

Site Analysis Data Sheet

Gross Site Area	6.99 ac
100yr Floodplain	0.00 ac
Steep Slopes 25% or greater	0.00 ac
Wetlands	0.00 ac
Wetlands Buffer	0.00 ac
Forested Area	0.00 ac
Erodible Soils	0.00 ac
Limit of Disturbance	6.70 ac
Impervious Area	4.22 ac
Green Space	2.48 ac
Public Road Right-of-Way	0.89 ac
Buildable Lots	6.10 ac
Open Space	0 ac

Design Narrative

Natural Resources:
The existing trees along the eastern and western edges of the property shall be saved to the maximum extent possible. The existing specimen tree, a 42" Spruce, located up along Clarksville Pike, will need to be removed in order to accommodate the road improvements required. There are no other natural resources located on this site. There are no wetlands, streams, their buffers, 100-year floodplain, or steep slopes.

Existing flow patterns shall be maintained. The existing discharge points from the site shall be located in the same location as their existing condition. The proposed flow rates shall be less than the existing condition.

Impervious areas are being minimized by providing 24' drive aisles and providing landscaped islands throughout and also by maintaining the existing trees along the eastern and western edges.

Sediment Control:
Sediment and erosion control shall be provided in accordance with the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control. The sediment control practices are shown on sheet 2 of this ECP and shall be revised as necessary and approved by HSCD under SDP-18-044.

Methodology:
The property was first checked to see if it qualified for "redevelopment". It was determined that the existing imperviousness of the total site exceeded 40% and therefore did qualify for "redevelopment". As a result, the stormwater management for this project was based on treating 50% of the existing impervious areas and 100% of new impervious areas.

This project requires road improvements along Clarksville Pike. The road improvements are to be provided on a separate SHA plan and the stormwater management required for those improvements shall be provided on those plans. Therefore, this report is for the SWM for the site area remaining after right-of-way dedication. The ESDV and Pe numbers are based on that area.

The current Howard County stormwater management regulations do not require management of the 2, 10, or 100-year storm events. However, since the site under SDP-91-002 did provide quantity management of these storms, it was determined that it would be practical to continue to manage these storms so that there is no increase in runoff than what is shown on SDP-91-002. Since there is no record of the stormwater management report associated with SDP-91-002 and since the site has been developed further since what is shown on SDP-91-002, the discharge points of both of the existing ponds were re-analyzed based on current conditions. The ponds were routed to establish runoffs of the 2, 10, and 100-year storms and those numbers were compared to the numbers shown on SDP-91-002. The design comparison was based on 7.2" for the 100-year storm since that is what the original report would have been based on.

A Pe number was established based on a Pe of 1.0" for the existing impervious surfaces that shall remain impervious and a Pe of 2.6" for any new impervious surfaces. An ESDV amount was then calculated based on these Pe numbers. For the purpose of sizing individual ESD practices, a weighted Pe (1.1") was utilized. Then, when added up, all the SWM practices were confirmed to meet or exceed the total required ESDV.

