FINAL ROAD CONSTRUCTION, GRADING AND SHORWAYDER MAINTACHMINE PELAN

GILYNCHIBSITBR BARNI

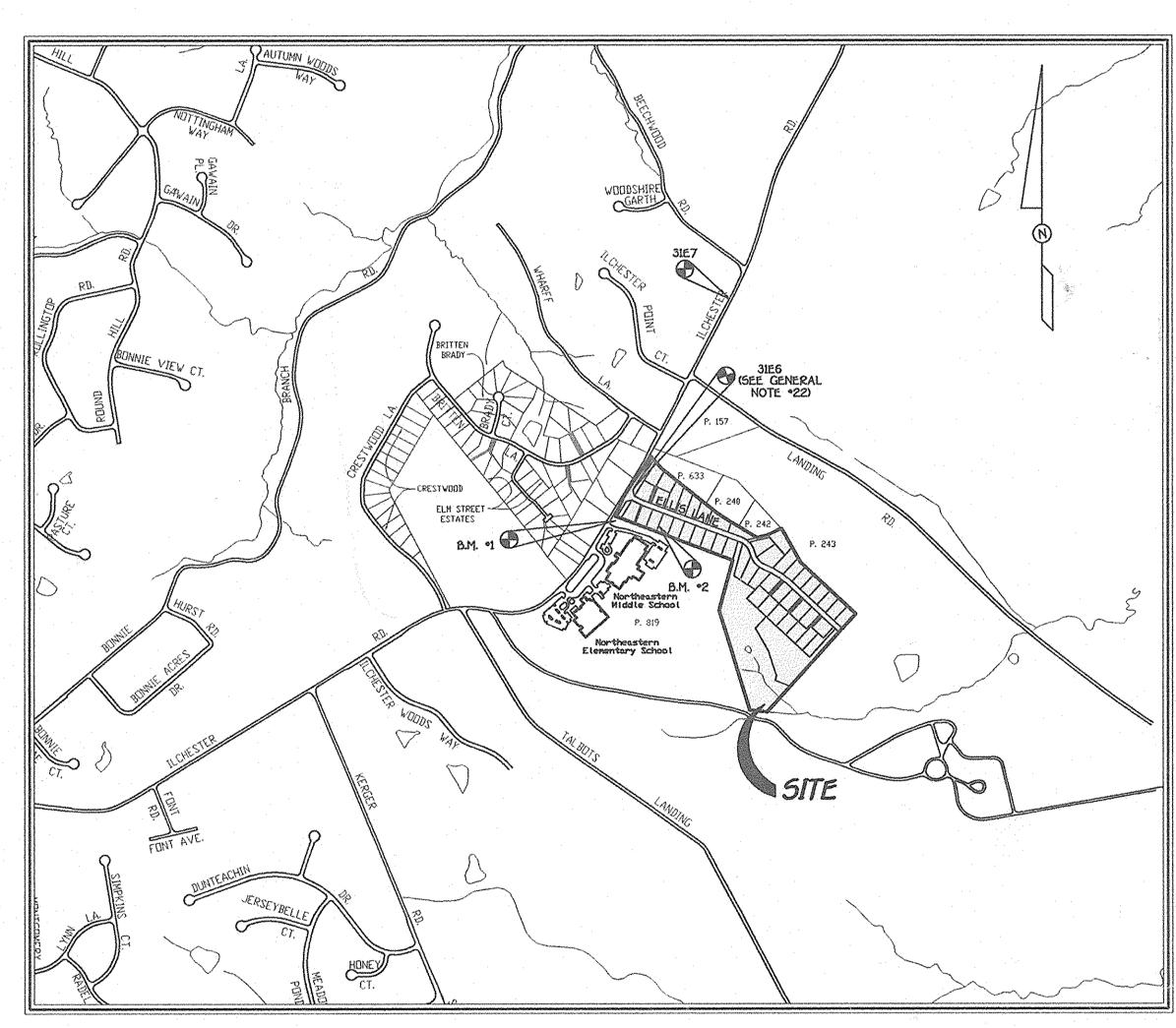
BUILDABLE LOTS 1 THRU 46, OPEN SPACE LOTS 47 THRU 58 AND NON-BUILDABLE PARCELS 'A' & 'B'

ZONIED: IR-20

TAX MAP No. 31 PARCEL NOs. 239 & 740 GRID No. 16

ey say qoʻring qaqad afqaq qaqay qaqay y faqili iy qiqay qamadasiy ilisang ahli ilmdiy dabi imma vab yil	igardan warangaajaayingi inilayyang ingadi jayan gadaaa, jayin ja'a wakijaa	ala markan kilomet da meri i ida meja inagi malambah ngigantak alam bili ingka da da		
en state de la companya de la compa La companya de la companya del la companya de la companya del la companya de la companya de la companya del la companya de la companya del la co	general programme de la companya de La companya de la companya de	e Colomo Colomo (Colomo Colomo Co Colomo Colomo Col	STREET LIGHT CHART	
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS
ELLIS LANE	C.L. 5TA. 0+37	28'R	150-WATT H.P.S. VAPOR PENDANT (CUTT-OFF) MOUNTED AT 30-FOOT ON A BRONZE FIBERGLASS POLE USING A 12' ARM.	ende des des partir de la company de la comp
ELLIS LANE	C.L. 5TA 3+75	9'R	100-WATT HAS VAPOR "PREMIER COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.	AT SPEED CALMING DEVICE
ELLIS LANE	C.L. 5TA. 7+60	9,8	100-WATT HPS VAPOR "PREMIER COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.	AT SPEED CALMING DEVICE
ELLIS LANE	C.L. 5TA. 10 +65	15'L	100-WATT HPS VAPOR "PREMIER COLONAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.	one and the house
ELLIS LANE	C.L. 5TA. 12+30	15'R	100-WATT HPS VAPOR "PREMIER COLOHAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.	
ELLIS LANE	C.L. 5TA. 13+20	9°R	100-WATT HPS VAPOR "PREMIER CALONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.	AT SPEED CALMING DEVICE
ELLIS LANE	C.L. STA. 17+40	9.8	100-WATT HPS VAPOR" PREMIER COLONIAL" POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.	AT SPEED CALMING DEVICE

STREET SIGN CHART							
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE			
ELLIS LANE	C.L. STA. 0+58	141.	STOP	R}-1			
ELLIS LANE	C.L. STA. 0+32	37°R	STREET	0-3			
ELLIS LANE	C.L. STA: 1+50	14'8	SPEED LIMIT 25	RZ-1			
ELLIS LANE	C.L. STA. 3+25	14°L	STOP AHEAD	W3-1a			
ELLIS LANE	C.L. STA. 3+25	14'R	ONE LANE ROAD AHEAD	W20-4			
ELLIS LANE	C.L. STA. 6+50	14°R	ONE LANE ROAD AHEAD	W20-4			
ELLIS LANE	C.L. STA. 12+50	14°R	ONE LANE ROAD AHEAD	W20-4			
ELLIS LANE	C.L. STA. 13*50	14°L	SPEED LIMIT 25	R2-1			
ELLIS LANE	C.L. STA. 16+40	14°R	ONE LANE ROAD AHEAD	W20-4			



SCALE: 1" = 600'

1st. BIJCTION DISTRICT HOWARD COUNTY, MARYLAND

> DR. AND MRS. MICHAEL ELLIS 4971 ILCHESTER ROAD ELLICOTT CITY, MARYLAND 21043

ELEV. 480.74

REBAR AND CAP SET & STA. -2+10 ILCHESTER ROAD 20' * FROM C ELEV. 462.34

REBAR AND CAP SET & STA. 3+45 ELLIS LANE 147' * FROM G

RESIDENCE)

DRIVEWAY NOTE

DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE DAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS A) WIDTH - 12 FERT (14 FERT SERVING MORE THAN ONE

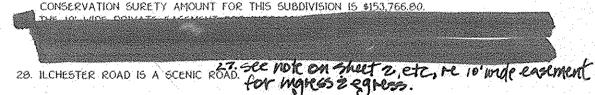
B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10° GRADE CHANGE AND MINIMUM 45 FOOT TURNING RADIUS.

D) STRUCTURES - (CULVERTS / BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING. E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY

PASSING 100 YEAR FLOOD WITH NO MORE THAN I FOOT DEPTH OVER DRIVEWAY SURFACE. F) STRUCTURE CLEARANCES - MINIMUM 12 FEET. G) MAINTENANCE - SUFFICIENT TO INSURE ALL

APPROVED DEPARTMENT OF PLANNING AND ZONING CHIEF, DEVELOPMENT ENGINEERING DIVISION MAJ APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

- 1 ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- 2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
- 3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- 4. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCO). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- 5. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS. PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 31 E6 AND
 - √31 E6 N 570852.396 E 1376700.705 V31 E7 N 572335.321
- E 1377503.919 6. THE TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP, INC. DATED MARCH
- 25, 1998 AND APPROVED UNDER 598-15. 7. BACKGROUND INFORMATION:
- A SUBDIVISION NAME: GLYNCHESTER FARM B. TAX MAP NO.: 31
- C. PARCEL NOS. 239 AND 740 D. ZONING: R-20 E. ELECTION DISTRICT: FIRST
- . TOTAL TRACT AREA: 28.81 AC. G. NO. OF BUILDABLE LOTS: 46
- H. NO. OF OPEN SPACE LOTS:
- I, NO. OF NON-BUILDABLE PARCELS: 2 J. AREA OF BUILDABLE LOTS: 16.237 AC.+
- K. AREA OF OPEN SPACE LOTS: 10.231 AC.+ L. AREA OF NON-BUILDABLE PARCELS: 0.110 AC.+ M. PREVIOUS FILE NOS.: 698-15 APPROVAL DATE: 1/13/98, POI-13
- N. TOTAL AREA OF OPEN SPACE REQUIRED 8.64 AC. (30% OF GROSS
- O. TOTAL AREA OF CREDITED OPEN SPACE PROVIDED: 10.143 AC. P. RECREATIONAL OPEN SPACE REQUIRED 46 X 200 = 9200 S.F.
- Q. RECREATIONAL OPEN SPACE PROVIDED 9805 S.F. ON LOT 50
- 8. NO CEMETERIES EXIST ON THE PROPERTY. 9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180. 10. THE FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING GRADING OR CONSTRUCTION IS PERMITTED.
- WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. 11. STORMWATER MANAGEMENT FACILITY:
- TYPE WET POOL DESIGN. (RETENTION) OWNER - ILCHESTER AT GLYNCHESTER HOMEOWNERS ASSOC., INC. MAINTENANCE - PRIVATELY MAINTAINED.
- 12. STREET LIGHTS WILL BE REQUIRED IN THE DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993". THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND
- 3. THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PUBLIC. CONTRACT No. 14-3976-0 14. THE SUBJECT PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND/OR SEWER ALLOCATIONS FOR THIS DEVELOPMENT ARE SUBJECT TO SECTION 18.122-8 OF THE HOWARD COUNTY CODE. ALLOCATIONS
- WILL BE MADE AVAILABLE AT THE TIME OF FINAL PLAT APPROVAL, IF CAPACITY 15. EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD
- COUNTY CONTRACT DRAWINGS. a. EXISTING WATER CONTRACT NO. 200-W b. EXISTING SEWER CONTRACT NOS. 10-124 AND 10-3696
- 16. TOPOGRAPHIC INFORMATION ESTABLISHED AT TWO FOOT INTERVALS BASED ON AERIAL TOPOGRAPHY PREPARED BY HARFORD AERIAL SURVEYS DATED MARCH.
- MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM. AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM
- 18. WETLAND AND FOREST STAND DELINEATION INFORMATION SHOWN WAS TAKEN FROM REPORTS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MARCH 5, 1998 AND APPROVED UNDER 5-98-15.
- 19. SOILS INFORMATION TAKEN FROM SOIL MAP NOS, 20 AND 21, SOIL SURVEY HOWARD COUNTY, MARYLAND, JULY 1968 165UE.
- 20. OPEN SPACE LOT 50 DEDICATED TO THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS. ALL OTHER OPEN SPACE LOTS WITHIN THIS SUBDIVISION SHALL BE DEDICATED TO THE HOMEOWNER'S ASSOCIATION. THE THREE MAIN ACCESSORY STRUCTURES LOCATED ON LOTS 13, 14 & 35 WILL BE RAZED PRIOR TO RECORDATION OF THE FINAL PLAT. EXISTING HOUSE TO
- 22. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS SURVEY DIVISION 72 HOURS PRIOR TO ANY WORK BEING DONE. SURVEY CONTROL STATION SIEG SHALL BE RELOCATED PRIOR TO THE WIDENING OF ILCHESTER ROAD. (410- 313-2417).
- 23. 402.2 DENOTES APPROXIMATE ELEVATION OFF 100 YEAR FLOOD PLAIN THE "NON-CRITICAL" METHOD WAS USED FOR DETERMINATION OF THE "100 YEAR
- 24. THE PURPOSE OF NON-BUILDABLE PARCELS "A" & "B" IS TO CREATE ACCESS TO ADJOINING PARCELS RECORDED IN LIBER 521, FOLIO 360, "MINTZ PROPERTY", PARCEL 240 AND LIBER 3004, FOLIO 136, "YAW PROPERTY", PARCEL 242. PARCELS 'A' & 'B' WILL BE CONVEYED TO ADJOINING PROPERTY OWNERS UPON RECORDATION OF THE FINAL RECORD PLAT. THE PARCELS WILL BE DEEDED AT NO COST FOR THE EXCLUSIVE USE OF THOSE PROPERTIES.
- 25. THE LANDSCAPE SURETY IN THE AMOUNT OF \$35,460 FOR PERIMETER LANDSCAPE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL IS POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION.
- 26. 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 3.4 ACRES AND ON-SITE PLANTING (AFFORESTATION) IN THE AMOUNT OF 0.5 ACRES. THE REMAINING FOREST CONSERVATION OBLIGATION IS LOCATED OFF-SITE IN NON-BUILDABLE PRESERVATION PARCEL B' OF SECTION 1. AREA 1 OF THE GAITHER HUNT SUBDIVISION RECORDED AS PLAT Nos. 13208 THRU 13211 BY PROVIDING 5.2 ACRES OF AFFORESTATION.
- SURETY FOR ON-SITE RETENTION (3.4 AC. x 0.20 = \$29,620.80), ON-SITE AFFORESTATION (0.5 AC. x 0.50 = \$10.890.00) AND OFF-SITE AFFORESTATION (5.2 AC. x 0.50 = \$113.256.00) IS POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION, TOTAL FOREST





