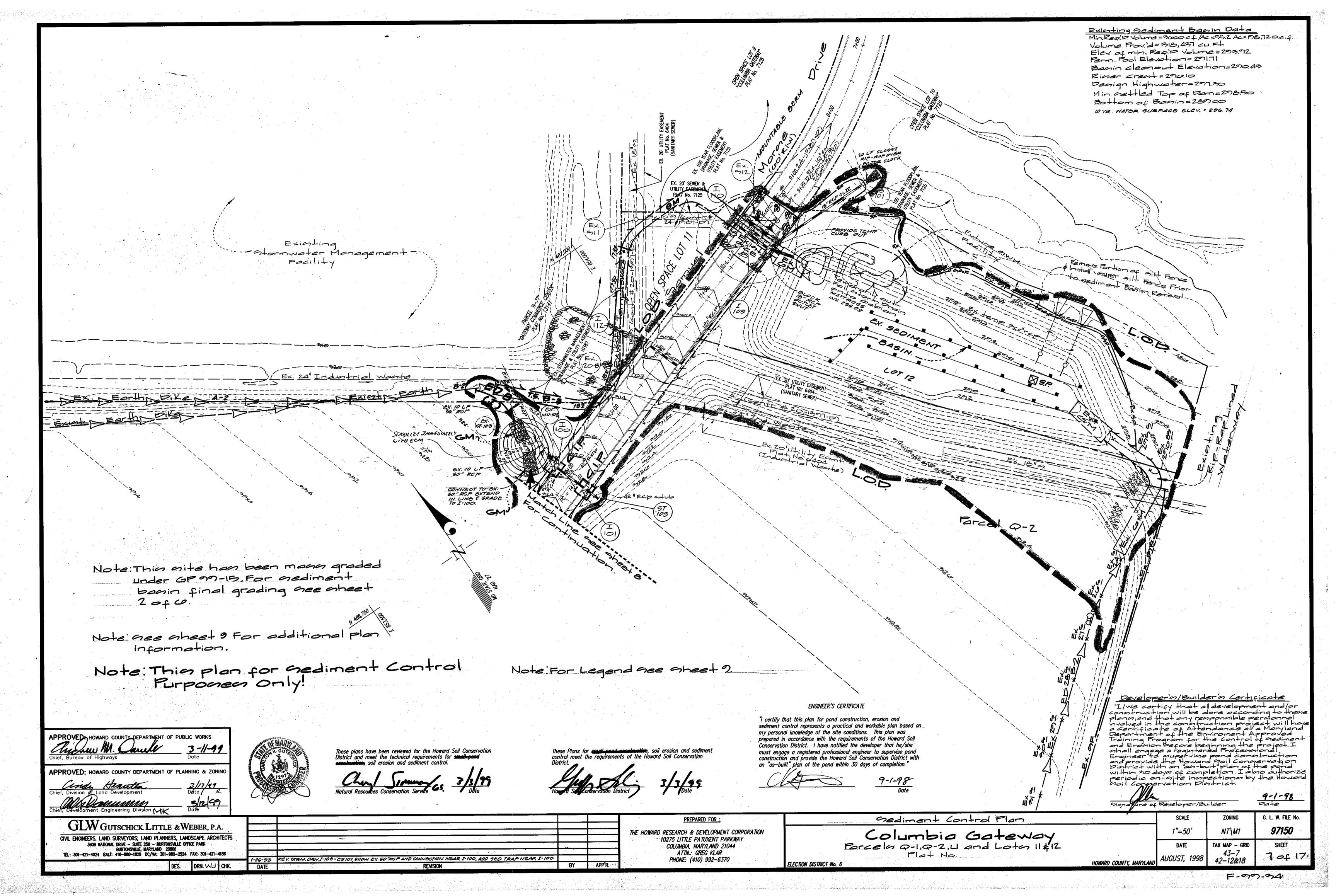
NEW TOWN &

TAX MAP - GRID

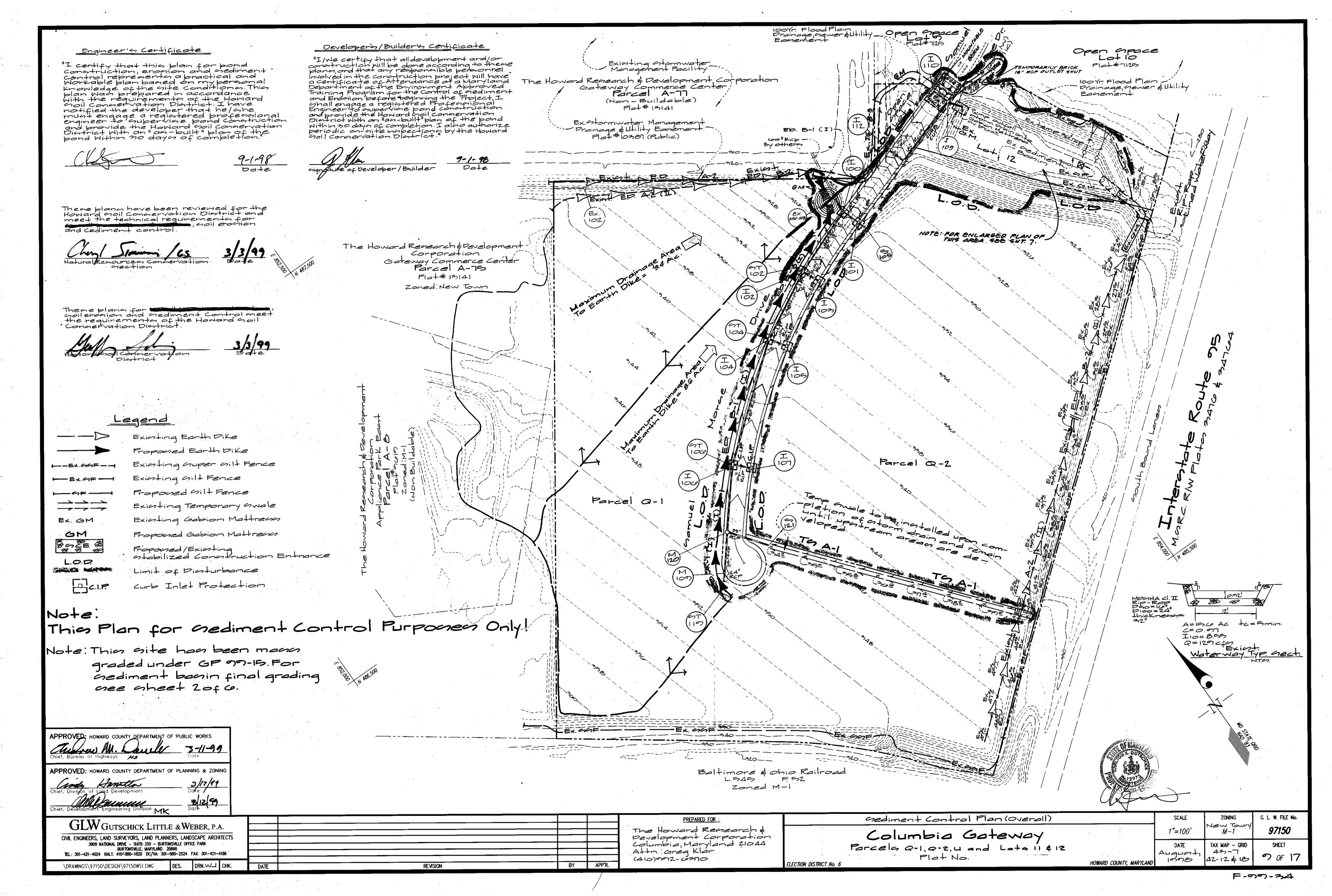
AS SHOWN

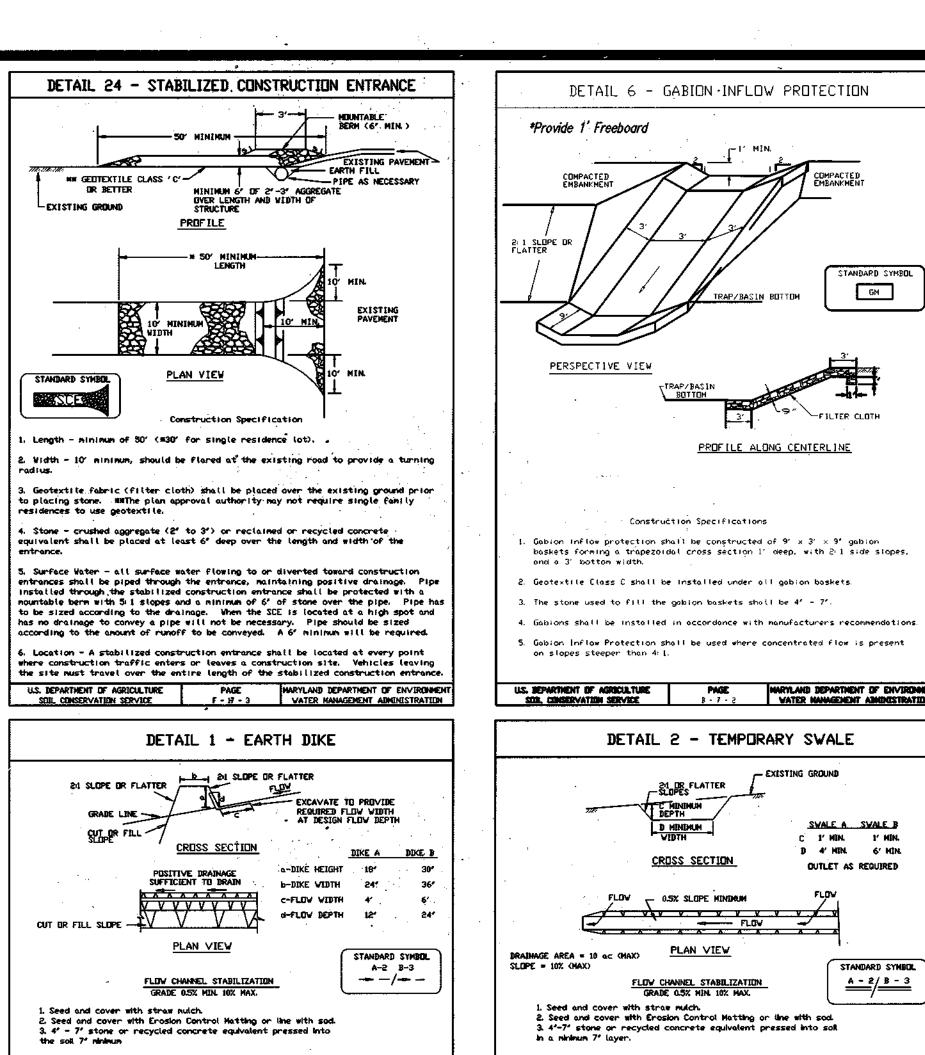






Note: For Legend Gee Gheet 9 Note: This site has been moss graded under GP 09-15. Note: This plan for mediment Control Purposes Only!! These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pend and sediment control. DEVELOPER'S/BUILDER'S 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 ENGINEER'S CERTIFICATE 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. "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 APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS control meet the requirements of the Howard Soil Conservation 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." gediment Control Plan G. L. W. FILE No. PREPARED FOR: GLW GUTSCHICK LITTLE & WEBER, P.A. 1"=50' THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY Columbia Gateway
