

**GENERAL NOTES**

- 1.) THE SUBJECT PROPERTY IS ZONED R-SC PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
- 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 MONUMENTS NO. 47GD AND 47GE WERE USED FOR THIS PROJECT.
- 3.) DISTANCES SHOWN ON THESE PLANS ARE BASED ON MARYLAND STATE PLANE ZONE, U.S. SURVEY FOOT.
- 4.) TRACT BOUNDARY IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED ON OR ABOUT JANUARY, 2015 BY BENCHMARK ENGINEERING, INC.
- 5.) A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- 6.) THE TRAFFIC STUDY WAS PREPARED BY MARS GROUP, INC. IN APRIL, 2015 AND APPROVED UNDER S-14-004.
- 7.) THE FOREST STAND DELINEATION AND WETLAND DELINEATION WAS PERFORMED BY ECO-SCIENCE PROFESSIONALS, INC. IN NOVEMBER, 2014. THERE IS NO FOREST STANDS OR WETLANDS LOCATED ON THIS SITE.
- 8.) THE GEOTECHNICAL REPORT WAS PREPARED BY GEOTECHNICAL LABORATORIES, INC. IN OCTOBER, 2015.
- 9.) THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. THE WATER AND SEWER IS PUBLIC. THE CONTRACT NUMBER IS 24-4952-D.
- 10.) THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE DATE TO BE DETERMINED, ON WHICH DATE DEVELOPERS AGREEMENT NUMBER F-16-030/24-4952 WAS FILED AND ACCEPTED.
- 11.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- 12.) THERE ARE NO HISTORIC SITES/STRUCTURES LOCATED ON THIS SITE.
- 13.) THERE ARE NO WETLANDS, WETLANDS BUFFERS, STREAMS, 100YR FLOODPLAIN OR STEEP SLOPES 25% OR GREATER LOCATED ON THIS SITE.
- 14.) NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF THE STREAM BUFFER.
- 15.) DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
  - a) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
  - b) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN).
  - c) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
  - d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
  - e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
  - f) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
  - g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- 16.) FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- 17.) THE PRIVATE USE-IN-COMMON MAINTENANCE ACCESS AGREEMENT FOR LOTS 2-8 SHALL BE RECORDED SIMULTANEOUSLY WITH THE RECORDATION OF THE SUBDIVISION PLAT.
- 18.) STORMWATER MANAGEMENT ENVIRONMENTAL SITE DESIGN (ESD) HAS BEEN PROVIDED IN ACCORDANCE WITH THE "MARYLAND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT ACT OF 2007" AND THE "HOWARD COUNTY DESIGN MANUAL VOLUME 1, CHAPTER 5" TO THE MAXIMUM EXTENT PRACTICAL (MEP). ALL PRACTICES ARE PRIVATELY OWNED AND MAINTAINED.
- 19.) LANDSCAPING IS PROVIDED WITH A CERTIFIED LANDSCAPE PLAN IN ACCORDANCE ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF \$6,450.00 FOR THE REQUIRED PERIMETER LANDSCAPING AND ADDITIONAL TREES PER WP-16-059 SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THE SITE DEVELOPMENT PLAN.
- 20.) THE FOREST CONSERVATION OBLIGATION AMOUNT OF 0.29 ACRES SHALL BE MET OFFSITE WITHIN THE FOREST MITIGATION BANK ESTABLISHED IN THE PARK OVERLOOK SUBDIVISION (F-13-093) RECORDED AS PLAT #22785-22788.
- 21.) THE ARTICLES OF INCORPORATION FOR THE HOMEOWNERS ASSOCIATION WILL BE ACCEPTED BY THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDATION OF THE PLAT.
- 22.) ALL AREAS ARE "MORE" OR "LESS".
- 23.) THE EXISTING STRUCTURES TO BE REMOVED SHALL BE DEMOLISHED PRIOR TO PLAT RECORDATION.
- 24.) THE PURPOSE OF OPEN SPACE LOT 8 IS FOR THE PROTECTION OF ENVIRONMENTAL AREAS SUCH AS THE STREAM BUFFER. IT WILL ALSO CONTAIN THE ESD STORMWATER PRACTICES. IT SHALL BE DEDICATED TO AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- 25.) THE RECREATIONAL OPEN SPACE REQUIREMENT FOR THIS PROJECT IS NOT REQUIRED SINCE THERE ARE LESS THAN 10 LOTS.
- 26.) RESERVATION OF PUBLIC UTILITY EASEMENTS  
DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, STORM DRAINAGE, OTHER PUBLIC UTILITIES LOCATED IN, ON, OVER AND THROUGH LOTS 1-7 AND OPEN SPACE LOT 8. ANY CONVEYANCES OF THE AFORESAID LOTS/PARCELS SHALL BE SUBJECT TO THE EASEMENTS HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOT(S)/PARCELS. UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.
- 27.) WP-16-008, A REQUEST TO WAIVE SECTION 16.146(a)(1) WAS APPROVED ON AUGUST 24, 2015 SUBJECT TO THE FOLLOWING CONDITIONS:
  - A) THE FINAL PLAN MUST BE SUBMITTED ON OR BEFORE NOVEMBER 6, 2015 (THE SAME APPO DATE IN THE ALLOCATIONS LETTER DATED JULY 6, 2015).
  - B) COMPLIANCE WITH SECTION 16.132 THRU 16.136 (PROVISIONS FOR ROAD IMPROVEMENTS ALONG SCAGGSVILLE ROAD).
- 28.) THE REQUIRED COMMUNITY MEETING FOR THIS PROJECT WAS HELD ON APRIL 7, 2015 PER SECTION 16.128 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- 29.) THE MODERATE INCOME HOUSING UNIT REQUIREMENT (COUNCIL BILL 35-2013) SHALL BE FULFILLED BY PAYMENT OF A FEE-IN-LIEU IN AN AMOUNT THAT IS TO BE CALCULATED BY THE DEPARTMENT OF INSPECTIONS LICENSING AND PERMITS AT THE TIME OF BUILDING PERMIT. THE FEE-IN-LIEU SHALL BE PAID FOR ALL LOTS/RESIDENTIAL UNITS WITHIN THIS SUBDIVISION AT TIME OF BUILDING PERMIT ISSUANCE.
- 30.) WP-16-059, A REQUEST TO WAIVE SECTION 16.1205(a)(7) WAS APPROVED ON DECEMBER 21, 2015 SUBJECT TO THE FOLLOWING CONDITIONS:
  - A) THE REMOVAL OF THE NORWAY MAPLE WILL REQUIRE MITIGATION WITH THE PLANTING OF 2:1 REPLACEMENT TREES (2 TOTAL) WITH A MINIMUM 3" CALIPER TRUNK. THE REPLACEMENT TREES SHALL BE BONDED AND SHOWN ON THE LANDSCAPE PLAN WITH THIS FINAL PLAN.
  - B) SPECIMEN TREE 'A' ON LOT 1 MUST REMAIN UNDISTURBED AND PROTECTED DURING THE DEMOLITION OF THE EXISTING HOUSE, THE INSTALLATION OF THE PROPOSED DRIVEWAY, AND THE CONSTRUCTION OF THE NEW HOUSE UNLESS IT CAN BE SUFFICIENTLY DEMONSTRATED THAT SPECIMEN TREE 'A' CANNOT BE SAVED.
  - C) PROVIDE THIS NOTE ON THE FUTURE SITE DEVELOPMENT PLAN.
- 31.) A FEE-IN-LIEU PAYMENT IN THE AMOUNT OF \$11,696.98 FOR THE REQUIRED ROAD IMPROVEMENTS ALONG OLD SCAGGSVILLE ROAD RIGHT-OF-WAY SHALL BE PAID AS PART OF CAPITAL PROJECT K-5061.
- 32.) A PRIVATE STREET NAME SIGN ASSEMBLY SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- 33.) PREVIOUS HOWARD COUNTY FILE REFERENCES: ECP-15-063, S-15-004, WP-16-008, WP-16-059.

# HIGH RIDGE ESTATES

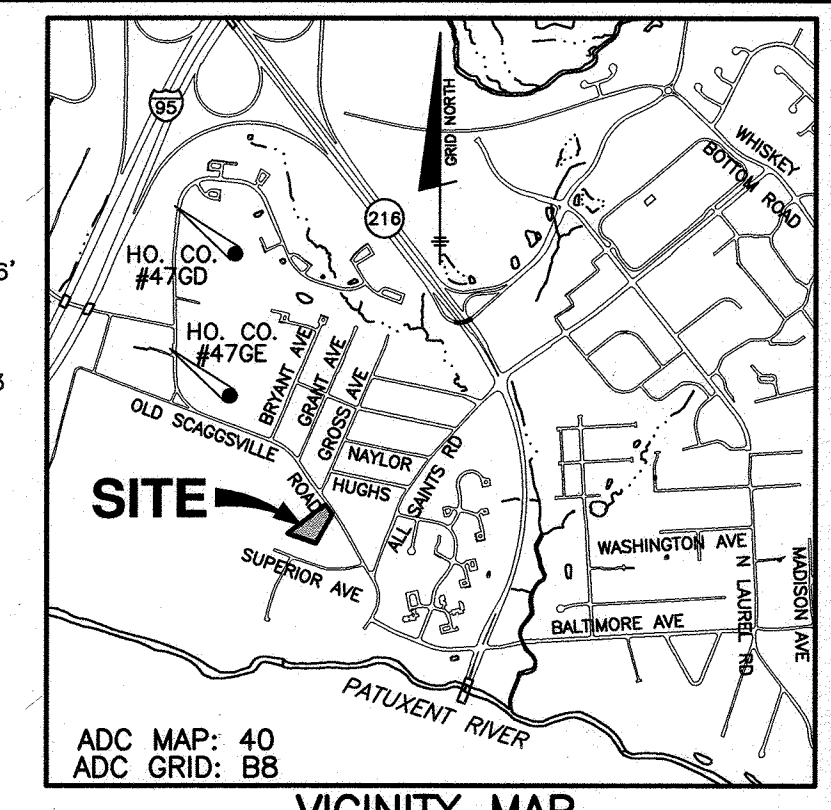
## LOTS 1 thru 7 and OPEN SPACE LOT 8

### A SUBDIVISION OF PARCEL 452

# SUPPLEMENTAL PLANS

**BENCH MARKS (NAD83)**

HO. CO. No. 47GD	ELEV. 312.32'
NEAR 9028 OLD SCAGGSVILLE ROAD	6 FEET FROM FIRE HYDRANT
	33.9 FEET FROM BGE 315258
N 530494.447	E 1350872.301
HO. CO. No. 47GE	ELEV. 335.756'
BY 9160 OLD SCAGGSVILLE ROAD	19.8 FEET FROM WATER METER
	76.5 FEET FROM BGE 31000
N 529044.964	E 1350854.953



- AS-BUILT NOTES:**
- 1.) HORIZONTAL DATUM FOR THIS AS-BUILT IS BASED ON THE MARYLAND STATE REFERENCE SYSTEM NAD 83/ ADJ 07 AS PROJECTED FROM HO. CO. GEODETIC CONTROL STATIONS 47GD AND 47GE. VERTICAL DATUM FOR THIS AS-BUILT IS NORTH AMERICAN VERTICAL DATUM 15 HIGHS 28 AS PROJECTED FROM THE ABOVE MENTIONED HOWARD COUNTY GEODETIC CONTROL STATIONS.
  - 2.) THE INSTRUMENTS USED IN PERFORMING THE AS-BUILT WERE A 5" TOTAL STATION AND PRISM.
  - 3.) THIS AS-BUILT WAS PERFORMED BY BENCHMARK ENGINEERING, INC.