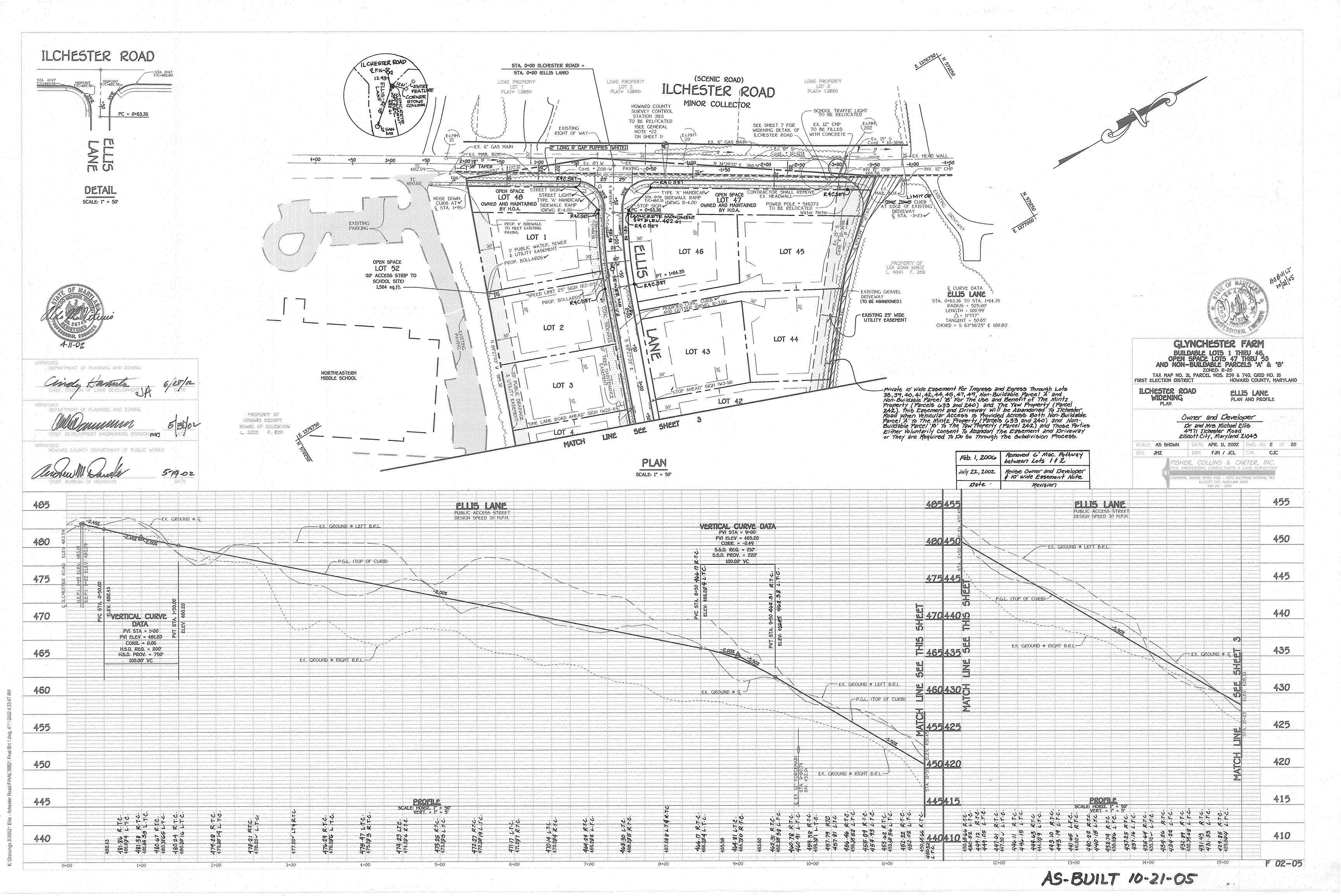
BUILDABLE LOTS 1 THRU 46, OPEN SPACE LOTS 47 THRU 53 AND NON-BUILDABLE PARCELS 'A' & 'B ZONED: R-20

> TAX MAP NO. 31, PARCEL NOS. 239 & 740, GRID NO. 16 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: APRIL 11, 2002 SHEET 1 OF 20

