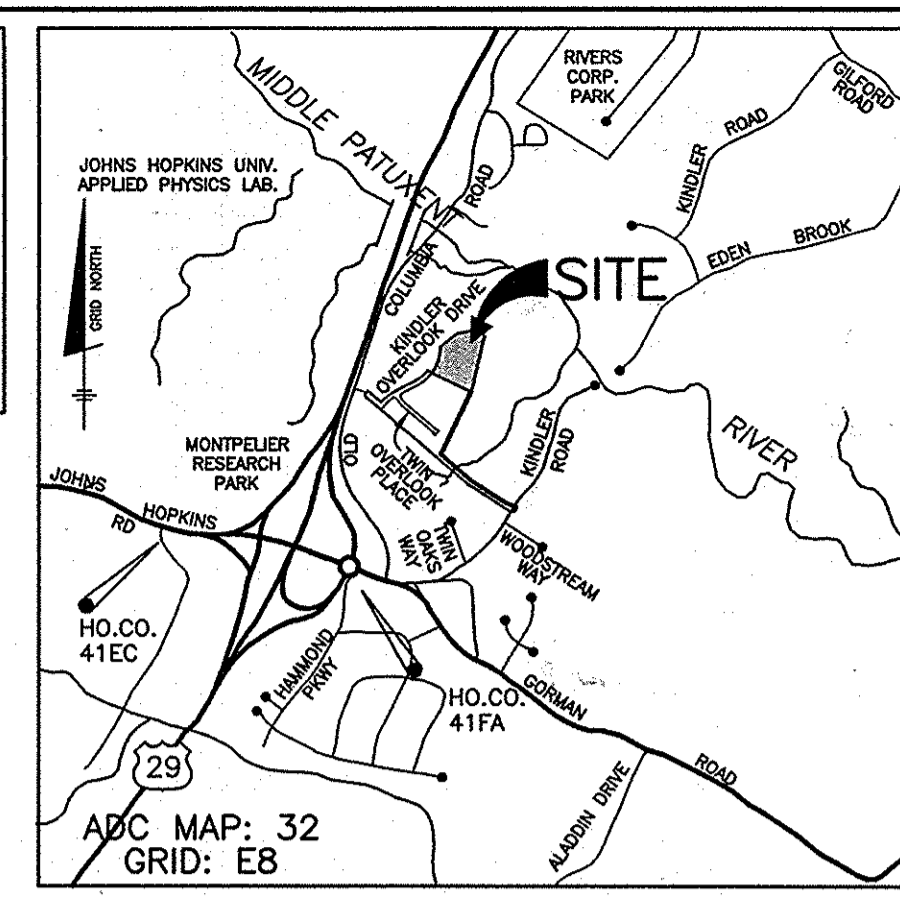


BENCH MARKS—(NAD'83)

HO.CO. 41EC	ELEV. 430.34
STAMPED DISC SET ON TOP OF 3' DEEP COLUMN OF CONCRETE	
N 543,588.8040	E 1,342,628.7800
HO.CO. 41FA	ELEV. 407.60
STAMPED DISC SET ON TOP OF 3' DEEP COLUMN OF CONCRETE	
N 545210.7590'	E 1344786.9530'



LEGEND

- EXISTING CONTOURS
- EXISTING STEEP SLOPES 25% OR GREATER
- EXISTING STEEP SLOPES 15% TO 24.9%
- EXISTING TREELINE
- PROPOSED TREELINE
- PROJECT BOUNDARY
- PROPOSED STORM DRAIN
- FOREST CONSERVATION EASEMENT
- SOILS DELINEATION LINE
- SOILS TYPE
- FACILITY DRAINAGE AREA
- SSSF SUPER SILT FENCE
- SF SILT FENCE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- TEMPORARY EROSION CONTROL MATTING
- GABION MAT
- INFLOW PROTECTION
- EARTH DIKES
- SOFT #1 STONE OUTLET
- SEDIMENT TRAP
- STANDARD INLET PROTECTION

