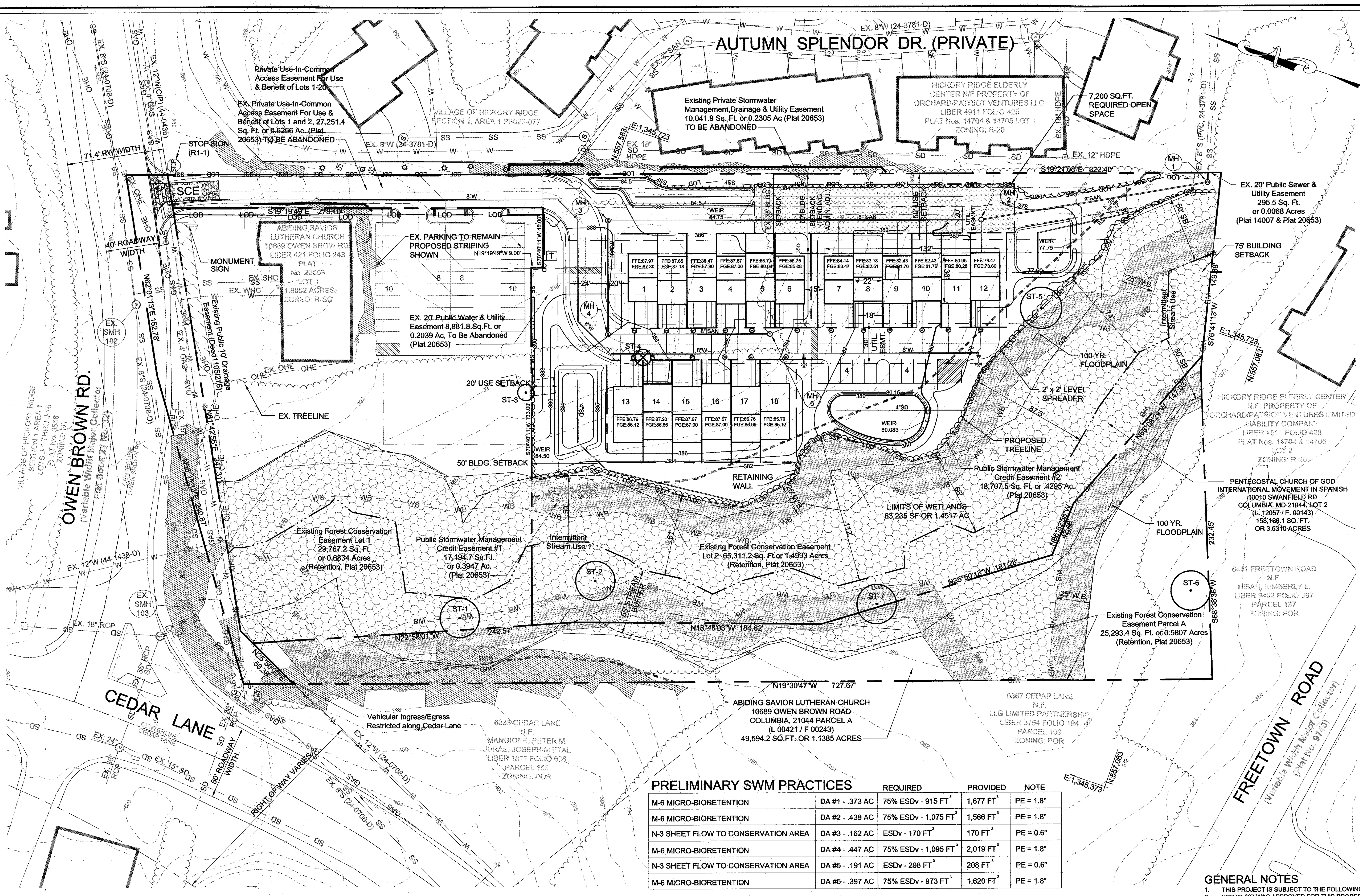