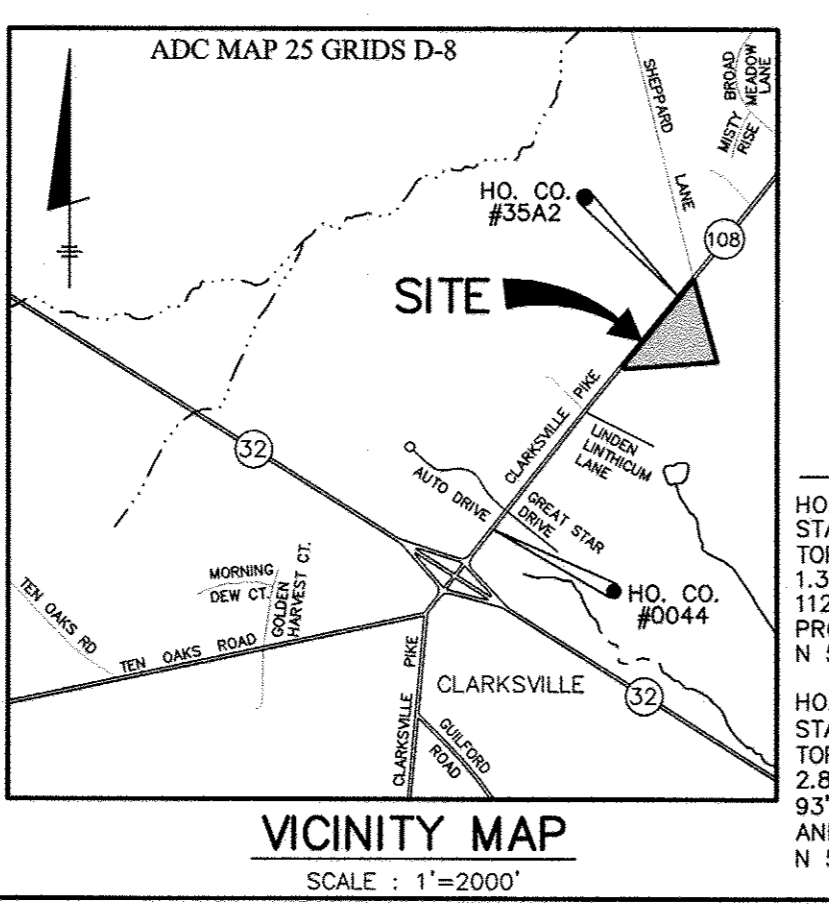
Conclusion:
The proposed M-6 Micro Bio-Retention ACF Focal Point practices shall adequately treat the required proposed impervious areas based on "redevelopment" criteria (50% of existing impervious area at Pe of 1.0" and full treatment of new/added impervious areas at a Pe of 2.6"). The total ESDV provided is greater than the total ESDV required.

Quantity management is adequately treated via the underground stormwater management structures. The 2, 10, and 100-year storms are less than the existing numbers.

Full treatment of the ESDVs is being provided therefore this project can be considered to be treated to the maximum extent practical. SEE SUMMARY TABLE ON SHEET 3.

LEGEND

	EXISTING CONTOURS
	EXISTING TREES
	PROPOSED CLARVILLE PIKE RIGHT-OF-WAY DEDICATION
	ESD DRAINAGE AREAS
	QUANTITY CONTROL DRAINAGE AREAS
	PROPOSED STORM DRAIN
	PROPOSED SEWER LINE



BENCH MARKS (NAD83)

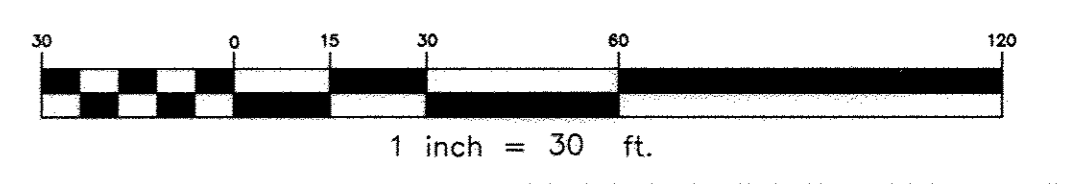
HO. CO. No. 0044 ELEV. 484.477
STAMPED BRASS DISK SET ON
TOP OF CONCRETE (3" DEEP) COLUMN,
1.3' EAST OF THE EDGE OF PAVEMENT MD ROUTE 108,
112± NORTH OF BGE#532720; AND 87± NORTHEAST
PROJECTED WALL LINE OF KENDALL HARDWARE
N 562,176.494' E 1,329,641.911'

HO. CO. No. 35A2 ELEV. 487.903
STAMPED BRASS DISK SET ON
TOP OF CONCRETE (3" DEEP) CIRCULAR BASE
2.8' WEST OF THE EDGE OF PAVEMENT MD ROUTE 108,
93± SOUTHWEST OF BGE#166792/C&P#97
AND 3.9' EAST OF A FENCE.
N 564,154.807' E 1,331,201.160'

