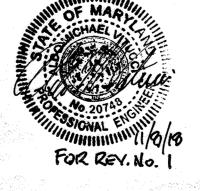
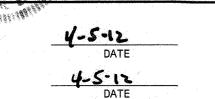


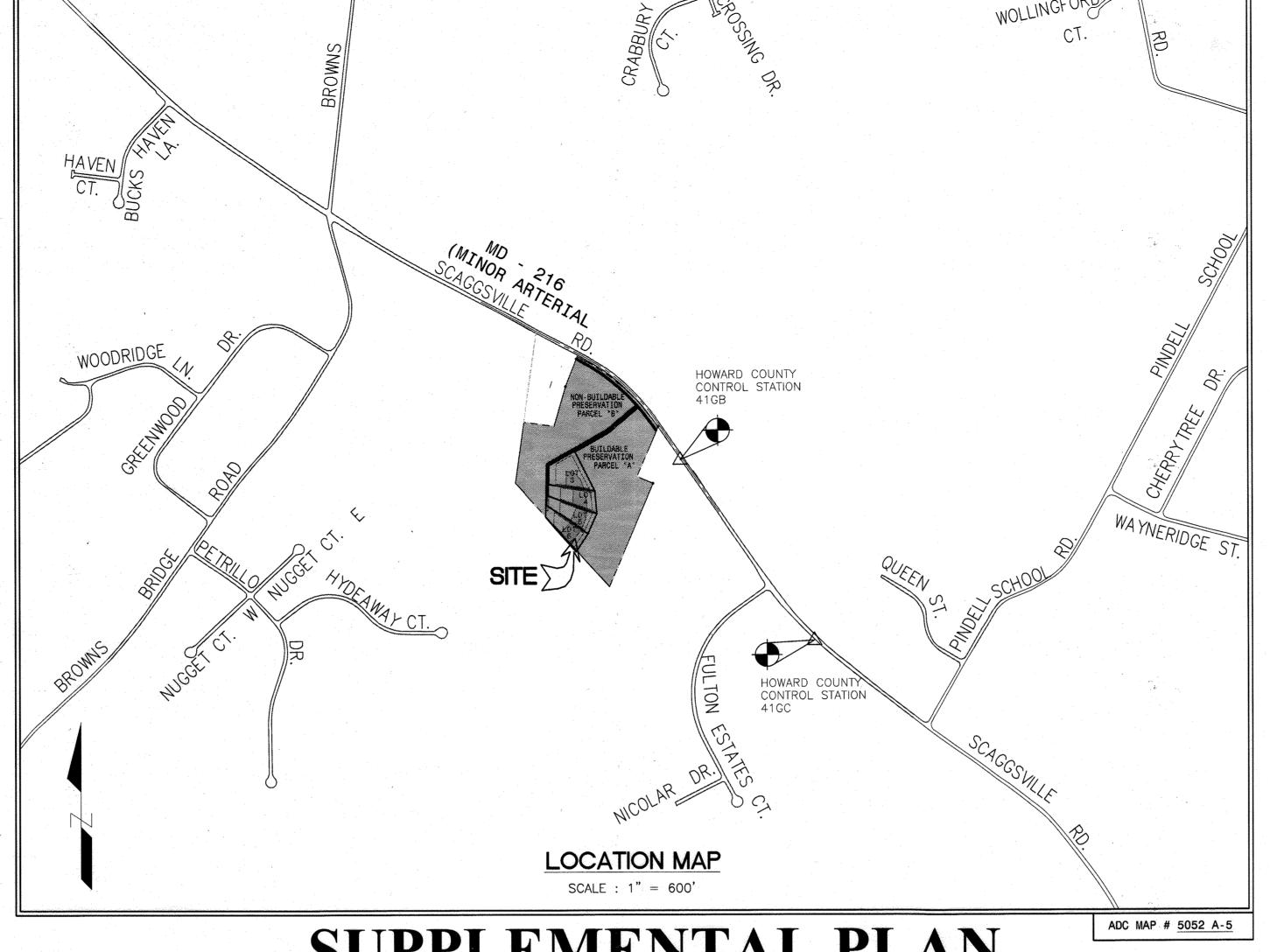
NOT TO SCALE

CO30 DAYBREAK CIRCLE CLARKOVILLE, MARYLAND 21029

DEPARTMENT OF PLANNING AND ZONING







# SUPPLEMENTAL PLAN FULTON WOODS

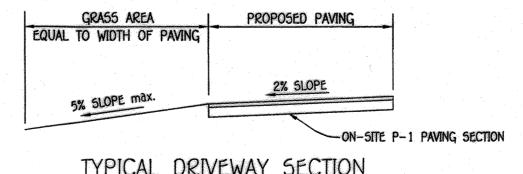
LOTS 3 THRU 6, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCEL'B' A RESUBDIVISION OF FULTON WOODS, LOT#2 PLAT#19301 TAX MAP 41, GRID 13, ZONED RR-DEO 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

	MICE	20-1	310R	ETEN	IOITI	N		
BIORETENTION FILTER	A	В	С	D	£	F	G	H
1 (LOT 3)	445.00	445.00	444.00	442.00	441.75	441.42	439.92	441.00
2 (LOT 4)						439.12		
3 (LOT 5)	440.00	440.00	439.00	437.00	436.75	436.42	434.92	436.00
4 (LOT 6)						431.42		
5 (PRES PARCEL A)						443.42		

MICRO-BIORETENTION PLANT MATERIAL

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

SITE ANALYSIS DATA :



TYPICAL DRIVEWAY SECTION FOR NON-ROOFTOP DISCONNECT CREDIT

FULTON WOODS LLC.

17701 HUNTMASTER CT. WOODBINE, MD. 21797

NOT TO SCALE

- 1. THIS PROJECT IS SUBJECT TO THE AMMENDED FIFTH EDITION OF THE SUBDIVISION REGULATIONS AND LAND DEVELOPMENT REGULATION PER COUNCIL BILL NO. 45-2003 AND THE 2004 ZONING
- 2. THE SUBJECT PROPERTY ZONED "RR-DEO" PER 2-2-4 COMPREHENSIVE ZONING PLAN AND "COMP LITE" ZONING AMMENDMENTS EFFECTIVE 7-28-06