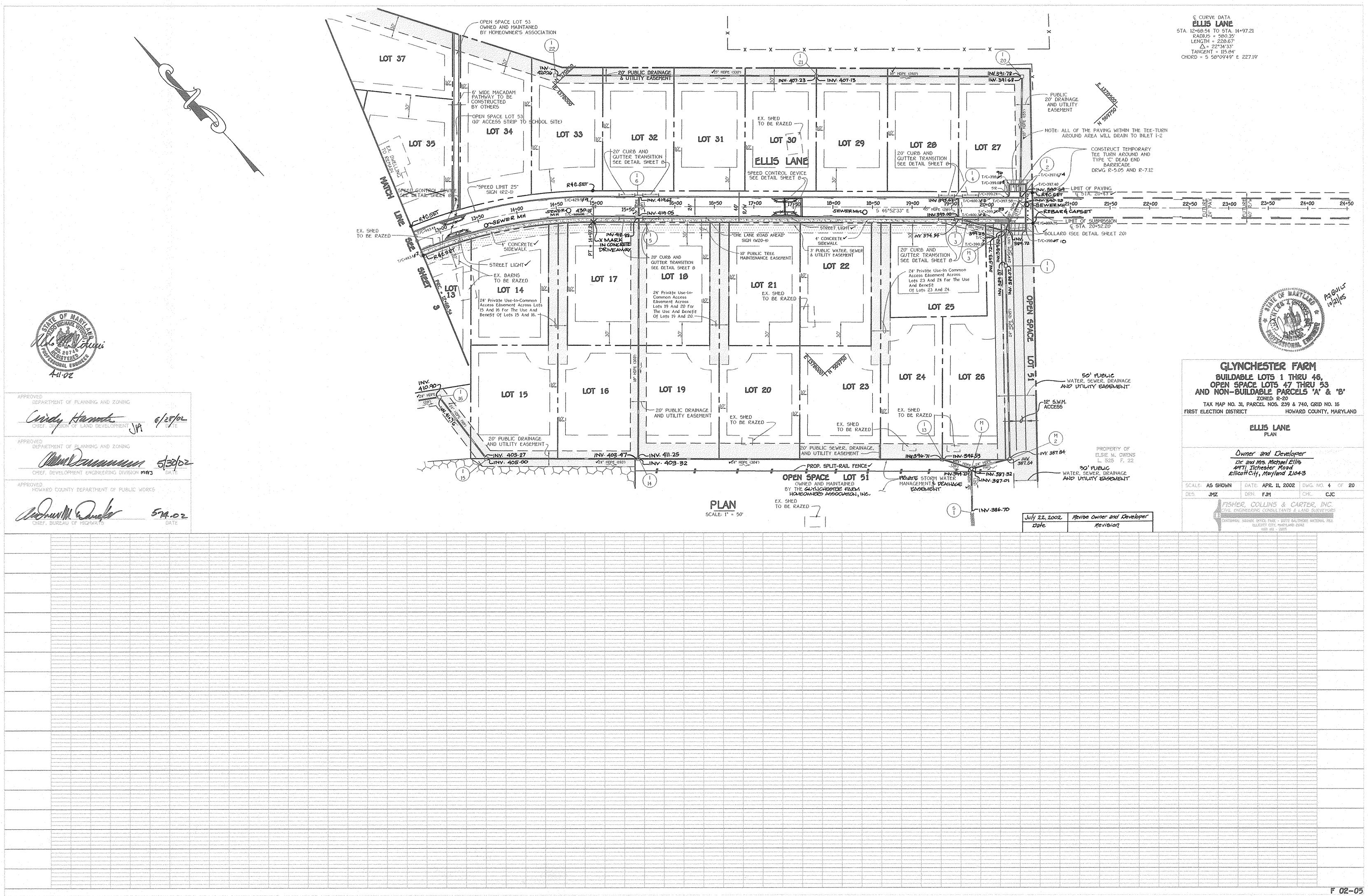
OWNER AND DEVELOPER

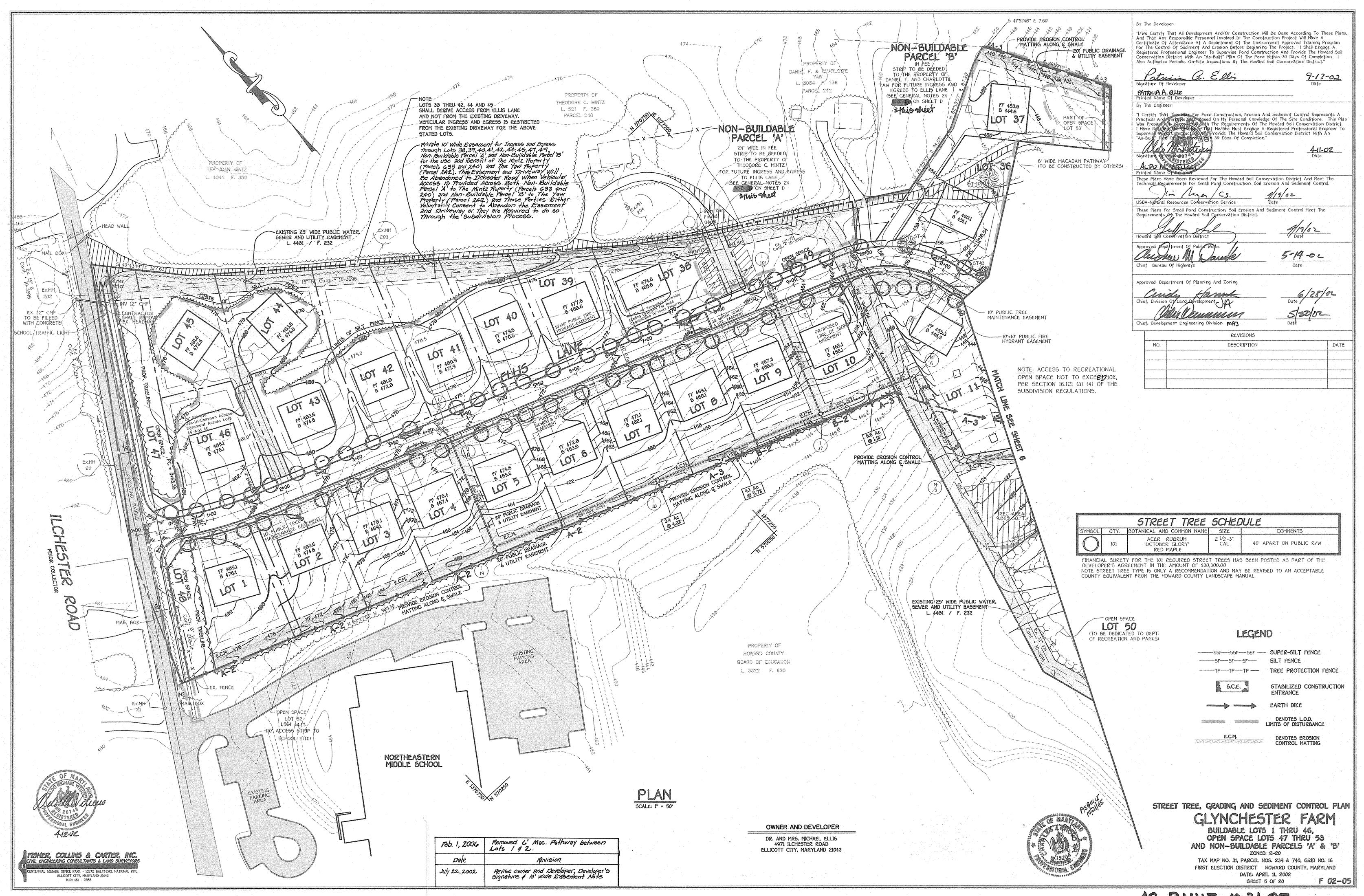


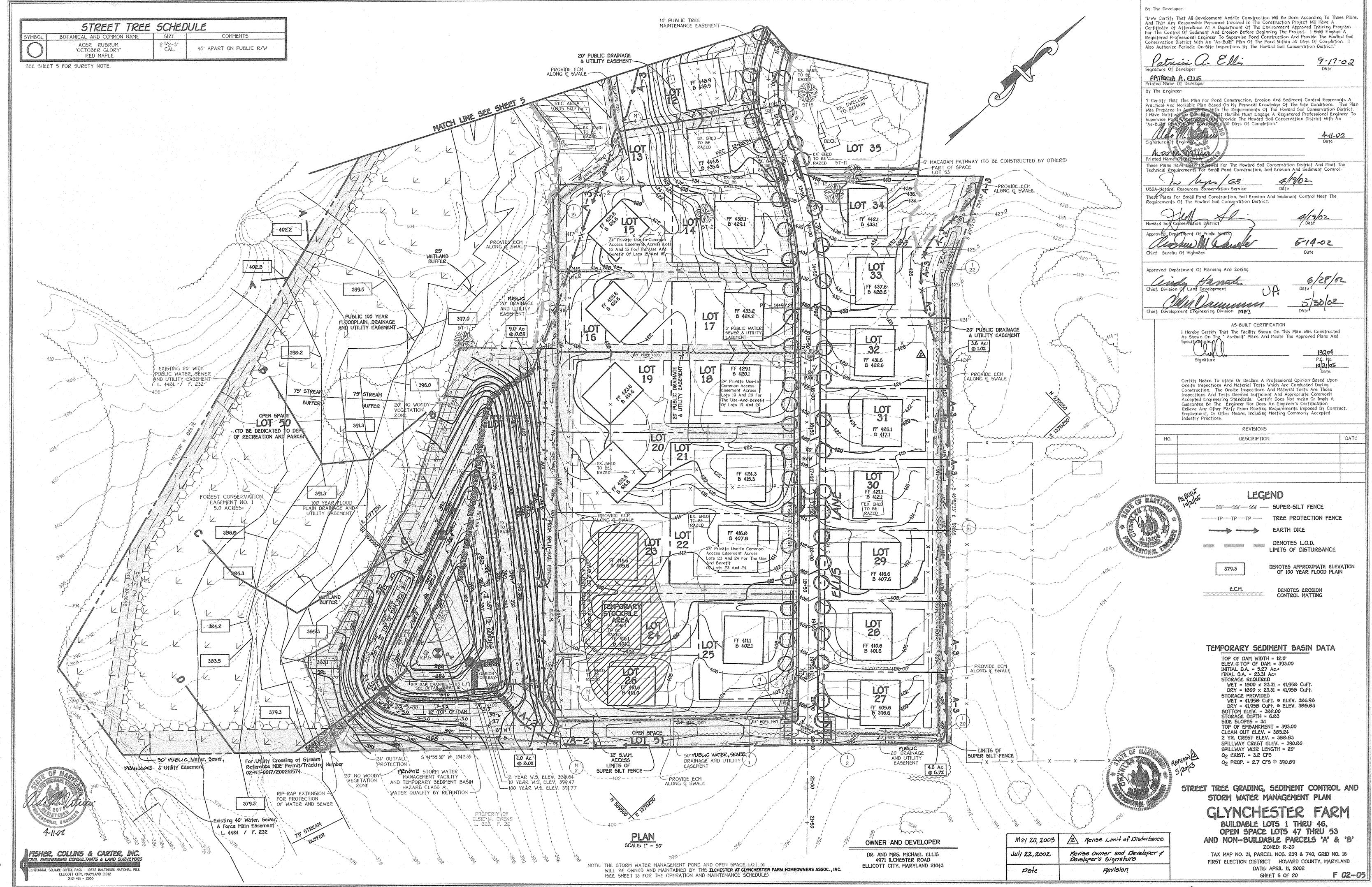
Review Owner and Developer

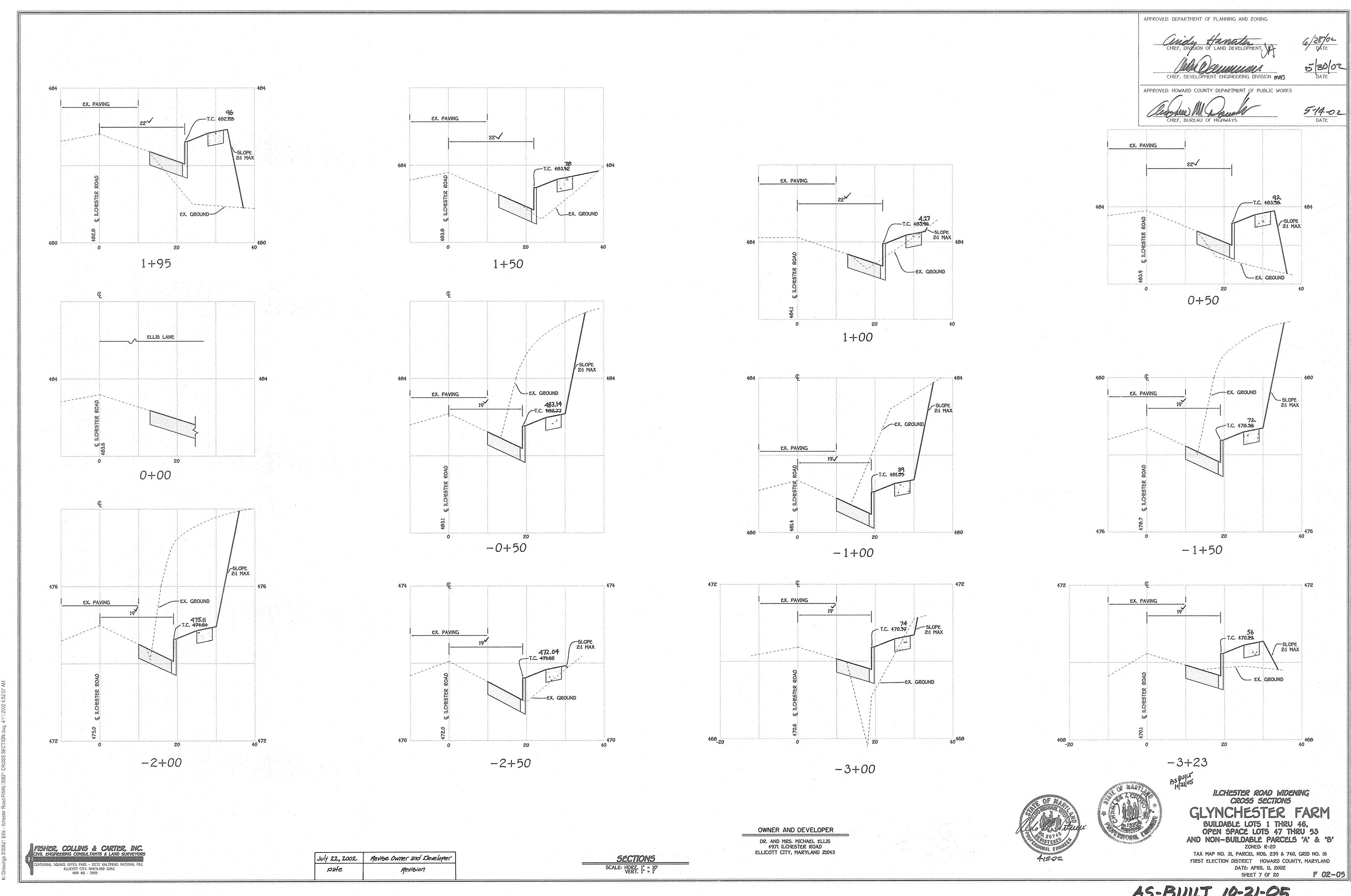


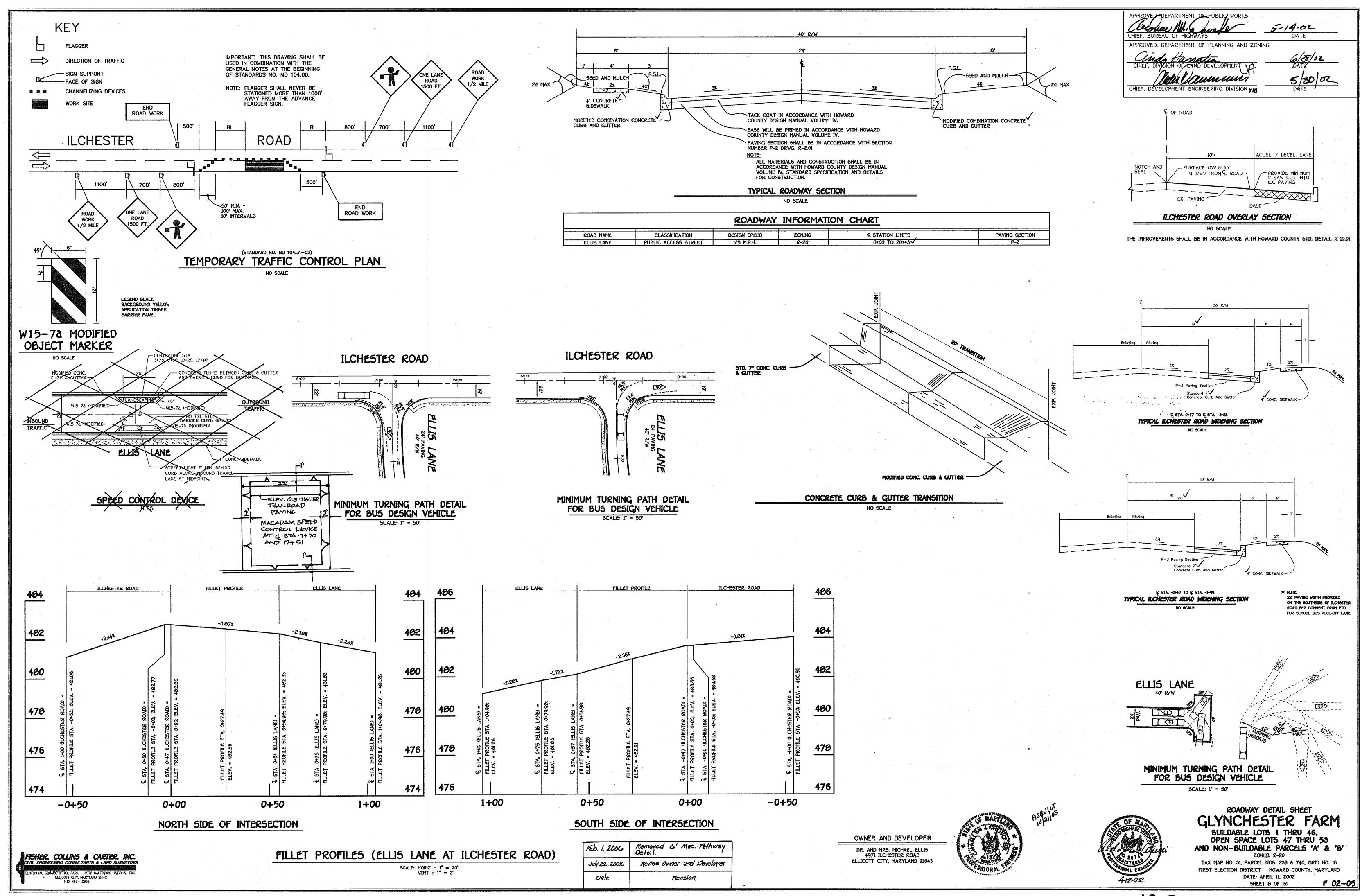


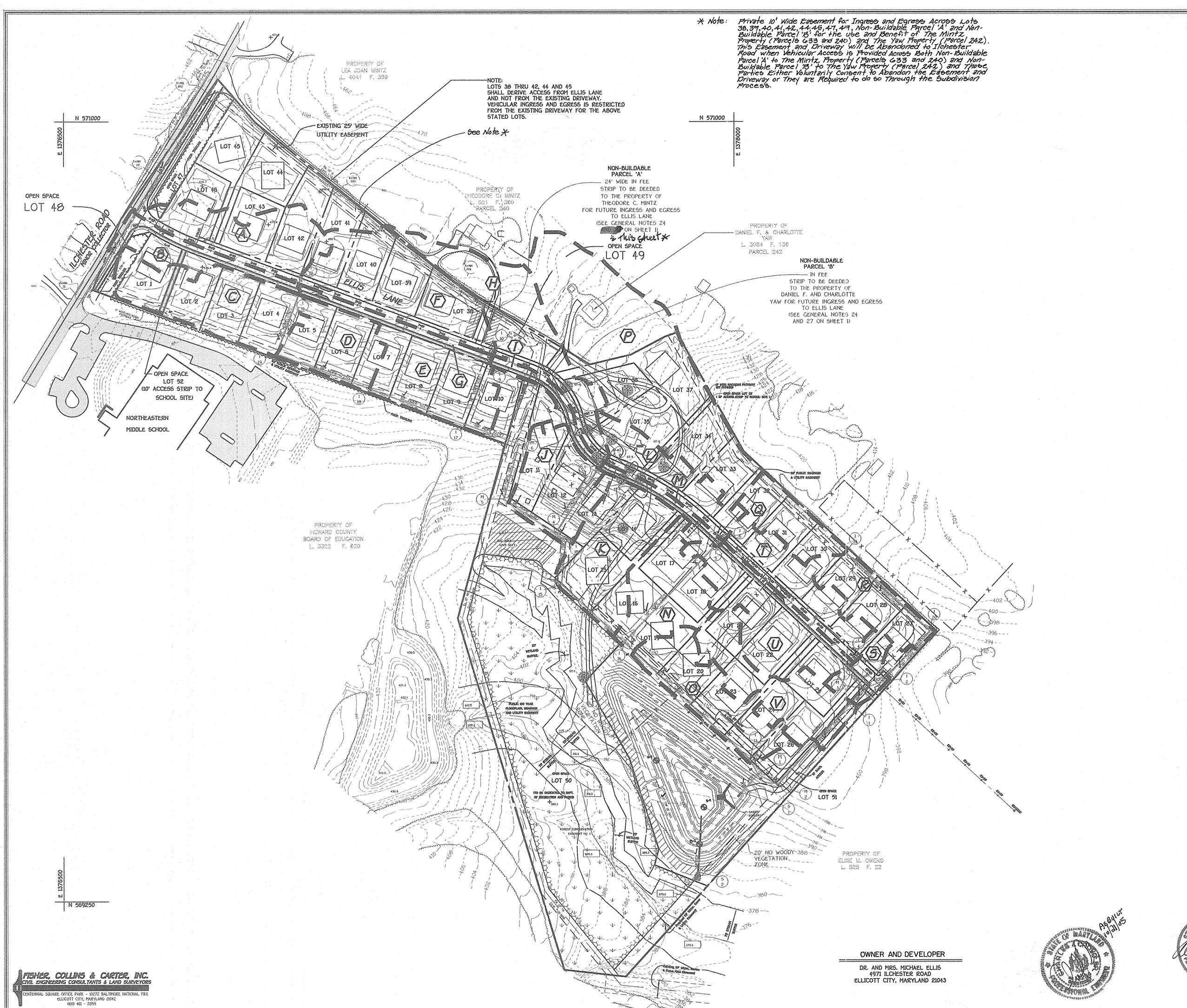












APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION MAT

REVISIONS

- 1	Revise Owner	and Developer & 10' Wic	le Easmt. Note	7.22:02
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DESCRIPTION

DATE

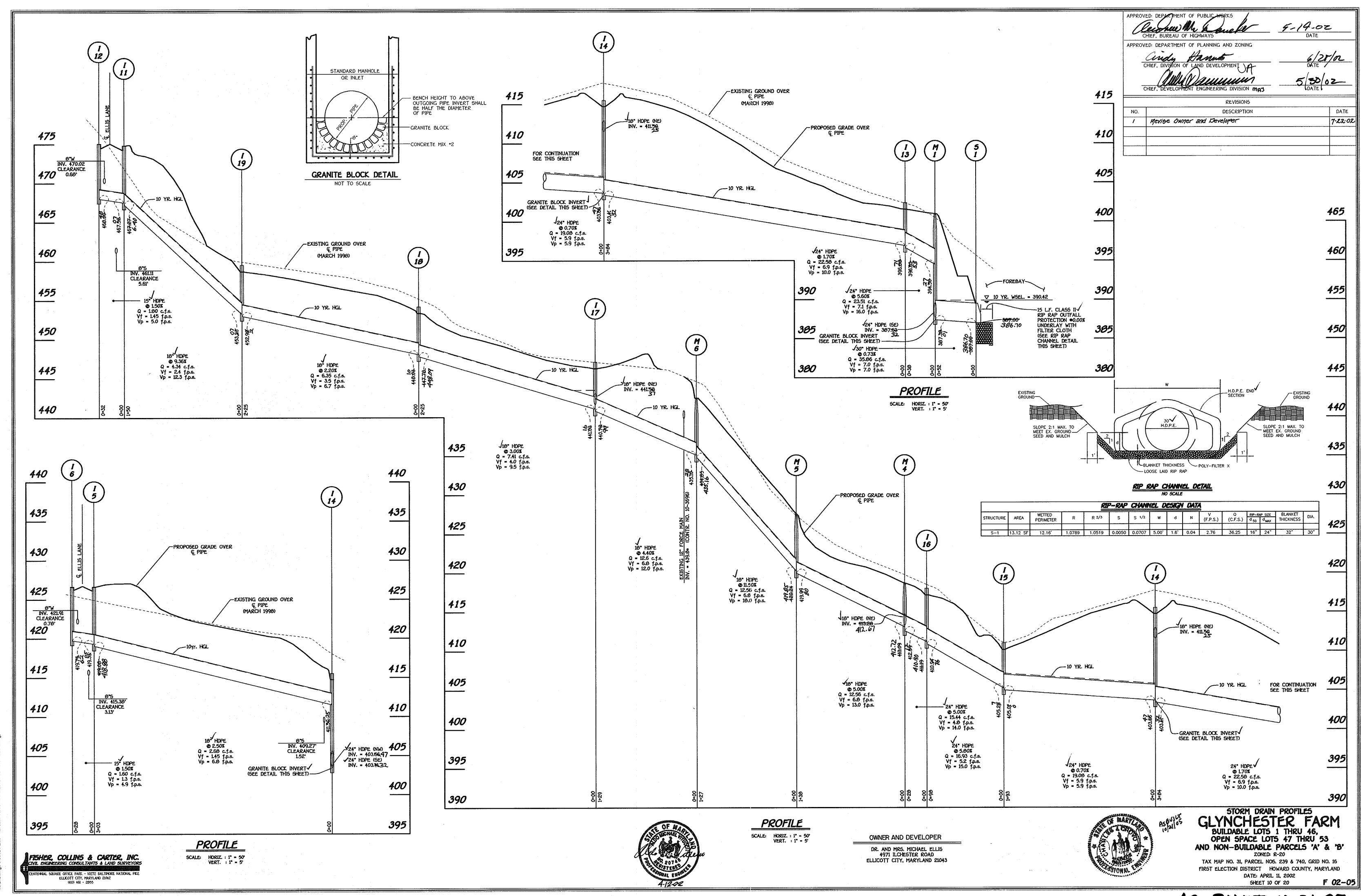
DRAINAGE AREA DATA							
INLET*	ZONING (Z)	SUBAREA (B)	AREA (A)	"C" FACTOR (C)	% IMPERVIOUS (P)		
1-1	R-20	V	1.00	0.34	35%		
1-2	R-20.	5	0.30	0.34	35%		
1-3	R-20	U	1.10	0.34	35%		
1-4	R-20	T	0.75	0.30	30%		
I -5	R-20	M	0.20	0.87	90%		
I-6	R-20	L	0.70	0.34	35%		
I-7	R-20	l	0.20	0.87	90%		
I-8	R-20	H	1,30	0.34	35%		
1-9	R-20	G	0.21	0.87	90%		
1-10	R-20	F	1.35	0.34	35%		
I-11	R-20	පි	0.50	0.87	90%		
1-12	R-20	Α	0.95	0.30	30%		
I-13	R-20	0	0.90	0.34	35%		
I-14	R-20	И	0.85	0.34	35%		
I-15	R-20	K	1.15	0.34	35%		
I-16	R-20	J	0.85	0.34	35%		
I-17	R-20	E	1.00	0.30	30%		
1-18	R-20	D	0.75	0.30	30%		
I-19	R-20	C	1.25	0.30	30%		
1-20	R-20	R	0.60	0.30	30%		
1-21	R-20	Ω	0.50	0.30	30%		
I-22	R-20	ρ	2.80	0.34	35%		

