	SHEET INDEX
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	ROAD PLAN & PROFILE
3	CROSS SECTIONS - CHURCH LANE
4	STREET TREE, GRADING & SEDIMENT CONTROL PLAN
5	DRAINAGE AREA MAP & LANDSCAPE PLAN
6	STORM DRAIN PROFILES
7	STORMWATER MANAGEMENT NOTES AND DETAILS
8	STORMWATER MANAGEMENT NOTES AND DETAILS
9	STORMWATER MANAGEMENT NOTES AND DETAILS
10	SEDIMENT CONTROL NOTES AND DETAILS
11	SOIL BORING PROFILES AND DETAIL SHEET
12	FOREST CONSERVATION PLAN AND DETAILS

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

ROCKY GLEN SUBDIVISION

LOTS 5 THRU 15

(A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565)

ZONED: R-20

TAX MAP NO. 18 GRID NO. 13 PARCEL NO. 41

ROAI	CLASSIFICATION	
ROAD NAME	CLASSIFICATION	R/W
ROCKY GLEN WAY	PUBLIC ACCESS PLACE	40'
		<u> </u>

		571	REET LIC	GHT CHART
DWG. No.	STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
2	ROCKY GLEN WAY	C.L. 5TA. 0+30		150-WATT H.P.S. VAPOR PREMIER POST-TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	ROCKY GLEN WAY	L.P. 5TA. 1+20	3' BEHIND CURB	100-WATT "PREMIER" H.P.S. VAPOR POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
2	ROCKY GLEN WAY	C.L. 5TA. 2+32	13' R	100-WATT "PREMIER" H.P.S. VAPOR POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

STREET NAME C.L. STATION OFFSET POSTED SIGN CODE ROCKY GLEN WAY 0+30 21' L STOP R1-1	TRA	AFFIC	CONT	ROL SIGN	5
	STREET NAME	C.L. STATION	OFFSET	POSTED SIGN	SIGN CODE
	ROCKY GLEN WAY			STOP	R1-1

FISHER, COLLINS & CARTER, INC.

IL ENGINEERING CONSULTANTS & LAND SURVEYORS

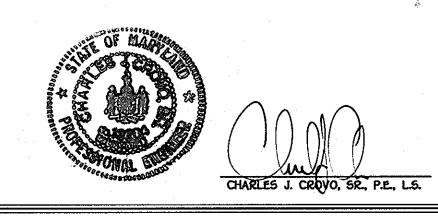
nial square office park - 10272 baltimore national pike

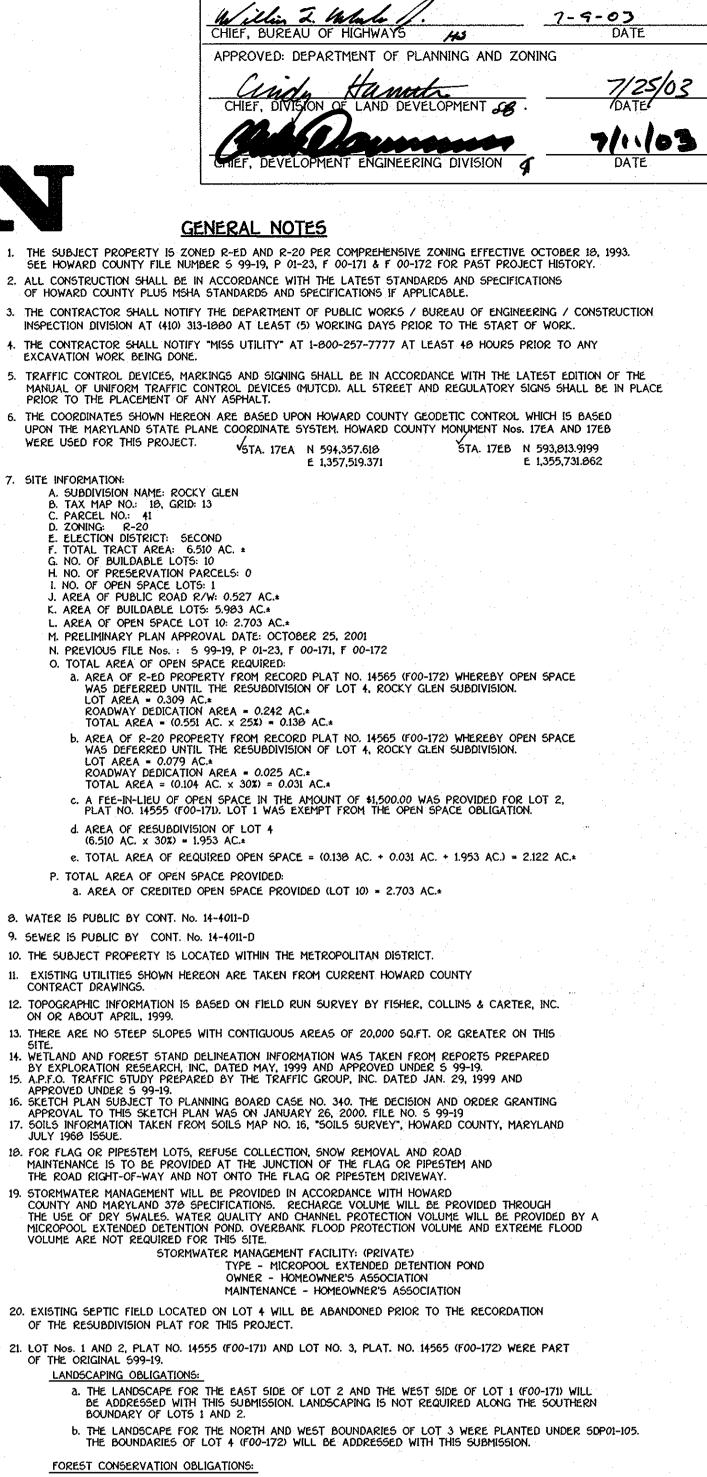
HOWARD COUNTY TO STATION ROLLING CONTROL STATION ROLLI
HOWARD COUNTY CONTROL STATION NO. 17EB NO. 17EB NO. 17EB NO. 17EB NO. 17EB
CHURCH SITE AND TYSON TO RED TYSON RED TY
VICINITY MAP

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 1200'

OWNER/DEVELOPER ROCKY GLEN, LLC. 3675 PARK AYENUE Ellicott City, MD 21043





APPROVED: DEPARTMENT OF PUBLIC WORKS

THE BOUNDARIES OF LOT 4 (F00-172) WILL BE ADDRESSED WITH THIS SUBMISSION.

a. THE FOREST CONSERVATION FOR LOTS 1 AND 2 (F00-171) HAVE BEEN MET WITH A FEE-IN-LIEU b. THE FOREST CONSERVATION FOR LOT 3 AND R.O.W. (F00-172) HAVE BEEN MET WITH THE ESTABLISHMENT OF A 0.12 AC. ON-SITE FOREST CONSERVATION EASEMENT (RETENTION).

a. AREA OF R-ED PROPERTY FROM RECORD PLAT NO. 14565 (F00-172), OPEN SPACE

WAS DEFERRED UNTIL THE RESUBDIVISION OF LOT 4, ROCKY GLEN SUBDIVISION. b. AREA OF R-20 PROPERTY FROM RECORD PLAT NO. 14565 (F00-172), OPEN SPACE

WAS DEFERRED UNTIL THE RESUBDIVISION OF LOT 4, ROCKY GLEN SUBDIVISION.

c. A FEE-IN-LIEU OF OPEN SPACE IN THE AMOUNT OF \$1,500.00 WAS PROVIDED FOR LOT 2, PLAT NO. 14555 (F00-171). LOT 1 WAS EXEMPT FROM THE OPEN SPACE OBLIGATION.

22. NO CEMETERIES EXIST ON THE PROPERTY. 23. THERE SHALL BE 95% COMPACTION PER AASHTO T-180 SPECIFICATIONS UNDER ALL IMPROVEMENTS.

24. THE CURB TRANSITION AT INLET I-1 SHALL COMPLY WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, DETAIL R-3.06. 25. STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT.

*STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

26. FINANCIAL SURETY FOR THE REQUIRED PERIMETER LANDSCAPING TREES (2) SHADE TREES AND 4 EVERGREEN TREES) AND THE REQUIRED 5.W.M. LANDSCAPING TREES (9 SHADE TREES AND 12 EVERGREEN TREES) HAS BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$11,400.00.

27. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS PROJECT HAS BEEN FULFILLED BY THE ON-SITE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.90 ACRES. THE REMAINING FOREST CONSERVATION OBLIGATION OF 0.60 AC. HAS BEEN FULFILLED BY A FEE-IN-LIEU PAYMENT SURETY FOR ON-SITE RETENTION (0.90 AC. x \$0.20/5Q. FT. = \$7,040.00), AND A FEE-IN-LIEU PAYMENT (0.60 x \$0.50/5Q. FT. = \$13,068.00). SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION. TOTAL FOREST CONSERVATION SURETY AMOUNT FOR THIS SUBDIVISION IS \$20,908.80. 28. SINCE THIS PLAN WAS SUBMITTED PRIOR TO NOVEMBER 15, 2001, IT MUST COMPLY WITH THE FOURTH EDITION OF THE

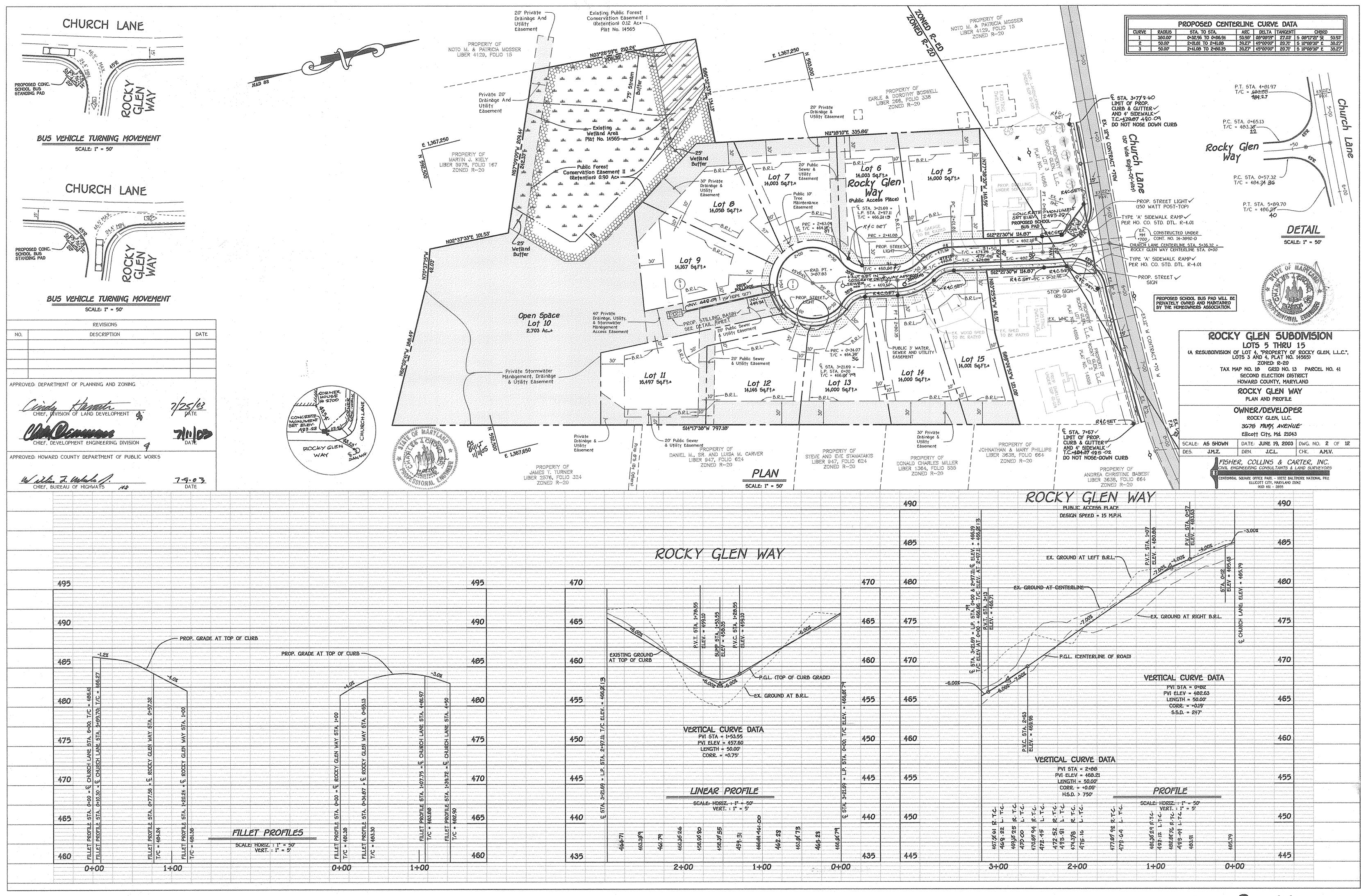
SUBDIVISION REGULATIONS AND THE NEW ZONING REGULATIONS, AS AMENDED BY COUNCIL BILL 50-2001.

