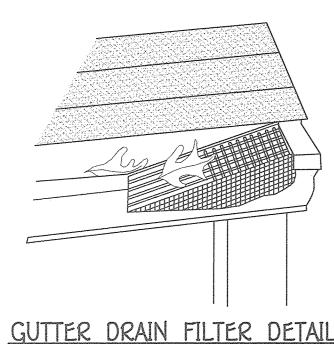
	SHEET INDEX						
SHEET NO. DESCRIPTION							
	1	TITLE SHEET					
	2	ENVIRONMENTAL CONCEPT PLAN					

STORMWATER MANAGEMENT PRACTICES									
T NO.	PERMEABLE CONCRETE (A-2) Y/N, NUMBER	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	INFILTRATION BERMS (M-4) Y/N, NUMBER	DRY WELLS (M-5) Y/N, NUMBER	MICRO-BIORETENTION (M-6) Y/N, NUMBER			
6	NO	NO	NO	NO	NO	YES, ONE (1)			
7	NO	NO	NO	NO	NO	YE5, ONE (1)			

STORMWATER MANAGEMENT SUMMARY						
AREA ID.	E5DV REQUIRED CU.FT.	E5Dv PROVIDED CU.FT.	REMARK5			
SITE	790	<i>8</i> 57	MICRO-BIORETENTION (M-6)			
TOTAL	790	857				

GROSS AREA = 0.618 AC. LOD = 0.45 ACRE5RCN = 77.0TARGET Pe = 1.2"



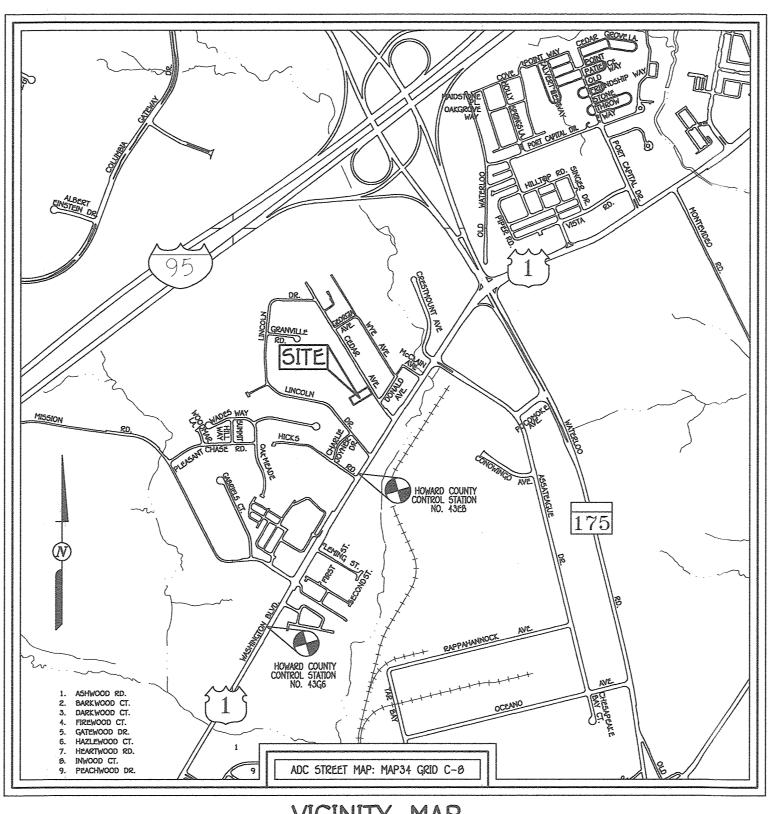
### STORMWATER MANAGEMENT NOTES

- 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 SQ. FT. OR LESS. 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.