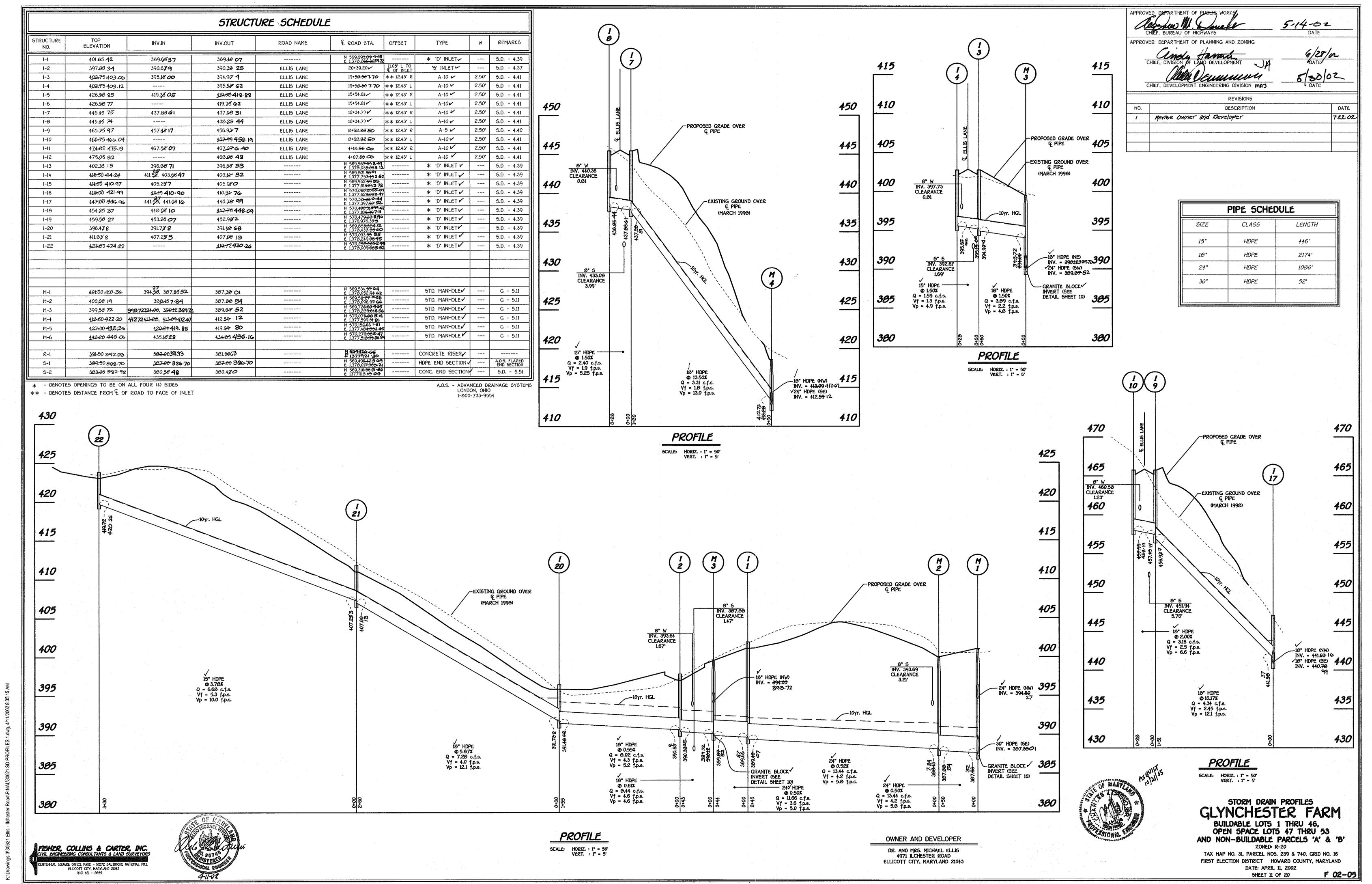


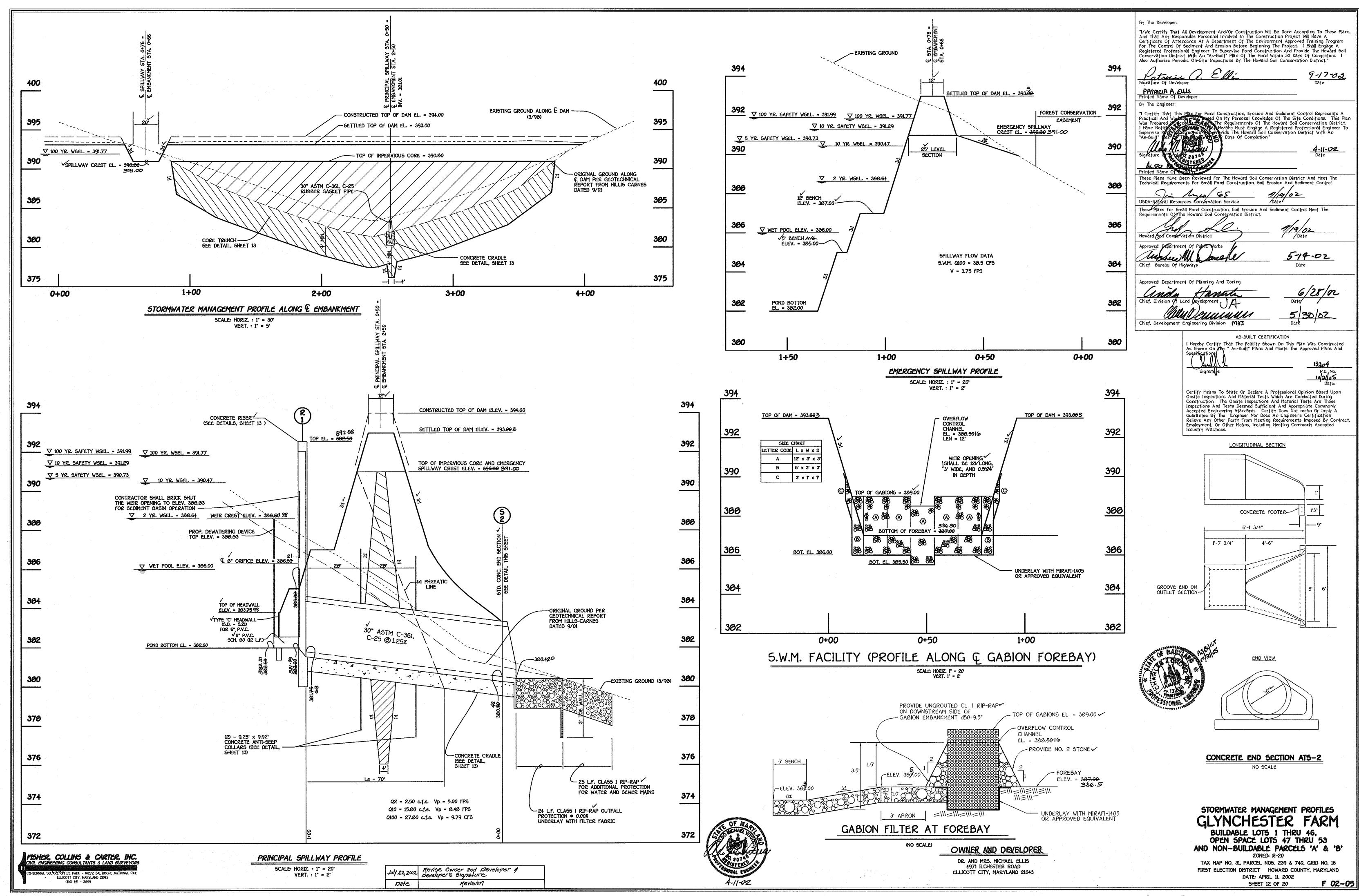
DRAINAGE AREA MAP GLYNCHESTER FARM

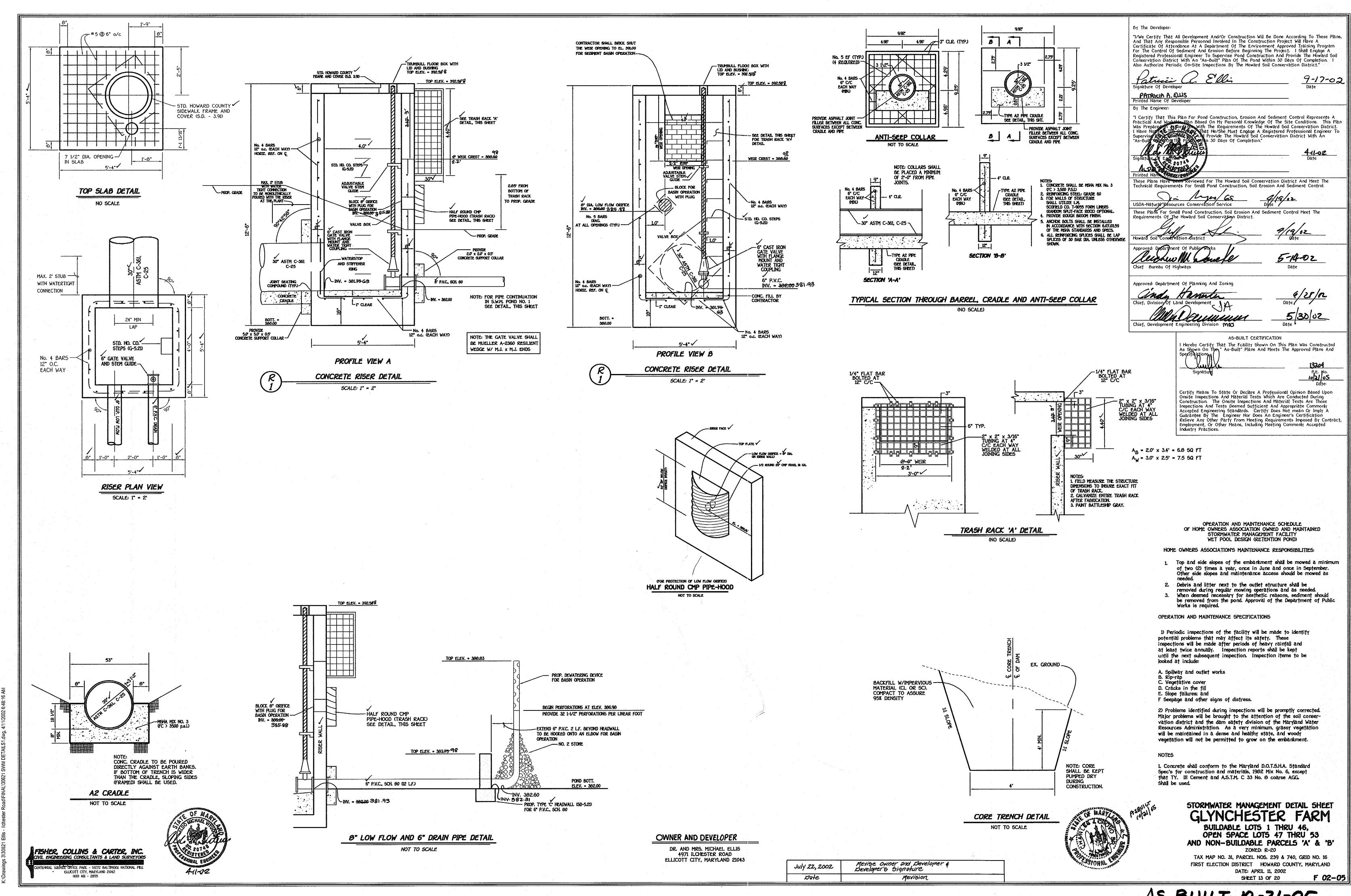
BUILDABLE LOTS 1 THRU 46, OPEN SPACE LOTS 47 THRU 53 AND NON-BUILDABLE PARCELS 'A' & 'B'

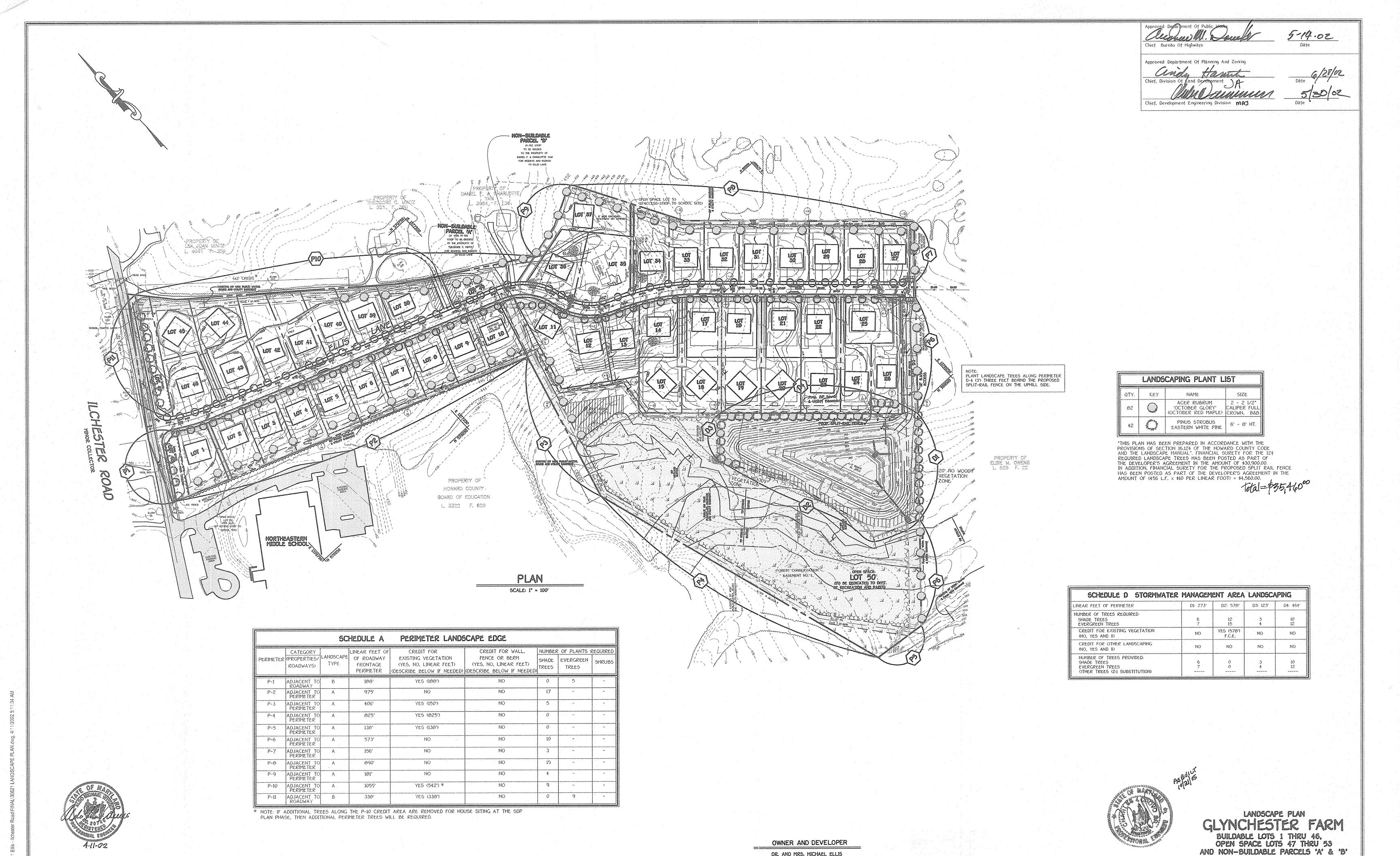
TAX MAP NO. 31, PARCEL NOS. 239 & 740, GRID NO. 16
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: APRIL 11, 2002
SHEET 9 OF 20
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FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