  - c. AREA OF 25% OR GREATER SLOPES = 0.0 Ac.
  - d. NET AREA OF TRACT = 21.17 Ac.
- 4. a. AREA OF PROPOSED ROAD R/W = 0 Ac.
- 5. a. AREA OF PROPOSED BUILDABLE LOTS = 4.57 Ac.
- b. AREA OF PROPOSED BUILDABLE PRESERVATION PARCEL "A" = 8.87 Ac.
- c. AREA OF NON-BUILDABLE PRESERVATION PARCELS "B" = 7.94 Ac.
- 6. NUMBER OF LOTS PROPOSED:
- c. NON-BUILDABLE PRESERVATION PARCEL "B" = 1
- 7. PRIOR CASE NUMBERS ARE AS FOLLOWS: SP-06-011, WP-06-076 & F-06-096 (PLAT # 19301), ECP-11-041 & WP07-064 F-08-014, WP-08-070, WP-09-026, WP-09-182, WP-11-107, WP-11-175, WP-07-064, WP-11-107, ECP 11-041 AND WP 12-044, F-15-064
- 8. PRIVATE WATER AND PRIVATE SEPTIC SHALL BE UTILIZED WITHIN THIS DEVELOPMENT.
- 9. SOILS INFORMATION TAKEN FROM SOIL MAP No. 13, SOIL SURVEY, HOWARD COUNTY, MARYLAND,
- 10. 122222 THIS AREA DESIGNATES A MINIMUM 80,000 SQ. FT. PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR SHARED SEWAGE DISPOSAL. IMPROVEMENTS OF
- ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION TO A PUBLIC SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENT INTO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY. APPROVAL OF THE NUMBER OF
- 11. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED TO THE
- 12. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY JACK C. MELLEMA INC. IN MARCH OF 2005.
- 13. TOPOGRAPHIC CONTOURS BASED FIELD RUN SURVEY PREPARED BY JACK C. MELLEMA INC. IN MARCH OF 2005.
- 14. THERE ARE NO AREAS OF STEEP SLOPES (25% OR GREATER) LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION
- 15. FOREST STAND DELINEATION AND WETLAND REPORT WERE PREPARED BY ECOSCIENCE PROFESSIONALS UNDER F-06-096 AND WERE APPROVED IN JUNE 2007. THE WETLANDS ARE DELINEATION BY THIS PLAT (F-12-044)
- 16. THIS PROPERTY IS LOCATED OUTSIDE OF THE METROPOLITAN DISTRICT.
- 17. THE TRAFFIC STUDY WAS PREPARED BY THE LEE CUNNINGHAM AND ASSOCIATES ON NOV. 15, 2005.
- 18. NO CEMETERIES OR HISTORIC SITE/BUILDING EXIST WITHIN THIS SUBDIVISION
- 20. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF
- 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER FOREST MANAGEMENT
- PRACTICES AS DEFINED IN DEED OF THE FOREST CONSERVATION EASEMENT ARE ALLOWED. 22. THE FLOODPLAIN STUDY WAS PREPARED BY ALDE INC. FOR F-06-096, AND APPROVED BY THE COUNTY ON 08-20-06.
- 23. PER SEC.16.121 OF THE SUBDIVISION REGULATION OPEN SPACE IS NOT REQUIRED
- 24. ALL SHOWN HOUSE SITES COMPLY WITH MINIMUM BUILDING RESTRICTION REGULATIONS
- 25. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREAS AS REQUIRED BY THE
- 26. EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 100 FEET OF THE PROPERTY HAVE BEEN SHOWN FROM THE
- 27. ALL WELLS SHALL BE DRILLED PRIOR TO FINAL PLAT RECORDATION. IT IS THE DEVELOPERS RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS-UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT. IF A WELL SUCCESS RATE IS ACCOMPLISHED AT VARIOUS LOCATIONS WITHIN SITE. THE DEVELOPER SHALL HAVE THE OPTION TO REQUEST RELIEF FROM DRILLING THE REMAINING WELLS PRIOR TO PLAT RECORDATION.
- 28. A GROUND WATER APPROPRIATION PERMIT WILL NOT BE REQUIRED

- (1) RESIDENTIAL BUILDING; (2) FOREST CONSERVATION EASEMENT; (3) WETLAND PRESERVATION;

- WITH SECTION 16 124 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY
- 38. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY
- PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. 39. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTIO

- 42. A FOREST CONSERVATION SURETY IN THE AMOUNT OF \$11.979.00 WILL BE REQUIRED FOR THE ON SITE REFORESTATION
- CONSERVATION BY RECORDING A FOREST CONSERVATION EASEMENT OF 7.92 ACRES. THE FOREST RETAINED IS 7.37

**FULTON WOODS** 

TAX MAP 41, GRID 13, ZONE RR-DEO 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SUPPLEMENTAL PLAN

SP-06-011 F-06-096 ECP-11-041 F-15-064

	And the second s	and the second s	and the second s
PREPARED BY: DWPR LLC. 7017 MEANDERING STREAM WAY FULTON, MD. 20759 FEL. 301-317-4058		OWNERS :  DEVELOPER :	FULTON WOODS, LLC. 17701 HUNTMASTER CT. WOODBINE, MD. 21797 TEL: 301.641.  FULTON WOODS, LLC. 17701 HUNTMASTER CT. WOODBINE, MD. 21797
DES. : DW/AVG	JOB :	the special control of the state of the special control of the speci	TEL: 301.641.5
NOW . AVC	PRO I ·	SCALE .	