GENERAL NOTES

- SUBJECT PROPERTY ZONED R-20 PER COMPREHENSIVE ZONING PLAN EFFECTIVE 10-6-13.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE ZONING REGULATIONS EFFECTIVE APRIL 13, 2004.
- TRACT BOUNDARY AND TOPOGRAPHY (EXCEPT THE PORTION ALONG THE 'FLAGSTEM') IS BASED ON A FIELD RUN BOUNDARY SURVEY PERFORMED OCTOBER, 2008 BY BENCHMARK ENGINEERING, INC. OFFSITE AND FLAGSTEM TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY GIS.
- 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. #41EC AND #41FA WERE USED FOR THIS PROJECT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
- WETLAND DELINEATION/CERTIFICATION PROVIDED BY WILDMAN ENVIRONMENTAL SERVICES DATED DECEMBER 17, 2006 AND REVISED IN JULY, 2007. AN ADDITIONAL WETLAND STUDY WAS PERFORMED FOR THE SEWER ALIGNMENT DECEMBER, 2008 BY ECO-SCIENCE PROFESSIONALS, INC.
- THERE ARE STEEP SLOPES (25% OR GREATER) ON THIS SITE. HOWEVER, THERE ARE NO AREAS IN EXCESS 20,000 S.F. WITHIN THE PLANNED DISTURBANCE AREAS, AND THEREFORE NO REGULATED STEEP SLOPES WITHIN THE PROJECT AREA.
- FOREST STAND DELINEATION PROVIDED BY WILDMAN ENVIRONMENTAL SERVICES DATED DECEMBER 17, 2006 AND SUPPLEMENTED IN JULY, 2007.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES LOCATED ON THIS SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER WILL BE PUBLIC.
- FOREST CONSERVATION SHALL BE MET BY THE ON-SITE RETENTION AND OFFSITE PLANTING AS DETERMINED IN THE PENDING REVISION OF F-10-051.
- THE PREVIOUS OPZ FILES FOR THIS SITE ARE S-07-003, WP-07-068, WP-08-048, P-09-003, 34-4613-D, F-10-051, WP-10-165, WP-11-090, WP-12-055, WP-13-151, WP-14-036.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY BENCHMARK ENGINEERING, INC., DATED DECEMBER 18, 2002 AND APPROVED UNDER SP-03-001 (KINDLER OVERLOOK II). NO ADDITIONAL STUDY WAS PERFORMED FOR THIS PROJECT. KINDLER OVERLOOK II, AS THE FLOODPLAIN IS ONLY ACROSS THE PROPERTY ALONG THE LONG FLAGSTEM. NO IMPROVEMENTS ARE BEING PROPOSED IN THIS AREA.

DESIGN NARRATIVE:

The site was analyzed as woods in good condition and a target RCN was determined. A target rainfall depth treatment (Pe) was determined based on the measured impervious areas and HSG soil types. The target Pe for this site is 1.6 inches. The target Pe was treated using Environmental Site Design practices as outlined in Chapter 5 of the 2000 Maryland Stormwater Design Manual, as amended by Maryland's Stormwater Management Act of 2007. The selected treatment method is a series of bio-retention facilities.

This site contains two small streams with associated buffers which cross the property within the flagstem connection to Kindler Road. No wetland or streams or their buffers occur within the developable area of the site. The site has some areas of steep slopes in excess of 25%. To protect natural resource areas, it is important to delay release of stormwater runoff from new impervious areas to avoid increasing peak runoffs, and to adequately treat the stormwater to avoid damage to sensitive species. In addition it is necessary to maintain adequate runoff to wetland and stream areas. The design incorporates large lots with minimum width driveways and shared driveway facilities in order to create the least possible stormwater runoff.

