

GENERAL NOTES

- SUBJECT PROPERTY ZONED RC-DEO PER 10/08/2013 COMPREHENSIVE ZONING PLAN.
- TOTAL AREA OF PROPERTY = 7.770 AC ±
- PROPERTY ADDRESS: 13325 FORSYTHE ROAD
- DEED REFERENCE: LIBER 15680 FOLIO 414
- PRIVATE WATER AND PRIVATE SEWER WILL BE USED WITHIN THIS SITE.
- THIS AREA DESIGNATES A PRIVATE SEWAGE AREA, OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE SYSTEM. THESE AREAS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE AREA RECORDATION OF A MODIFIED SEWAGE AREA SHALL NOT BE NECESSARY.
- THE BOUNDARY SHOWN HEREON IS BASED ON A FIELD RUN BOUNDARY SURVEY PREPARED BY NTT ASSOCIATES, INC. IN JANUARY OF 2021 IN THE MERIDIAN OF MARYLAND STATE PLAN NAD 83 BASED ON GPS OBSERVATIONS OF HOWARD COUNTY, MARYLAND STATIONS 09AB AND 04EB.
- THE ELEVATIONS AND TWO FOOT CONTOURS SHOWN HEREON ARE BASED ON A FIELD RUN TOPOGRAPHICAL SURVEY PREPARED BY NTT ASSOCIATES, INC. IN JANUARY OF 2021 IN THE DATUM OF NAVD 88 BASED ON GPS OBSERVATIONS OF HOWARD COUNTY, MARYLAND STATIONS 09AB AND 04EB.
- OFFSITE TOPOGRAPHY IS BASED ON HOWARD COUNTY AERIAL GIS TOPOGRAPHY FLOWIN IN 2011 AND IS SHOWN AT TWO-FOOT CONTOUR INTERVALS.
- THE SOILS SHOWN HAVE BEEN TAKEN FROM THE US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE, HOWARD COUNTY SOILS GRID 3, SUB-GRID 237.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP, WIDTH AND LOT AREAS AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREAS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN-GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL AREAS HAVE BEEN LOCATED.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES OR HISTORIC STRUCTURES ON-SITE.
- THERE IS A STREAM AND ITS ASSOCIATED BUFFER AS WELL AS WETLANDS AND ITS ASSOCIATED BUFFER LOCATED ON-SITE BUT NEITHER IS LOCATED WITHIN OUR AREA OF DEVELOPMENT.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF STEEP SLOPES, WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS, UNLESS ALTERNATIVE COMPLIANCE HAVE BEEN APPROVED OR ACTIVITIES HAVE BEEN DETERMINED ESSENTIAL BY THE DEPARTMENT OF PLANNING AND ZONING.
- EXISTING UTILITIES ARE LOCATED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORDED DRAWINGS. APPROXIMATE LOCATIONS OF THE EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- CONTRACTOR TO MAINTAIN POSITIVE SLOPE AWAY FROM THE FOUNDATION OF THE HOUSE.
- LIMIT OF DISTURBANCE: 36,207 SF± OR 0.8312 AC±
- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN DOES NOT CONSTITUTE AN APPROVAL OF SUBSEQUENT SUBDIVISION, FOREST CONSERVATION, OR SITE DEVELOPMENT PLAN. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS THAT MAY ALTER THE SITE DESIGN, HOUSE LOCATION, DRIVEWAY LOCATION, GRADING, TREE CLEARING, AND/OR OTHER REQUIREMENTS AS THE DEVELOPMENT PROCESS THROUGH THE PLAN REVIEW PROCESS IN ACCORDANCE WITH THE SUBDIVISION AND ZONING REGULATIONS.
- THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY SILL ENGINEERING GROUP, LLC, DATED AUGUST OF 2021, AND IS APPROVED UNDER EOP-21-0141.
- THIS PLAN IS CONDITIONALLY EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 THE HOWARD COUNTY CODE FOR FOREST CONSERVATION IN-LIEU OF SECTION 16.1202B(1)(v)(ii). THIS PROJECT IS A MINOR SUBDIVISION CREATING ONE ADDITIONAL LOT WITH NO FURTHER SUBDIVISION POTENTIAL.

