

GENERAL NOTES

1. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PREPARED BY POTOMAC AERIAL SURVEYS, DATED FEBRUARY 26, 2014. OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS.
3. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED APRIL 30, 2014.
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. 41GE AND 46AA WERE USED FOR THIS PROJECT.
5. THE SUBJECT PROPERTY IS ZONED "R-ED-MXD-3" IN ACCORDANCE WITH THE 10/6/13 ZONING REGULATIONS, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
6. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
7. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
8. WATER FOR THIS PROJECT IS TO BE PUBLIC EXTENSIONS OF CONTRACT NO. 44-3505.
9. SEWER FOR THIS PROJECT IS TO BE PUBLIC EXTENSIONS OF CONTRACT NO. 20-3506.
10. EXISTING UTILITIES LOCATED FROM TOPOGRAPHIC SURVEY AND AS-BUILT DRAWINGS. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE.
11. A NON CRITICAL FLOODPLAIN IS LOCATED ONSITE. THE REQUIRED DETAILED STUDY SHALL BE SUBMITTED WITH THE FUTURE SUBDIVISION PLANS.
12. STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE SHOWN HEREON.
13. FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT SHALL BE ADDRESSED BY A FOREST CONSERVATION PLAN SUBMITTED WITH THE SUBDIVISION PLANS.
14. WETLANDS AND STREAMS SHOWN ONSITE ARE BASED ON THE DELINEATION BY ENVIRONMENTAL SYSTEMS ANALYSIS, INC. (ESA), AUGUST 2013.
15. IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-ED-MXD-3 PROJECT IS 50% OF GROSS AREA (91.3136 AC. GROSS AREA X 50% = 45.6568 AC.). REFER TO PROPOSED OPEN SPACE SHOWN HEREON.
16. GEOTECHNICAL INVESTIGATIONS SHALL COMPLETED AND SUBMITTED WITH THE FUTURE SUBDIVISION PLANS.
17. A NOISE STUDY SHALL BE PREPARED BY ROBERT H. VOGEL ENGINEERING AND SUBMITTED WITH THE FUTURE SUBDIVISION PLANS.
18. FOREST STAND DELINEATION PLAN PREPARED BY KLEBASKO ENVIRONMENTAL, LLC. C/O MR. MICHAEL J. KLEBASKO, P.W.S., DATED MAY 2014.
19. SCAGGSVILLE ROAD IS CLASSIFIED AS A MINOR ARTERIAL. THE PROPOSED STREETS ARE CLASSIFIED AS PUBLIC ACCESS STREETS / PLACE. MURPHY ROAD IS CLASSIFIED AS A MINOR COLLECTOR.
20. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
21. THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
22. STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON STRUCTURAL PRACTICES & MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIOTENTION, BIO SWALES AND DRYWELLS. THESE FACILITIES WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. MICRO-SCALE FACILITIES MANAGING ROAD RUNOFF SHALL BE DESIGNATED AS PRIVATELY OWNED AND JOINTLY MAINTAINED (H.O.A. AND HOWARD COUNTY); HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEDDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.
23. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (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 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 THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
24. IN ACCORDANCE WITH SECTION 16.121(A)(4) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, RECREATION OPEN SPACE FOR THIS R-ED-MXD-3 PROJECT IS 300 SF / UNIT (176 X 300 = 52,800 SF). THE OVERALL REQUIREMENT SHALL BE MET PER REGULATION OR IN COMBINATION WITH THE JUNE 2012 POLICY REGARDING THE ALLOWANCE OF A MAXIMUM 50% CREDIT FOR RECREATIONAL OPEN SPACE IN LIEU OF LAND AREA.
25. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.

ENVIRONMENTAL CONCEPT PLAN MAPLE LAWN SOUTH (SFD RESIDENTIAL) PARCEL 113 - LIBER 683 / FOLIO 747 HOWARD COUNTY, MARYLAND

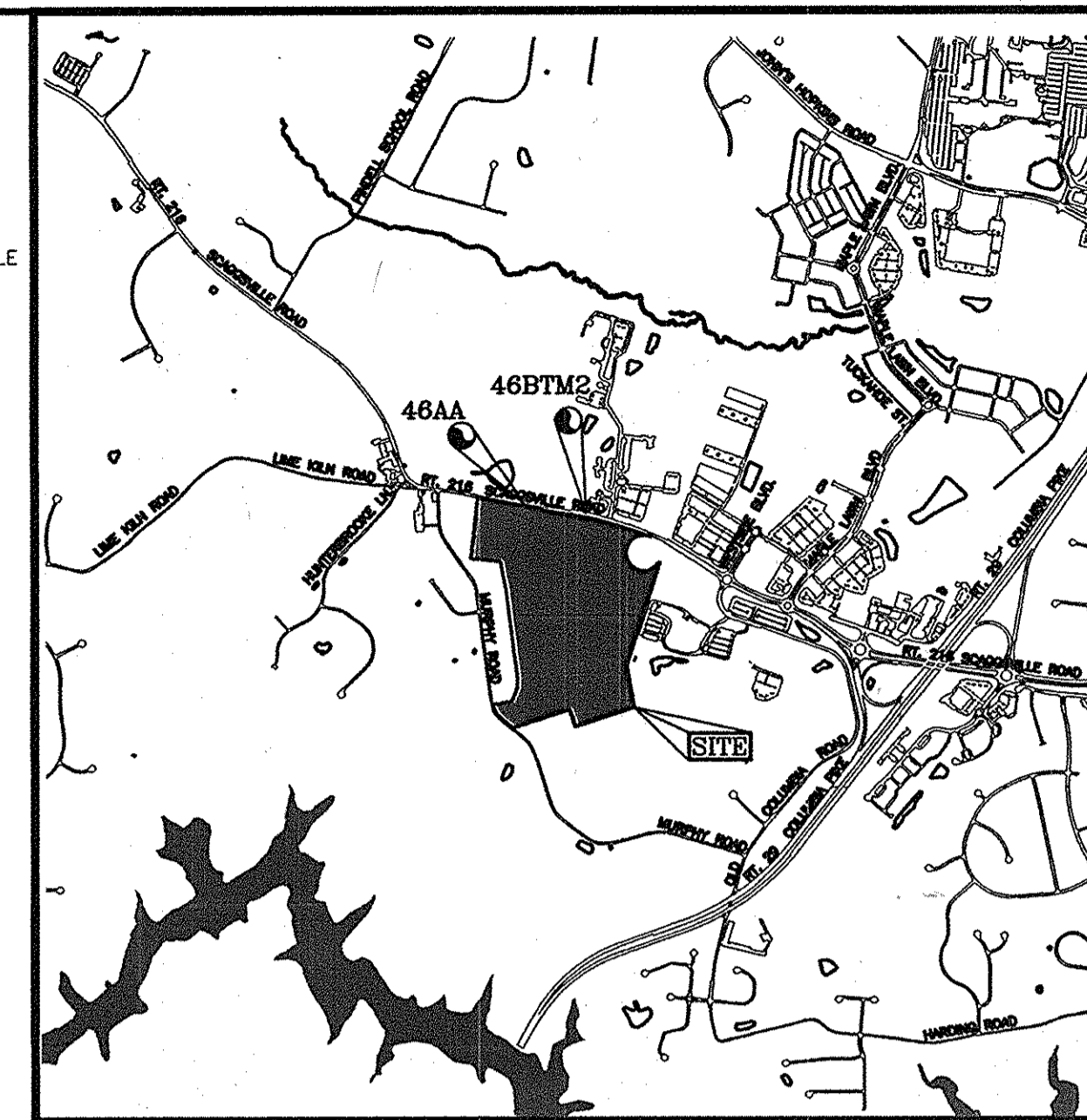
BENCHMARKS

HOWARD COUNTY BENCHMARK 46BTM2
N 540,303.01 E 1,336,232.89 ELEV.: 451.069 FT.
3/4" REBAR - RT. 216 NEAR FULTON ELEMENTARY

HOWARD COUNTY BENCHMARK 46AA
N 540,396.42 E 1,335,505.32 ELEV.: 446.976 FT.
CONCRETE MONUMENT - RT. 216 BETWEEN FULTON AND SCAGGSVILLE

LEGEND:

- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREES (FIELD LOCATED)
- EXISTING TREE LINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK

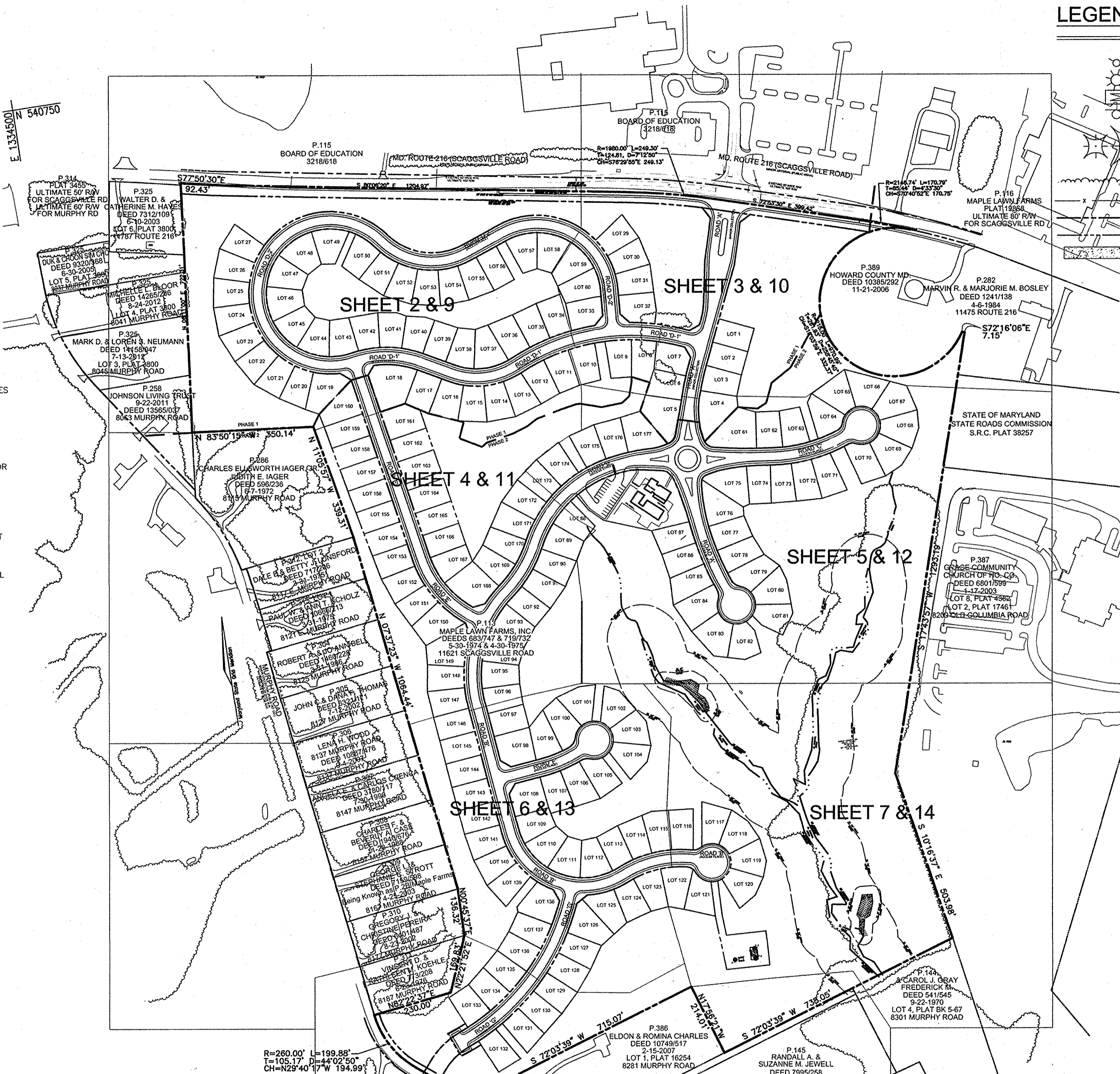


VICINITY MAP

SCALE: 1"=2000'
ADC MAP COORDINATES: 18 H 5. 6
J 5. 6

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ENVIRONMENTAL SITE DESIGN NARRATIVE:

IN ACCORDANCE WITH THE DEVELOPMENT ENGINEERING DIVISION ECP CHECKLIST ITEM III.K.

1. THE NATURAL AREAS ON THE MAPLE LAWN SOUTH PROJECT SITE ARE LOCATED NEAR THE CENTER AND TRAVEL SOUTH TOWARDS THE SOUTHEAST PORTION OF THE SITE. NO DISTURBANCE TO THE STREAM AND STREAM BUFFER, WETLAND AND WETLAND BUFFER RESOURCES IS PROPOSED.
2. NO DRAMATIC DISTURBANCE TO THE NATURAL DRAINAGE PATTERNS ARE PROPOSED, PLEASE REFER TO THE PROPOSED GRADING.
3. THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT. THE ESD CONCEPT INCLUDES THE USE OF MICRO-SCALE PRACTICES TO INCLUDE MICRO-BIOTENTION FACILITIES, DRYWELLS, RAIN BARRELS AND BIO-SWALES AS WELL AS THE NON-STRUCTURAL PRACTICES.
4. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE A PROPOSED SEDIMENT BASIN(S), EARTH DIKES, AND SILT FENCE PERIMETER CONTROLS. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT.
5. STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF MICRO-SCALE PRACTICES TO INCLUDE MICRO-BIOTENTION FACILITIES, DRYWELLS, RAIN BARRELS AND BIO-SWALES AS WELL AS THE NON-STRUCTURAL PRACTICES. THE RESULTS OF THE ENVIRONMENTAL SITE DESIGN FOR THIS PROJECT WILL REFLECT "WOODS IN GOOD CONDITION".

TARGET PE = 1.6" PROVIDED PE = 1.6"
TARGET ESDv = 136,216 CUFT PROVIDED = 138,572 +/- CUFT

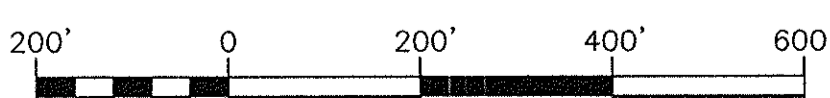
6. AT THIS CONCEPT STAGE OF DEVELOPMENT, NO DESIGN MANUAL WAIVERS AND/OR WAIVER PETITIONS FOR ENVIRONMENTAL AND/OR STORMWATER MANAGEMENT DESIGN ARE REQUIRED.