**RIGHT OF WAY ELEVATION CHART**

R/W FT. NO.	DESCRIPTION	ELEVATION
101	REBAR @ CAP	251.23'
104	REBAR @ CAP	251.06'

**MINIMUM LOT SIZE CHART**

LOT	GROSS	PIPESTEM	MINIMUM LOT SIZE
2	6,456	456	6,000
3	6,936	696	6,240
4	7,415	935	6,480
5	7,895	1,175	6,720
6	8,207	1,174	7,033
7	7,263	934	6,329

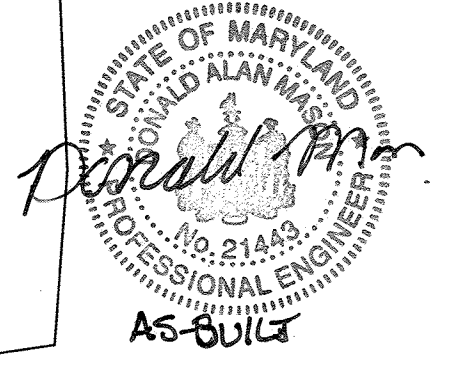
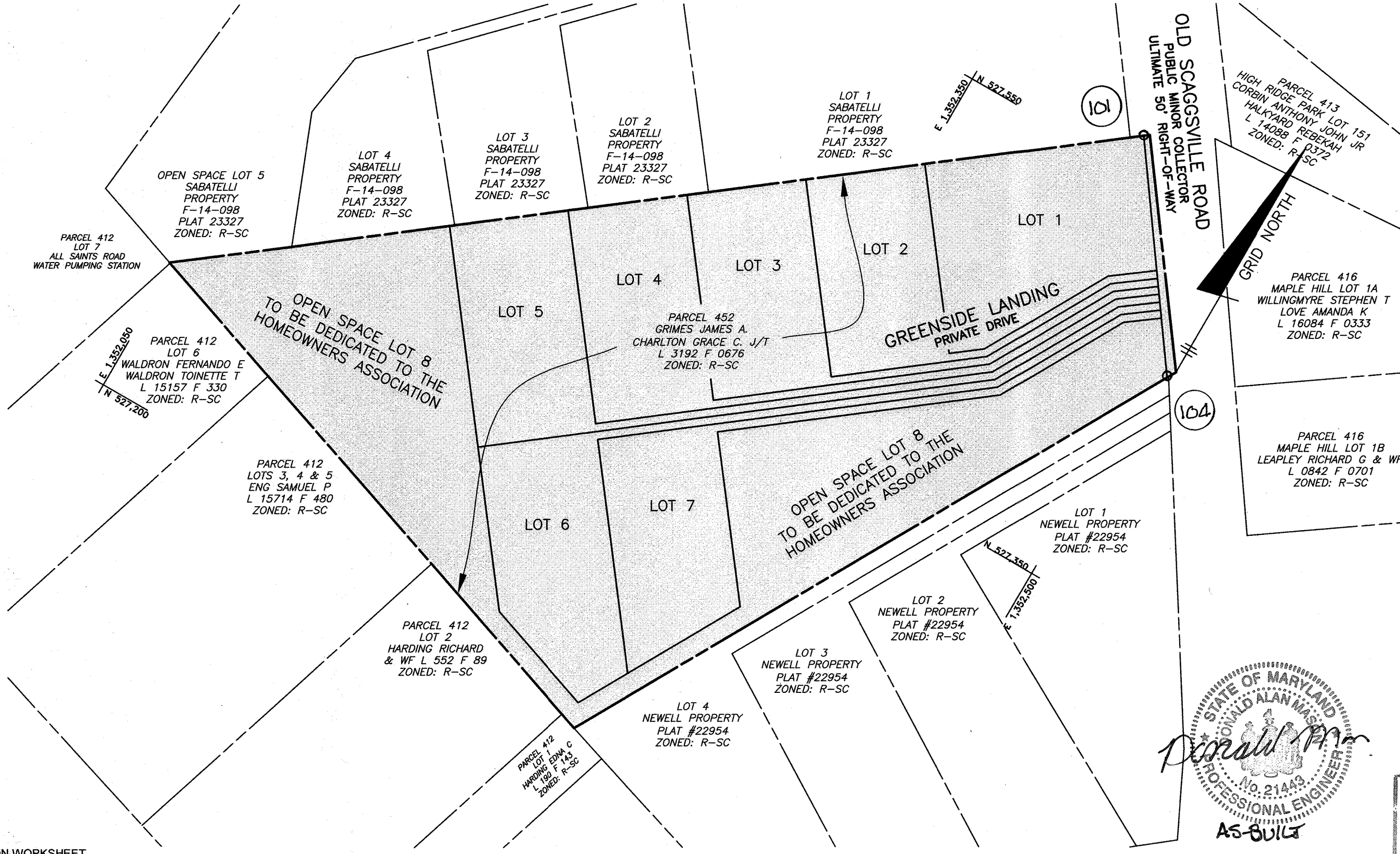
MINIMUM LOT SIZE ALLOWED PER ZONING (SECTION 110.0.D.2): 6,000 SF

**SHEET INDEX**

NO.	TITLE
1	TITLE SHEET
2	SUPPLEMENTAL GRADING PLAN
3	SUPPLEMENTAL STORMWATER MANAGEMENT DETAILS
4	SUPPLEMENTAL STORMWATER MANAGEMENT NOTES, CHARTS & SOIL BORING LOGS
5	SUPPLEMENTAL STORM DRAIN DRAINAGE MAP, PROFILES & DETAILS
6	SUPPLEMENTAL LANDSCAPE PLAN
7	ESD TO THE MEP STORMWATER MANAGEMENT DA MAP

**Site Analysis Data Chart**

Category	Value	Zoning
Zoning	R-SC	R-SC
Gross Area	1.91 ac	1.91 ac
100yr Floodplain	0.00 ac	0.00 ac
Steep Slopes 25% or greater (outside floodplain)	0.00 ac	0.00 ac
Net Area	1.91 ac	1.91 ac
Number of lots/units allowed (4 d.u. per net acre)	7	7
Number of lots/units proposed	7	7
Area of Buildable Lots	1.22 ac	1.22 ac
Area of Open Space Lots	0.68 ac	0.68 ac
Area of Proposed Right-of-way Dedication	0.01 ac	0.01 ac
<b>Open Space Calculations</b>		
Area of Open Space Required (25% of net)	0.48 ac	0.48 ac
Area of Open Space Provided	0.68 ac	0.68 ac
Area of Non-Credited Open Space	0.07 ac	0.07 ac
Area of Credited Open Space	0.61 ac	0.61 ac
Recreational Open Space Required	NA *	NA *
Recreational Open Space Provided	NA	NA
* Recreational open space is not required since there are less than 10 lots/units proposed (Section 16.121(a)(4)(i))		



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. 21443, Expiration Date: 12-31-22

**AS-BUILT CERTIFICATION**  
I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications  
Date: 4/20/22  
Donald Mason, P.E.

**ADDRESS CHART**

LOT	STREET ADDRESS
1	9304 OLD SCAGGSVILLE ROAD
2	9206 GREENSIDE LANDING
3	9210 GREENSIDE LANDING
4	9214 GREENSIDE LANDING
5	9218 GREENSIDE LANDING
6	9219 GREENSIDE LANDING
7	9215 GREENSIDE LANDING

**NOTE:**  
THIS PLAN CANNOT BE USED FOR A GRADING PERMIT.

**NET TRACT AREA:** 5-Aug-22

A. Total tract area	1.91
B. Land dedication acres (parks, county facility, etc.)	0.00
C. Land dedication for roads or utilities (not being constructed by this plan)	0.00
D. Area to remain in commercial agricultural production/use	0.00
E. Other deductions (specify) FLOODPLAIN	0.00
F. Net Tract Area	1.91

**LAND USE CATEGORY:** (from Trees Technical Manual)  
Input the number "1" under the appropriate land use, limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

**Specimen Tree Chart**

Specimen Tree	Scientific Name	Common Name	DBH	Condition	Notes
A	Picea abies	Norway Spruce	36"	good	to remain
B	Acer platanoides	Norway Maple	36"	poor	to be removed (WP-16-059)

**EXISTING FOREST COVER:**

I. Existing forest cover	0.00
J. Area of forest above afforestation threshold	0.00
K. Area of forest above conservation threshold	0.00
<b>BREAK EVEN POINT:</b>	
L. Forest retention above threshold with no mitigation	0.00
M. Clearing permitted without mitigation	0.00
<b>PROPOSED FOREST CLEARING:</b>	
N. Total area of forest to be cleared	0.00
O. Total area of forest to be retained	0.00
<b>PLANTING REQUIREMENTS:</b>	
P. Reforestation for clearing above conservation threshold	0.00
Q. Reforestation for clearing below conservation threshold	0.00
R. Credit for retention above conservation threshold	0.00
S. Total reforestation required	0.00
T. Total afforestation required	0.29
U. Credit for landscaping (may not exceed 20% of "S")	0.00
V. Total reforestation and afforestation required	0.29

NOTE: THE FOREST CONSERVATION OBLIGATION AMOUNT OF 0.29 ACRES HAS BEEN MET OFFSITE IN THE FOREST MITIGATION BANK ESTABLISHED WITHIN THE PARK OVERLOOK SUBDIVISION (F-13-093) RECORDED AS PLAT #22785-22788.

**STORMWATER MANAGEMENT SUMMARY TABLE**

Practice	DA (sf)	Imp Area (sf)	% Imp	Rv	Pe required	Required	Provided	2% DA?	Required	Provided	Pe	Rev	Required	Provided	Ownership
(M-6) Micro Bio-Retention #1	16,748	3,754	22%	0.25	1.2	335	537	PASS	422	1112	2.6				Private
(M-6) Micro Bio-Retention #2	15,456	3,145	20%	0.23	1.2	309	317	PASS	360	587	2.0				Private
(M-6) Micro Bio-Retention #3	16,063	8,968	56%	0.55	1.2	321	788	PASS	887	1339	1.8				Private
(M-6) Micro Bio-Retention #4	10,710	1,573	15%	0.18	1.2	214	215	PASS	195	441	2.6	119 cf	met via the M-6 practices		Private
(M-6) Micro Bio-Retention #5	2,843	1,897	67%	0.65	1.2	57	119	PASS	185	311	2.0				Private
(N-2) Disconnection of Non-Rooftop #1	3,816	1,812	47%	0.48	1.2				152	152	1.0				Private
<b>Totals per individual Drainage Area</b>	65,636	21,149				1236	1976		2201	3941					
<b>Totals per Overall Site</b>	83,028	21,792	30%	0.32	1.2				2657						

**Notes:**  
1. The Pe required column is based on total site Pe calculation. The Rv is based on individual drainage area percent impervious (per DED)  
2. The ESDv required is based on 75% of ESDv  
3. The 643 sf of impervious area not treated via ESD is a portion of the driveway for Lot 1 and the portion of the use-in-common driveway within the public ROW of Old Scaggsville Road

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Vet...  
DATE: 5-24-16  
DATE: 5-20-16

**Eco-Science Professionals, Inc.**  
CONSULTING ECOLOGISTS  
MD DNR Qualified Professional  
USACE Wetland Delisting  
Certification # WDCP93MD06100482  
P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752  
John P. Casales

**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE & SUITE 315 A BELGITT CITY, MARYLAND 21043  
(P) 410-465-6109 (F) 410-465-6144  
WWW.BE-CVLENGINEERING.COM

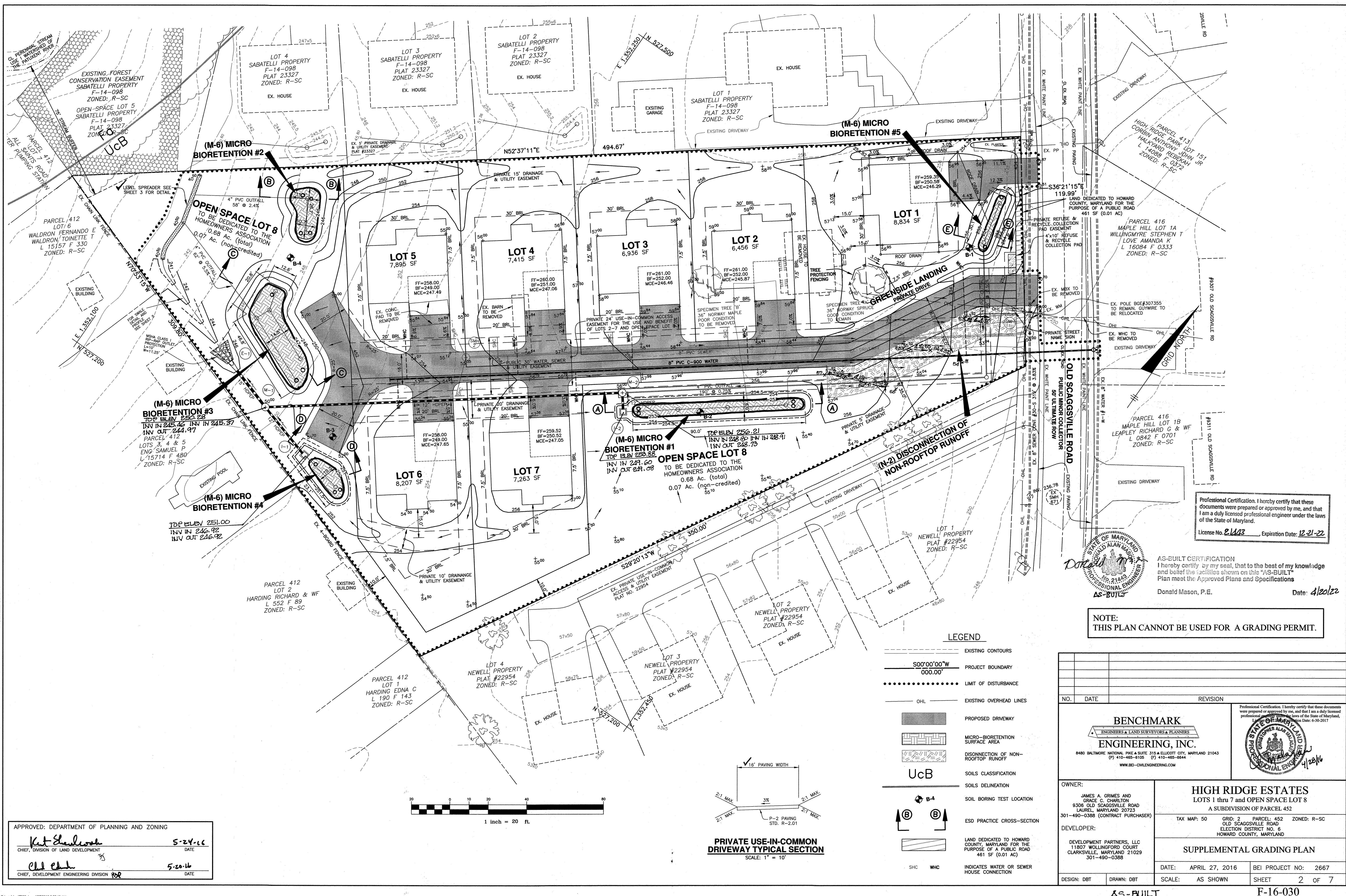
**OWNER:**  
JAMES A. GRIMES AND GRACE C. CHARLTON  
9306 OLD SCAGGSVILLE ROAD  
LAUREL, MARYLAND 20723  
301-490-0368 (CONTRACT PURCHASER)