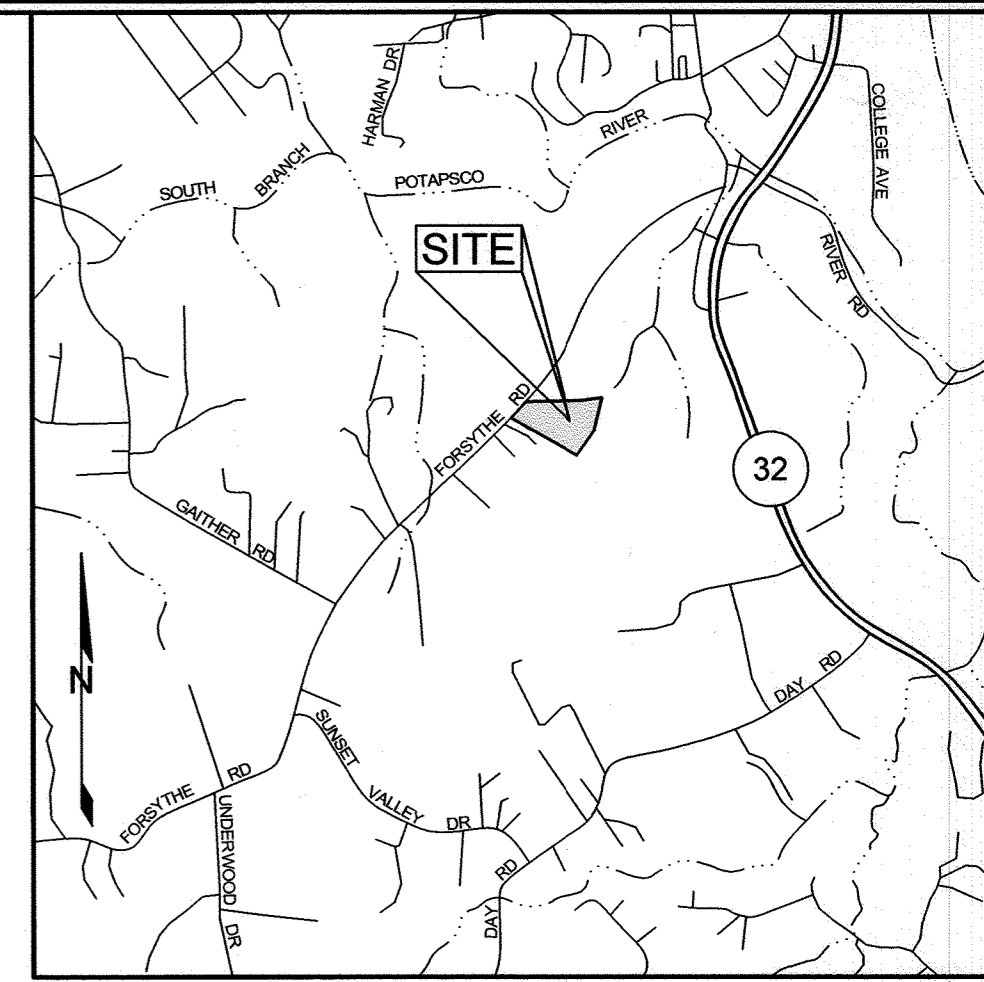
ENVIRONMENTAL CONCEPT PLAN

MACHADO PROPERTY

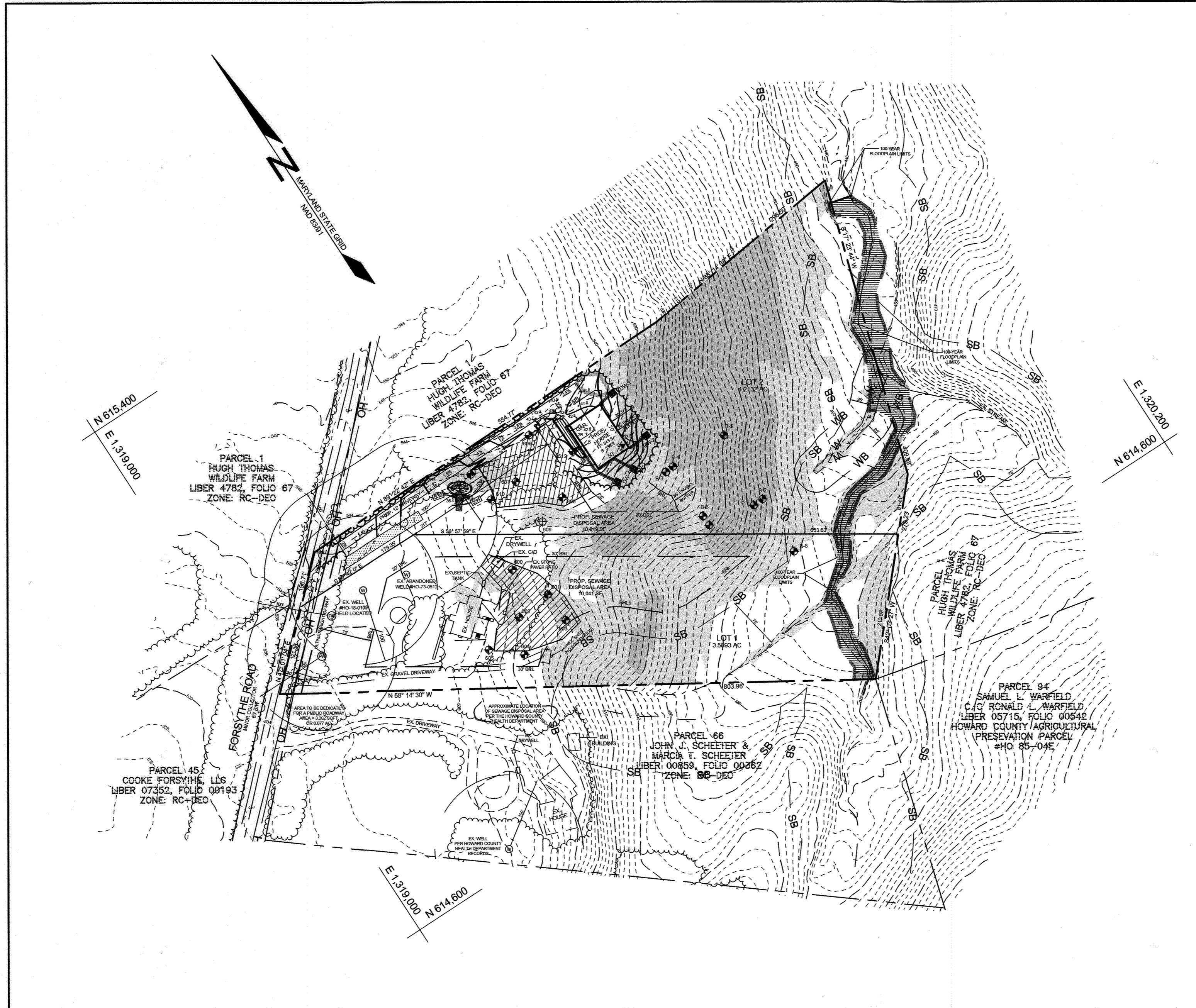
HOWARD COUNTY, MARYLAND

LEGEND

- EXISTING CONTOUR GIS
- EXISTING CONTOUR FIELD RUN
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TREELINE
- PROPOSED TREELINE
- EXISTING STREAM
- STREAM BUFFER
- EXISTING WETLAND
- WETLAND BUFFER
- SOIL BOUNDARY
- 100-YEAR FLOODPLAIN LIMITS
- EXISTING SEWAGE DISPOSAL AREA
- PROPOSED WELL BOX
- EXISTING PASSED PERCOLATION TEST HOLE
- EXISTING FAILED PERCOLATION TEST HOLE
- EX. MODERATE SLOPES 15% TO 25%
- EX. STEEP SLOPES >25%
- EX. WELL
- FUTURE WELL



HOWARD COUNTY, MARYLAND ADC MAP 11 GRID A3
VICINITY MAP
SCALE: 1"=2000'



LOCATION MAP

SCALE: 1"=100'

SITE ANALYSIS DATA SHEET

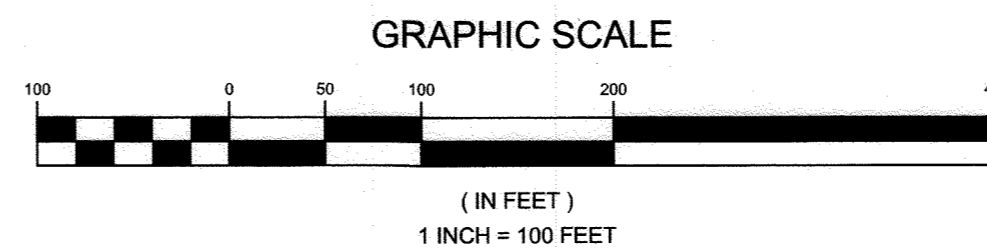
ENVIRONMENTAL AREA	SIZE OR USE
TOTAL PROJECT AREA	7.7825 AC ±
ROW TO BE DEDICATED	0.1345 AC ±
PROPOSED PROJECT AREA	7.7825 AC ±
LIMIT OF DISTURBANCE	0.8312 AC ±
GREEN OPEN AREA (LAWN)	2.0842 AC ±
PROPOSED IMPERVIOUS AREA	0.2253 AC ±
PROPOSED SITE USES	RESIDENTIAL
WETLANDS	0.0401 AC ±
WETLAND BUFFERS	0.2072 AC ±
FLOODPLAINS	0.2001 AC ±
FLOODPLAIN BUFFERS	0.7718 AC ±
FOREST	5.6883 AC ±
SLOPES 15%-24.9%	3.9528 AC ±
SLOPES GREATER THAN 25%	1.5000 AC ±
HIGHLY ERODIBLE SOILS	AC ± (1)

- *NOTES**
- SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY.
 - HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

STORMWATER MANAGEMENT NOTES & DESIGN NARRATIVE

BELOW IS A LIST TO DESCRIBE THE STORMWATER MANAGEMENT REQUIREMENTS AND ACHIEVEMENTS FOR THE SITE PER THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II, AS AMENDED BY THE STORMWATER MANAGEMENT ACT OF 2007.

- ENVIRONMENTALLY SENSITIVE AREAS HAVE BEEN AVOIDED WHERE POSSIBLE. THE AREA OF DEVELOPMENT WAS DESIGNED TO AVOID DISTURBING AREAS OF STEEP SLOPES. NO STREAMS OR WETLANDS EXIST WITHIN THE AREA OF DEVELOPMENT.
- TO THE GREATEST EXTENT PRACTICABLE THE NATURAL FLOW PATTERNS OF THE SITE HAVE BEEN MAINTAINED.
- IMPERVIOUS AREAS HAVE BEEN REDUCED BY POSITIONING THE BUILDING AS CLOSE TO THE DRIVEWAY AS THE SETBACKS AND SEWAGE DISPOSAL AREA ALLOW.
- A STABILIZED CONSTRUCTION ENTRANCE, SILT FENCES AND SUPER SILT FENCES ARE USED AS SEDIMENT AND EROSION CONTROL.
- THE STORMWATER MANAGEMENT OBLIGATIONS FOR THIS PARCEL WILL BE MET BY THE USE OF FOUR DRYWELLS (M-5) AND ONE MICRO-BIOTRETENTION FACILITY (M-6), AND TWO NON-ROOFTOP DISCONNECTS (N-2).
- NO DESIGN MANUAL WAIVERS OR WAIVER PETITIONS ARE BEING REQUESTED WITH THIS PLAN, BUT WILL BE REQUESTED AT A FUTURE PLAN STAGE.



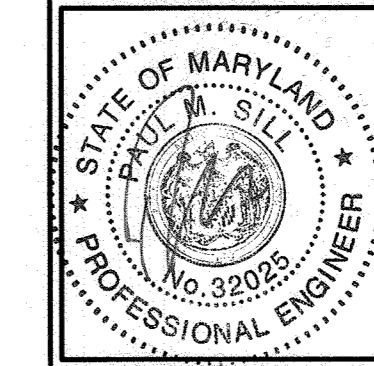
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 2/11/22

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 2/18/21

OWNER/DEVELOPER

ISABEL MACHADO
13325 FORSYTHE ROAD
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ISABEL_MACHADO@HCPSS.ORG
(443)-812-5981



SILL ENGINEERING GROUP, LLC

16005 Frederick Road, 2nd Floor
Woodbine, Maryland 21797
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Civil Engineering for Land Development

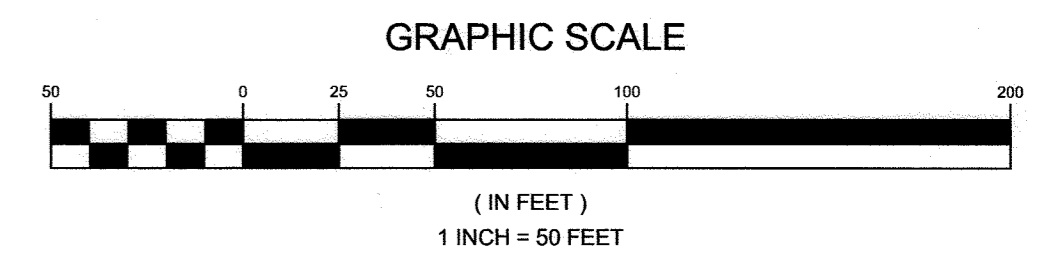
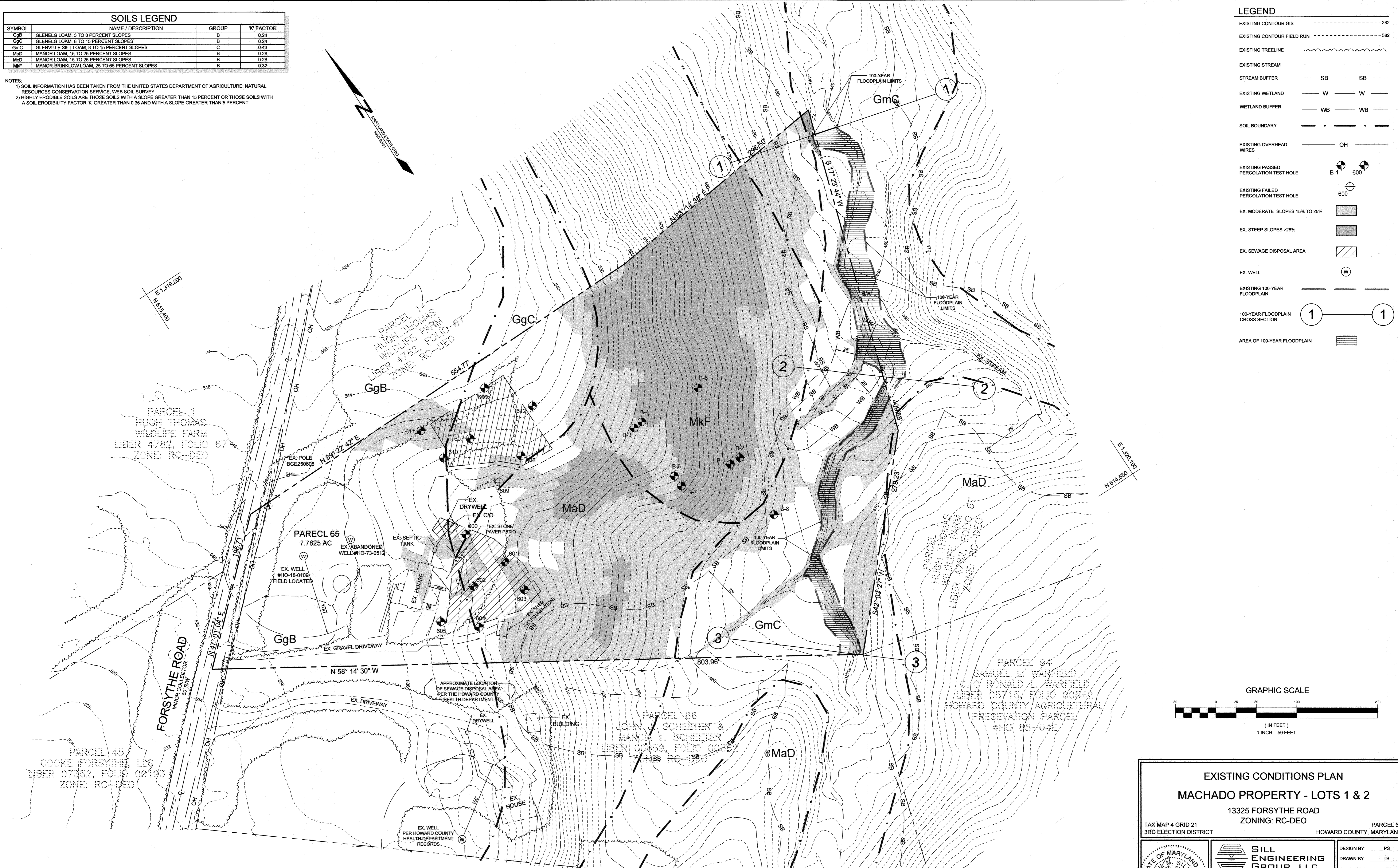
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CHECKED BY: PS
SCALE: AS SHOWN
DATE: DECEMBER 10, 2021
PROJECT #: 20-022
SHEET #: 1 of 6