Parcel 'Q-1', 'Q-2', 'U' and Late 11 412
Flat No. CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK COLUMBIA, MARYLAND 21044 TAX MAP - GRID BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186 ATTN.: GREG KLAR 43-7 42-12&18 80f 17 AUGUST, 1998 DATE DATE PHONE: (410) 992-6370 HOWARD COUNTY, MARYLAND ELECTION DISTRICT No. 6 REVISION





Construction Specifications

All temporary smales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

3. Runoff diverted from an undisturbed area shall outlet directly into an

4. All trees, brush, stumps, obstructions, and other objectional naterial

section as required to neet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.

DETAIL 20B - SUMP PIT

CROSS SECTION

Construction Specifications

1. Pit dimensions are variable, with the minimum diameter being 2 times the

2. The standpipe should be constructed by perforating a 12' to 24'

3. A base of filter material consisting of clean gravel or #57 stone should be placed in the pit to a depth of 12°. After installing the

standpipe, the pit surrounding the standpipe should then be backfilled with

4. The standpipe should extend 12' to 18' above the Lip of the pit on the riser crest elevation (basin dewatering only) and the filter material

should extend 3' minimum above the anticipated standing water elevation.

diameter corrugated or PVC pipe. Then wrapping with $1/2^{\circ}$ hardware cloth and Geotextile Class E. The perforations shall be $1/2^{\circ} \times 6^{\circ}$

CLOTH AND GEDTEXT

PERFORATED CORREGATED
METAL OR PVC PIPE

CLEAN GRAVEL DR

TANDARD SYMBO

X SP

8. Inspection and maintenance must be provided periodically and after

STANDETPE SHOULD EXTEND
AT LEAST
12' TO 18' ABOVE THE TOP OF THE PIT OR

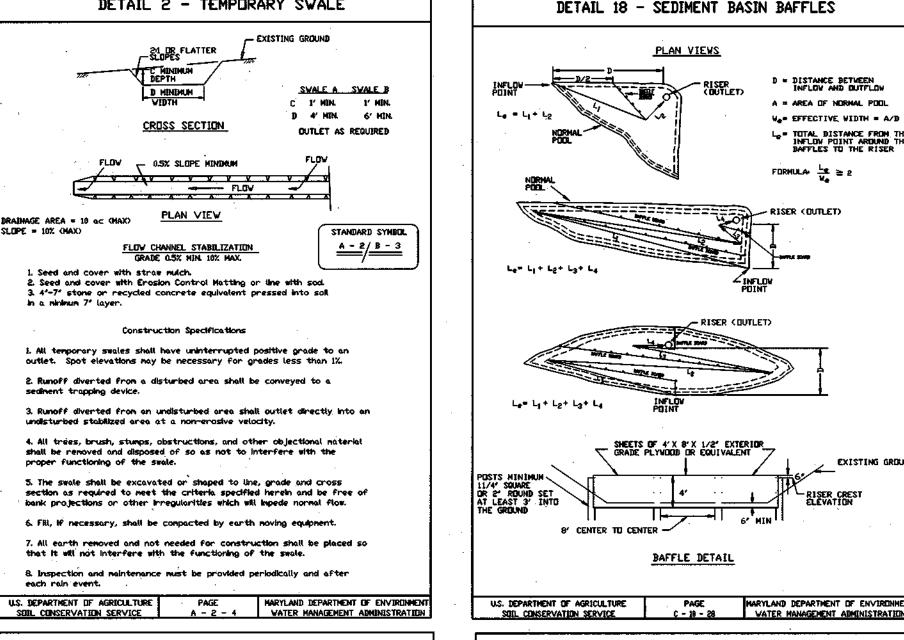
OF M-43 # 57 STONE BEFORE INSTALLING STANDPIPE.

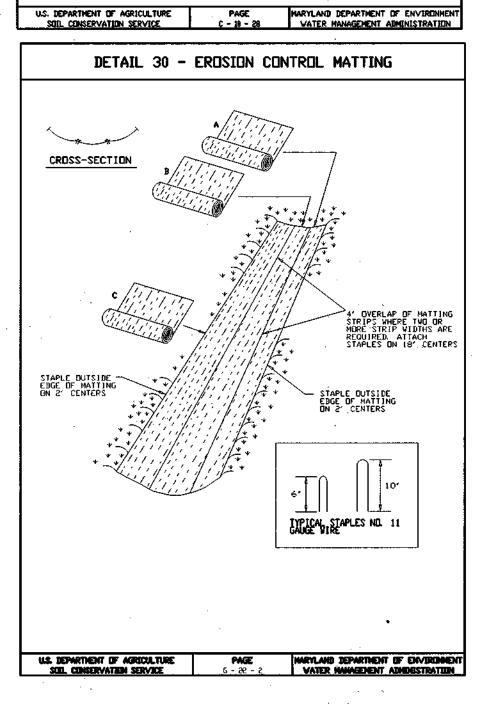
shall be removed and disposed of so as not to interfere with the

