

GENERAL NOTES

- SUBJECT PROPERTY IS ZONED R-20 PER THE 10-6-2013 COMPREHENSIVE ZONING PLAN.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, DATED OCTOBER 7, 2007.
- PROJECT LIMITS ARE BASED ON THE RECORD PLAT FOR TEMORA, RECORDING REFERENCE 5567.
- TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY PREPARED BY BENCHMARK ENGINEERING, INC. DATED MAY 2015, AND HOWARD COUNTY 2011 GIS. CONTOUR INTERVAL IS 2'.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE STREAMS, WETLANDS, THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION ELEMENTS' AREAS.
- THERE ARE NO STEEP SLOPES (25% OR GREATER) IN EXCESS OF 20,000 S.F. ON THIS SITE. THERE ARE 1,983 S.F. OF MODERATE SLOPES RANGING FROM 15%-24.99% LOCATED ON THIS SITE.
- THERE IS NO NEED FOR A FLOOD STUDY FOR THIS PROJECT. THERE ARE NO FLOODPLAINS, WETLANDS OR THEIR BUFFERS LOCATED ON-SITE. THERE IS A NO STREAM BUT A 100 FT STREAM BUFFER IS LOCATED IN THE SOUTHEAST CORNER OF THE SITE.
- TO THE BEST OF OUR KNOWLEDGE THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
- ANISE STUDY IS NOT REQUIRED FOR THIS PLAN.
- THIS SITE IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND THE PLANNED SERVICE AREA. WATER AND SEWER WILL BE PUBLIC CONNECTIONS PROPOSED TO CONTRACTS 20-1452-D AND 24-1050-D.
- THE SITE AREA IS LESS THAN 20,000 S.F., THEREFORE, THE SITE SHALL BE EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1202(B)(1)(i) OF THE SUBDIVISION REGULATIONS FOR DEVELOPMENT ON LAND WHICH IS LESS THAN 20,000 S.F. IN SIZE. PREVIOUS DPZ FILES: PLAT 5567, F-82-97, EOP-15-084, SFP-15-022.
- PERMITS FOR LANDSCAPING IS NOT REQUIRED FOR THIS PROPERTY AS ALL LINES ARE INTERIOR TO THE SUBDIVISION. ONE STREET TREE IS REQUIRED. SURETY IN THE AMOUNT OF \$300 FOR THE TREE SHALL BE POSTED AS PART OF THE BUILDING PERMIT PLAN.
- APPROVAL OF THE EOP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION AND/OR SITE DEVELOPMENT PLAN.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
 - SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.).
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM 45' TURNING RADIUS.
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
 - STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS, OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS OR DECKS. OPEN OR ENCLOSED, MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
- A PRE-SUBMISSION COMMUNITY MEETING FOR THIS PROJECT IS NOT REQUIRED.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- EXISTING UTILITIES SHOWN ARE BASED ON A FIELD SURVEY, HOWARD COUNTY GIS, AND INFORMATION OF RECORD.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE BUILDER'S EXPENSE. CONTRACTOR SHALL ADJUST ELEVATIONS OF STRUCTURES AS NECESSARY.
- SHC SHALL BE THE RESPONSIBILITY OF THE OWNER.
- STORMWATER MANAGEMENT METHODS WERE DESIGNED BASED ON THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II. TREATMENT IS PROVIDED USING ENVIRONMENTAL SITE DESIGN METHODS, INCLUDING MICRO-BIORETENTION PRACTICE. THE FACILITY SHALL BE OWNED AND MAINTAINED BY LOT OWNER.
- BRL INDICATES ZONING RESTRICTION LINE. OTHER RESTRICTIONS MAY APPLY.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- THE STAKING OF FOUNDATIONS PRIOR TO CONSTRUCTION TO ENSURE COMPLIANCE WITH REGULATORY BUILDING RESTRICTION LINES IS RECOMMENDED.

DESIGN NARRATIVE:

The Effective Site Area was analyzed as woods in good condition and a target RCN was determined. The Hydrologic Soil Group was determined by Howard Soil Survey. The soils were determined to be group "C". The Effective Site Area is comprised of the area of the site which will be developed and excludes protected environmental areas which will be preserved. A target rainfall depth treatment (Pa) was determined based on the measured impervious areas and HSG soil types. The target Pe for this site is 1.6 inches. The target Pa 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 method is landscape infiltration (M-3).