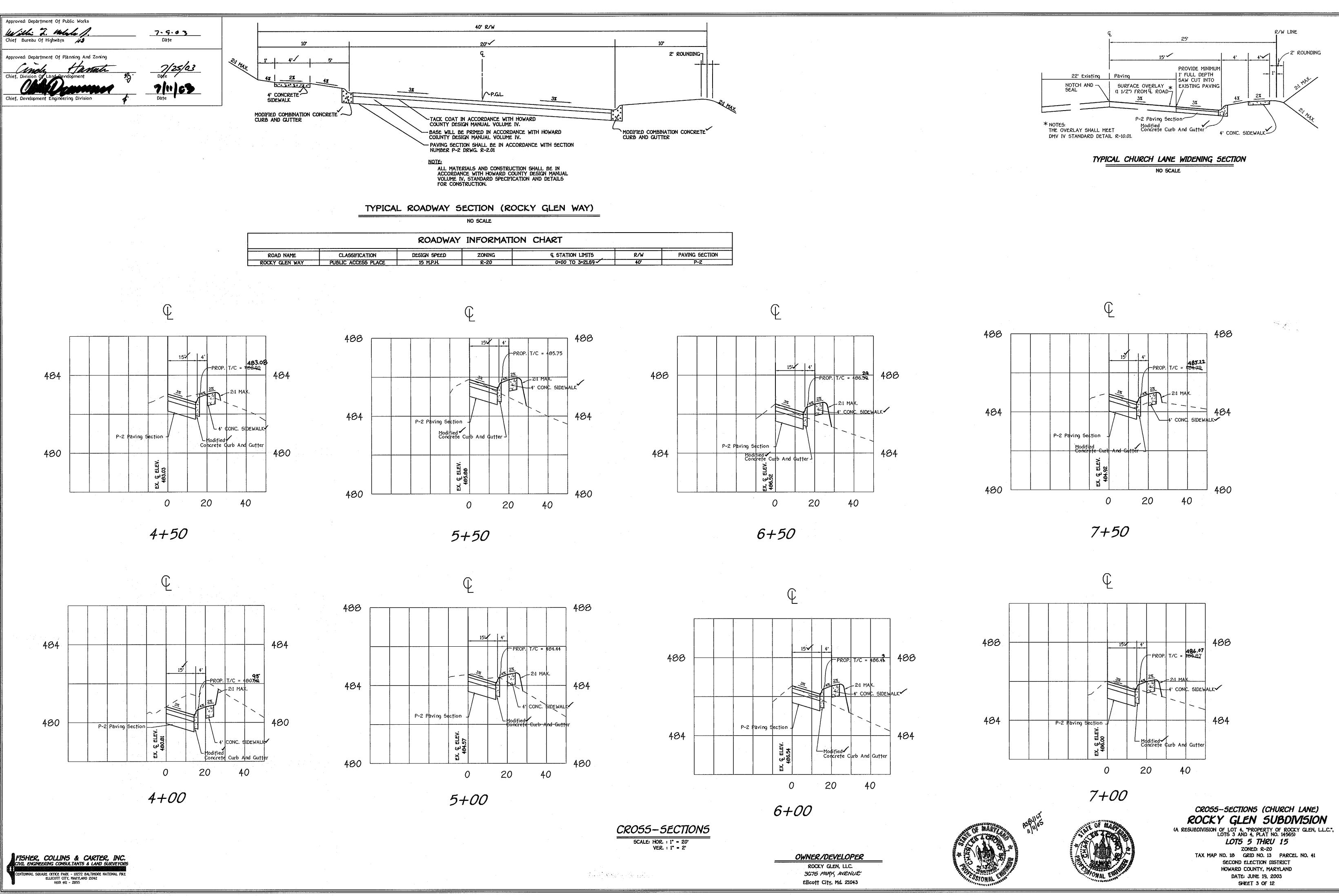


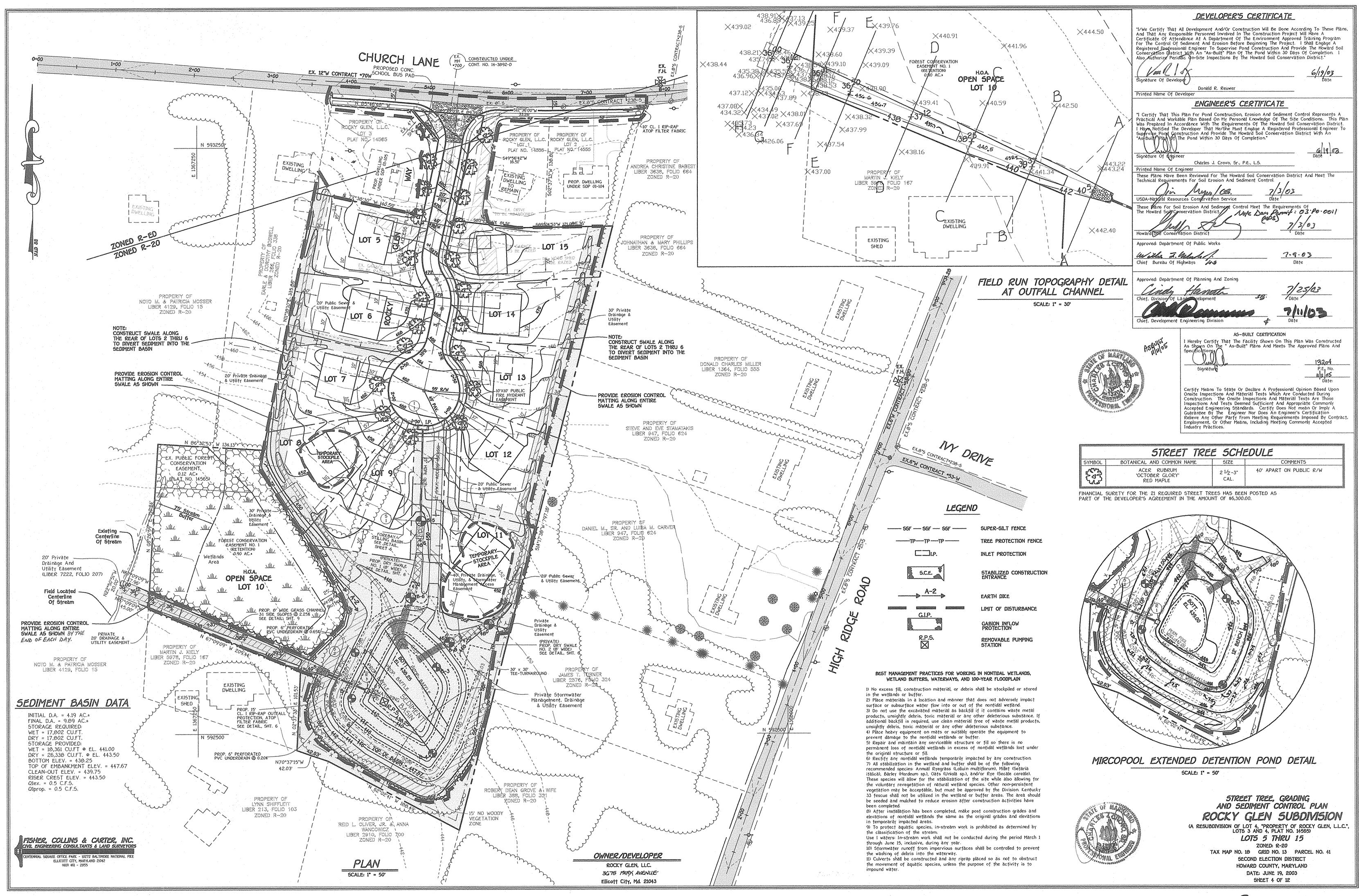
TITLE SHEET ROCKY GLEN SUBDIVISION LOTS 5 THRU 15 (A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565)

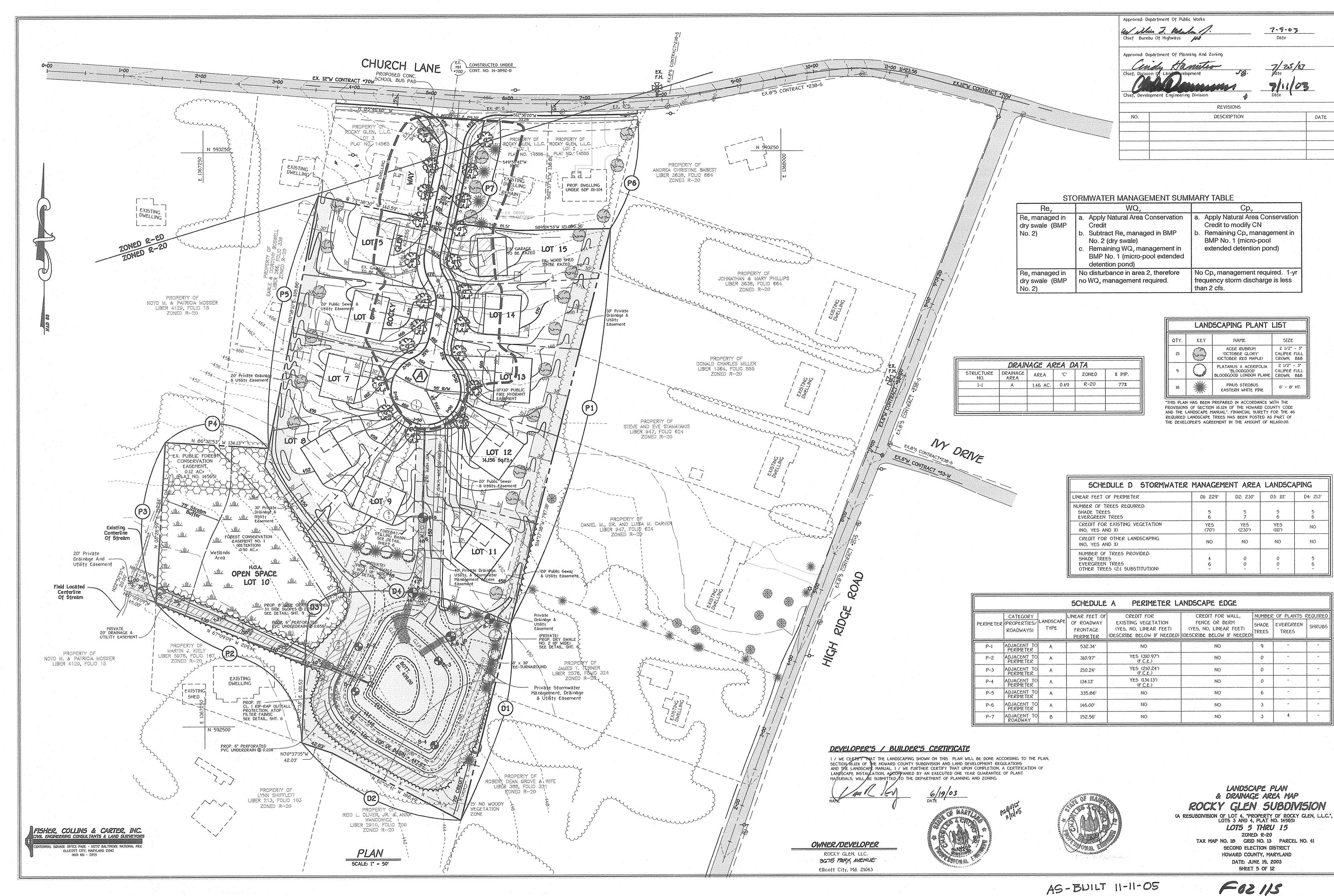
TAX MAP NO. 18 GRID NO. 13 PARCEL NO. 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JUNE 19, 2003 SHEET 1 OF 12