## APPROVED BY ME. AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSED No. 14440 EXPIRATION DATE: 5-19-2013.

, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR

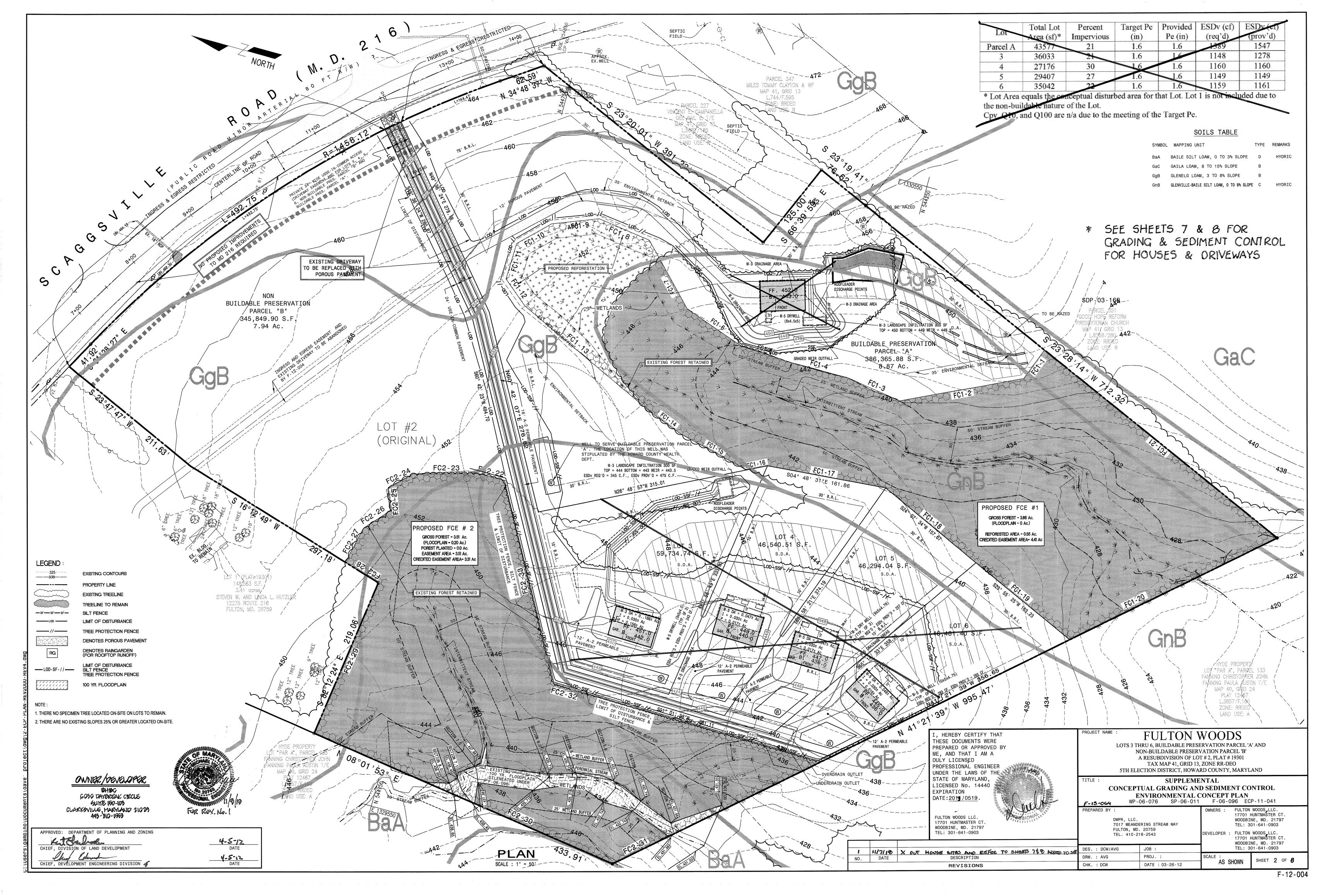
NO. REVISIONS

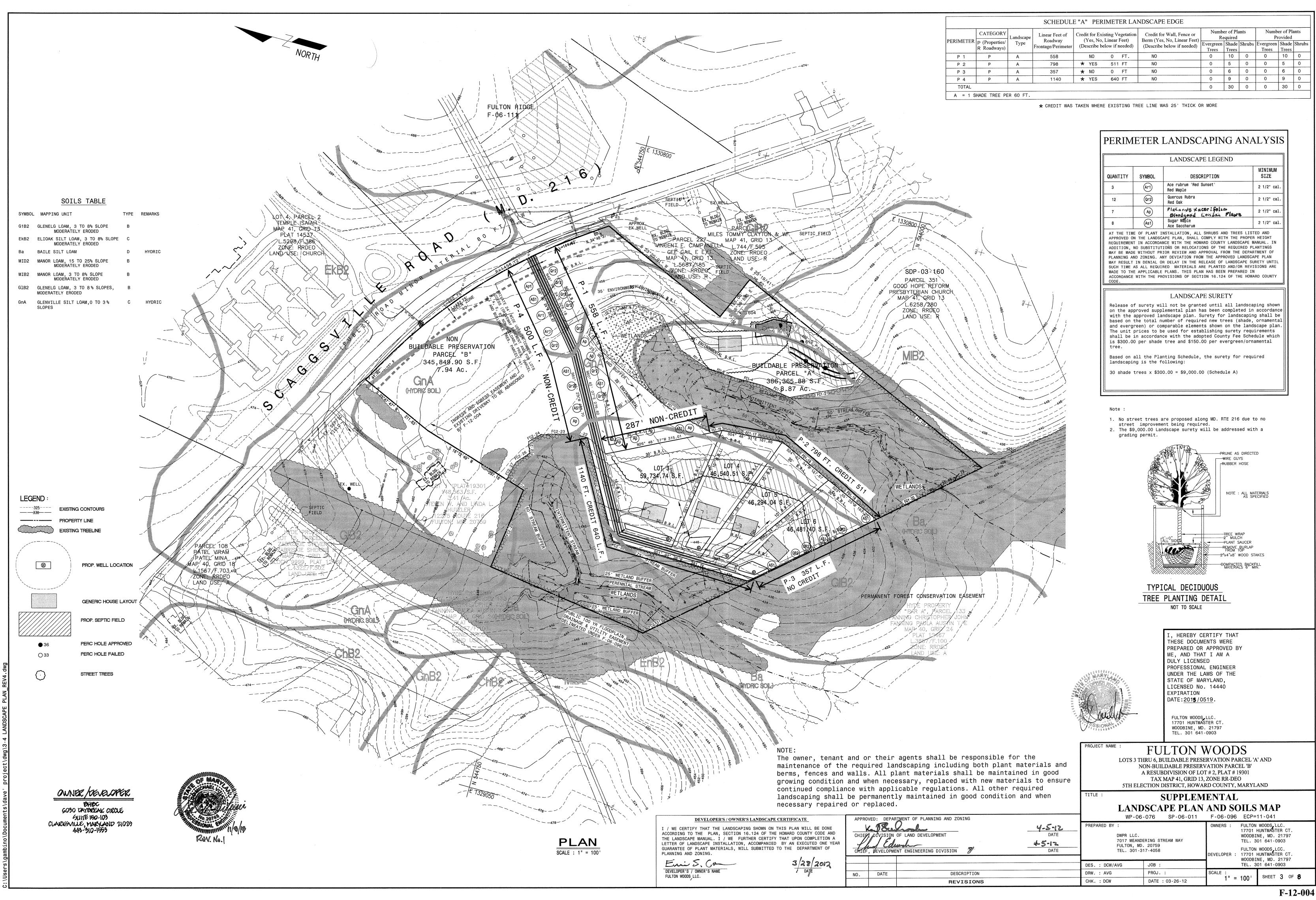
STORMWATER MANAGEMENT PRACTICES

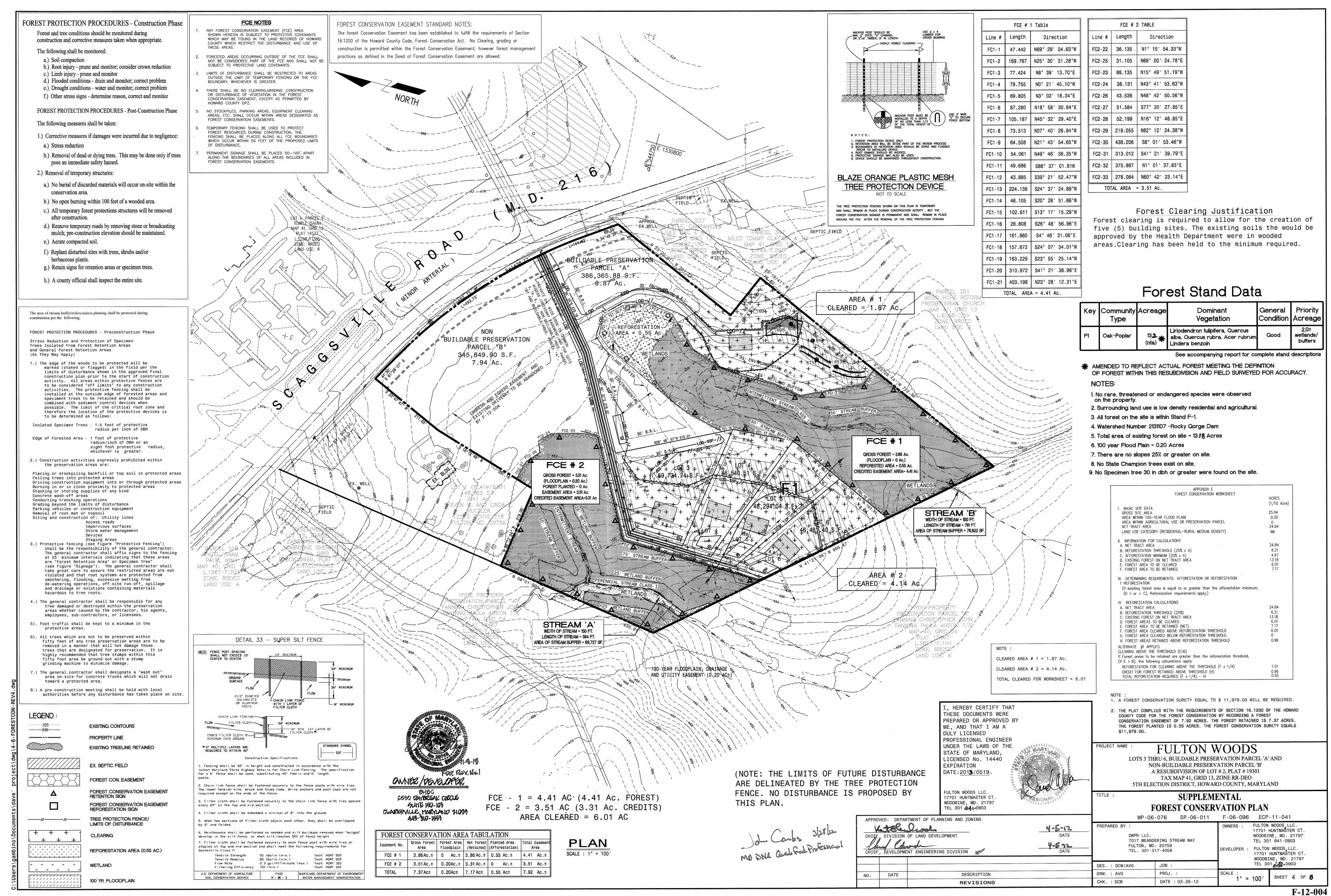
NUMBER	ADDRESS	CONGERVATION AREA	BIORGICHIAN M-6	ORAGO SNALVE M-8	
		N-3	(NUMBER)	(NUMBER)	
1(A)	12245 BLUE SKY BUGUING WAY		1		
3	12251 BLUE SKY EVENING WAY		1		
4	12295 BLUE 9KY EVENING WAY		1		
5	12259 BLUE SKY EVENING WAY		}		
( )	19263 BLUE SKY EVENING WAY	₹1	1		
	USE-IN-COMMON DRIVE	4		3	

LIMIT OF DISTURBANCE AREA ..... = 3.84 Ac. IMPERVIOUS AREA ..... = 0.93 Ac. GREEN OPEN AREA ..... = 20.45 Ac. AREA OF 25% OR GREATER SLOPES ... = 0.000 Ac FOREST AREA ..... = 14.20 Ac. WETLAND AND WETLAND BUFFER ..... = 3.90 Ac. WETLAND AREA ..... = 1.70 Ac. WETLAND BUFFER AREA ..... = 2.20 Ac. AREA OF ERODIBLE SOILS ..... = 5.74 AC

GROSS AREA OF TRACT ..... = 21.37 Ac.