SHEET INDEX

SHEET	TITLE
1	ECP - GRADING PLAN
2	SEDIMENT & EROSION CONTROL PLAN
3	ECP - SWM ESD DEVELOPED D.A. MAP

- GENERAL NOTES**
- SUBJECT PROPERTY ZONED B-1 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
 - THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
 - PROJECT BOUNDARY IS BASED ON DEED REFERENCE LIBER-05082/FOLIO-06878 AS PREPARED BY DAFT, MCCUNE, WALKER, INC. DATED 6/14/13. TOPOGRAPHIC INFORMATION SHOWN HEREON REFLECTS THE RESULTS OF A TOPOGRAPHIC SURVEY PERFORMED BY DAFT, MCCUNE, WALKER, INC. ON 10/22/12 AND HOWARD COUNTY DIGITAL GIS.
 - PER THE ACCOMPANYING WETLANDS CERTIFICATION LETTER THERE ARE NO WETLANDS, OR ACCOMPANYING WETLANDS BUFFER WITHIN THE PROPOSED L.O.D. FOR THIS PROJECT. ACCORDING TO ON-SITE OBSERVATION AND AVAILABLE DATA (G.I.S., SDP-91-002), THERE ARE NO STREAMS, STREAM BUFFERS, 100-YR FLOODPLAIN OR 25% OR GREATER STEEP SLOPES WITH MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED WITHIN THE PROJECT SITE.
 - PER THE ACCOMPANYING SIMPLIFIED FOREST STAND DELINEATION REPORT, THERE IS ONE SPECIMEN TREE OBSERVED ON THE PROPERTY: 42" SPRUCE IN GOOD CONDITION. IT IS ANTICIPATED THAT IN THE DEVELOPMENT OF THE PROPERTY THE SPECIMEN TREE WILL BE REMOVED. IT IS UNDERSTOOD AN ALTERNATIVE COMPLIANCE WILL NEED TO BE FILED AND APPROVED. THERE WERE NO FORESTS OBSERVED ON THE PROPERTY.
 - APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION AND/OR SITE DEVELOPMENT 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 SITE DEVELOPMENT PLAN STAGE. THEREFORE, THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING THOSE THAT MAY ALTER OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES.
 - THE STORMWATER MANAGEMENT PRACTICES SHOWN ON THIS PLAN ASSUME ADEQUATE SOIL BORING TEST RESULTS. THE DESIGN MAY NEED TO BE ADJUSTED AT THE NEXT STAGE AFTER SOIL BORING TESTING HAS BEEN COMPLETED AND AN ALTERNATE PRACTICE MAY NEED TO BE UTILIZED.
 - APPLICABLE DPZ FILE REFERENCES: SDP-91-002
 - THE SEDIMENT AND EROSION CONTROL SHOWN ON SHEET 2 IS A SCHEMATIC CONCEPTUAL DESIGN. A MORE DETAILED DESIGN COMPLETE WITH SEQUENCE OF CONSTRUCTION, NOTES AND DETAILS SHALL BE PROVIDED ON THE SDP.
 - THERE ARE EXISTING STRUCTURES LOCATED ON THIS SITE TO BE REMOVED.



BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS
ENGINEERING INC.
8480 BALTIMORE NATIONAL PIKE & SUITE 315 & ELLICOTT CITY, MARYLAND 21043
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WWW.BC-CHILDENGINEERING.COM