Material	Specification	Size	Notes
Plantings	see Appendix A; Table A.4	n/ā	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand 60-65% compost 35-40% or		USDA soil types loamy sand or sandy loam; clay content <5%
	sandy loam 30% coarse sand 30% compost 40%		
Organic Content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum
Pea gravel diaphragm	pea gravel: ASTM-D-440	No. 0 or No. 9 (1/0" †o 3/0")	
Curtain drain	ornāmentāl stone: wāshed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Grāvel (underdrāins and infiltration berms)	AA5HTO M-43	No. 57 or No. Aggregațe (3/8" †o 3/4")	
Underdräin piping	F 750, Type P5 20 or AASHTO M-270	4" †o 6" rigid schedule 40 PVC or 5DR35	Slotted or perforated pipe; 3/6" pert. © 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f = 3500 psi at 20 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n.a	on-site testing of poured-in-place concrete required: 20 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland — design to include meeting ACI Code 350.R/09; vertical loading IH-10 or H-201; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sànd	AA5HTO-M-6 or A5TM-C-33	0.02" †o 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

# ENVIRONMENTAL CONCEPT PLAN CEDARS EXTENDED LOTS 6 AND 7

TAX MAP No. 43 GRID No. 08 PARCEL NO. 257 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP

#### 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 ONCE PER MONTH AND AFTER EACH HEAVY STORM.

### GENERAL NOTES

- 1. BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED JUNE, 2018. TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. IN JUNE, 2018 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED
- 2. 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. 43EB AND 43G6 WERE USED FOR THIS PROJECT. 5ta. 43EB N 545,963.613 E 1,371,573.894 Elev.= 216.312 5†a. 43G6 N 544,117.400 E 1,370,550.920 Elev.= 219.402
- 3. NO PREVIOUS DPZ FILES
- 4. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009.
  NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.

  5. THIS PROPERTY IS LOCATED INSIDE THE METROPOLITAN DISTRICT. LOTS TO BE SERVED PUBLIC WATER AND PUBLIC SEWER, CONTRACT
- 6. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE. 7. THE SUBJECT PROPERTY IS ZONED R-SC (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN). 8. NO 100 YEAR FLOODPLAIN, WETLANDS AND/OR THEIR BUFFERS, STREAM(S), NOR STEEP SLOPES EXIST ON-SITE. STREAM BUFFER
- 9. NO FOREST STANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED
- 10. LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT. 11. THIS PROPERTY IS EXEMPT FROM FOREST CONSERVATION REQUIREMENTS SINCE IT IS A LOT LESS THAN 40,000 SQ.FT. AND A SUBDIVISION CREATING ONE LOT WITH NO FURTHER SUBDIVISION POTENTIAL.
- 12. A SOIL BORING WILL BE REQUIRED FOR THIS PROJECT SINCE A MICRO-BIORETENTION POND IS BEING UTILIZED. 13. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT SUBDIVISION, FOREST CONSERVATION, OR SITE DEVELOPMENT PLANS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS THAT MAY ALTER THE SITE DESIGN, HOUSE LOCATION, DRIVEWAY LOCATION, GRADING, TREE CLEARING, AND/OR OTHER REQUIREMENTS AS THE DEVELOPMENT PLAN PROGRESSES THROUGH THE PLAN REVIEW PROCESS IN ACCORDANCE WITH THE SUBDIVISION AND ZONING
- REGULATIONS AND THE FOREST CONSERVATION REQUIREMENTS. 14. APPROVAL OF THIS ECP BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT PROVIDE APPROVAL OF THE SHOWN SEDIMENT
- 15. A HOUSE EXISTS ON THE PROPERTY, KNOWN AS 7360 CEDAR AVENUE, WHICH WILL BE RAZED.

  16. SOILS SHOWN HEREON ARE BASED ON THE NRCS WEBSOIL SURVEY AND HOWARD COUNTY SOIL MAP #25. 17. NO HISTORICAL FEATURES OR CEMETERIES ARE ON SITE.

#### DESIGN NARRATIVE

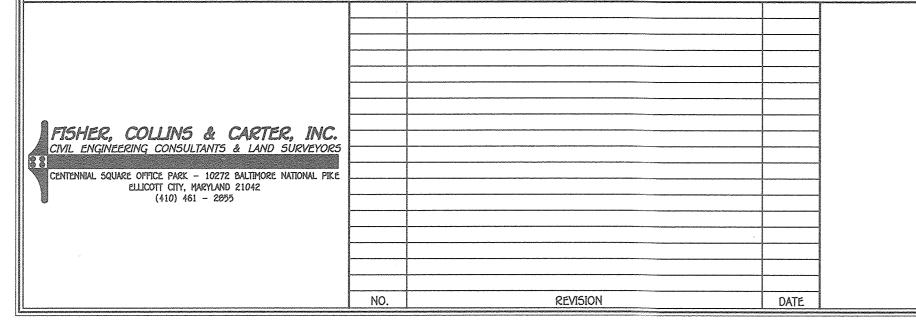
This report will demonstrate how the criteria set forth in the Maryland Stormwater Design Manual, Volumes I and II (effective October 2000, revised May 2009) will be satisfied on this project. The goal of creating hydrology similar to that of "Woods in Good Condition" will be accomplished through the 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.

