SHEET INDEX 2 ENVIRONMENTAL CONCEPT PLAN 3 ENVIRONMENTAL CONCEPT PLAN 4 ENVIRONMENTAL CONCEPT PLAN 5 ENVIRONMENTAL CONCEPT PLAN PRELIMINARY EROSION & SEDIMENT CONTROL PLAN PRELIMINARY EROSION & SEDIMENT CONTROL PLAN 8 PRELIMINARY EROSION & SEDIMENT CONTROL PLAN PRELIMINARY EROSION & SEDIMENT CONTROL PLAN 10 STORMWATER MANAGEMENT NOTES & DETAILS

		STORMWA	ITER MANAGEMENT SUMMARY
AREA ID.	E50v REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
SITE	17,093	26,252	ROOFTOP DISCONNECTIONS (N-1), NON-ROOFTOP DISCONNECTIONS (N-2), DRY WELLS (M-5), MICRO-BIORETENTION (M-6) & POCKET POND (P-5)
TOTAL	17,093	26,252	

	STORMWA	ITER MANAGEMENT PR	PACTICES	
LOT NO.	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	DRY WELLS (M-5) Y/N, NUMBER	MICRO-BIORETENTION (M-6) Y/N, NUMBER
3	NO	YE5	YES, FOUR (4)	NO Y
4	NO	YES	YES, FOUR (4)	NO
5	NO	YE5	NO	YE5, ONE (1)
6	NO	YE5	YES, FOUR (4)	NO
7	. NO	NO	NO	YE5, ONE (1)
8	NO	YE5	YES, FOUR (4)	NO
9	NO	YE5	YES, FOUR (4)	NO
10	NO	YE5	NO	YES, ONE (1)
11	NO	YE5	YES, FOUR (4)	NO
12	NO	YE5	YES, FOUR (4)	NO NO
13	NO	YE5	YES, FOUR (4)	. : NO
14	YES, NINE (9)	YES	YES, FOUR (4)	NO

DESIGN NARRATIVE

This report will demonstrate how the criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009) will be satisfied on this project. The goal of creating hydrology similar to that of "Woods in Good Condition" will be accomplished through the use of the practices contained within Chapter 5 of said manual. The achievement of this goal will remove the requirement of providing Channel Protection Volume.

Westland Farm Estates is a 45.209 acre lot that exists along Lime Kiln Road. The Lot is also known as 12549 Lime Kiln Road. Property is zoned RR-DEO and located on Tax Map 45, Grid 5, Parcel No. 20, Lot No. 2 of the Howard County, Maryland Tax Map Database System. This property will utilize a private well and private septic system. The property is located in the Fulton area of Howard County in the watershed of an unnamed tributary of the Patuxent River (Rocky Gorge Dam) (02131107). This property is relatively square in shape and runoff on—site runs in all directions with a ridge through the middle of the property. The property borders the WSSC to the south. Forest exists on—site and afforestation is proposed. Also, according to a field inspection conducted by Eco—Science Professionals (ESP) dated December 2000, no wetlands exist on-site, but streams, stream buffers, and floodplain exist on-site. The Web Soil Survey shows soils on the site consist mostly of Glenela loam, Manor loam, and Manor-Brinklow complex (GaB, GaC, MaC, MaD, MkF), Type "B" soils and Benevola silt loam, Glenville silt loam, and Wiltshire silt loam (BeB, GmB, WhB), Type "C" soils. The runoff from the roofs of the proposed houses is to be directed through roof leaders to micro-bioretentions or drywells. A portion of the driveway runoff will be treated by micro-bioretentions, but the majority will utilize non-rooftop disconnection credit. The proposed roadway will be treated by a pocket pond.

Environmentally sensitive areas do exist on-site, therefore special effort is being taken to protect natural resource on-site. Stream and stream buffers areas have been placed within forest conservation easements and the floodplain has been placed on open space.

It is the intent of the proposed design to discharge runoff similar to the characteristics and direction of this site prior to any of the proposed

III. Reduction of impervious areas through better site design, alternative surfaces and Nonstructural Practices

The design of this project utilizes a proposed public road, individual and common driveways. Non-Structural practices as permitted in Chapter 5, Drywells (M-5), Micro-Bioretentions (M-6), and Non-Rootop Disconnection (N-2) will be used to address ESD to the MEP requirements for the stormwater related to the individual lots. A structural pocket pond will be utilized for the public road.

IV. Integration of Erosion and Sediment Controls into Stormwater Strategy:

It is anticipated that silt fence, super silt fence, and erosion control matting will be utilized for erosion & sediment control. There is no direct discharge of runoff directly to a stream. All on-site runoff from the proposed lots will discharge to the existing ground then to the Little Patuxent River (Rocky Gorge) located off-site. The public roadway drainage will be directed to the proposed side ditches, then to a proposed storm drain system that will go to the sand filter, then to the existing on-site pond, and eventually to the Patuxent River (Rocky Gorge). Drainage easement will be placed over the proposed sand filter and downstream to the existing pond, but no other easements are anticipated. The existing floodplain easement has already been recorded. It is anticipated that all cut will be utilized on-site for construction at time of

V. Implementation of ESO Planning Techniques and practices to the Maximum Extent Practicable (MEP)

The full required E5D volume is being provided.

VI. Request for a Design Manual Waiver: No Waivers related to stormwater management are being requested in this project.

SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 45.28 AC.+. LIMIT OF DISTURBED AREA = 16.73 Ac. ±
- PRESENT ZONING DESIGNATION = RR-DEO (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL E. PREVIOUS HOWARD COUNTY FILES: F-10-103, SP-09-011;
- WP-10-014; WP-13-076; WP-15-023. TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 3.00 AC. +
- G. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 11.15 AC.+ (1.96 AC. IS 25% OR GREATER)
- . TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC. TOTAL AREA OF EXISTING FOREST = 0.30 AC. ±

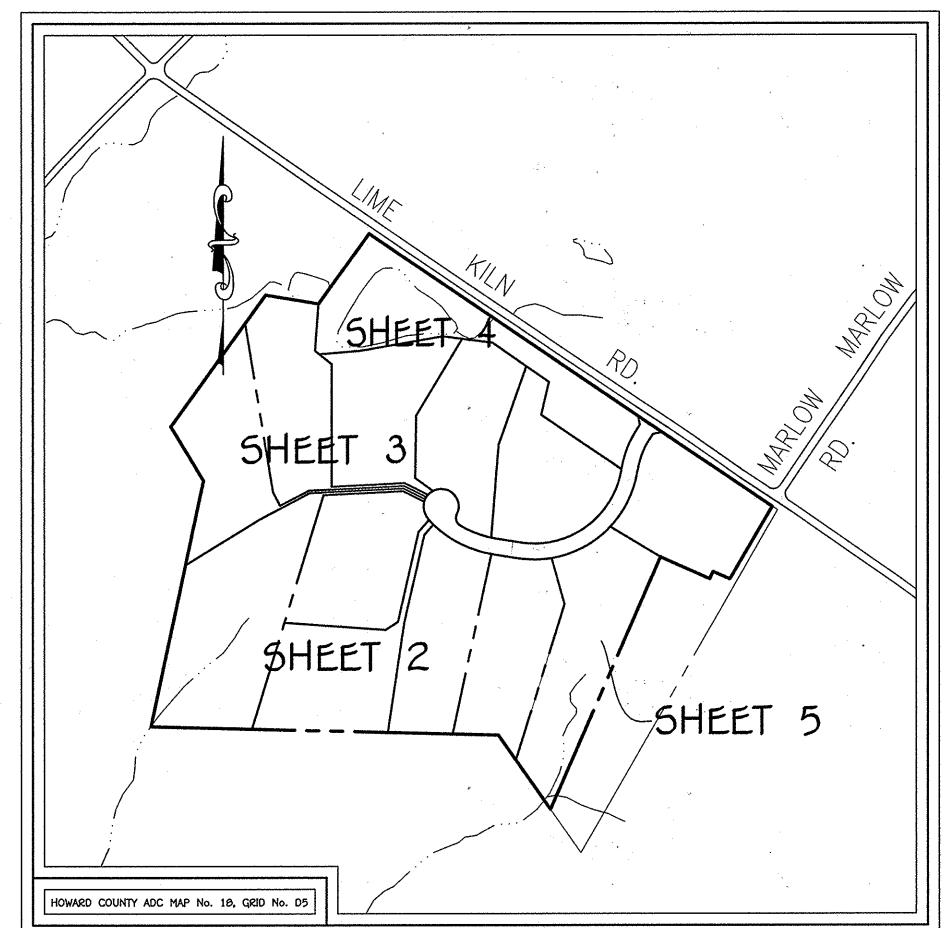
- TOTAL GREEN OPEN AREA = 42.43 AC. ± TOTAL IMPERVIOUS AREA = 2.05 AC. ± AREA OF ERODIBLE SOILS = 6.34 AC. ±