A 100 ft stream buffer exists on the furthest southeast corner of the property although no stream exists on-site. This site contains no floodplains/wetlands or associated buffers. To protect natural resource areas, it is important to delay release of stormwater runoff from new impervious areas to avoid increasing peak runoff, and to adequately treat the stormwater to avoid damage to sensitive species. In addition it is necessary to maintain adequate runoff to wetland areas. The design incorporates minimum width driveways in order to create the least possible stormwater runoff, and provided runoff release in multiple locations. Tree cover exists on site but no area constitutes a forest nor are there any specimen trees.

Conceptual treatment has been designed based on preliminary grading, the site topography and the house and driveway locations. Driveway areas may be treated by on-lot landscape infiltration. ESD volume will be provided in the landscape infiltration facility. Generally rooftop runoff will be piped to on-site landscape infiltration facility. The outfall provided generally releases runoff in natural drainage pattern 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, silt fence, 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. Impervious areas that are treated or treated to 1.0" (water quality treatment) in the landscape infiltration facility. 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, ESD is provided to the MEP though full treatment of the target Pe of 1.6 cannot be achieved because part of the facility will be collecting runoff from grass areas and grading all of driveway to the landscape infiltration facility is not possible.

This site is not required to provide Qf for extreme flood protection.

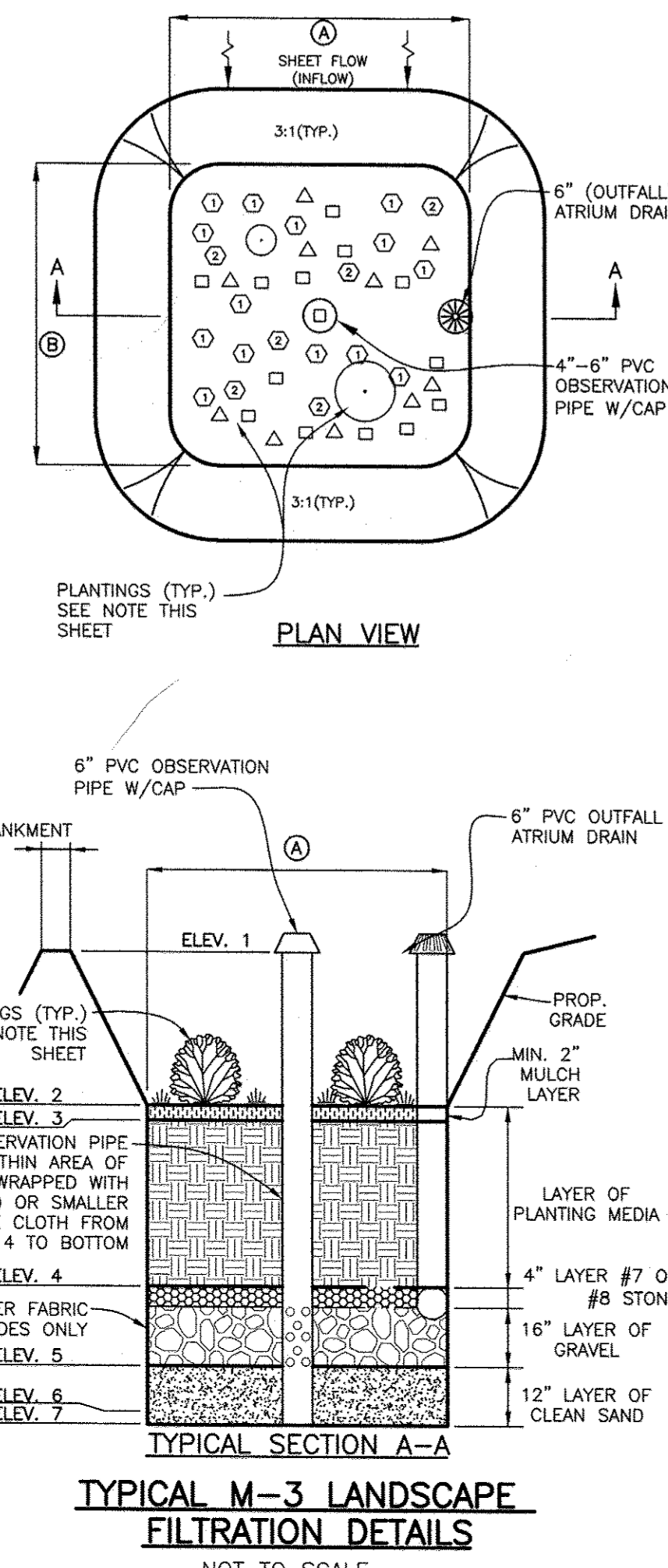
ESD/Site Data Summary			
Name of Development	TEMORA LOT 6 SWM		
Watershed	Patapsco River Lower North Branch		
Watershed Designation	2-13-09-06	Class	I
Area of Site	9921 square feet	Percent	30%
Impervious Cover	2936 square feet	Percent	30%
Area of A soils	0 square feet	Percent	0%
Area of B soils	9921 square feet	Percent	100%
Area of C soils	0 square feet	Percent	0%
Area of D soils	0 square feet	Percent	0%
Target RCN	55		
Target Pe	1.60 inches		
Achieved Pe	1.63 inches	pass	102%
Target ESDv	423 cubic feet		
Achieved ESDv	429 cubic feet		101%
Required Qf	0 cubic feet		
Provided Qf	0 cubic feet	N/A	N/A