RIPARIAN SPECIES (Hydric soils only) SIZE QUANTITY/ACRE Sugar maple Acer saccharna River birch Betula nigra whip Black willow Quercus palustris whip Salix nigra whip Platanus Occidentalis whip

OTHER PLANTING INSTRUCTIONS Plant material should be obtained from a reputable nursery and ordered 3 to 6 months before desired delivery. Delivery should be arranged to occur as close to planting time possible, and stock should be protected from direct sun and drying until planting. Planting dates are October through May, with spring months preferred. (Suggested supplier: Silva Native Nursery & Seed Co., New Freedom, PA, (717) 227-0486.

Total Provided = 193

Stock should be inspected before planting for signs of damage, disease, or insect infestation, vigor, and size. Damaged or inferior plants should be replaced.

Upon planting container grown stock, plants should be removed from the container and the soil gently loosened from the roots. If roots encircle the root ball, or are J-shaped or kinked, consider replacement. Do not trim roots on-site.

The planting field should be dug and backfilled with the native soil. Rake the surface and cover the disturbed area with approximately 4 inches of mulch, but avoid burying the base of the stem to prevent fungal rot. Water immediately to settle the soil around the roots.

MAINTENANCE AND PROTECTION OF PLANTED AREA

residents to monitor and protect the plantings.

Soils should be tested to determine the need for fertilizer. If fertilizer is needed, it should be applied at the testing lab's recommended rates after the first growing season (late fall or early spring). Organic or slow-release fertilizers are preferred.

Watering should be planned to compensate for deficient rainfall. New plantings need water once a week for the first growing season. The second year, watering may only be necessary in July and August, and in subsequent years only water during drought periods. Watering should be done slowly enough to permit deep soaking of the root zone.

manually, or by careful and selective use of appropriate herbicide Post protective signage that states that this area is a Forest Conservation Area and trees have been planted for reforestation. An effort should be made to inform and gain the cooperation of the adjacent

Monitor the young trees for several years for health, insect damage, and invasive vines. Replace dead

FOREST PROTECTION PLAN

The forest conservation and reforestation areas will need to be protected from injury during the land clearing and construction process, and from any future land use changes. Long-term protection will require placing the forest in a permanent, recorded, non-developable open space or consevation easement. The legal document establishing this protection will be required for final FCP approval.

#### CONSTRUCTION PHASE

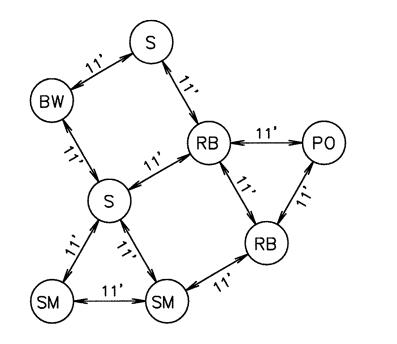
Protective measures during the construction stage will focus on protecting the critical root zone of the retained trees along the new forest edge. The final LOD line will be staked in the field by a qualified professional who will determine which individual trees will be saved, and the extent of the critical root zone based on trees species and size. The resulting boundary will be fenced with approved fencing and posted as a tree preservation area, and no disturbance to the vegetation within the retention area will be allowed, except that which may be necessary to manage the health of the trees, such as thinning, pruning, or vine control. Any grading and construction that will occur uphill from the forest will require sediment control measures such as a silt fence or other device that will prevent siltation in the critical root zone of retained trees.

TWO-YEAR POST-CONSTRUCTION MANAGEMENT PROGRAM

Howard County requires the developer to commit to a minimum of two years of responsibility for the management of the Forest Conservation Area. The program must be supervised by a qualified professional. The obligations include: periodic (beginning and end of growing season) inspection of the or removal of damaged or dying trees, or invasive plant control; education of new land owners or occupants about allowable activities and future responsibilities for the forest; and a final inspection and certification that the forest is intact and the conditions of FCP have been met submitted to the County. Upon review of the final certification, the County will notify the developer of release from all future obligations, and their transferral to the owner.

MD DNR Qualified Professional

# TYPICAL PLANTING DIAGRAM



PO = PIN OAKSM = SUGAR MAPLE RB = RIVER BIRCHBW = BLACK WILLOW

= SYCAMORE

# NOTE TO CONTRACTOR:

1. FOR DEAD OR DISEASED TREES, THE CONTRACTOR MAY REMOVE THE SAME. 2. TREES ARE TO BE PLACED IN A RANDOM PATTERN TO CREATE A NATURAL EFFECT. THEY ARE TO BE MIXED IN THE RATIOS DESCRIBED ABOVE AND THEY ARE TO BE SPACED APPROXIMATELY 20 FEET APART.

FOREST PROTECTION PROCEDURES - Construction Phase

Forest and tree conditions should be monitored during construction and corrective measures taken when appropriate.

The following shall be monitored:

a.) Soil compaction

b.) Root injury - prune and monitor; consider crown reduction

c.) Limb injury - prune and monitor d.) Flooded conditions - drain and monitor; correct problem

FOREST PROTECTION PROCEDURES - Post-Construction Phase

e.) Drought conditions - water and monitor; correct problem

f.) Other stress signs - determine reason, correct and monitor

The following measures shall be taken:

1.) Corrective measures if damages were incurred due to negligence: a.) Stress reduction

b.) Removal of dead or dying tress. This may be done only if trees

pose an immediate safety hazard. 2.) Removal of temporary structures:

a.) No burial of discarded materials will occur on-site within the conservation area.

b.) No open burning within 100 feet of a wooded area.

c.) All temporary forest protections structures will be removed after construction.

d.) Remove temporary roads by removing stone or broadcasting mulch; pre-construction elevation should be maintained.

e.) Aerate compacted soil.

f.) Replant disturbed sites with trees, shrubs and/or herbaceous plants.

g.) Retain signs for retention areas or specimen trees.

h.) A county official shall inspect the entire site.

The area of stream buffer/reforestation planting shall be protected during construction per the following:

FOREST PROTECTION PROCEDURES - Preconstruction Phase Stress Reduction and Protection of Specimen Trees Isolated from Forest Retention Areas and General Forest Retention Areas

(As They May Apply)

1.) The edge of the woods to be protected will be marked (staked or flagged) in the field per the limits of disturbance shown in the approved final construction plan prior to the start of construction activity. All areas within protective fences are to be considered "off limits" to any construction activities. The protective fencing shall be installed at the outside edge of forested areas and speciment trees to be retained and should be combined with sediment control devices when ossible. The limit of the critical root zone and herefore the location of the protective devices is to be determined as follows:

Isolated Specimen Trees - 1.5 feet of protective radius per inch of DBH

Edge of Forested Area - 1 foot of protective radius/inch of DBH or an eight foot protective radius, whichever is greater.