	50IL5 LEGEND		
50IL	NAME	CLA55	K FACTOR
Вев	Benevola silt loam, 3 to 8 percent slopes	С	0.43
GgB	Glenelg loam, 3 to 0 percent slopes	В	0.28
GgC	Glenelg loam, 8 to 15 percent slopes	В	0.28
Gm8	Glenville silt loam, 3 to 8 percent slopes	С	0.43
MaC	Manor loam, 8 to 15 percent slopes	8	0.28
MaD	Manor loam, 15 to 25 percent slopes	В	0.28
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	В	0.32
WhB	Wiltshire sitt loam, 3 to 8 percent slopes	С	0.20

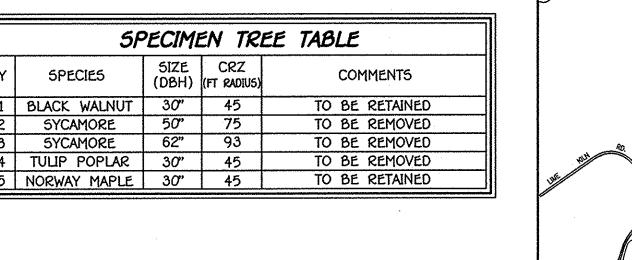
ENVIRONMENTAL CONCEPT PLAN

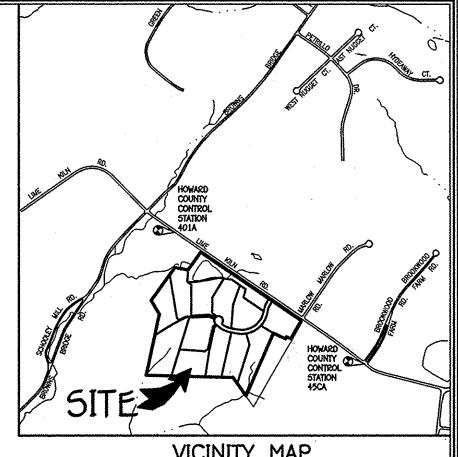
WESTLAND FARM ESTATES LOTS 3 THRU 14 & OPEN SPACE LOT 15

TAX MAP No. 45 GRID No. 5 PARCEL No. 28 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



SPECIMEN TREE TABLE							
KEY	5PECIE5	SIZE (DBH)	CRZ (FT RADIU5)	COMMENTS			
5P1	BLACK WALNUT	30"	45	TO BE RETAINED			
5P2	SYCAMORE	50°	75	TO BE REMOVED			
5P3	SYCAMORE	62"	93	TO BE REMOVED			
5P4	TULIP POPLAR	30"	45	TO BE REMOVED			
5P5	NORWAY MAPLE	30"	45	TO BE RETAINED			





GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

 THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING
- DONE.

 3. BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY BY FISHER, COLLINS & CARTER, INC., DATED OCTOBER 1991. TOPOGRAPHY BASED ON HARFORD AERIAL SURVEYS, INC. DATED JANUARY 2006 AND SUPPLEMENTED WITH FIELD RUN TOPOGRAPHY BY FISHER, COLLINS & CARTER, INC ON OR ABOUT APRIL, 2006 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.

 4. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 161A AND 161B WERE USED FOR THIS PROJECT.

 5. PREVIOUS DPZ FILE NUMBERS: F-10-103, SP-09-011; WP-10-014; WP-13-076; WP-15-023.

 6. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH CHAPTER 5 APE BEING LITTLIZED.

- NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
- 9. THE SUBJECT PROPERTY IS ZONED RR-DEO (PER DATE 10/06/2013).
 10. STEEP SLOPES, WETLANDS, STREAM, THEIR BUFFERS, AND FLOODPLAIN EXIST ON-SITE.
 11. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
 12. FOREST CONSERVATION OBLIGATIONS WILL BE ADDRESSED AT FINAL PLAN STAGE. IT IS ANTICIPATED THAT A COMBINATION OF
- RETENTION AND REFORESTATION WILL BE PROVIDED."

 13. SOIL BORINGS ARE REQUIRED FOR THIS PROJECT AND ARE BEING CONDUCTED.

 14. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED—LINE REVISION PLAN, REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED—LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS HIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- 15. SOILS ARE BASED ON THE NRCS WEBSOIL SURVEY AND HOWARD COUNTY SOIL MAP 22 16. A WETLAND DELINEATION & FOREST STAND DELINEATION REPORT FOR THIS PROJECT WAS APPROVED WITH 5P-09-011.

 17. PURPOSE OF THIS PLAN IS TO SHOW ENVIRONMENTAL SITE DESIGN THROUGH USE OF DRYWELLS, MICRO-BIORETENTION FACILITIES,

- 20. ON SEPTEMBER 14, 2009, THE PLANNING DIRECTOR APPROVED A REQUEST TO WAVE SECTION 16.120.(B)(4)(II) REQUIRING LOT DIMENSIONS TO GENERALLY NOT EXCEED 3:1 LOT DEPTH TO LOT WIDTH RATIO (LOTS 11 & 12), SECTION 16.120(B)(4)(III)B REQUIRING THE PAVEMENTS OF PLACEMENT OF FLOODPLAINS, WETLANDS, STREAMS AND THEIR BUFFERS AND FOREST CONSERVATION EASEMENTS TO BE LOCATED ON LOTS 10 ACRES OR GREATER IN
- SIZE AND SECTION 16.132(A)(2)(I) REQUIRING THAT IF LAND IS OWNED ON ONLY ONE SIDE OF A LOCAL OR MINOR COLLECTOR ROAD, THE DEVELOPER SHALL CONSTRUCT ONE SIDE OF THE ROAD UP TO ONE-HALF OF THE FULL DESIGNATED PAVEMENT WIDTH OR CONTRIBUTE TO THE COUNTY FUNDS NECESSARY TO DO CONSTRUCTION, SUBJECT TO THE FOLLOWING CONDITIONS:
- (1) A 35' BUILDING RESTRICTION LINE FROM THE STREAM BANK BUFFERS, FLOODPLAIN LIMITS AND FOREST CONSERVATION DELINEATED AND LABELED ON THE FINAL PLAT. (2) NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITT
- BUFFERS, FLOODPIAIN AREA OR FOREST CONSERVATION EASEMENTS.

 1. ON JANUARY 8, 2013, THE PLANNING DIRECTOR APPROVED A WAIVER (WP-13-076) TO SECTION 16.144(k) REQUIRING SUBMISSION OF THE FINAL PLANS FOR WESTLAND FARM ESTATES, PHASE II, BETWEEN JULY 1, 2012 TO NOVEMBER 1, 2012 (SP-09-011). A ONE YEAR EXTENSION WAS APPROVED SUBJECT TO THE FOLLOWING CONDITIONS:
 (1) THE FINAL PLAN FOR PHASE II MUST BE SUBMITTED BETWEEN JULY 1, 2013 TO NOVEMBER 1, 2013.
- STORMWATER MANAGEMENT REGULATIONS FOR REVIEW A MINIMUM OF 30 DAYS PRIOR TO JULY 1, 2013 (ON OR BEFORE JUNE 1,
- (3) THE FINAL PLAN FOR PHASE II OF WESTLAND FARM ESTATES (SP-09-011) SHALL BE DESIGNED IN ACCORDANCE WITH THE NEW STORMWATER MANAGEMENT REGULATIONS AND SHALL ADDRESS ALL ECP COMMENTS AS APPLICABLE. 22. ON SEPTEMBER 26, 2014 THE PLANNING DIRECTOR APPROVED A WAIVER (WP-15-023) TO SECTION 16.144(b) TO REACTIVATE SP-09-011 AND SECTION 16.144(k) REQUIRING SUBMISSION OF FINAL PLANS FOR PHASE II BETWEEN JULY 1, 2013 TO NOVEMBER 1,
- 2013 (SP-09-011) TO EXTEND THE DEADLINE BY SIX MONTHS FROM THE WAIVER PETITION APPROVAL LETTER. APPROVAL TO THE REQUESTED WAIVERS IS SUBJECT TO THE FOLLOWING CONDITIONS: (1) THE PRELIMINARY EQUIVALENT SKETCH PLAN, SP-09-011, IS REACTIVATED AND A SIX MONTH EXTENSION FROM THE DATE OF THIS WAIVER PETITION APPROVAL LETTER (ON OR BEFORE MARCH 26, 2015) IS GRANTED FOR THE SUBMISSION OF THE FINAL
- (2) SUBMISSION TO THE DEVELOPMENT ENGINEERING DIVISION OF AN ENVIRONMENTAL CONCEPT PLAN (ECP) BASED ON NEW STORMWATER MANAGEMENT REGULATIONS WITHIN 45 DAYS FROM THE DATE OF THE WAIVER PETITION APPROVAL LETTER (ON OR
- BEFORE NOVEMBER 10, 2014). (3) THE FINAL PLAN MUST COMPLY WITH ALL CURRENT COUNTY AND STATE REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION
- (INCLUDING MODERATE INCOME HOUSING UNIT REQUIREMENTS). (4) THE FINAL PLAN FOR PHASE II OF WESTLAND FARM ESTATES (SP-09-011) SHALL BE DESIGNED IN ACCORDANCE WITH THE NEW
- STORMWATER MANAGEMENT REGULATIONS AND SHALL ADDRESS ALL ECP COMMENTS AS APPLICABLE.