RIVER HILL SQUARE
REDEVELOPMENT OF
RIVER HILL GARDEN CENTER

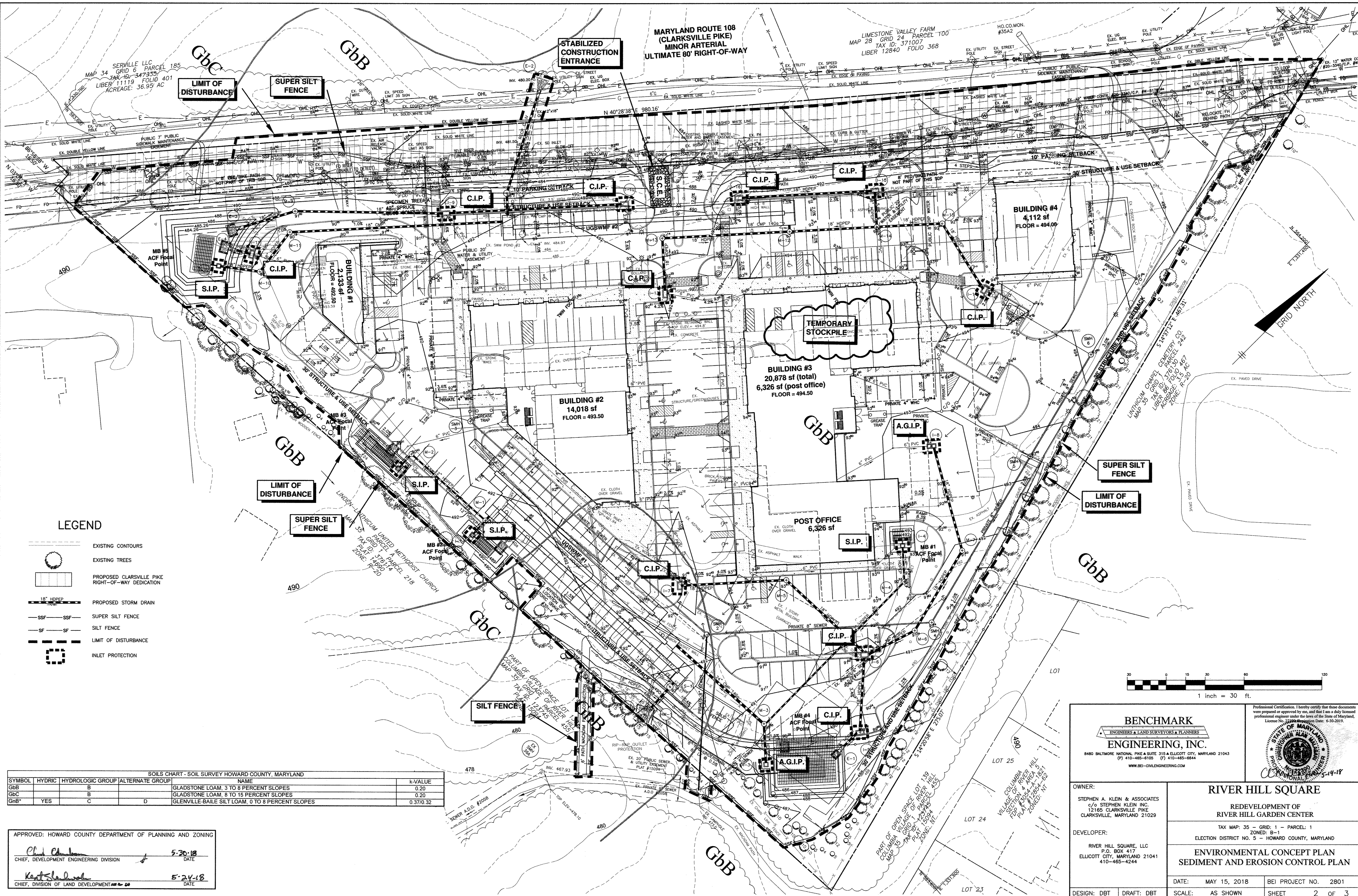
OWNER:
STEPHEN A. KLEIN & ASSOCIATES
c/o STEPHEN KLEIN INC.
12165 CLARVILLE PIKE
CLARKSVILLE, MARYLAND 21029

DEVELOPER:
RIVER HILL SQUARE, LLC
P.O. BOX 417
ELLICOTT CITY, MARYLAND 21041
410-465-4244

TAX MAP: 35 - GRID: 1 - PARCEL: 1
ZONED: B-1
ELECTION DISTRICT NO. 5 - HOWARD COUNTY, MARYLAND

ENVIRONMENTAL CONCEPT PLAN

DATE: MAY 15, 2018 BEI PROJECT NO. 2801
DESIGN: DBT DRAFT: DBT SCALE: AS SHOWN SHEET 1 OF 3



- LEGEND**
- EXISTING CONTOURS
 - EXISTING TREES
 - PROPOSED CLARKSVILLE PIKE RIGHT-OF-WAY DEDICATION
 - PROPOSED STORM DRAIN
 - SUPER SILT FENCE
 - SILT FENCE
 - LIMIT OF DISTURBANCE
 - INLET PROTECTION

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	ALTERNATE GROUP	NAME	K-VALUE
Gbb		B		GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	0.20
Gbc		B		GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES	0.20
Gnb*	YES	C	D	GLENNVILLE-BAILE SILT LOAM, 0 TO 8 PERCENT SLOPES	0.37/0.32

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Anderson 5-30-18
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent S. DeLoach 5-24-18
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

