SEQUENCE OF CONSTRUCTION

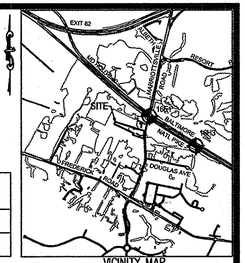
1. Obtain a Grading Permit.
2. Install Standard Construction Entrance.
3. Install the sediment control measures as shown on plan.
4. Perform necessary grading and construction of house and driveway extension.
5. Stabilize the site with topsoil and seeding.
6. After the site is permanently stabilized and permission is granted from the Howard County Sediment Control Inspector, remove sediment controls and stabilize any remaining disturbed areas.

SITE ANALYSIS DATA CHART

TOTAL SITE AREA	= 3.11 ACRES
SITE AREA WITHIN WETLAND	= 1,690 S.F. (0.04 ACRES)
AREA WITHIN 25' WETLAND BUFFER	= 5,140 S.F. (0.12 ACRES)
AREA OF STEEP SLOPES (>=15%)	= 1,700 S.F. (0.04 ACRES)
AREA OF ERODIBLE SOILS	= 0 S.F.
AREA WITHIN 100-YR FLOODPLAIN	= 0 S.F.
AREA WITHIN 100' STREAM BUFFER	= 26,000 S.F. (0.6 ACRES)
TOTAL FORESTED AREA	= 57,600 S.F. (1.28 ACRES)
TOTAL DISTURBED (LOD) AREA	= 32,500 S.F. (0.75 ACRES)
TOTAL FORESTED AREA TO BE CLEARED	= 4,625 S.F. (0.11 ACRES)
PROPOSED GREEN OPEN SPACE	=2.926 ACRES
PROPOSED IMPERVIOUS AREA	=0.184 ACRES
PROPOSED ASPHALT PAVEMENT	=0.088 ACRES
PROPOSED BUILDING	=0.088 ACRES
PROPOSED WALKWAY	=0.007 ACRES