7360 Cedar Avenue is zoned R-5C is located on Tax Map 43, Parcel No. 257 of the Howard County, Maryland Tax Map Database System. The property was part of a previous plat "Cedar Extended". The site has an existing house with some individual trees. Since this a subdivision of a lot less than 40,000 sq.ft., it is anticipated that forest conservation will not be required. The proposed houses will be served by public water and sewer (the existing house is currently served by public water and public sewer). The runoff from the lot is mostly from west to the east/southeast toward an off-site stream that starts at the end of an existing pipe off-site. Two Micro-Bioretentions will be utilized to treat the rooftop from the lots. Per the 2004 Web Soil Survey, soils on-site consist of "UfA" Urban Land-Fallsington and "UcB" Urban Land-Chillum-Beltsville Complex,

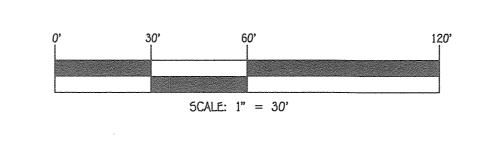
- I. <u>Natural Resource Protection:</u>
- An environmentally sensitive feature such as a stream buffer exists on-site, but wetlands and their buffers, streams, steep slopes, and floodplain do not exist on-site.
- II. <u>Maintenance of Natural Flow Patterns:</u>
- Nature flow patterns will be maintained. Existing and proposed runoff flows mostly toward the east and southeast portion of
- III. <u>Reduction of impervious areas through better site design. Alternative surfaces and Nonstructural Practices</u> A common driveway will be utilized to provide access to both of the proposed houses. The design will help reduce the amount of impervious area needed to serve the new development.
- IV. Integration of Erosion and Sediment Controls into Stormwater Strategy: 5ilt Fence & super silt fence will be utilized to provide erosion and sediment control.
- V. Implementation of ESD Planning Techniques and practices to the Maximum Extent Practicable (MEP)
- The full required ESD volume is being provided.
- VI. <u>Request for a Design Manual Waiver:</u> No waivers regarding stormwater management are required.

### SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 0.297 AC.±. (Lo† 6) & 0.298 AC.± (Lo† 7) LIMIT OF DISTURBED AREA = 19,652 SQ.FT. OR 0.45 Ac. ± PRESENT ZONING DESIGNATION = R-SC
- (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL PREVIOUS HOWARD COUNTY FILES: N/A
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC± TOTAL AREA OF STEEP SLOPES:
- MODERATED STEEP SLOPES: 15%-24.9% = 0.00 AC± STEEP SLOPES: 25% OR GREATER = 0.00 AC+
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC. ± TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.143 AC. ± (STREAM BUFFER)
- TOTAL AREA OF EXISTING FOREST = 0.00 AC±
- TOTAL AREA OF FOREST TO BE RETAINED = 0.00 AC± TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.595 AC±
- TOTAL GREEN OPEN AREA = 0.430 AC±
- TOTAL IMPERVIOUS AREA = 0.165 AC±
- TOTAL AREA OF ERODIBLE SOILS = 0.000 AC. ±
- TOTAL AREA OF ROAD DEDICATION = 0.023 AC. ±



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. 38386, EXPIRATION



OWNER/DEVELOPER GOLDEN GATE LLC C/O GOPI MANDELA

6404 IVY LANE GREENBELT, MARYLAND 20770

301-703-2020

9. 27.19 SECTION PARCEL NO. CEDARS EXTENDED, LOTS 6 AND 7 257 TAX/ZONE ELEC. DIST. CENSUS TR. BLOCK NO. L. 18252 08 606901 R-5C 43 F. 001