2.) Construction activities expressly prohibited within the preservation areas are:

Placing or stockpiling backfill or top soil in protected areas Felling trees into protected areas
Driving construction equipment into or through protected areas Burning in or in close proximity to protected areas Stacking or storing supplies of any kind oncrete wash-off areas Conducting trenching operations

Storm water management

Grading beyond the limits of disturbance Parking vehicles or construction equipment Siting and construction of: Utility lines Impervious surfaces

Staging Areas 3.) Protective fencing (see Figure "Protective Fencing")
shall be the responsibility of the general contractor The general contractor shall affix signs to the fencing at 25' minimum intervals indicating that these areas are "Forest Retention Area" or Specimen Tree" (see Figure "Signage"). The general contractor shall take great care to assure the restricted areas are not violated and that root systems are protected from smothering, flooding, excessive wetting from de-watering operations, off-site run-off, spillage and drainage or solutions containing materials hazardous to tree roots.

4.) The general contractor shall be responsible for any tree damaged or destroyed within the preservation areas whether caused by the contractor, his agents, employees, sub-contractors, or licensees.

5). Foot traffic shall be kept to a minimum in the protective areas.

6). All trees which are not to be preserved within fifty feet of any tree preservation areas are to be removed in a manner that will not damage those trees that are designated for preservation. It is highly recommended that tree stumps within this fifty foot area be ground out with a stump grinding machine to minimize damage.

7.) The general contractor shall designate a "wash out" area on-site for concrete trucks which will not drain

8.) A pre-construction meeting shall be held with local authorities before any disturbance has taken place on site.

### FCE NOTES

ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.

FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.

LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.

THERE SHALL BE NO CLEARING, GRADING , CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNT DPZ.

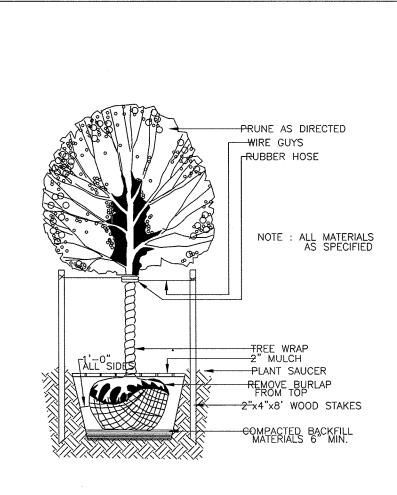
NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.

TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 50 FEET OF THE PROPOSED LIMITS

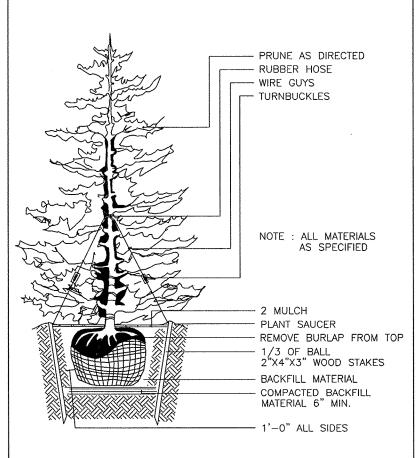
FOREST CONSERVATION EASEMENTS.

PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART

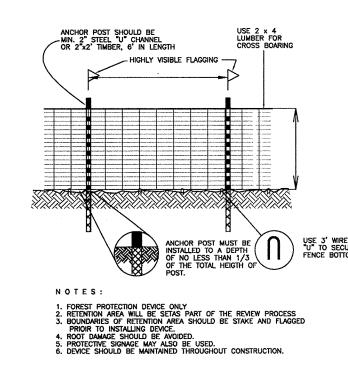
ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN



TYPICAL DECIDUOUS TREE PLANTING DETAIL NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL NOT TO SCALE



BLAZE ORANGE PLASTIC MESH

THE TREE PROTECTION FENCING SHOWN ON THIS PLAN IS TEMPORARY AND SHALL REMAIN IN PLACE DURING CONSTRUCTION ACTIVITY. BUT THE FOREST CONSERVATION SIGNAGE IS PERMANENT AND SHALL REMAIN IN PLACE AROUND THE FCE AFTER THE REMOVAL OF THE TREE PROTECTION FENCING

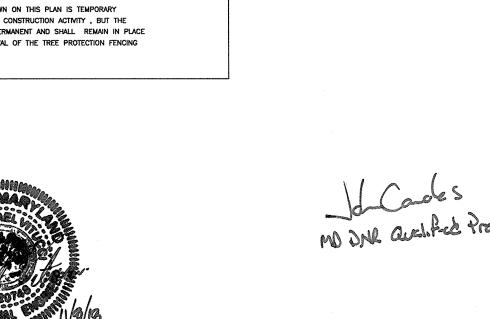
OWNER/DEVELOPER

6030 Daybreak Circue

9UHE 150-103

CLARKEVILLE, MARYLAND 21029

443-310-1553



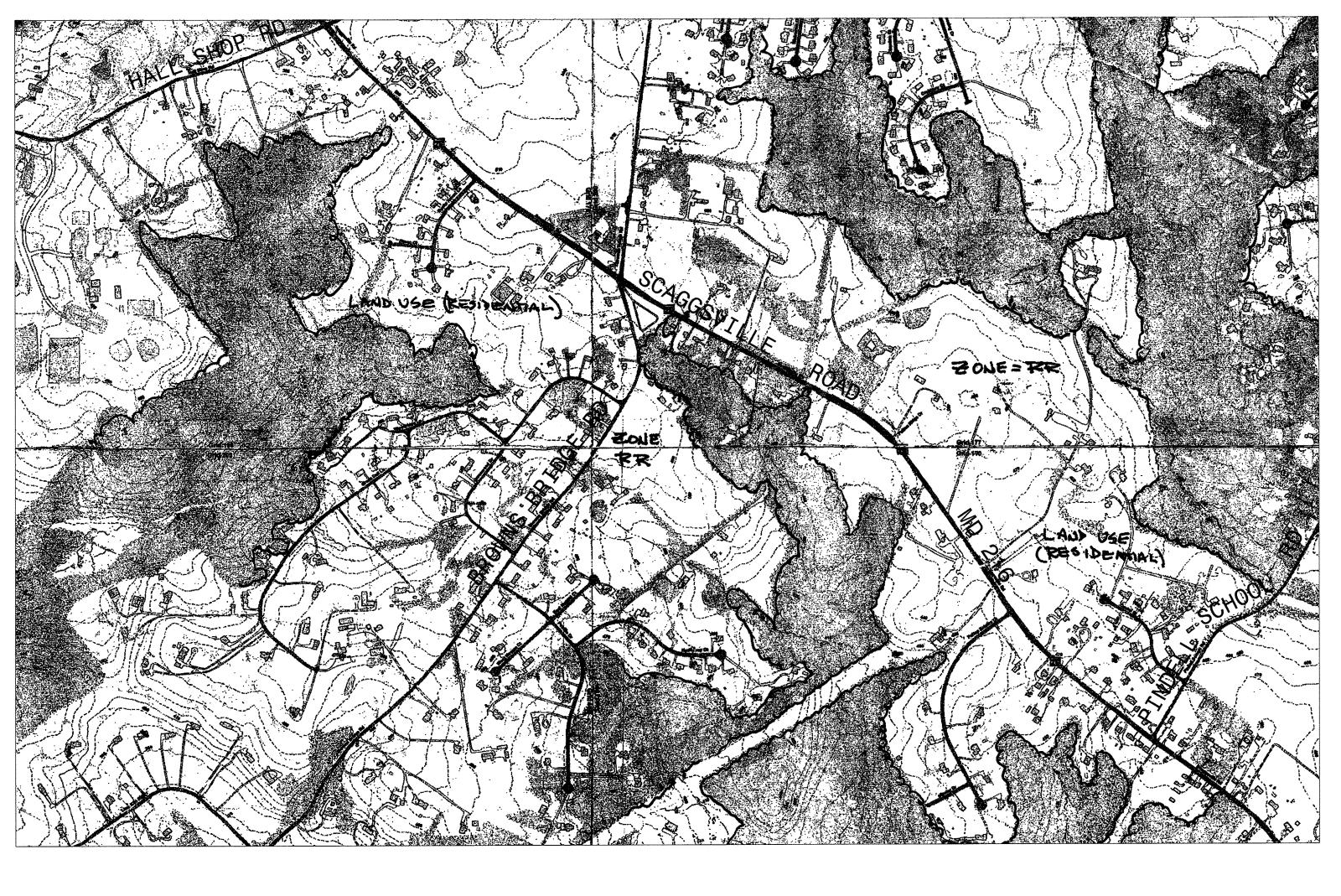
DEVELOPER'S / OWNER'S LANDSCAPE CERTIFICATE I / WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I / WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR

GUARANTEE OF PLANT MATERIALS, WILL SUBMITTED TO THE DEPARTMENT OF

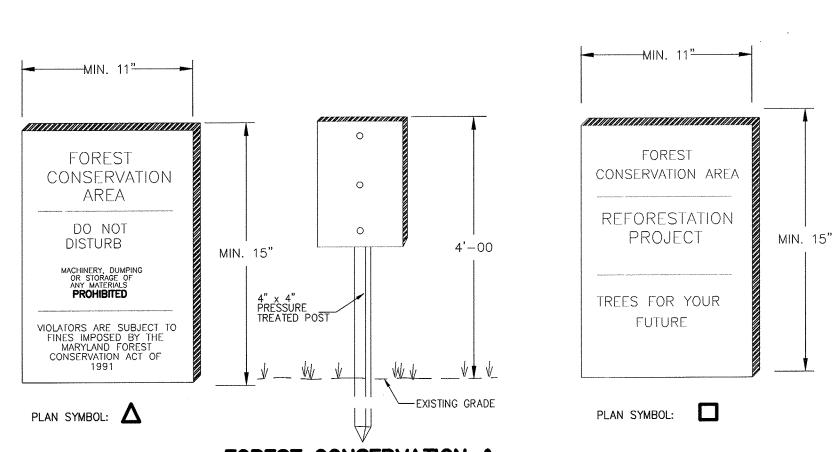
En S. Ca DEVELOPER'S / OWNER'S NAME FULTON WOODS, LLC.

PLANNING AND ZONING.

3/28/2012



LOCATION MAP SCALE : 1" = 1000'



FOREST CONSERVATION & REFORESTATION SIGN DETAIL NOT TO SCALE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF DIVISION OF LAND DEVELOPMENT

DATE

NO.

of Echandron

CHIEF, DEVELOPMENT ENGINEERING DIVISION

FOREST CONSERVATION EASEMENT STANDARD NOTES:

The forest Conservation Easement has been established to fulfill the requirements of Section

construction is permitted within the Forest Conservation Easement; however forest management

DESCRIPTION

**REVISIONS** 

16.1200 of the Howard County Code, Forest Conservation Act. No Clearing, grading or

practices as defined in the Deed of Forest Conservation Easement are allowed.

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, ICENSED No. 14440 EXPIRATION DATE: 2013 / 0519.

FULTON WOODS, WOODBINE, MD. 21797

TEL. 301-641-0903

**FULTON WOODS** 

DATE: 03-26-12

TITLE :

4-5-12

1-5-12

DATE

LOTS 3 THRU 6, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCEL 'B' A RESUBDIVISION OF LOT # 2, PLAT # 19301 TAX MAP 41, GRID 13, ZONE RR-DEO 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

SUPPLEMENTAL FOREST CONSERVATION PLAN PLANTING PLAN AND DETAILS

WP-06-076 SP-06-011 F-06-096 ECP-11-041 DWPR LLC. 7017 MEANDERING STREAM WAY FULTON, MD. 20759

PREPARED BY : FULTON WOODS, & C. 17701 HUNTMASTER CT. WOODBINE, MD. 21797 TEL. 301-641-0903 FULTON WOODS, LLC. TEL. 301-317-4058 DEVELOPER : 17701 HUNTMÅSTER CT. WOODBINE, MD. 21797 TEL. 301-641-0903 DES. : DCW/AVG J0B : PROJ. SHEET 5 OF 8 1" = 100'

F-12-004

# 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 em-

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.

#### <u>Earth Fill</u>

NRCS - MARYLAND

Material - The fill material shall be taken from approved designated borrow areas. 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 enMaterials used in the outer shell of the empankment must have the capability to support vegetation of the quality required to prevent crosion of the embankment

<u>Placement</u> - Areas on which fill is to be placed shall be scarified prior to placement of ill. 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.

<u>Compaction</u> - 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 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 hall 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. Fach 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 embankmen 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 denth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be I to I or flatter. The backfill shall be compacted with construction equipment, roll-

JANUARY 2000

ers, or hand tampers to assure maximum density and minimum permeability.

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

#### 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 pacted by hand tampers or other manually directed compaction confirment. The material adjacent to the pipe. At no time during the 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

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 old 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

exceed four inches in thickness and comneeds to fill completely all spaces under and backfilling operation shall driven equipment

be 7" to assure flowability of the material.

Adequate measures shall be taken (sand bags

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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 conform-

# bankment or other embankment materials.

All pipes shall be circular in cross section. Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

ing to that specified for the core of the em-

etc.) to prevent floating the pipe. When using

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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 wa-

tertight coupling bands or flanges.

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

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two coats of asphalt.

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

- 2. Coupling bands, anti-scep 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 pine and riser are metal. Anti-seen collars shall be connected to the pine 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 pine shall be re-rolled an adequate number of corrugations to accommodate the handwidth. 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 easket, pre-punched 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 oring gaskets having a minimum diameter

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with one coat of zinc chromate primer or 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 I inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

- Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neo-
- Bedding The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other instable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling shall conform to "Structure

6. Other details (anti-seep collars, valves,

etc.) shall be as shown on the drawings. Reinforced Concrete Pipe - All of the follow-

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

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 pine and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons. flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

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3. Laying pipe - Bell and spigot pipe shall be placed with the bell and upstream. Joints Concrete shall meet the requirements of shall be made in accordance with recommendations of the manufacturer of the Maryland Department of Transportation, material. After the joints are sealed for State Highway Administration Standard Specifications for Construction and Materials, the entire line, the hedding shall be placed so that all spaces under the pipe are filled. Section 414, Mix No. 3.

viation from the original line and grade of

the pipe. The first joint must be located

4. Backfilling shall conform to "Structure

5. Other details (anti-seep collars, valves,

etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall ap-

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-

shall be completely watertight.

adequate support.

Backfill".

struction inspection.

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1785 or ASTM D-2241. Corrugated High

Density Polyethylene (HDPE) pipe, cou-

within 4 feet from the riser.

ply for plastic pipe:

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

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.