 (5) A NEW APFO TRAFFIC STUDY MAY BE REQUIRED WITH THE FINAL PLAN SUBMISSION. PLEASE VERIFY WITH THE DEVELOPMENT

	LEGEND								
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION						
412	EXISTING 2' CONTOURS	-402	PROPOSED CONTOUR						
410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION						
GgB GgC	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE						
~~~~	EXISTING TREELINE	<b> </b>	PROPOSED TREELINE						
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING						
	25% AND GREATER STEEP SLOPES	<b>O</b> 544	BORING (PERC) TEST HOLE						
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	5F	SILT FENCE						
- 00	STREAM BANK BUFFER	ECM	erosion control matting						
	EXISTING CENTERLINE OF STREAM	55F	SUPER SILT FENCE						
€£5T1	SPECIMEN TREE	OF	DIVERSION FENCE						
<del>\                                    </del>	PROPOSED FOREST CONSERVATION EASEMENT	圝	STABILIZES CONSTRUCTION ENTRANCE						
			DOMINACE AGEN DIVIDE						

o. 05		- SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE	
		EXISTING TREELINE	<u> </u>	PROPOSED TREELINE	
VICTALITY / NAACO		15% TO 24.9% STEEP SLOPES		PROPOSED PAVING	
VICINITY MAP		25% AND GREATER STEEP SLOPES	<b>O</b> 544	BORING (PERC) TEST HOLE	
SCALE: 1" = 1200'		100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	<del></del> 5F	SILT FENCE	
SCALL. 1 — 1200		- STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING	
		existing centerline of stream	55F	SUPER SILT FENCE	
	€;5T1	SPECIMEN TREE	OF	DIVERSION FENCE	
		PROPOSED FOREST CONSERVATION EASEMENT		STABILIZES CONSTRUCTION ENTRANCE	
				DRAINAGE AREA DIMDE	
	APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONI	NG .	717	ie gueet	

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•				
FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS				
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS				
AND THE COLLOS WILLS GIVE ADOLD OF THE STATE				
entennial square office park — 10272 baltimore national pike ellicott city, maryland 21042				
(410) 461 - 2055	T 2			
				·
	1 1			7
	NO.	REVISION	DATE	X

