





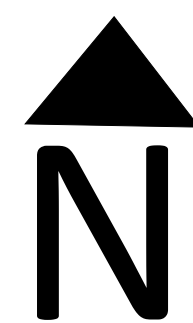
9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND  
CONSTRUCTION FUNDING: WBS- N0009.3.5000 AND N0010.3.5000

## GENERAL NOTES

- 1) OWNER: HOWARD COUNTY PUBLIC SCHOOLS  
ADDRESS: 10910 CLARKSVILLE PIKE, ELLICOTT CITY, MD. 21042  
TELEPHONE NO.: 410 313-6600
- 2) DEVELOPER: HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS  
ADDRESS: 2106 OAKLAND MILLS ROAD, COLUMBIA, MD. 21046  
TELEPHONE NO.: 410 313-1695
- 3) SUBJECT PROPERTY ZONED: NEW TOWN
- 4) PROPERTY ADDRESS: 9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046
- 5) MAP 42 GRID 23 PARCEL 443, LOT 310 L.F. 18973/314 TAX ACCOUNT: 16-155942, 11.023 ACRES
- 6) PUBLIC WATER AND PUBLIC SEWER ARE NOT PRESENTLY USED WITHIN THIS SITE BUT ARE AVAILABLE.
- 7) THE TOPOGRAPHY SHOWN HEREON HAS BEEN FIELD RUN BY HOWARD COUNTY SURVEY DIVISION ON 10-19-2016 AND 5-13-2019; THE TOPOGRAPHY DISPLAYED BEYOND THE LIMIT OF FIELD RUN SURVEY IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2011
- 8) THE SOILS INDICATED ARE FROM THE U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE WEB SOIL SERVICE WEBSITE.
- 9) THERE ARE NO WETLANDS, WETLAND BUFFERS, STREAMS OR STREAM BUFFERS WITHIN THE LIMIT OF THIS SITE.
- 10) THERE ARE NO EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN THE LIMIT OF DISTURBANCE.
- 11) EXISTING UTILITIES ARE LOCATED BY THE USE ON ALL OF THE FOLLOWING CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE INDICATED FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- 12) SOILS INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT AGRICULTURE, NATURAL RESOURCE CONSERVATION SERVICE, WEB SOIL SURVEY WEBSITE AND FIELD INVESTIGATIONS. IF FUTURE INVESTIGATIONS SHOW UNSATISFACTORY SOIL CONDITIONS FOR ANY OF THE STORMWATER MANAGEMENT TREATMENTS SHOWN, EITHER UNDERDRAINS WILL BE PROVIDED OR A DIFFERENT PRACTICE WILL BE SUBSTITUTED.
- 14) THE STORMWATER MANAGEMENT OBLIGATIONS WILL BE MET BY TWO MICRO-BIORETENTION FACILITY.
- 15) THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION IN ACCORDANCE WITH SECTION 16.1202(b)(1)(iii) OF THE HOWARD COUNTY CODE.
- 16) 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 AND FLOODPLAIN.
- 17) PERIMETER LANDSCAPING FOR THIS DEVELOPMENT IS SATISFIED BY EXISTING VEGETATION.