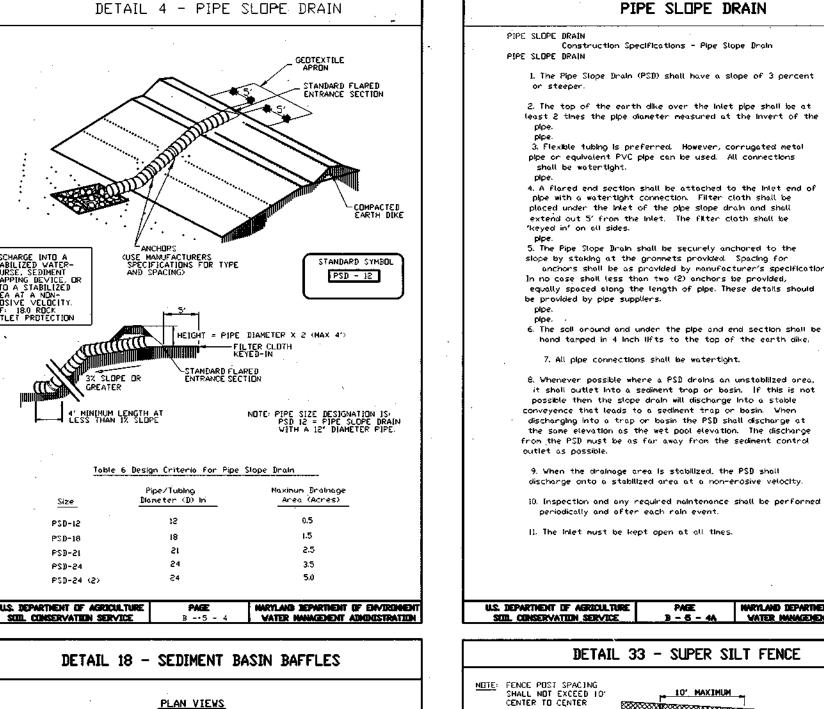
5. The swale shall be excavated or shaped to line, grade and cross

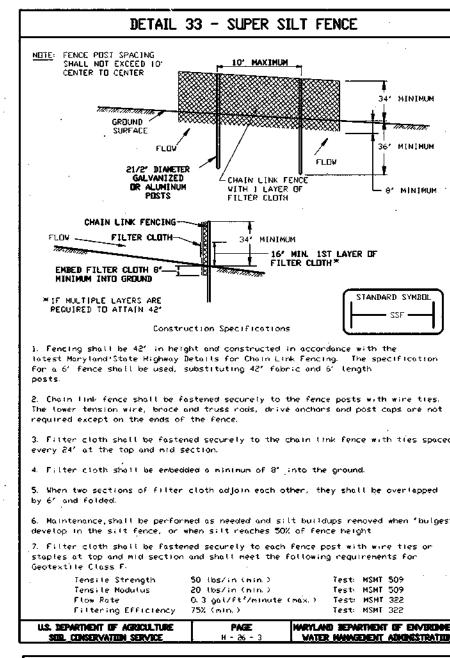
6. FRI, If necessary, shall be compacted by earth noving equipment.

2. Runoff diverted from a disturbed area shall be conveyed to a

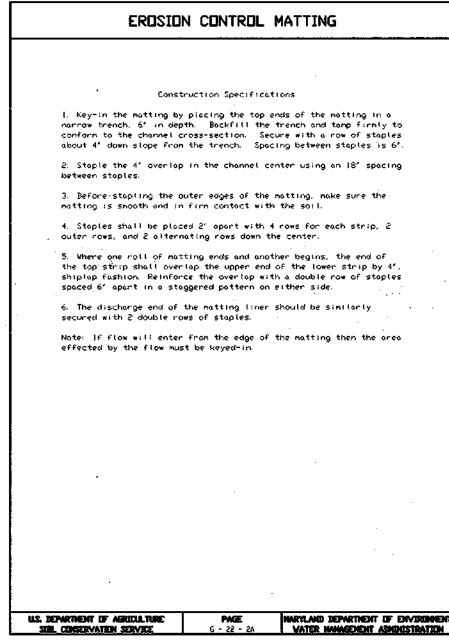








PIPE SLOPE DRAIN



STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION

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

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

- I. This practice is limited to areas having 2:1 or flatter slopes
- a. The texture of the exposed subsoil parent material is not adequate to produce vegetative growth.
- b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplied of moisture and plant nutrients.
- c. The original soil to be vegetated contains material toxic to plant growth.
- d. The soil is so acidic that treatment with limestone is not feasible.
- II. 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
- i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by a agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrastina textured subsoils and shall contain less than 5% by volume of cinders, stones, slaa, coarse fraaments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
- ii. Topsoil must be free of plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
- iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate if 4-8 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.
- II. For sites having disturbed areas under 5 acres:
- i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 -Vegetative Stabilization Methods and Materials.
- Ill. For sites having disturbed areas over 5 acres:
- i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
- a. 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. b. Organic content of topsoil shall be not less than
- 1.5 percent by weight.
- c. Topsoil having soluble salt greater than 500 parts per mill shall not be used.
- d. No sod or seed shall be placed on soil which has weed control until sufficient time has elapsed (14
- days min.) to permit dissipation of photo-toxic 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 ii. Place topsoil (if required) and apply soil amendments as
- specified in 2.0 Vegetative Stabilization Section 1 -Vegetative Stabilization Methods and Materials. V. Topsoil Application
- i. When topsoilling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" -8" higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4'-8' layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoilling or other operations shall be corrected in order to prevent the formation of depressions or water
- iv. Topsoil shall not be placed while the topsoil or subsoil is frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- VI. Alternative for Permanent Seeding Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
- i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
- a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR
- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If composi does not meet these requirements, the appropriate constituents must be added to meet the requirements c. Composted sludge shall be applied at a rate of 1
- ton/1,000 square feet. iv. Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4lb/1,000 square feet, and 1/3 the normal lime application rate.
- Guideline Specifications, Soil Preparation and odding. MD-VA Pub. #1 , Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

ELECTION DISTRICT No. 6

These plans have been reviewed for the Howard Soil Conservation District and meet the technical

This Development Plan is approved for Soil Erosion and Sediment Control

by the Howard Soil Conservation

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."