AS-BUILT 11-11-05







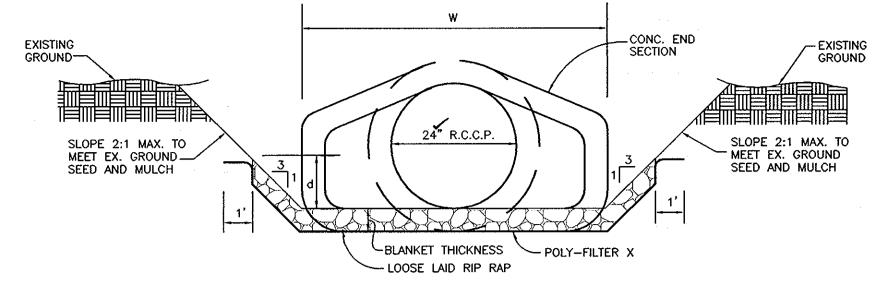


			STRI	UCTURE SCHEDU	LE			
STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	456.35.76		449.77.34	ROCKY GLEN WAY	L.P. STA. 1±53.55 1+38-50		A-10 🗸	5.D. 4.42
					113000			
					55.4l			
R-1	446.1729	441.0024	740.50.441.		55.41 N 592,562-44 E 1,367,479-4Q		CONC. RISER	PRECAST
					E 1,367,47940 64.65			
	·				4.76			
5-1	449.85.34	448.50.09	448.08.09		N 592,775:84 £ 1.367,533.68.33		H.D.P.E. END SECTION	
5-2	443.25 45		440.5Q45	· • • • • • • • • • • • • • • • • • • •	N 592,5 55.32 75.49 E 1,367,48 5.24 (6.8 0		TYPE "A" ENDWALL	MODIFIED / 5.D. 5.11

	PIPE SCHEDULE	
SIZE	MATERIAL	LENGTH
15"	HDPE	117'

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- 1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding
- 2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- 3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- 4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



RIP-RAP CHANNEL DESIGN DATA

0.0707

(F.P.S.)

5.0' 0.77' 0.04 1.80

R 2/3

0.6834

0.005

AREA

5.60 SF

PERIMETER

9.85'

0.5685

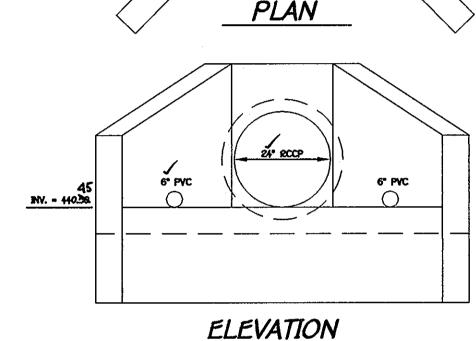
PE 2:1 MAX. TO T EX. GROUND D AND MULCH 1' 1' SLOPE 2:1 MAX. TO MEET EX. GROUND SEED AND MULCH	CHIEF, DEVELOPMENT E	NGINEERING DIVISION * REVISIONS	7/11/03 DATE	
BLANKET THICKNESS POLY-FILTER X LOOSE LAID RIP RAP	NO.	DESCRIPTION		DATE
RIP RAP CHANNEL DETAIL NO SCALE				

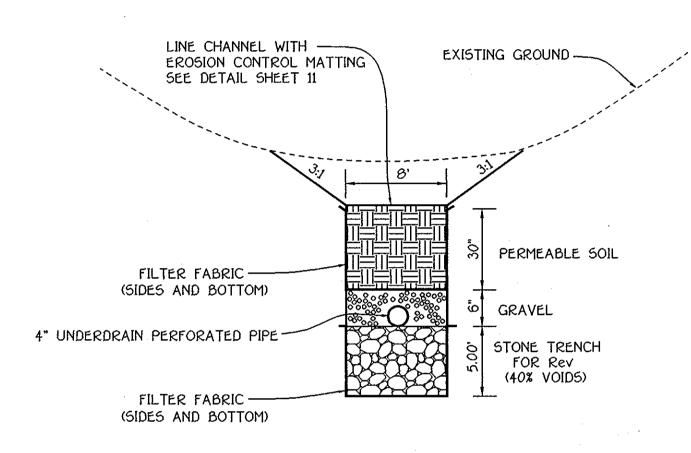
19" | 10.10 CFS | 24"

Q RIP-RAP SIZE BLANKET (C.F.S.) d 50 d MAX THICKNESS

10.10 9.5" 15"

STRUCTURE 24° RCCP



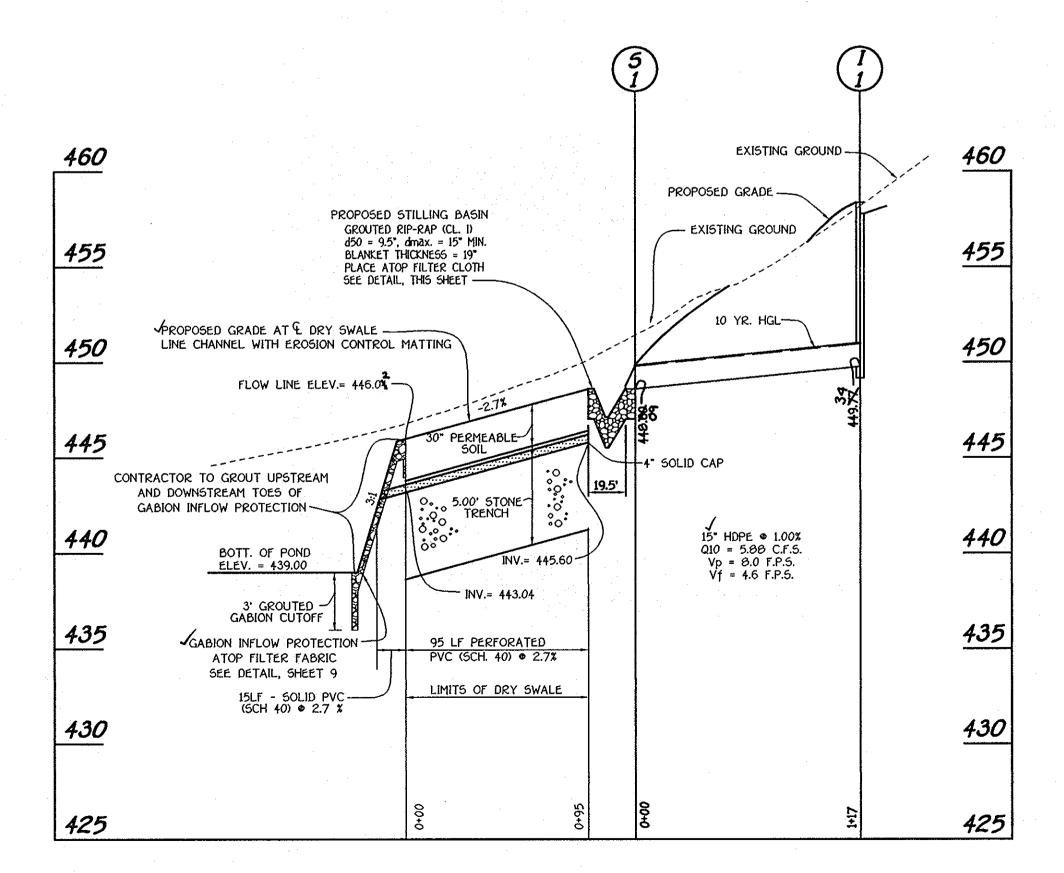


DRY SWALE DETAIL NOT TO SCALE

MODIFIED TYPE "A" HEADWALL

NOT TO SCALE

NOTE: SEE S.D. 5.11 FOR DIMENSIONS AND REINFORCEMENT.





460 455 - EXISTING GROUND 455 PROPOSED GRADE AT & DRY SWALE ----LINE CHANNEL WITH EROSION CONTROL MATTING 450 FLOW LINE ELEV .= 445.90 -· 30" PERMEABLE 445 CONTRACTOR TO GROUT UPSTREAM AND DOWNSTREAM TOES OF GABION INFLOW PROTECTION 440 BOTT. OF POND ELEV. = 439.00 - INV.= 442.90 3' GROUTED --60 LF PERFORATED PVC (5CH. 40) @ 4.0% GABION INFLOW PROTECTION ATOP FILTER FABRIC SEE DETAIL, SHEET 9 LIMITS OF DRY SWALE 15LF - SOLID PVC ----(5CH 40) \$ 4.0% 430 425

> DRY SWALE NO. 2 PROFILE SCALE: HORIZ. : 1" = 50" VERT. : 1" = 5"

- GROUTED RIP-RAP (CL. I) d50 = 9.5", dmax. = 15" MIN. BLANKET THICKNESS = 19" PLACE ATOP FILTER CLOTH <u>PLAN</u> -GROUTED RIP-RAP (CL. 1) h/3 d50 = 9.5", dmax. = 15" MIN BLANKET THICKNESS = 19" PLACE ATOP FILTER CLOTH

TYP. STILLING BASIN OUTFALL DETAIL

PROFILE

			5TIL	LING	BASIN	DAT	A			
STRUCTURE NO.	INV. A	EL. B	С	D	£	F	h	М	ai	X
5-1	448.60	448.60	6.0	1.25'	2.0'	5.5'	1.5'	2.44'	1.58'	10.0

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

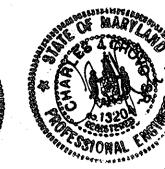
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation. Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter slopes where:
- 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 supplies 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 representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
- II. Topsoil Specifications Soil to be used as topsoil must meet the following:
 - 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 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 11/2" in diameter.
 - ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, 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 of 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.
- 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 I Vegetative Stabilization Methods and Materials.
- 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 content greater than 500 parts per million shall not be used.
- d. No sod or seed shall be placed on soil which has been treated with soil sterilants or
- chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
- Note: 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 topsoi
- ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization Section I Vegetative Stabilization Methods and Materials.
- V. Topsoil Application
 - i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- ii. Grades on the areas to be top soiled, which have been previously established, shall be maintained, albeit 4" 3" higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4" 0" 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 top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- iv. Topsoil shall not be placed while the topsoil or subsoil is in a 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.
- 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 26.04.06.
- 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 compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
- 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 the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.
- References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. 1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.