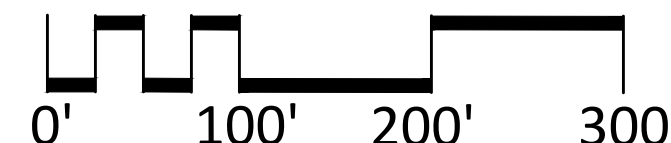


## LEGEND



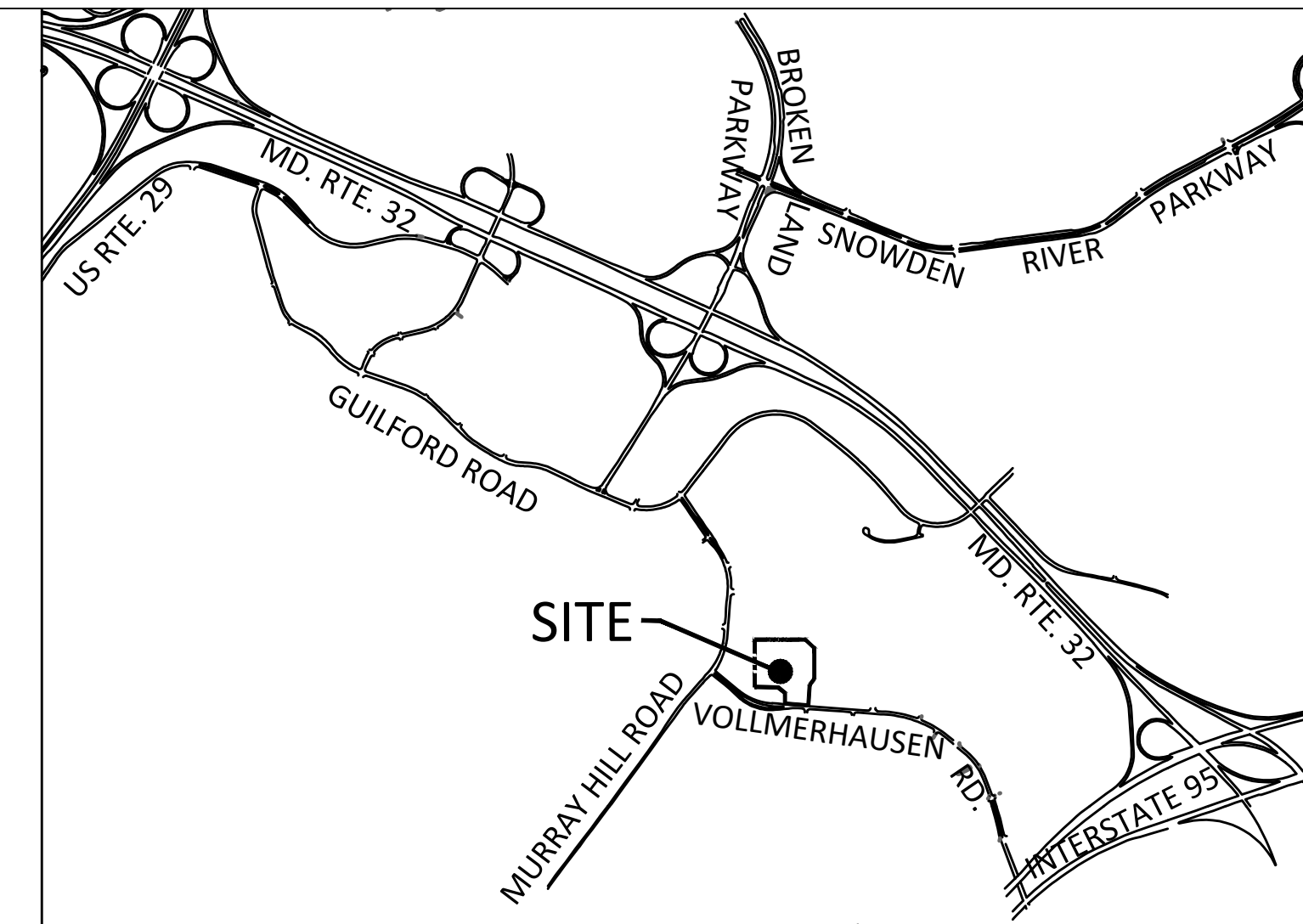
## LOCATION MAP

SCALE: 1"=100'

[illegible]

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 490, EXPIRATION DATE: JUNE 17, 2023.

DESIGN PROFESSIONAL:  
PAUL WALSKY  
HOWARD CO. DEPT. OF REC. & PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
TELEPHONE NUMBER: 410 313-1695



## VICINITY MAP


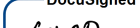
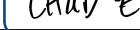
SCALE: 1"=2000'

## SHEET INDEX

1	COVER SHEET
2	EXISTING CONDITIONS AND DEMOLITION PLAN
3	GRADING, EROSION AND SEDIMENT CONTROL PLAN
4	EROSION AND SEDIMENT CONTROL DETAILS
5	EROSION AND SEDIMENT CONTROL NOTES
6	DETAILS
7	LAYOUT AND GEOMETRY PLAN
8	ENVIRONMENTAL CONCEPT PLAN
9	STORMWATER MANAGEMENT DETAILS
10	STORMWATER MANAGEMENT DETAILS
11	STORMWATER MANAGEMENT NOTES
12	LANDSCAPE PLAN
13	EXISTING DRAINAGE AREA MAP
14	PROPOSED DRAINAGE AREA MAP
15	DRAINAGE AREA MAP ESD PRACTICES