**DEVELOPER:**  
DEVELOPMENT PARTNERS, LLC  
11807 WOLLINGFORD COURT  
CLARKSVILLE, MARYLAND 21029  
301-490-0368

**HIGH RIDGE ESTATES**  
LOTS 1 thru 7 and OPEN SPACE LOT 8  
A SUBDIVISION OF PARCEL 452  
TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

**SUPPLEMENTAL PLAN TITLE SHEET**  
DATE: APRIL 27, 2016 SHEET PROJECT NO: 2667  
SCALE: AS SHOWN BEI SHEET 1 OF 7

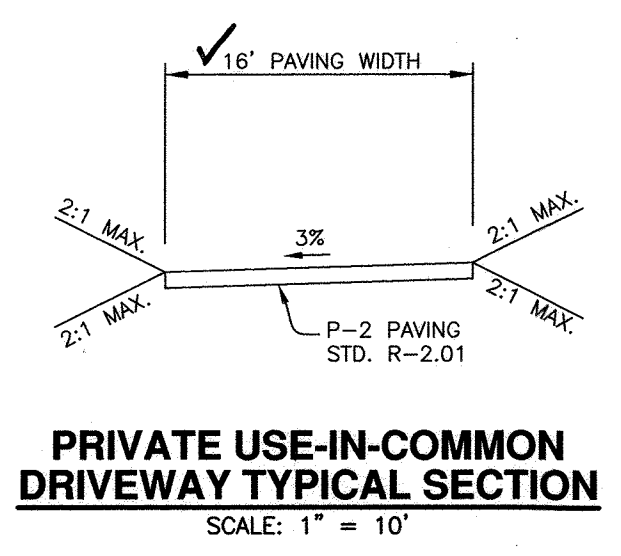
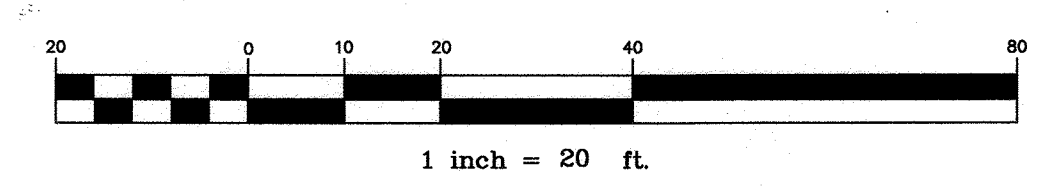




APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Kat Shulman* 5-24-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chad Clark* 5-20-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



- LEGEND**
- EXISTING CONTOURS
  - PROJECT BOUNDARY
  - ..... LIMIT OF DISTURBANCE
  - OHL EXISTING OVERHEAD LINES
  - PROPOSED DRIVEWAY
  - MICRO-BIORETENTION SURFACE AREA
  - DISCONNECTION OF NON-ROOFTOP RUNOFF
  - SOILS CLASSIFICATION
  - SOILS DELINEATION
  - SOIL BORING TEST LOCATION
  - ESD PRACTICE CROSS-SECTION
  - LAND DEDICATED TO HOWARD COUNTY, MARYLAND FOR THE PURPOSE OF A PUBLIC ROAD
  - SHC WHC INDICATES WATER OR SEWER HOUSE CONNECTION

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. 21443 Expiration Date: 12-21-22

AS-BUILT CERTIFICATION  
 I hereby certify by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications

Donald Mason, P.E. Date: 4/20/22

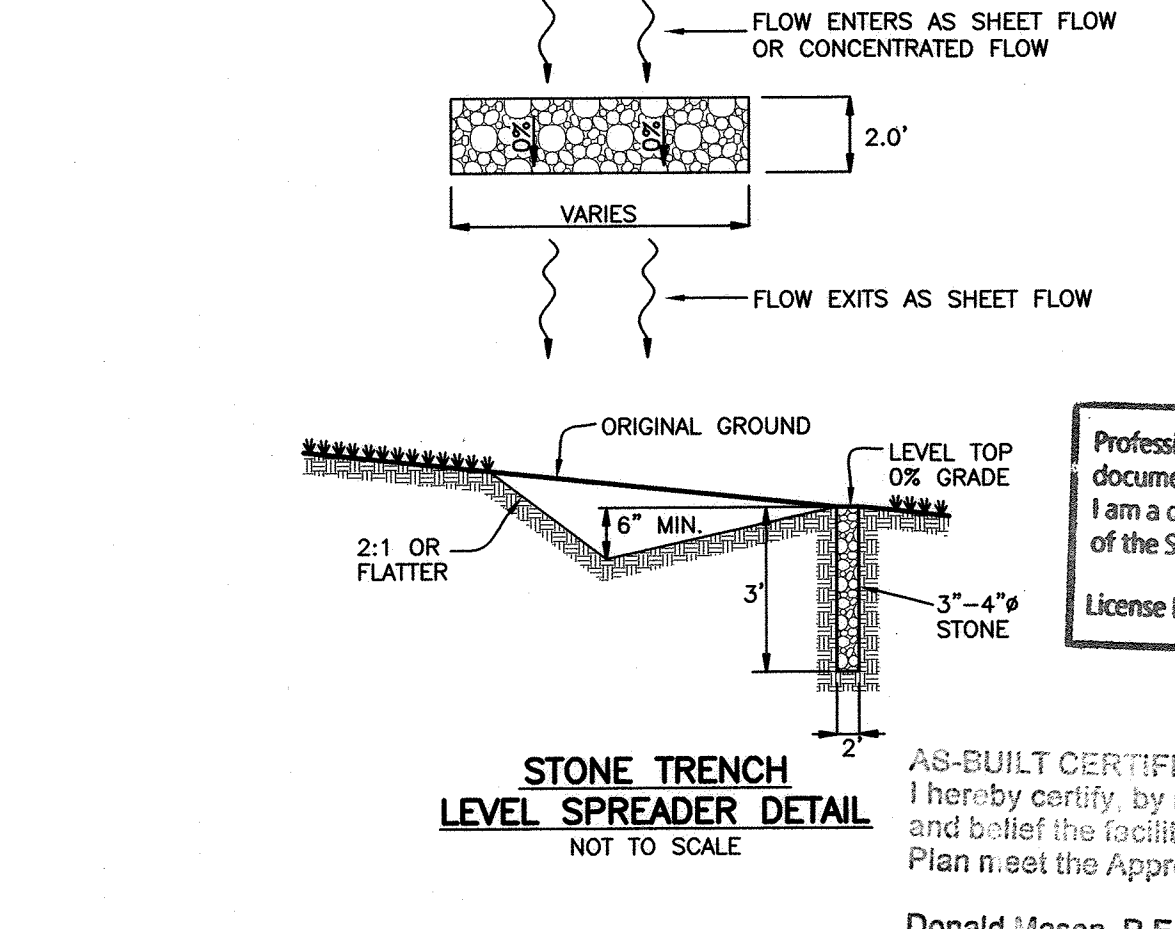
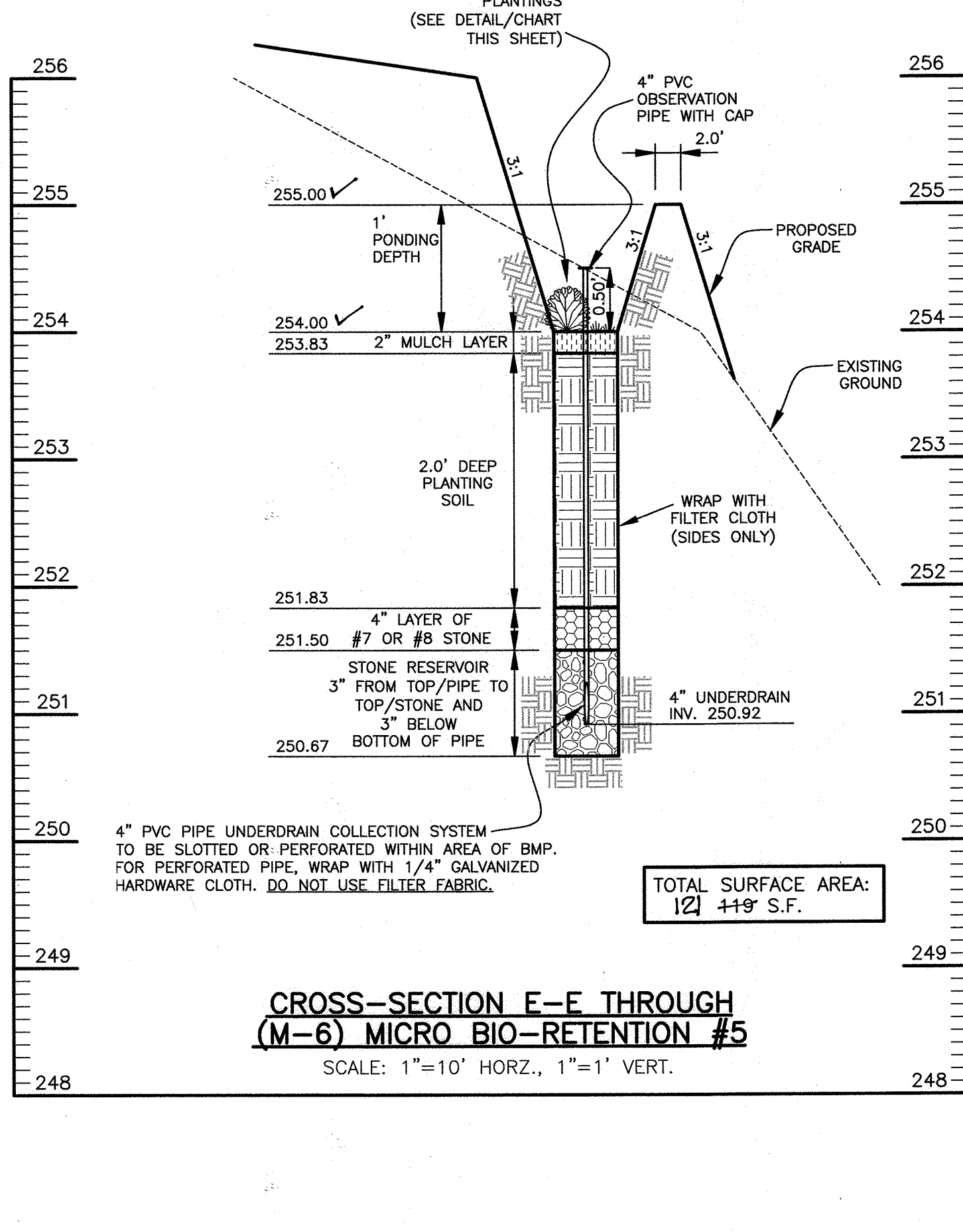
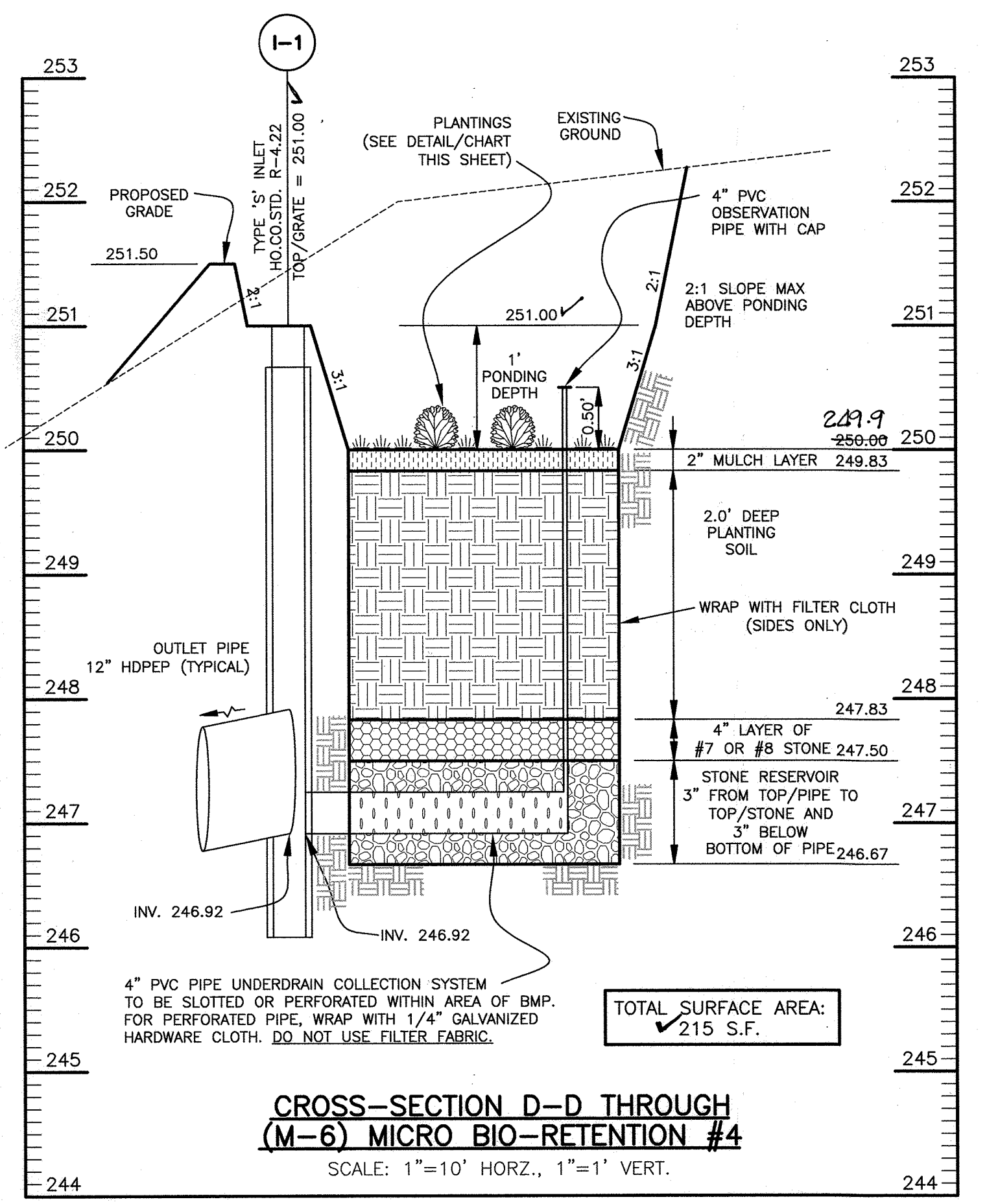
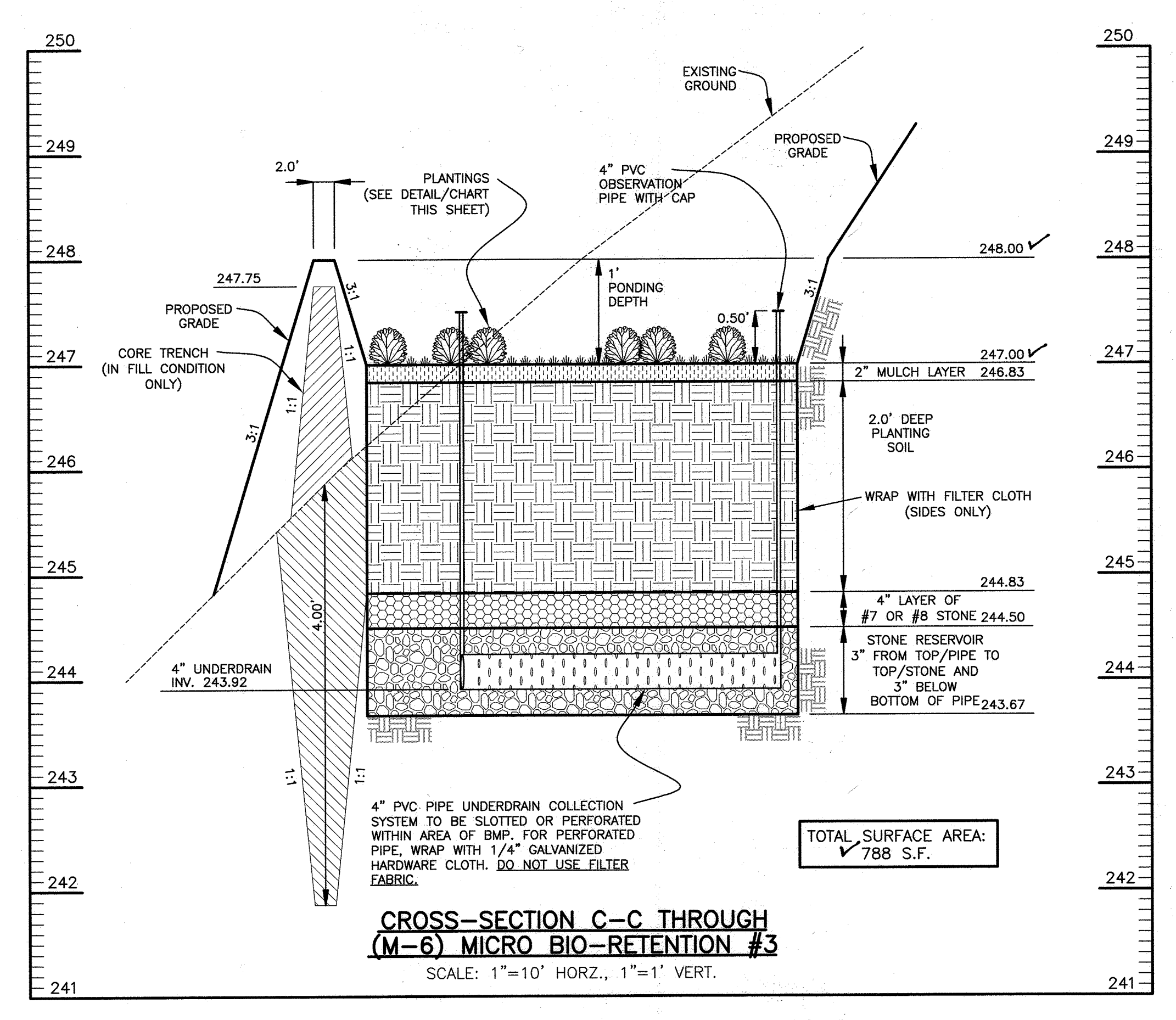
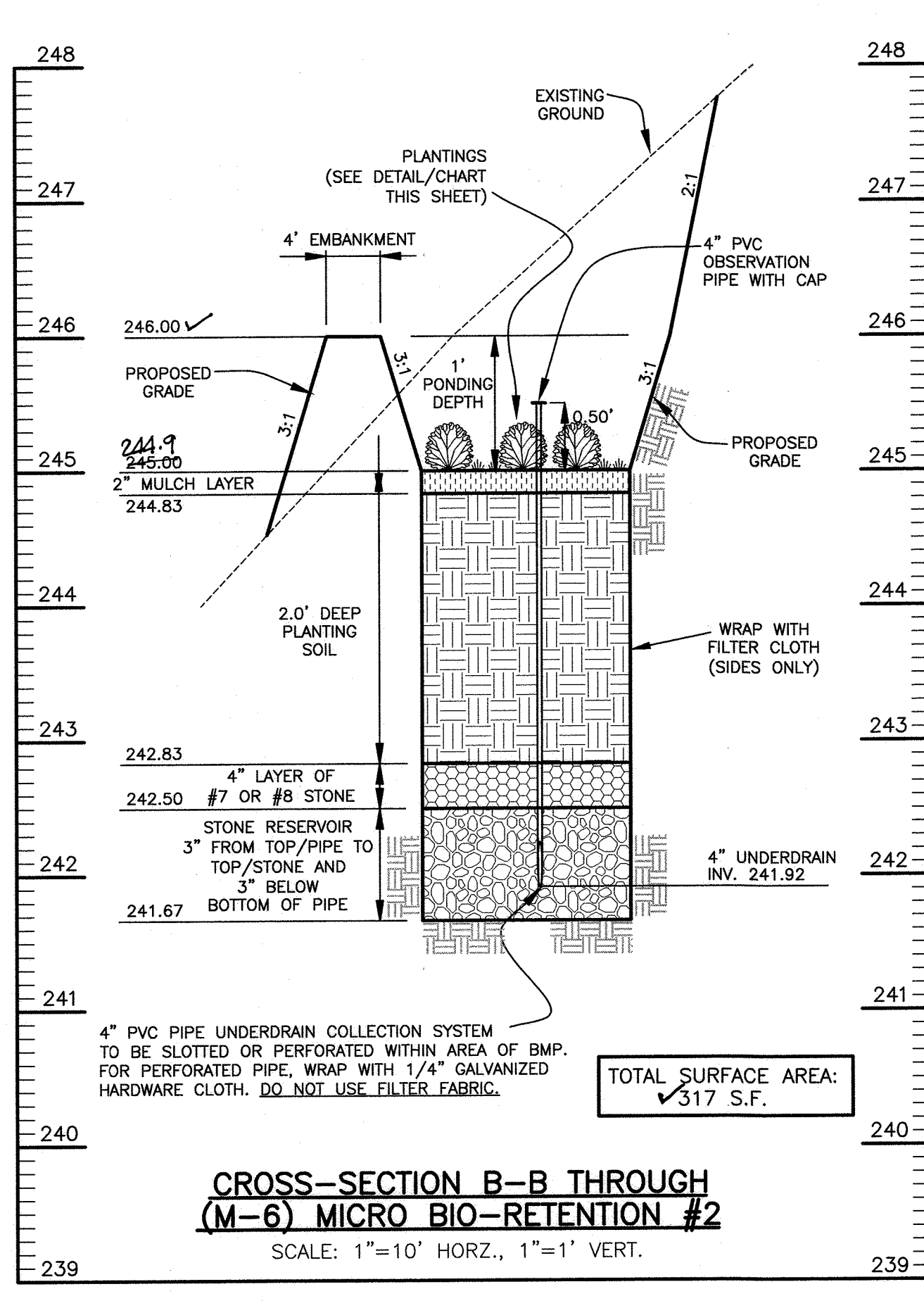
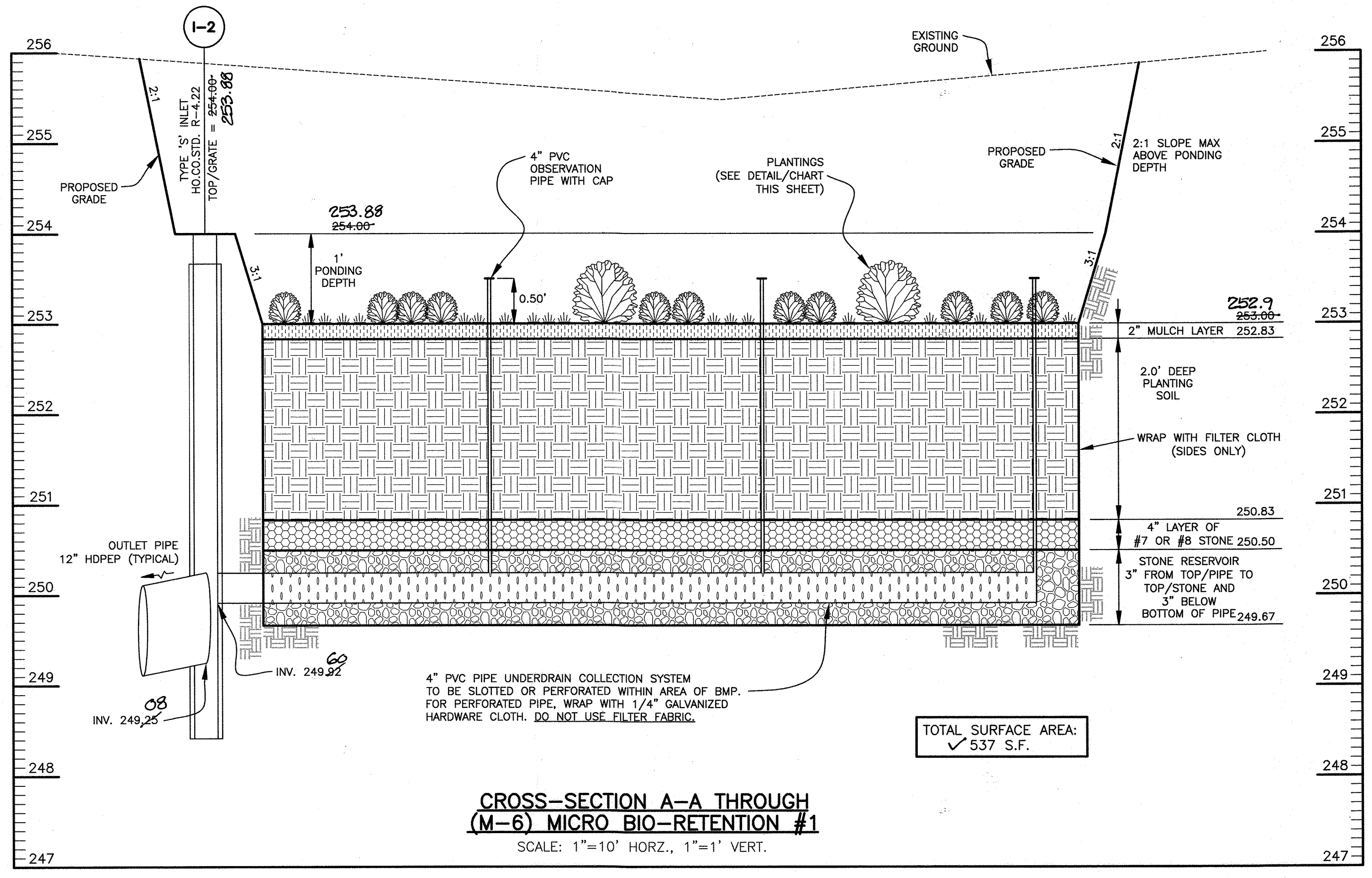
NOTE: THIS PLAN CANNOT BE USED FOR A GRADING PERMIT.