Conceptual treatment has been designed based on preliminary grading, the site topography and the house and driveway locations. Impervious surfaces will be treated with a series of micro-bio-retention facilities. Multiple outfalls are provided to generally release runoff in natural drainage patterns for the site.

Sediment and erosion controls have been designed based on the 2011 Maryland Specifications for Soil Erosion and Sediment Control. Erosion control matting and super silt fence will be used to prevent runoff containing unacceptable levels of TSS from leaving the site and entering the adjacent wetlands during the construction. It will be the obligation of the contractor to install, inspect and maintain these practices.

The target Pe for this site is 1.6 inches. By using Environmental Site Design practices as outlined in Chapter 5 of the 2000 Maryland Stormwater Design Manual as amended by Maryland Stormwater Management Act of 2007, full treatment of the target Pe of 1.6 will be achieved.

No Design Manual waivers or Waiver Petitions are anticipated at this time.

PROJECT:	Kindler Overlook II	DATE:	01/27/14			
PRACTICES AND SIZING						
Pe:	1.6	inches				
MBR ID	Drainage Area	Impervious	I (%)	Rv	ESDv (cf)	Required ESD Storage
MB-A	37829	10084	27%	0.290	1462	1097
MB-B	22615	6466	29%	0.307	927	695
MB-1	13089	4093	31%	0.331	578.4	434
MB-2	15081	5325	35%	0.368	739.4	555
MB-3	14976	4234	28%	0.304	607.9	458
MB-4	12361	3088	25%	0.275	453.0	340
MB-5	6232	2000	32%	0.339	281.5	211
MB-6	12865	3176	25%	0.272	466.9	350
MB-7	11258	2000	18%	0.210	315.1	238

SITE ANALYSIS DATA/TABULATION

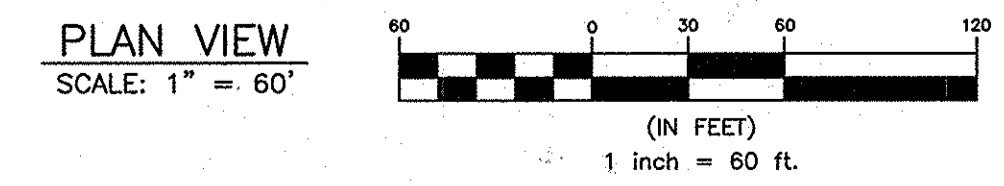
- A) TOTAL PROJECT AREA..... 6.10± AC.
- B) EFFECTIVE SITE AREA FOR SHM..... 4.00± AC.
- C) AREA OF WETLANDS AND BUFFER*..... 0.00± AC.
- D) AREA OF 100-YR. FLOODPLAIN & BUFFER*..... 0.00± AC.
- E) AREA OF FOREST*..... 3.53± AC.
- F) AREA OF STEEP SLOPES 15% OR GREATER*..... 3.66± AC.
- G) HIGHLY ERODIBLE SOILS (> 0.35)*..... 0.00± AC.
- H) LIMIT OF DISTURBED AREA..... 3.81± AC.
- I) PROPOSED USE: SINGLE FAMILY DETACHED DWELLINGS
- J) GREEN OPEN AREA..... 3.05± AC.
- K) IMPERVIOUS COVER..... 0.95± AC.

*THE TOTAL PROPERTY AREA IS 6.1 ACRES. THE EFFECTIVE SITE AREA FOR STORMWATER MANAGEMENT IS 4.0 ACRES. THE ABOVE ENVIRONMENTAL AREAS INCLUDE ONLY THOSE LOCATED WITHIN THE EFFECTIVE SITE AREA. ENVIRONMENTAL AREAS OUTSIDE OF THE LIMIT OF DISTURBANCE ARE NOT INCLUDED IN THIS ANALYSIS, AS THEY WILL NOT BE IMPACTED.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Scott Calverley 5/15/14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Phil Phelan 5-16-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION PLANS, SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. 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, SITE DEVELOPMENT PLAN OR RED-LINE REVISION REVIEW STAGE. 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.