SITE ANALYSIS DATA CHART

- A. TOTAL PROJECT AREA: 91.31 AC. +/-
- B. AREA OF PLAN SUBMISSION: 91.31 AC.
- C. AREA OF WETLANDS AND BUFFERS: 89.9 AC. (91.31 - 0.62 - 0.79 = 89.9)
- D. AREA OF FLOODPLAIN: 34,576 SF NON-CRITICAL (TBD)
- E. AREA OF FOREST: 8.27 AC. (REFER TO FSD)
- F. AREA OF STEEP SLOPES (15% & GREATER): 27,207 S.F. OR 0.62 AC.
- G. ERODIBLE SOILS: N/A
- H. LIMIT OF DISTURBED AREA: 72.5 AC. +/-
- I. PROPOSED USES FOR SITE AND STRUCTURES: RESIDENTIAL SINGLE FAMILY DETACHED HOMES
- J. GREEN OPEN AREA: 60.84 AC. (GROSS-IMP-FOREST)
- K. PROPOSED IMPERVIOUS AREA: 22.2 AC. +/- (SWM COMPUTATIONS)
- L. PRESENT ZONING DESIGNATION: R-ED-MXD-3
- M. OPEN SPACE REQUIRED: 45.66 ACRES +/- (50%)
- N. TOTAL NUMBER OF UNITS ALLOWED: 179 (89.9 X 2)
- O. TOTAL NUMBER OF UNITS PROPOSED: 176
- P. DPZ FILE REFERENCES: CONT # 44-3505, CONT # 20-3506

COVER SHEET & KEY MAP

SCALE: 1"=200'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Clum 1-7-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Walter Lane 1-05-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER
MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER
BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN

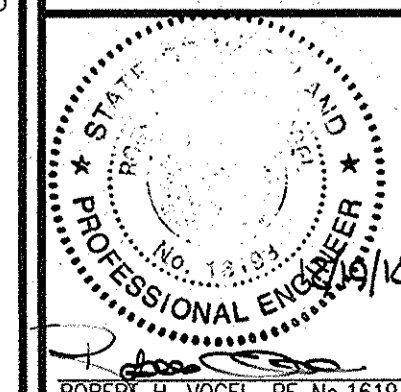
COVER SHEET & KEY MAP

MAPLE LAWN SOUTH

11621 SCAGGSVILLE ROAD
LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2 ZONED: R-ED-MXD-3
5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

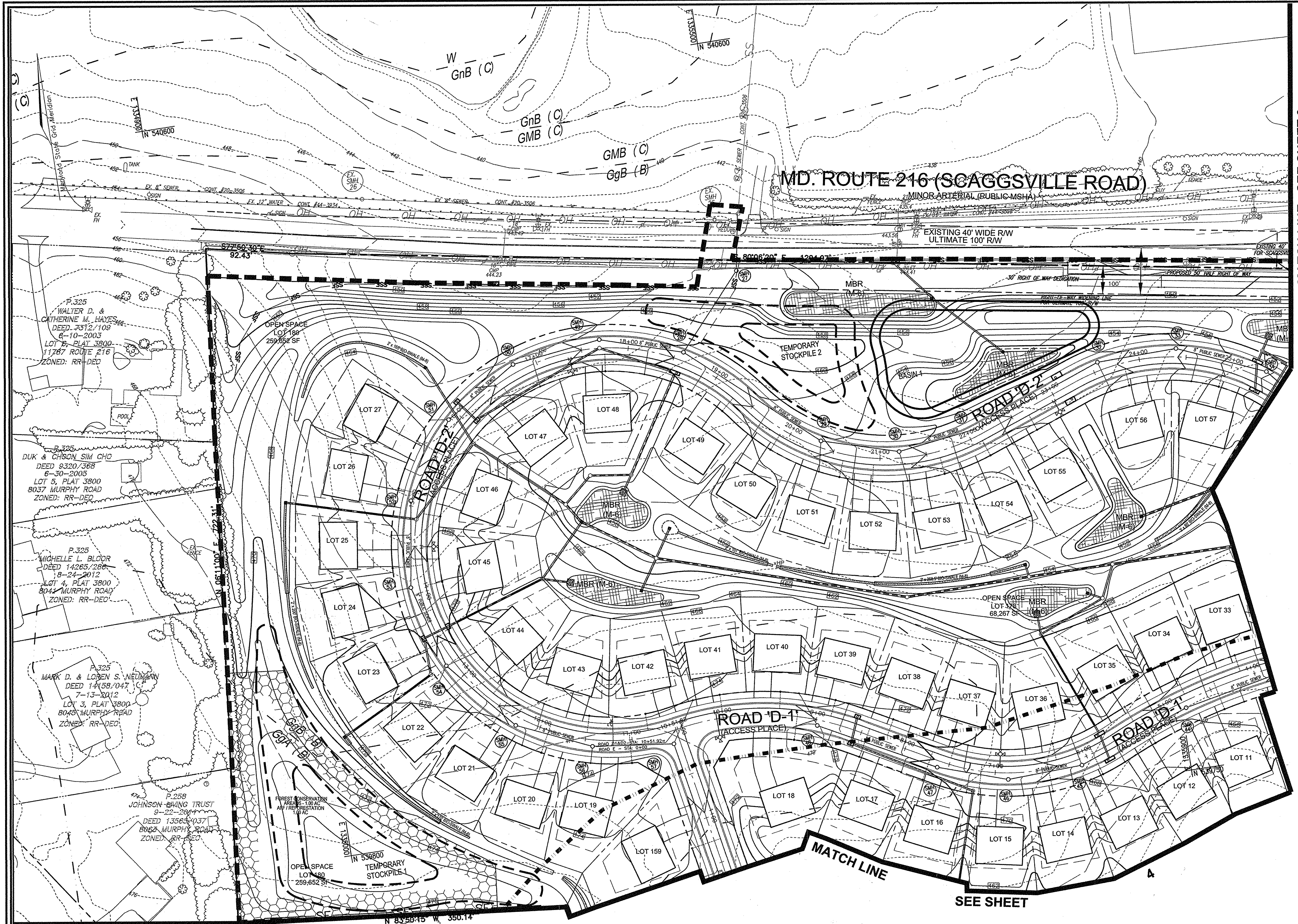
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8961



PROFESSIONAL CERTIFICATE
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. MY EXPIRATION DATE IS 09-27-2018.

DESIGN BY: RHV/GAH
DRAWN BY: GAH
CHECKED BY: RHV
DATE: DECEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 11-34

1 SHEET OF 16



MATCH LINE - SEE SHEET 3

LEGEND:

	EXISTING CONTOUR
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
	EXISTING CURB AND GUTTER
	PROPOSED CURB AND GUTTER
	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY LINE
	EXISTING CLEANOUT
	EXISTING FIRE HYDRANT
	EXISTING WATER LINE
	PROPOSED STORM DRAIN
	PROPOSED STORM DRAIN INLET
	EXISTING TREES
	EXISTING TREETRINE
	EXISTING FENCE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SOILS BOUNDARY
	PROPOSED SIDEWALK
	FOREST CONSERVATION EASEMENT
	SILT FENCE
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
	EXISTING DRAINAGE AREA DIVIDE

HSCD NOTE:
 APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.

OWNER: MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER: BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN

MAPLE LAWN SOUTH
 11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
 5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: DECEMBER 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-34

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 NO. 16193

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. 16193, EXPIRATION DATE 09-27-2018.

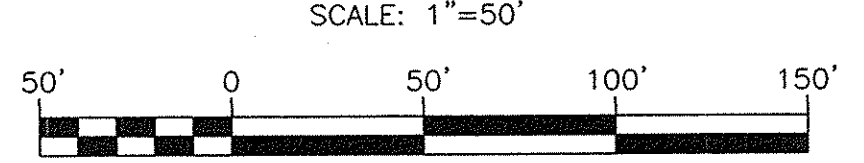
2 SHEET OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edick 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kevin S. Dwyer 1-05-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN



MAPPED SOILS TYPES - CLARKSVILLE SE MAP #23

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	WATER LOGGING	K FACTOR	ROCK FACTOR	EROSION FACTOR
BaA BULKY SILT LOAM, 6 TO 8 PERCENT SLOPES	D	NO	NO	0.32	NO	NO
GaA CLENGLE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GgB CLENGLE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GmB CLENGLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.37	YES	YES
GnB CLENGLE-BULKY SILT LOAM, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	PARTIAL
MgC MANDAL LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.24	YES	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY, MARYLAND

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

*BALE COMPONENT OF GgB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREES
- EXISTING TREE LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- EXISTING DRAINAGE AREA DIVIDE

DEFINITION
A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA

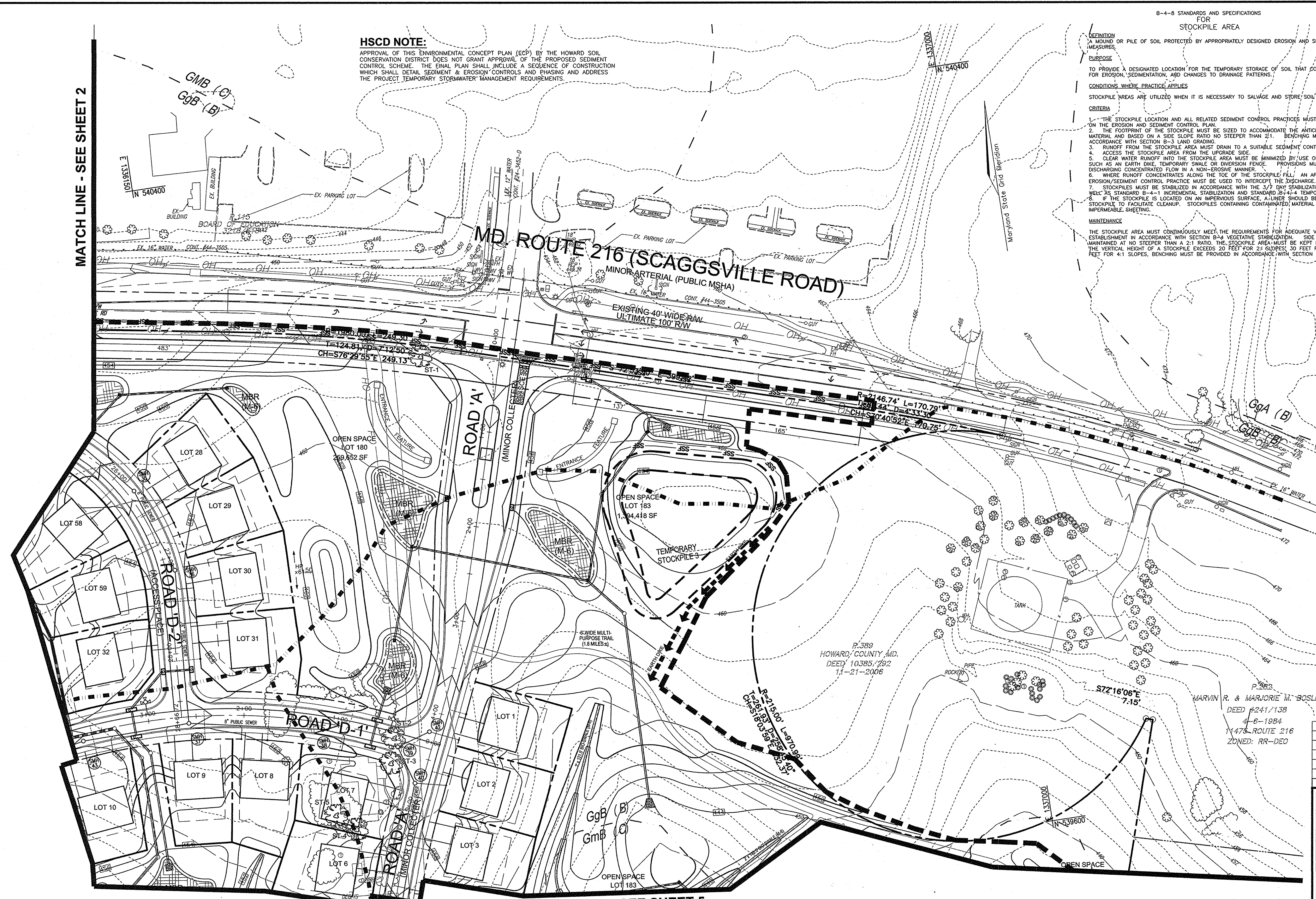
- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS TO THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCORPORAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
- IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE
THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

HSCD NOTE:
APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.

MATCH LINE - SEE SHEET 2

MATCH LINE - SEE SHEET 5



OWNER
MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER
BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN

MAPLE LAWN SOUTH
11621 SCAGGSVILLE ROAD
LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
PARCEL 113
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
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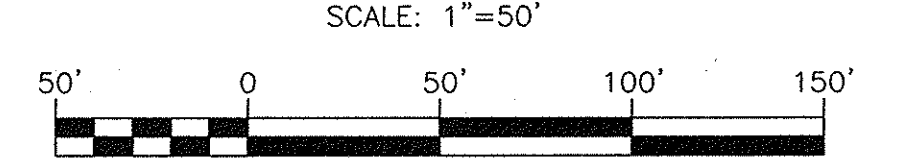
TEL: 410.461.7666
FAX: 410.461.8961

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad P. ...
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 1-7-15

Kevin ...
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 1-05-15

SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN



MAPPED SOILS TYPES - CLARKSVILLE SE MAP #23

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT ORGANIC MATTER	K FACTOR	PERCENT EROSION	PERCENT STABILIZATION
BaA	BALD SALT LOAM, 0 TO 3 PERCENT SLOPES	D	YES	0.32	NO	YES	NO
GaA	GLENNVILLE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	0.20	YES	NO	NO
GaB	GLENNVILLE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	0.20	YES	NO	NO
GaB	GLENNVILLE SALT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	0.37	YES	YES	YES
GaB	GLENNVILLE-SALT SALT LOAM, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	0.37	NO	PARTIAL	PARTIAL
MdC	MARBLE LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.24	YES	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

NOTE:
HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

*BALE COMPONENT OF GaB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/GAH
DRAWN BY: GAH
CHECKED BY: RHV
DATE: DECEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 11-34