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

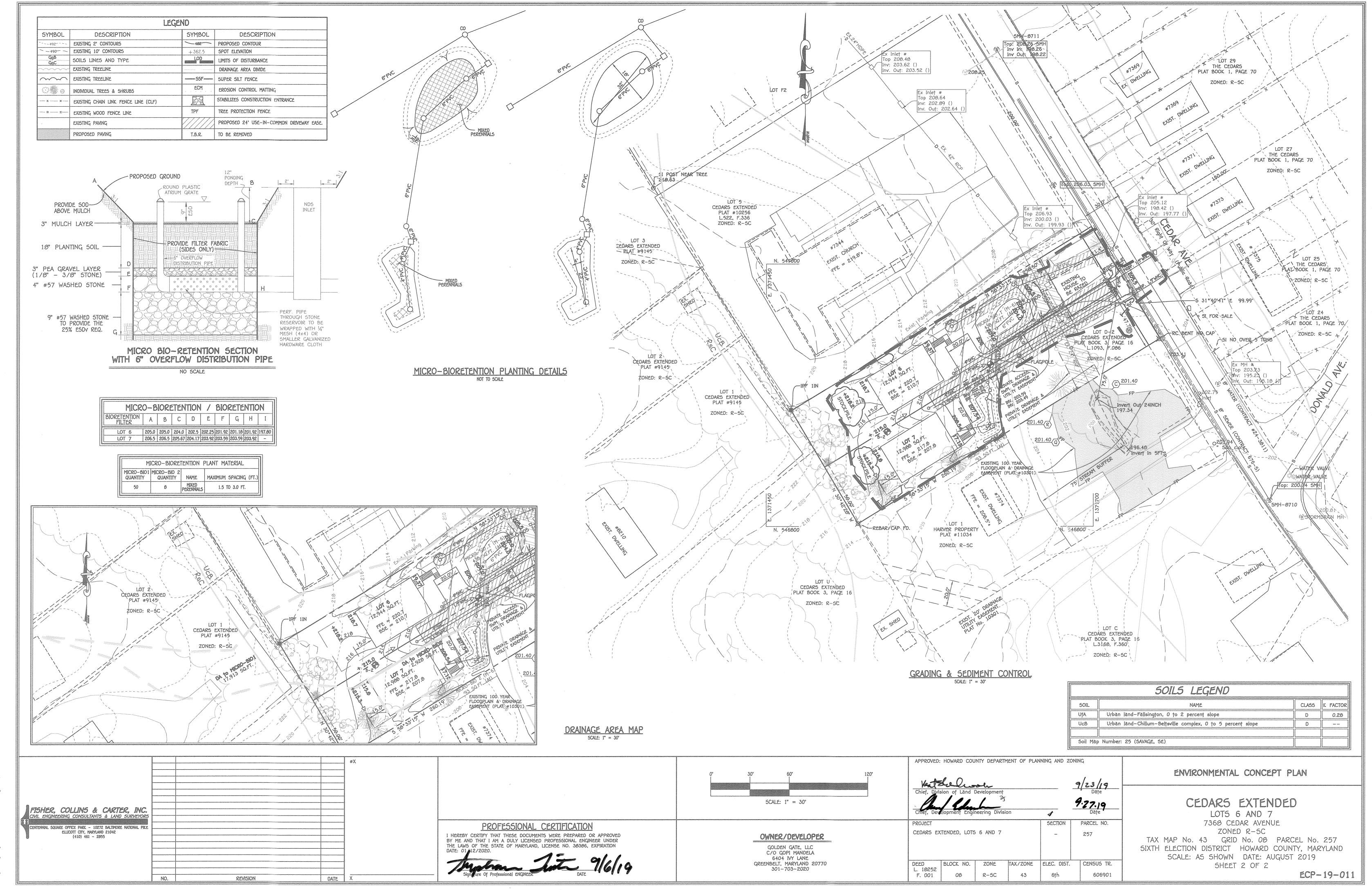
TITLE SHEET

## CEDARS EXTENDED

LOTS 6 AND 7 7368 CEDAR AVENUE

ZONED R-5C TAX MAP No. 43 GRID No. 08 PARCEL No. 257 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: AUGUST 2019

SHEET 1 OF 2 ECP-19-011



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