STORM DRAIN PROFILES ROCKY GLEN SUBDIVISION (A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565)

LOTS 5 THRU 15 ZONED: R-20

TAX MAP NO. 18 GRID NO. 13 PARCEL NO. 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JUNE 19, 2003

FISHER, COLLINS & CARTER, INC. ivil engineering consultants a land surveyor: BAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

AS-BUILT 11-11-05

OWNER/DEVELOPER

ROCKY GLEN, LLC.

Ellicott City, Md. 21043

3G75 PARK AVENUE

SHEET 6 OF 12

STORM WATER MANAGEMENT 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. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

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

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC. SC. CH. or CL and must have at least 30% passing the .200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber fired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

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

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum

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

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than fou feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent thating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adiacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated

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

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Stel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling banks or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

3. Connections- All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be

BFISHER, COLLINS & CARTER, INC.

ivil engineering consultants a land surveyor:

ITENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrupated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide

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

5. Backfilling shall conform to "Structure Backfill".

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

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

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

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

Plastic Pipe

The following criteria shall apply for plastic pipe: 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirement of AASHTO M252 Type 5, and 12" through 24" inch shall meet the

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".

requirement of AASHTO M294 Type 5.

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

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

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

Rock Riprap

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

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C

Care of Water during Construction

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

Stabilization

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

Erosion and Sediment Control

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

OPERATION AND MAINTENANCE

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

OWNER/DEVELOPER

ROCKY GLEN, LLC. 3G75 PARK AVENUE Ellicott City, Md. 21043

Embankment and Cut-off Trench Construction

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER

SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED.

OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS

ALL FILL MATERIALS MUST BE PLACED AND COMPACTED WITH MD SCS 378

UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH

THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK

REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFOLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC. SC, CH, OR CL. IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. BASED ON OUR VISUAL CLASSIFICATIONS IT APPEARS THAT SOME OF THE ON-SITE SOILS, ESPECIALLY THE NEAR SURFACE SOILS, WILL BE SUITABLE FOR USE AS CORE TRENCH MATERIAL. IT IS RECOMMENDED THAT ADDITIONAL EXPLORATION AND LABORATORY TESTING BE PERFORMED PRIOR TO POND

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL

- 1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE. 2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY
- AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY. 3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED

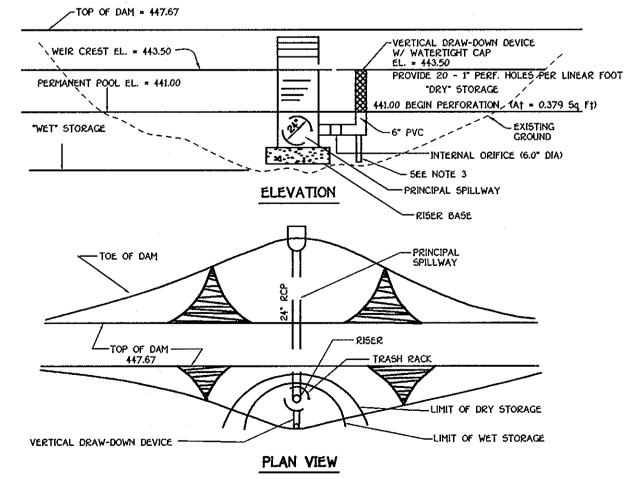
TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE

OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA

- 4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI. AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982; INCLUDING ALL REVISIONS
- 5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS FOR IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE(3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
- 6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE. 7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS
- 8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS. 9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 014 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60% OF THE SPECIFIED MINIMUM VALUE
- OVER AT LEAST 90% OF THE VISIBLE REFLECTIVE SURFACE.

 10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE. 11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR
- PERMITTEE HAS THE OPTION OR PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART OF HIS OWN DESIGN. FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBE BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE 5HALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED. CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING
- 12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER. UNLESS OTHERWISE 13 TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FORM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.

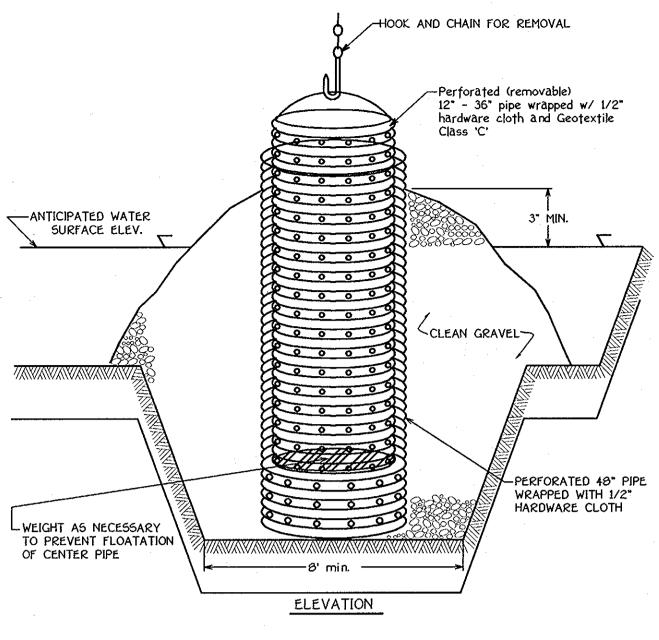
5.W.M./SEDIMENT BASIN VERTICAL DRAW-DOWN DEVICE



CONSTRUCTION SPECIFICATIONS

- 1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE. 2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA
- OF THE INTERNAL ORIFICE 3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
- 4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1' BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE

REMOVABLE PUMPING STATION



Construction Specifications

1. The outer pipe should be 40" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations. 2. After installing the outer pipe, backfill around outer pipe with 2" aggregate

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C. 4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin

Facility Shall Be Inspected Annually And After Major Storms. Inspections Should Be Performed

Top And Side Slopes Of The Embankment Shall Be Mowed A Minimum Of Two (2) Times A Year,

Visible Signs Of Erosion In The Pond As Well As Rip-Rap Outlet Area Shall Be Repaired As Soon

The Low Flow PVC Pipes Shall Be Visually Inspected For Clogging A Minimum Of Two (2) Times A Year, Once In June And Once In September. This Should Be Accomplished At The Same Time

Structural Components Of The pond Such as The Dam, Riser Structure And The Pipes Shall Be

Repaired Upon The Detection Of Any Damage. The Components Should Be Inspected During

Sediment Should Be Removed When Its Accumulation Significantly Reduces The Design Storage,

Interfere With The Function Of The Riser, When Deemed Necessary For Aesthetic Reasons, Or

When Deemed Necessary By The Howard County Department Of Public Works.

Once In June And Once In September. Other side Slopes, The Bottom Of The Pond, And

Debris And Litter Next To The Outlet Structure Shall Be Removed During Regular Mowing

During Wet Weather To Determine If The Pond Is Functioning Properly.

Sediment Should Be Removed When Its Accumulation Reaches 6".

Maintenance Access Should Be Mowed As Needed.

As The Mowing Of The Embankment.

B. NON-ROUTINE MAINTENANCE

Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District with An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District." signature Of Developer Donald R. Reuwer Printed Name Of Developer 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-Builty Plan of the Pond Within 30 Days Of Completion." 6 19/03

DEVELOPER'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

Printed Name Of Engineer [hese Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Soil Erosion And Sediment Control.

Charles J. Crovo, Sr., P.E., L.S.

USDA-Natural Resources Conservation Service These Plans For Soil Erosion And Sediment Control Meet The Requirements Of Note: Dan Parmit 03. po.0011 The Howard Soil Conservation District

Willen 2. Mala / Chief Bureau Of Highways

Approved: Department Of Public Works

Signature Of Engineer

Approved: Department Of Planning And Zoning

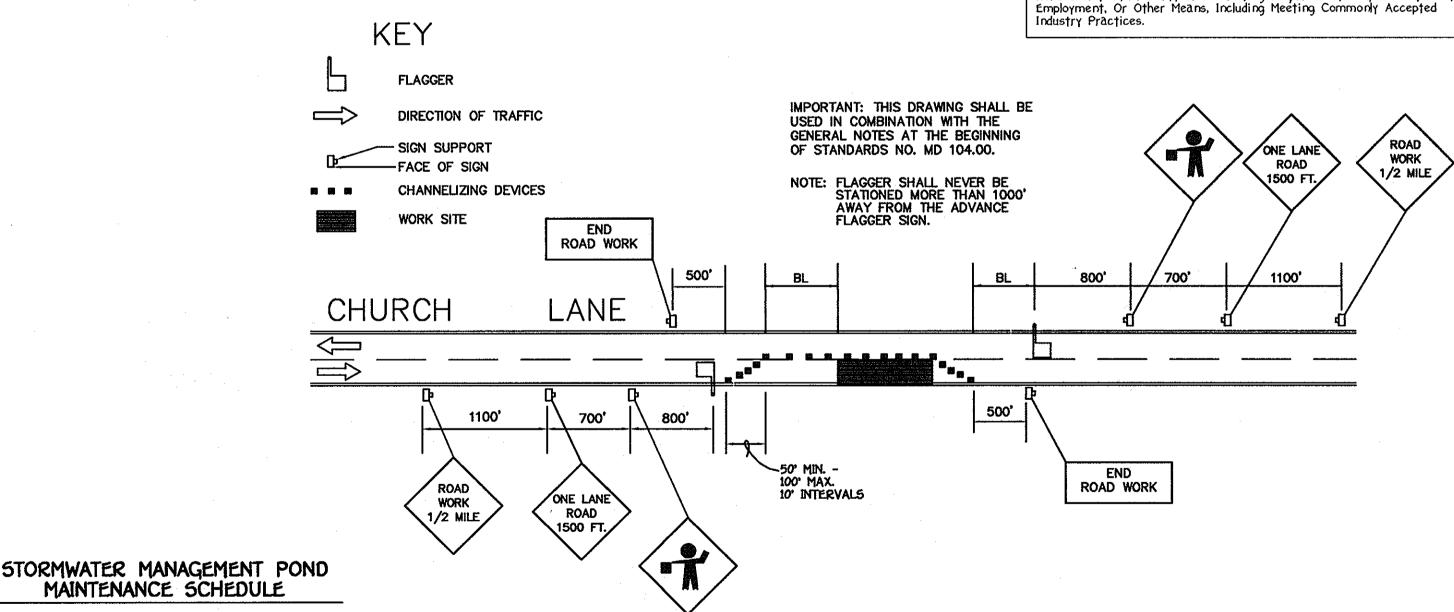
Chief, Development Engineering Division A5-BUILT CERTIFICATION I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And

7-9.03

13204 P.E. No. Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A

Guarantee By The Engineer Nor Does An Engineer's Certification

Relieve Any Other Party From Meeting Requirements Imposed By Contract.