PROJECT BACKGROUND INFORMATION
 PRESENT ZONING: R-20
 LOCATION: TAX MAP 24 - GRID 23 - P/O PARCEL 300
 APPLICABLE DPZ FILE REFERENCES: PLAT 5567
 DEED REFERENCES: LOT 06 (L05082 / F.004777)

PROPOSED USE OF SITE: RESIDENTIAL (SFD)
PROPOSED WATER AND SEWER SYSTEMS: PUBLIC WATER & SEWER

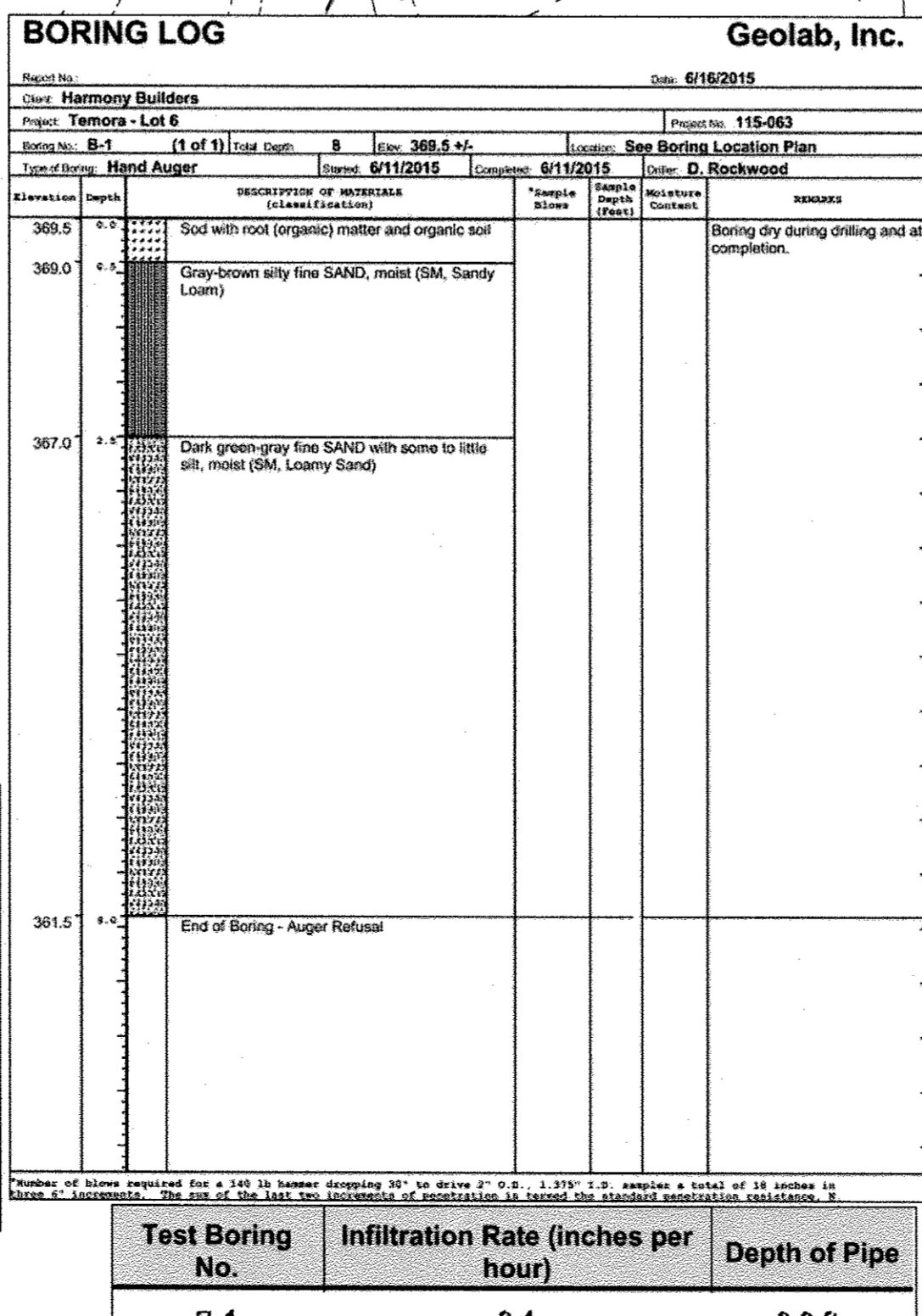
SITE DATA TABULATION	
1) TOTAL PROJECT AREA.....	0.32 AC.±
2) AREA OF 100-YR. FLOODPLAIN.....	0.00 AC.
3) AREA OF MODERATE SLOPES (15%-24.9%).....	0.04 AC.±
1-3%) AREA OF STEEP SLOPES (25% OR GREATER).....	0.00 AC.
4) AREA OF EXISTING FOREST.....	0.00 AC.
5) AREA OF ERODIBLE SOILS.....	0.00 AC.
6) AREA OF WETLANDS (INCLUDING BUFFER).....	0.00 AC.
7) AREA OF STREAM BUFFER (OUTSIDE WETLANDS & BUFFER).....	0.00 AC.
8) NET AREA OF SITE(S).....	0.32 AC.±
9) NUMBER OF LOTS ALLOWED.....	1
10) NUMBER OF RESIDENTIAL LOTS PROPOSED.....	1
11) AREA OF PLAN SUBMISSION.....	0.32 AC.±
12) APPROXIMATE LIMIT OF DISTURBANCE.....	0.31 AC.±
13) PRESENT ZONING DESIGNATION.....	R-20
14) PROPOSED USES FOR THE SITE & STRUCTURES.....	RESIDENTIAL-SFD
15) MINIMUM LOT SIZE.....	20,000 SF
16) OPEN SPACE REQUIRE.....	N/A
17) OPEN SPACE PROVIDED (CREDITED).....	0.00 AC.
18) OPEN SPACE PROVIDED (TOTAL).....	0.00 AC.
19) RECREATIONAL OPEN SPACE REQUIRED.....	N/A
20) RECREATIONAL OPEN SPACE PROVIDED.....	N/A
21) NUMBER OF PARKING SPACES REQUIRED.....	N/A
22) TOTAL NUMBER OF PARKING SPACES PROVIDED.....	N/A
23) BUILDING COVERAGE AREA (IMPERVIOUS).....	0.04 AC (±12%)
24) TOTAL IMPERVIOUS AREA.....	0.07 AC (±24%)