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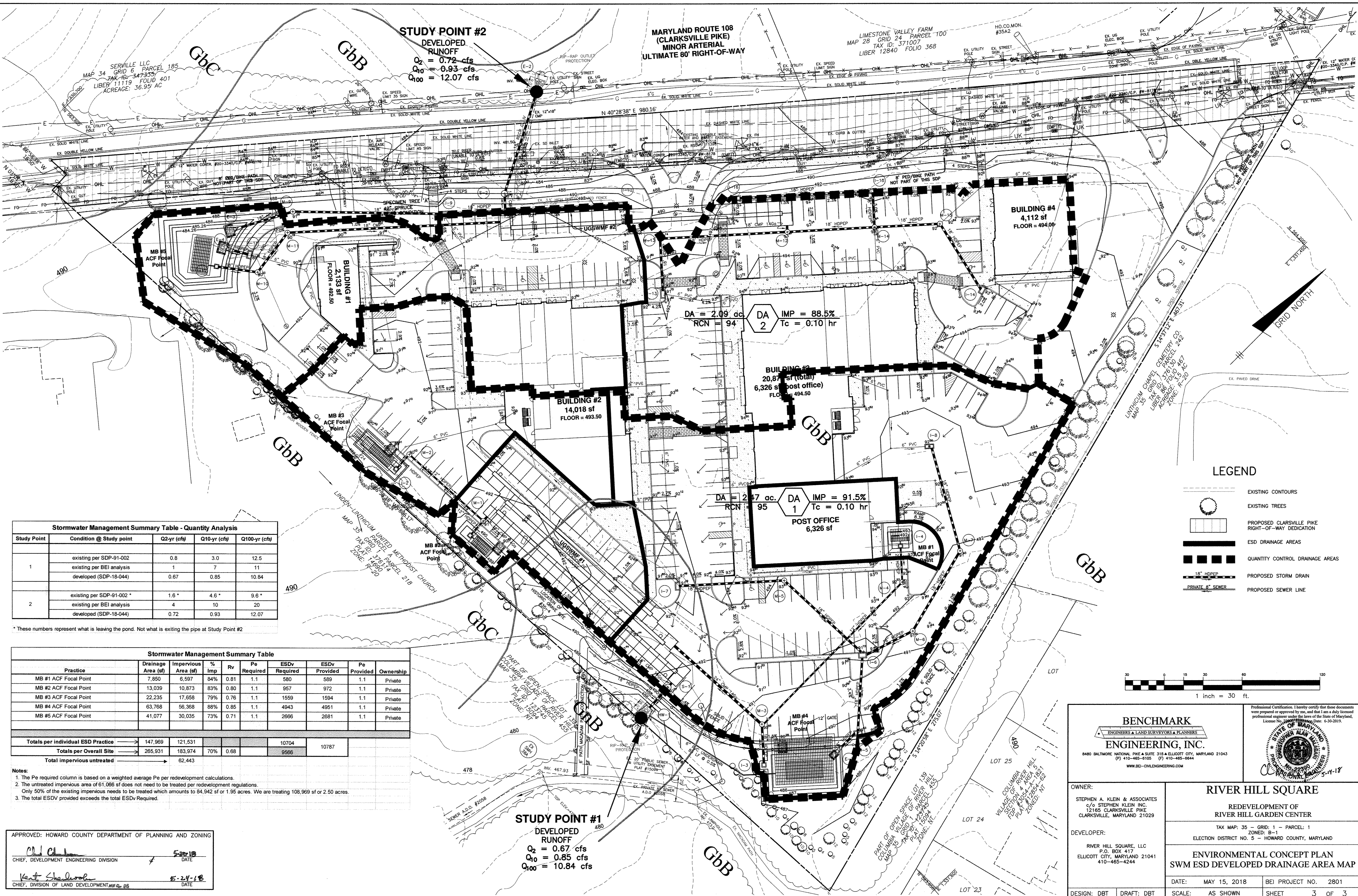
OWNER: RIVER HILL SQUARE
 REDEVELOPMENT OF RIVER HILL GARDEN CENTER