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. 32025, EXPIRATION DATE JUNE 20, 2023

SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	0.24
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	0.24
GmC	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	0.43
MaD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.28
MaD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.28
MkF	MANOR-BRINKLOW LOAM, 25 TO 65 PERCENT SLOPES	B	0.32

NOTES:
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LEGEND	
EXISTING CONTOUR GIS	---
EXISTING CONTOUR FIELD RUN	---
EXISTING TREELINE	~~~~~
EXISTING STREAM	---
STREAM BUFFER	SB SB
EXISTING WETLAND	W W
WETLAND BUFFER	WB WB
SOIL BOUNDARY	---
EXISTING OVERHEAD WIRES	OH
EXISTING PASSED PERCOLATION TEST HOLE	B-1 600
EXISTING FAILED PERCOLATION TEST HOLE	600
EX. MODERATE SLOPES 15% TO 25%	[Pattern]
EX. STEEP SLOPES >25%	[Pattern]
EX. SEWAGE DISPOSAL AREA	[Pattern]
EX. WELL	(W)
EXISTING 100-YEAR FLOODPLAIN	---
100-YEAR FLOODPLAIN CROSS SECTION	① --- ①
AREA OF 100-YEAR FLOODPLAIN	[Pattern]



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 CHIEF DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/19/21

PLAN VIEW
 SCALE: 1"=50'

OWNER/DEVELOPER
 ISABEL MACHADO
 13325 FORSYTHE ROAD
 SYKESVILLE, MD 21784
 ISABEL_MACHADO@HCPSS.ORG
 (443)-812-6981

EXISTING CONDITIONS PLAN
MACHADO PROPERTY - LOTS 1 & 2
 13325 FORSYTHE ROAD
 ZONING: RC-DEO

TAX MAP 4 GRID 21
 3RD ELECTION DISTRICT

PARCEL 65
 HOWARD COUNTY, MARYLAND

SILL ENGINEERING GROUP, LLC
 16905 Frederick Road, 2nd Floor
 Woodbine, Maryland 21797
 Phone: 443.325.5076
 Fax: 410.696.2022
 Email: info@sillengineering.com
 Civil Engineering for Land Development

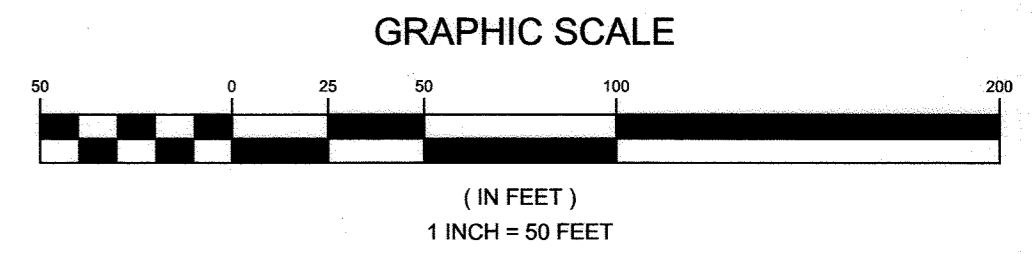
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 PROJECT #: 20-022
 SHEET #: 2 of 6

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LEGEND	
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PROPOSED CONTOUR	PROPOSED SPOT ELEVATION
DIRECTION OF FLOW	EXISTING TREELINE
PROPOSED TREELINE	EXISTING STREAM
EXISTING STREAM	STREAM BUFFER
EXISTING WETLAND	WETLAND BUFFER
SOIL BOUNDARY	EXISTING OVERHEAD WIRES
EXISTING 100-YEAR FLOODPLAIN	EXISTING 100-YEAR FLOODPLAIN CROSS SECTION
AREA OF 100-YEAR FLOODPLAIN	EXISTING SEWAGE DISPOSAL AREA
	PROPOSED WELL BOX
	EXISTING PASSED PERCOLATION TEST HOLE
	EXISTING FAILED PERCOLATION TEST HOLE
	EX. MODERATE SLOPES 15% TO 25%
	EX. STEEP SLOPES >25%
	EX. WELL
	FUTURE WELL
	PROPOSED 12" CULVERT
	STABILIZED CONSTRUCTION ENTRANCE
	SUPER SILT FENCE
	LIMIT OF DISTURBANCE



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/28/21
 CHIEF, DIVISION OF LAND DEVELOPMENT

PLAN VIEW
 SCALE: 1"=50'

OWNER/DEVELOPER
 ISABEL MACHADO
 13325 FORSYTHE ROAD
 SYKESVILLE, MD 21784
 ISABEL_MACHADO@HCPSS.ORG
 (443)-812-5981

CONCEPTUAL GRADING,
 SEDIMENT AND EROSION CONTROL PLAN
 MACHADO PROPERTY - LOTS 1 & 2
 13325 FORSYTHE ROAD
 ZONING: RC-DEO
 TAX MAP 4 GRID 21
 3RD ELECTION DISTRICT
 PARCEL 65
 HOWARD COUNTY, MARYLAND

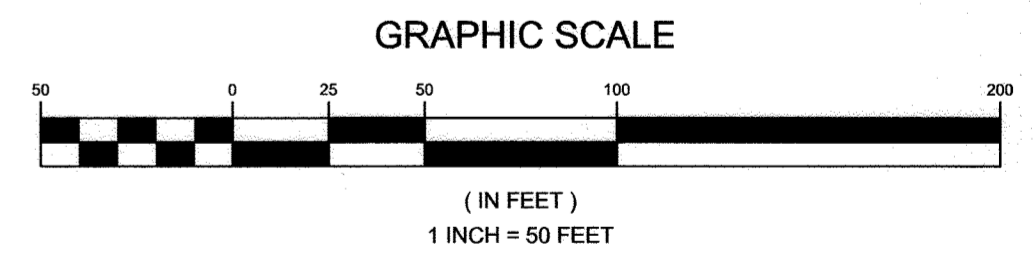
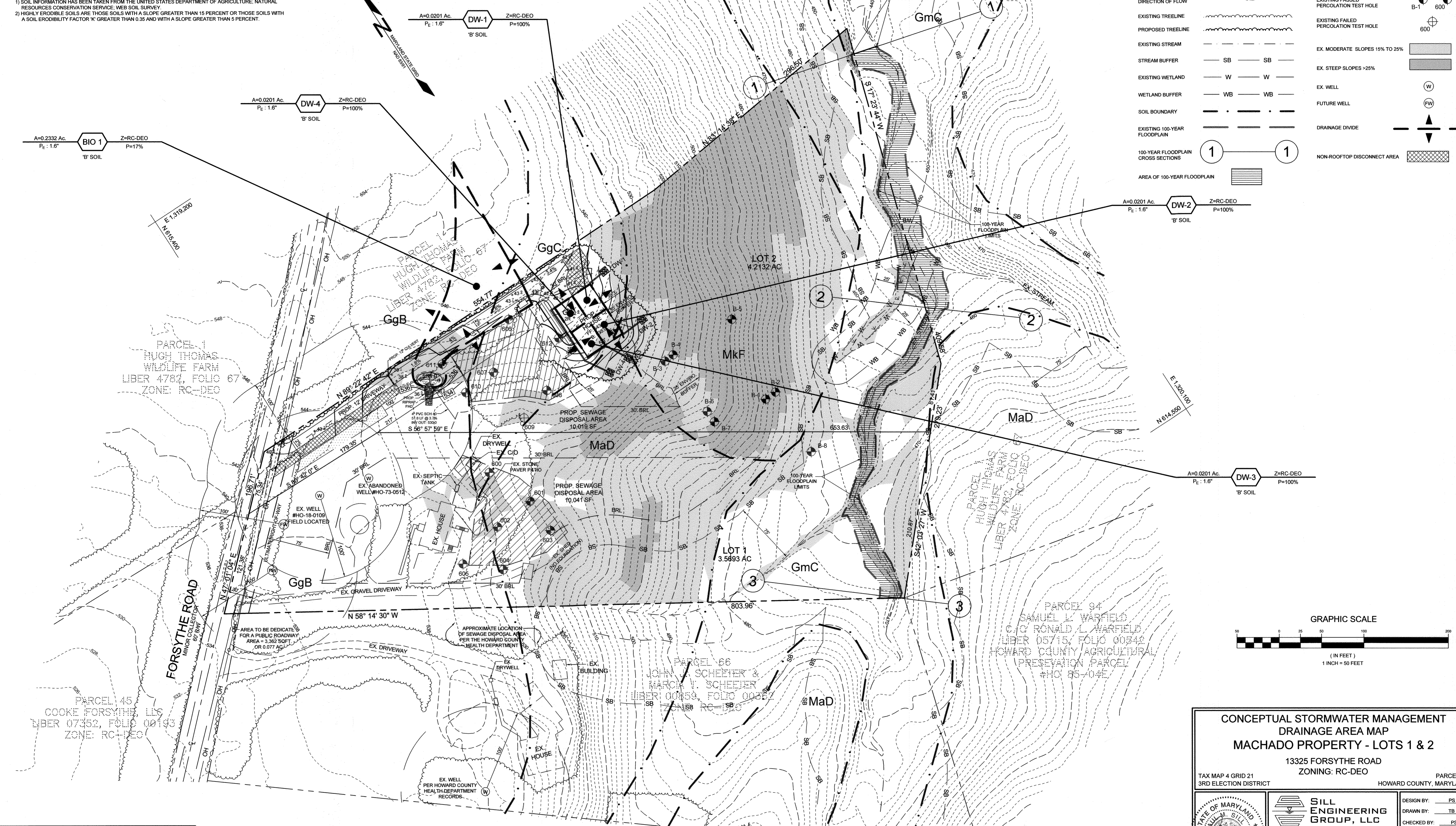
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16005 Frederick Road, 2nd Floor Woodbine, Maryland 21797 Phone: 443.325.5076 Fax: 410.696.2022 Email: info@sillengineering.com Civil Engineering for Land Development		DATE: DECEMBER 10, 2021
		PROJECT #: 20-022
		SHEET #: 3 of 6