ELLICOTT CITY, MARYLAND 21042 (410) 481 - 2855 4971 ILCHESTER ROAD ELLICOTT CITY, MARYLAND 21043

July 22,2002

Date

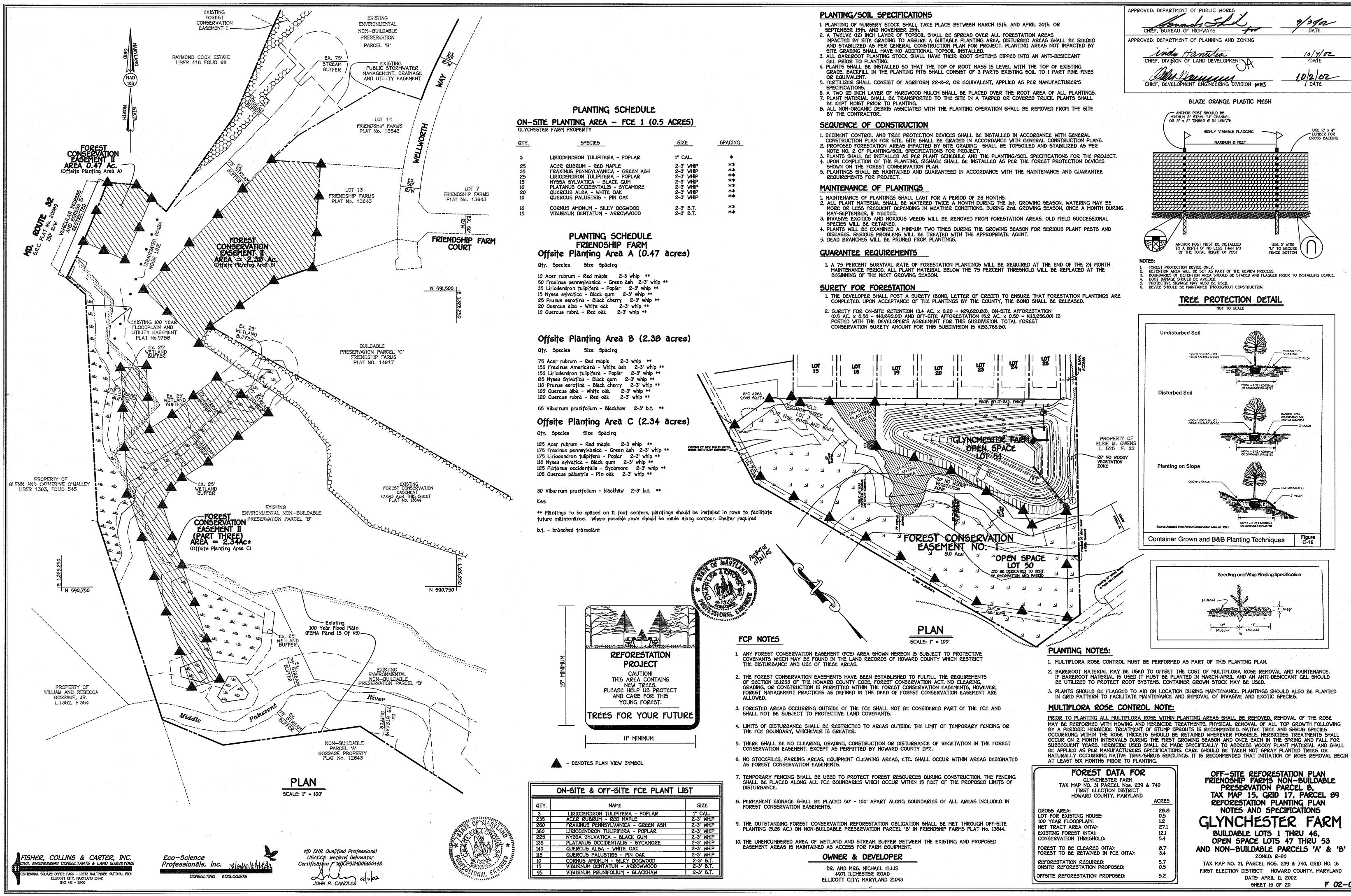
Revise Owner and Developer

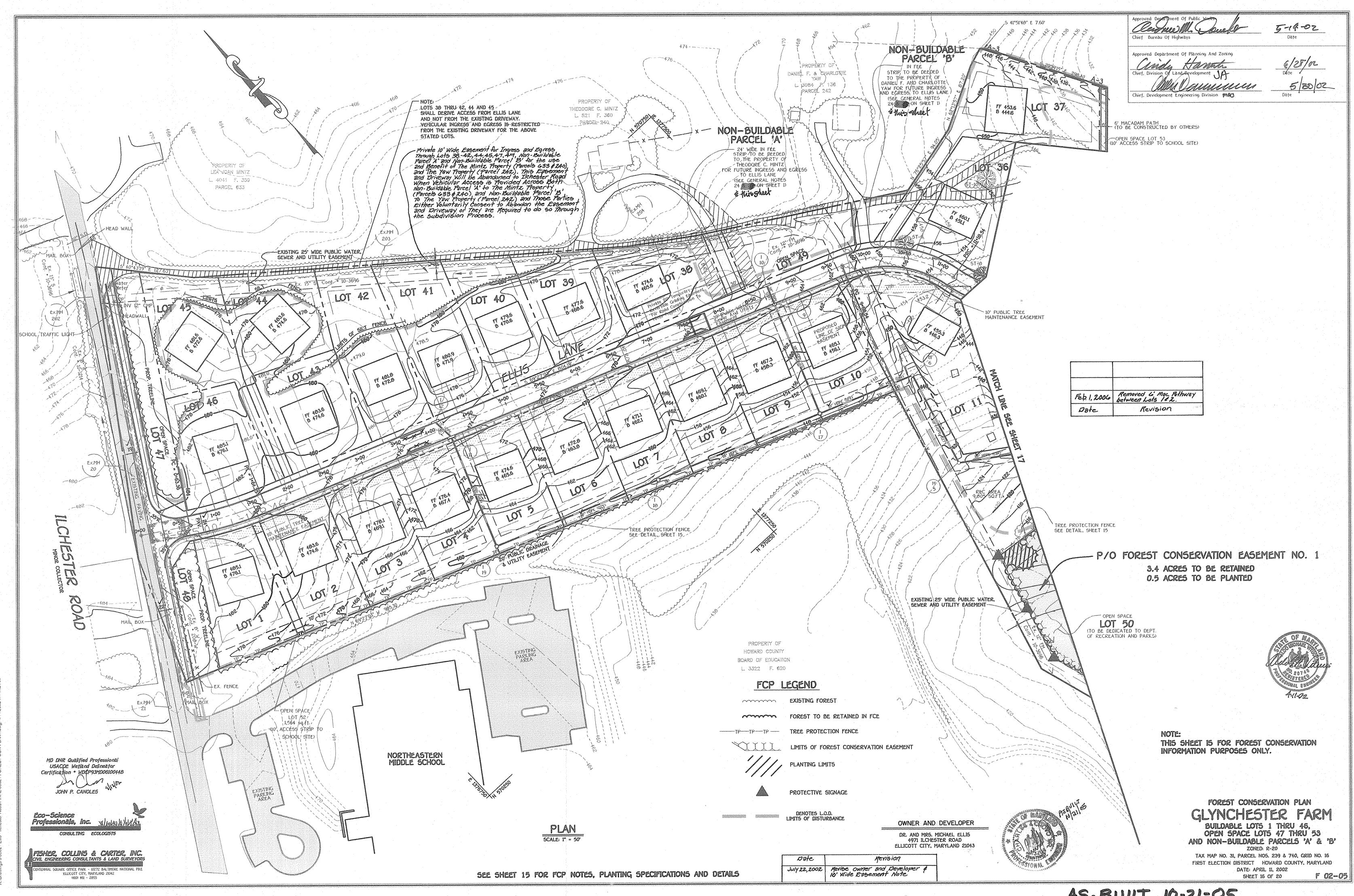
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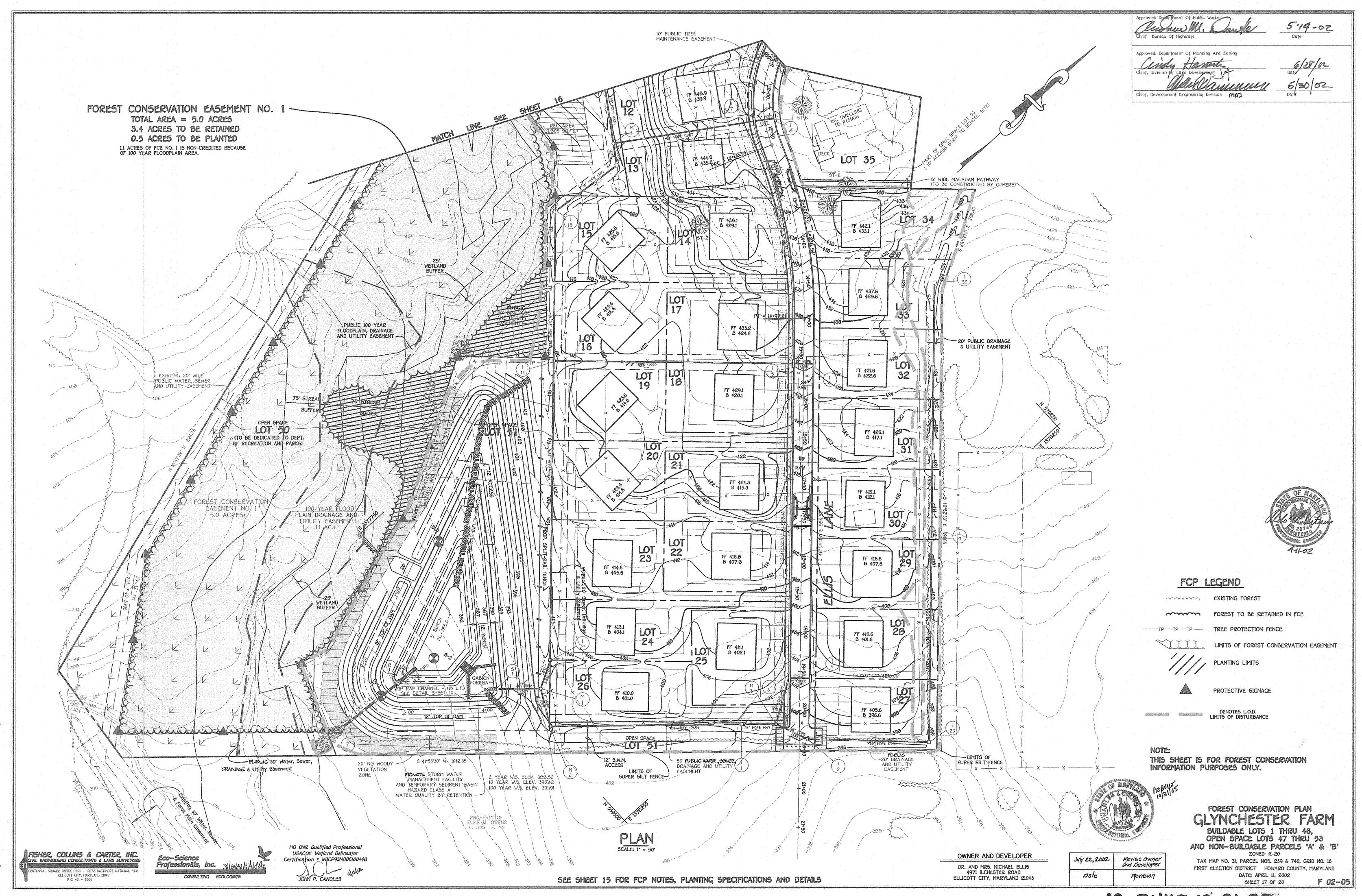
TAX MAP NO. 31, PARCEL NOS. 239 & 740, GRID NO. 16

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: APRIL 11, 2002 SHEET 14 OF 20







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
- 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 ooperation with Maryland Agricultural Experimental Station.

- Topsoil Specifications Soil to be used as topsoil must meet the following: 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.
- Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4—0 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
- For sites having disturbed areas over 5 acres:

dissipation of phyto-toxic 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

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 topsoil.

Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

- 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 $4"-\theta"$ higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4" 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from 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 e subsoil is excessively wet or in a condition that may otherwise be detrimental to prope arading 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 I 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.

References: Guideline Specifications, Soil Preparation and Sodding,. MD-VA, Pub. #1. Cooperative

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.

SEDIMENT CONTROL NOTES

Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855)
- 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 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 DAY: AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING
- SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE 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 GERMINATION AND ESTABLISHMENT OF GRASSES.
- 6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR
- 7) SITE ANALYSIS: AREA DISTURBED AREA TO BE ROOFED OR PAVED AREA TO BE VEGETATIVELY STABILIZED
 - ACRES ACRES ACRES 15,000 CU. YDS.
- OFFSITE WASTE/BORROW AREA LOCATION Y SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE AME 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 LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

FISHER, COLLINS & CARTER, INC. VIL ENGINEERING CONSULTANTS & LAND SURVEYORS al square office park - 10272 Baltimore Nationa ELLICOTT CITY, MARYLAND 21042

20.0 STANDARDS AND SPECIFICATIONS **VEGETATIVE STABILIZATION** DEFINITION

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

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vecetation, 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

- A. Site Preparation Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins. 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.

 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. 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 warrante
- 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. v. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - 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 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.
- c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

 ii. Permanent Seeding
 - Minimum soil conditions required for permanent vegetative establishment:

 1. Soil pH 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 it lovegrass or 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.

Seedbed Preparation

Soil must contain sufficient pore space to permit adequate root penetration. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise lossened 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 stones and branches, 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 leaving 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
- 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 i. 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 Methods of Seeding Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast Hydroseeding: Apply seed uniformly with 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.
- b. 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 time. Do not use burnt or hydrated lime when hydroseeding Seed and fertilizer shall be mixed on site and seeding shall be done immediately and
- ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders 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. 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. 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, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
- Wood Cellulose Fiber Mulch (WCFM) WCFM shall consist of specially prepared wood cellulose processed into a uniform
- 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, tertilizer 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.
- 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.

 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. 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 i
- 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 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. 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: 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 nounds of wood cellulose fiber ner 100 calloce
- the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons
- 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 Tax II. Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
- iv. 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

Revise Owner and Developer & July 22,2002 veveloper's signature

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 in the operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization J. Incremental Stabilization of Embankments - Fill Slopes
- Embankments 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 embanament to intercept surface runoff and convey it down the slope in a non-erosive manner to
- a sediment trapping device. Construction sequence: Refer to Figure 4 (below). 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. Place Phase 1 embankment, dress and stabilize. Place Phase 2 embankment, dress and stabilize.
- Place final phase embarkment, dress and stabilize. Overseed previously seeded

areas as necessary.

Note: Once the placement of fill 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 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
- 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.

Seed Mixture (Hardiness Zone6b) From Table 26					Fertilizer Rate	Lime Rate
No.	Species	Application Rate (lb/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" 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 generally receiving low maintenance.

- A. Seed mixtures Permanent Seeding
- 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 bs/ac), in addition to the above soil amendments shown in the table below, to be performed a

	Seed Mixture (Hardiness Z From Table	Fertilizer Rate (10-20-20)			Lime Rate			
No.	Species Application Rate (Ib/ac) Seeding Dates Seeding N P205 K20							
3	TALL FESCUE (85%) 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 b/ac	(4 1 b/	2 tons/do
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15. 8/15 - 10/15	i* - 2*	1000sf)	1000sf)	1000sf)	1000sf)

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.

STARTING WORK.