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 HSCD.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONIN and Development Milanum Chief, Development Engineering Division MK 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

F:\DRAWINGS\97150\97150SC1.DWG

3-11-99

DES. MUT DRN. SDS CHK.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Construction Specifications

grade to an outlet. Spot elevations may be necessary for grades less than 1%

2. Runoff diverted from a disturbed area shall be conveyed to a sediment

3. Runoff diverted from an undisturbed area shall outlet directly into an

4. All trees, brush, stumps, obstructions, and other objectional naterial

shall be removed and disposed of so as not to interfere with the proper

5. The dike shall be excavated or shaped to line, grade and cross section as

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

PAGE HARYLAND DEPARTMENT OF ENVIRONMEN
A → 1 - 6 VATER MANAGEMENT ADMINISTRATION

8. Inspection and maintenance must be provided periodically and after

required to neet the criteria specified herein and be free of bank projections

1. All temporary earth dikes shall have uninterrupted positive

undisturbed, stabilized area at a non-erosive velocity.

or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

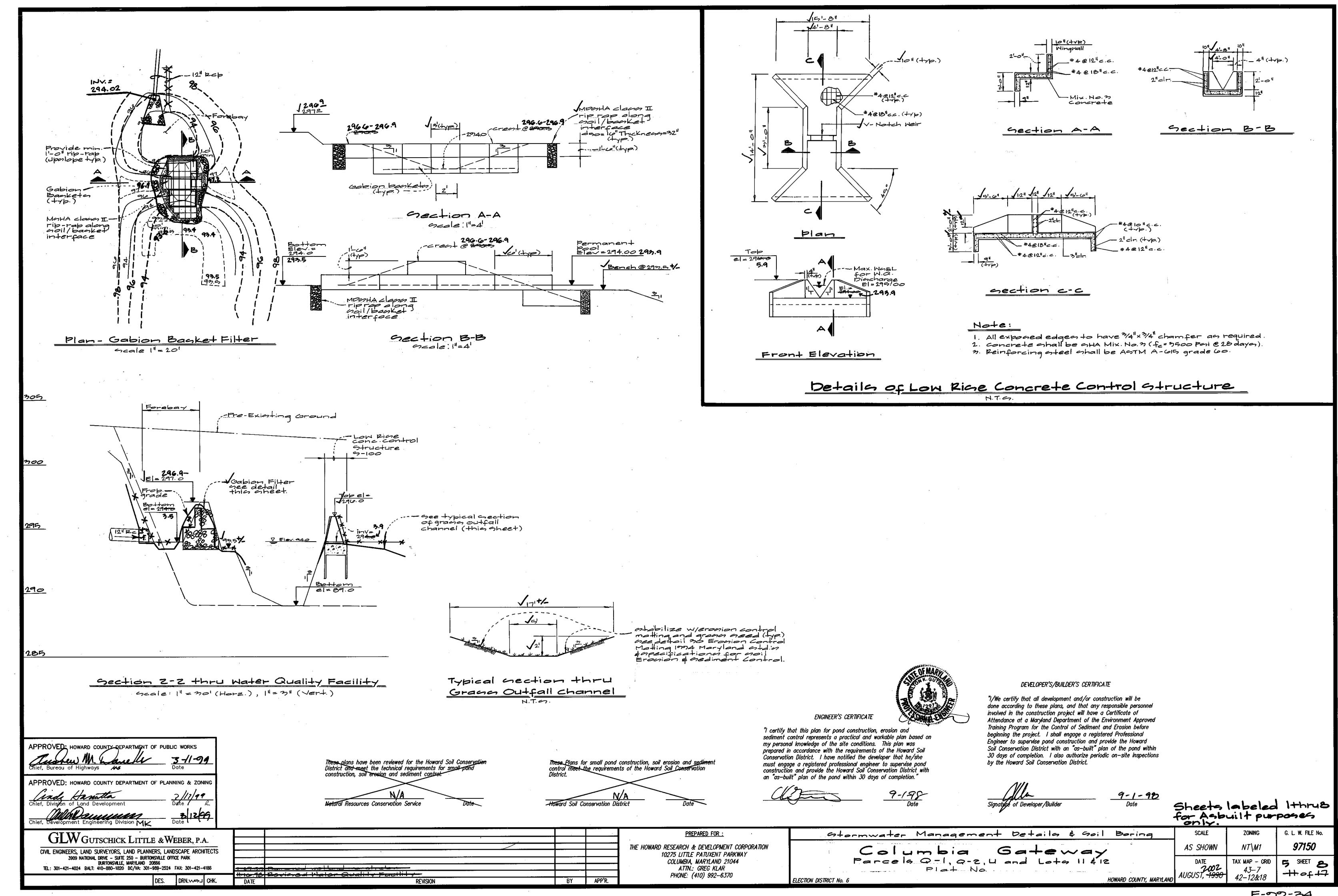
DATE REVISION BY APP'R.