16E1

SHEET INDEX



VICINITY MAP
SCALE 1"=2000'
ADC MAP COORDINATES 19 C-4

GENERAL NOTES

1. CURRENT TITLE REFERENCE
   OWNER – KEVIN H. & KYONG S. SON
   DEED REFERENCE – LIBER 14790, FOLIO 473
   DATE – MARCH 18, 2013
   GRANTOR – JONG Y. & KYUNG S. YOO
2. PROPOSED USE: SINGLE FAMILY RESIDENTIAL
   PROPOSED SEWER – PRIVATE
   PROPOSED WATER – PUBLIC
3. THE OUTLINE SHOWN HEREON IS BASED ON AN ON THE GROUND FIELD SURVEY.
4. THE TOPOGRAPHY OF THIS PLAT IS TAKEN FROM FIELD RUN INFORMATION BY BPR, INC. IN APRIL 2013 AND IS VERIFIED TO ACCURATELY REPRESENT THE RELATIVE CHANGES ON THE SUBJECT PROPERTY. THE DATUM USED IS BASED ON NAVD88, HOWARD COUNTY CONTROL BENCH MARK 16E1.
5. THERE ARE NO FLOODPLAINS ON SITE.
6. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 ATLEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
7. CONTRACTOR TO MAINTAIN POSITIVE SLOPE AWAY FROM THE FOUNDATION OF THE HOUSE.
8. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN OR GRADING PERMIT.
9. THERE IS A PERENNIAL STREAM ON THE SOUTH EAST CORNER OF THE PROPERTY, WITH A SMALL AREA OF ASSOCIATED WETLANDS ON SITE.
10. THERE ARE NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES ON SITE.
11. WATERSHED = LITTLE PATUXENT RIVER (DNR #02131105)
12. THE SUBJECT PROPERTY IS ZONED RC-DEO IN ACCORDANCE WITH THE OCTOBER 6, 2013 COMPREHENSIVE ZONING REGULATIONS.
13. WAIVER PETITION WP-14-082 APPROVED ON FEBRUARY 20, 2014 TO THE FOLLOWING SECTIONS:
    a. SECTION 16.116(a)(2)(iii) TO ALLOW GRADING AND PAVEMENT WITHIN THE 100' STREAMBANK BUFFER SUBJECT TO THE FOLLOWING CONDITIONS:
       (i) ALL MOWING AND GARDENING ACTIVITIES MUST CEASE WITHIN THE WETLAND AND 25' WETLAND BUFFER
       (ii) SUBJECT TO COMPLIANCE WITH THE "RC" ZONING DISTRICT REGULATIONS REGARDING BUILDING SETBACKS AND HEIGHT
       (iii) SUBJECT TO COMPLIANCE WITH THE BUILDING AND GRADING PERMIT REQUIREMENTS FOR THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS.
    b. SECTION 16.1205(a)(7) FOR REMOVAL OF SPECIMEN TREE #2 SUBJECT TO THE FOLLOWING CONDITIONS:
       (i) SPECIMEN TREE #4 SHALL BE SAVED AND TREE PROTECTION DEVICES MUST BE INSTALLED AROUND SPECIMEN TREE #4 DURING INSTALLATION OF THE SEPTIC FIELD.
       (ii) SUBMIT A NOTARIZED DECLARATION OF INTENT FOR A SINGLE LOT CLEARING LESS THAN 20,000 SQUARE FEET OF FOREST TO DPZ WITH SUBMISSION OF THE ECP ORIGINAL.
14. WAIVER PETITION WILL REMAIN VALID FOR ONE YEAR FROM FEBRUARY 20, 2014, OR AS LONG AS THIS ECP/GRADING PLAN REMAINS IN ACTIVE PROCESSING.
15. FOREST CONSERVATION REQUIREMENTS WILL BE ADDRESSED BY SUBMITTING A "DECLARATION OF INTENT" EXEMPTION FOR CLEARING LESS THAN 20,000 SQ.FT. OF FOREST.

STORMWATER MANAGEMENT PRACTICE CHART
2830 MARRIOTTSVILLE ROAD

Practice	Location
Rooftop Disconnection - B	Front of House
Rooftop Disconnection - C	Front of House
Rooftop Disconnection - D	Front of House
Rooftop Disconnection - E	Front of House
Rooftop Disconnection - G	Back of House
Rooftop Disconnection - H	Back of House
Rooftop Disconnection - I	Back of House
Non-rooftop Disconnection	Driveway
Non-rooftop Disconnection	Walkway
Rain Barrel-A	North side of House
Rain Barrel-F	Back of House

SOIL TABLE

SYMBOL	NAME/DESCRIPTION	HYDRIC	TYPE
GgC	Glenelg loam, 8 to 15 % slopes	NO	B
GmB	Glenville silt loam, 3 to 8 % slopes	YES	C
GnB	Glenville-Baile silt loams, 0 to 8% slopes	YES	C

Howard County Soil Map No. 12

NOTE: Temporary or permanent stabilization is to be provided at the direction of the sediment control inspector, or at the time frames required by the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, which ever is more restrictive.

SPECIMEN TREES

SYMBOL	NAME/DESCRIPTION	
1	41.5" RED OAK - GOOD	To Remain
2	40" POPLAR - GOOD	To be Removed
3	30" POPLAR - GOOD	To Remain
4	33.5" POPLAR - GOOD	To Remain
5	37" POPLAR - GOOD	To Remain
6	35" POPLAR - GOOD	To Remain
7	33" POPLAR - GOOD	To Remain
8	30.5" WHITE OAK - GOOD	To Remain