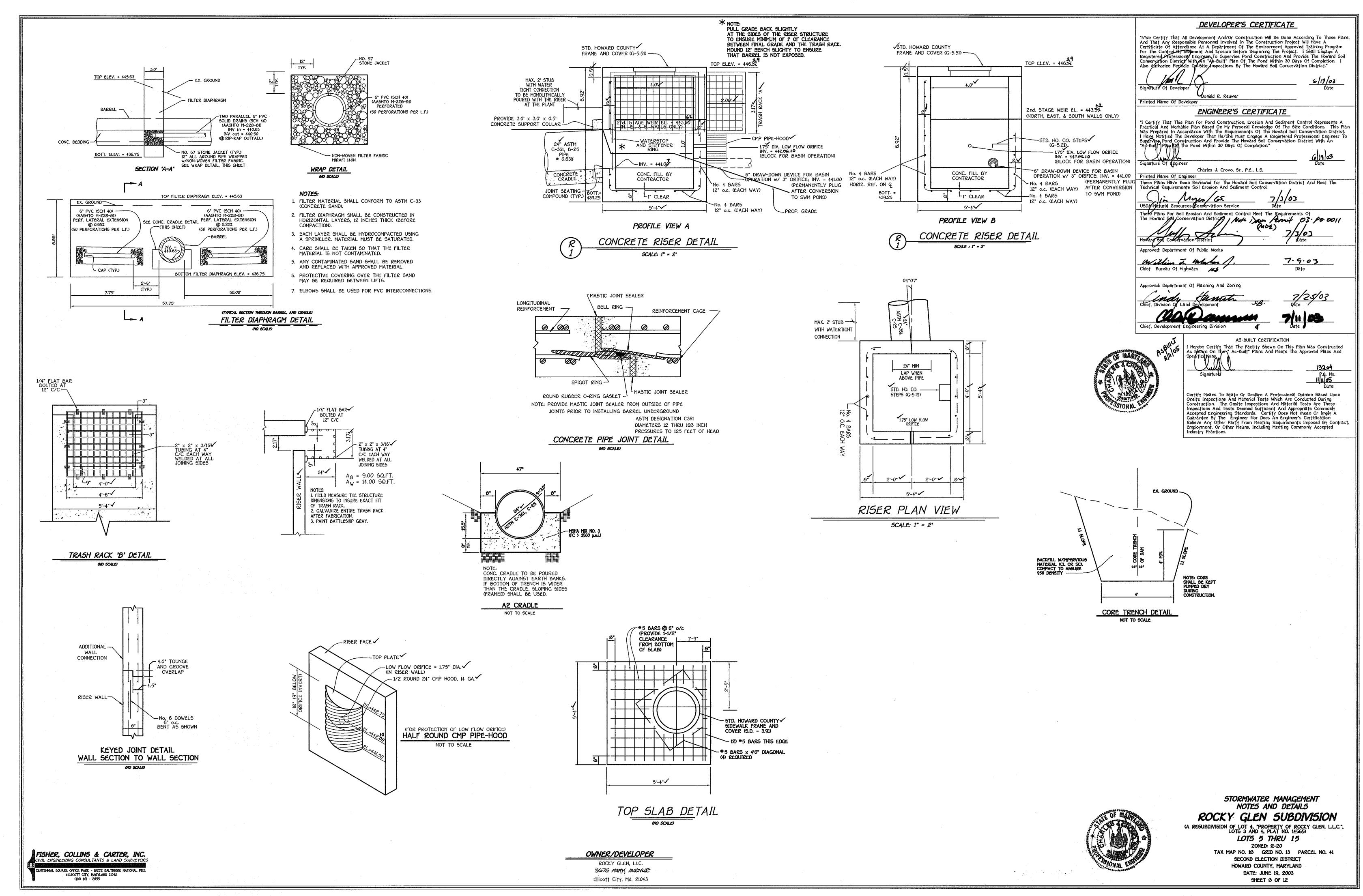
(STANDARD NO. MD 104.31-01) TEMPORARY TRAFFIC CONTROL PLAN

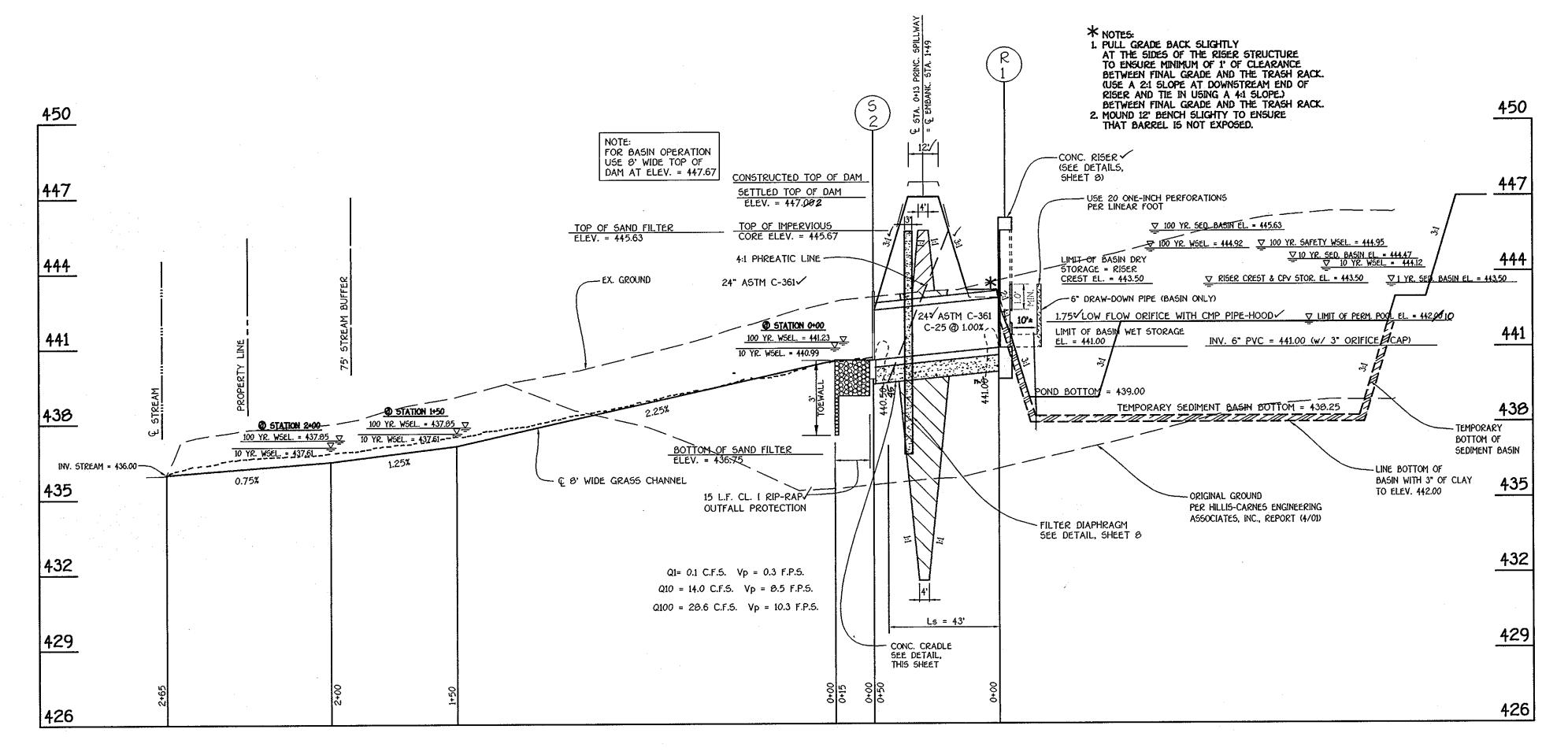


STORMWATER MANAGEMENT NOTES AND DETAILS ROCKY GLEN SUBDIVISION (A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565)

> ZONED: R-20 TAX MAP NO. 16 GRID NO. 13 PARCEL NO. 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JUNE 19, 2003 SHEET 7 OF 12

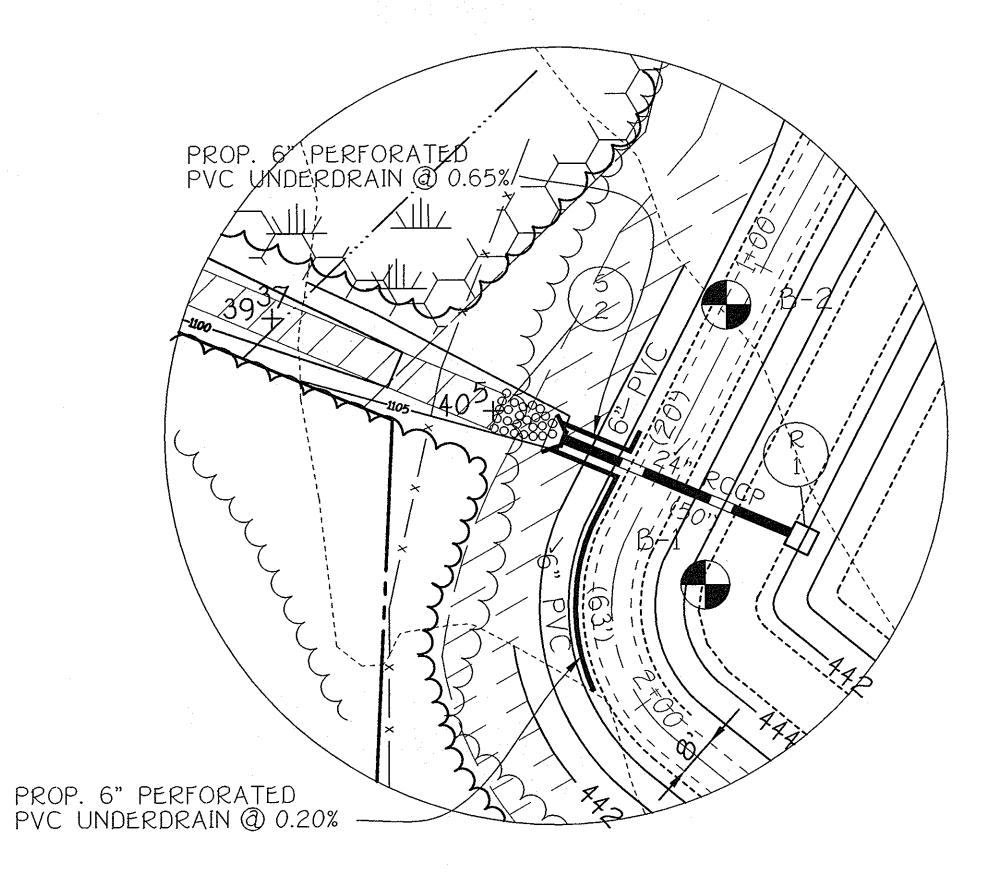
LOTS 5 THRU 15





S.W.M. FACILITY NO. 1
PRINCIPAL SPILLWAY PROFILE

SCALE: HOR.: 1* = 30'
VER.: 1" = 3'