PROFESSIONAL CERTIFICATION 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, LICENSE NO. 30306, EXPIRATION DATE: 01/12/2016.

OWNER / DEVELOPER LIME KILN. LLC C/O BOB CORBETT. WILLIAMSBURG GROUP, LLC 5485 HARPERS FARM ROAD, SUITE 200 COLUMBIA, MARYLAND 21044

3-09-15 3.12.15 PARCEL NO. SECTION WESTLAND FARMS ESTATES CENSUS TR. TAX/ZONE ELEC. DIST. BLOCK NO. ZONE 21404 TO FIFTH RR-DEO 21406

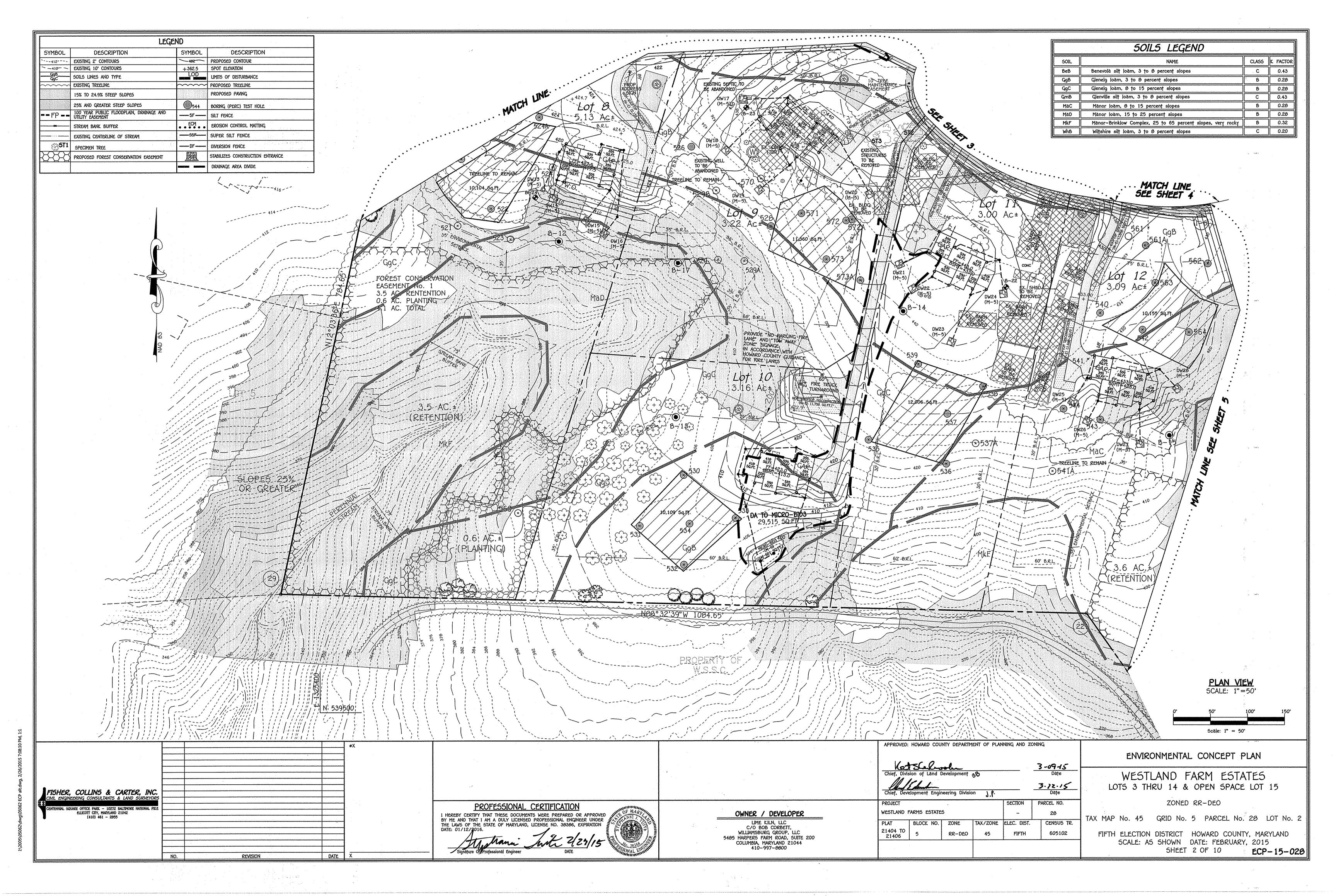
IIILE SHEET

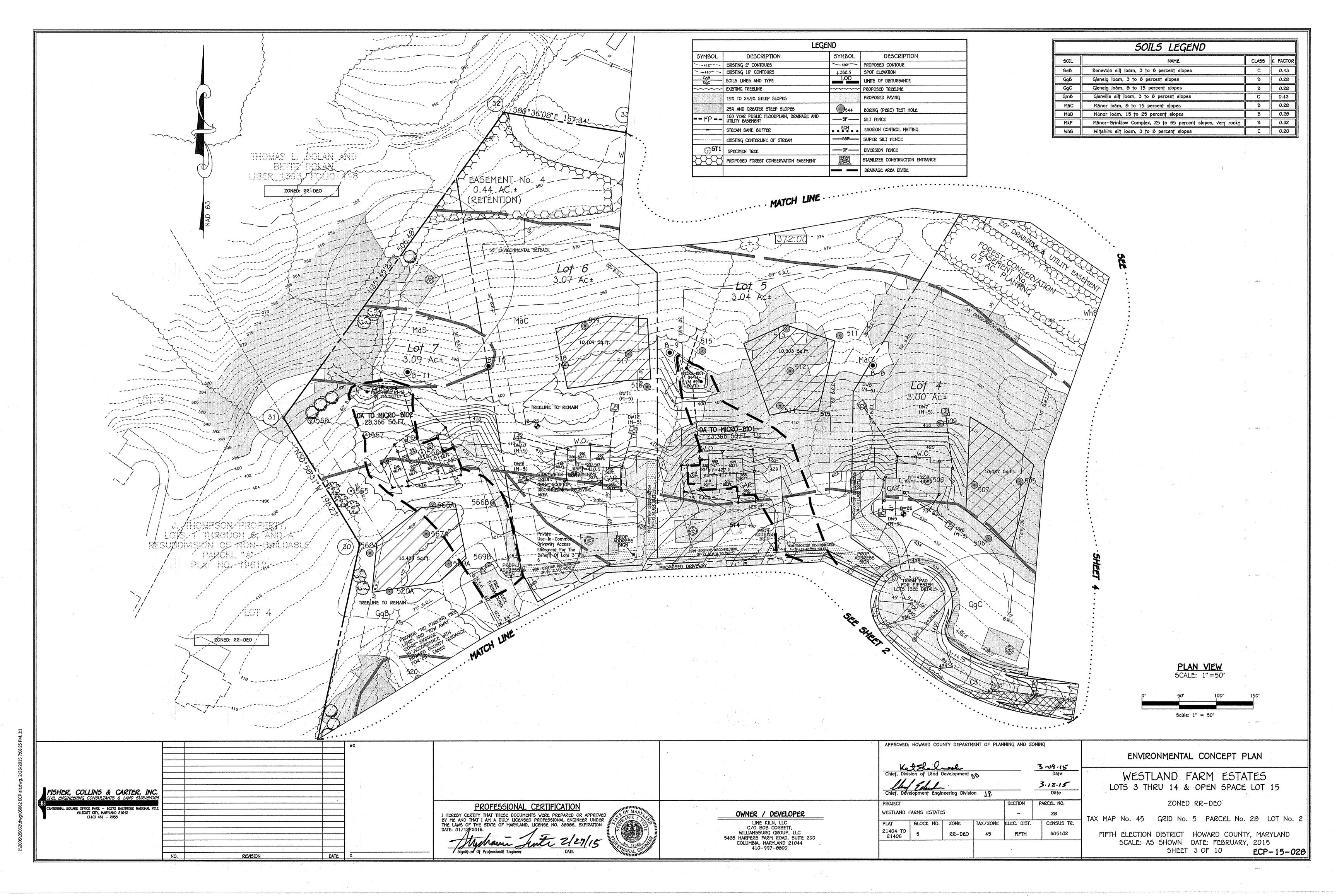
WESTLAND FARM ESTATES LOTS 3 THRU 14 & OPEN SPACE LOT 15

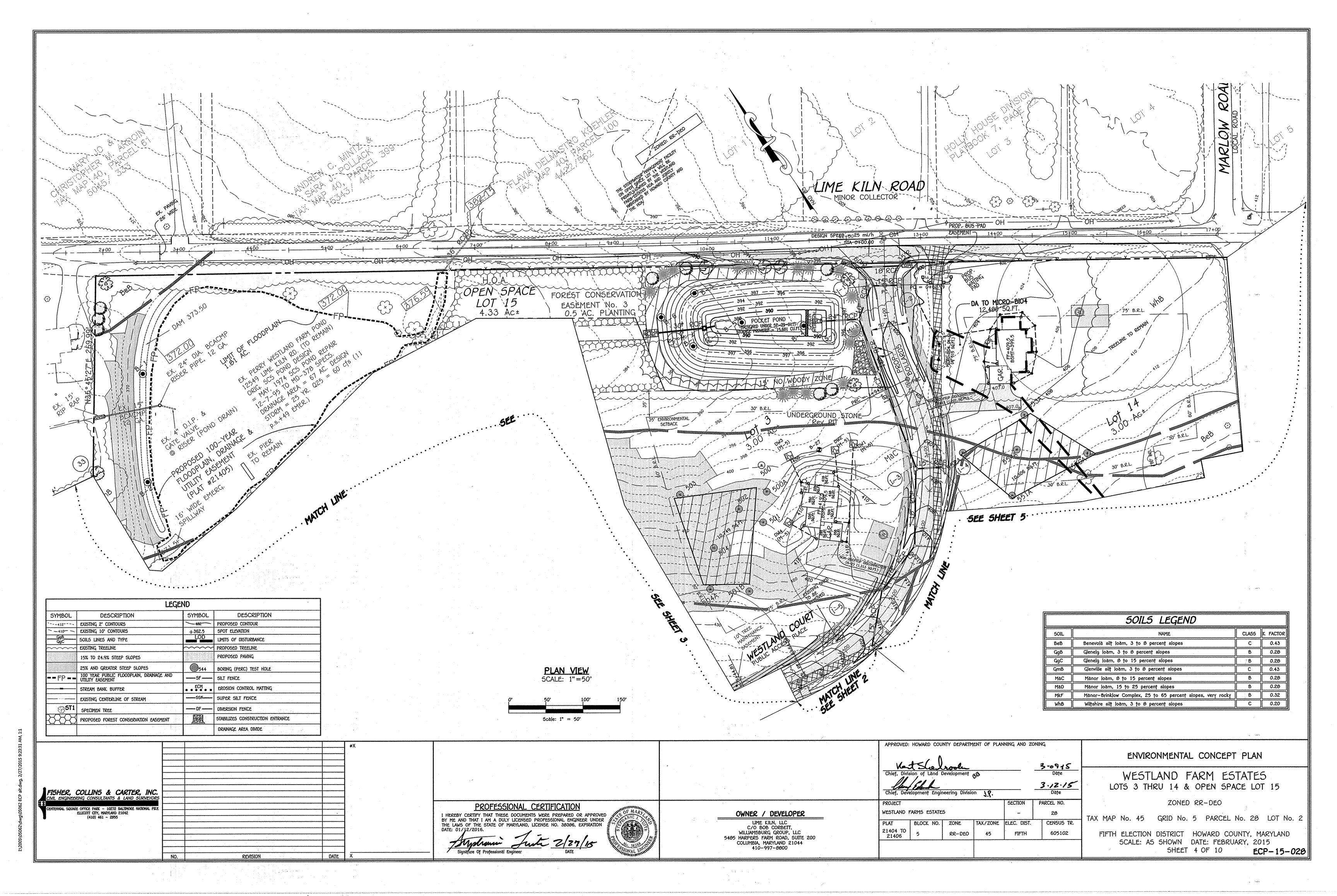
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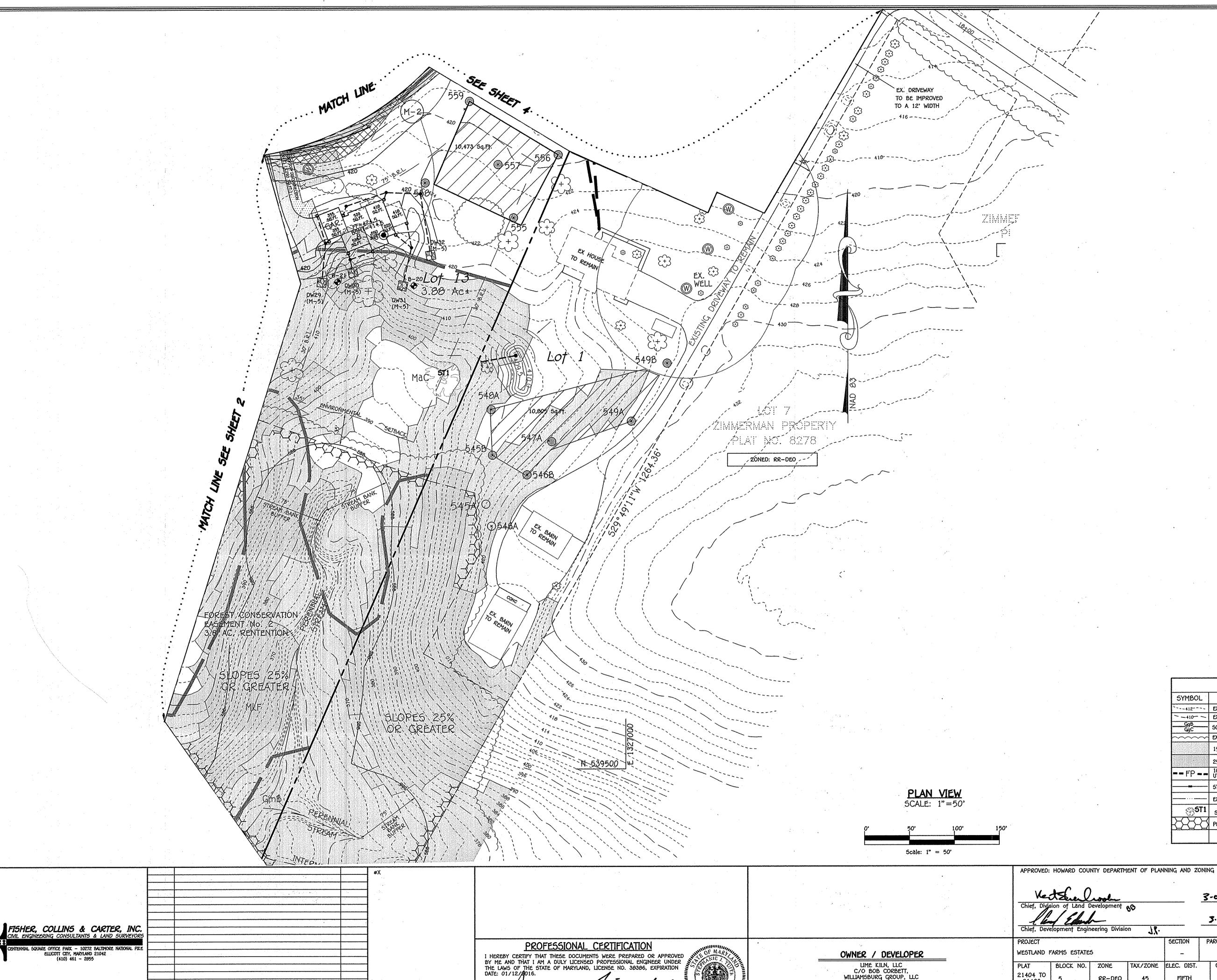
TAX MAP No. 45 GRID No. 5 PARCEL No. 28 LOT No. 2

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: FEBRUARY, 2015 SHEET 1 OF 10 ECP-15-028









DATE X

	50IL5 LEGEND							
501L	NAME	CLASS	K FACTOR					
Вев	Benevola silt loam. 3 to 8 percent slopes	C	0.43					
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.28					
GgC	Glenelg loam. 8 to 15 percent slopes	8	0.28					
Gmß	Glenville silt loam, 3 to 8 percent slopes	С	0.43					
MaC	Manor loam, 8 to 15 percent slopes	§ 8	0.28					
MaD	Manor loam, 15 to 25 percent slopes	В	0.28					
MkF	Manor-Brinklow Complex, 25 to 65 percent slopes, very rocky	В	0.32					
WhB	Wiltshire silt loam, 3 to 8 percent slopes	C	0.20					

	LEGE	END	
5YMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
412	EXISTING 2' CONTOURS	402	PROPOSED CONTOUR
-410	EXISTING 10' CONTOURS	+362.5	SPOT ELEVATION
<u> </u>	SOILS LINES AND TYPE	LOD	LIMITS OF DISTURBANCE
~~~~	EXISTING TREELINE	~~~~	PROPOSED TREELINE
	15% TO 24.9% STEEP SLOPES		PROPOSED PAVING
	25% AND GREATER STEEP SLOPES	O 544	BORING (PERC) TEST HOLE
FP	100 YEAR PUBLIC FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT	5F	SILT FENCE
***************************************	STREAM BANK BUFFER	ECM	EROSION CONTROL MATTING
	existing centerline of stream	55F	SUPER SILT FENCE
⊕5T1	SPECIMEN TREE		DIVERSION FENCE
888	PROPOSED FOREST CONSERVATION EASEMENT		STABILIZES CONSTRUCTION ENTRANCE
······································			DRAINAGE AREA DIVIDE