LEGEND

- FENCE LINE
- SUBJECT BOUNDARY
- ADJOINING BOUNDARY
- 100 — EX. MINOR CONTOURS
- 102 — EX. MAJOR CONTOURS
- 1 — PASSED PERCOLATION TEST
- 464 — PROPOSED CONTOURS
- STRUCTURE/PAVING TO BE DEMOLISHED
- DISCONNECTION OF NON-ROOFTOP RUNOFF
- PROP. WATER LINE
- PROP. SANITARY LINE
- SOIL LINE
- LOD — LIMIT OF DISTURBANCE
- SF SF SF — SILT FENCE
- SSF SSF — SUPER SILT FENCE
- STANDARD CONSTRUCTION ENTRANCE
- PRIVATE SEPTIC AREA (10,000 SF)
- EXISTING TREELINE
- SPECIMEN TREE
- EX. STREAM
- 100' STREAM BUFFER
- WETLAND LIMITS
- 25' WETLAND BUFFER
- TPF TPF — TREE PROTECTION FENCE
- (N-1) ····· DISCONNECTION OF ROOFTOP RUNOFF
- M-1 — 60-gallon RAIN BARREL

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS
3300 NORTH RIDGE ROAD
ELLICOTT CITY, MD 21043
PHONE: (410) 203-9800
FAX: (410) 203-9228
www.kci.com

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 # 8818, EXPIRATION DATE: 10/17/2014

STATE OF MARYLAND – DHARAM V. KATHURIA – REG. NO. 21084 – PROFESSIONAL ENGINEER

4/22/14

OWNER/DEVELOPER
Kevin Son
2830 Marriottsville Road
Marriottsville, MD 21104
(240) 731-0792

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, Development Engineering Division — Date 4.28.14

CHIEF, Division of Land Development — Date 4/28/14

ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer — Date 4/22/14

DHARAM V. KATHURIA
Print name of Engineer

DEVELOPER'S CERTIFICATE

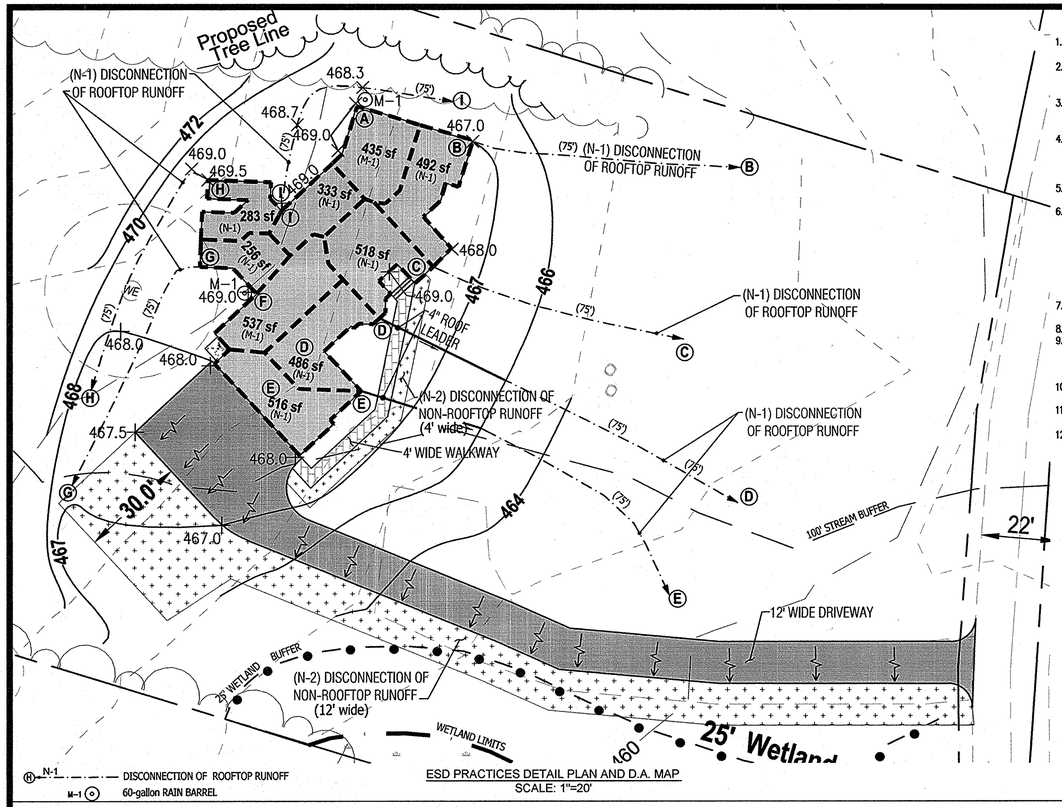
I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at MD Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer (KEVIN SON) — Date 4/23/14