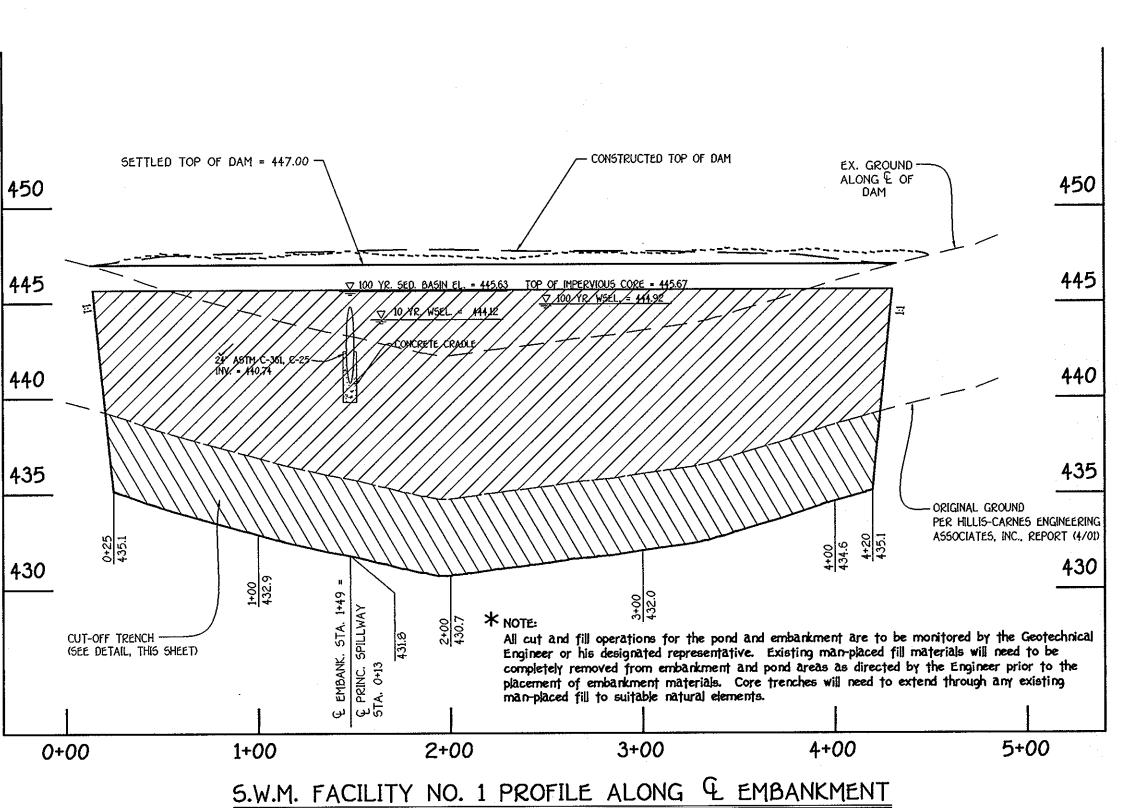
SAND FILTER PLAN VIEW DETAIL

5CALE: 1' = 20'

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIHORE NATIONAL PIKE



SCALE: HORIZ. 1" = 50'

VERT. 1" = 5"

OWNER/DEVELOPER

ROCKY GLEN, LLC.

3G7G FARK AVENUE

Ellicott City, Md. 21043

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Centrol 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." 6/17/03 Printed Name Of Developer 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-Builty Plan Laff The Pond Within 30 Days Of Completion." 6 19 13 Signature Of Engineer Charles J. Crovo, Sr., P.E., L.S. Printed Name Of Engineer These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical sequirements Soil Erosion And Sediment Control. USDA-Natural Resources Conservation Service These Plans For Soil Erosion And Sediment Control Meet The Requirements Of Approved: Department Of Public Works 7.9.03 Chief Bureau Of Highways Approved: Department Of Planning And Zoning

DEVELOPER'S CERTIFICATE



AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The As-Built" Plans And Meets The Approved Plans And Specifical Trans

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

A. ROUTINE MAINTENANCE

Facility Shall Be Inspected Annually And After Major Storms. Inspections Should Be Performed During Wet Weather To Determine If The Pond Is Functioning Properly.

Signature

Top And Side Slopes Of The Embankment Shall Be Mowed A Minimum Of Two (2) Times A Year, Once In June And Once In September. Other side Slopes, The Bottom Of The Pond, And Maintenance Access Should Be Mowed As Needed

Debris And Litter Next To The Outlet Structure Shall Be Removed During Regular Mowing Operations And As needed.

Visible Signs Of Erosion In The Pond As Well As Rip-Rap Outlet Area Shall Be Repaired As Soon As It Is Noticed.

B. NON-ROUTINE MAINTENANCE

Structural Components Of The pond Such as The Dam, Riser Structure And The Pipes Shall Be Repaired Upon The Detection Of Any Damage. The Components Should Be Inspected During Routine Maintenance Operations.

Sediment Should Be Removed When Its Accumulation Significantly Reduces The Design Storage, Interfere With The Function Of The Riser, When Deemed Necessary For Aesthetic Reasons, Or When Deemed Necessary By The Howard County Department Of Public Works.



STORMWATER MANAGEMENT NOTES AND DETAILS ROCKY GLEN SUBDIVISION

(A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565)

LOTS 5 THRU 15

ZONED: R-20

TAX MAP NO. 18 GRID NO. 13 PARCEL NO. 41
SECOND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 19, 2003
SHEET 9 OF 12

20.0 STANDARDS AND SPECIFICATIONS VEGETATIVE STABILIZATION

DEFINITION Using vegetation as cover for barren soil to protect it from forces that cause erosion

PURPOSE Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources. CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration Olup to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc. **EFFECTS ON WATER QUALITY AND QUANTITY**

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

Install erosion and sediment control structures (either temporary of permanent) such as diversions grade stabilization structures, berms, waterways, or sediment control basins. ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites

having disturbed area over 5 acres.

8. Soil Amendments (Fertilizer and Lime Specifications) Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a *100 mesh sieve and 98-100% will pass through a *20 mesh sieve. Incorporate lime and fertilizer into the top 3-5° of soil by disking or other suitable means.

Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of 3° to 5° by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be

rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. in corporate lime and fertilizer into the top 3-5° of soil by disking or other suitable means.

ii. Permanent Seeding

a. Minimum soil conditions results of the slope.

rmanent seeding

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil off shall be between 6.0 and 7.0. Soluble salts shall be less than 500 parts per million (ppm).

The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass of serecia lespedezas is to be planted, then a sandy soil (30% silt

plus clay) would be acceptable. Soil shall contain 1.5% minimum organic matter by weight. 4. Soil shall contain 1.5% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5° to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from

sliding down a slope.

Apply soil amendments as per soil test or as included on the plans.

Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like storage and branches, the surface of t and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer kaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on

D. Seed Specifications i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags_shall be made available to the inspector to verify type and rate of seed used. ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcas or drop seeded, or a cultipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen, P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac. Lime - use only ground agricultural limestone. Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one o not use burnt or hydrated lime when hydrose

Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (In order of preference) Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, mody, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1055).
- 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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT
- OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1. b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
 GRADING NECESSARY TO INSTALL STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES TO BE PERFORMED FIRST. REMAINDER OF THE GRADING TO BE PERFORMED AFTER STORM DRAINS, SEDIMENT TRAP AND EARTH DIKES ARE INSTALLED. 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 SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER

3:1 SLOPE

PERSPECTIVE VIEW

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 6.510 ACRES AREA DISTURBED 5.40 1.50 ACRES ACRES AREA TO BE ROOFED OR PAVED DE VEGETATIVELY STABILIZED 3.90 ACRES TOTAL FILL 15,000 CU.YDS OFFSITE WASTE/BORROW AREA LOCATION N/A CU.YDS.

GERMINATION AND ESTABLISHMENT OF GRASSES.

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 CONTROLS MUST BE PROVIDED, IF DEEMED

NECESSARY BY THE HOWARD COUNTY 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 THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

I FISHER, COLLINS & CARTER, INC. VIL ENGINEERING CONSULTANTS & LAND SURVEYORS SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL P ELLICOTT CITY, MARYLAND 21042

- ii. Wood Cellulose Fiber Mulch (WCFM)

 a. WCFM shall consist of specially prepared wood cellulose processed into a uniform
- fibrous physical state.

 WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry. WCFM, including dye, shall contain no germination or growth inhibiting factors.

 WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed
- in contact with the soil without inhibiting the growth of the grass seedlings. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
- will be phytol-toxic.

 f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

 Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

 Mulching Seeded Areas Mulch shall be applied to all seeded areas immediately after seeding.

 i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed accordance with these seedifications.
- accordance with these specifications.

 ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch
- ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1° and 2°. Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
 H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
- preference), depending upon size of area and erosion hazard:
- A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

 Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
- of water.

 iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Table, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
- Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long. 1. Incremental Stabilization - Cut Slopes All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes
- shall be excavated and stabilized in equal increments not to exceed 15°. Construction sequence (Refer to Figure 3 below):
- a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 b. Perform Phase 1 excavation, dress, and stabilize. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as
- necessary. Perform final phase excavation, dress and stabilize. Overseed previously seeded

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization. J. Incremental Stabilization of Embankments - Fill Slopes

- Embarkments shall be constructed in lifts as prescribed on the plans.
- ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches

 15", or when the grading operation ceases as prescribed in the plans.

 iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-crosive manner to
 - of the embankment to intercept surface runoff and convey it down the slope in a non-erosive a sediment trapping device.

 Construction sequence: Refer to Figure 4 (below).

 a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.

 b. Place Phase 1 embankment, dress and stabilize.

 c. Place Phase 2 embankment, dress and stabilize.

 d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as pecessary.
- areas as necessary.

 Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in Soil tests are not required for Temporary Seeding.

5e	ed Mixture (Hardi: From	ness Zone6b) Table 26			Fertilizer Rațe	Lime Rate
No.	Species	Application Rate (b/ac)	Seeding Dates	Seeding Depths	(10-10-10)	
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas

A. Seed mixtures - Permanent Seeding

TRAP/BASIN BOTTOM

PROFILE ALONG CENTERLINE

TRAP/BASIN

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at

	Seed Mixture (Hardiness Zo From Table 2					Fertilizer R (10-20-20)	late	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (05%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/	175 lb/ac	175 lb/ac (4 lb/	2 tons/ac (100 lb/
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"	1000sf)	1000sf)	1000sf)	1000sf)

STANDARD SYMBOL

GABION INFLOW PROTECTION

NOT TO SCALE

36" MINIMUM FENCE POST LENGTH PERSPECTIVE VIEW - FENCE POST SECTION MINIMUM 20" ABOVE GROUND EMBED GEOTEXTILE CLASS F TOP VIEW - FENCE POST DRIVEN A MINIMUM OF 8" VERTICALLY MINIMUM OF 16" INTO THE GROUND CROSS SECTION STAPLE STANDARD SYMBOL JOINING TWO ADJACENT SILT FENCE SECTIONS 1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot. 2. Geotextile shall be fastened securely to each fence post with wire ties or staples at too and mid-section and shall meet the following requirements for Geotextile Class F: 50 lbs/in (min.) Test: MSMT 509 Tensile Modulus Test: MSMT 509 20 lbs/in (min.) 0.3 gal ft / minute (max.)2 Test: MSMT 322 Flow Rate 75% (min.) Filtering Efficiency 3. Where ends of geotextile fabric come together, they shall be overlapped folded and stapled to prevent sediment bypass 4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height DETAIL 22 - SILT FENCE NOT TO SCALE -- MOUNTABLE -50' MINIMUM EXISTING PAVEMENT --- EARTH FILL ** GEDTEXTILE CLASS 'C'~ --- PIPE AS NECESSAR' OR BETTER MINIMUM 6' OF 2'-3' AGGREGATE DVER LENGTH AND WIDTH OF -EXISTING GROUND PROFILE -- * 50' MINIMUM-LENGTH MIN. 10' MINIMUM PAVEMENT STANDARD SYMBOL

-16" MINIMUM HEIGHT OI

GEOTEXTILE CLASS F

10' MAXIMUM CENTER TO

- Center _

1. Length - minimum of 50' (*30' for single residence lot).

SECTION

Construction Specifications

baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes,

4. Gabions shall be installed in accordance with manufacturers recommendations.

5. Gabion Inflow Protection shall be used where concentrated flow is present

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion

2. Geotextile Class C shall be installed under all gabion baskets.

3. The stone used to fill the gabion baskets shall be 4" - 7".

and a 3' bottom width.