3-09-15 Date 3.12-15 LOTS 3 THRU 14 & OPEN SPACE LOT 15

PARCEL NO.

WESTLAND FARMS ESTATES CENSUS TR. TAX/ZONE ELEC. DIST. BLOCK NO. ZONE 21404 TO 21406 605102 RR-DEO

LIME KILN, LLC
C/O BOB CORBETT,
WILLIAMSBURG GROUP, LLC
5405 HARPERS FARM ROAD, SUITE 200
COLUMBIA, MARYLAND 21044
410-997-0000

TAX MAP No. 45 GRID No. 5 PARCEL No. 28 LOT No. 2

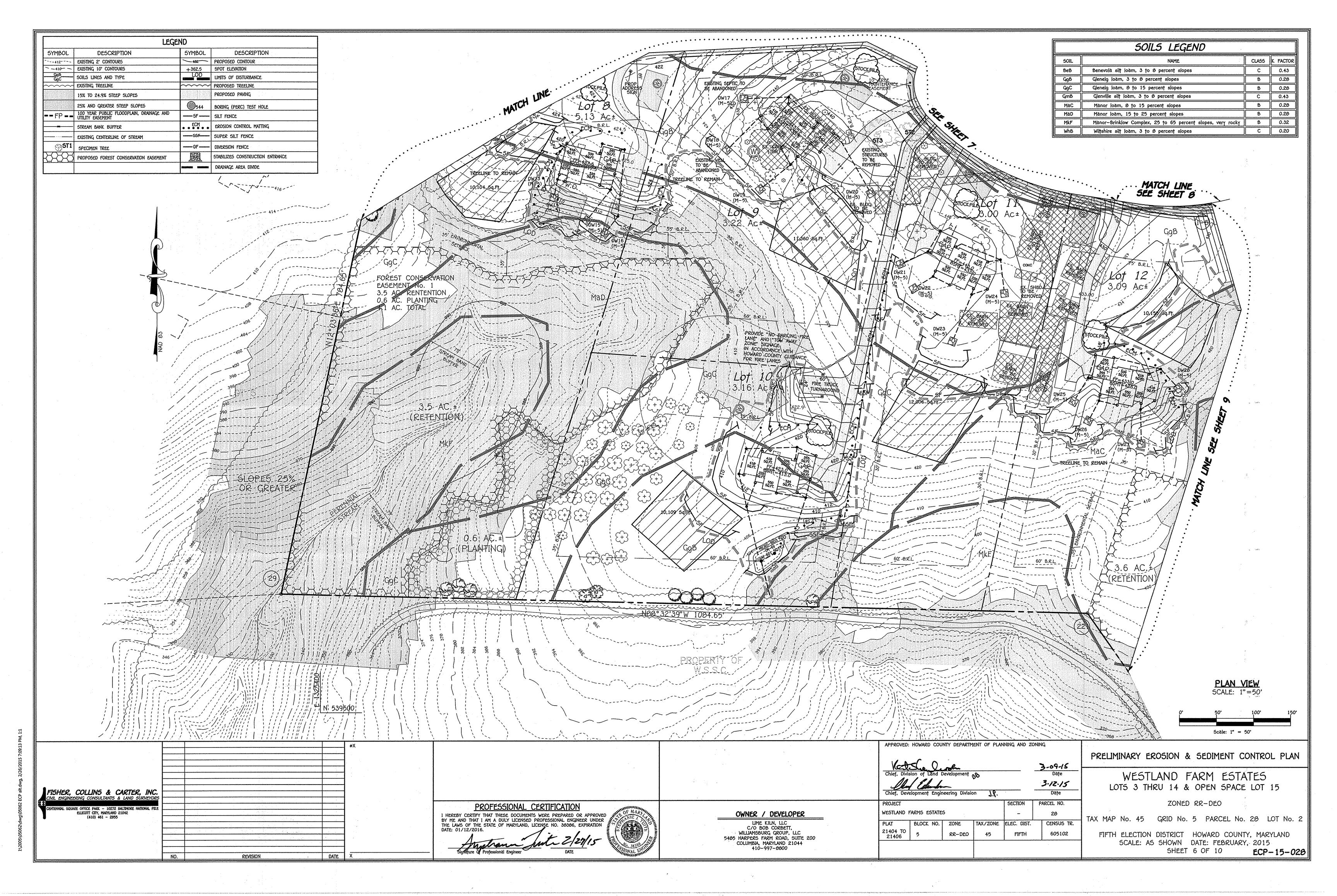
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: FEBRUARY, 2015
SHEET 5 OF 10 ECP-15-02