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 DATE: 1-5-18
 DATE: 1-31-18



#	ELEV.	DEPTH
1	368.50	
2	367.50	
3	367.33	
4	366.50	
5	364.70	
6	366.17	
7	363.70	

MICRO-BIORETENTION PLANTING LEGEND	
SYMBOL	NAME
①	Vinca minor (COMMON PERIWINKLE)
②	Ajuga reptans (CREEPING BUGLEWEED)
□	Iris versicolor (IRIS)
△	Elymus virginicus (VIRGINIA WILD RYE)
○	Vaccinium vitis-idaea (LITTLE BLUE BERRY)



ESD Practices Summary Table				
Lot No.	Practice	MDE	Number	Ownership/Maintenance
LOT 6	Landscape Infiltration	(M-3)	1	Private

SOILS LEGEND			
MAP SYMBOL	SOIL TYPE	MAPPING UNIT	K FACTOR
LoB	B	LEGORE-MONTALTO-URBAN LAND COMPLEX; 0 TO 8 PERCENT SLOPES	0.28/0.32
LoC	B	LEGORE-MONTALTO-URBAN LAND COMPLEX; 8 TO 15 PERCENT SLOPES	0.28/0.32

ESD Micro-Scale Practices Summary Table									
Target Pa	1.80 inches	Target Pa	0.61 inches	Target ESDv	433 cf				
Drainage Area	Practice	MDE Type	Total DA Imp. Area	Oe	Imp. Treated by Practice	sd Proc	sd Proc	sd Proc	sd Proc
LOT 6	L11	(M3)	6,688	2,287	0.70	2,287	110	164	96
Totals			6,688	2,287	0.70	2,287			