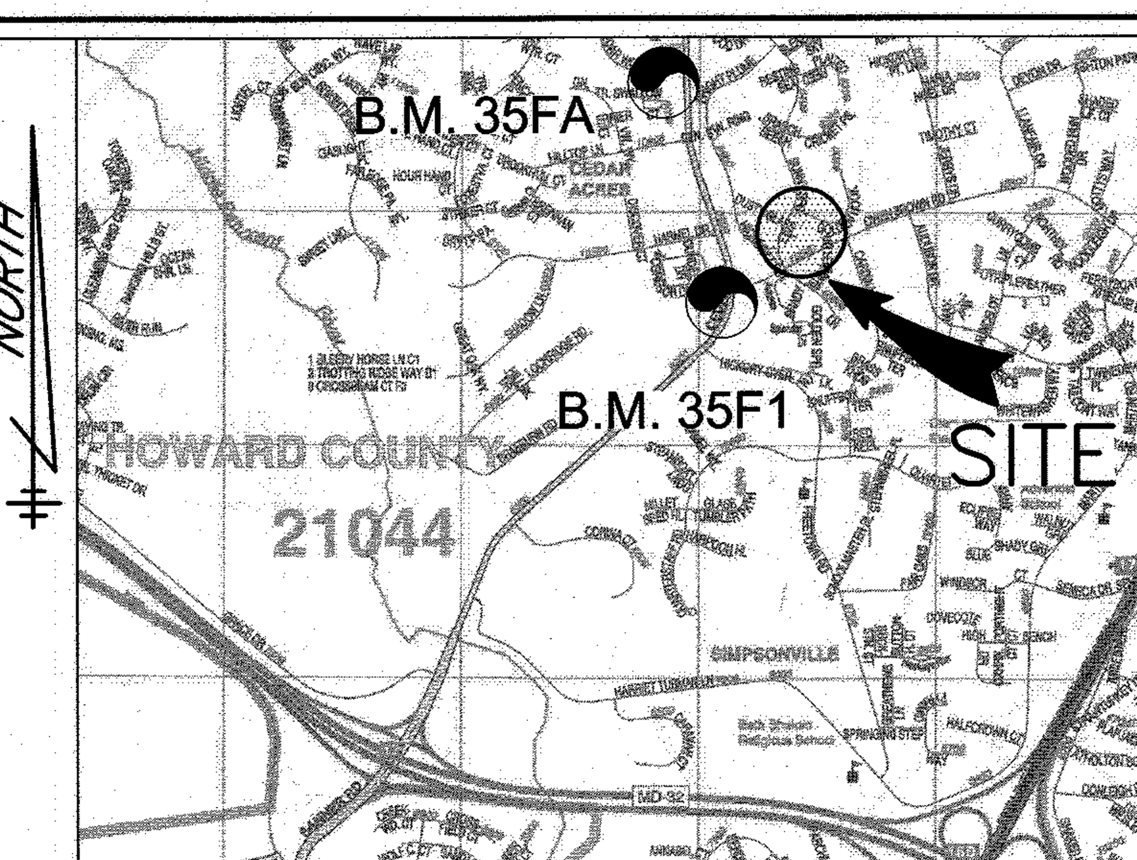