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LEGEND	
EXISTING CONTOUR GIS	EXISTING SEWAGE DISPOSAL AREA
EXISTING CONTOUR FIELD RUN	PROPOSED WELL BOX
PROPOSED CONTOUR	EXISTING PASSED PERCOLATION TEST HOLE
PROPOSED SPOT ELEVATION	EXISTING FAILED PERCOLATION TEST HOLE
DIRECTION OF FLOW	EX. MODERATE SLOPES 15% TO 25%
EXISTING TREELINE	EX. STEEP SLOPES >25%
PROPOSED TREELINE	EX. WELL
EXISTING STREAM	EX. FAILED PERCOLATION TEST HOLE
STREAM BUFFER	FUTURE WELL
EXISTING WETLAND	DRAINAGE DIVIDE
WETLAND BUFFER	NON-ROOFTOP DISCONNECT AREA
SOIL BOUNDARY	
EXISTING 100-YEAR FLOODPLAIN	
100-YEAR FLOODPLAIN CROSS SECTIONS	
AREA OF 100-YEAR FLOODPLAIN	



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
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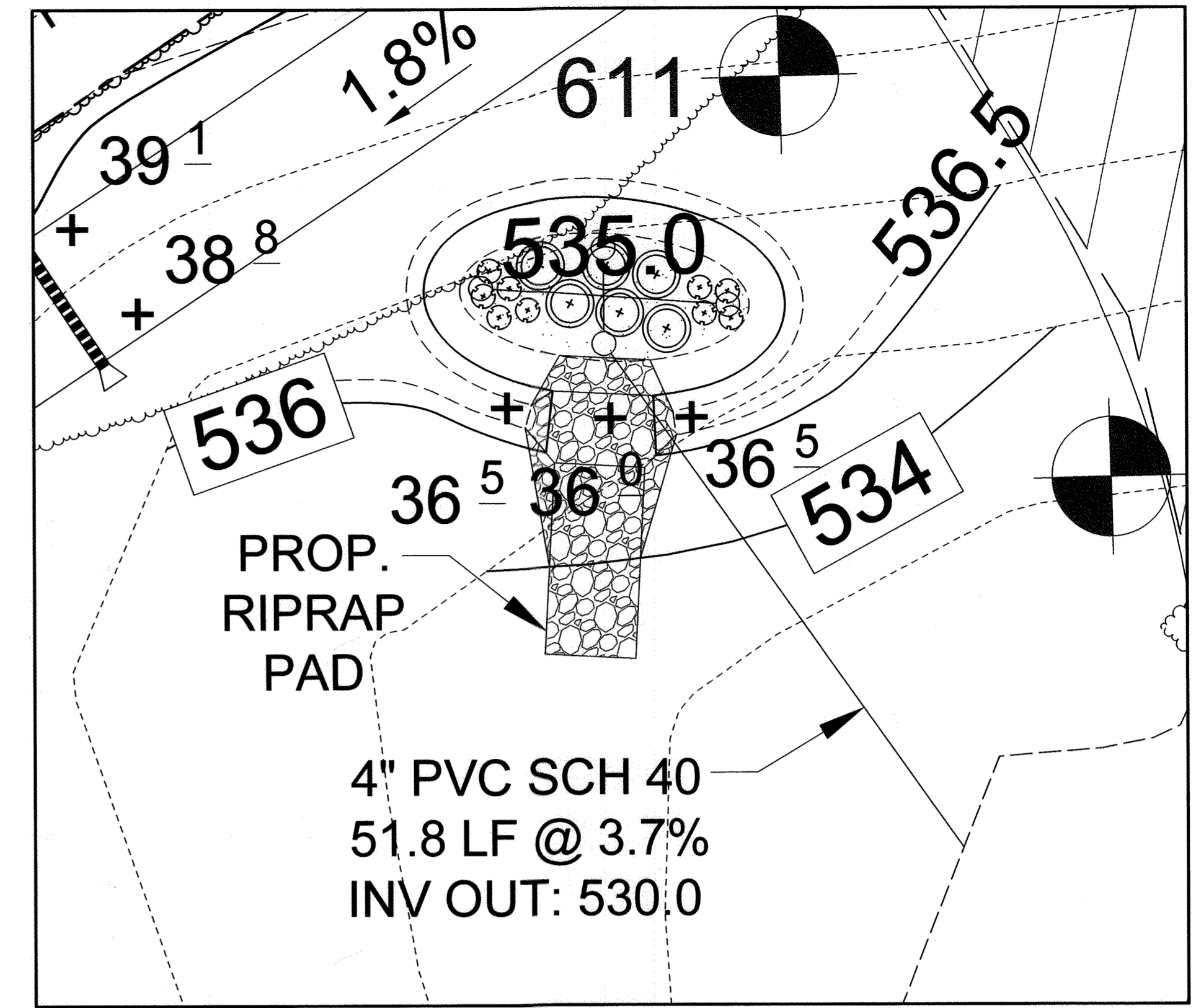
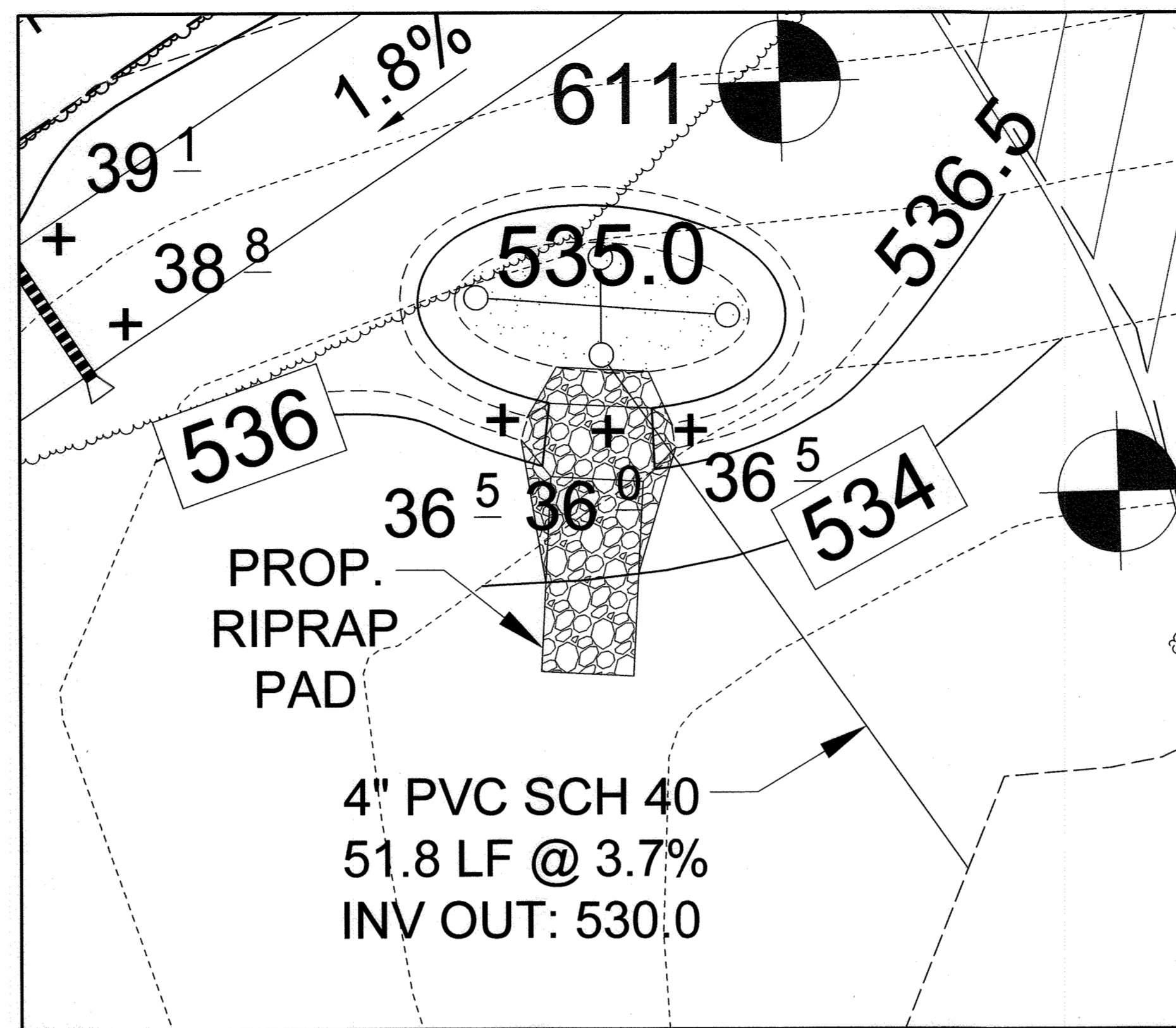
DRAINAGE AREA MAP
 SCALE: 1"=50'

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CONCEPTUAL STORMWATER MANAGEMENT
 DRAINAGE AREA MAP
 MACHADO PROPERTY - LOTS 1 & 2
 13325 FORSYTHE ROAD
 ZONING: RC-DEO
 TAX MAP 4 GRID 21
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	SILL ENGINEERING GROUP, LLC 16005 Frederick Road, 2nd Floor Woodbine, Maryland 21797 Phone: 443.325.5076 Fax: 410.696.2022 Email: info@sillengineering.com Civil Engineering for Land Development	DESIGN BY: PS DRAWN BY: TB CHECKED BY: PS SCALE: AS SHOWN DATE: DECEMBER 10, 2021 PROJECT #: 20-022 SHEET #: 4 of 6
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	ECP-21-041	