NO.	DATE	REVISION

<b>BENCHMARK</b> ENGINEERS & LAND SURVEYORS & PLANNERS <b>ENGINEERING, INC.</b> 8480 BALTIMORE NATIONAL PIKE SUITE 315 A ELICOTT CITY, MARYLAND 21043 (P) 410-465-6168 (F) 410-465-6644 WWW.BE-CMLEENGINEERING.COM		
OWNER: JAMES A. GRIMES AND GRACE C. CHARLTON 9306 OLD SCAGGSVILLE ROAD LAUREL, MARYLAND 20723 301-490-0388 (CONTRACT PURCHASER)		
DEVELOPER: DEVELOPMENT PARTNERS, LLC 11807 WOLLINGFORD COURT CLARKSVILLE, MARYLAND 21029 301-490-0388		<b>HIGH RIDGE ESTATES</b> LOTS 1 thru 7 and OPEN SPACE LOT 8 A SUBDIVISION OF PARCEL 452 TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND
DESIGN: DBT DRAWN: DBT		





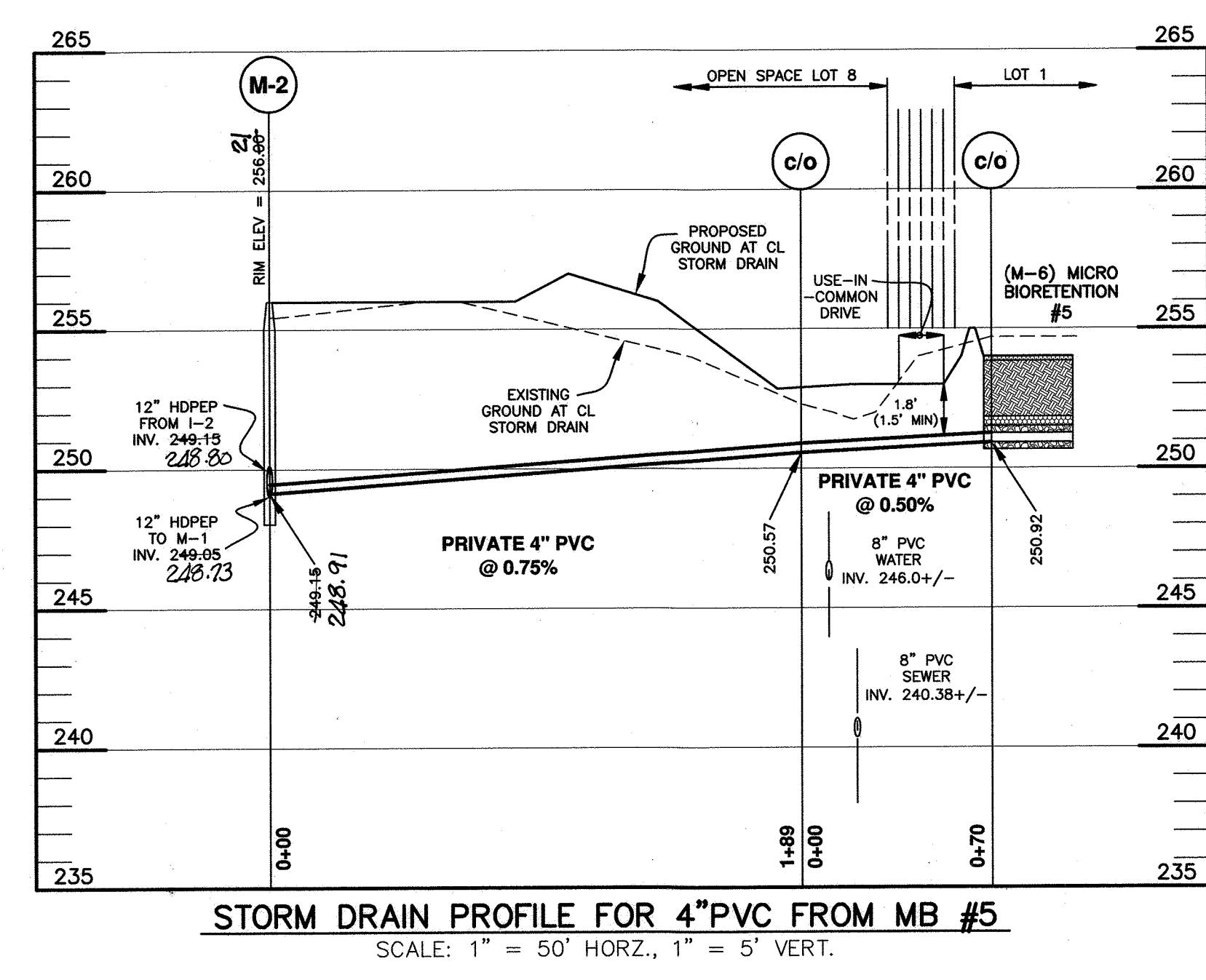
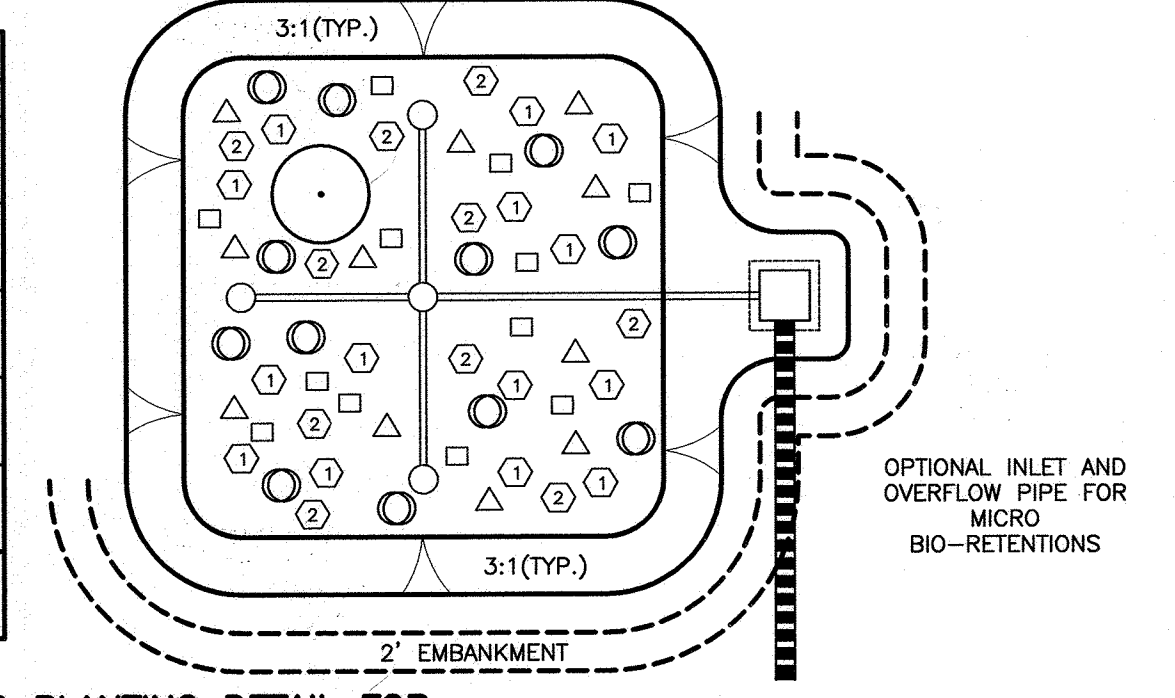
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.  
License No. 21443, Expiration Date: 12-21-22  
Donald Mason, P.E. Date: 4/22/22

**(M-6) MICRO BIO-RETENTION LANDSCAPING CHART**

Facility square footage	PLANT NAME	COMMON NAME	TYPE	SIZE	MB #1 QUANTITY	MB #2 QUANTITY	MB #3 QUANTITY	MB #4 QUANTITY	MB #5 QUANTITY	TOTAL QUANTITY
537	Ilex verticillata	Common Winterberry	shrub	2.5'-3' ht	5	3	8	2	1	20
317	Lobelia cardinalis	Cardinal flower	perennial herbaceous plant	quart bulb	36	21	53	14	8	132
788	Lobelia siphilitica	Great Blue Lobelia	perennial herbaceous plant	quart bulb	36	21	53	14	8	132
215	Carex stricta	Upright Sedge	grass	quart bulb	36	21	53	14	8	132
119	Iris versicolor	Blue Water Iris	perennial herbaceous plant	quart bulb	36	21	53	14	8	132
1976	Liatis spicata	Prairie Gay Feather	perennial herbaceous plant	quart bulb	36	21	53	14	8	132

**PLANTING LEGEND**

SYMBOL	NAME
①	LOBELIA CARDINALIS
②	LOBELIA SIPHILITICA
□	CAREX STRICTA
△	IRIS VERSICOLOR
○	LIATRIS SPICATA
●	ILEX VERTICILLATA



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
5-24-16  
5-20-16

NOTE: SEE SHEET 2 FOR PLAN VIEW DIMENSIONS OF MICRO BIO-RETENTION PRACTICES.

**BENCHMARK ENGINEERING, INC.**  
11807 WOLLINGFORD COURT, CLARKSVILLE, MARYLAND 21029  
301-490-0388 (CONTRACT PURCHASER)

**HIGH RIDGE ESTATES**  
LOTS 1 thru 7 and OPEN SPACE LOT 8  
A SUBDIVISION OF PARCEL 452

TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC  
ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

DEVELOPER: DEVELOPMENT PARTNERS, LLC  
11807 WOLLINGFORD COURT, CLARKSVILLE, MARYLAND 21029  
301-490-0388

DATE: APRIL 27, 2016 BEI PROJECT NO: 2586  
SCALE: AS SHOWN SHEET 3 OF 7



**BORING LOG** Geolab, Inc.

Report No.:		Date:	
Client: <b>Cornerstone Homes</b>		Project No. <b>115-123</b>	
Project: <b>High Ridge Estates</b>		Location: <b>See Boring Location Plan</b>	
Boring No. <b>B-1</b>	(1 of 1) Total Depth <b>11</b> Elev. <b>255.0</b>	Start Date: <b>10/24/2015</b> Completed: <b>10/24/2015</b> Driller: <b>M. Norris</b>	
Elevation	Depth	DESCRIPTION OF MATERIALS (classification)	Remarks
255.0	0.0	Sod with root matter and organic soil	Boring dry during drilling and at completion.
254.5	0.5	Brown fine to medium SAND with little silt and clay and trace gravel, moist (SM, Sandy Loam)	
250.0	5.0		12.0
248.0	7.0	Off-white gravelly fine to coarse SAND with little silt, moist (SM, Sandy Loam)	
244.0	11.0	End of Boring	

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

**BORING LOG** Geolab, Inc.

Report No.:		Date:	
Client: <b>Cornerstone Homes</b>		Project No. <b>115-123</b>	
Project: <b>High Ridge Estates</b>		Location: <b>See Boring Location Plan</b>	
Boring No. <b>B-2</b>	(1 of 1) Total Depth <b>12</b> Elev. <b>255.5</b>	Start Date: <b>10/24/2015</b> Completed: <b>10/24/2015</b> Driller: <b>M. Norris</b>	
Elevation	Depth	DESCRIPTION OF MATERIALS (classification)	Remarks
255.5	0.0	Sod with root matter and organic soil	Boring dry during drilling and at completion.
255.0	0.5	Tan silty fine sandy GRAVEL, moist (GM, Sandy Loam)	
245.5	10.0	Light tan clayey SILT with some fine sand, moist (ML, Loam)	13.3
243.5	12.0	End of Boring	

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

**CONSTRUCTION SPECIFICATIONS**

**B.4.C Specifications for Micro-Bioretenion, Rain Gardens, Landscape Infiltration & Infiltration Berms**

**1. Material Specifications:**  
The allowable materials to be used in these practices are detailed in Table B.4.1.

**2. Filtering Media or Planting Soil:**  
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretenion practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05. The planting soil shall be tested and shall meet the following criteria:  
Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)  
Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy and (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).  
Clay Content - Media shall have a clay content of less than 5%.  
pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

**3. Compaction:**  
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoers to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

**4. Plant Material:**  
Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.

**5. Plant Installation:**  
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be placed so 1/8th of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

**6. Underdrains:**  
Underdrains should meet the following criteria:  
• Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).  
• Perforations - If perforated pipe is used, perforations should be 3/4" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/2" (No. 4 or 4x4) galvanized hardware cloth.  
• Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.  
• The main collector pipe shall be at a minimum 0.5% slope.  
• A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.  
• A 4" layer of pea gravel (1/4" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**7. Miscellaneous:**  
These practices may not be constructed until all contributing drainage area has been stabilized

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a		PE Type I nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" or 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe, 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/2-inch galvanized hardware cloth.
Poured in place concrete (if required)	MSHA Mix No. 3; $f_c = 3500$ psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-00	n/a	on-site testing of poured-in-place concrete required: 28 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.8.9; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil properties); and analysis of potential cracking.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbide or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

**OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)**

- 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.
- The Owner shall perform a plant inspection 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.
- 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 the new layer is applied.
- The Owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

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

- Maintenance of areas receiving disconnected 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 areas, foot traffic should be discouraged as well.