PREPARED FOR: THE HOWARD RESEARCH & DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD. 21044 (410) 992-6970

COLUMBIA GATEWAY Parcels Q-1, Q-2, U and Lots 11412

SEDIMENT CONTROL NOTES & DETAILS

G. L. W. FILE No. NEW TOWN a 97150 SHEET AUGUST 1998 10 OF 17 HOWARD COUNTY, MARYLAND



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 locations 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 controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture 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 laver 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 adioining 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 advanized 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. Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.
- Materials (Aluminum Coated Steel Pipe) This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.
- 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 rerolled 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 aasket 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:

within 2 feet from the riser.

- 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
- 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

4. Backfilling shall conform to "Structure Backfill".

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

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 of 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.

<u>Concrete</u>

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 608,

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 pumpina 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.

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

Erosion and Sediment Control

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

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
- 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.

:50.000	Acres
:50,50	Acres
:1.カ	Acres
:4.2	Acres
:2,000	Cu. Yds.
:12,000	Cu. Yds.
	:1.3 :4.2 :2,000

- BORROW AREA LOCATION: SEE GP-99-15.
 REQUIRED FILL WAS BEEN STOCKPILED
 ADVACENT TO 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
- 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

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

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

of the following schedules

- 1) Preferred Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 unreaform fertilizer (9 lbs/1000 sq ft).
- 2) Acceptable Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sa 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 sa 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 sa 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 greas. 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 rve (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
- 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 COLUMBIA 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 103 (CONSTRUCTED UNDER F97-98 REOLINE) (10AY).
- 4. When area draining to EXISTING STUB 15 stabilized, construct earth dike (I) 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 SAMUEL MORSE ORIVE) (IWEEK).
- 5. CONSTRUCT EMERGENCY SPILLWAY TO REGIONAL POND (F97-98 REDLINE), CONSTRUCT STORM DRAIN INSTALL CURB INLET PROTECTION. TEMPORARILY OUTFALL STORM DRAIN I-109 TO EXISTING GABION MATTRESS TO EXISTING SEDIMENT BASIN.
- 6. FINE GRADE SITE (I WEEK).
- INSTALL CURB AND GUTTER AND BASE PAVE. STABILIZE REMAINING AREAS. INSTALL STREET LIGHTS AND TREES
- 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
- CONSTRUCT WATER QUALITY PACILITY AND STABILIZE (IMONTH)
- INSTALL SURFACE COURSE PAVING (I WEEK)

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.

Signoffre of Developer/Builder

ELECTION DISTRICT No. 6

control meet the requirements of the Howard Soil Conservation

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

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\97150\DESIGN\97150SWM

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

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

PREPARED FOR:

ENGINEER'S CERTIFICATE

sediment control represents a practical and workable plan based on

"I certify that this plan for pond construction, erosion and

my personal knowledge of the site conditions. This plan was

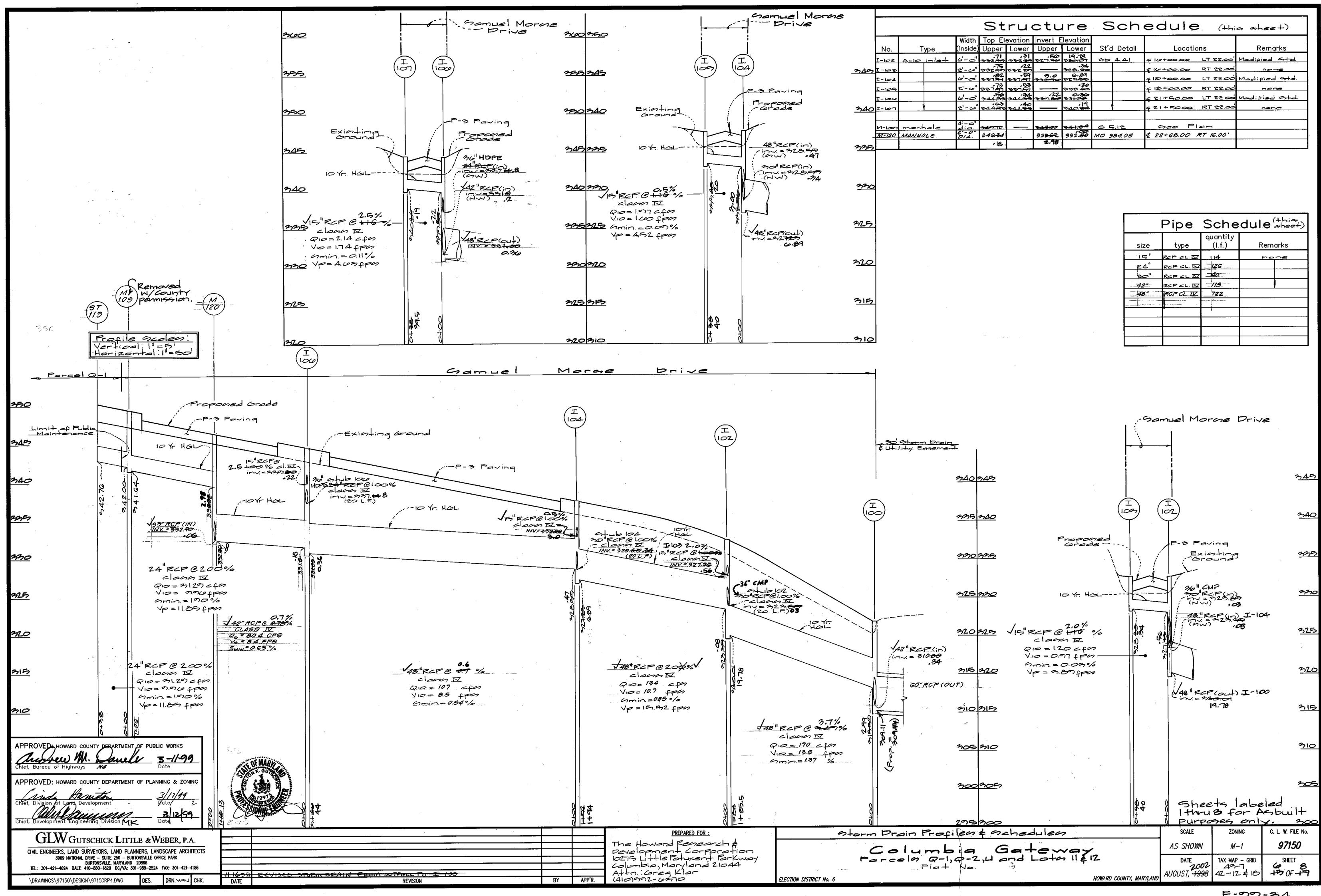
prepared in accordance with the requirements of the Howard Soil