DEVELOPER: RIVER HILL SQUARE, LLC
 P.O. BOX 417
 ELICOTT CITY, MARYLAND 21041
 410-465-4244

TAX MAP: 35 - GRID: 1 - PARCEL: 1
 ZONED: R-1
 ELECTION DISTRICT NO. 5 - HOWARD COUNTY, MARYLAND

**ENVIRONMENTAL CONCEPT PLAN
 SEDIMENT AND EROSION CONTROL PLAN**

DATE: MAY 15, 2018 BEI PROJECT NO. 2801
 SCALE: AS SHOWN SHEET 2 OF 3



STUDY POINT #2
 DEVELOPED
 RUNOFF
 $Q_2 = 0.72$ cfs
 $Q_{10} = 0.93$ cfs
 $Q_{100} = 12.07$ cfs

MARYLAND ROUTE 108
 (CLARKSVILLE PIKE)
 MINOR ARTERIAL
 ULTIMATE 80' RIGHT-OF-WAY

LIMESTONE VALLEY FARM
 MAP 28 GRID 24 PARCEL 100
 TAX ID: 371007
 LIBER 12840 FOLIO 368

DA = 2.09 ac
 RCN = 94
 DA 2
 IMP = 88.5%
 Tc = 0.10 hr

DA = 2.27 ac
 RCN = 95
 DA 1
 IMP = 91.5%
 Tc = 0.10 hr

STUDY POINT #1
 DEVELOPED
 RUNOFF
 $Q_2 = 0.67$ cfs
 $Q_{10} = 0.85$ cfs
 $Q_{100} = 10.84$ cfs

Stormwater Management Summary Table - Quantity Analysis

Study Point	Condition @ Study point	Q2-yr (cfs)	Q10-yr (cfs)	Q100-yr (cfs)
1	existing per SDP-91-002	0.8	3.0	12.5
	existing per BEI analysis	1	7	11
	developed (SDP-18-044)	0.67	0.85	10.84
2	existing per SDP-91-002 *	1.6 *	4.6 *	9.6 *
	existing per BEI analysis	4	10	20
	developed (SDP-18-044)	0.72	0.93	12.07

* These numbers represent what is leaving the pond. Not what is exiting the pipe at Study Point #2

Stormwater Management Summary Table

Practice	Drainage Area (sf)	Impervious Area (sf)	% Imp	Rv	Pe Required	ESDv Required	ESDv Provided	Pe Provided	Ownership
MB #1 ACF Focal Point	7,850	6,597	84%	0.81	1.1	580	589	1.1	Private
MB #2 ACF Focal Point	13,039	10,873	83%	0.80	1.1	957	972	1.1	Private
MB #3 ACF Focal Point	22,235	17,658	79%	0.76	1.1	1559	1594	1.1	Private
MB #4 ACF Focal Point	63,768	56,368	88%	0.85	1.1	4943	4951	1.1	Private
MB #5 ACF Focal Point	41,077	30,035	73%	0.71	1.1	2666	2681	1.1	Private
Totals per individual ESD Practice	147,969	121,531				10704	10787		
Totals per Overall Site	285,931	183,974	70%	0.68		9566	10787		
Total impervious untreated		62,443							

Notes:
 1. The Pe required column is based on a weighted average Pe per redevelopment calculations.
 2. The untreated impervious area of 61,066 sf does not need to be treated per redevelopment regulations. Only 50% of the existing impervious needs to be treated which amounts to 84,942 sf or 1.95 acres. We are treating 108,969 sf or 2.50 acres.
 3. The total ESDv provided exceeds the total ESDv Required.

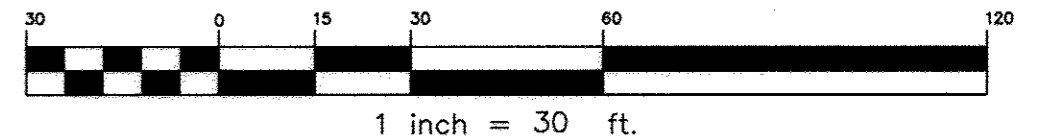
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Chubb
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5-24-18

Kent Sheehy
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 5-24-18

LEGEND

- EXISTING CONTOURS
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- ESD DRAINAGE AREAS
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ENVIRONMENTAL CONCEPT PLAN
SWM ESD DEVELOPED DRAINAGE AREA MAP

DATE: MAY 15, 2018
 BEI PROJECT NO. 2801

DESIGN: DBT
 DRAFT: DBT
 SCALE: AS SHOWN
 SHEET 3 OF 3