MATERIALS SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN & LANDSCAPE INFILTRATION			
PLANTINGS	SPECIFICATION	SIZE	NOTES
PLANTING SOIL (2'-4" TO 4" DEEP)	LOAMY SAND (60% - 65%) & COMPOST (35%-40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%)	N/A	PLANTINGS ARE SITE-SPECIFIC; SEE PLANT LIST THIS SHEET
ORGANIC CONTENT	MIN. 10% BY DRY WEIGHT (ASTM-D-2974)		USDA SOIL TYPES LOAMY SAND OR SANDY LOAM, CLAY CONTENT < 5%
PEA GRAVEL DIAPHRAGM	PEA GRAVEL: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	AGED 6 MONTHS, MINIMUM. NO PINE OR WOOD CHIPS
CURTAIN DRAIN (IF REQUIRED)	ORNAMENTAL STONE: WASHED COBBLES	STONE: 2" TO 5"	
GEOTEXTILE		N/A	PE TYPE 1 NONWOVEN
UNDERDRAIN GRAVEL	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	SLOTTED OR PERFORATED PIPE, 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW, MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH.
POURED IN PLACE CONCRETE (IF REQUIRED)	MSHA MX NO.3; F _{cr} 3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED, REINFORCING TO MEET ASTM-615-60	N/A	ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND. DESIGN TO INCLUDE MEETING ACI CODE 308 R/89; VERTICAL LOADING (H-10 OR H-20); ALLOWABLE HORIZONTAL LOADING (BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING.
SAND	AASHTO-M-8 OR ASTM-C-33	0.02" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND.

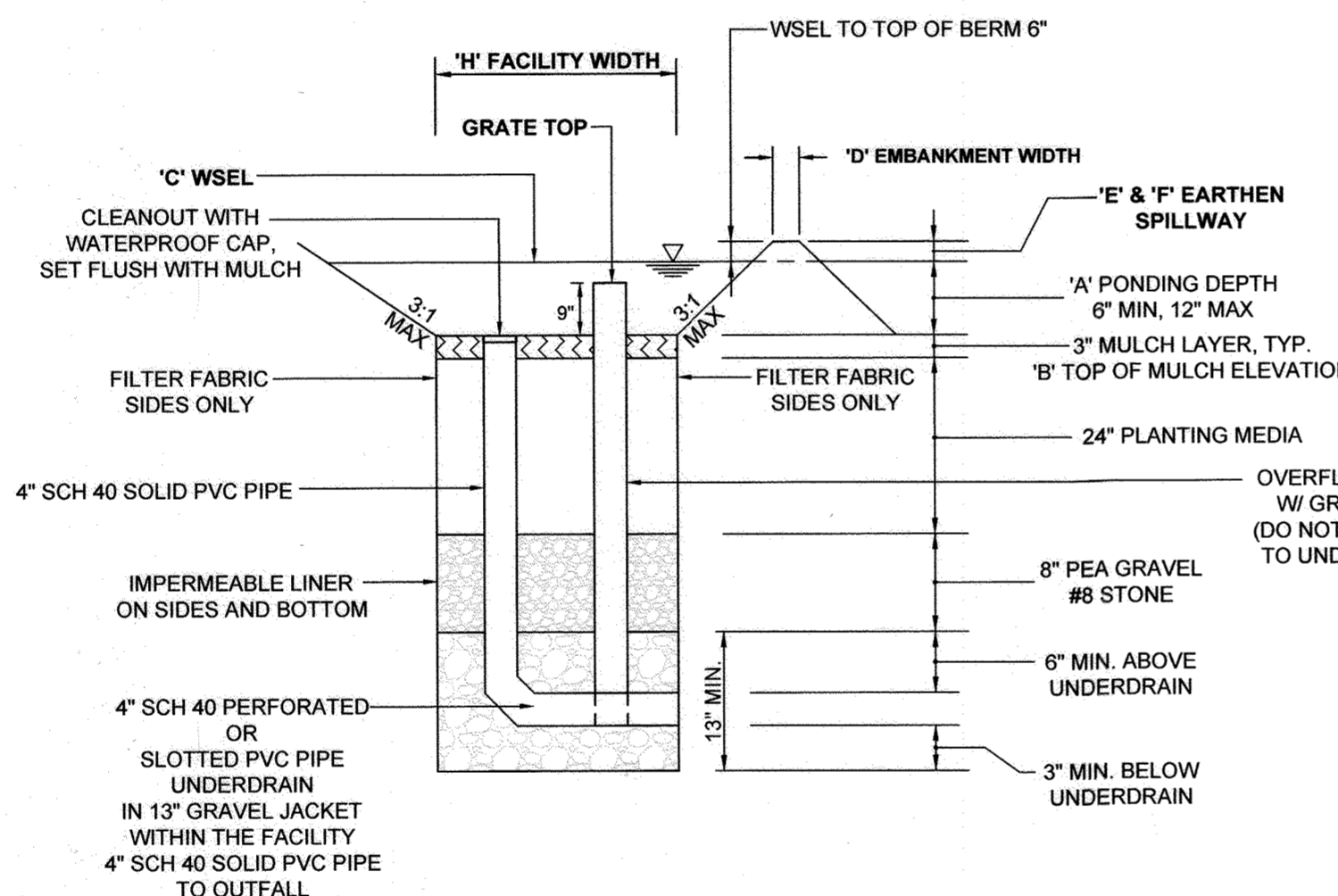


OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED MICRO-BIORETENTION FACILITIES (M-6)

1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

PLAN VIEW MICRO-BIORETENTION FACILITY #1

LANDSCAPE PLAN VIEW MICRO-BIORETENTION FACILITY #1



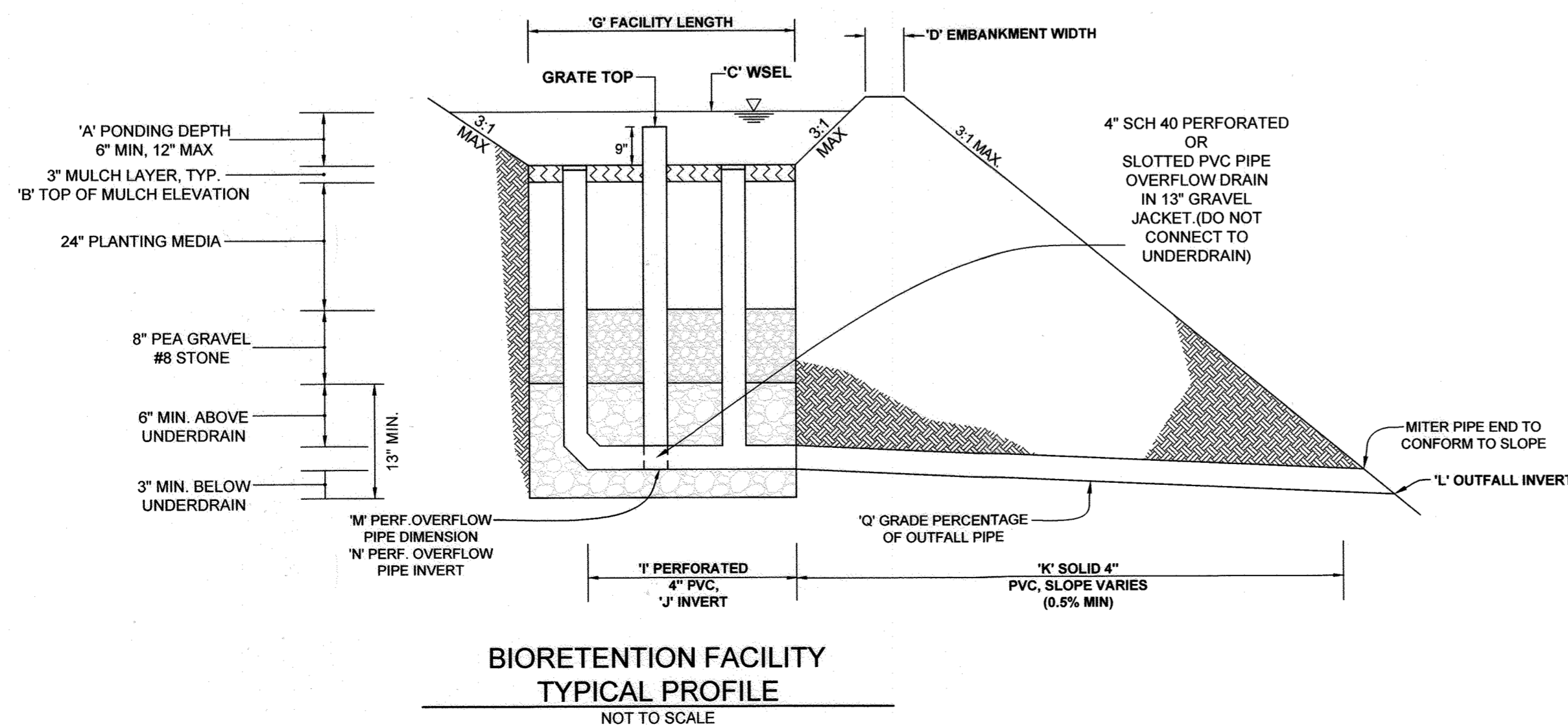
BIORETENTION FACILITY TYPICAL SECTION NOT TO SCALE

- NOTES:
- FOR ADDITIONAL INFORMATION, SEE THE MICRO-BIORETENTION FACILITY DETAIL D-9.03 IN THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II.
 - SEE CHART, THIS SHEET, FOR ELEVATIONS AND DISTANCES.
 - BIO 1 TO HAVE AN IMPERMEABLE LINER.