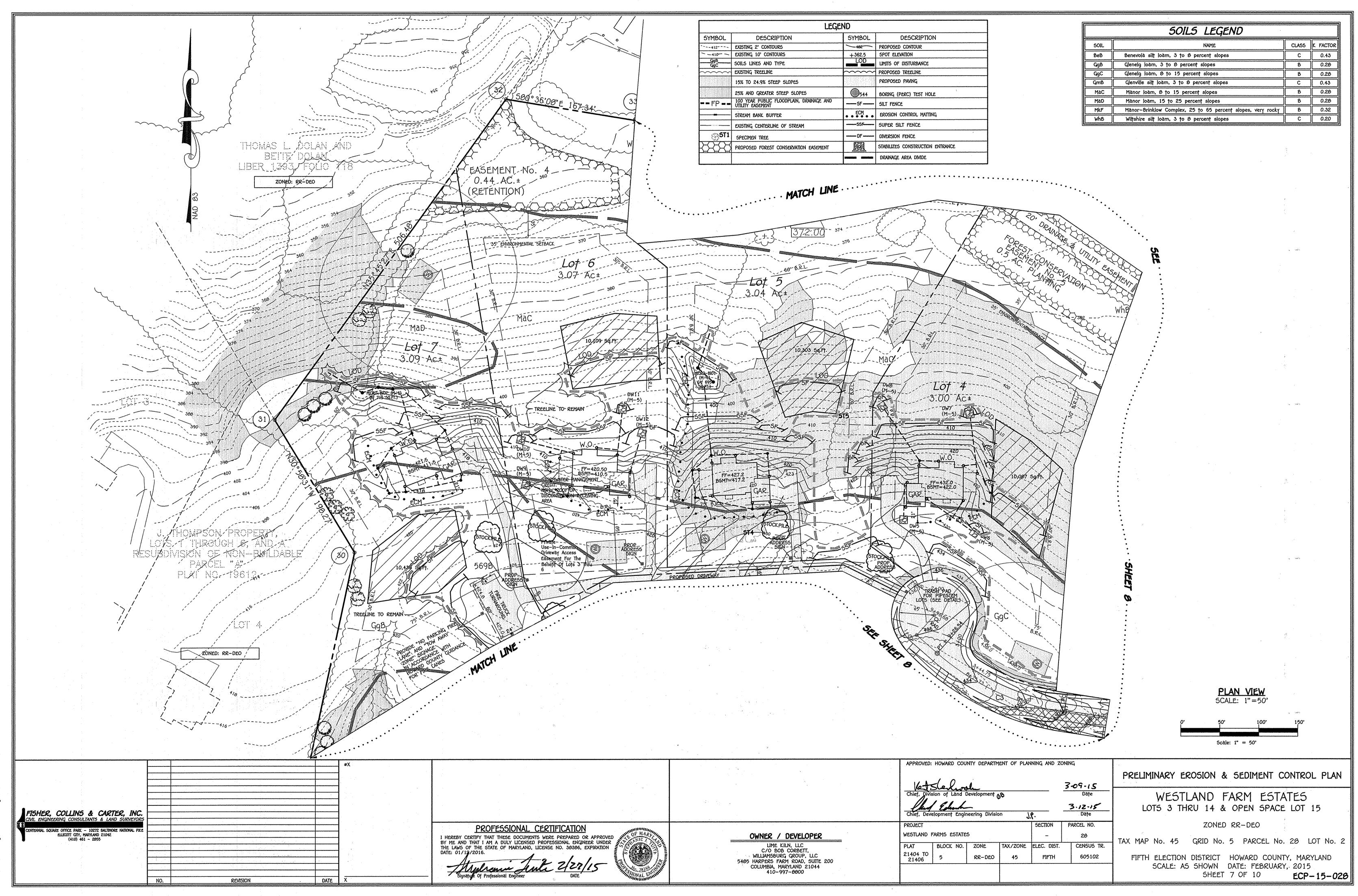
ENVIRONMENTAL CONCEPT PLAN

WESTLAND FARM ESTATES

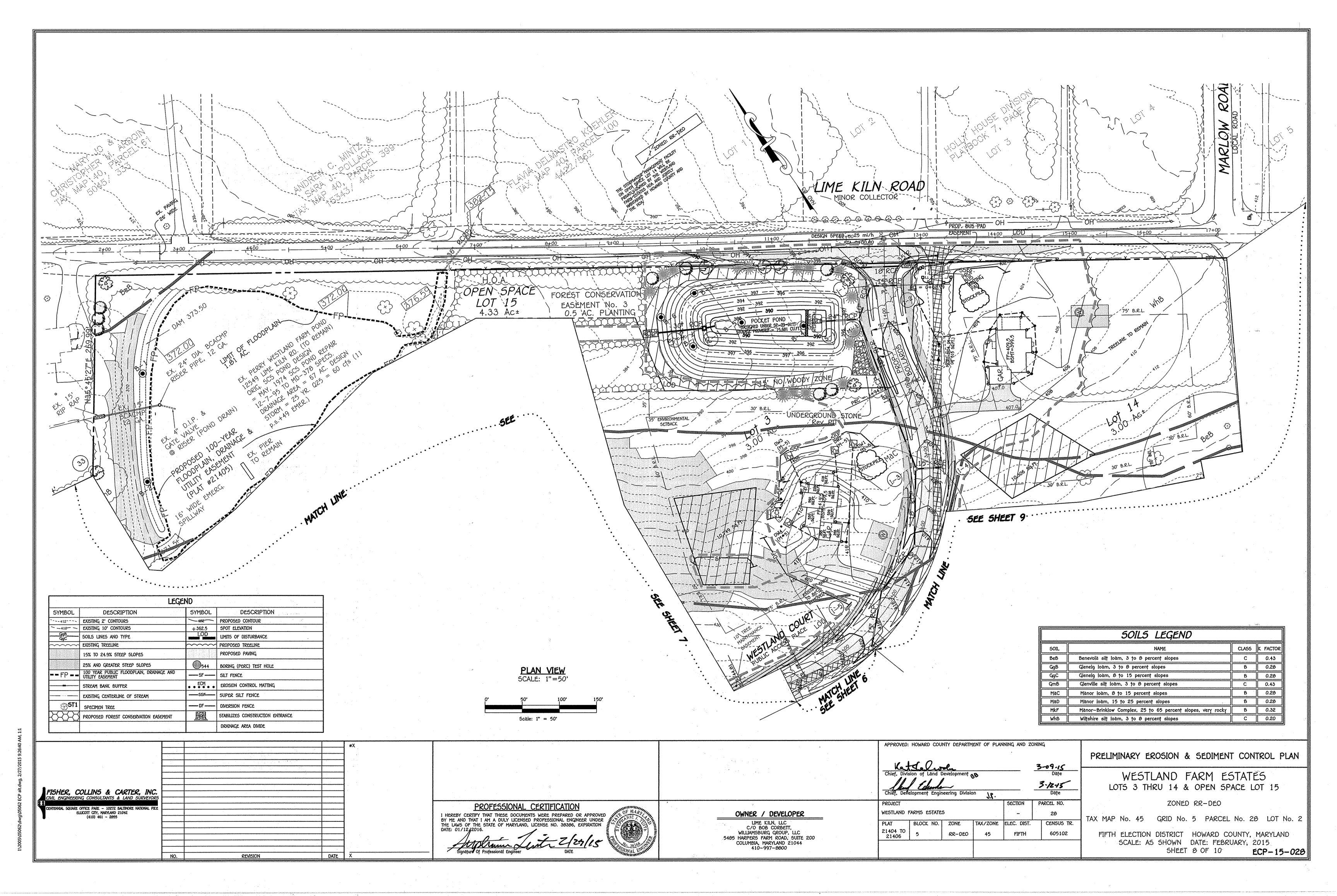
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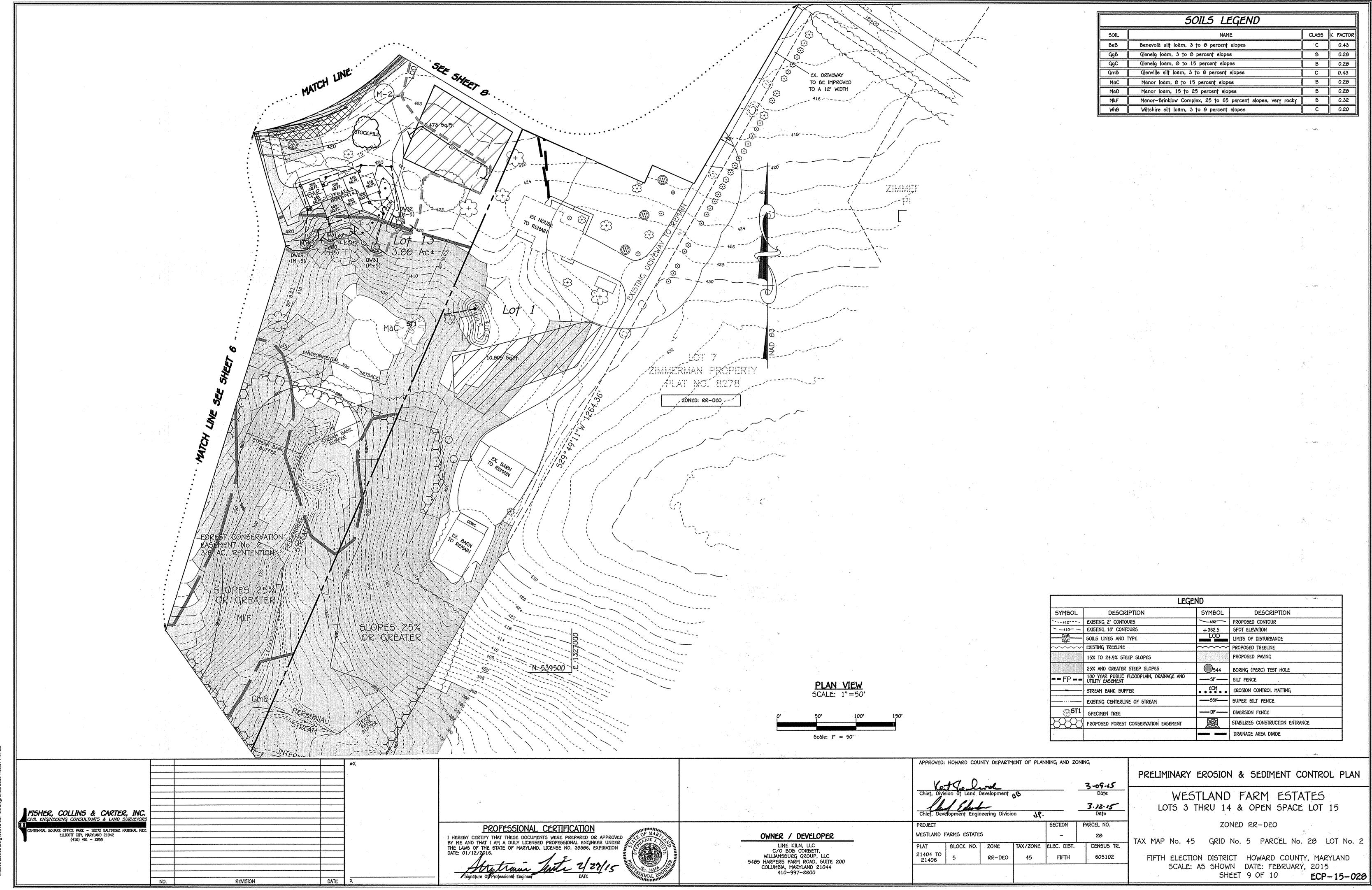
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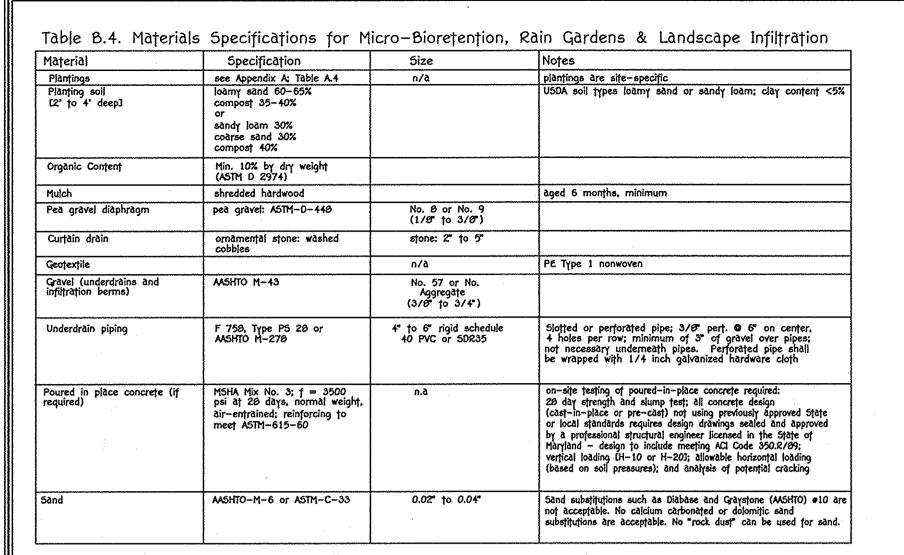