BM#35FA
NAD83 Elevation: 410.395'
Northing: 559266.1141
Easting: 1344682.6937

BM# 35F1
NAD83 Elevation: 400.490'
Northing: 557787.3693
Easting: 1345217.3147

ADC MAP: 32, E3

NORTH



VICINITY MAP

SCALE: 1" = 2000'

LEGEND

EXISTING

- STRUCTURE
- PROPERTY LINE
- EDGE OF ROADWAY
- SIDEWALK
- CENTER LINE OF ROADWAY
- 380 CONTOUR MAJOR
- 378 CONTOUR MINOR
- RIGHT OF WAY
- SD STORM DRAIN
- SS SANITARY
- W WATER
- GAS GAS
- OHE OVERHEAD ELECTRIC
- TREELINE TO BE REMOVED
- TREELINE TO REMAIN
- CENTERLINE OF STREAM
- STREAM BUFFER
- WET WETLAND
- 100 YR. FLOODPLAIN
- GbB / BaA SOILS
- WETLAND BUFFER
- SLOPES 15% OR GREATER
- ACCESS EASEMENT
- UTILITY EASEMENT
- FOREST CONSERVATION
- FIRE HYDRANT
- POWER POLE
- ST-3 SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED

PROPOSED

- STRUCTURE
- SIDEWALK
- OPEN SPACE
- LOT BOUNDARY
- PAVEMENT
- TREELINE
- LEVEL SPREADER
- CROSSWALK
- 390 CONTOUR MAJOR
- 388 CONTOUR MINOR
- WALL
- 8"W WATER MAIN
- WATER HOUSE CONNECTION
- FIRE HYDRANT
- PROPOSED STORM DRAIN
- 8"SAN SANITARY MAIN
- SANITARY HOUSE CONNECTION
- LOD LIMIT OF DISTURBANCE
- LOD SF SILT FENCE
- LOD SSF SUPER SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE W/MOUNTABLE BERM (MOUNTABLE BERM)
- T TRANSFORMER PAD
- BOLLARDS
- SPOT ELEVATION

SHEET INDEX

SHEET 1 OF 2 - ENVIRONMENTAL CONCEPT PLAN
SHEET 2 OF 2 - DRAINAGE AREA MAP

SITE ANALYSIS DATA SHEET

PROJECT AREA	4.769 AC
L.O.D AREA	2.01 AC
TOTAL IMPERVIOUS AREA	.99 AC
TOTAL FOREST AREA	2.47 AC
STEEP SLOPES 15% AND GREATER	0.15 AC
WETLAND BUFFER	1.89 AC
RECREATIONAL OPEN SPACE PROVIDED	0.17 AC
REQUIRED OPEN SPACE PROVIDED	2.63 AC
REQUIRED PARKING	45 P.S.
PROVIDED PARKING	80 P.S.
FLOODPLAIN	40 AC
ERODIBLE "D" SOILS NON-STEEP SLOPE	2.75 AC
ERODIBLE "D" STEEP SLOPE SOILS	0.06 AC
ERODIBLE "A" STEEP SPOLE SOILS	0.07 AC

PRELIMINARY SWM PRACTICES

		REQUIRED	PROVIDED	NOTE
M-6 MICRO-BIORETENTION	DA #1 - .373 AC	75% ESDv - 915 FT³	1,677 FT³	PE = 1.8"
M-6 MICRO-BIORETENTION	DA #2 - .439 AC	75% ESDv - 1,075 FT³	1,566 FT³	PE = 1.8"
N-3 SHEET FLOW TO CONSERVATION AREA	DA #3 - .162 AC	ESDv - 170 FT³	170 FT³	PE = 0.6"
M-6 MICRO-BIORETENTION	DA #4 - .447 AC	75% ESDv - 1,095 FT³	2,019 FT³	PE = 1.8"
N-3 SHEET FLOW TO CONSERVATION AREA	DA #5 - .191 AC	ESDv - 208 FT³	208 FT³	PE = 0.6"
M-6 MICRO-BIORETENTION	DA #6 - .397 AC	75% ESDv - 973 FT³	1,620 FT³	PE = 1.8"

SOILS TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP	K-FACTOR	SOIL MAP NUMBER	NOTES
BaA	BALE SILT LOAM	D	.37	MD 027	0% - 3% SLOPE
GbB	GLADSTONE LOAM	A	.28	MD 027	3% - 8% SLOPE
GbC	GLADSTONE LOAM	A	.28	MD 027	8% - 15% SLOPE