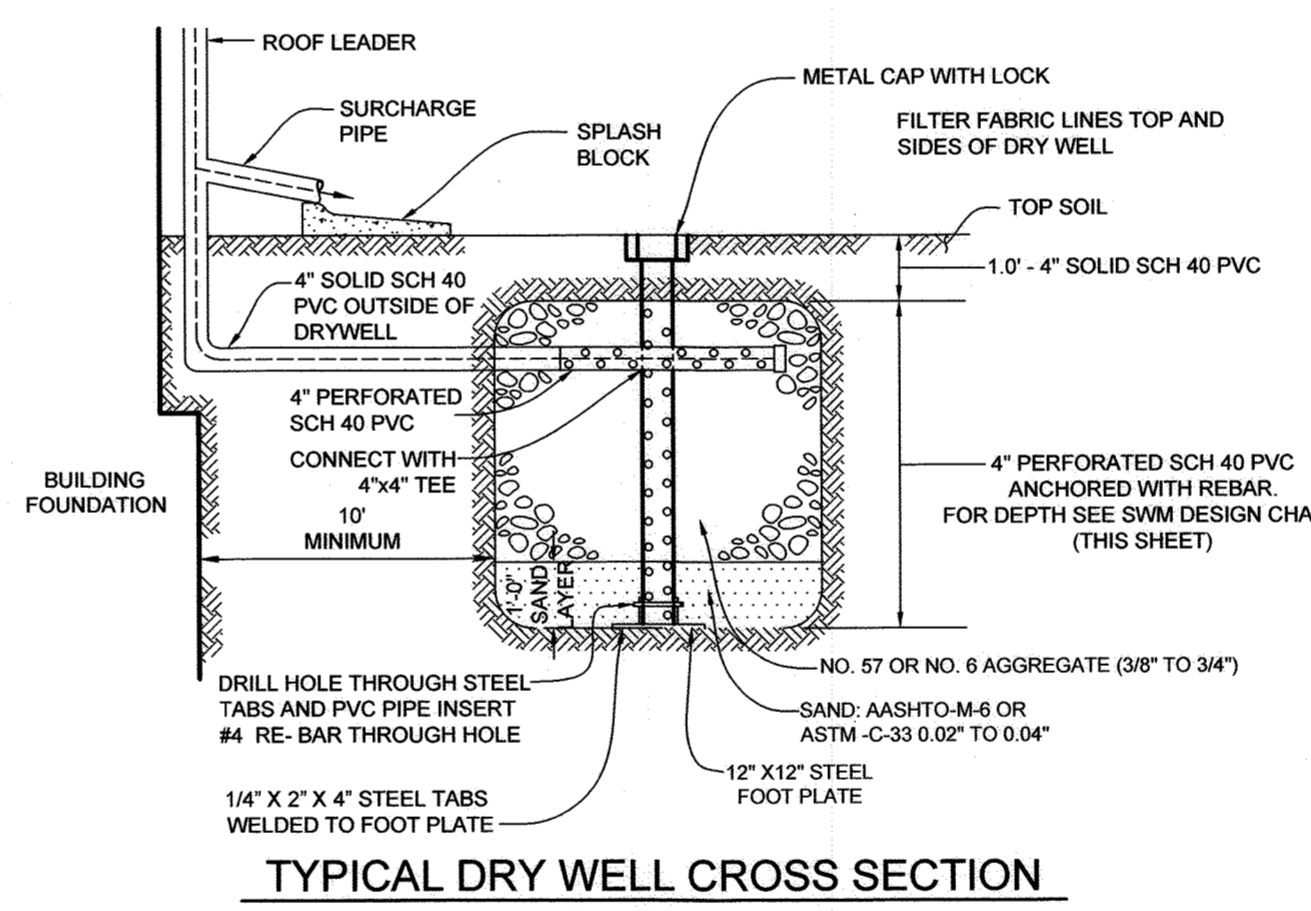
BIORETENTION ELEVATIONS AND DIMENSIONS

DESCRIPTION	BIO 1
'A' PONDING DEPTH	1.0'
'B' TOP OF MULCH	535.00
'C' WSEL	536.00
'D' EMBANKMENT WIDTH	2.0'
'E' SPILLWAY WIDTH	5.0'
'F' SPILLWAY LENGTH	9.5'
'G' FACILITY LENGTH	24.4'
'H' FACILITY WIDTH (AVERAGE)	10.6'
'I' PERF. UNDERDRAIN PIPE DIMENSION	8.0"
'J' UNDERDRAIN PIPE INVERT	531.92
'K' SOLID UNDERDRAIN DIMENSION	51.8'
'L' OUTFALL INVERT	530.0
'M' PERF. OVERFLOW PIPE DIMENSION	20.8"
'N' OVERFLOW PIPE INVERT	531.92
'O' GRAVEL STORAGE DEPTH	N/A*
'P' BOTTOM ELEVATION OF FACILITY	531.75
'Q' GRADE % OF OUTFALL PIPE	3.7%

* IMPERMEABLE LINER, NO STORAGE



BIORETENTION FACILITY TYPICAL PROFILE NOT TO SCALE



TYPICAL DRY WELL CROSS SECTION NOT TO SCALE

- NOTES:
1. MANUFACTURED SAND IS NOT ACCEPTABLE IN DRYWELLS.
 2. ALL PIPES SHOULD BE SCH 40 PVC 4" MIN.
 3. DRYWELLS MUST BE A MINIMUM OF:
 - 10' FROM BUILDING FOUNDATION
 - 30' FROM SEPTIC FIELD
 - 100' FROM WELL LOCATION AND SHOULD BE LOCATED TO MINIMIZE ANY BASEMENT SEEPAGE.
 4. TRENCH MAY NOT BE INSTALLED IN FILL.

DRYWELL (M-5) DESIGN CHART					
DRYWELL	VOLUME REQUIRED	VOLUME PROVIDED	P _e REQUIRED	P _e TREATED	SIZE
1	113 CF	161.5 CF	1.6"	2.33"	9.5'x8.5'x5.0' DEEP
2	113 CF	153 CF	1.6"	2.21"	9.0'x8.5'x5.0' DEEP
3	113 CF	153 CF	1.6"	2.13"	9.0'x8.5'x5.0' DEEP
4	113 CF	153 CF	1.6"	2.21"	9.0'x8.5'x5.0' DEEP
TOTAL	452 CF	620.5 CF	1.6"	2.22"	

NOTE: THE IMPERVIOUS SURFACE OF THE HOUSE WILL BE TREATED BY EACH DRY WELL. COMPLETION OF DRYWELL WILL HAPPEN AT THE SITE DEVELOPMENT PLAN STAGE.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

1. THE MONITORING WELLS AND STRUCTURES SHALL BE INSPECTED ON A QUARTERLY BASIS AND AFTER EVERY LARGE STORM EVENT.
2. WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS SHALL BE RECORDED OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
3. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
4. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN THE 72 HOURS TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
5. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
6. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

OWNER/DEVELOPER

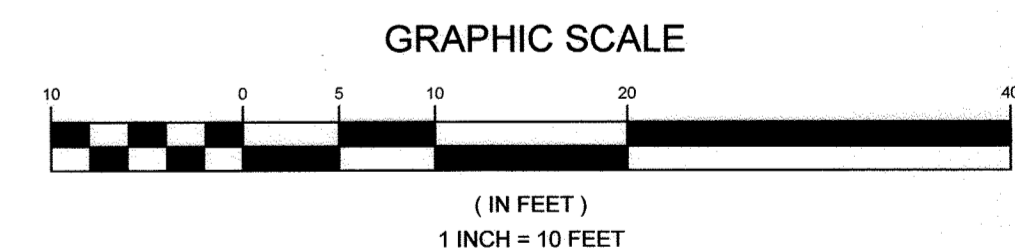
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BIORETENTION PLANT LIST						
SHRUBS						
LEGEND	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	REMARKS	QTY. BIO 1
(*)	ILEX GLABRA	INK BERRY	AS SHOWN* (MIN. 4' O.C.)	24" - 36" HT.	-	6
(*)	RUBICECKIA	BLACK-EYED SUSAN	AS SHOWN* (MIN. 2' O.C.)	1 GALLON	-	9

NOTE: PLANT MATERIAL MUST COVER 50% OF THE MULCH AREA AT MATURE GROWTH.
*INTERPERSE PLANTINGS THROUGHOUT BIORETENTION FILTER AREA
BIO 1 - BIORETENTION AREA = 204 S.F. OR 0.0047 AC.
PROVIDED: 6 SHRUBS AND 9 HERBACEOUS SPECIES

OPERATION AND MAINTENANCE SCHEDULE FOR ROOFTOP (N-1) AND NON-ROOFTOP (N-2) DISCONNECTS

MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR THE OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G. BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER).



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF DEVELOPMENT ENGINEERING DIVISION DATE
12/28/21
CHIEF, DIVISION OF LAND DEVELOPMENT, DATE

CONCEPTUAL STORMWATER MANAGEMENT PLAN, NOTES & DETAILS
MACHADO PROPERTY - LOTS 1 & 2
13325 FORSYTHE ROAD
ZONING: RC-DEO
TAX MAP 4 GRID 21
3RD ELECTION DISTRICT
PARCEL 65
HOWARD COUNTY, MARYLAND