BENCHMARK ENGINEERING, INC.
 8480 BALTIMORE NATIONAL PIKE & SUITE 315 ELLICOTT CITY, MARYLAND 21043
 (P) 410-465-8105 (F) 410-465-6644
 WWW.BE-ENGINEERING.COM

OWNER:
 BROWN, CHRISTOPHER L AND BROWN, KAREN T/E
 4228 COLUMBIA RD
 ELLICOTT CITY, MD 21043

DEVELOPER:
 HARMONY BUILDERS INC.
 4228 COLUMBIA RD
 ELLICOTT CITY, MARYLAND 21043
 410-463-0833

TEMORA LOT 6 (F-82-97)
 4220 COLUMBIA ROAD
 ELLICOTT CITY, MD 21042

TAX MAP 24, GRID 23, PARCEL 300
 ZONED: R-20 (LOW DENSITY RESIDENTIAL)
 ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND

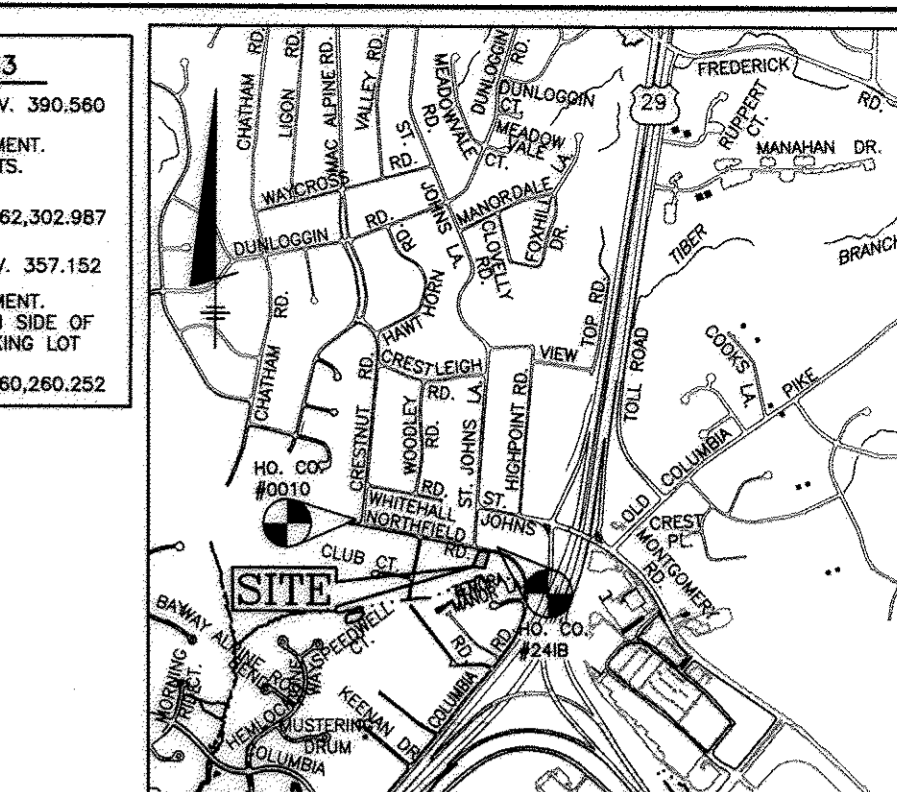
ENVIRONMENTAL CONCEPT PLAN COVER AND GRADING PLAN

DATE: OCTOBER, 2015
 SCALE: AS SHOWN
 BEI PROJECT NO. 2694
 SHEET 1 OF 2

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.