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.

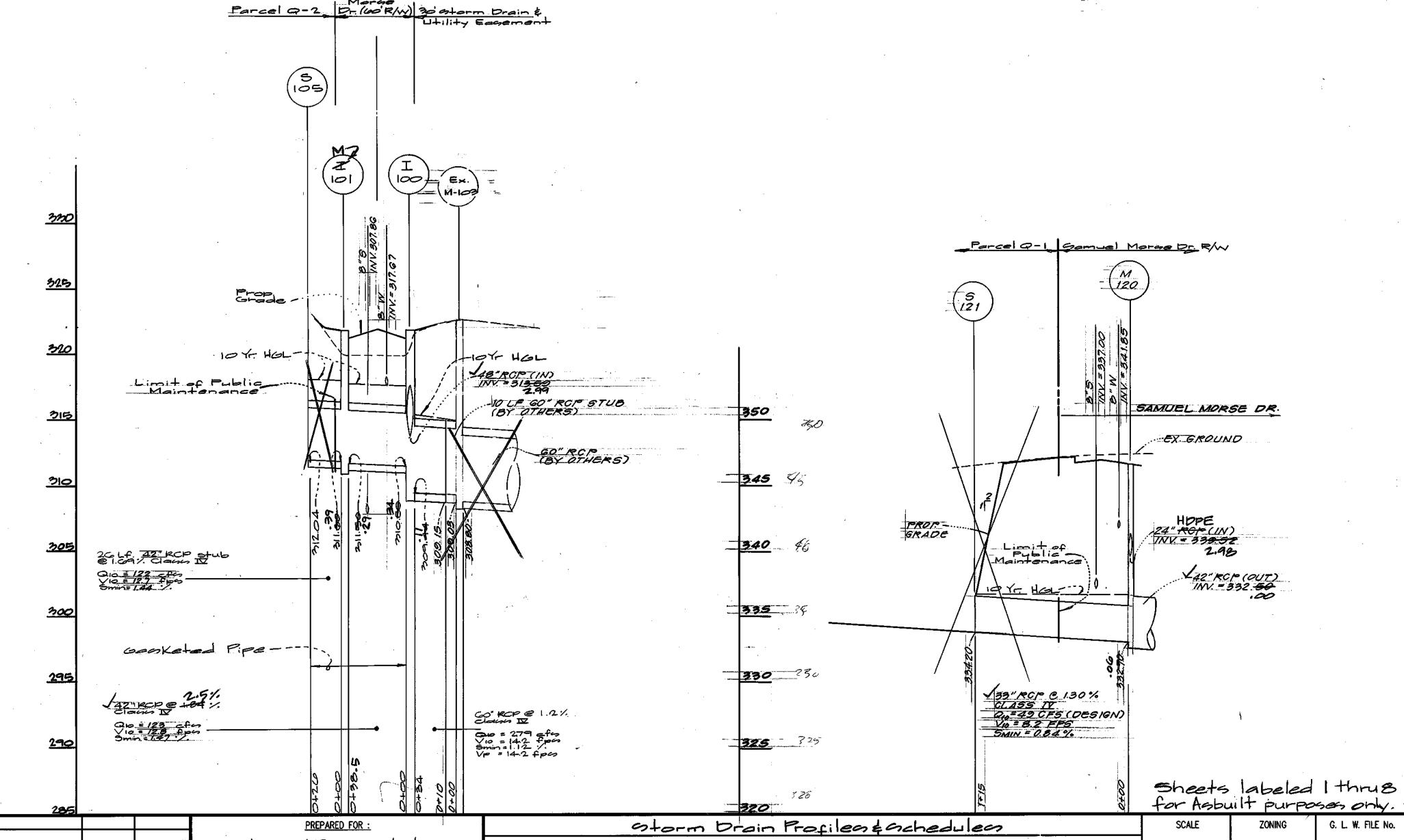
Conservation District. I have notified the developer that he/she

GENERAL NOTES G. L. W. FILE No. ZONING NEW TOWN & 97150 COLUMBIA GATEWAY AS SHOWN M-1Parcela Q-1, 0-2, 4 and Lota 11 & 12 SHEET TAX MAP - GRID AUGUST 1998 42-12 & 18 HOWARD COUNTY, MARYLAND



				St	ru	ctu	ıre	Sc	h	edule			
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size	type	quantity (l.f.)	Remarks
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60"	RCP CL. IS	~ 4	
33"	ROPCL IV	115	
			,



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

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. VIGS. CHK. \DRAWINGS\97150\DESIGN\97150RP4.DWG

The Howard Renearch & Development Corporation 10275 Little Patuxent Parkway Columbia, Maryland 21044 Attn. Greg Klar (410)992-6270 DATE REVISION BY APP'R.