2. Width - 10' minimum, should be flared at the existing road to provide a turning

Construction Specification

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2' to 3') or reclaimed or recycled concrete equivalent shall be placed at least 6' deep over the length and width of the

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6° of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6' minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE

OWNER/DEVELOPER

ROCKY GLEN, LLC.

Ellicott City, Md. 21043

3G75 PARK AVENUE

Construction Specifications

Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 10" spacing between staples.

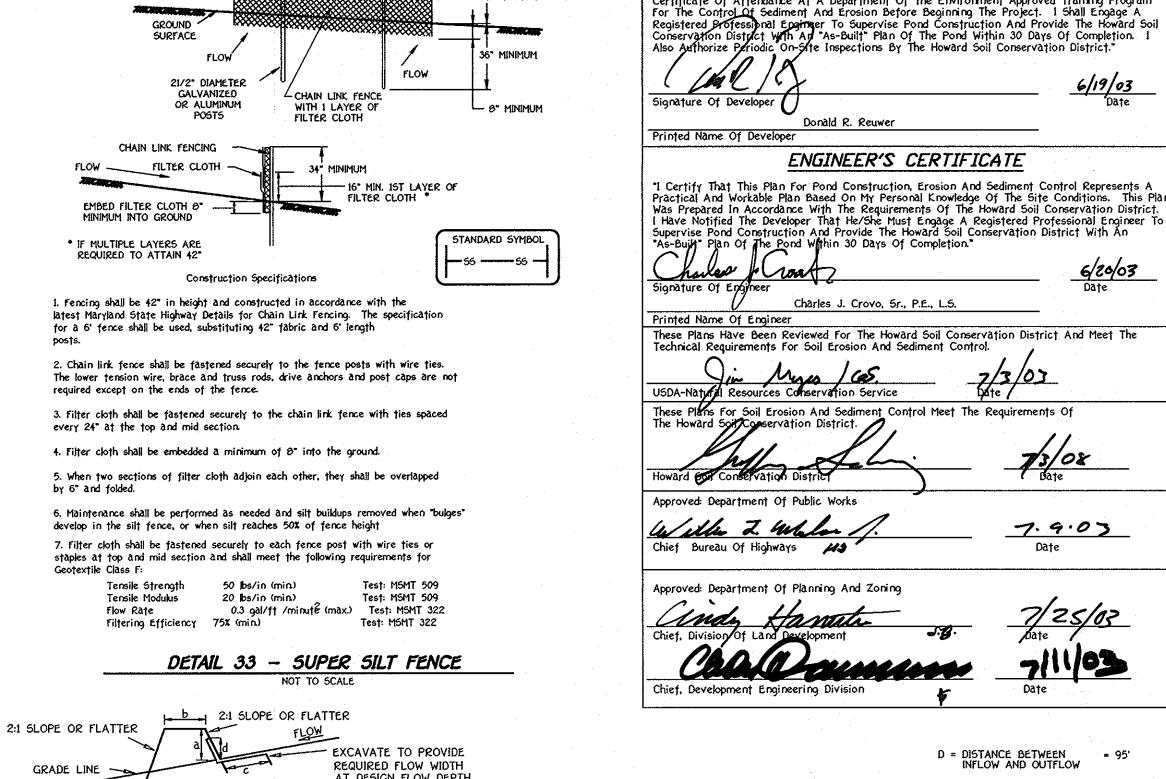
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil. 4. Staples shall be placed 2' apart with 4 rows for each strip, 2

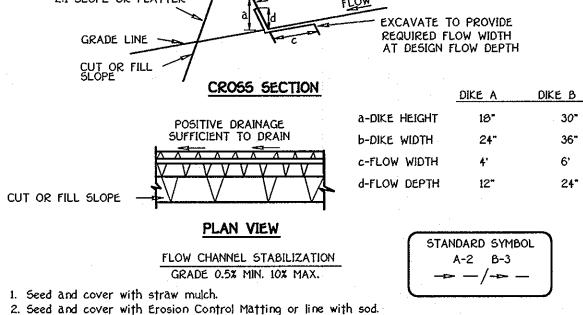
outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.

The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.





3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive 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 trapping device. 3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede

6. Fill shall be compacted by earth moving equipment.

with the proper functioning of the dike.

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

8. Inspection and maintenance must be provided periodically and after each rain event. EARTH DIKE

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT, AND MOE POND PERMIT.

2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24 HOURS BEFORE
STARTING WORK. NOTIFY MDE DAM SAFETY 5 DAYS BEFORE POND CONSTRUCTION.

3. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS (2 DAYS). CLEAR AND GRUB FOR SEDIMENT BASIN/SWM POND ONLY. INSTALL STABILIZED CONSTRUCTION ENTRANCE. (2 WEEKS)

4. INSTALL SEDIMENT BASIN/SWM POND AND ASSOCIATED SILT FENCE AS INDICATED ON THE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF SEDIMENT BASIN/SWM POND EMBANKMENT. WHERE NECESSARY, RIPPING AND JACK HAMMERING SHOULD BE UTILIZED IN THE EXCAVATION OF THE FACILITY. (2 WEEKS)

5. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CLEAR AND GRUB FOR REMAINING SEDIMENT CONTROL MEASURES. INSTALL REMAINING SEDIMENT CONTROL MEASURES, EARTH DIKES, SILT FENCE, AND THE DRAINAGE SWALES ALONG THE PROPERTY BOUNDARY AS INDICATED ON THE PLANS. (I WEEK)

6. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CLEAR AND GRUB THE REMAINDER OF THE SITE. (3 DAYS) 7. GRADE SITE TO THE PROPOSED SUB-GRADE AND INSTALL THE SEWER AND WATER ALONG WITH THE STORM DRAIN SYSTEM. STABILIZE ALL SLOPES

IMMEDIATELY UPON COMPLETION OF GRADING. (3 WEEKS) 8. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENT FROM THE POND WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. ALL SEDIMENT

MUST BE PLACED UPSTREAM OF THE APPROVED TRAPPING DEVICE. 9. CONSTRUCT CURB AND GUTTER AND ROAD BASE COURSE. (2 WEEKS)

11. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL

INSPECTION OF THE COMPLETED PROJECT.

10. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES AND THE POND HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND/OR BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL DESIGN GRADE. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)

Sediment Control Notes and Details ROCKY GLEN SUBDIVISION LOTS 5 THRU 15

(A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565) ZONED: R-20

DEVELOPER'S CERTIFICATE

6/19/03

6/20/03

73/08

7.9.03

D = DISTANCE BETWEEN

A = AREA OF NORMAL POOL * 3,672 SQ.FT.

EXISTING GROUND

We = EFFECTIVE WIDTH = A/D = 30.7

FORMULA: $\frac{Le}{H} \ge 2 = (Le = 77' MiN.)$

Le= TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

RISER (OUTLET)

RISER (OUTLET)

INFLOW POINT

PLAN VIEWS

SHEETS OF 4'X 8'X 1/2" EXTERIOR

GRADE PLYWOOD OR EQUIVALENT

BAFFLE DETAIL

SEDIMENT BASIN BAFFLES

NOT TO SCALE

(OUTLET)

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans,

ENGINEER'S CERTIFICATE

Charles J. Crovo, Sr., P.E., L.S.

-D/2-----

Le= L1+ L2+ L3+ L4

Le= L1+ L2+ L3+ L4

8' CENTER TO CENTER

11/4" SQUARE

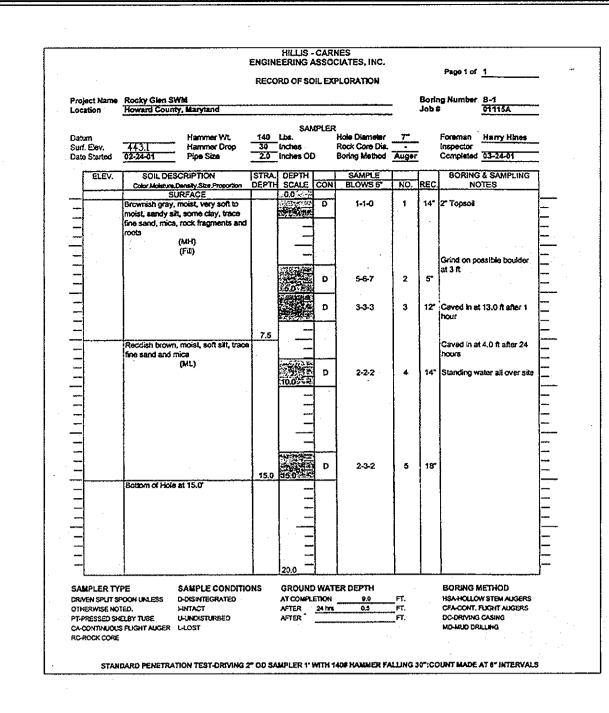
THE GROUND

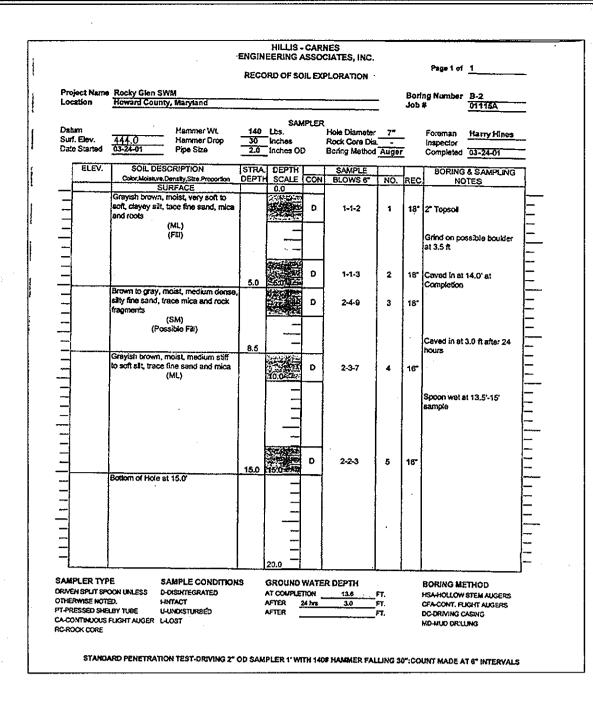
OR 2" ROUND SET

AT LEAST 3' INTO

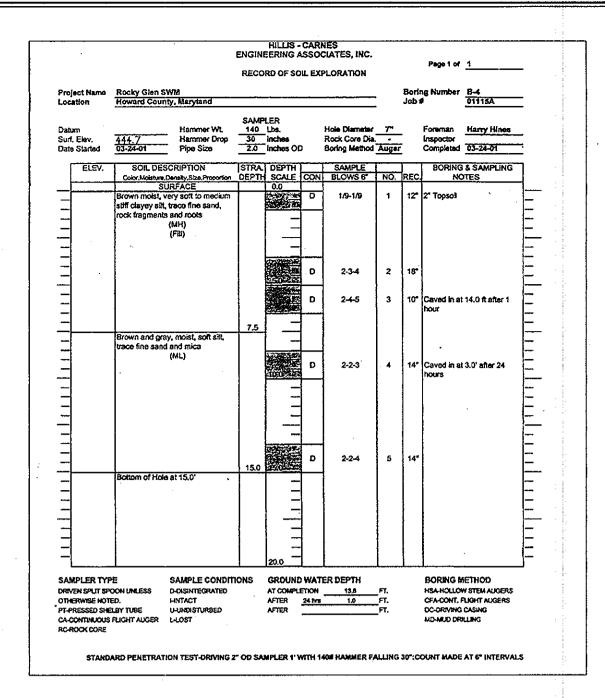
And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program