DESIGN BY: PS
DRAWN BY: TB
CHECKED BY: PS
SCALE: AS SHOWN
DATE: DECEMBER 10, 2021
PROJECT #: 20-022
SHEET #: 5 OF 6

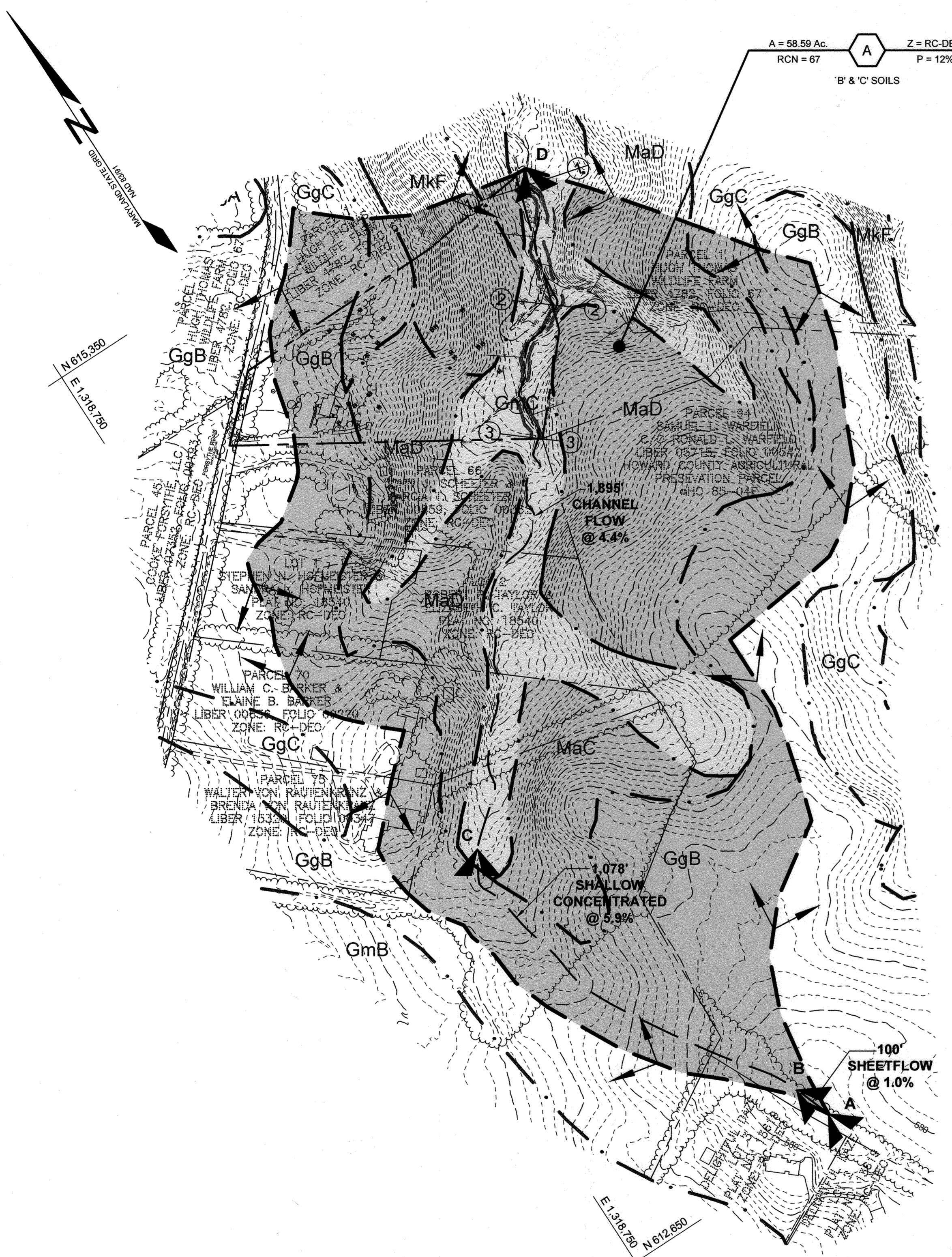
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16005 Frederick Road, 2nd Floor
Woodbine, Maryland 21797
Phone: 410.696.2022
Fax: 410.696.2022
Email: info@sillengineering.com
Civil Engineering for Land Development

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. 32025, EXPIRATION DATE JUNE 20, 2023.

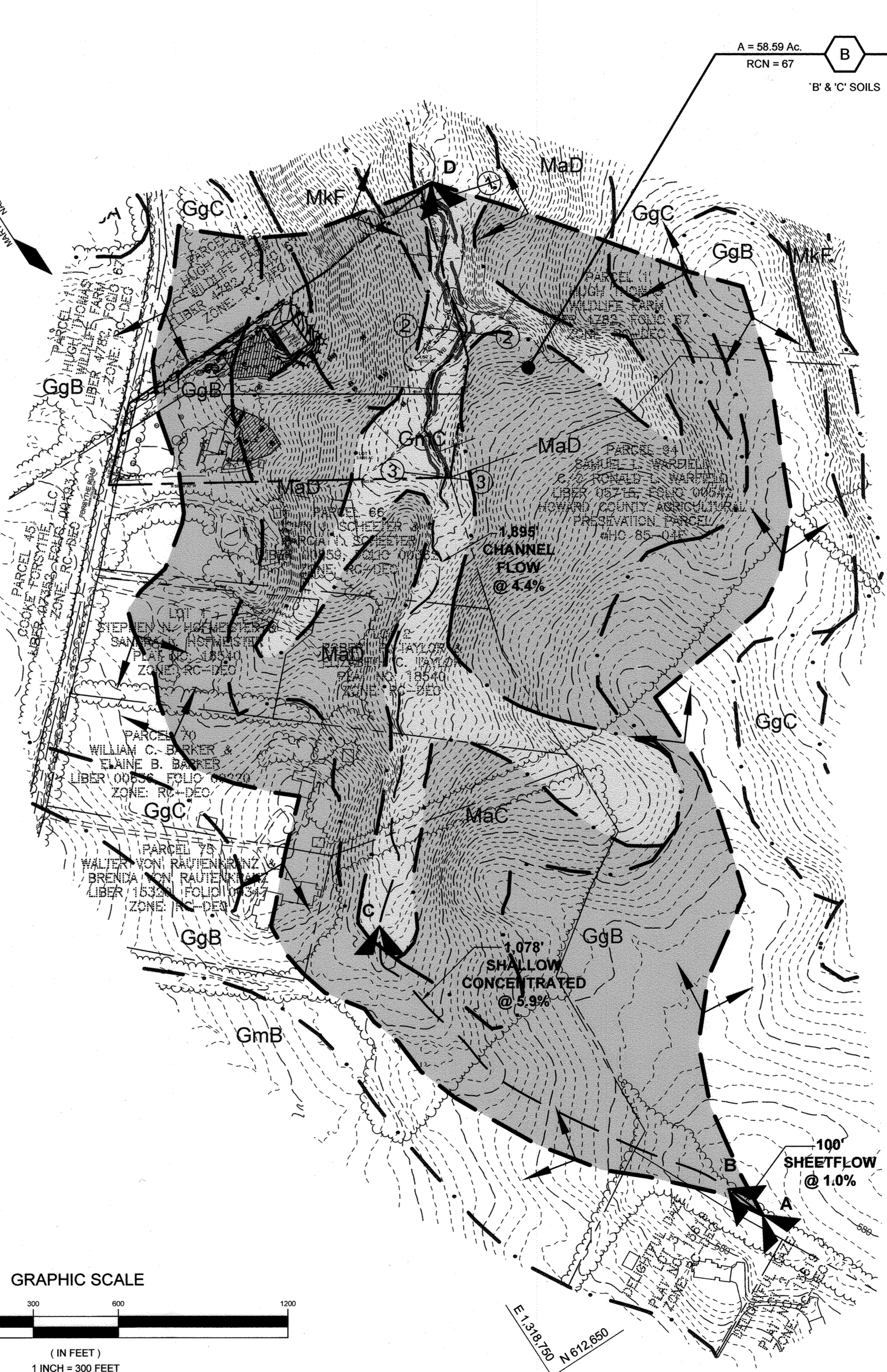
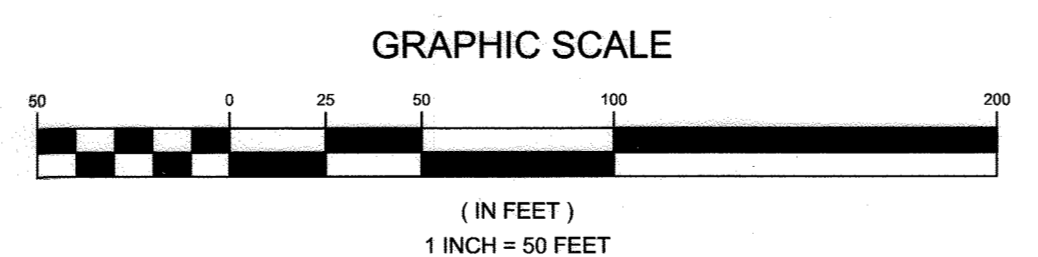
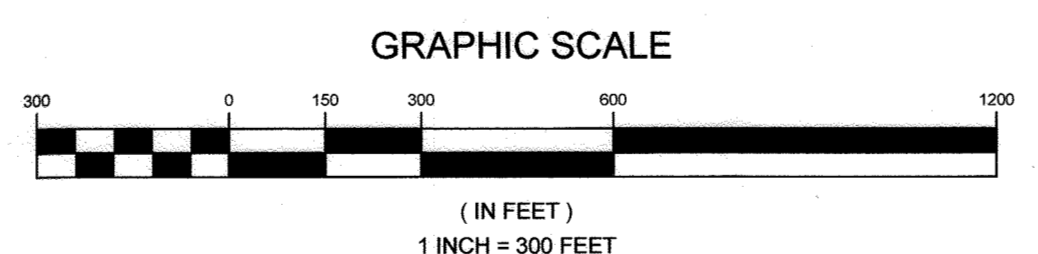
SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	0.37
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	0.43
GmC	GLENVILLE SILT LOAM, 3 TO 15 PERCENT SLOPES	C	0.49
MaD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.32
McD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.28
MkF	MANOR-BRINKLOW LOAM, 25 TO 65 PERCENT SLOPES	B	0.32

NOTES:
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEBB SOIL SURVEY.
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