GENERAL NOTES

1. THIS PROJECT IS SUBJECT TO THE FOLLOWING DPZ FILES, F-08-123, BA 83-14E, AND BA 06-015C.
2. SDP 08-067 WAS APPROVED FOR THIS PROPERTY, HOWEVER THE IMPROVEMENTS WERE NEVER CONSTRUCTED.
3. F-08-123 WAS APPROVED AND RECORDED IN CONJUNCTION WITH SDP 08-067.
4. DESIGN NARRATIVE: SEE SWM & NATURAL RESOURCE PROTECTION REPORT.
5. NO GRADING OR REMOVAL OF VEGETATION COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS, 100 YEAR FLOODPLAIN AND AREAS OF STEEP SLOPES GRATER THAN 25% WITH A CONTIGUOUS AREA OF 20,000 SQUARE FEET OR GRATER UNLESS A FORMAL WAIVER PETITION IS GRANTED OR HAS BEEN DETERMINED TO BE A NECESSARY OR ESSENTIAL DISTURBANCE.
6. APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS,SITE DEVELOPMENT PLANS OR RED-LINE REVISION. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE HOWARD COUNTY ZONING REGULATIONS, AND CRESCENT NEIGHBORHOOD DOCUMENTS SHALL OCCUR AT THE SUBDIVISION PLAN, SITE DEVELOPMENT PLAN OR REDLINE REVISIONS REVIEW STAGE. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAIL REVIEW COMMENTS (INCLUDING COMMENT THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
7. THE FOREST CONSERVATION REQUIREMENTS FOR THE PROPOSED HIDDEN RIDGE DEVELOPMENT HAVE BEEN ADDRESSED, SEE MDC-693(SDP).
8. THERE ARE SEVEN SPECIMEN TREES LOCATED ON WITHIN THE PROPOSED HIDDEN RIDGE DEVELOPMENT, ST-4, 35" RED OAK, TO BE REMOVED.
9. THE OWNERSHIP OF PARCEL A WILL BE TRANSFERRED ALONG WITH THE OWNERSHIP OF LOT 2. DENSITY CALCULATIONS INCLUDE ACREAGE FROM PARCEL A.
10. AN ADMINISTRATIVE ADJUSTMENT IS REQUIRED FOR THE PROPOSED 60' BUILDING SETBACK.

SPECIMEN TREES

NO.	SIZE	TYPE	CONDITION
ST-1	34.5"	POPLAR	GOOD
ST-2	32.5"	AM. ELM	GOOD
ST-3	33.5"	RED OAK	GOOD
ST-4	35"	RED OAK	GOOD
ST-5	31"	WHITE OAK	GOOD
ST-6	38"	RED OAK	GOOD
ST-7	34.5"	SCARLET OAK	GOOD

Natural Resource Protection

The existing forest conservation area will be used to treat runoff. A 2' wide x 2' deep stone level spreader, along with additional landscaping, will reduce runoff velocity. The forested area will act as a natural wind and noise barrier from the surrounding collector roads (Cedar Lane & Freetown Road). The preservation and protection of the forested area will maintain an ecological balance and promote healthy wildlife.
The proposed micro-bioretention facilities with underdrains will provide adequate treatment of runoff by creating smaller, manageable amounts of water. These additional measures will prevent unwanted runoff from bypassing the stormwater management facilities. The preservation of existing vegetation will provide an adequate screen and noise buffer.

Maintenance of Natural Flow Patterns

Approximately 75% of the natural sheet flow is directed towards the existing forest conservation area. Currently, the natural flow patterns directly impact to the adjacent townhouse development. Runoff from the entry drive flows into the existing storm drain system that services the Village of Hickory Ridge. The Village of Hickory Ridge SWM facility was not designed to meet the increased run-off that is produced from the entry drive. The Hidden Ridge development will address this problem by adding curb and gutter along the entry drive, which will direct the flow into a proposed micro-bioretention facility for treatment. With the creation of smaller drainage areas, proposed SWM facilities, and additional vegetation, we have greatly reduced the flow of impervious runoff to the protected forested area. A decrease in runoff will minimize potential future erosion and flooding concerns to the downstream developments.

Reduction of impervious area through better site design

The reduction of impervious area through better site design was achieved through various site specific features. Impervious areas have been minimized in order to reduce runoff and runoff velocity to all proposed SWM facilities. Minimal driveway widths and depths are being proposed to reduce the impervious footprint. Specimen tress, forest conservation, and existing forested areas will be preserved to assist in SWM treatment. Open space preservation will further reduce the flow of runoff to the forest conservation area.

Integration of Erosion and Sediment Controls Into the Stormwater Strategy

During the construction phase appropriate ESC controls will be implemented to minimize the movement and deposit of sediment throughout the site. A stabilized construction entrance with mountable berm will prevent sediment from entering or exiting the site onto Owen Brown Road. The existing forest areas that will be directly impacted by construction runoff will be protected by super silt fence. Specimen tree ST-5 will require temporary tree protection during the construction phase. Once construction is completed, stone level spreaders will be put in place to reduce runoff into the forest conservation areas.