- 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
- 3. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY SURVEY DIVISION AT 410-313-6103 REGARDING THE RELOCATION OF CONTROL STATION 31E6 AT LEAST TWO WEEKS PRIOR TO THE WIDENING OF ILCHESTER ROAD.
- 4. 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
- 5. 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)
- 6. 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, AND SILT FENCE AS INDICATED ON THE PLANS. (I WEEK)
- RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CONSTRUCT STORM DRAIN SYSTEM FROM 5-1 TO 1-19 WHICH IS ALONG THE REAR OF LOTS 5 THRU 24. GRADE SWALES SHOWN ON THE GRADING PLAN ALONG THE REAR OF LOTS 1 THRU 24. CONSTRUCT STORM DRAIN SYSTEM FROM S-1 TO 1-22 WHICH IS ALONG THE REAR OF LOTS 27 THRU 33 AND THE SIDE OF LOTS 27 AND OPEN SPACE LOT 50. GRADE SWALES SHOWN ON THE GRADING PLAN ALONG THE REAR OF LOTS 27 THRU 34 AND LOT 37. (3 WEEKS)
- 8. RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. CLEAR AND GRUB THE REMAINDER OF THE SITE. (10 DAYS)
- 9. GRADE SITE TO THE PROPOSED SUB-GRADE AND INSTALL THE SEWER AND WATER ALONG ELLIS LANE AND THE REMAINING STORM DRAIN SYSTEM. STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING.
- 10. 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.
- 12. STABILIZE ALL DISTURBED AREAS AND OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR TO PROCEED. 13. 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

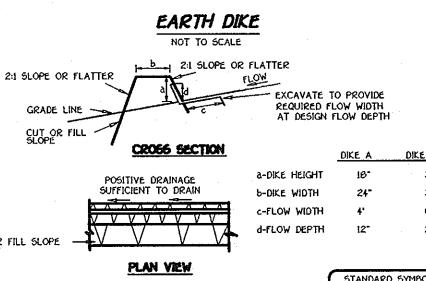
BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL DESIGN

GRADE. STABILIZE ALL REMAINING AREAS IN ACCORDANCE WITH

PERMANENT SEEDING NOTES. (2 WEEKS)

11. CONSTRUCT CURB AND GUTTER AND ROAD BASE COURSE. (2 WEEKS)

14. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT.



2. Seed and cover with Erosion Control Matting or line with sod. 3. 4" - 7" stone or recycled concrete equivalent pressed into Construction Specifications

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

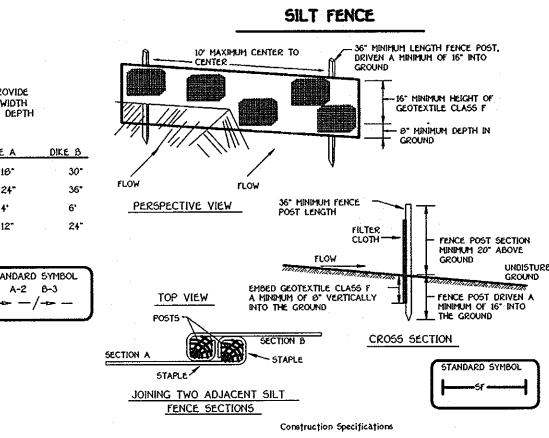
1. All temporary earth dikes shall have uninterrupted positive grade to

FLOW CHANNEL STABILIZATION

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 with the proper functioning of the dike.

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 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



SUPER SILT FENCE

NOTE: FENCE POST SPACING

STANDARD SYMBOL

SHALL NOT EXCEED 10' CENTER TO CENTER

118118118118118

GROUND

SURFACE

CHAIN LINK FENCING

EMBED FILTER CLOTH 8" _____

MINIMUM INTO GROUND

* IF MULTIPLE LAYERS ARE

REQUIRED TO ATTAIN 42"

required except on the ends of the fence.

every 24" at the top and mid section.

Tensile Strength

Tensile Modulus

Filtering Efficiency 75% (min.)

Flow Rate

** GEOTEXTILE CLASS 'C'

OR BETTER

- EXISTING GROUND

by 6" and folded.

Geotextile Class F:

21/2" DIAMETER

GALVANIZED

FILTER CLOTH -

OR ALUMINUM

10' MAXIMUM

WITH I LAYER OF

Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the

for a 6' fence shall be used, substituting 42" fabric and 6' length

4. Filter cloth shall be embedded a minimum of 8" into the ground.

develop in the silt fence, or when silt reaches 50% of fence height

latest Maryland State Highway Details for Chain Link Fencing. The specification

2. Chain link fence shall be fastened securely to the fence posts with wire ties.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced

5. When two sections of filter cloth adjoin each other, they shall be overlapped

7. Filter cloth shall be fastened securely to each fence post with wire ties or

staples at top and mid section and shall meet the following requirements for

6. Maintenance shall be performed as needed and silt buildups removed when "bulges"

20 lbs/in (min.)

STABILIZED CONSTRUCTION ENTRANCE

MINIMUM 6" OF 2"-3" AGGREGATE

OVER LENGTH AND WIDTH OF STRUCTURE

PROFILE

PLAN VIEW

Construction Specification

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

equivalent shall be placed at least 6" deep over the length and width of the

entrances shall be piped through the entrance, maintaining positive drainage. Pipe

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

according to the amount of runoff to be conveyed. A 6" minimum will be required.

where construction traffic enters or leaves a construction site. Vehicles leaving

the site must travel over the entire length of the stabilized construction entrance.

installed through the stabilized construction entrance shall be protected with a

has no drainage to convey a pipe will not be necessary. Pipe should be sized

5. Surface Water - all surface water flowing to or diverted toward construction

6. Location - A stabilized construction entrance shall be located at every point

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete

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

residences to use geotextile.

O' MINIMUM

* 50' MINIMUM LENGTH

The lower tension wire, brace and truss rods, drive anchors and post caps are not

34" MINIMUM

FILTER CLOTH

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the oround. 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 2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements

Test: MSMT 509 Tensile Modulus 20 bs/in (min) 0.3 gal ft / minute (max.)* Test: MSMT 322 Filtering Efficiency 75% (min.) 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.

OWNER AND DEVELOPER DR. AND MRS. MICHAEL ELLIS 4971 ILCHESTER ROAD **ELLICOTT CITY, MARYLAND 21043**

9-17-02 <u>Patricia A. Quis</u> By The Engineer "I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workables Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Practical And Workants Plan Based On My Personal Knowledge Of the Site Conditions. This Plan Was Prepared in Associate With The Requirements Of The Howard Soil Conservation District. I Have Not the Howard Soil Conservation District With An Supervise Figure 1 And Provide The Howard Soil Conservation District With An "As-Built Fig. Of It Roll Within 30 Days Of Completion." +-11-02 4-11-02 Signatura 3 Signatura These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control. In luger / 65 USDA-Natural Resources Conservation Service These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District. Approved: Department Of Public Work 5-14-02 Chief Bureau Of Highways Approved: Department Of Planning And Zoning Chief, Division of Land Development 5/30/02 Chief, Development Engineering Division MAJ

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

Certificate Of Attendance At A Department Of The Environment Approved Training Program

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. 1

For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A

And That Any Responsible Personnel Involved In The Construction Project Will Have A

Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

By The Developer:

* MINIMUM

36° MINIMUM

FLOW

---- 16" MIN. 15T LAYER OF

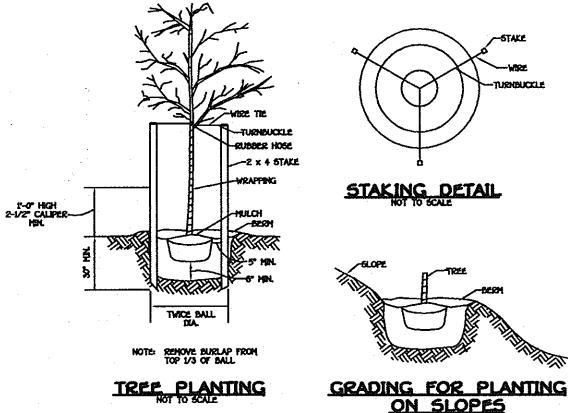
Test: MSMT 509

BERM (6" MIN.)

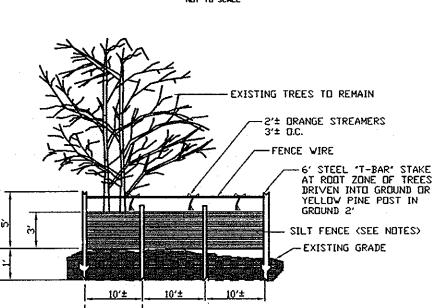
XISTING PAVEMENT

##SCE

0.3 gal/ft /minuté (max.) Test: MSMT 322







I. Silt Fence to be neeled into the soil. . Wire, snow fence, etc. for tree protection only. Boundaries of Retention Area will be established as part of the forest conservation plan review process. 4. Boundaries of Retention Area should be staked and flagged prior to

installing device. 5. Avoid root damage when placing anchor posts. Device should be properly naintained throughout construction. Protection signs are also required, see Figure C-4. 8. Locate fence outside the Crictical Root Zone.

> SEDIMENT AND EROSION CONTROL NOTES & DETAILS GLYNCHESTER FARM BUILDABLE LOTS 1 THRU 46. OPEN SPACE LOTS 47 THRU 53

AND NON-BUILDABLE PARCELS 'A' & 'B' ZONED: R-20 TAX MAP NO. 31, PARCEL NOS. 239 & 740, GRID NO. 16 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

F 02-05

Site Preparation

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

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

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

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embarkment, 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 embarkment 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 embarkment must have the capability to support vegetation of the quality required to prevent erosion of the embarkment.

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 hauting 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 tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

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

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

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

Structure Backfill

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

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

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

Materials — (Aluminum Coated Steel Pipe) — This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated 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 thickness.

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

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/0 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 3/0-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 3/0-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/0-inch closed cell gaskets the full width of the flange is also acceptable.

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

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

5. Backfilling shall conform to "Structure Backfill".

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

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

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

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "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-1705 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 requirement of AASHTO M294 Type 5.

2. Joints and connections to anti-seep collars shall be completely watertight.

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

4. Backfilling shall conform to "Structure Backfill".

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

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

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

Rock Riprap

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

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.

ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION SAMPLER Hote Diameter 8* Rock Core Dia _____ Boring Method HSA Hammer Drep Brown, moist, very stiff sit, trace 1-3-3 organics, gravel and rock fragments Possible Fill (ML) Brown to reddish brown and gray, moist, medium stiff to very stiff clave 5-6-8 silt, trace to little fine sand and rock No groundwater encou while chilling Caved in at 3.2 at 4-7-10 E/OD/same lottom of Hole at 12.0°

GROUND WATER DEPTH

AT COMPLETION

AFTER E/O/D

SAMPLE CONDITIONS

D-DISINTEGRATED

IJINTACT

SAMPLER TYPE

OTHERWISE NOTED.

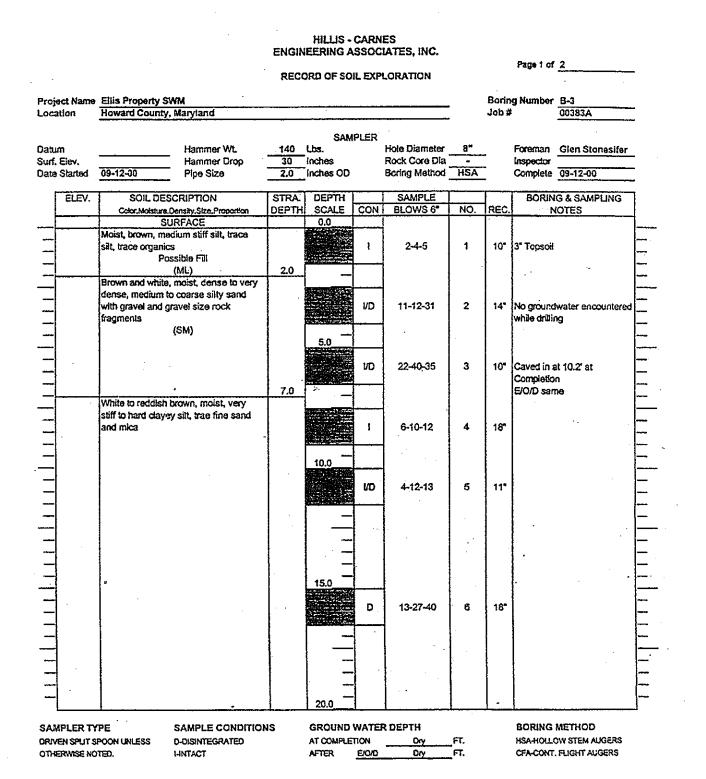
DRIVEN SPLIT SPOON LINLESS

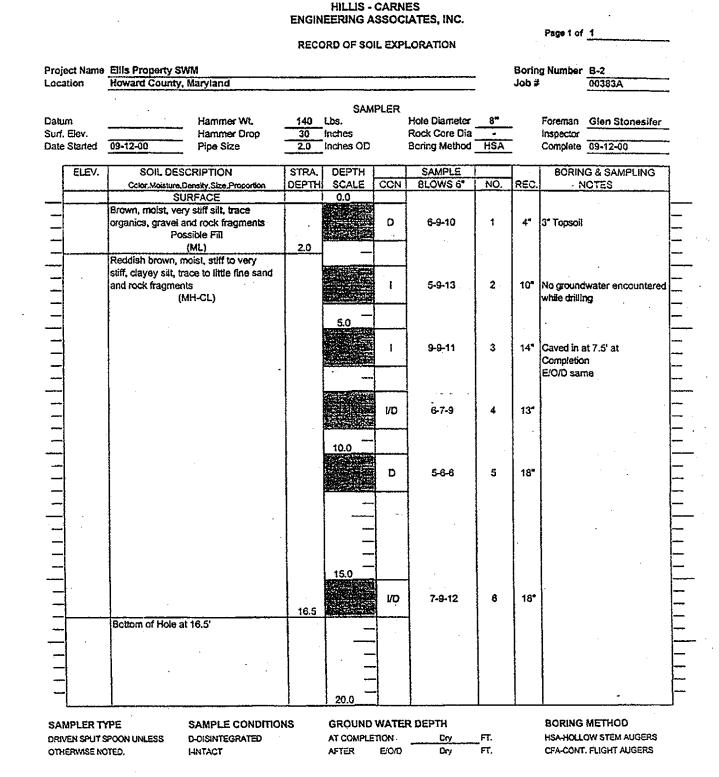
BORING METHOD

HSA-HOLLOW STEM AUGERS

CFA-CONT, FLIGHT AUGERS

HILLIS - CARNES





| Project Name | Ellis Property SWM | Boring Number | B-3 | Job # | Boring Number | Boring Number | B-3 | Job # | Boring Number | Boring Number | Boring Number | Boring Number | Boring N