ECP PLAN
SON PROPERTY
2830 MARRIOTTSVILLE ROAD
RECORDED IN LIBER 14790, FOLIO 473
ZONING RC-DEO 3rd ELECTION DIST. HOWARD COUNTY, MARYLAND
TAX MAP – 16 GRID – 16 PARCEL – 47

SCALE: 1" = 40'	JOB NO.: 13111	DATE : APRIL 2, 2014	SHEET : 1 OF 2

ECP #14-020



Ⓗ N-1 ·-·-·-·- DISCONNECTION OF ROOFTOP RUNOFF

M-1 ⊙ 60-gallon RAIN BARREL

ESD PRACTICES DETAIL PLAN AND D.A. MAP
SCALE: 1"=20'

STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days as to all other disturbed or graded areas on the project site.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec.B-4-3). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
5. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
6. Site Analysis:

Total Area of Site	=	3.1137 Acres
Area Disturbed	=	0.75 Acres
Area to be roofed or paved	=	0.18 Acres
Area to be vegetatively stabilized	=	0.57 Acres
Total Cut	=	To be balanced onsite
Total Fill	=	To be balanced onsite

Offsite waste/borrow area location:

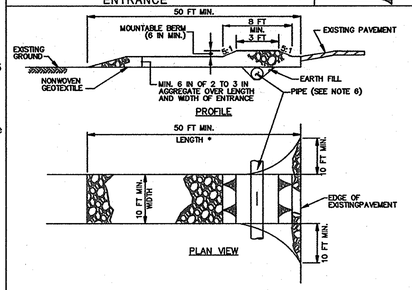
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
9. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
10. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized within one working day, whichever is shorter.
11. Any changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding with construction.
12. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the enforcement authority. Unlessotherwise specified and approved by the approval authority, no more than 30 acres cumulatively may be disturbed at a given time.

STORMWATER MANAGEMENT SUMMARY TABLE

Practice	Location	Impervious Area Treated
Rooftop Disconnection - B	Front of House	492 ft²
Rooftop Disconnection - C	Front of House	518 ft²
Rooftop Disconnection - D	Front of House	486 ft²
Rooftop Disconnection - E	Front of House	516 ft²
Rooftop Disconnection - G	Back of House	256 ft²
Rooftop Disconnection - H	Back of House	283 ft²
Rooftop Disconnection - I	Back of House	333 ft²
Non-rooftop Disconnection	Driveway	3,833 ft²
Non-rooftop Disconnection	Walkway	330 ft²
Rain Barrel-A	North side of House	435 ft²
Rain Barrel-F	Back of House	537 ft²
Total Impervious Area requiring treatment = 8,019 square feet		
Total Impervious Area treated = 8,019 square feet		

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

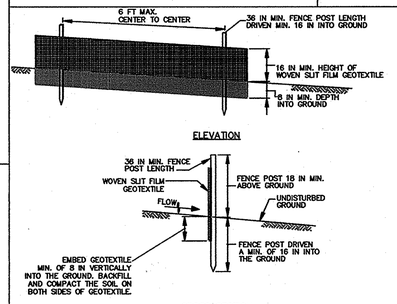
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



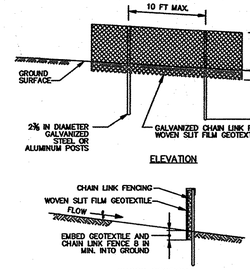
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1⅜ X 1⅜ ± 3/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

2 OF 2

SWM Concept Design Narrative

Stormwater management at the proposed development will be addressed by implementing Environmental Site Design (ESD) practices to the maximum extent possible (MEP), in accordance with the revised Maryland Department of the Environment (MDE) Stormwater Design Manual Chapter 5.