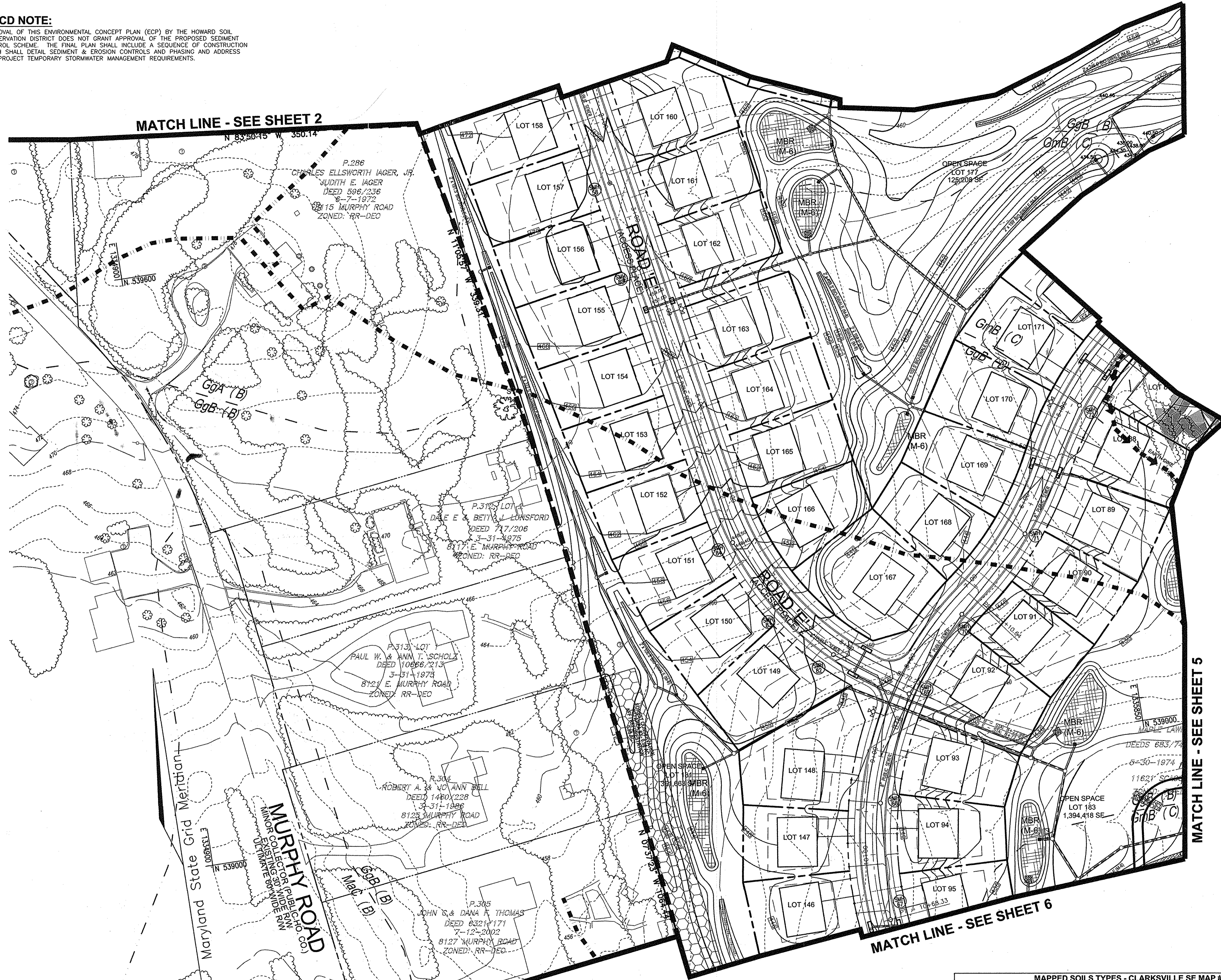
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193
EXPIRATION DATE: 08-27-2018

ROBERT H. VOGEL, PE No. 18193

3 SHEET OF 16

HSCD NOTE:

APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.



LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- PROPOSED SIDEWALK
- PUBLIC 100 YR FLOODPLAIN
- FOREST CONSERVATION EASEMENT
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- EARTH DIKE
- EXISTING DRAINAGE AREA DIVIDE

OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN

MAPLE LAWN SOUTH
 11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
 5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

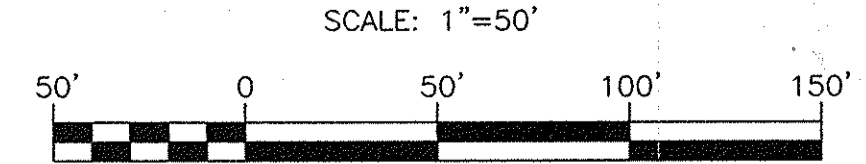
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHW/GAH
 DRAWN BY: GAH
 CHECKED BY: RHW
 DATE: DECEMBER 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-34

PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 06-27-2018.

4 SHEET OF 16

SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN



MAPPED SOILS TYPES - CLARKSVILLE SE MAP #23

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT PERCENTILES	K FACTOR	PERCENT FROM AERIAL PHOTOGRAPH	PERCENT FROM FIELD SURVEY
BaA BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	D	YES	YES	0.32	NO	YES
GaA GLENHOLM LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GaB GLENHOLM LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GaBb GLENHOLM LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.37	YES	YES
GaBc GLENHOLM-BALE SILT LOAM, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	PARTIAL
MbC MANDALAY LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.24	YES	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY

NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

*BALE COMPONENT OF GaB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

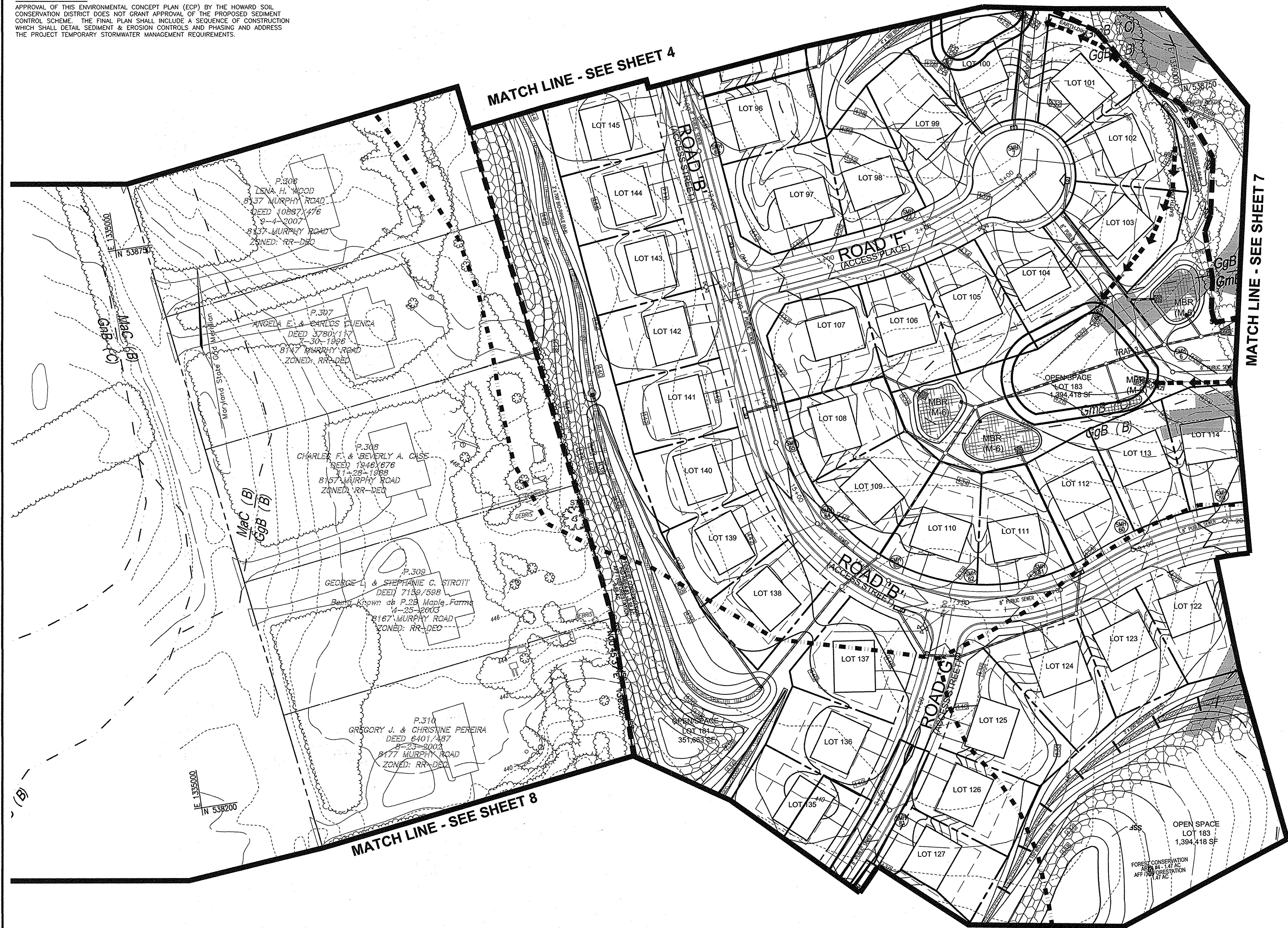
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Egan 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

West Spaulding 1-05-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

K:\Projects\14-00000\ECPPAL_ECP_LAYOUT\FINAL.dwg, 1/13/2014 12:48 PM

HSCD NOTE:
 APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.



LEGEND:

---	EXISTING CONTOUR
---	PROPOSED CONTOUR
+	PROPOSED SPOT ELEVATION
+	EXISTING SPOT ELEVATION
==	EXISTING CURB AND GUTTER
==	PROPOSED CURB AND GUTTER
⊙	EXISTING UTILITY POLE
⊙	EXISTING LIGHT POLE
⊙	EXISTING MAILBOX
⊙	EXISTING SIGN
⊙	EXISTING SANITARY MANHOLE
S	EXISTING SANITARY LINE
⊙	EXISTING CLEANOUT
⊙	EXISTING FIRE HYDRANT
W	EXISTING WATER LINE
---	PROPOSED STORM DRAIN
---	PROPOSED STORM DRAIN INLET
---	EXISTING TREELINE
---	EXISTING FENCE
---	PROPERTY LINE
---	RIGHT-OF-WAY LINE
---	SOILS BOUNDARY
---	PROPOSED SIDEWALK
---	MODERATE SLOPES (15% - 24.99%)
---	STEEP SLOPE (>25%)
---	PUBLIC 100 YR FLOODPLAIN
---	FOREST CONSERVATION EASEMENT
SF	SILT FENCE
SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
←	EARTH DIKE
---	EXISTING DRAINAGE AREA DIVIDE

OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

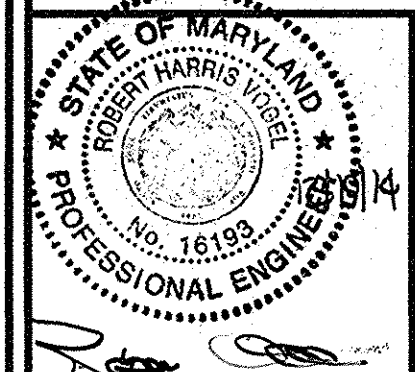
NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
 SITE LAYOUT, CONCEPT GRADING, SOIL
 EROSION AND SEDIMENT CONTROL PLAN**

MAPLE LAWN SOUTH
 11621 SCAGGSVILLE ROAD
 LIBERTY 683 / FOLIO 747

TAX MAP 46 GRID 2 5TH ELECTION DISTRICT ZONED: R-ED-MXD-3 PARCEL 113 HOWARD COUNTY, MARYLAND

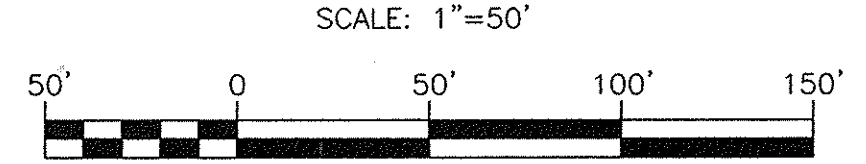
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, ELICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.9361



PROFESSIONAL CERTIFICATE
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE 09-27-2019.

DESIGN BY: RHV/GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: DECEMBER 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-34

**SITE LAYOUT, CONCEPT GRADING, SOIL
 EROSION AND SEDIMENT CONTROL PLAN**



MAPPED SOILS TYPES - CLARKSVILLE SE MAP #23

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT INCLUDES	K FACTOR	ERODIBLE LAYER	CLAY CONTENT
BsA	BALE SILT LOAM, 0 TO 3 PERCENT SLOPES	D	YES	0.32	NO	YES	NO
Cpk	GLENNVILLE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	0.20	YES	NO	NO
Csh	GLENNVILLE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	0.20	YES	NO	NO
GmB	GLENNVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	0.37	YES	YES	NO
GmB	GLENNVILLE-BALE SILT LOAM, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	0.37	NO	PARTIAL	NO
Msc	MAJOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.24	YES	NO	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
 NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT
 *BALE COMPONENT OF GmB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Egan 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Keith A. D... 1-05-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

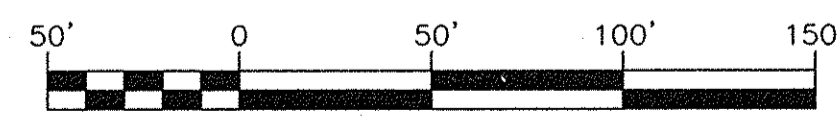
MATCH LINE - SEE SHEET 5

MATCH LINE - SEE SHEET 6

MATCH LINE - SEE SHEET 8

SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=50'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edinger
CHIEF, DEVELOPMENT ENGINEERING DIVISION

1-7-15
DATE

Kevin A. Schuch
CHIEF, DIVISION OF LAND DEVELOPMENT

1-05-15
DATE

MAPPED SOILS TYPES - CLARKSVILLE SE MAP #23

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT ERODIBLE	K FACTOR	PERCENT ERODIBLE	STAY SLOPE
BaA BULKY SILT LOAM, 0 TO 3 PERCENT SLOPES	B	D	YES	0.32	NO	YES
GaA CLENNEL LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GaB CLENNEL LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GmB CLENNEL SILT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.37	YES	YES
GmB CLENNEL-SILT LOAM, 0 TO 3 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	PARTIAL
MaC MAJOR LOAM, 0 TO 15 PERCENT SLOPES	B	NO	NO	0.24	YES	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT
*BALE COMPONENT OF GmB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

NOTE:
LOWEST POINT OF PEDESTRIAN BRIDGE SHALL BE ABOVE THE 100 YEAR FLOODPLAIN

LEGEND:

- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- + 402.88 PROPOSED SPOT ELEVATION
- + 402.88 EXISTING SPOT ELEVATION
- ===== EXISTING CURB AND GUTTER
- ===== PROPOSED CURB AND GUTTER
- ○ ○ ○ ○ EXISTING UTILITY POLE
- ○ ○ ○ ○ EXISTING LIGHT POLE
- ○ ○ ○ ○ EXISTING MAILBOX
- ○ ○ ○ ○ EXISTING SIGN
- ○ ○ ○ ○ EXISTING SANITARY MANHOLE
- ○ ○ ○ ○ EXISTING SANITARY LINE
- ○ ○ ○ ○ EXISTING CLEANOUT
- ○ ○ ○ ○ EXISTING FIRE HYDRANT
- ○ ○ ○ ○ EXISTING WATER LINE
- ===== PROPOSED STORM DRAIN
- ===== PROPOSED STORM DRAIN INLET
- ○ ○ ○ ○ EXISTING TREES
- ===== EXISTING TREELINE
- ===== EXISTING FENCE
- ===== PROPERTY LINE
- ===== RIGHT-OF-WAY LINE
- ===== SOILS BOUNDARY
- ===== PROPOSED SIDEWALK
- ===== MODERATE SLOPES (15% - 24.99%)
- ===== STEEP SLOPE (>25%)
- ===== PUBLIC 100 YR FLOODPLAIN
- ===== FOREST CONSERVATION EASEMENT
- ===== SILT FENCE
- ===== SUPER SILT FENCE
- ===== LIMIT OF DISTURBANCE
- ===== EARTH DIKE
- ===== EARTH DIKE
- ===== EXISTING DRAINAGE AREA DIVIDE

HSCD NOTE:

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OWNER

MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER

BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN**

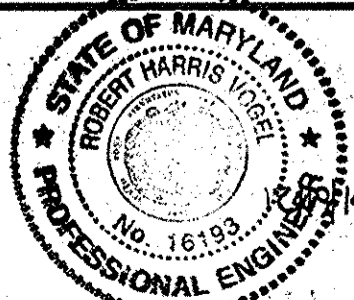
MAPLE LAWN SOUTH

11621 SCAGGSVILLE ROAD
LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
PARCEL 113
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961



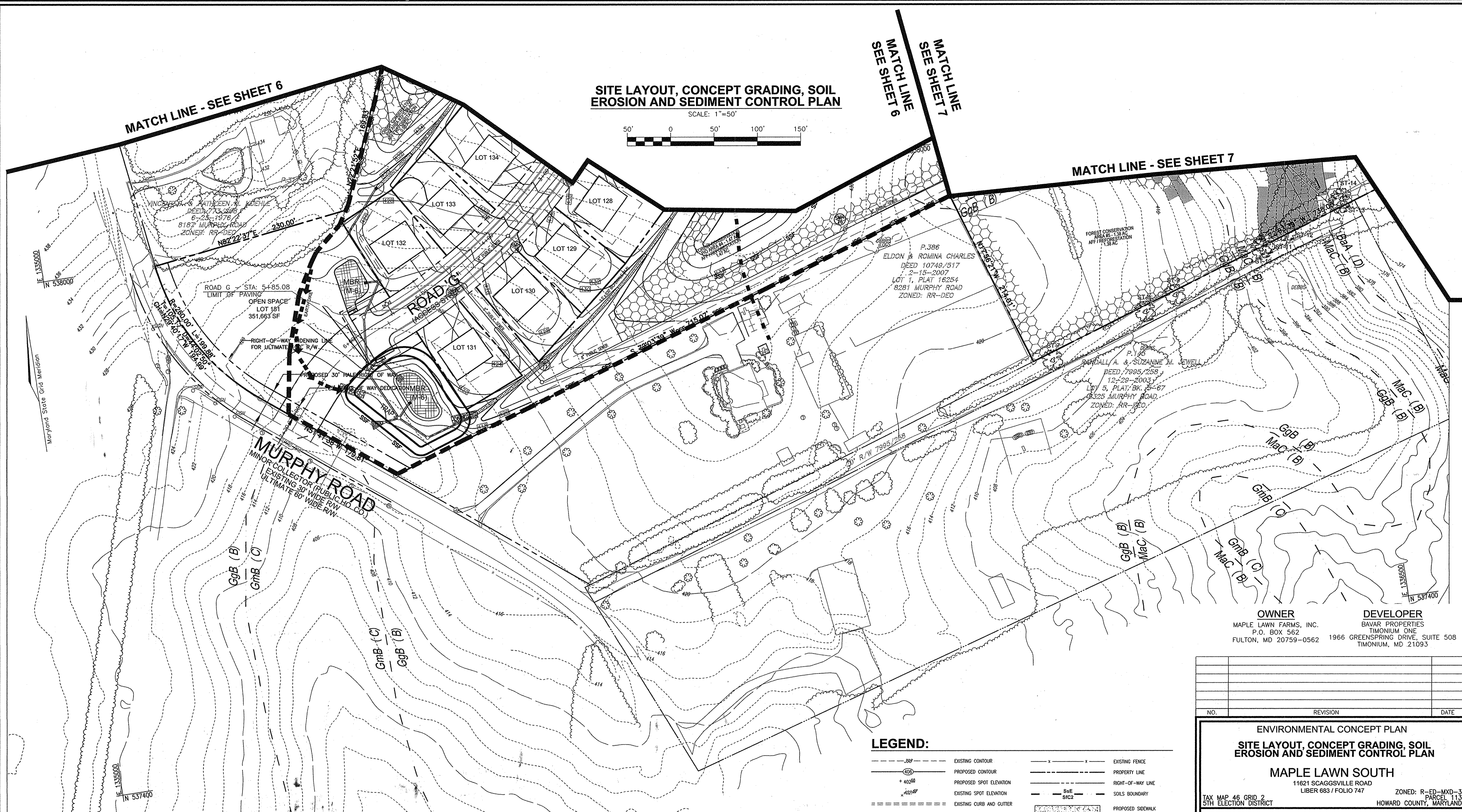
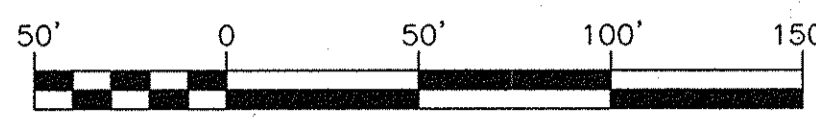
DESIGN BY: RHY/GAH
DRAWN BY: GAH
CHECKED BY: RHY
DATE: DECEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 11-34

PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016

7 SHEET OF 16

SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=50'



MATCH LINE - SEE SHEET 6

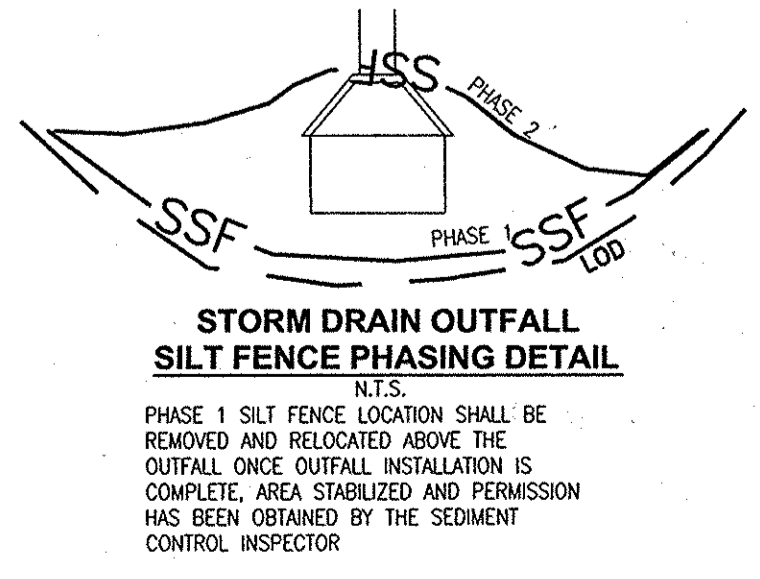
MATCH LINE 6
SEE SHEET 6

MATCH LINE - SEE SHEET 7

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MAPPED SOILS TYPES - CLARKSVILLE SE MAP #23							
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K FACTOR	PERCENT EROSION	STORM DRAIN
BaA	BALD SILT LOAM, 0 TO 3 PERCENT SLOPES	D	NO	NO	0.32	NO	YES
GaA	CLEMG SLOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.29	YES	NO
GaB	CLEMG SLOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GaB	CLEMG SILT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	NO	0.37	YES	YES
GaB	CLEMG-SILT SLOAM, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY*	0.37	NO	PARTIAL
MaC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	NO	0.24	YES	NO

TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
NOTE: HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT
*BALE COMPONENT OF GaB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC



LEGEND:

- - - - - EXISTING CONTOUR
- - - - - PROPOSED CONTOUR
- + 40.88 EXISTING SPOT ELEVATION
- + 40.88 EXISTING SPOT ELEVATION
- ===== EXISTING CURB AND GUTTER
- ===== PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREE LINE
- - - - - EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- - - - - SOILS BOUNDARY
- PROPOSED SIDEWALK
- MODERATE SLOPES (15% - 24.99%)
- PUBLIC 100 YR FLOODPLAIN
- FOREST CONSERVATION EASEMENT
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- EARTH DIKE
- EARTH DIKE
- EXISTING DRAINAGE AREA DIVIDE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 1-7-15

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 1-05-15

OWNER
MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER
BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

NO.	REVISION	DATE

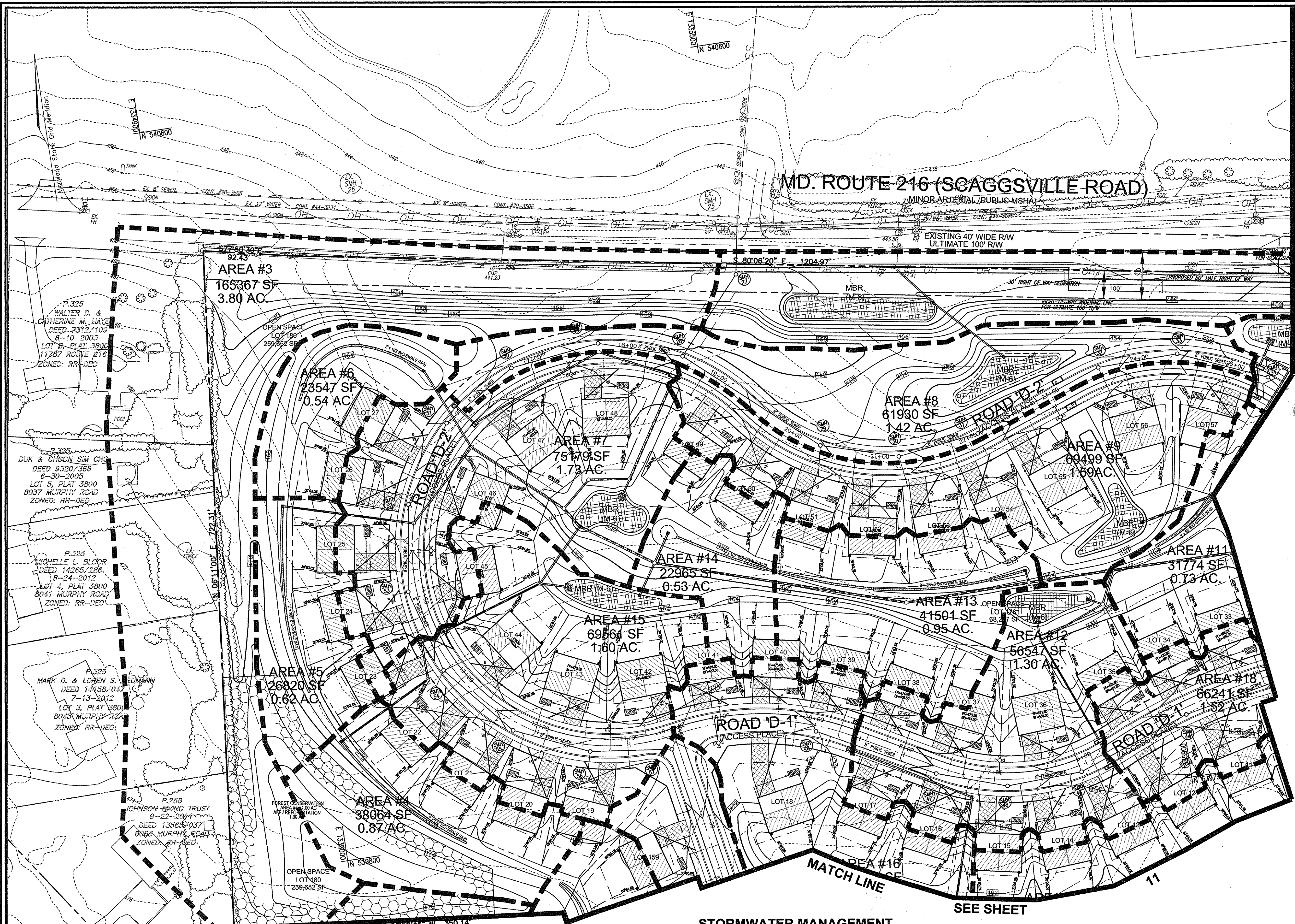
ENVIRONMENTAL CONCEPT PLAN
SITE LAYOUT, CONCEPT GRADING, SOIL EROSION AND SEDIMENT CONTROL PLAN
MAPLE LAWN SOUTH
 11621 SCAGGSVILLE ROAD
 LIBERTY, MD 21093
 ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 2407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV/GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
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 EXPIRATION DATE: 06-27-2018

8 SHEET OF 16



- LEGEND:**
- - - - - EXISTING CONTOUR
 - EXISTING CONTOUR
 - + 402.88 PROPOSED SPOT ELEVATION
 - x 402.88 EXISTING SPOT ELEVATION
 - ===== EXISTING CURB AND GUTTER
 - ===== PROPOSED CURB AND GUTTER
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING MAILBOX
 - EXISTING SIGN
 - EXISTING SANITARY MANHOLE
 - S EXISTING SANITARY LINE
 - EXISTING CLEANOUT
 - EXISTING FIRE HYDRANT
 - W EXISTING WATER LINE
 - ===== PROPOSED STORM DRAIN
 - ===== PROPOSED STORM DRAIN INLET
 - ===== EXISTING TREETRINE
 - ===== EXISTING FENCE
 - PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - ===== PROPOSED SIDEWALK
 - ===== FOREST CONSERVATION EASEMENT
 - ===== DRAINAGE DIVIDE
 - ===== DRAINAGE AREA DESIGNATION
 - 15' NON-STRUCTURAL ROOFTOP DISCONNECTIONS
 - NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
 - ===== MICRO-SCALE PRACTICE BIO-SWALE (M-B)
 - ===== MICRO-SCALE PRACTICE MICRO BIOTENTION / BIOTENTION (M-B)
 - RAIN WATER HARVESTING RAIN BARREL
 - ===== PROPOSED DRYWELL

MATCH LINE - SEE SHEET 10

OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
 STORMWATER MANAGEMENT
 DRAINAGE AREA MAP
 MAPLE LAWN SOUTH**

11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
 5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS

8407 MAIN STREET
 ELLICOTT CITY, MD 21043

TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/CAH
 DRAWN BY: CAH
 CHECKED BY: RHV
 DATE: DECEMBER 2014
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9 SHEET OF **16**

MATCH LINE SEE SHEET 11

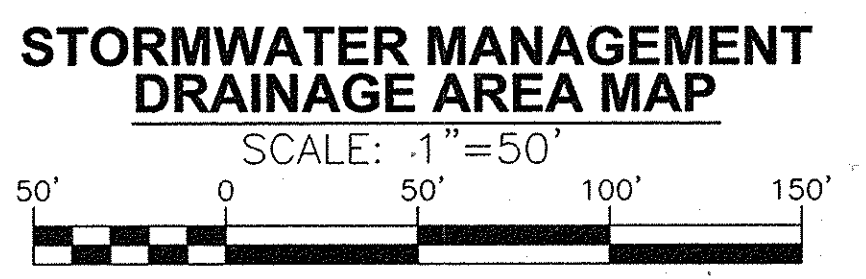
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad E. ... 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kathleen ... 1-05-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

ESD SWM NOTE:

STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON STRUCTURAL PRACTICES & MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIOTENTION, BIO SWALES AND DRYWELLS. THESE FACILITIES WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. MICRO-SCALE FACILITIES MANAGING ROAD RUNOFF SHALL BE DESIGNATED AS PRIVATELY OWNED AND JOINTLY MAINTAINED (H.O.A. AND HOWARD COUNTY); HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.