### Care of Water during Construction

plings and fittings shall conform to the All work on permanent structures shall be following: 4" - 10" inch pipe shall meet carried out in areas free from water. The the requirements of AASHTO M252 Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage Type S, and 12" through 24" inch shall channels, and stream diversions necessary to meet the requirements of AASHTO M294 protect the areas to be occupied by the permanent works. The contractor shall also fur-2. Joints and connections to anti-seep collars nish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the 3. Bedding -The pipe shall be firmly and uniformly bedded throughout its entire work and for maintaining the excavations, foundation, and other parts of the work free length. Where rock or soft, spongy or from water as required or directed by the enother unstable soil is encountered, all such gineer for constructing each part of the work. After having served their purpose, all tempomaterial shall be removed and replaced rary protective works shall be removed or with suitable earth compacted to provide leveled and graded to the extent required to prevent obstruction in any degree whatsoever 4. Backfilling shall conform to "Structure 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

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 conof the excavated slopes and bottom required excavations and will allow satisfactory per-

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formance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be

### <u>Stabilization</u>

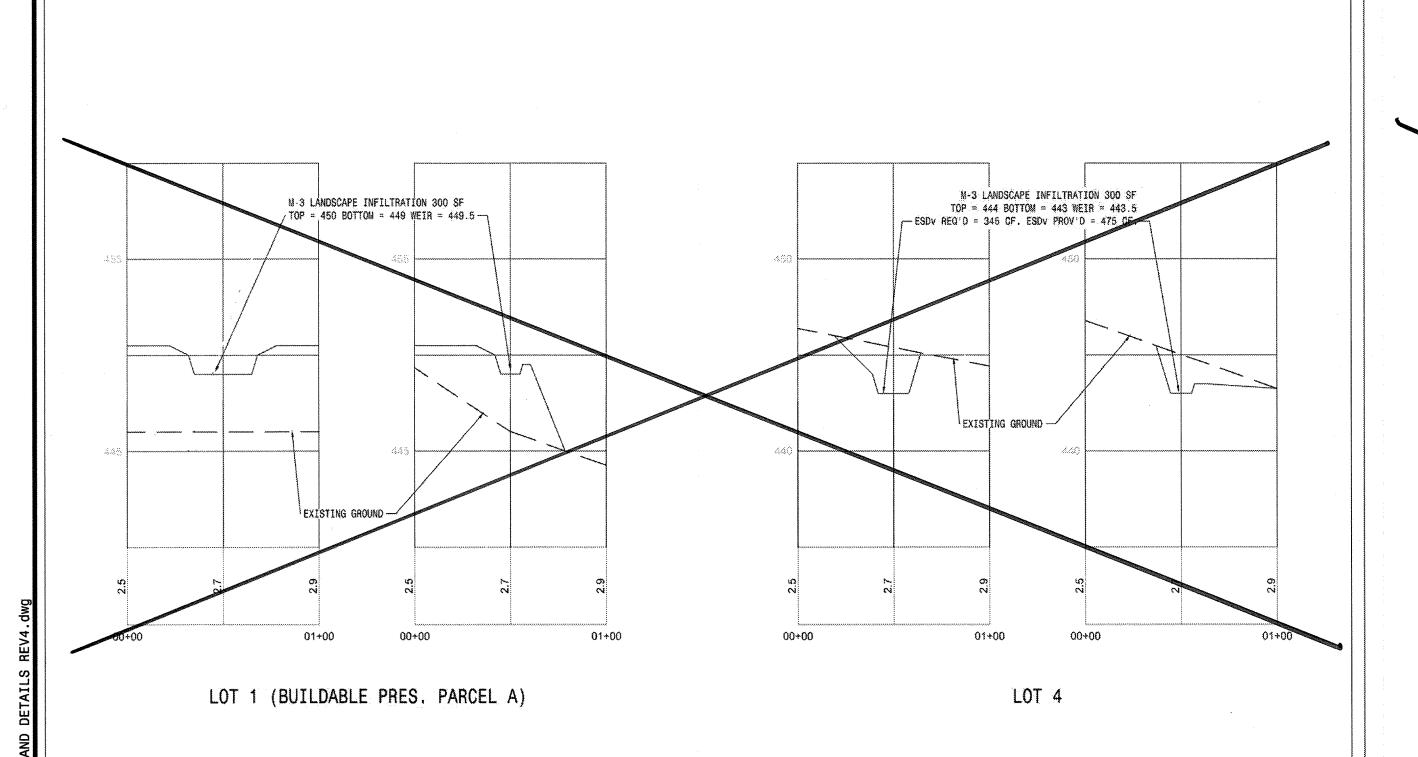
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming fertilizing and mulching in accordance with the Natural Resources Conservation Service 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 crosion and sediment control measures.

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[OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)]

- Owner shall periodically sweep (or vacuum porous concrete pavement) t surfaces to reduce sediment accumulation and ensure co Sweeping should be performed at least twice and commercial dearing unit. Washing or compressed air units should not be used to perform surface clear
- The Owner shall periodically clean s, inlets, stone edge drains and other structures within or draining to th
- noderation. Delicers should be non-toxic and be The Owner shall use deice applied either as calciu magnesium acetate or as pretreal

all ensure snow plowing is performed carefully with blad e the surface. Plowed snow piles and snowmelt should not be di [Insert to ¶ 4]

IOPERATION AND MAINTENANCE SCHEDULE FOR DSCAPE INFILTRATION **(M-3)** MICRO-BIORETENTION (**M-6** RAIN GARDENS (M-7), BIORETENTION SWALE (M-8), ENHANCED FILTERS (M-9))

- a. The Owner shall regintain the plant material, mulch layer and soil layer annually. Maintenance of mulcil and soil is limited to correcting a was of erosion or wash out. Any mulch replacement shall be done in the spying. Plant material shall be checked for disease and in sect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland Stormwate Design Manual Volume II, Table A.4.1 and 2.
- The Owner shall perform a plant in We spring and in the fall of each year. During the inspection, the Owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material will acceptable replacement plant material, treat diseased tyres and shrubs, and replace all deficient stakes and
- The Owner shall is spect the mulch each spring. The mulch shall be replaced every two to three wars. The previous mulch layer shall be removed betwee the new layer is appli
- Nuner shall correct soil erosion on an as needed basis, with a minimur per month and after each heavy storm...

IOPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES (I-1),

ORY WELLS (M-5)] The Owner shall inspect the monitoring wells and structures on a quarterly bas

and an every heavy storm event. The Owner shall record the water levels and sediment build up in the monitoring wells over a period of several days to insure trench drainage.

The Owner shall maintain a log book to determine the rate at which the facility

When the facility becomes clogged to that does not drain down within a seventytwo (72) hour time period, corrective action shall be to

e. The maintenance log book shall be available to Howard Sounty for inspection to insure compliance with operation and maintenance criteria.

me performance characteristics of the infiltration facility have bee ring schedule can be reduced to an annual basis unless the performanc ates that a more frequent schedule is required.

> , HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSED No. 14440 EXPIRATION DATE: 2013 /0519.

FULTON WOODS, LLC 17701 HUNTMASTER CT.

WOODBINE, MD. 21797 TEL. 301-641-0903

OWNER/DEVELOPER 6030 DAYBREAK CIRCLE

GUME 150-103 CLARKGNILLE, MARCHAND 21029 443-310-1553

APPROVED: DEPARTMENT OF PLANNING AND ZONING 658 hole CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE

DEVELOPER'S / OWNER'S LANDSCAPE CERTIFICATE

I / WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. I / WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Emis. Com DEVELOPER'S / OWNER'S NAME FULTON WOODS, LLC

CHIEF, DIVISION OF LAND DEVELOPMENT

3/28/2012

APPROVED: DEPARTMENT OF PLANNING AND ZONING DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION DES. : DCW/AVG 1 11/7/19 X OUT PROFILE & NOTES DESCRIPTION DATE REVISIONS

**FULTON WOODS** 

J0B :

DATE : 2-27-12

TITLE :

LOTS 3 THRU 6, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCEL 'B' A RESUBDIVISION OF LOT # 2, PLAT # 19301 TAX MAP 41, GRID 13, ZONE RR-DEO 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