The proposed development is not within any Critical Areas per Appendix D.4, nor is this a redevelopment project, or a commercial/industrial project. This site is not defined as a hot spot.

Environmental Site Design (ESD) will be achieved for the project by non-structural and structural ESD practices. These include Disconnection of Rooftop Runoff (N-1), Disconnection of Non-rooftop Runoff (N-2), and Rainwater Harvesting (M-1).

Background
The property is currently developed with a two-story house near the front of the property, associated lawn area, and an 18-foot wide gravel driveway. The lawn area surrounds the home, and several outbuildings and gardens are present within the lawn. The old residential structure will be replaced with a new, two-story house of approximately 3,856 square feet in area. The existing driveway will be replaced with a new 12-foot wide driveway according to the County Standards.

The property is currently serviced by public water and a private septic system. The property is not subject to Historic District Commission requirements. The property does not lie within the BWI Airport Noise Zone or the Airport Zoning District. Furthermore, the property is not subject to Design Advisory Panel review (Route 1 or Route 40 Corridor).

Natural Resources Protection and Enhancement
The rear of the property contains a brushy edge that transitions into a Tulip Poplar-dominated forest, approximately 1.28 acres in area. Eight specimen trees were identified on site, from fair to good condition. The overall community which extends offsite includes a more diverse mixed Oak/Poplar community. A small wetland/stream system is present in the southeastern corner of the property. This system extends onto the subject property from the adjacent property. The 25-foot buffer from the wetland is maintained as mowed lawn. The stream channel cuts across the corner of the site and runs through the wetlands. Portions of the stream channel have received sediment deposition and the channel is disturbed. The wetland/stream system drains to the Little Patuxent and is part of the Use IV-P watershed. The stream is subject to a 100-foot perennial stream buffer.

The proposed demolition of old house and driveway, and construction of the new house and driveway is anticipated to cause disturbance of approximately 10,200 square feet of stream buffer area. This disturbance will be caused by demolition activity, grading, and new paving within the 100' stream buffer. The disturbance will NOT involve removal of vegetative cover or trees, or construction of a structure within the buffer. Any disturbance within the non-tidal wetlands and its buffers has been avoided.

The proposed development will REDUCE total impervious area within the stream buffers from 4,815 square feet to 2,925 square feet - a 40% reduction. This positive impact will be brought about by removing the old house which currently is partially located within the buffer, and reducing the total width of driveway from existing 18 feet to 12 feet.

The construction activity will also cause removal of one specimen tree (#2). In an attempt to locating the house as far away from the stream buffer as possible, the limit of disturbance will unavoidably extend into the Critical Root Zone (CRZ) of Specimen Tree #2.

Maintenance of Natural Flow Patterns
Natural topography of the site exhibits runoff flowing eastward towards Marriottsville Road. Approximately half of the site flows into a wetland stream system located at the south-east corner, which in turn drains to a culvert that passes under Marriottsville Road. The proposed design maintains the natural flow patterns on site. Minimal grading will be performed to preserve the hydrologic characteristics of the land to its pre-development stage. The post-developed drainage patterns very closely mimic the existing hydrology. All runoff from proposed impervious areas and from treatment facilities flow directly onto grassed areas, before being conveyed to the ultimate discharge points.

Reduction of Impervious Areas
The house footprint has been minimized by proposing a 2-story house with basement rather than a rancher-style design. The proposed driveway width will be kept to the minimum allowed by the County, and reduced from the current 18' to 12'. To reduce the limit of disturbance to a minimum, the new house is sited in the front portion of the property. The extremely long and narrow shape of the parcel influenced the location of the house in the wider portion of the property. Advantage was also taken of using the existing driveway and extending it to a minimum extent possible, in order to reduce total impervious area on site.