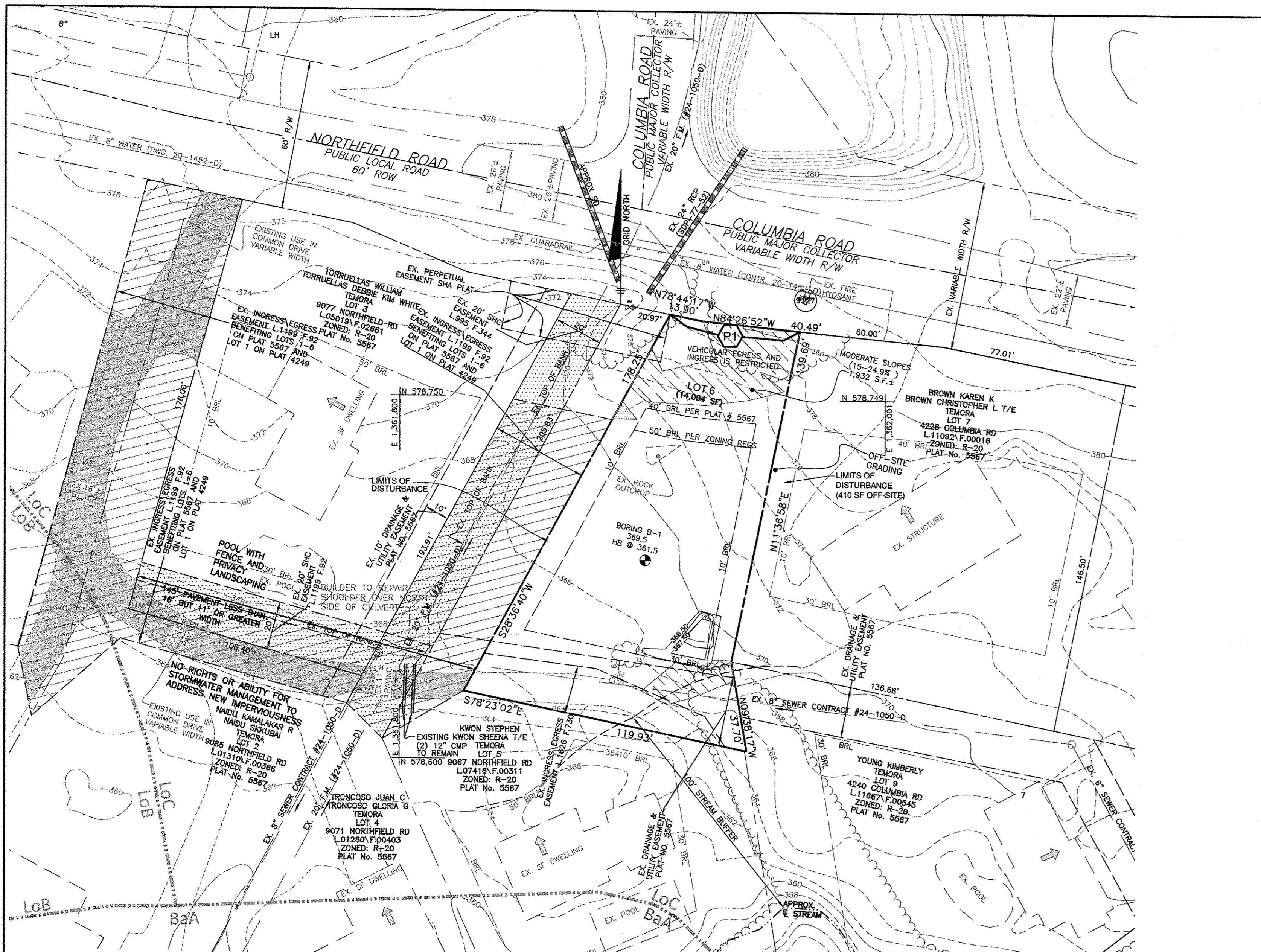
NOTE: STORMWATER MANAGEMENT HAS BEEN DESIGNED FOR A TOTAL HOUSE IMPERVIOUS AREA OF 1675 SF. SHOULD A HOUSE TYPE REVISION BE REQUIRED THAT CAUSES THE HOUSE TO EXCEED THE DESIGN AREA, THE STORMWATER MANAGEMENT WILL BE REEVALUATED AT THAT TIME.

SHEET INDEX	
NO.	DESCRIPTION
1	COVER AND GRADING PLAN
2	SEDIMENT & EROSION CONTROL, EXISTING CONDITIONS, AND STORMWATER MANAGEMENT PLANS