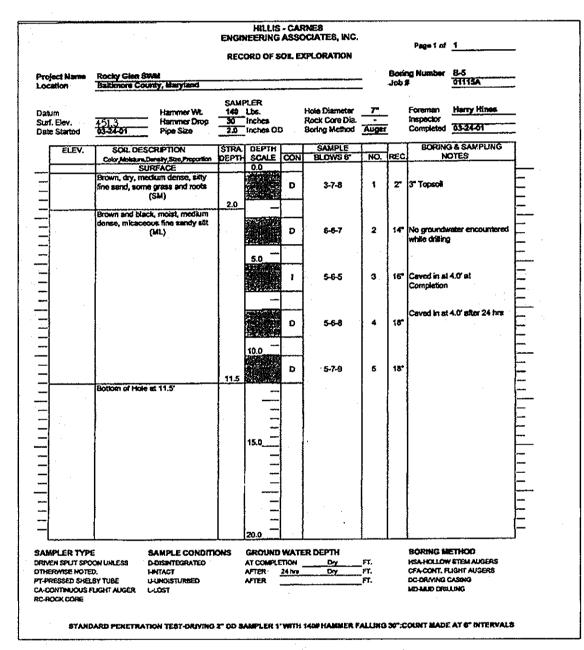
> TAX MAP NO. 16 GRID NO. 13 PARCEL NO. 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JUNE 19, 2003 SHEET 10 OF 12





	•.				ASSC	CIATES, INC.			Page 1 of	1	_
Project Name	Rocky Glen SWM Howard County, Maryland		RECORD OF SOIL EXPLORATION		Boring Number			B-3 01115A	<u>.</u>		
	NOW ZIG GOTH	.,,					•		,		•
SAMPLER Datum Surf. Elev.	4460	Hammer Wt. Hammer Drop	140	Lbs. Inches		Hole Diameter Rock Core Dia.	7*		Foreman Inspector	Harry Hines	-
Date Started	03-24-01	Pipe Size	2.0	Inches Of	•	Boring Method			Completed	03-24-01	<u>-</u>
ELEV.	I sou des	CRIPTION	ISTRA	DEPTH		SAMPLE			BORING	& SAMPLING	1
	Color,Moisture.l	Censity, Size Proportion	DEPTH	SCALE	CON		NO.	REC		TES]
		JRFACE		0.0		ĺ			Ì		
	dayey sit, trace	oft to medium stiff, a fine sand, mica,			Q	1-2-2	1	18"	2" Topsoil		_
	and roots			- T	<u> </u>						
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	Reddish brown	to gray, soft silt,	7.5						Caved in at	4.0 ft after 24	
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SAMPLER TY		SAMPLE CONDITI	ONS			ER DEPTH	,		BORING N		
DRIVEN SPLIT S OTHERWISE NO		D-DISINTEGRATED HINTACT		AT COMPU	ETION 24 hrs	10.0	_FT.			N STEM AUGERS FLIGHT AUGERS	
PT-PRESSED SH	ELBY TUŠE	U-UNDISTURBED		AFTER			FT.		DC-DRIVING	CASING	
CA-CONTINUOU RC-ROCK CORE	S FLIGHT AUGER	LLOST					-		MD-MUD DR	ILLING	





HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

8-12-11

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140F HAMBER FALLING SO": COUNT MADE AT 5" INTERVALS

Caved in at 4.1' at

Caved in at 4.2' after 24 hrs.

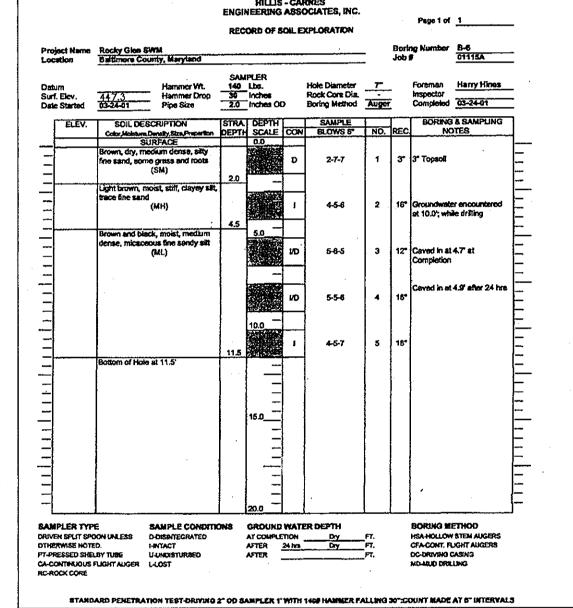
HSA-HOLLOW STEM AUGERS CFA-CONT, FLIGHT AUGERS DC-DRIVING CASING

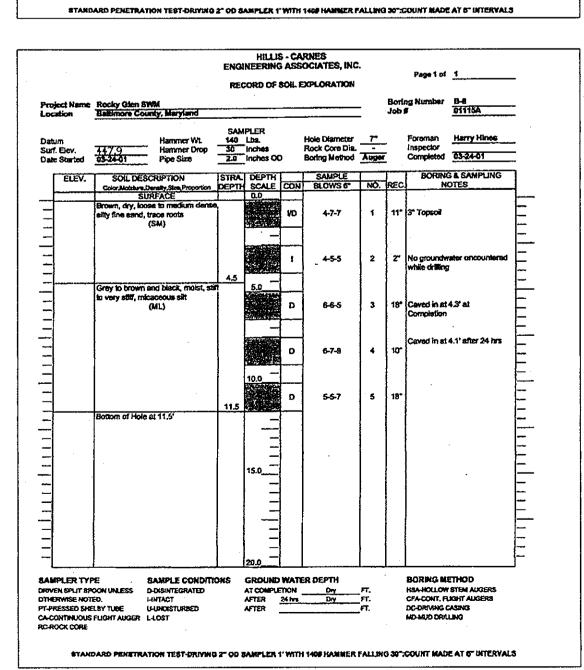
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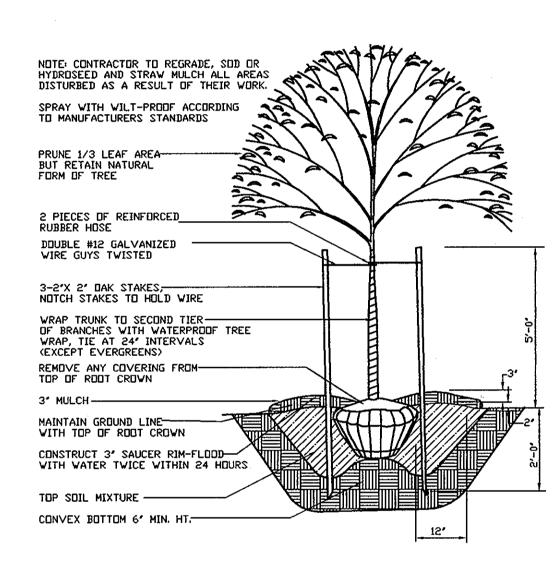
FISHER, COLLINS & CARTER, INC.

IVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

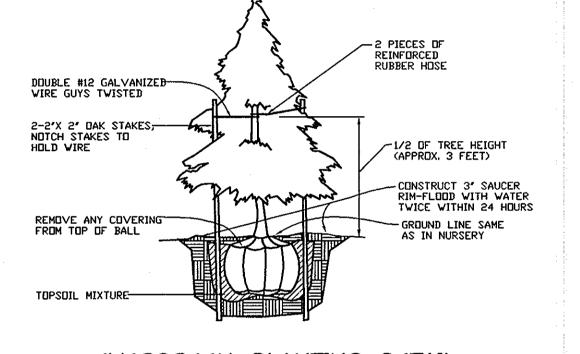
TENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE



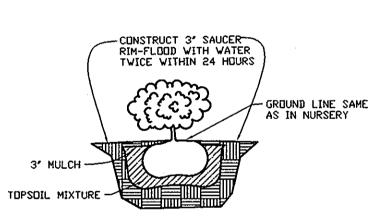








EVERGREEN PLANTING DETAIL



SHRUB PLANTING DETAIL

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no healed-in plants from cold storage will be accepted. Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to 'Landscape Specification Guidelines' for Baltimore-Washington Metropolitan Areas', (hereinafter 'Landscape Guidelines') approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines Contractor's attention is directed to the maintenance requirements found within the one year specifications including

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work.

Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at Contractor id responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing

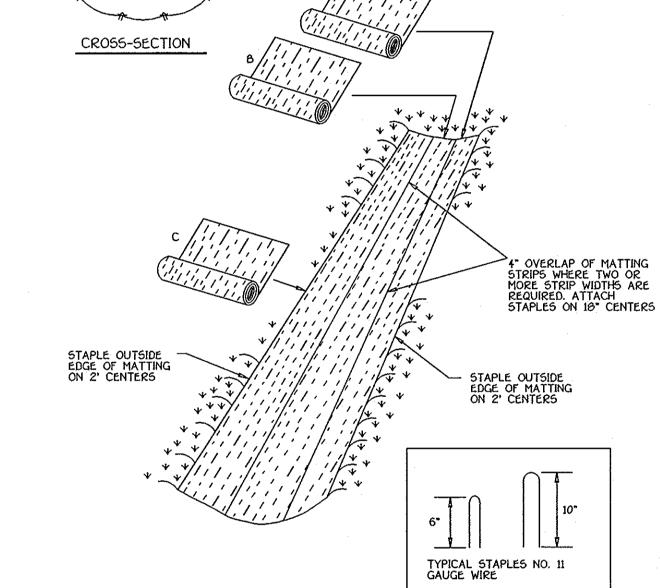
Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except Positive drainage shall be maintained in planting beds 2 percent slope).

Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated. All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded. This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

TREE PLANTING DETAIL



DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A

Certificate Of Attendance At A Department of the Environment Approved Training Program for The Control of Sediment And Erosion Defore Beginning The Project. I shall Engage A Registered Professional Engineer. To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "Al-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

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 Supervise Port Construction And Provide The Howard Soil Conservation District With An "As-Built" Plant Of The Pond Within 30 Days Of Completion."

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The

7-9.03

These Plans for Soil Erosion And Sediment Control Meet The Requirements Of

Technical Requirements for Soil Erosion And Sediment Control.

Resources Conservation Service

Printed Name Of Developer

Signature Of Enginee

Printed Name Of Engineer

Approved: Department Of Public Works

Approved: Department Of Planning And Zoning

Chief, Development Engineering Division

Chief Bureau Of Highways

Construction Specifications

- 1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- 2. Staple the 4" overlap in the channel center using an 10" spacing between staples.
- 3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- 4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- 5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion Reinforce the overlap with a double row of staples

spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

> Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in

OWNER/DEVELOPER

ROCKY GLEN, LLC.

3G75 PARK AVENUE

Ellicott City, Md. 21043

ROCKY GLEN SUBDIVISION

(A RESUBDIVISION OF LOT 4, "PROPERTY OF ROCKY GLEN, L.L.C.", LOTS 3 AND 4, PLAT NO. 14565) LOTS 5 THRU 15 ZONED: R-20

EROSION CONTROL MATTING

NOT TO SCALE

TAX MAP NO. 18 GRID NO. 13 PARCEL NO. 41 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: JUNE 19, 2003 SHEET 11 OF 12

50ILS BORINGS AND DETAIL SHEET