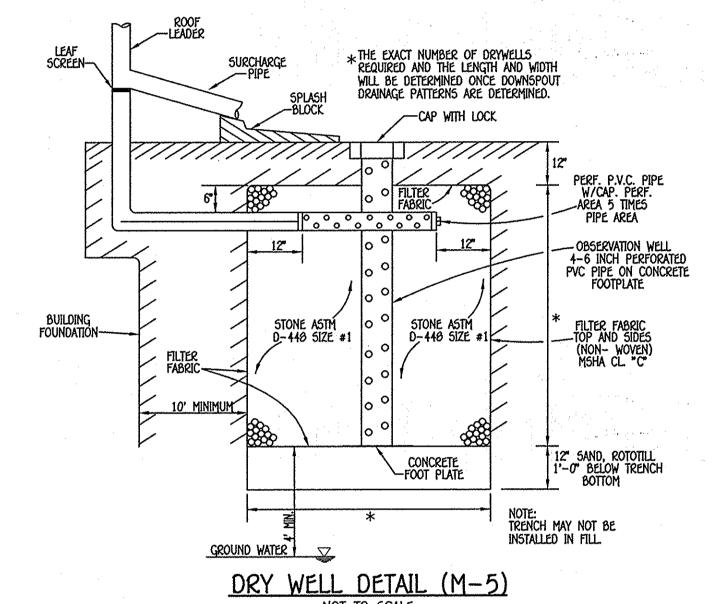
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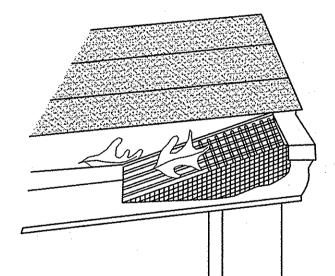




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GUTTER DRAIN FILTER DETAIL NOT TO SCALE

STORMWATER MANAGEMENT NOTES

- 1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE
- MAY 4, 2010. 2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 5Q. FT. OR LE55.
- 3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET. 4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

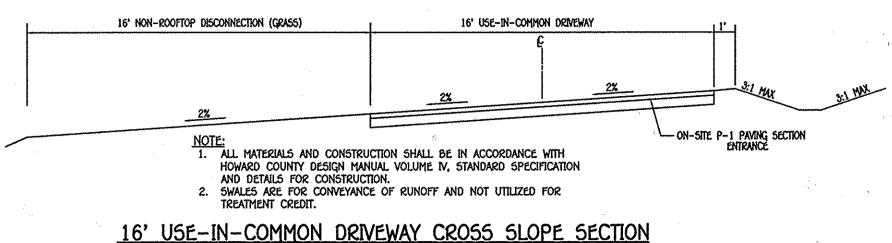
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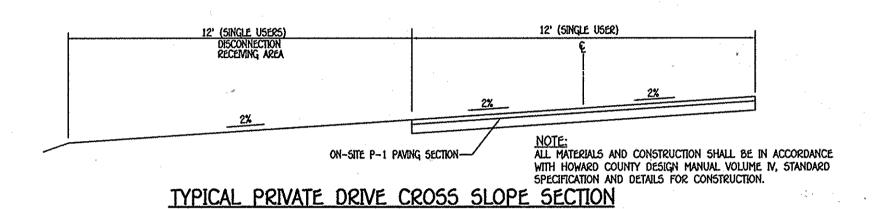
OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

- A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS. D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO
- (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED. THE

OPERATION & MAINTENANCE SCHEDULE FOR
PRIVATELY OWNED AND MAINTAINED,
DISCONNECTION OF ROOFTOP RUNOFF (N-1)
DISCONNECTION OF NONROOFTOP RUNOFF (N-2)
MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL

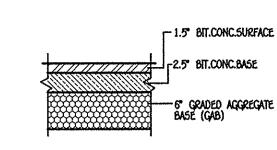
PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.