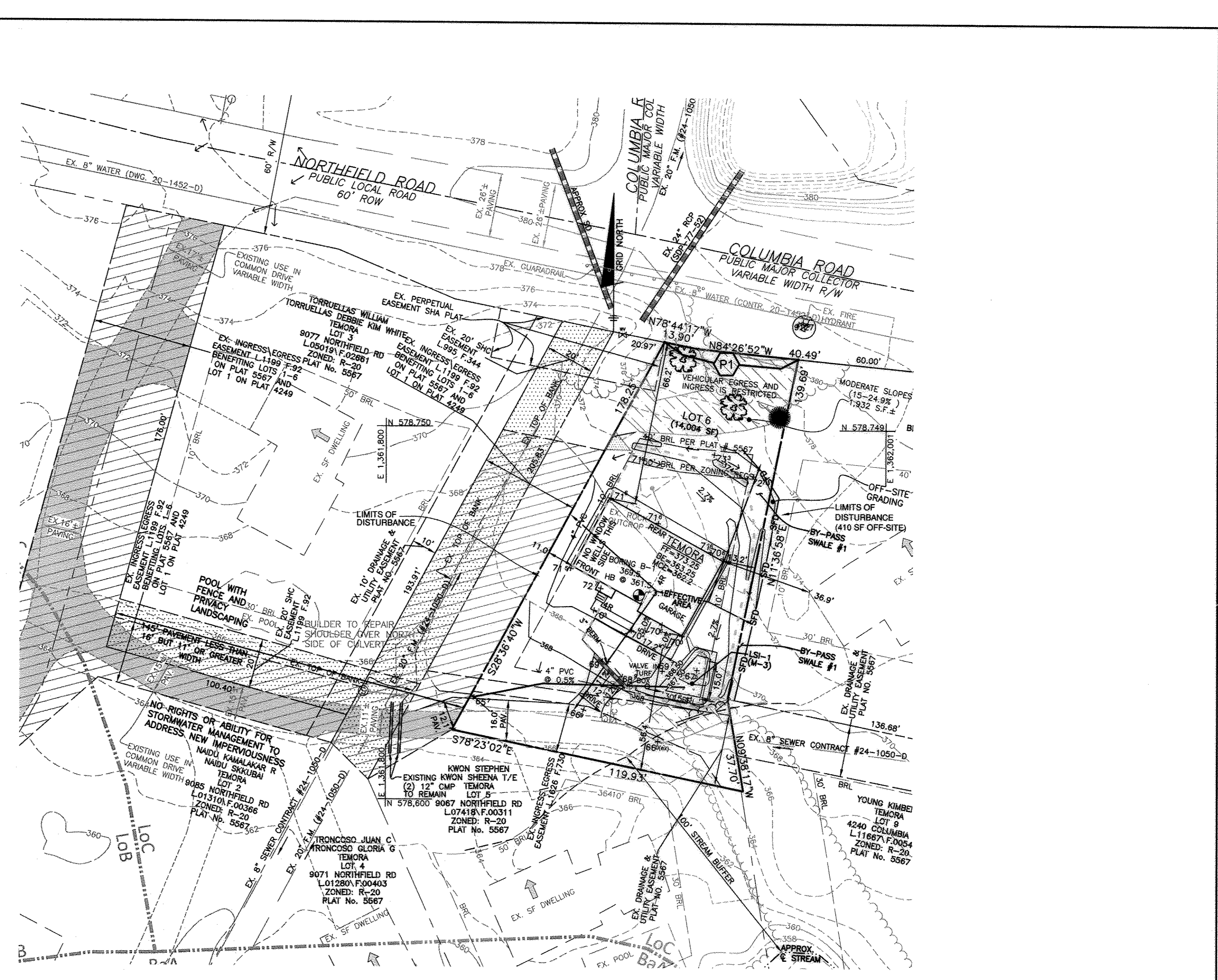


VICINITY MAP
 SCALE: 1"=2000'