MATCH LINE

SEE SHEET

MATCH LINE - SEE SHEET 9

MD ROUTE 216 (SCAGGSVILLE ROAD)

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREE LINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- NON-STRUCTURAL ROOFTOP DISCONNECTIONS
- NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
- MICRO-SCALE PRACTICE BIO-SWALE (4-8)
- MICRO-SCALE PRACTICE MICRO BIORETENTION / BIORETENTION (4-9)
- RAIN WATER HARVESTING RAIN BARREL
- PROPOSED DRYWELL

DA-3

- NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
- MICRO-SCALE PRACTICE BIO-SWALE (4-8)
- MICRO-SCALE PRACTICE MICRO BIORETENTION / BIORETENTION (4-9)
- RAIN WATER HARVESTING RAIN BARREL
- PROPOSED DRYWELL



OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAYAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
 STORMWATER MANAGEMENT
 DRAINAGE AREA MAP
 MAPLE LAWN SOUTH**

11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747
 ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
 ENGINEERING, INC.**
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: DECEMBER 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-34

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 12/13/14

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. 12018, EXPIRATION DATE: 09-27-2018

10 SHEET OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Egan 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

W. J. Lewis 1-05-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

ESD SWM NOTE:
 STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON-STRUCTURAL PRACTICES & MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION, BIO-SWALES AND DRYWELLS. THESE FACILITIES WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. MICRO-SCALE FACILITIES MANAGING ROAD RUNOFF SHALL BE DESIGNATED AS PRIVATELY OWNED AND JOINTLY MAINTAINED (H.O.A. AND HOWARD COUNTY); HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.

**STORMWATER MANAGEMENT
 DRAINAGE AREA MAP**
 SCALE: 1"=50'

MATCH LINE - SEE SHEET 12

ESD SWM NOTE:
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LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- PUBLIC 100 YR FLOODPLAIN
- FOREST CONSERVATION EASEMENT
- DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- NON-STRUCTURAL ROOFTOP DISCONNECTIONS
- NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
- MICRO-SCALE PRACTICE BIO-SWALE (M-3)
- MICRO-SCALE PRACTICE MICRO-BIORETENTION (M-6)
- RAIN WATER HARVESTING RAIN BARREL
- PROPOSED DRYWELL

DA-3

OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21103

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
 STORMWATER MANAGEMENT
 DRAINAGE AREA MAP
 MAPLE LAWN SOUTH**

TAX MAP 46 GRID 2
 5TH ELECTION DISTRICT

11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747

ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043

TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV/GAH
 DRAWN BY: GAH
 CHECKED BY: RHV
 DATE: DECEMBER 2014
 SCALE: AS SHOWN
 W.O. NO.: 11-34

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. 11813, EXPIRATION DATE 09-27-2016.

11 SHEET OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 1-05-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

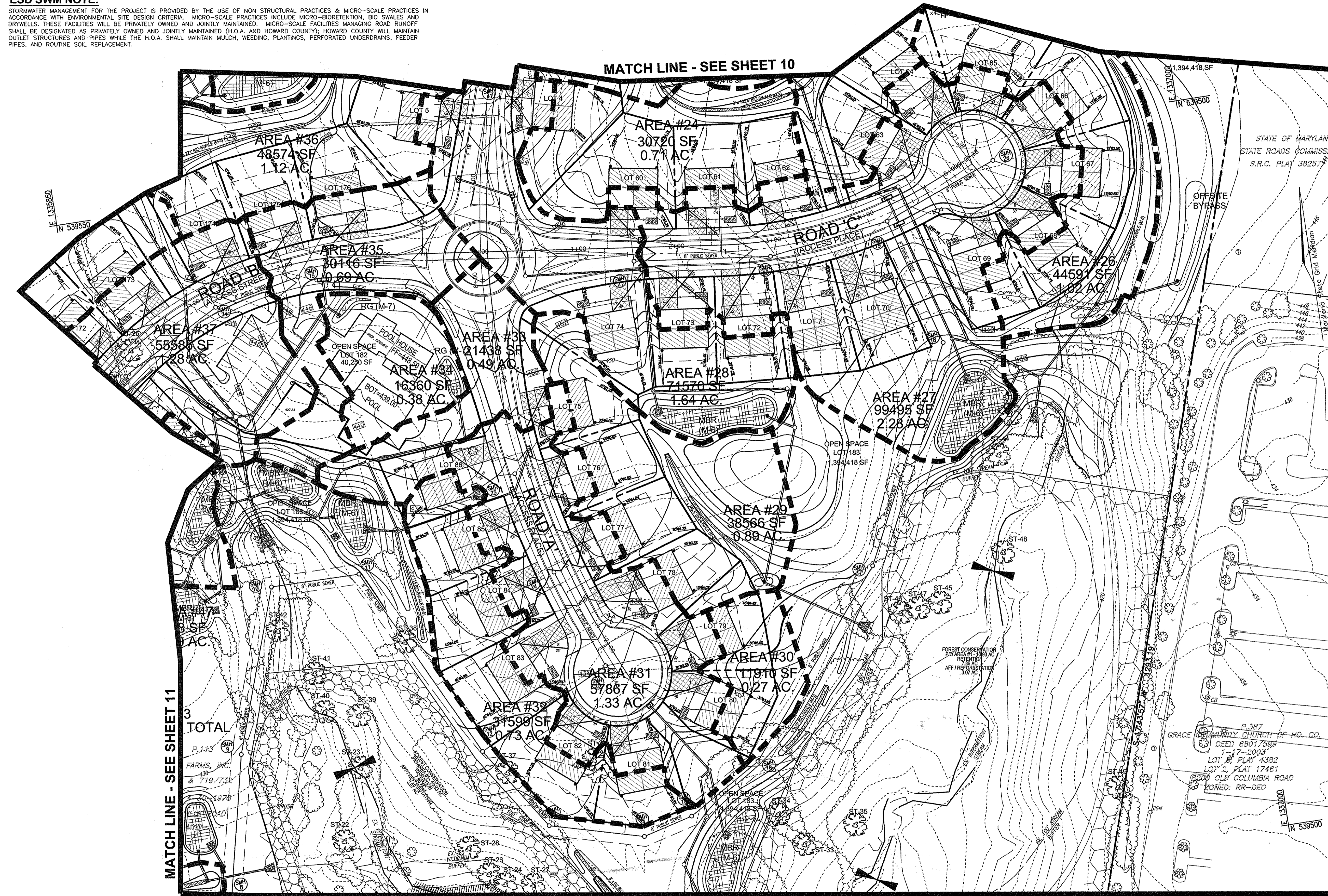
**STORMWATER MANAGEMENT
 DRAINAGE AREA MAP**

SCALE: 1"=50'

K:\Projects\11-15-14\ESD_SWM\Map.dwg, 12/10/2014 1:54:51 PM

ESD SWM NOTE:

STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON STRUCTURAL PRACTICES & MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION, BIO SWALES AND DRYWELLS. THESE FACILITIES WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. MICRO-SCALE FACILITIES MANAGING ROAD RUNOFF SHALL BE DESIGNATED AS PRIVATELY OWNED AND JOINTLY MAINTAINED (H.O.A. AND HOWARD COUNTY); HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.



LEGEND:

- 320 --- EXISTING CONTOUR
- 406 --- PROPOSED CONTOUR
- + 402.88 PROPOSED SPOT ELEVATION
- * 402.88 EXISTING SPOT ELEVATION
- ==== EXISTING CURB AND GUTTER
- ==== PROPOSED CURB AND GUTTER
- ⊙ EXISTING UTILITY POLE
- ⊙ EXISTING LIGHT POLE
- ⊙ EXISTING MAILBOX
- ⊙ EXISTING SIGN
- ⊙ EXISTING SANITARY MANHOLE
- ⊙ EXISTING SANITARY LINE
- ⊙ EXISTING CLEANOUT
- ⊙ EXISTING FIRE HYDRANT
- ⊙ EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- FOREST CONSERVATION EASEMENT
- DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- NON-STRUCTURAL ROOFTOP DISCONNECTIONS
- NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
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- MICRO-SCALE PRACTICE MICRO BIORETENTION / BIORETENTION (M-6)
- RAIN WATER HARVESTING RAIN BARREL
- PROPOSED DRYWELL

OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
 STORMWATER MANAGEMENT
 DRAINAGE AREA MAP
 MAPLE LAWN SOUTH**

11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747
 ZONED: R-ED-MXD-3
 TAX MAP 46 GRID 2
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
 ENGINEERING, INC.**
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 8407 MAIN STREET ELICOTT CITY, MD 21043
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 CHECKED BY: RHV
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 SCALE: AS SHOWN
 W.O. NO.: 11-34

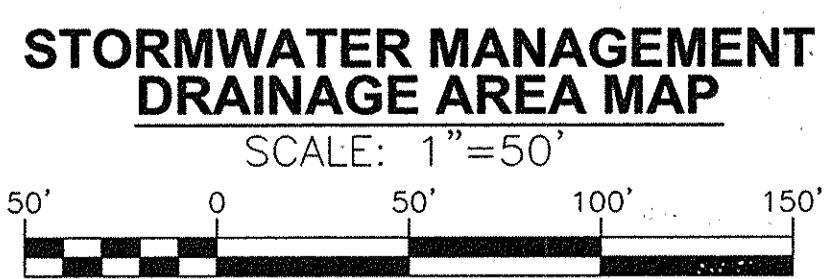
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18933, EXPIRATION DATE 09-27-2018.

12 SHEET OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

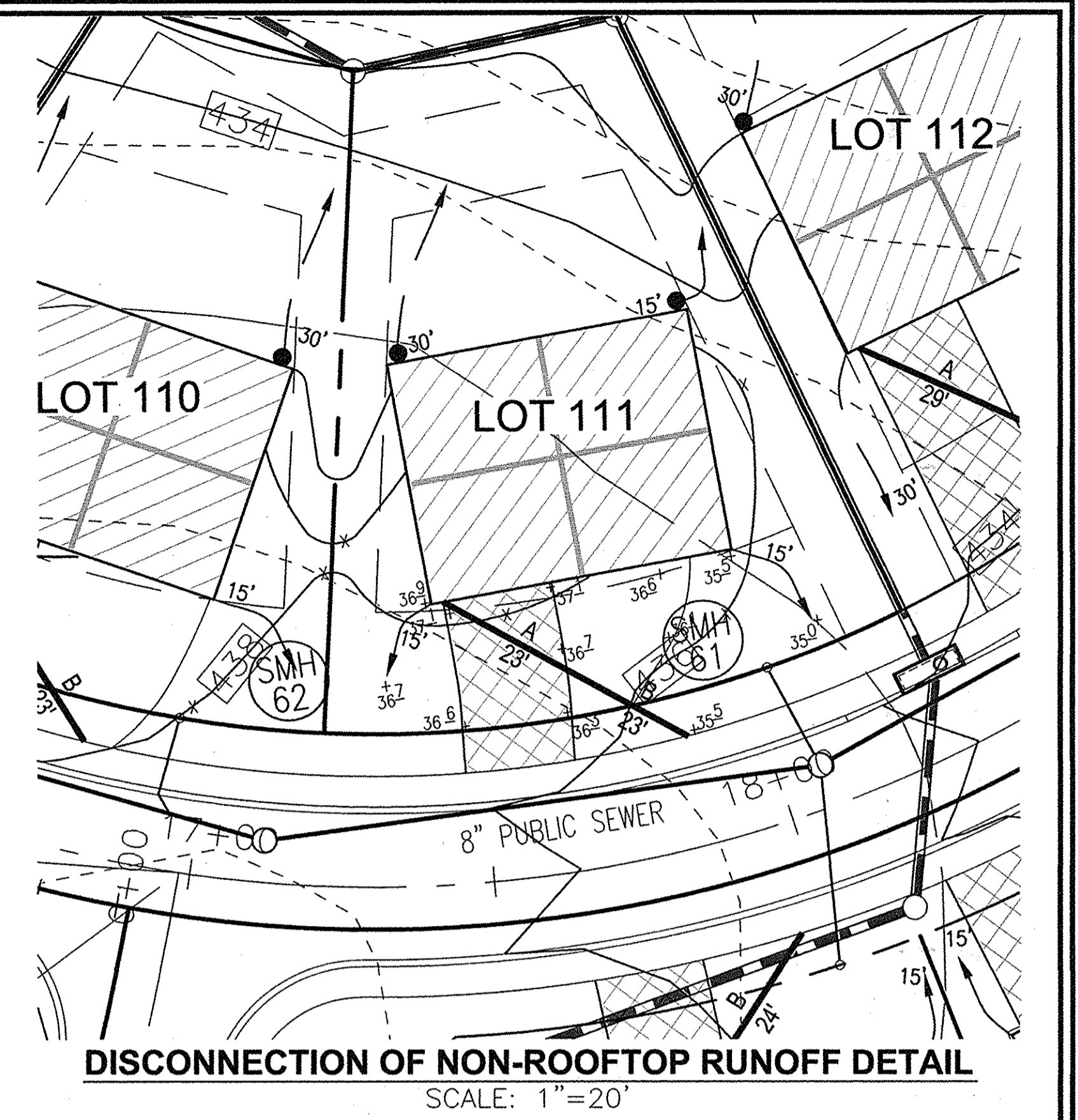
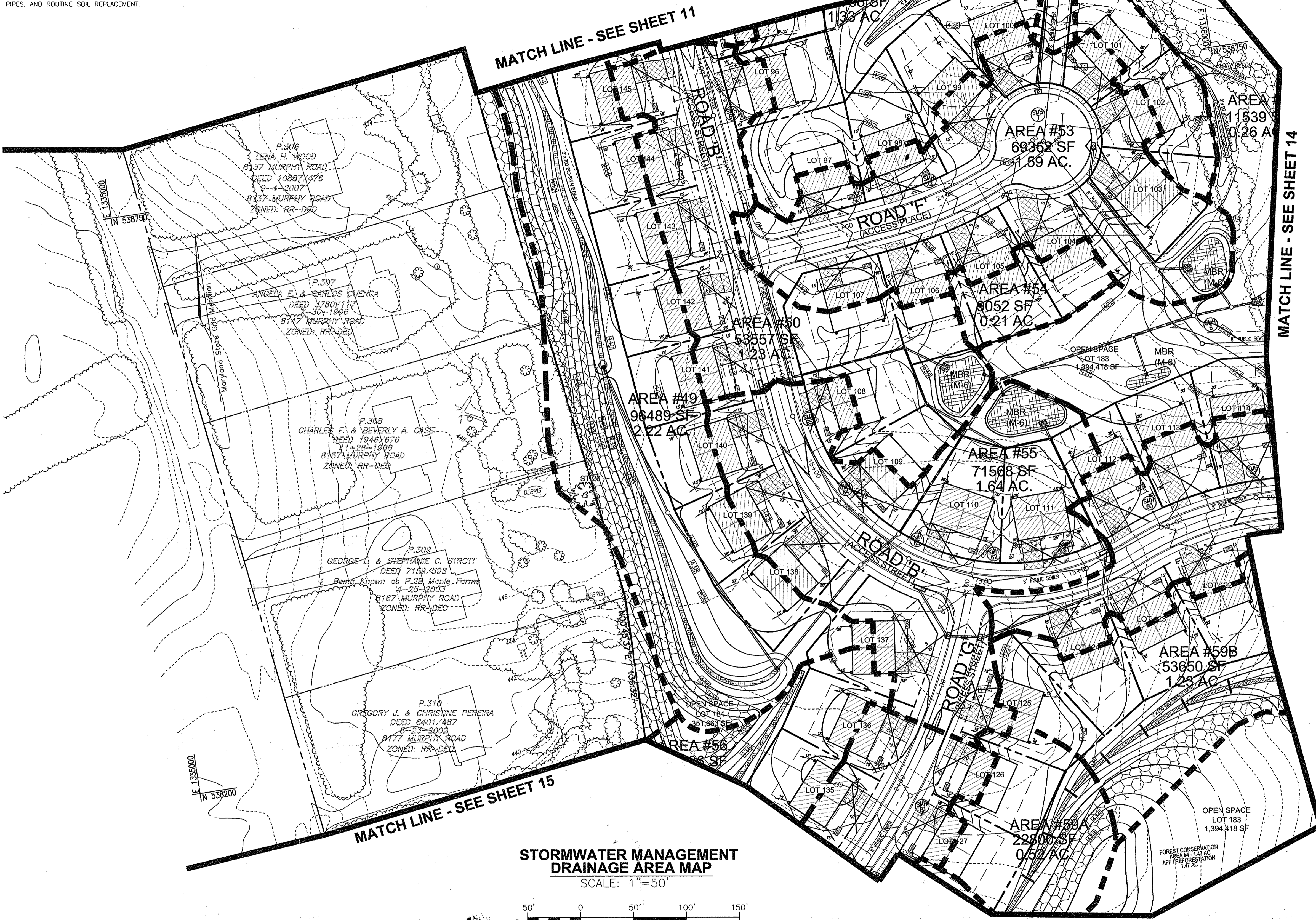
[Signature] 1-15-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE



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ESD SWM NOTE:

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LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EXISTING CURB AND GUTTER
- PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREELINE
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- FOREST CONSERVATION EASEMENT
- DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- NON-STRUCTURAL ROOFTOP DISCONNECTIONS
- NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
- MICRO-SCALE PRACTICE BIO-SWALE (M-S)
- MICRO-SCALE PRACTICE MICRO-BIORETENTION/BIORETENTION (M-B)
- RAIN WATER HARVESTING RAIN BARREL
- PROPOSED DRYWELL

OWNER
MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER
BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT
DRAINAGE AREA MAP
MAPLE LAWN SOUTH**
11621 SCAGGSVILLE ROAD
LIBER 683 / FOLIO 747
ZONED: R-ED-MXD-3
TAX MAP 46 GRID 2
5TH ELECTION DISTRICT
PARCELS 113
HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
ENGINEERING, INC.**
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET
ELLCOTT CITY, MD 21043
TEL: 410.461.7666
FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHY/GAH
DRAWN BY: GAH
CHECKED BY: RHY
DATE: DECEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 11-34

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. 16193 EXPIRATION DATE: 09-27-2018

13 SHEET OF 16

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-7-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

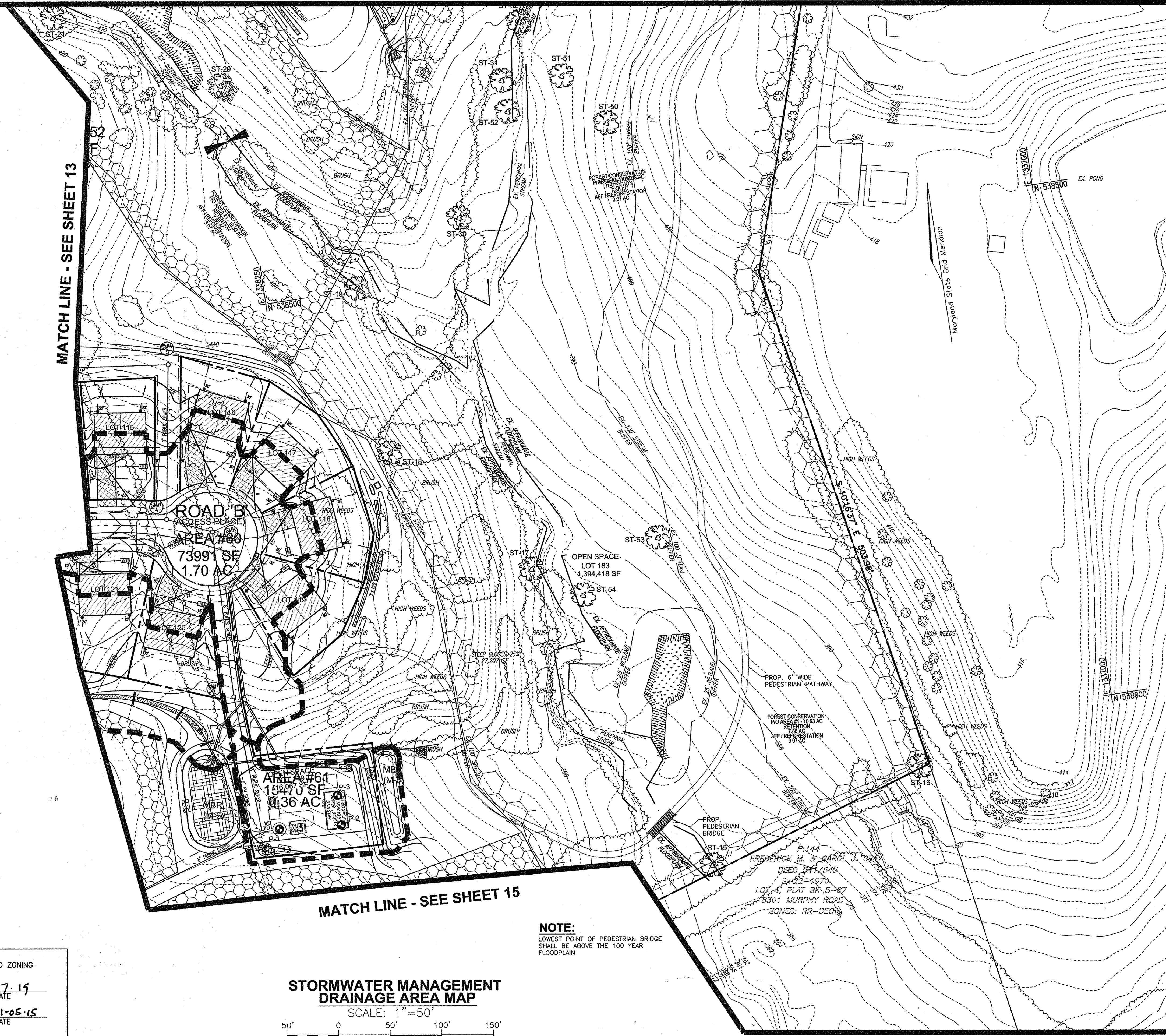
[Signature] 1-8-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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MATCH LINE - SEE SHEET 12

MATCH LINE - SEE SHEET 13



MATCH LINE - SEE SHEET 15

NOTE:
LOWEST POINT OF PEDESTRIAN BRIDGE SHALL BE ABOVE THE 100 YEAR FLOODPLAIN

STORMWATER MANAGEMENT DRAINAGE AREA MAP

SCALE: 1" = 50'



LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- +40.25 PROPOSED SPOT ELEVATION
- +402.88 EXISTING SPOT ELEVATION
- ==== EXISTING CURB AND GUTTER
- ==== PROPOSED CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN INLET
- EXISTING TREETRINE (FIELD LOCATED)
- EXISTING FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SIDEWALK
- FOREST CONSERVATION EASEMENT
- DRAINAGE DIVIDE
- DRAINAGE AREA DESIGNATION
- DA-3
- NON-STRUCTURAL ROOFTOP DISCONNECTIONS
- NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF
- MICRO-SCALE PRACTICE BIO-SWALE (M-B)
- MICRO-SCALE PRACTICE MICRO-BIORETENTION / BIORETENTION (M-S)
- RAIN WATER HARVESTING RAIN BARREL
- PROPOSED DRYWELL

OWNER: MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER: BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Phil Edwards 1-7-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Robert H. Vogel 1-05-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT
DRAINAGE AREA MAP**

MAPLE LAWN SOUTH
11621 SCAGGSVILLE ROAD
LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
PARCEL 113
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS

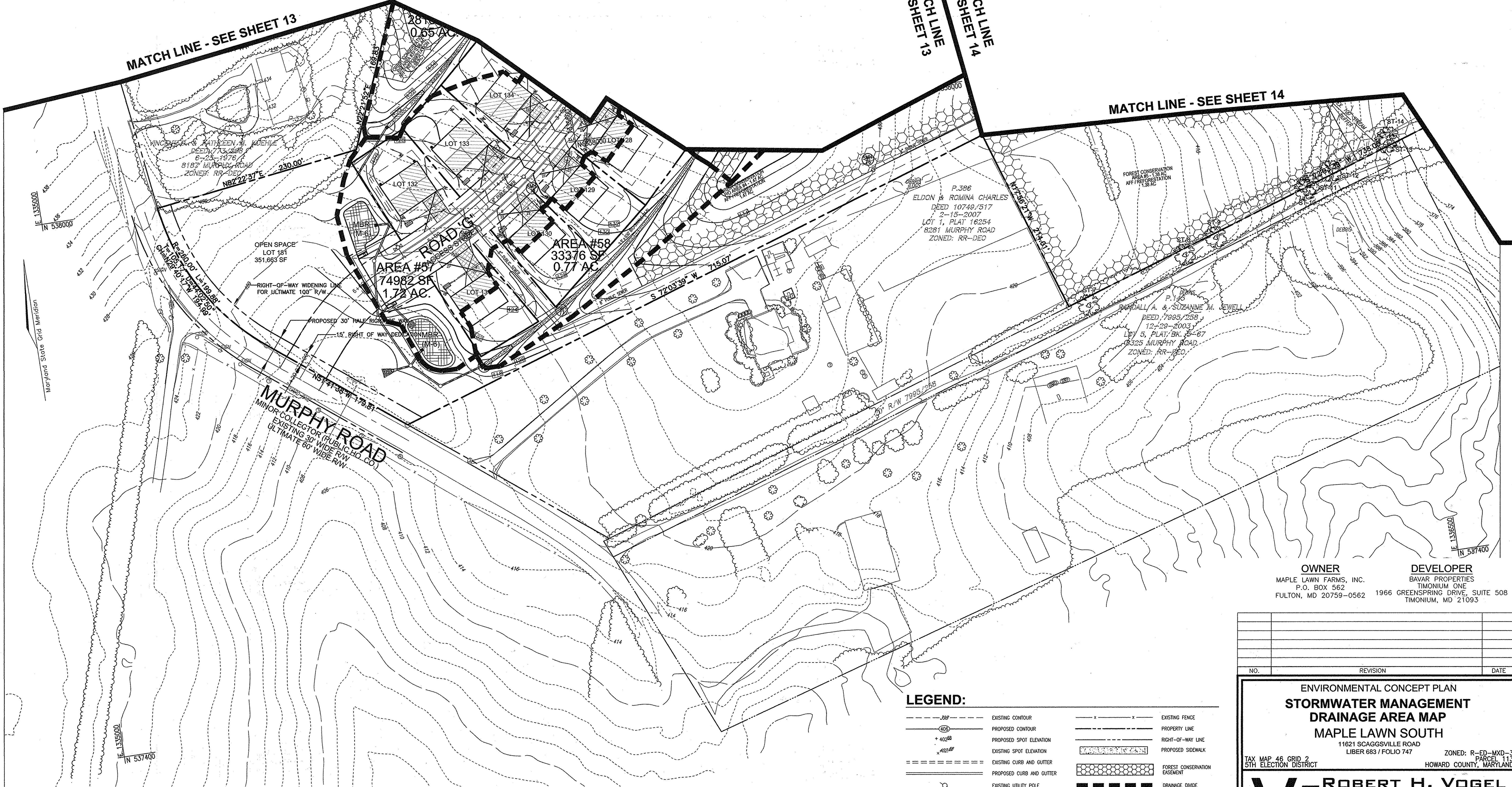
8407 MAIN STREET
ELlicott CITY, MD 21043

TEL: 410.461.7666
FAX: 410.461.8961

	DESIGN BY: RHV/GAH	PROFESSIONAL CERTIFICATE 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. 16193, EXPIRATION DATE 09-27-2018.
	DRAWN BY: GAH	
	CHECKED BY: RHV	
	DATE: DECEMBER 2014	
SCALE: AS SHOWN	W.O. NO.: 11-34	14 SHEET OF 16

ESD SWM NOTE:

STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON STRUCTURAL PRACTICES & MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION, BIO SWALES AND DRYWELLS. THESE FACILITIES WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED. MICRO-SCALE FACILITIES MANAGING ROAD RUNOFF SHALL BE DESIGNATED AS PRIVATELY OWNED AND JOINTLY MAINTAINED (H.O.A. AND HOWARD COUNTY); HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.



STORMWATER MANAGEMENT DRAINAGE AREA MAP

SCALE: 1" = 50'



LEGEND:

- | | | | |
|-------------|----------------------------|-------|--|
| --- 300 --- | EXISTING CONTOUR | -x-x- | EXISTING FENCE |
| --- 400 --- | PROPOSED CONTOUR | --- | PROPERTY LINE |
| + 402.88 | PROPOSED SPOT ELEVATION | --- | RIGHT-OF-WAY LINE |
| + 402.88 | EXISTING SPOT ELEVATION | --- | PROPOSED SIDEWALK |
| --- | EXISTING CURB AND GUTTER | --- | FOREST CONSERVATION EASEMENT |
| --- | PROPOSED CURB AND GUTTER | --- | DRAINAGE DIVIDE |
| --- | EXISTING UTILITY POLE | --- | DRAINAGE AREA DESIGNATION |
| --- | EXISTING LIGHT POLE | --- | NON-STRUCTURAL ROOFTOP DISCONNECTIONS |
| --- | EXISTING MAILBOX | --- | NON-STRUCTURAL DISCONNECTION OF NON-ROOFTOP RUNOFF |
| --- | EXISTING SIGN | --- | MICRO-SCALE PRACTICE BIO-SWALE (M-8) |
| --- | EXISTING SANITARY MANHOLE | --- | MICRO-SCALE PRACTICE MICRO-BIORETENTION / BIORETENTION (M-9) |
| --- | EXISTING SANITARY LINE | --- | RAIN WATER HARVESTING BARN BARREL |
| --- | EXISTING CLEANOUT | --- | PROPOSED DRYWELL |
| --- | EXISTING FIRE HYDRANT | --- | |
| --- | EXISTING WATER LINE | --- | |
| --- | PROPOSED STORM DRAIN | --- | |
| --- | PROPOSED STORM DRAIN INLET | --- | |
| --- | EXISTING TREETRUNK | --- | |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Ch. E. ... 1-7-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

... 1-8-15
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER
 MAPLE LAWN FARMS, INC.
 P.O. BOX 562
 FULTON, MD 20759-0562

DEVELOPER
 BAVAR PROPERTIES
 TIMONIUM ONE
 1966 GREENSPRING DRIVE, SUITE 508
 TIMONIUM, MD 21093

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT DRAINAGE AREA MAP
 MAPLE LAWN SOUTH
 11621 SCAGGSVILLE ROAD
 LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
 5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
 PARCEL 113
 HOWARD COUNTY, MARYLAND

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PROFESSIONAL CERTIFICATE

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 W.O. NO.: 11-34

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193, EXPIRATION DATE 09-27-2018.