Implementation of ESD Planning Techniques and Practices to the MEP

The following techniques were used in order implement ESD to the MEP:
- Narrower, shorter streets.
- Vegetated micro-bioretention facilities.
- Shared visitor parking and 9'x18' parking stall dimensions.
- Maximize the use of open space throughout the community.
- Rooftop runoff directed to conservation areas for treatment.
- Minimal grading to conserve existing vegetation.
- Additional planting will be added to the existing forest conservation area to increase the forested area.
- Existing vegetation preservation will act as a natural buffer from the surrounding developments and adjacent collector roadways.
- Additional vegetation will be used throughout the site.

Alternative Compliance

1. Subdivision and Land Development Regulations - Section 16.120 (C)(4) For a private road to a Single Family Attached development that exceeds 200' in length.
2. Zoning Regulations - Section 16.134(a) to officially accept the sidewalk arrangement shown, based on recommendations from the Planning Director.

Design Manual Waivers

1. Volume III - Roads and Bridges, Chapter 2, Appendix A, Note #5: Any access place and/or access street in townhouse, condaminium/apartment development will require 26' of pavement width.

Section 16.116 (c) Necessary Disturbance

No grading, removal of vegetation and tress and paving is located within wetland, stream, wetland buffers or steep slopes.

1. The proposed entry drive impedes into the "A" soils steep slopes. Due to the configuration of the pipestem lot, this disturbance is unavoidable, as there are no other reasonable alternatives to access the site. The site is bordered by a protected forest conservation area to the south and west, east is the Village of Hickory Ridge development, and is the north Abiding Savior Lutheran Church.

GRAPHIC SCALE

40 0 20 40 80 160

1 inch = 40 ft.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-30-16

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-21-16

PHOENIX ENGINEERING, INC.
309 INTERNATIONAL CIRCLE, SUITE 130
HUNT VALLEY, MD 21030
PHONE: 410-329-1150 FAX: 410-329-1110
WWW.PHOENIX-ENG.COM

OWNER / DEVELOPER:
KB COMPANIES, INC.
7 OLD CISTERN COURT
CATONSVILLE, MD 21228
703-556-9569
ATTN: PATRICK BYRNE

Drawn By: KPM	Project Manager: KPM
Date: September 26, 2016	Scale: AS SHOWN
Checked: KMW	Dwg: ECP01.DWG