**BORING LOG** Geolab, Inc.

Report No.:		Date:	
Client: <b>Cornerstone Homes</b>		Project No. <b>115-123</b>	
Project: <b>High Ridge Estates</b>		Location: <b>See Boring Location Plan</b>	
Boring No. <b>B-4</b>	(1 of 1) Total Depth <b>11</b> Elev. <b>247.0</b>	Start Date: <b>10/24/2015</b> Completed: <b>10/24/2015</b> Driller: <b>M. Norris</b>	
Elevation	Depth	DESCRIPTION OF MATERIALS (classification)	Remarks
247.0	0.0	Sod with root matter and organic soil	Groundwater was encountered at a depth of 8.33 feet.
246.5	0.5	Tan fine SAND with little silt and clay, moist (SM, Sandy Loam)	
242.0	5.0		14.5
236.5	10.5	Tan sandy GRAVEL with little to trace silt, (GM, Sand)	
236.0	11.0	End of Boring	

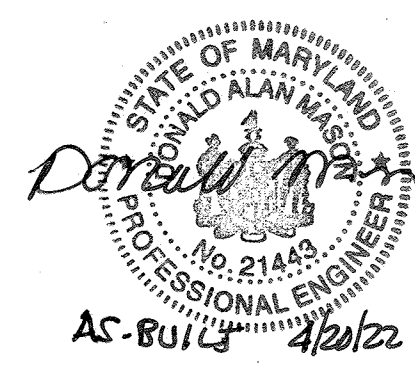
\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

**BORING LOG** Geolab, Inc.

Report No.:		Date:	
Client: <b>Cornerstone Homes</b>		Project No. <b>115-123</b>	
Project: <b>High Ridge Estates</b>		Location: <b>See Boring Location Plan</b>	
Boring No. <b>B-3</b>	(1 of 1) Total Depth <b>11</b> Elev. <b>252.0</b>	Start Date: <b>10/24/2015</b> Completed: <b>10/24/2015</b> Driller: <b>M. Norris</b>	
Elevation	Depth	DESCRIPTION OF MATERIALS (classification)	Remarks
252.0	0.0	Sod with root matter and organic soil	Boring dry during drilling and at completion.
251.5	0.5	Tan-brown and off-white silty fine SAND, moist (SM, Sandy Loam)	
247.0	5.0	Tan fine SAND with little silt, moist (SM, Loamy Sand)	
245.0	7.0	Light tan fine to coarse SAND with some gravel and little silt, moist (GM, Loamy Sand)	
244.0	8.0		9.1
242.5	9.5	Pale tan silty fine to medium SAND, moist (SM, Sandy Loam)	
241.5	10.5	Tan sandy GRAVEL with some silt, moist (GM, Sand)	
241.0	11.0	End of Boring	

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"



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. **21443**, Expiration Date: **12-31-22**

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 5-24-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 [Signature] 5-20-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION

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. 21445, Expiration Date: 6-30-2017

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE SUITE 215 ELICOTT CITY, MARYLAND 21043  
 (P) 410-465-8102 (F) 410-465-8944  
 WWW.BE-CMENGINEERING.COM

OWNER: JAMES A. GRIMES AND GRACE C. CHARLTON  
 9306 OLD SCAGGSVILLE ROAD  
 LAUREL, MARYLAND 20723  
 301-490-0368 (CONTRACT PURCHASER)

DEVELOPER: DEVELOPMENT PARTNERS, LLC  
 11807 WOLLINGFORD COURT  
 CLARKSVILLE, MARYLAND 21029  
 301-490-0368

**HIGH RIDGE ESTATES**  
 LOTS 1 thru 7 and OPEN SPACE LOT 8  
 A SUBDIVISION OF PARCEL 452

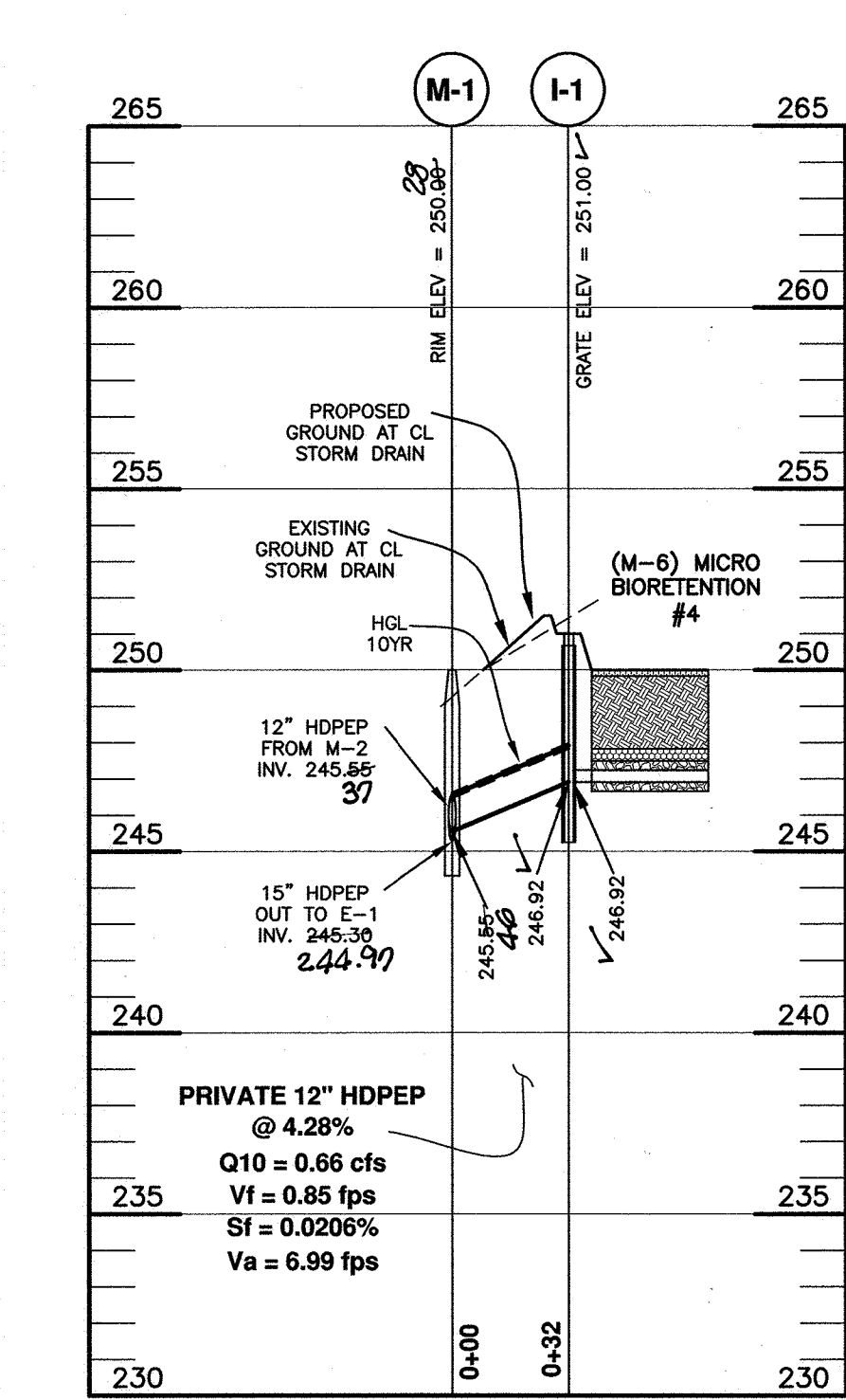
TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC  
 OLD SCAGGSVILLE ROAD  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

**SUPPLEMENTAL STORMWATER MANAGEMENT NOTES, CHART, AND SOIL BORING LOGS**

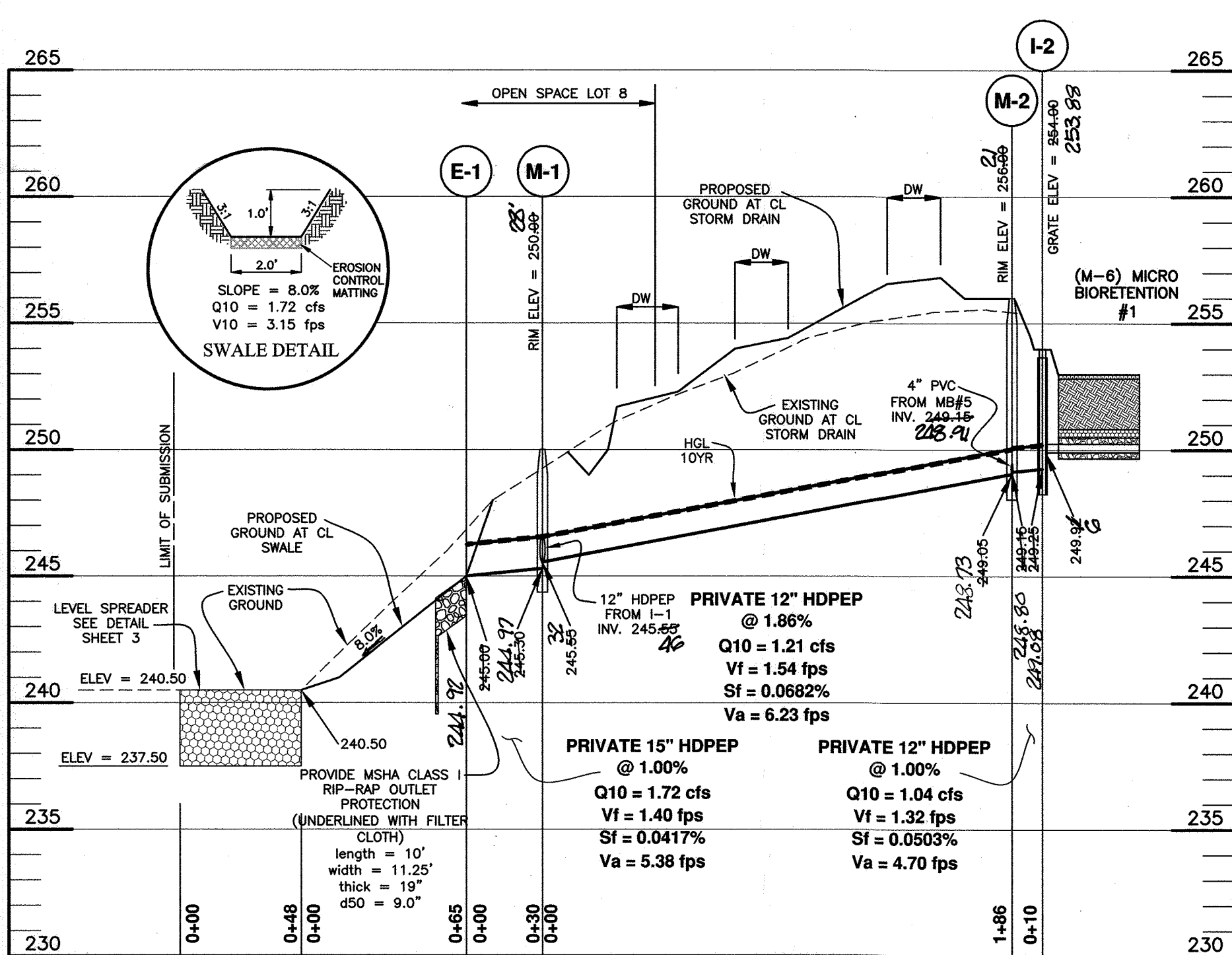
DATE: APRIL 27, 2016 BEI PROJECT NO: 2586  
 SCALE: AS SHOWN SHEET 4 OF 7



NRCS SOILS CHART - Map No. 28				
SYMBOL	HYDRIC	HYDROLOGIC GROUP	Kw erodibility Factor	NAME
Fa*	YES	D	0.20	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT
UcB		D	0.37	URBAN LAND- CHILLUM-BELTSVILLE COMPLEX 0 TO 5 PERCENT SLOPES



**STORM DRAIN PROFILE**  
SCALE: 1" = 50' HORZ., 1" = 5' VERT.



**STORM DRAIN PROFILE**  
SCALE: 1" = 50' HORZ., 1" = 5' VERT.

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 5-21-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
*[Signature]* 5-20-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