Integration of Erosion & Sediment Controls into SWM Strategy
A stabilized construction entrance will ensure that any construction equipment does not track mud onto public roads. Silt fence will be installed on downstream side of the limit of disturbance to trap any sediment-laden runoff during construction.

Implementation of ESD Planning Techniques and Practices
The following is an overview of applicability for stormwater ESD practices considered for this project.

Alternative Surfaces: ESD practice includes green roofs, permeable pavements, and reinforced turf. Green roofs were not applied due to the relative high cost of the system for a residential structure. Permeable pavements such as porous pavement and concrete pavers were not used due to on-site "C" soil type. Reinforced turf has not been used, since frequent vehicle movement is expected on the driveway.

Nonstructural Practices: ESD practice involves directing flow from impervious areas onto vegetated areas where it can soak into or filter over ground instead of being connected to storm drain system. Disconnection of Rooftop Runoff (N-1) has been applied to treat runoff from most of the rooftop area, providing overland flow not steeper than 5%. Disconnection of non-rooftop runoff (N-2) is being applied for the driveway and walkway, which are sloped not more than 5%, to facilitate natural treatment and infiltration of rainwater into the ground . Sheetflow to Conservation Areas (N-3) is not applicable since there are no preserved environmental areas downstream of outfall.

Structural Micro-Scale Practices: Rainwater Harvesting (M-1) will be used to treat runoff from the remaining rooftop downspouts. These downspouts are unable to be disconnected for sufficient length to be eligible as N-1 practices.

Waiver to Environmental Regulations
A waiver petition in support of ECP-14-020, for construction of a single family was approved by the County on February 20, 2014. The approved waivers were to the following Sections of the Subdivision and Land Development Regulations:

Section 16.116 (a) (2) (iii), which states that "Grading, removal of vegetative cover and trees, paving and new structures shall not be permitted within 100 feet of a perennial streambank for use III & IV streams; and

Section 16.1205 (a) (10), which requires retention of specimen trees (30" dbh or greater) that are not contained within other priority forest retention areas as outlined in Section 16.1205(a)(1-9).

OPERATION AND MAINTENANCE SCHEDULE DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

a. Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The Owner shall ensure the areas receiving runoff are protected from future compaction or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

OPERATION AND MAINTENANCE SCHEDULE FOR RAINWATER HARVESTING (M-1)

a. The Owner shall empty barrels on a monthly basis and clean barrel with a hose.
b. The Owner shall verify integrity of leaf screens, gutters, downspouts, spigots, and mosquito screens, and clean and remove any debris.
c. The Owner shall replace damaged components as needed.
d. The Owner shall disconnect the barrel prior to winter, or allow the barrel to drain by bottom spigot during the winter season.

ECP #14-020

KCI TECHNOLOGIES
ENGINEERS
PLANNERS
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CONSTRUCTION MANAGERS
3300 NORTH RIDGE ROAD
ELLICOTT CITY, MD 21043
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FAX: (410) 203-9228
www.kci.com

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 # 8818, EXPIRATION DATE: 10/17/2014

4/22/14

OWNER/DEVELOPER
Kevin Son
2830 Marriottsville Road
Marriottsville, MD 21104
(240) 731-0792

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, Development Engineering Division — Date 4.28.14

CHIEF, Division of Land Development — Date 4/28/14

ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer — Date 4/22/14

DHARAM V. KATHURIA
Print name of Engineer

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at MD Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer (KEVIN SON) — Date 4/23/14

ECP NOTES & DETAILS

SON PROPERTY

2830 MARRIOTTSVILLE ROAD
RECORDED IN LIBER 14790, FOLIO 473
ZONING RC-DEO 5TH ELECTION DIST. HOWARD COUNTY, MARYLAND
TAX MAP - 16 GRID - 16 PARCEL - 47

SCALE: 1" = 40'	JOB NO.: 13111	DATE : APRIL 2, 2014	SHEET : 2 OF 2