SHEET INDEX

NO.	DESCRIPTION
1	COVER SHEET
2	ENVIRONMENTAL CONCEPT AND SEDIMENT CONTROL PLAN
3	SEDIMENT CONTROL PLAN, NOTES AND DETAILS

NO.	DATE	REVISION

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

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 LICENSE NO. 28376
 EXPIRES 5-13-14
 I hereby certify that the documents were prepared or approved by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 28376, Expiration Date: 5-13-2015.

OWNER/DEVELOPER: ROBERT MOWREY 826 FROG MORTAR ROAD MIDDLE RIVER, MARYLAND 21220 443-955-3043	KINDLER OVERLOOK II LOTS 1 thru 7 AND OPEN SPACE LOTS 8 thru 10
LOCATION: TAX MAP: 41 GRID: 18 PARCEL: 366 ZONED: R-20 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	TITLE: COVER SHEET
DATE: MAY, 2014	BEI PROJECT NO. 1962
SCALE: AS SHOWN	SHEET 1 OF 3

SOILS LEGEND			
SYMBOL	TYPE	K _f FACTOR	NAME
GgC	B	.20	GLENELG LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
GmC	B	.37	GLENVILLE SILT LOAM - 8 TO 15 PERCENT SLOPES
GoB	B	.37	GLENVILLE-CORDORUS SILT LOAMS - 0 TO 8 PERCENT SLOPES
MaB	B	.24	MANOR LOAM - 3 TO 8 PERCENT SLOPES
MaC	B	.24	MANOR LOAM - 8 TO 15 PERCENT SLOPES
MoD	B	.24	MANOR LOAM - 15 TO 25 PERCENT SLOPES
MkF	B	.24	MANOR BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES - VERY ROCKY

SOILS TAKEN FROM NRCS WEB SOIL SURVEY, MARCH 17, 2014
*WHOLE SOIL K FACTOR

LEGEND	
	EXISTING CONTOURS
	EXISTING STEEP SLOPES 25% OR GREATER
	EXISTING STEEP SLOPES 15% TO 24.9%
	EXISTING TREELINE
	PROPOSED TREELINE
	PROJECT BOUNDARY
	PROPOSED STORM DRAIN
	FOREST CONSERVATION EASEMENT
	SOILS DELINEATION LINE
	SOILS TYPE
	FACILITY DRAINAGE AREA
	SUPER SILT FENCE
	SILT FENCE
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	STABILIZED CONSTRUCTION ENTRANCE
	TEMPORARY EROSION CONTROL MATTING
	GABION MAT INFLOW PROTECTION
	EARTH DIKES
	STONE OUTLET SEDIMENT TRAP
	STANDARD INLET PROTECTION



APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 5/15/14
 CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 5-16-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION
BENCHMARK ENGINEERS & LAND SURVEYORS & PLANNERS ENGINEERING, INC. 6840 BALTIMORE NATIONAL PIKE SUITE 315 ELLICOTT CITY, MARYLAND 21043 (P) 410-465-8105 (F) 410-465-6844 WWW.BE-CIVILENGINEERING.COM		 Professional Engineer (P.E.) I 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. 28376, Expiration Date: 1-1-2015.
OWNER/DEVELOPER: ROBERT MOWREY 826 FROG MORTAR ROAD MIDDLE RIVER, MARYLAND 21220 443-955-3043		KINDLER OVERLOOK II LOTS 1 thru 7 AND OPEN SPACE LOTS 8 thru 10 LOCATION: TAX MAP: 41 GRID: 18 PARCEL: 386 ZONED: R-20 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND TITLE: ENVIRONMENTAL CONCEPT AND SEDIMENT CONTROL PLAN DATE: MAY, 2014 BEI PROJECT NO. 1962 SCALE: AS SHOWN SHEET 2 OF 3