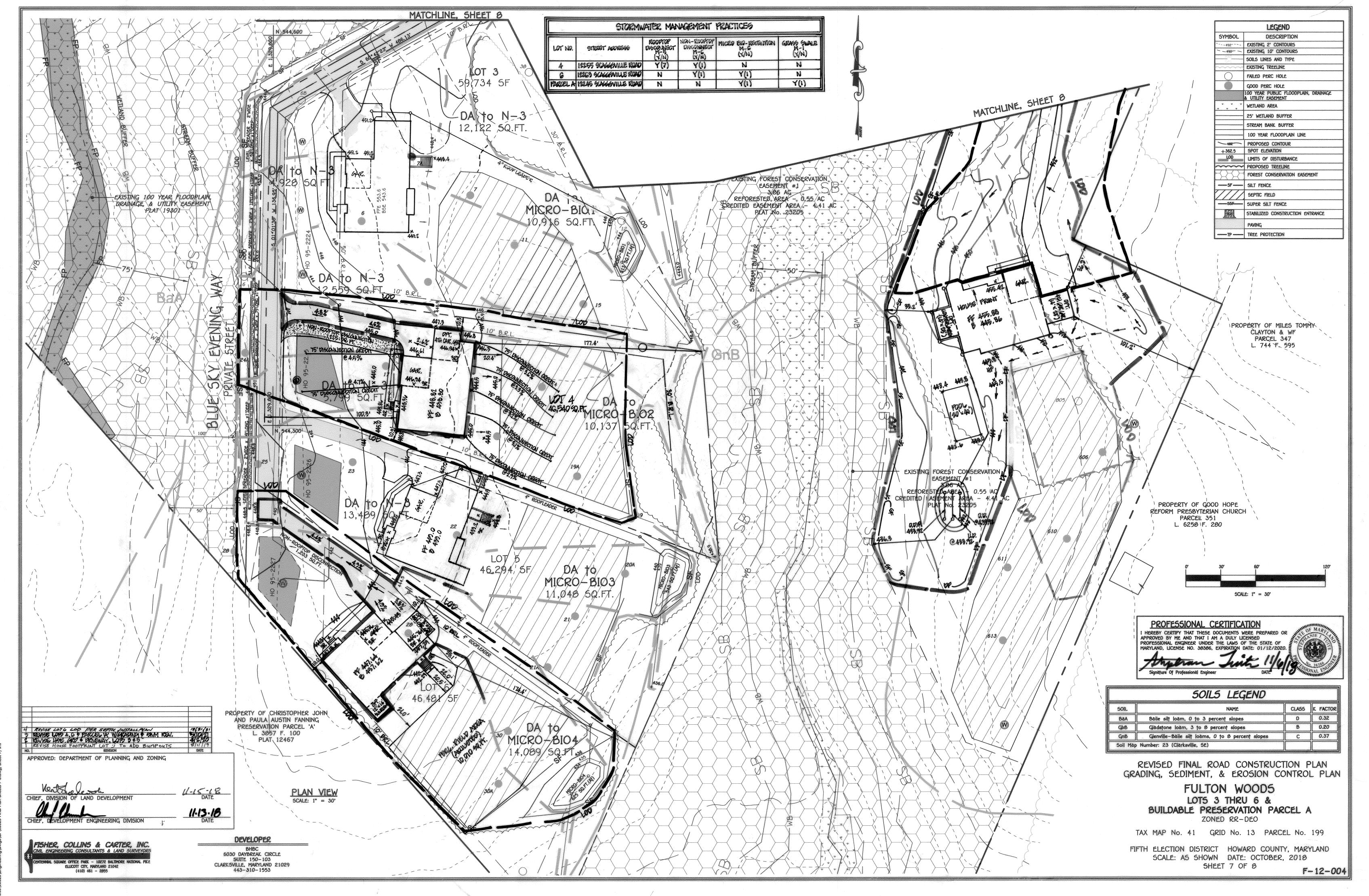
**SUPPLEMENTAL** 

POND NOTES AND DETAILS

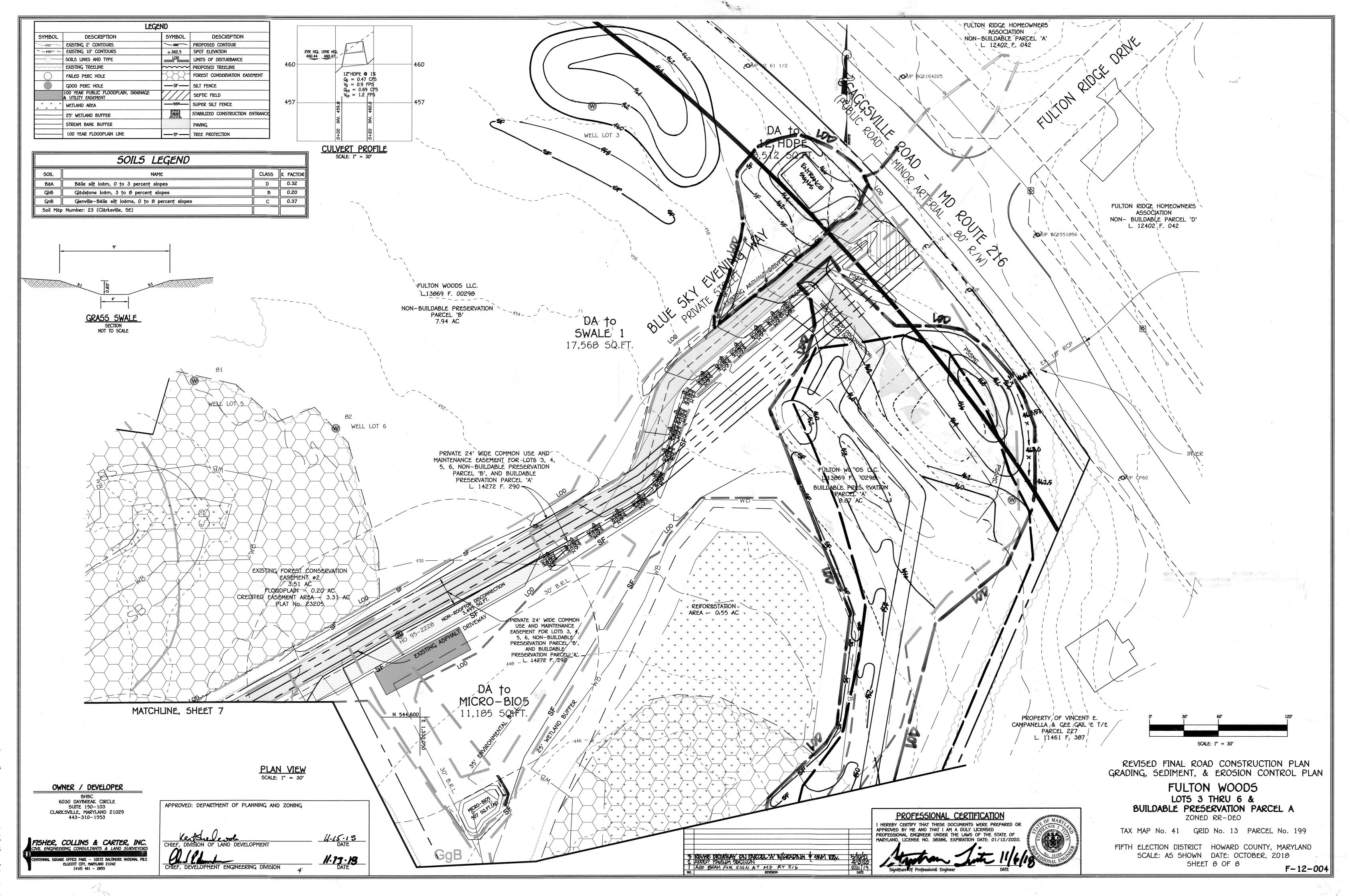
WP-06-076 SP-06-011 F-06-096 ECP-11-041 F-15-064 17701 HUNTMASTER CT. DWPR LLC. WOODBINE, MD. 21797 7017 MEANDERING STREAM WAY TEL. 301-641-0903 FULTON, MD. 20759 FULTON WOODS, LLC TEL. 301-317-4058 : 17701 HUNTMASTER CT. WOODBINE, MD. 21797

> TEL, 301-641-0903 SHEET 6 OF 8 F-12-004

1" = 100'



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