REVISION NOTES

Date	No.	Comment

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. 36065 Exp. Date: 6-26-18

Date 11-16-16

STATE OF MARYLAND KEVIN M. WALKER No. 36065 PROFESSIONAL ENGINEER

KEVIN M. WALKER
Professional Engineer
Number 36065

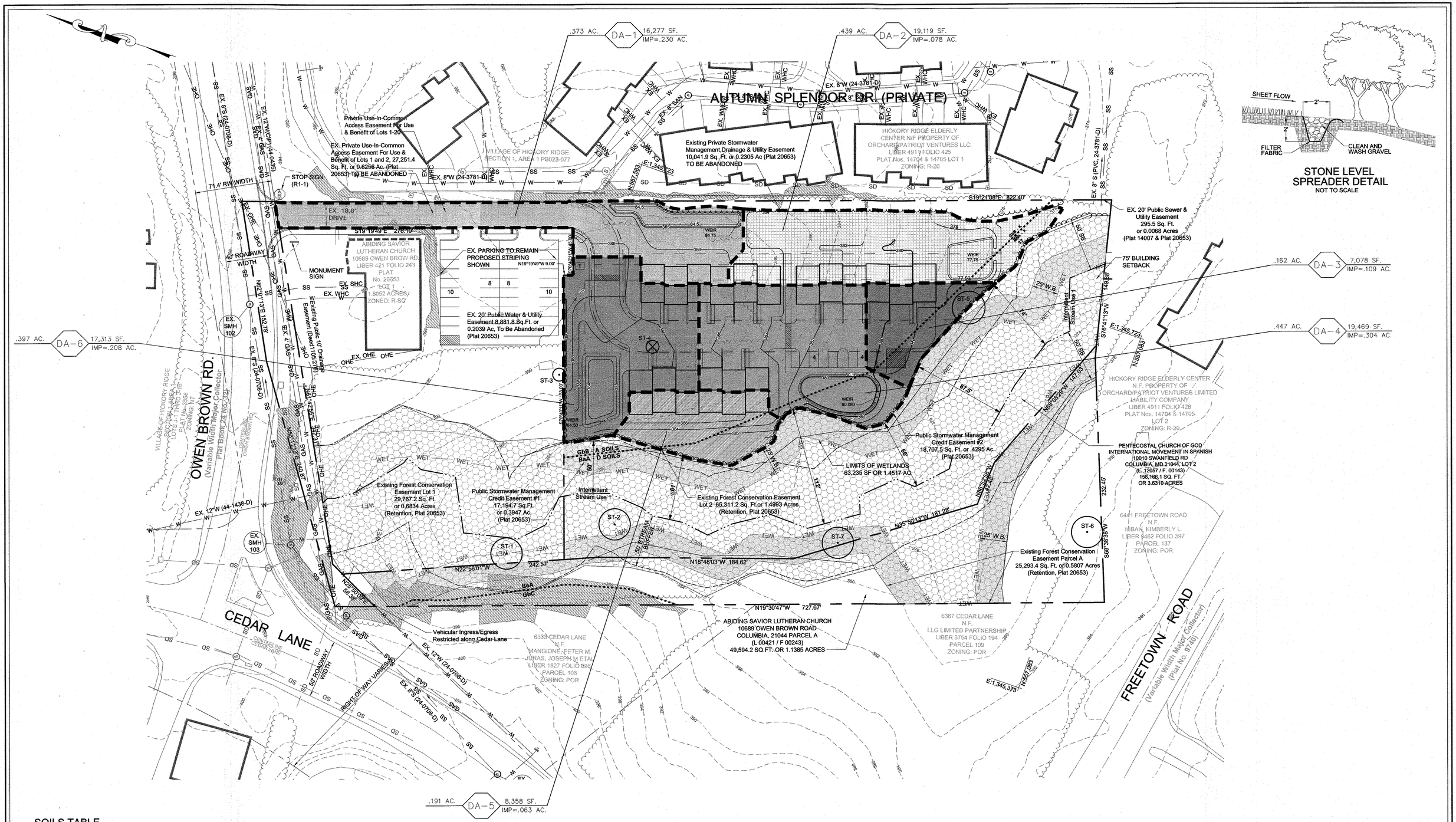
ENVIRONMENTAL CONCEPT PLAN

HIDDEN RIDGE
10689 OWEN BROWN ROAD

ZONING: R-SC-MEDIUM DENSITY RESIDENTIAL
TAX MAP: 35 GRID: 18 PARCEL: 238 DISTRICT: 05
ACCOUNT #: 376203 LIBER: 421/FOLIO: 243 PLAT: 20653
CENSUS TRACT: 605602 CENSUS BLOCK: 3

HOWARD COUNTY, MARYLAND

ECP-16-043



STONE LEVEL SPREADER DETAIL
NOT TO SCALE

SOILS TABLE

MAP UNIT SYMBOL	MAP UNIT NAME	HYDROLOGIC SOIL GROUP	K-FACTOR	SOIL MAP NUMBER	NOTES
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ATTN: PATRICK BYRNE

Drawn By: KPM	Project Manager: KPM
Date: September 26, 2016	Scale: AS SHOWN
Checked: KMW	Dwg: DA02.DWG

REVISION NOTES

Date	No.	Comment

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. 36065 Exp. Date: 6-26-18

Date 11/16/16

STATE OF MARYLAND KEVIN M. WALKER No. 36065 PROFESSIONAL ENGINEER

KEVIN M. WALKER
Professional Engineer
Number 36065

PROPOSED CONDITIONS DRAINAGE AREA

HIDDEN RIDGE
10689 OWEN BROWN ROAD

ZONING: R-SC-MEDIUM DENSITY RESIDENTIAL
TAX MAP: 35 GRID: 18 PARCEL: 238 DISTRICT: 05
ACCOUNT #: 376203 LIBER: 421/FOLIO: 243 PLAT: 20653
CENSUS TRACT: 605602 CENSUS BLOCK: 3

HOWARD COUNTY, MARYLAND

SHEET NO.: 2 OF 2

ECP-16-043