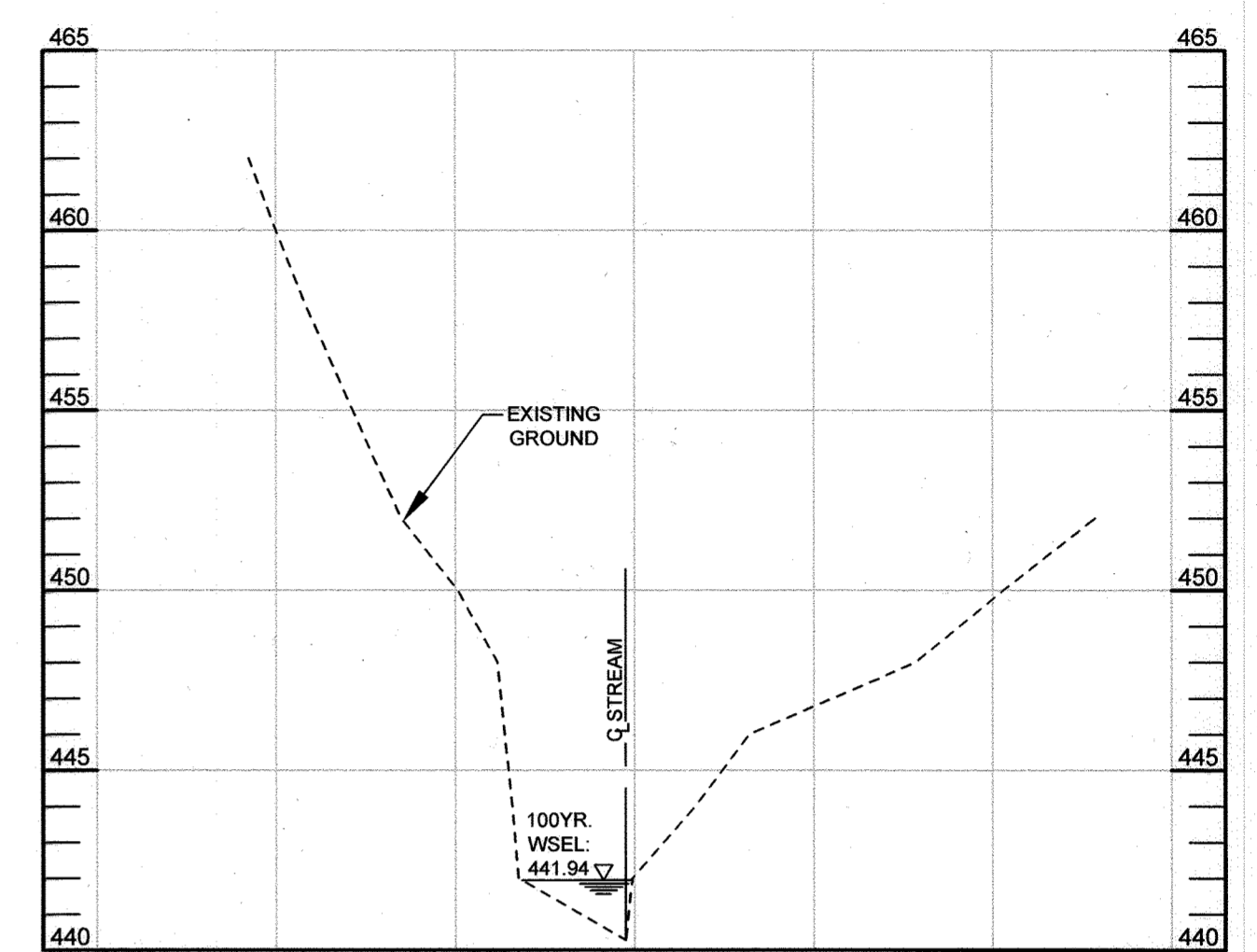
LEGEND	
EXISTING CONTOUR GIS	---382---
EXISTING CONTOUR FIELD RUN	---382---
EXISTING TREELINE	~~~~~
EXISTING STREAM	— SB — SB —
STREAM BUFFER	— SB — SB —
EXISTING WETLAND	— W — W — W — W —
WETLAND BUFFER	— W — W — W — W —
SOIL BOUNDARY	— . . . —
EXISTING DRAINAGE AREA	→ — — — →
EXISTING FLOODPLAIN LIMITS	① — — — ①
FLOODPLAIN CROSS SECTIONS	① — — — ①
'B' SOILS	▨
'C' SOILS	▩



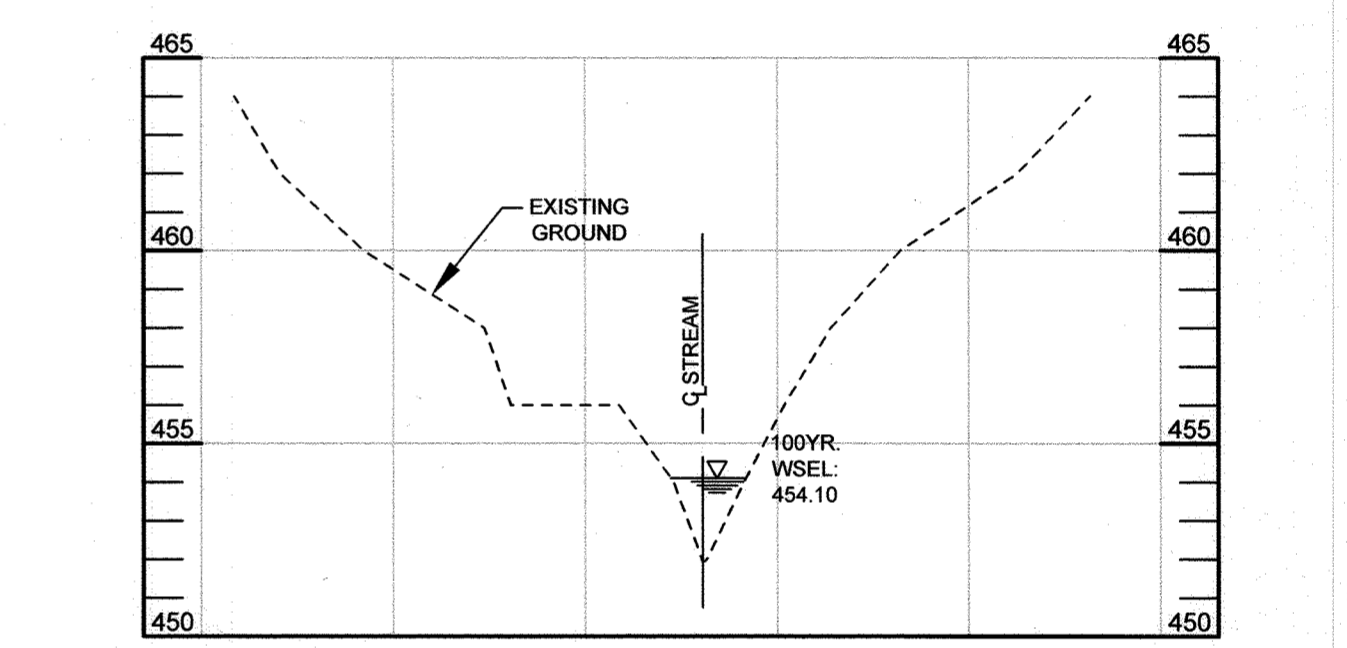
EXISTING CONDITIONS PLAN VIEW
SCALE: 1"=200'



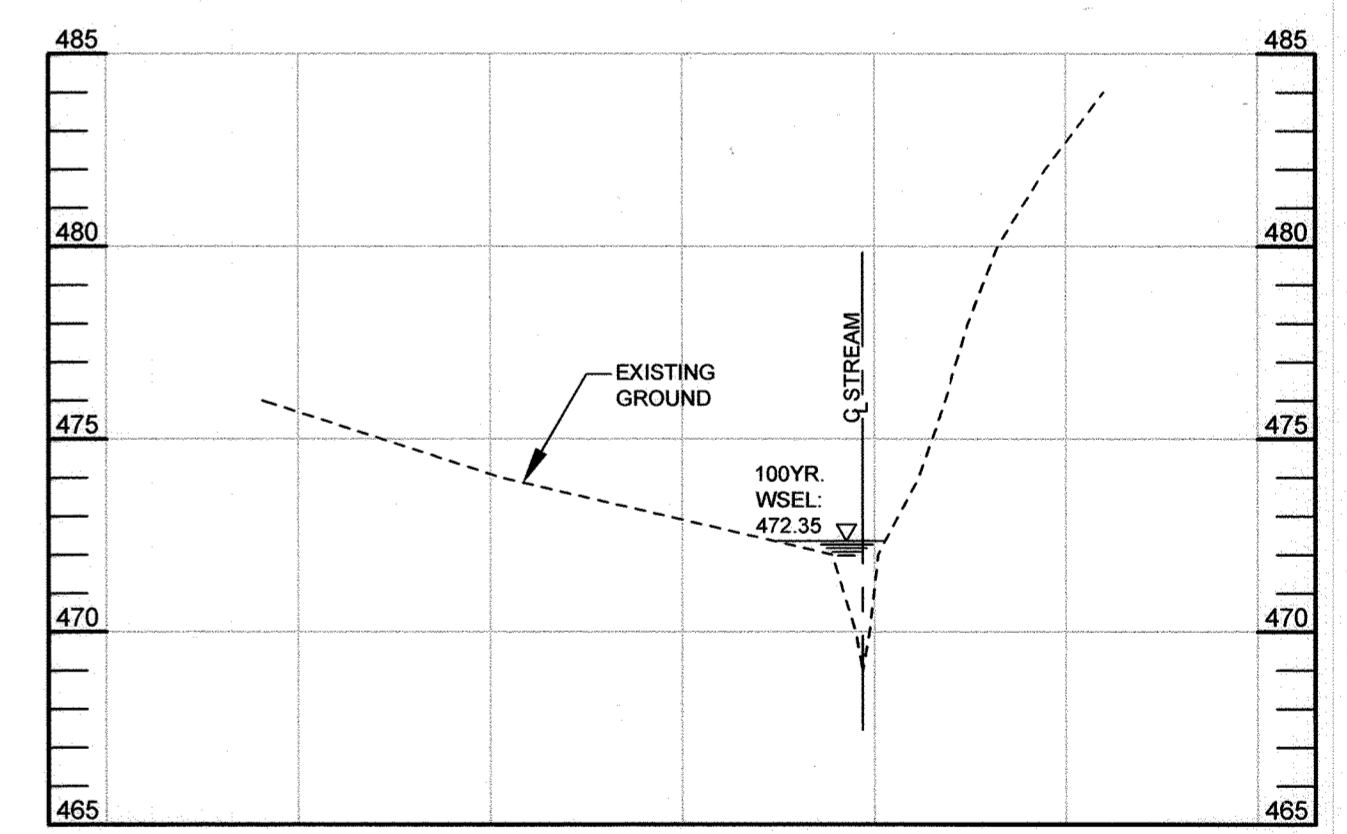
PROPOSED CONDITIONS PLAN VIEW
SCALE: 1"=200'



CROSS SECTION #1
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



CROSS SECTION #2
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



CROSS SECTION #3
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 12/28/21
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