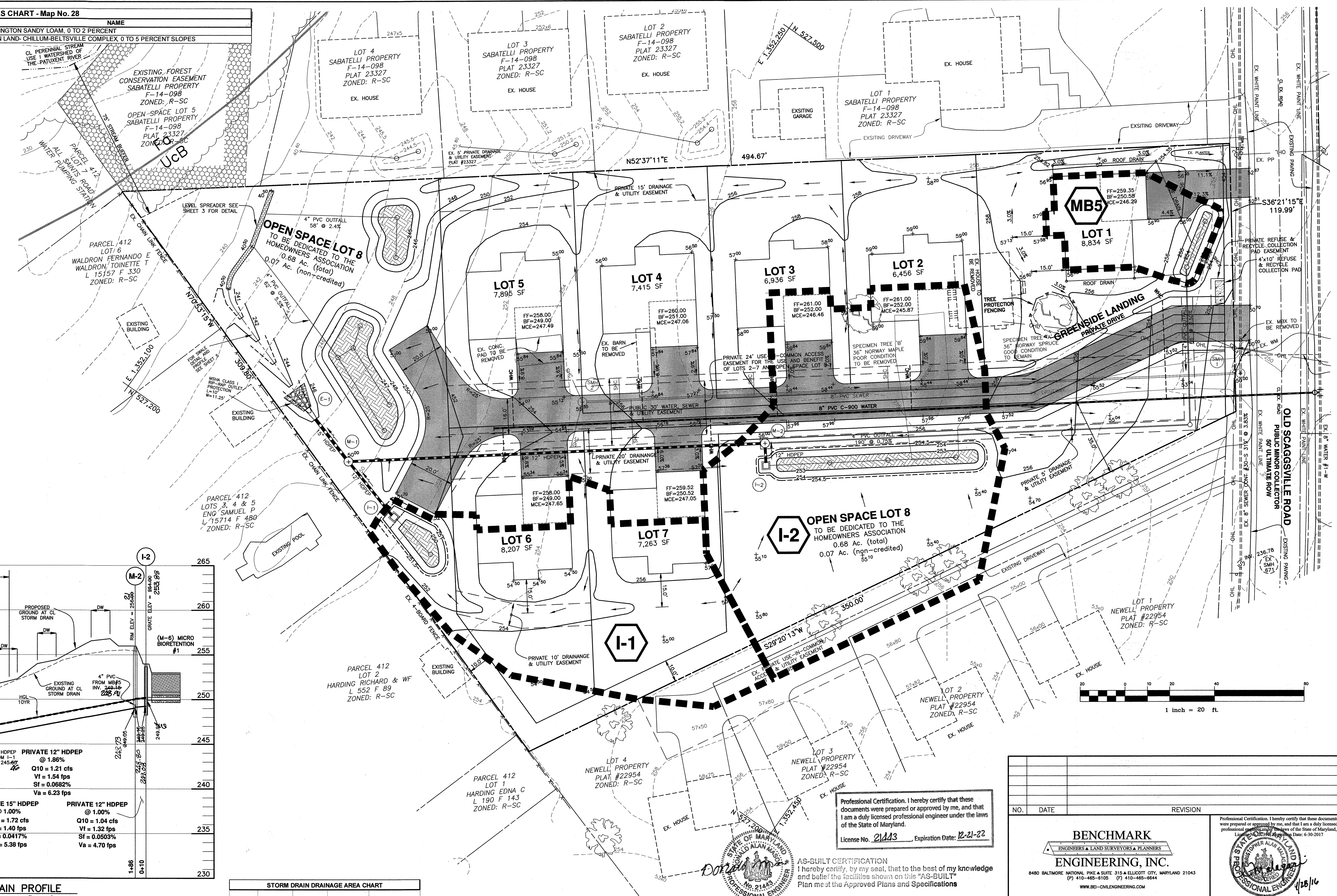
INLET #	ZONING (Z)	AREA (Ac) (A)	"C" FACTOR (C)<25	% IMPERVIOUS (P)>25
I-1	PGCC	0.25	0.36	65.0
I-2	PGCC	0.38	0.36	65.0
MB #5	PGCC	0.07	0.36	65.0

SIZE	TYPE	LENGTH (L.F.)	MAINTENANCE
4"	PVC (MB outfall pipes)	351	PRIVATE
6"	PVC (roof manifold)	151	PRIVATE
12"	HDPEP	228	PRIVATE
15"	HDPEP	30	PRIVATE

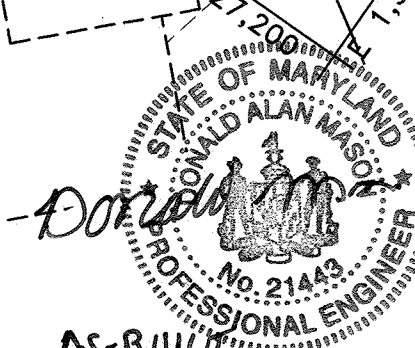
All pipes shall have smooth interior. No interior corrugations.

STRUCTURE	TYPE	LOCATION	INVERT IN	INVERT OUT	TOP ELEV.	THROAT ELEV.	STD. DETAIL	MAINTENANCE
INLETS								
I-1	S	N 527219.92 E 1352230.67	246.92 (4")	246.92 (12")	251.00	NA	HO.CO.STD. D-4.22	PRIVATE
I-2	S	N 527333.66 E 1352353.90	249.92 (4")	249.92 (12")	254.00	NA	HO.CO.STD. D-4.22	PRIVATE
MANHOLES								
M-1	4" DIA	N 527228.64 E 1352199.87	245.66 (12")	245.66 (12")	250.00	245.66	HO.CO.STD. G-5.12	PRIVATE
M-2	4" DIA	N 527341.61 E 1352347.73	249.76 (12")	249.76 (12")	256.00	249.76	HO.CO.STD. G-5.12	PRIVATE
END SECTIONS								
E-1	15" HDPEP	N 527237.60 E 1352171.23	245.00	245.00	NA	NA	NA	PRIVATE

STRUCTURE LOCATION FOR MANHOLES IS AT THE CENTER OF THE MANHOLE RIM.  
 STRUCTURE LOCATION FOR 'S' INLETS IS AT THE CENTER OF THE GRATE.  
 STRUCTURE LOCATION FOR 'E' END SECTIONS IS AT THE MIDPOINT OF THE END OF THE STRUCTURE.  
 PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.



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. 21443 Expiration Date: 12-21-22



AS-BUILT CERTIFICATION  
 I hereby certify, by my seal, that to the best of my knowledge and belief the facilities shown on this "AS-BUILT" Plan meet the Approved Plans and Specifications  
 Donald Mason, P.E. Date: 4-20-22

NO.	DATE	REVISION

**BENCHMARK ENGINEERING, INC.**  
 ENGINEERS & LAND SURVEYORS & PLANNERS  
 8480 BALTIMORE NATIONAL PIKE SUITE 315 4 ELICOTT CITY, MARYLAND 21043  
 (P) 410-465-6105 (F) 410-465-6644  
 WWW.BE-CVLENGINEERING.COM

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**HIGH RIDGE ESTATES**  
 LOTS 1 thru 7 and OPEN SPACE LOT 8  
 A SUBDIVISION OF PARCEL 452

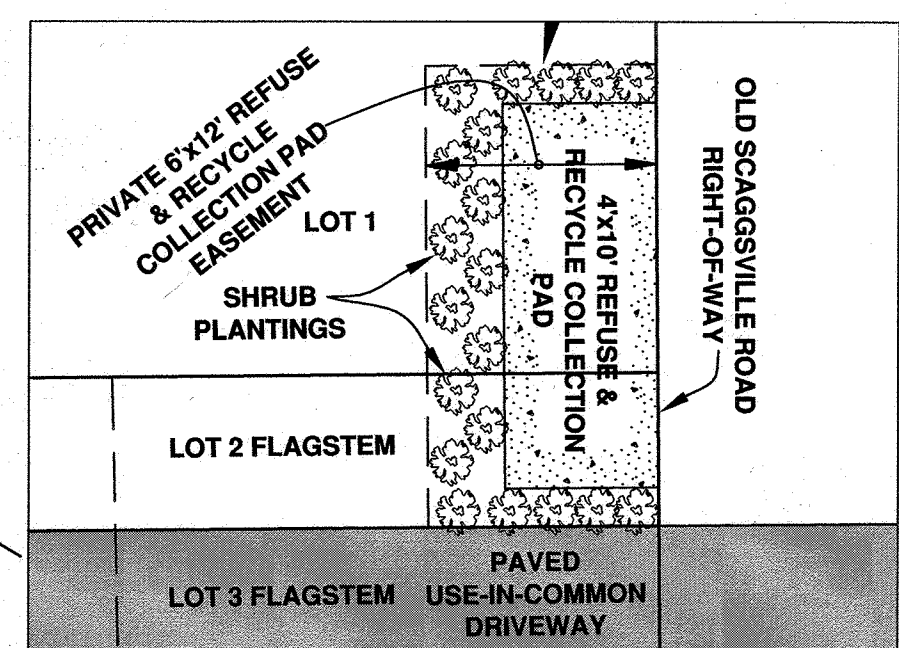
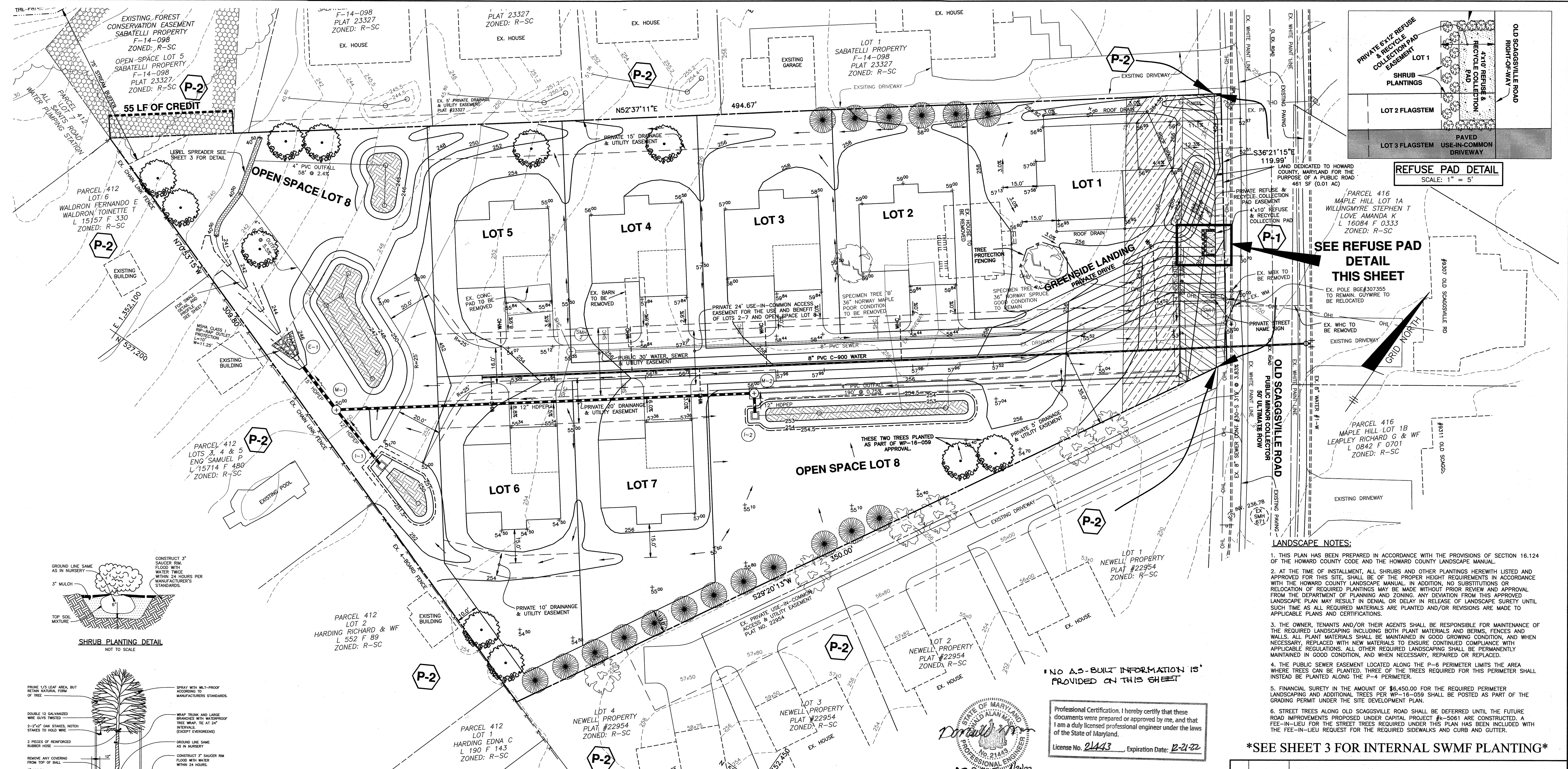
TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC  
 OLD SCAGGSVILLE ROAD  
 ELECTION DISTRICT NO. 6  
 HOWARD COUNTY, MARYLAND

**SUPPLEMENTAL STORM DRAIN DRAINAGE MAP, PROFILES & DETAILS**

DATE: APRIL 27, 2016 BEI PROJECT NO: 2667  
 SCALE: AS SHOWN SHEET 5 OF 7

DESIGN: DBT DRAWN: DBT





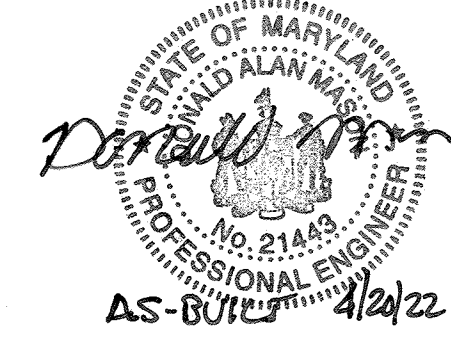
REFUSE PAD DETAIL  
SCALE: 1" = 5'

SEE REFUSE PAD  
DETAIL  
THIS SHEET

- LANDSCAPE NOTES:**
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
  2. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWIT LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
  3. THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
  4. THE PUBLIC SEWER EASEMENT LOCATED ALONG THE P-8 PERIMETER LIMITS THE AREA WHERE TREES CAN BE PLANTED. THREE OF THE TREES REQUIRED FOR THIS PERIMETER SHALL INSTEAD BE PLANTED ALONG THE P-4 PERIMETER.
  5. FINANCIAL SURETY IN THE AMOUNT OF \$6,450.00 FOR THE REQUIRED PERIMETER LANDSCAPING AND ADDITIONAL TREES PER WP-16-059 SHALL BE POSTED AS PART OF THE GRADING PERMIT UNDER THE SITE DEVELOPMENT PLAN.
  6. STREET TREES ALONG OLD SCAGGSVILLE ROAD SHALL BE DEFERRED UNTIL THE FUTURE ROAD IMPROVEMENTS PROPOSED UNDER CAPITAL PROJECT #K-5061 ARE CONSTRUCTED. A FEE-IN-LIEU FOR THE STREET TREES REQUIRED UNDER THIS PLAN HAS BEEN INCLUDED WITH THE FEE-IN-LIEU REQUEST FOR THE REQUIRED SIDEWALKS AND CURBS AND GUTTER.

"NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET"

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. 21443 Expiration Date: 12-21-22



**LEGEND**

- EXISTING CONTOURS
- PROJECT BOUNDARY SITE FOR PE CALCULATION
- EXISTING OVERHEAD LINES
- BGE "GREEN ZONE" 20' FROM OVERHEAD LINES (TREES LESS THAN 25 FEET TALL)
- BGE "YELLOW ZONE" 25' WIDE (TREES 25-40 FEET TALL)
- PERIMETER DESIGNATION
- PERIMETER TREES PLANTED UNDER SDP-14-084

**SCHEDULE A PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO ROADWAY ①	ADJACENT TO PERIM. PROPERTY ②	ADJACENT TO TRASH PAD	TOTALS
LANDSCAPE TYPE	N/A	A - LIGHT 1:50 shade 1:60 evergreen	B - MODERATE 1:50 shade 1:40 evergreen	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	122 LF	1,149 LF	28 LF	1041+4+4
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		YES, 55 LF*	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	
NUMBER OF PLANTS REQUIRED	N/A	1,094 LF	28 LF	
SHADE TREES	0	18	1	19
EVERGREEN TREES	0	0	1	1
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0
SHRUBS	0	0	0	0
NUMBER OF PLANTS PROVIDED				
SHADE TREES	0	9	0	9
EVERGREEN TREES	0	18~	0	18
OTHER TREES (2:1 SUBSTITUTE)	0	0	0	0
SHRUBS (10:1 SUBSTITUTE)	0	0	20**	20

\* CREDIT BASED ON EXISTING FOREST CONSERVATION EASEMENT ON SABATELLI SUBDIVISION.  
\*\* SHRUBS HAVE BEEN SUBSTITUTED AT A 10:1 RATIO.  
~ EVERGREEN TREES HAVE BEEN SUBSTITUTED FOR THE SHADE TREE REQUIREMENT AT A 2:1 RATIO.

**PERIMETER LANDSCAPE PLANTING LIST**

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
	11*	TILIA CORDATA "GREENSPIRE" (Greenspire Littleleaf Linden)	2.5' - 3' col.	SHADE TREES ALONG PERIMETER EDGES TO BE PROVIDED BY THE BUILDER.
	20	JUNIPERUS CHINENSIS (Pfitzerana Compacta) Compact Pfitzer Juniper	2' - 2.5' hgt.	NEEDLE EVERGREEN SHRUB PLANTED AROUND REFUSE PAD TO BE PROVIDED BY THE BUILDER.
	18	ILEX OPACA (American Holly)	5' - 6' ht.	EVERGREEN TREES ALONG PERIMETER EDGES TO BE PROVIDED BY THE BUILDER.

\* 2 OF THESE 20 TREES HAVE BEEN PROVIDED AS A CONDITION OF THE APPROVAL OF WP-16-059 FOR THE REMOVAL SPECIMEN TREE 'B'.

**DEVELOPER'S/BUILDER'S 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 SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE-YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.  
*J.M. Boy* 4/27/16  
JUSTIN W. BOY  
DEVELOPMENT PARTNERS, LLC

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**  
*K. [Name]* 5-24-16  
CHIEF, DIVISION OF LAND DEVELOPMENT  
*Ch. [Name]* 5-20-16  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO. DATE REVISION

**BENCHMARK ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL PIKE A SUITE 315 ELLICOTT CITY, MARYLAND 21043  
(410) 465-8108 (410) 465-8109 (410) 465-8104  
WWW.BEI-CVLENGINEERING.COM

**OWNER:**  
JAMES A. GRIMES AND GRACE C. CHARLTON  
9306 OLD SCAGGSVILLE ROAD  
LAUREL, MARYLAND 20723  
301-490-0388 (CONTRACT PURCHASER)

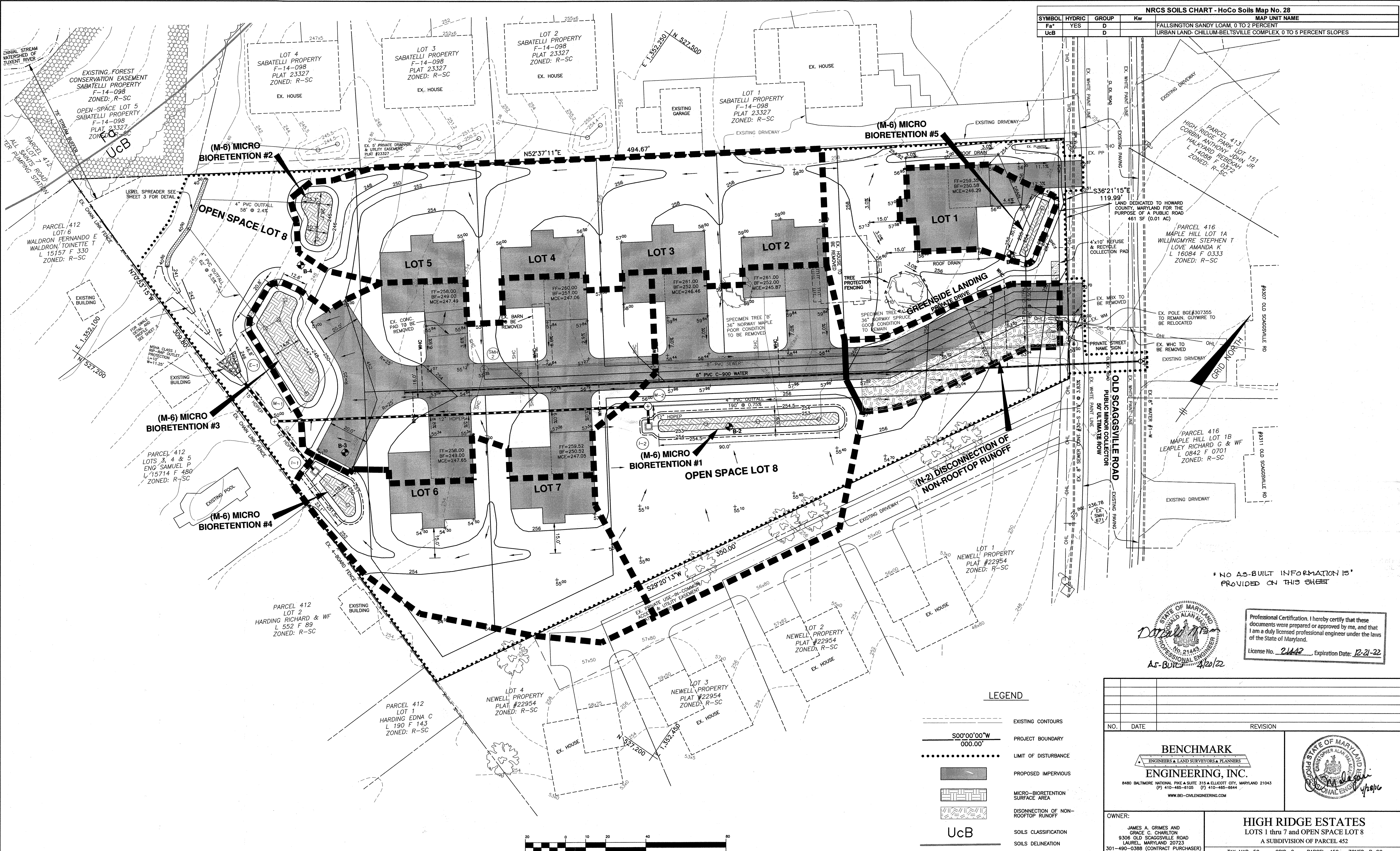
**DEVELOPER:**  
DEVELOPMENT PARTNERS, LLC  
11807 WOLLINGFORD COURT  
CLARKSVILLE, MARYLAND 21029  
301-490-0388

**HIGH RIDGE ESTATES**  
LOTS 1 thru 7 and OPEN SPACE LOT 8  
A SUBDIVISION OF PARCEL 452  
TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC  
ELECTION DISTRICT NO. 6  
HOWARD COUNTY, MARYLAND

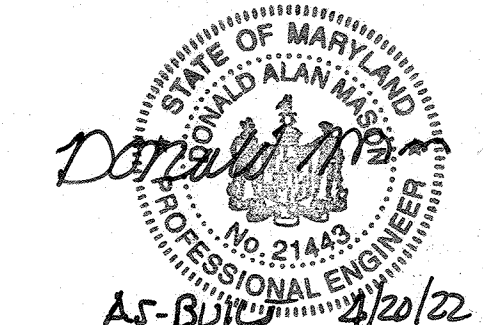
**SUPPLEMENTAL LANDSCAPE PLAN**  
DATE: APRIL 27, 2016 BEI PROJECT NO: 2667  
SCALE: AS SHOWN SHEET 6 OF 7



NRCS SOILS CHART - HoCo Soils Map No. 28			
SYMBOL	HYDRIC	GROUP	Kw
Fa*	YES	D	FALLSINGTON SANDY LOAM, 0 TO 2 PERCENT
UcB		D	URBAN LAND: CHILLUM-BELTSVILLE COMPLEX, 0 TO 5 PERCENT SLOPES



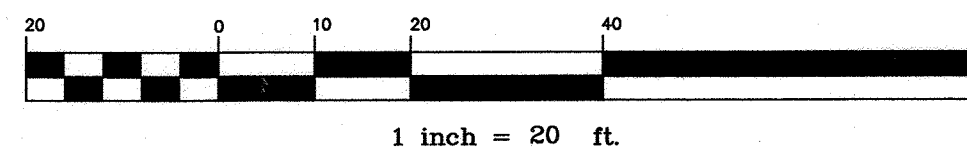
\* NO AS-BUILT INFORMATION IS PROVIDED ON THIS SHEET



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. 21443, Expiration Date: 12-21-22

**LEGEND**

- EXISTING CONTOURS
- PROJECT BOUNDARY
- LIMIT OF DISTURBANCE
- PROPOSED IMPERVIOUS
- MICRO-BIORETENTION SURFACE AREA
- DISSECTION OF NON-ROOFTOP RUNOFF
- SOILS CLASSIFICATION
- SOILS DELINEATION
- SOIL BORING TEST LOCATION
- DRAINAGE DIVIDE



APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Kat Shalomon* 5-24-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chad Edmond* 5-20-16  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION

**BENCHMARK**  
ENGINEERS & LAND SURVEYORS & PLANNERS  
**ENGINEERING, INC.**  
8480 BALTIMORE NATIONAL, PRE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043  
(P) 410-465-6105 (F) 410-465-6444  
WWW.BE-CIVILENGINEERING.COM

OWNER: JAMES A. GRIMES AND GRACE C. CHARLTON 9306 OLD SCAGGSVILLE ROAD LAUREL, MARYLAND 20723 301-490-0388 (CONTRACT PURCHASER)	<b>HIGH RIDGE ESTATES</b> LOTS 1 thru 7 and OPEN SPACE LOT 8 A SUBDIVISION OF PARCEL 452 TAX MAP: 50 GRID: 2 PARCEL: 452 ZONED: R-SC OLD SCAGGSVILLE ROAD ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND
DEVELOPER: DEVELOPMENT PARTNERS, LLC 11807 WOLLINGFORD COURT CLARKSVILLE, MARYLAND 21029 301-490-0388	<b>ESD to the MEP STORMWATER MANAGEMENT DRAINAGE AREA MAP</b> DATE: APRIL 27, 2016 BEI PROJECT NO: 2667 SCALE: AS SHOWN SHEET 7 OF 7