15 SHEET OF 16

APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, 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-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A BARRIER TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERBERIS GRASS, COCKSCOMB, 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 1% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (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 6.5 TO 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO 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 STOCKPILE TOPSOIL, IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

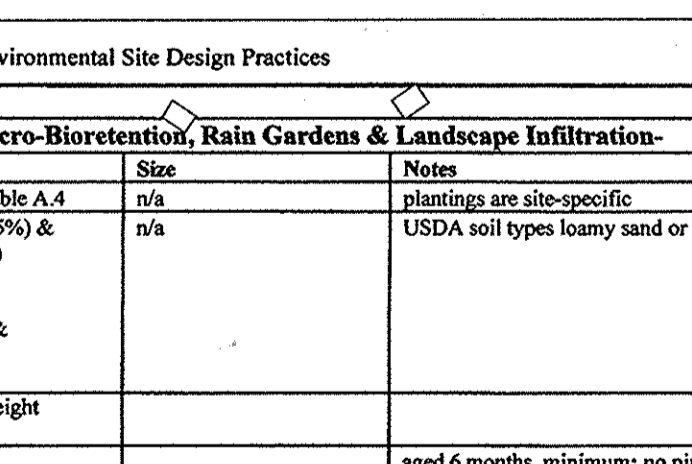
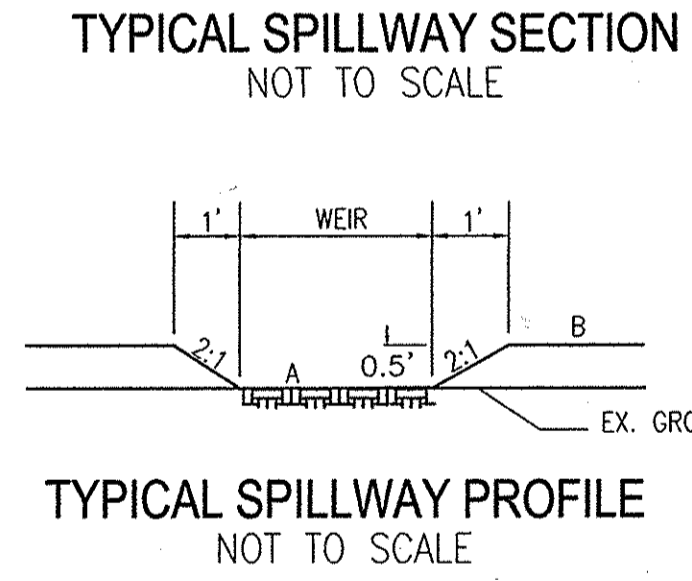
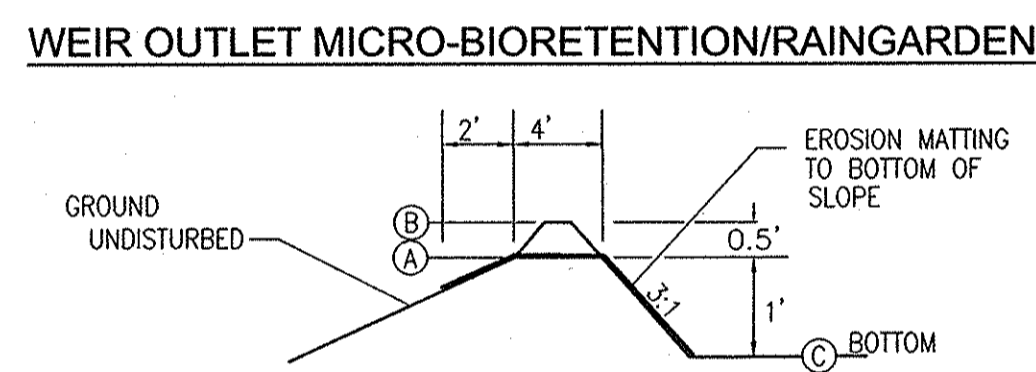
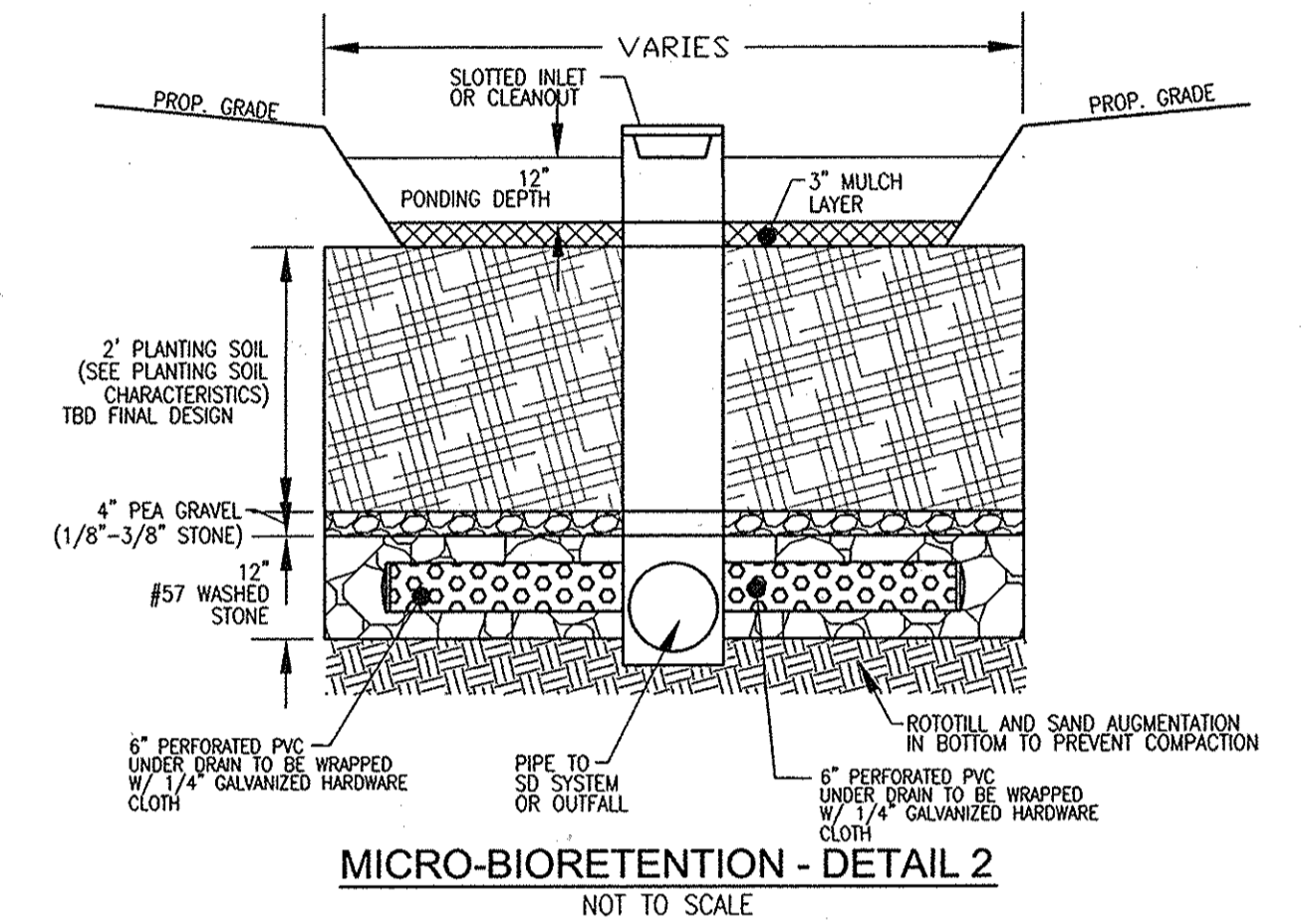
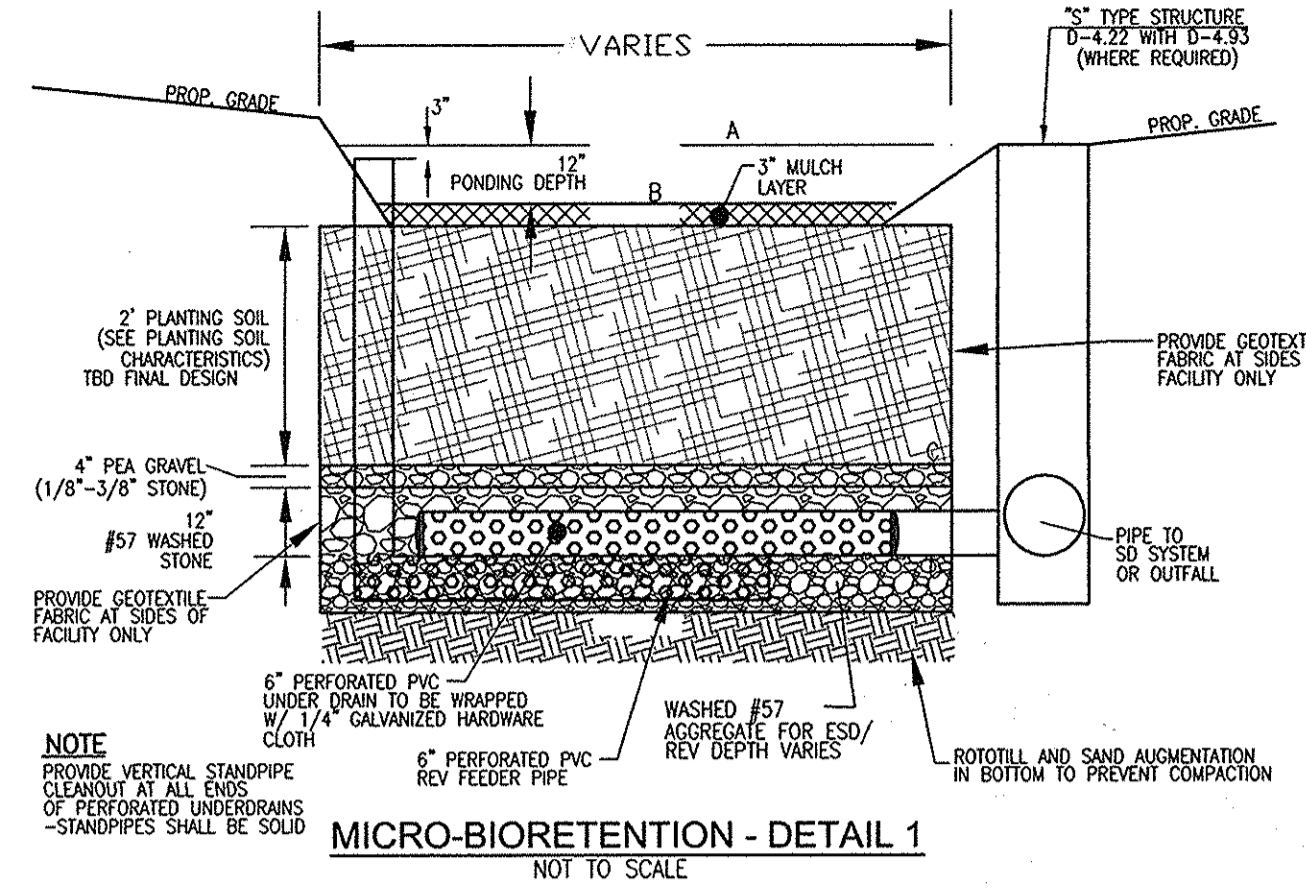
3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL WHEN POSSIBLE. USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT OR LIGHT EQUIPMENT WITH SOFT TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LOGS, 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 CHISEL PLOW, RIPPER, OR SUBSIDER. THESE TILLING OPERATIONS ARE TO RESTRUCTURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REMOVE 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-BIORETENTION 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 PLANTED SO 1/3RD 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 PLOUGS 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, DEBRIS, 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 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (E.G., PVC OF HOPE).
• PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4+4) 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 (1/8" 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 1,000 SQUARE FEET OF SURFACE AREA.