GROUND WATER DEPTH

AT COMPLETION

AFTER E/O/O

HSA-HOLLOW STEM AUGER

CFA-CONT, FLIGHT AUGERS

SAMPLE CONDITIONS

HILLIS - CARNES

ENGINEERING ASSOCIATES, INC

"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 Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District." 9-17-02 PATRICIA A. QUIS By The Engineer: "I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workahe The Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared to accordance both the Requirements Of The Howard Soil Conservation District. I Have Notified The August Provide The Howard Soil Conservation District. I Have Notified The August Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Road Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Road Provide The Roa <u> ALDO M.º</u> These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control. 1 lages / 65. 1/19/02 USDA-Natural Resources Conservation Service These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District. 5-14-0C Chief Bureau Of Highways Approved: Department Of Planning And Zoning Chief, Division of Land Development Mulanum Chief, Development Engineering Division MAJ AS-BUILT CERTIFICATION



By The Developer:

Construction. The Onsite Inspections And Material Tests Are Those

nspections And Tests Deemed Sufficient And Appropriate Commonly

Accepted Engineering Standards. Certify Does Not mean Or Imply A

Relieve Any Other Party From Meeting Requirements Imposed By Contract

Guarantee By The Engineer Nor Does An Engineer's Certification

Employment, Or Other Means, Including Meeting Commonly Accepted

Embankment and Cut-off Trench Construction

Industry Practices.

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFOLLING OR PENETROMETER TESTING SHOULD BE EXCAVATE OUT

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.

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
CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL
ALL FILL MATERIALS MUST BE PLACED AND COMPACTED WITH MD SCS 378

STORMWATER MANAGEMENT POND

	DESIGN SUMMARY									
DESIGN STORM	ALLOWABLE RELEASE RATE	FACILITY INFLOW	FACILITY DISCHARGE	WATER SURFACE ELEVATION	STORAGE VOLUME (AC.FT.)					
2 YEAR	2.7 cfs	34.7	2.7	300.64	114170					
10 YEAR	20.5 cfs	79.2	19.3	390.47	2.25270					
100 YEAR	N/A	132.4	<i>9</i> 5.9	391.77	3.12429					

STRUCTURE CLASSIFICATION, LOW HAZARD, CLASS 'A' POND
STORAGE- HEIGHT PRODUCT 0.59 Ac. 11. x 12 = 7.1
WATERSHED AREA TO FACILITY (ACRES): ULTIMATE 23.31 ACRES
LEVEL OF MANAGEMENT PROVIDED BY FACILITY: TWO AND TEN YEAR STORMS

5.W.M. NOTES AND DETAILS
GLYNCHESTER FARM
BUILDABLE LOTS 1 THRU 46,
OPEN SPACE LOTS 47 THRU 53
AND NON-BUILDABLE PARCELS 'A' & 'B'

ZONED: R-20

TAX MAP NO. 31, PARCEL NOS. 239 & 740, GRID NO. 16

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: APRIL 11, 2002

SHEET 19 OF 20

F 02-0



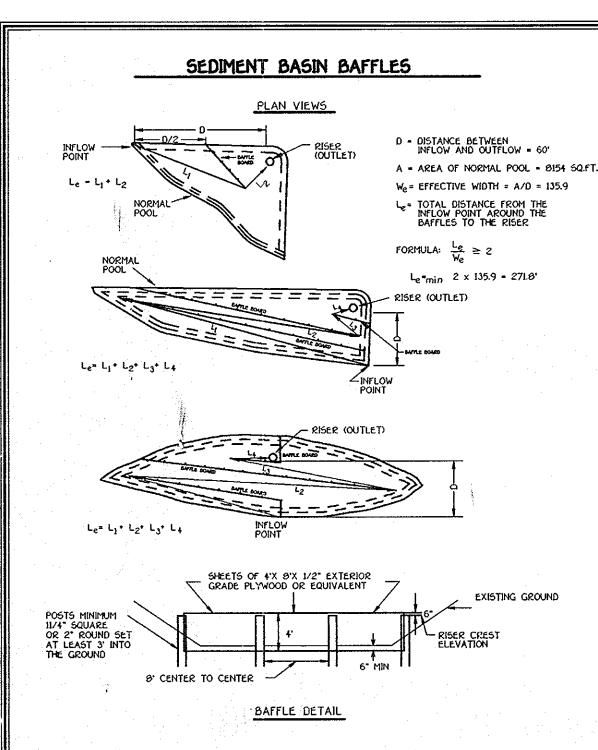
OWNER AND DEVELOPER

DR. AND MRS. MICHAEL ELLIS
4971 ILCHESTER ROAD
ELLICOTT CITY, MARYLAND 21043

SAMPLER TYPE

OTHERWISE NOTED.

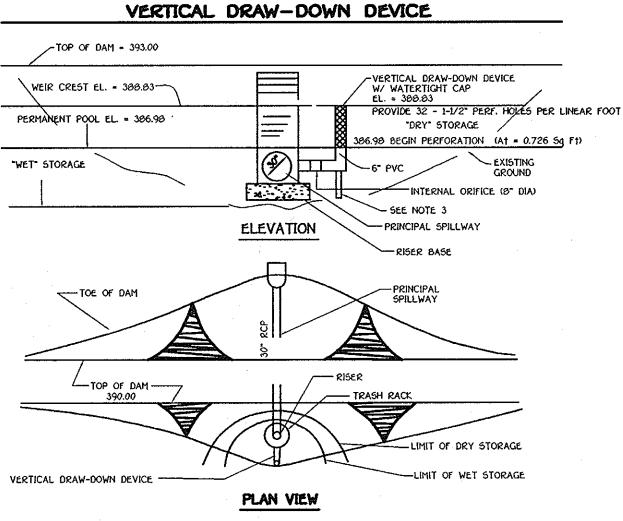
DRIVEN SPLIT SPOON UNLESS



BAFFLE COMPUTATIONS

D = 90 FT.A = 13,500 SQ. FT. • ELEV. 386.98 We = A/D = 13,500 SQ. FT. / 90 FT. = 150 FT.Le REQUIRED = We x 2 = 150 FT. x 2 = 300 FT. Le PROVIDED = L1+L2+L3+L4 = 30'+140'+95'+70' = 335 FT.

S.W.M./SEDIMENT BASIN



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 MINIMUM WIRE

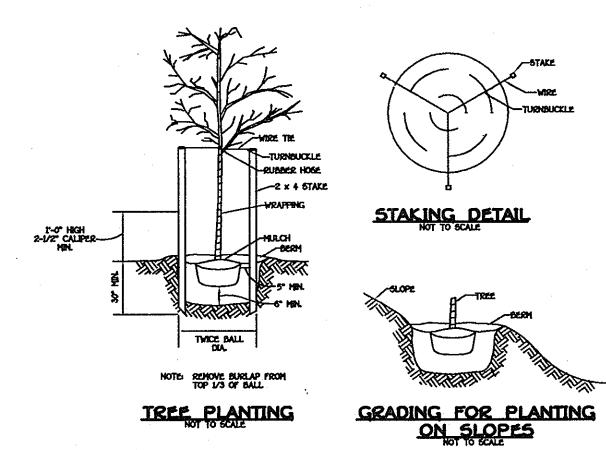
-Perforated (removable) 12° - 36° pipe wrapped w/ 1/2° hardware cloth and Geotextile 000 0000 000 -ANTICIPATED WATER 2009 SURFACE ELEV. 0000 0000 0 0 0 0 0000 0000 1000g 0000 0000 0 0 0 0 0000 000 0000 PERFORATED 48" PIPE WRAPPED WITH 1/2" HARDWARE CLOTH 000 0000 LWEIGHT AS NECESSARY TO PREVENT FLOATATION ELEVATION Construction Specifications

REMOVABLE PUMPING STATION

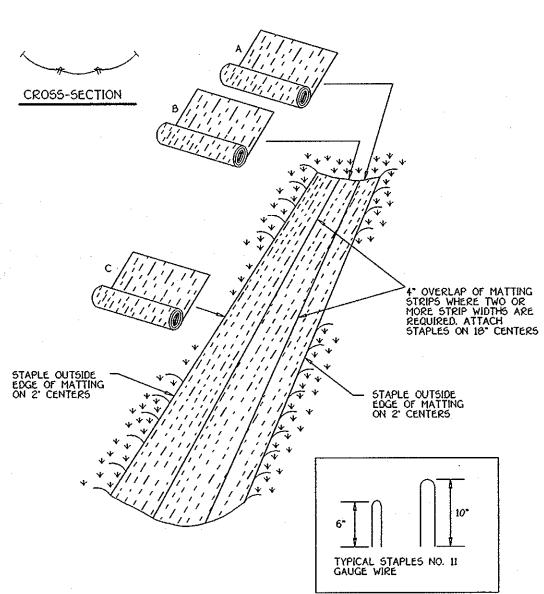
_HOOK AND CHAIN FOR REMOVAL

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 10" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.



EROSION CONTROL MATTING



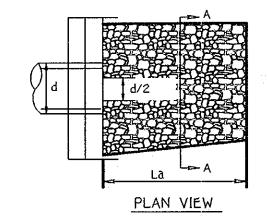
1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

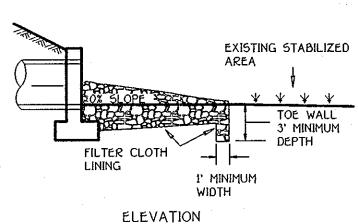
Construction Specifications

- 2. Staple the 4" overlap in the channel center using an 18" spacing
- 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

ROCK OUTLET PROTECTION III





TILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND FILTER CLOTH LINING THE EDGE OF THE RIP-RAP

SECTION A-A

ROCK OUTLET PROTECTION III

Construction Specifications

1. The subgrade for the filter, rip-rap, 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 undisturbed material.

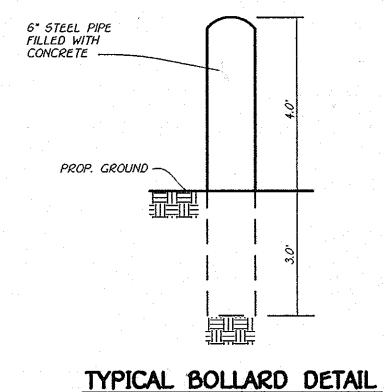
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.

3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall 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 rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

By The Developer: "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 Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District." 9-17-02 PATRICIA A. EUS Printed Name Of Developer By The Engineer: "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 I Have Notified to Developer That He/She Must Engage A Registered Professional Engineer To Supervise Park Control and Provide The Howard Soil Conservation District With An "As-Built" The Within 30 Days Of Completion." 4-11-02 Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control. USDA-Natural Resources Conservation Service These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District. 5-14-De Approved: Department Of Planning And Zoning Chief. Division of Land Development Chief, Development Engineering Division MAJ



NOT' TO SCALE

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

OWNER AND DEVELOPER DR. AND MRS. MICHAEL ELLIS 4971 ILCHESTER ROAD

ELLICOTT CITY, MARYLAND 21043

SEDIMENT EROSION CONTROL AND STORM WATER MANAGEMENT DETAILS GLYNCHESTER FARM BUILDABLE LOTS 1 THRU 46, OPEN SPACE LOTS 47 THRU 53

TAX MAP NO. 31, PARCEL NOS. 239 & 740, GRID NO. 16 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: APRIL 11, 2002 F 02-05

AND NON-BUILDABLE PARCELS 'A' & 'B'

SHEET 20 OF 20

FISHER, COLLINS & CARTER, INC.

ELLICOTT CITY, MARYLAND 21042

Revide Owner, and Developer & Developer's Signature July 22,2002 Dele Revision