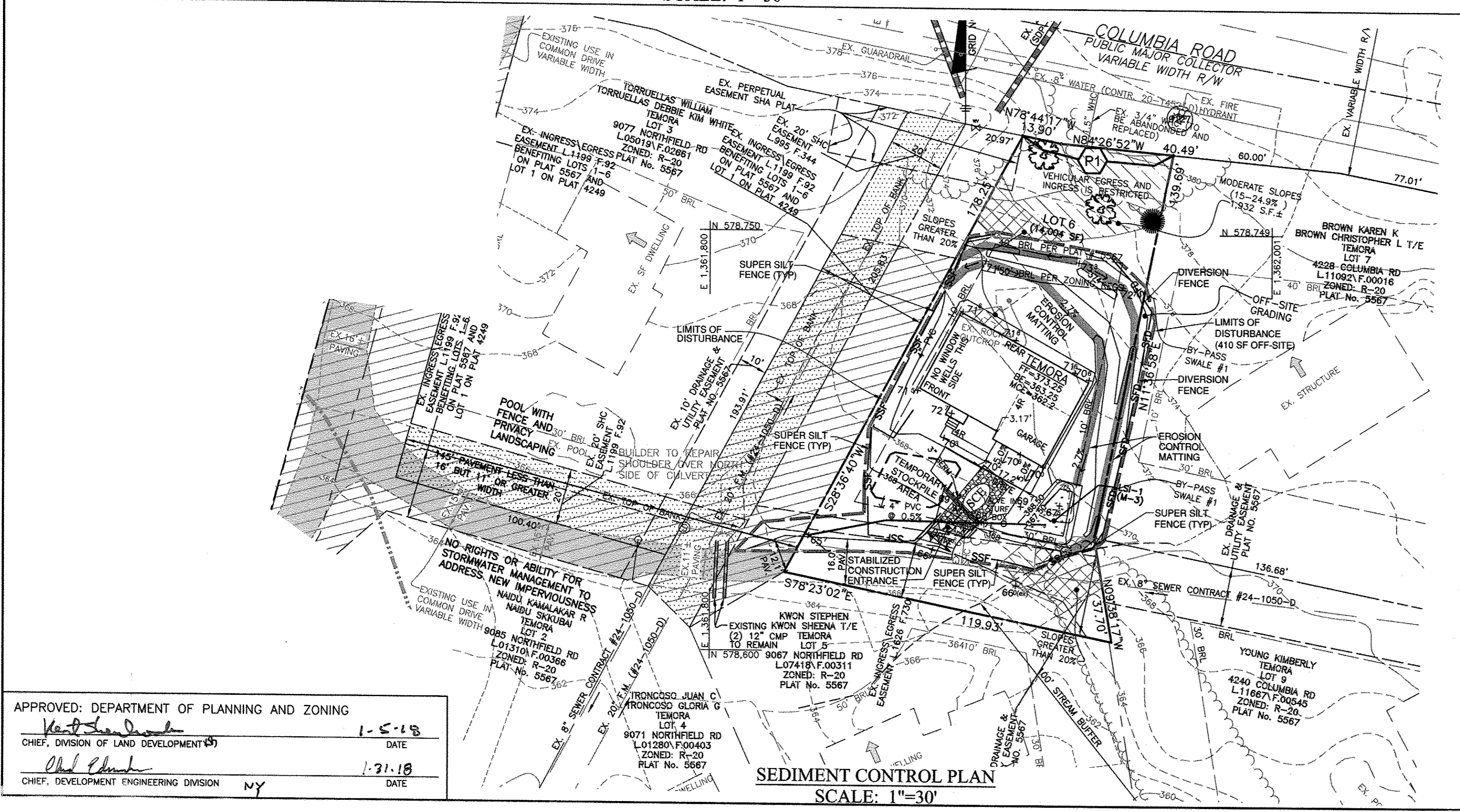
LEGEND	
SOILS CLASSIFICATION	GnB
SOILS DELINEATION	--- 5-69
EXISTING CONTOURS	--- 570
PROPOSED CONTOURS	--- 568
EXISTING WOODS LINE	--- 570
PROPOSED WOODS LINE	--- 568
STREAM BUFFER	--- 570
EXISTING UIC DRIVE	--- 570
EXISTING INGRESS FOR EASEMENT (PER DEED L-1199/F.92)	--- 570
PROPOSED STRUCTURE	--- 570
BORING LOCATION	⊕ B-1
15% TO 24.99% SLOPES	--- 570
LIMITS OF DISTURBANCE	--- 570
EFFECTIVE SITE AREA	--- 570
PROPOSED ESD PRACTICE	--- 570
DRAINAGE AREA	--- 570



EX. CONDITIONS PLAN
SCALE: 1"=30'



SWM PLAN
SCALE: 1"=30'



SEDIMENT CONTROL PLAN
SCALE: 1"=30'

LEGEND

- SOILS CLASSIFICATION Gnb
- SOILS DELINEATION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- STREAM BUFFER
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- DRAINAGE AREA

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USDA - NRCS WEBSITE. SOIL SURVEY MAP PAGE 13.

NO.	DATE	REVISION

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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. 45577, Expiration Date: 06-08-18.

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TAX MAP 24, GRID 23, PARCEL 300
ZONED: R-20 (LOW DENSITY RESIDENTIAL)
ELECTION DISTRICT NO. 2 - HOWARD COUNTY, MARYLAND

ENVIRONMENTAL CONCEPT PLAN
SEDIMENT & EROSION CONTROL,
EXISTING CONDITIONS, AND
STORMWATER MANAGEMENT PLANS

DESIGN: JC DRAFT: NAF

DATE: OCTOBER, 2015 BEI PROJECT NO. 2694
SCALE: AS SHOWN SHEET 2 OF 2

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 1-5-18 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 1-31-18 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION NY