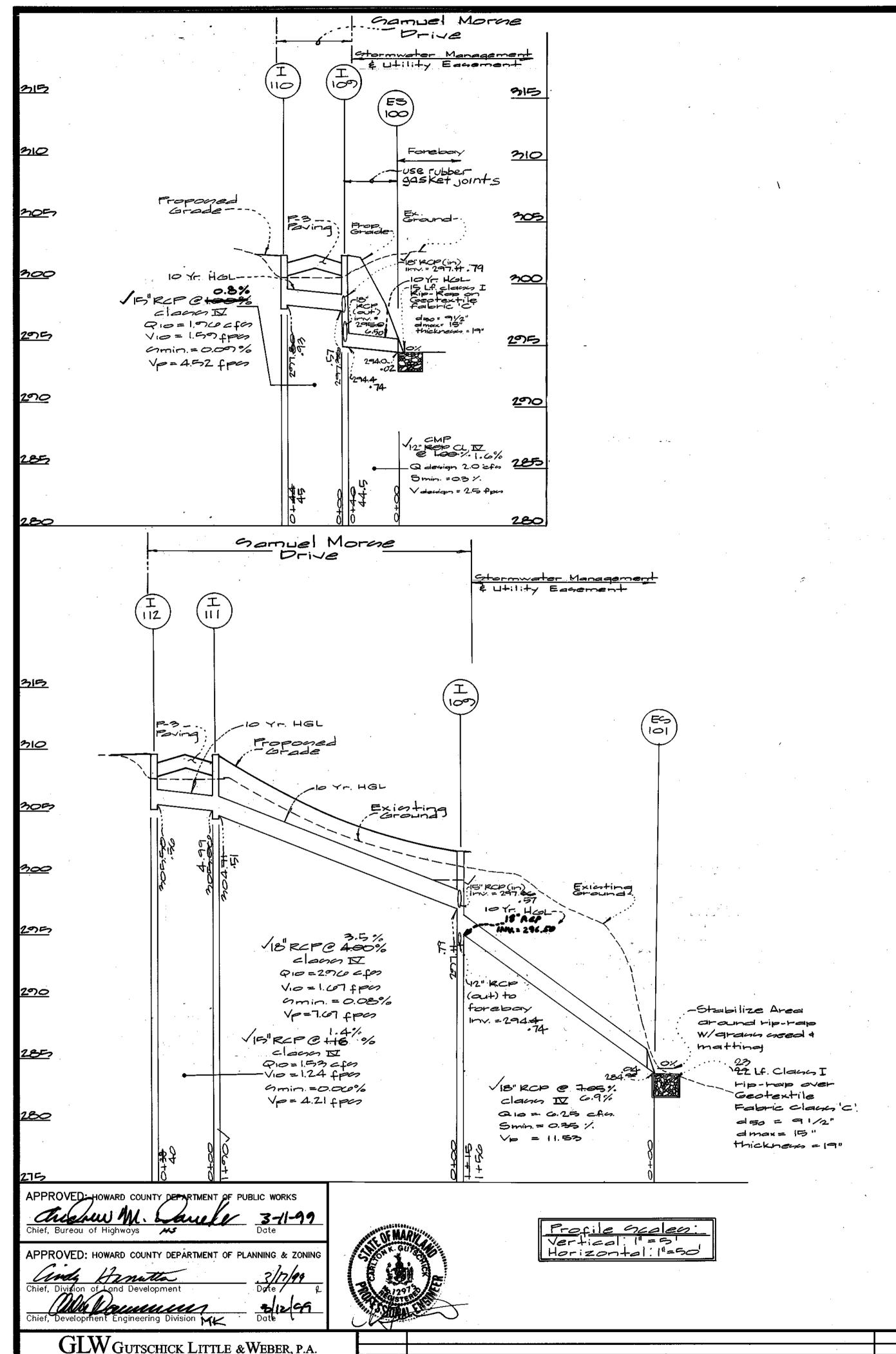
ELECTION DISTRICT No. 6

Parcelo Q-1, Q-2, U and Loto 11 & 12

ZONING G. L. W. FILE No. 97150 AS SHOWN DATE TAX MAP - GRID 2002 43-7

HOWARD COUNTY, MARYLAND AUGUST, 1998 42-12 \$ 18 7 SHEET 8

F-000-34



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Sheets labeled 1 thru8 for Asbuilt purposes only.

GLWGUTSCHICK 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.VSJ CHK.

\DRAWINGS\97150\DESIGN\97150RP4.DWG

DATE REVISION BY APP'R.

PREPARED FOR:

The Howard Renearch &

Development Corporation

10279 Little Patuxent Parkway

Columbia, Maryland 21044

Attn.: Greg Klar

(410)992-0970

Columbia Gateway
Parcelo'Q'-1;Q'-2 & U and Loto 11 & 12

ELECTION DISTRICT No. 6

SCALE ZONING G. L. W. FILE No.

AS SHOWN M-1 97150

DATE TAX MAP - GRID 43-7

AUGUST, 1998 42-12 & 15 OF 17