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	D	RY WE	LL CHA	ART	
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L D W
DW1	894 SQ. FT.	72 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW2	ø36 5Q. FT.	71 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW3	778 SQ. FT.	67 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW4	<i>8</i> 90 5Q. FT.	71 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW5	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW6	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW7	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DWØ	1,085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW9	957 5Q. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW10	646 5Q. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW11	1,005 SQ. FT.	<i>8</i> 6 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW12	710 5Q. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW13	410 5Q. FT.	34 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW14	778 5Q. FT.	62 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW15	<i>6</i> 90 5Q. FT.	71 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW16	<i>8</i> 94 5Q. FT.	71 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW17	957 5Q. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW18	646 5Q. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW19	1,005 5Q. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW20	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW21	710° 5Q. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW22	1,005 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW23	646 5Q. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW24	957 5Q. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW25	710 5Q. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW26	1,005 SQ. FT.	<i>8</i> 6 C.F.	72 C.F.	100%*	8' x 8' x 4'
DW27	646 SQ. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW28	957 5Q. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW29	710 SQ. FT.	57 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW30	1,085 SQ. FT.	86 C.F.	102 C.F.	100%*	8' x 8' x 4'
DW31	646 5Q. FT.	52 C.F.	77 C.F.	100%*	8' x 8' x 3'
DW32	957 SQ. FT.	76 C.F.	77 C.F.	100%*	8' x 8' x 3'

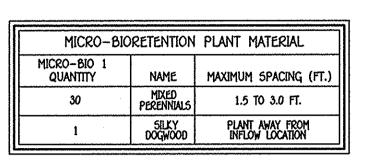
* AREA OF TREATMENT EXCEEDS THAT REQUIRED.



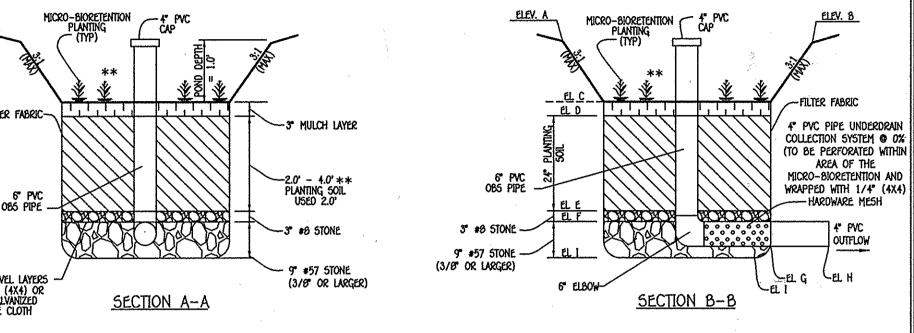
P-1 DRIVEWAY PAVING SECTION
NOT TO SCALE

	ROAD AND STREET	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	<u>.</u> ≥7	3 TO <5	5 TO <7	_≥7
Number	CLASSIFICATION	PAVEMENT MATERIAL (INCHES)	MIN I	HMA WITH	GAB	HMA W	ITH CONSTA	INT GAB
	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
P-2	MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROOD:	HMA SUPERPAVE INTERMEDIATE SURFACE N/A	2.0	2.0	2.0	2.0	2.0	2.0
	Access place, access street cul-de-sacs: residential	HMA SUPERPAVE BASE 19.0 MM. PG 64-22, LEVEL 1 (ESAL)	6.0	6.0	6.0	7.0	5.0	4.0
		GRADED AGGREGATE BASE (GAB)	11.0	5.0	4.0	8.0	8.0	8.0

WESTLAND COURT PAVING SECTION NOT TO SCALE



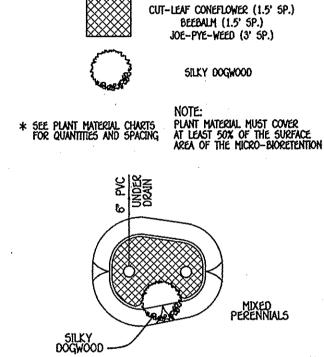
		MICA	20-1	310R	ETEI	IOITV	N		
BIORETENTION FILTER	Α	В	С	D	£	F	G	Н	1
1	394.00	394.00	393.00	392.75	390.75	390.50	390.00	389.00	389.75
2	400.00	400.00	399.00	398.75	396.75	396.50	396.00	395.00	395.75
3	400.00	400.00	399.00	398.75	396.75	396.50	396.00	395.00	395.75
4	403.50	403.50	403.25	403.00	401.00	400.75	400.25	399.60	400.00



MICRO-BIORETENTION DETAIL (M-6)

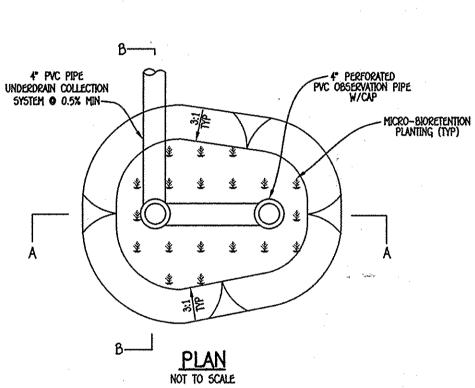
OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING, PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE
- FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2. B. THE OWNER SHALL PERFORM A PLANT IN THE 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 WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL
- DEFICIENT STAKES AND WIRES. C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE
- NEW LAYER IS APPLIED. D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF

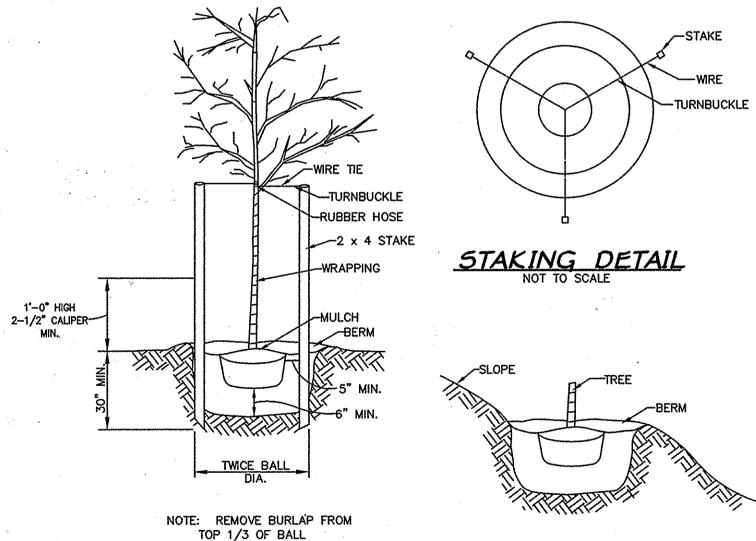


PERENNIALS



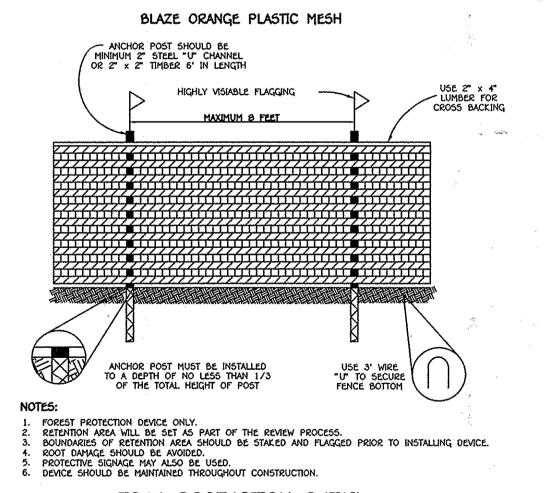


ENVIRONMENTAL CONCEPT PLAN



TREE PLANTING

GRADING FOR PLANTING



TREE PROTECTION DETAIL

		#X
		\exists
FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS		_
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS		
entennial square office park — 10272 baltimore national pike ellicott city, maryland 21042		\dashv
(410) 461 - 2055		
	÷ 4	

PROFESSIONAL CERTIFICATION I 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, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2016.

OWNER / DEVELOPER LIME KILN, LLC C/O BOB CORBETT, WILLIAMSBURG GROUP, LLC 5485 HARPERS FARM ROAD, SUITE 200 COLUMBIA, MARYLAND 21044

3-09-15 3.12.15 PARCEL NO. SECTION WESTLAND FARMS ESTATES TAX/ZONE ELEC. DIST. CENSUS TR. BLOCK NO. ZONE 21404 TO rr-deo 21406

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

STORMWATER MANAGEMENT NOTES & DETAILS

WESTLAND FARM ESTATES LOTS 3 THRU 14 & OPEN SPACE LOT 15

ZONED RR-DEO

GRID No. 5 PARCEL No. 20 LOT No. 2

FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: FEBRUARY, 2015 SHEET 10 OF 10 ECP-15-028