7. MISCELLANEOUS
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



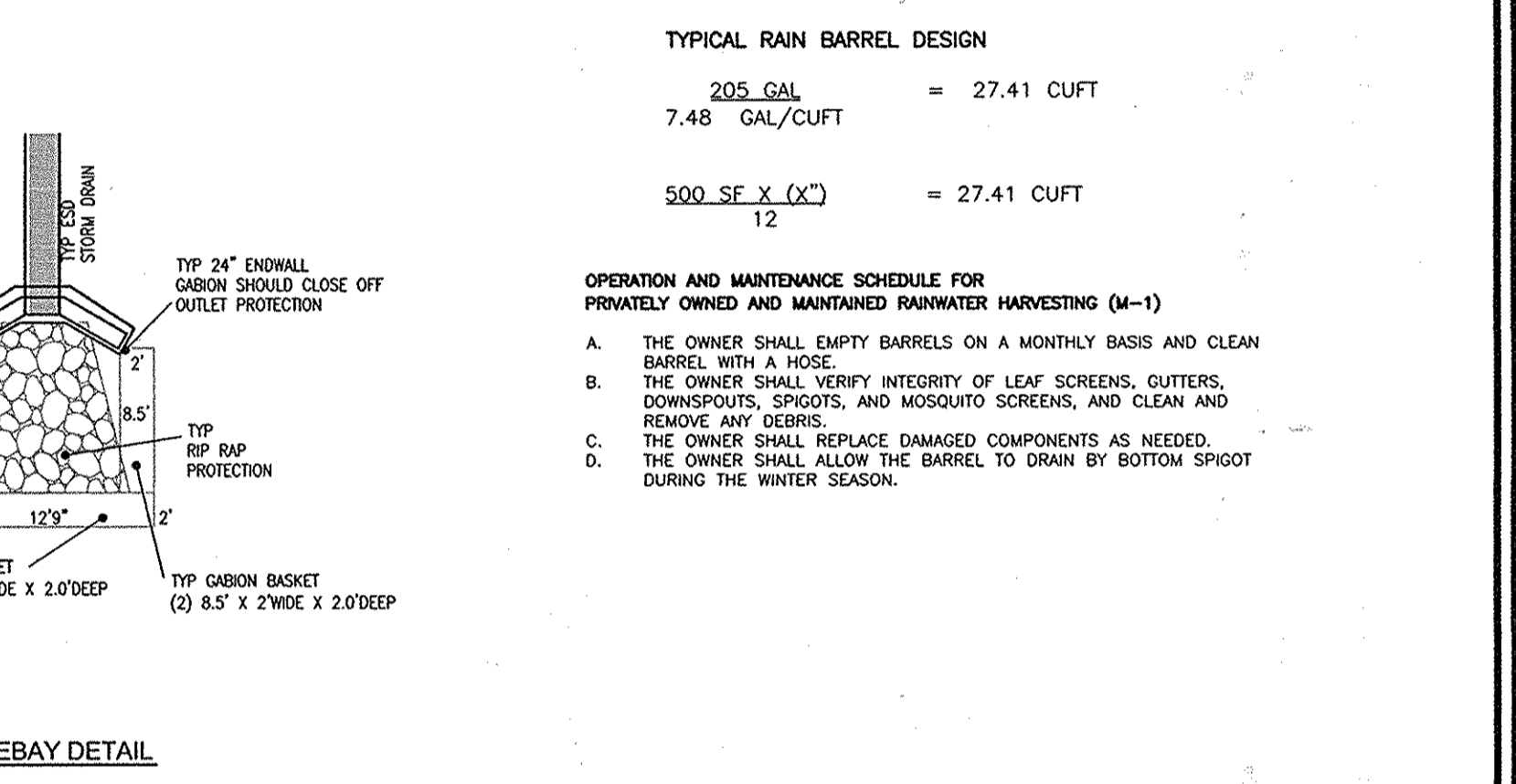
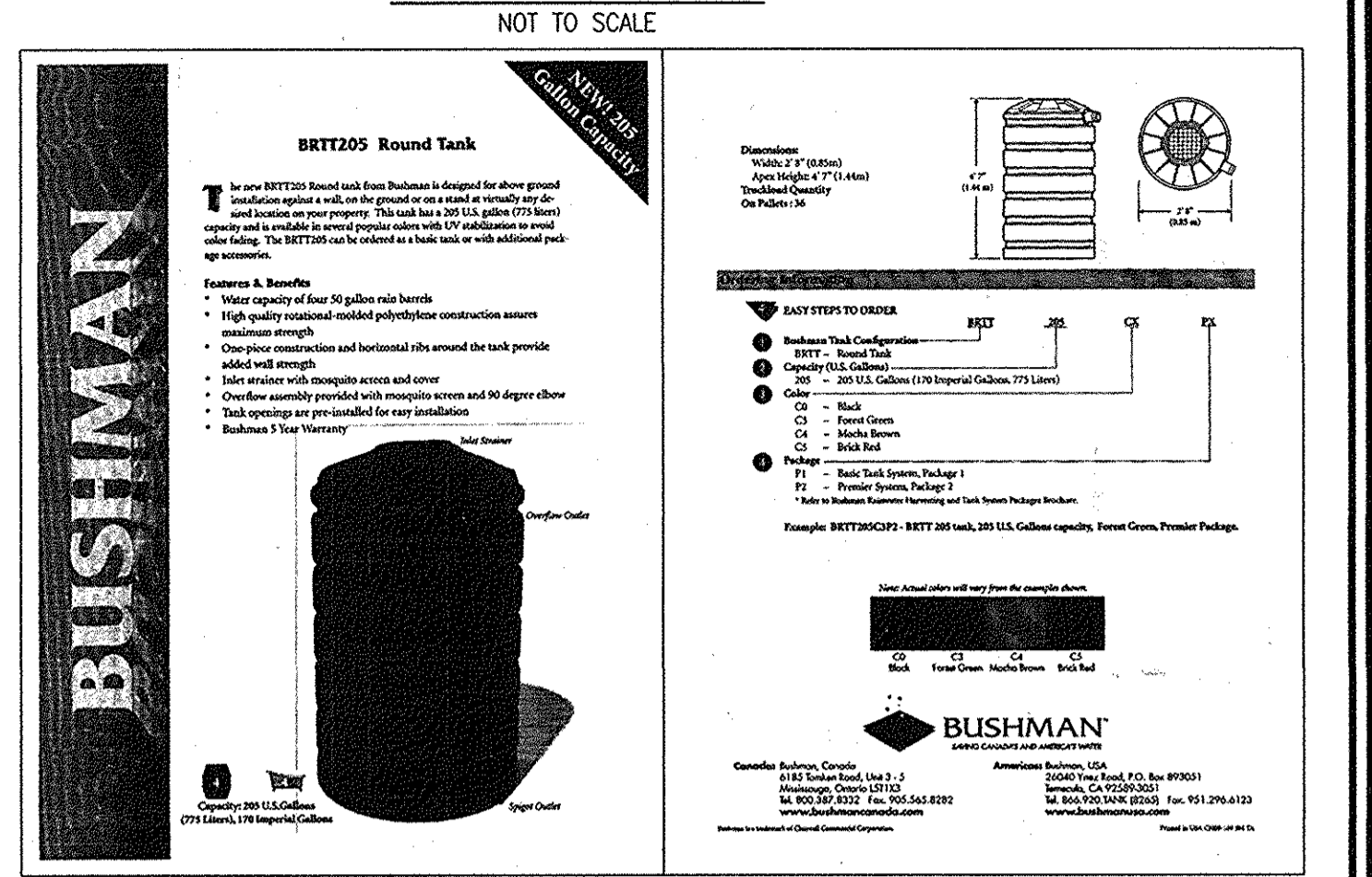
N-1. DISCONNECTION OF ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:
THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF
- SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION. SHOULD AREAS RECEIVING DISCONNECTED RUNOFF BECOME COMPACTED, SCARIFYING THE SURFACE OR ROTOTILLING THE SOIL TO A DEPTH OF FOUR TO SIX INCHES SHALL BE PERFORMED TO ENSURE PERMEABILITY. ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

INSPECTION:
A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT SIZING FOR TREATMENT AREAS HAVE BEEN MET AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:
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 (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER). IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

BUSHMAN BRIT205 (205 GALLON) RAIN HARVESTING SYSTEM OR EQUIVALENT



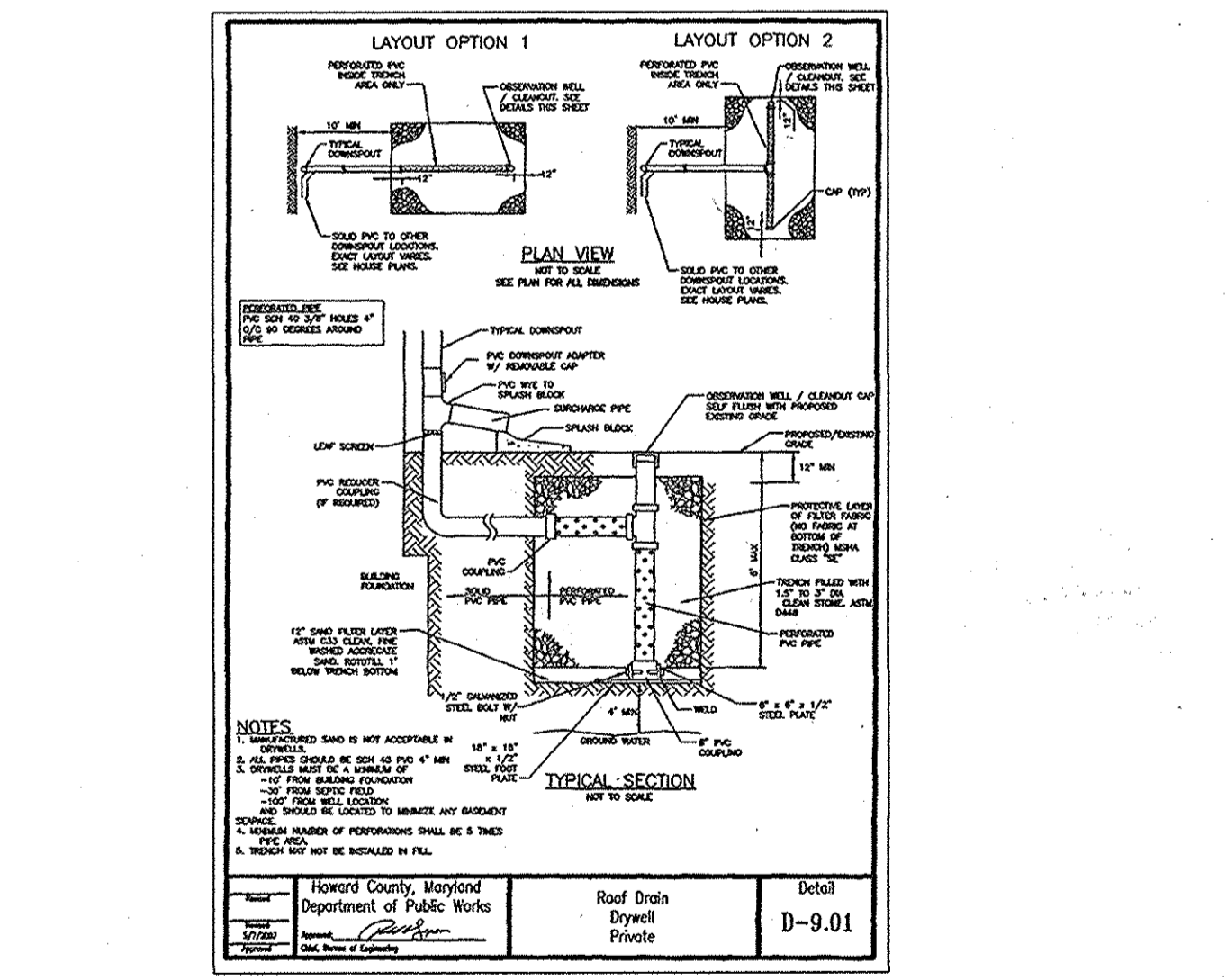
OPERATION AND MAINTENANCE SCHEDULE FOR MICROBIORETENTION / BIO-SWALE AREAS

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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.

2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DISEASED STAKES AND WIRES.

3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER EVERY 2 TO 3 YEARS.

4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.



HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRYWELL (M-5)

A. THE OWNER SHALL INSPECT & CLEAN ANNUALLY, INCLUDING PIPES, GUTTERS, DOWNSPOUTS AND FILTERS.

B. PONDED STANDING WATER OR ALGAL GROWTH ON THE TOP OF A DRYWELL MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE GRAVEL MEDIA. IF WATER POND FOR MORE THAN 48 HOURS AFTER A MAJOR STORM OR MORE THAN SIX INCHES OF SEDIMENT HAS ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND REPLACED.

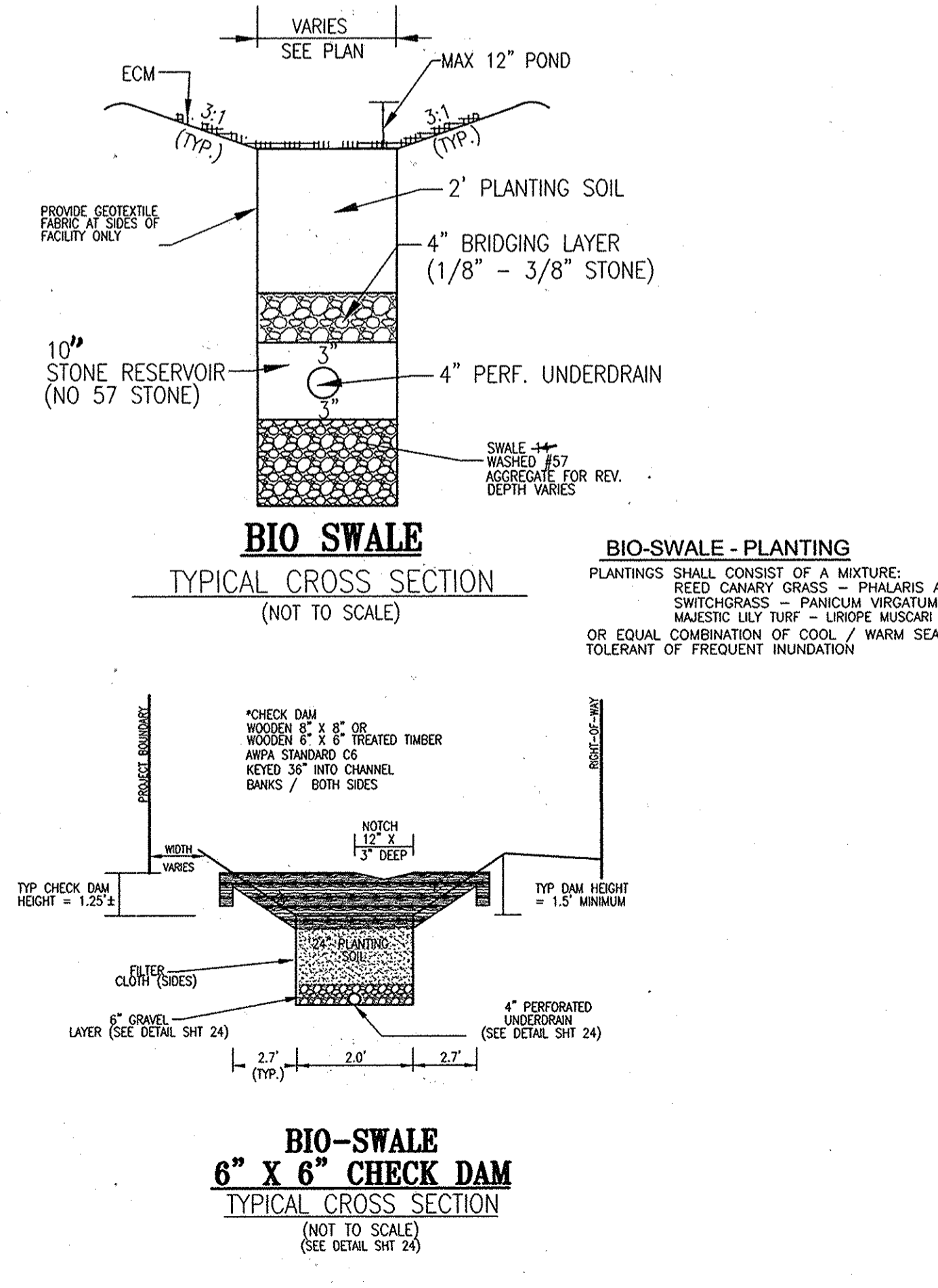
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 1-7-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 1-05-15
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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	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)	n/a	
Mulch	shredded hardwood	n/a	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	2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGORIGATE (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 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 pipes; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-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-615-60	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 ACT Code 350.8.069; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressures); 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 "took dust" can be used for sand.



OWNER
MAPLE LAWN FARMS, INC.
P.O. BOX 562
FULTON, MD 20759-0562

DEVELOPER
BAVAR PROPERTIES
TIMONIUM ONE
1966 GREENSPRING DRIVE, SUITE 508
TIMONIUM, MD 21093

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT NOTES AND DETAILS
MAPLE LAWN SOUTH
11621 SCAGGSVILLE ROAD
LIBER 683 / FOLIO 747

TAX MAP 46 GRID 2
5TH ELECTION DISTRICT

ZONED: R-ED-MXD-3
PARCEL 113
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
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DESIGN BY: RHV/GAH
DRAWN BY: GAH
CHECKED BY: RHY
DATE: DECEMBER 2014
SCALE: AS SHOWN
W.O. NO.: 11-34

PROFESSIONAL CERTIFICATE
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. EXPIRES DATE 07-27-2018

16 SHEET OF 16