## SITE DATA CHART

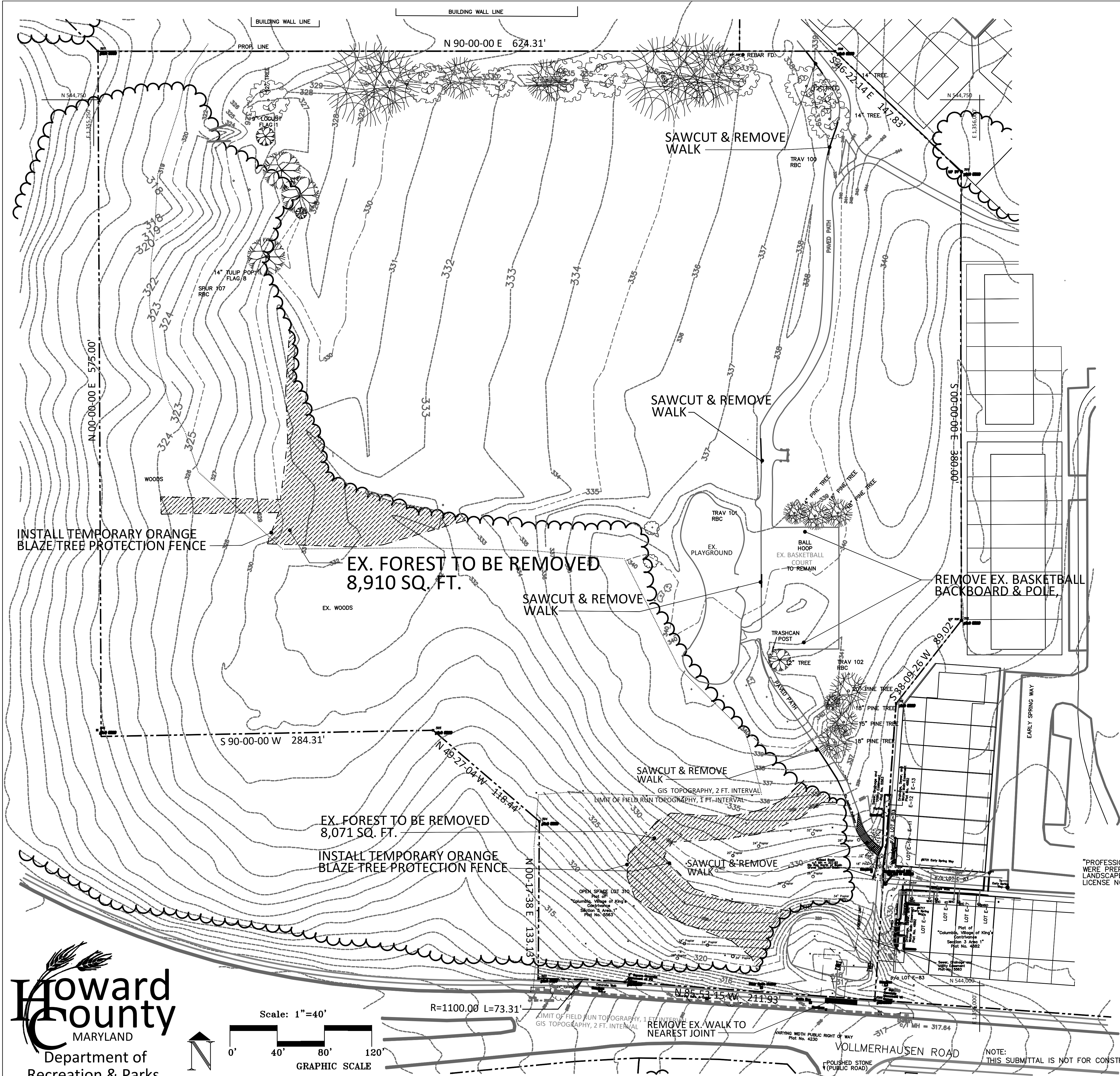
a.	TOTAL PARCEL AREA: 11 ACRES
b.	LIMIT OF DISTURBANCE: 2.13 ACRES
c.	ZONING: NEW TOWN
d.	PROPOSED USES AND STRUCTURES: PATHWAYS, BASKETBALL COURT, STORM WATER MANAGEMENT FACILITIES, SOFTBALL BACKSTOP
e.	APPLICABLE DPZ FILE NUMBERS: FDP-169-A-4 PART 1, PLAT NO. 4439, PLAT NO. 5563

APPROVED: DEPARTMENT OF PLANNING & ZONING	
DocuSigned by:  Chief, Development Engineering Division	6/22/2022
DocuSigned by:  Chief, Division of Land Development	Date 6/22/2022
DocuSigned by:  Director	Date 6/23/2022
SB4020094700C404	

COVER SHEET  
ALTERNATIVE COMPLIANCE EXHIBIT  
**Huntington Park**

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942 11.0 ACRES  
OWNER: HOWARD COUNTY BOARD OF EDUCATION APRIL 19, 2022 SHEET 1 OF 15





- NOTE**
- 1) ALL EXISTING TREES WITHIN THE LIMIT OF DISTURBANCE SHALL BE REMOVED.
  - 2) ALL REQUIRED DEMOLITION NOT INDICATED SHALL BE INCLUDED IN THE CONTRACT.

PROPOSED FOREST TO BE REMOVED: 0.35 ACRES

- EXISTING STORM DRAIN PIPE & INLET
- EXISTING ELECTRIC OUTLET OR CONNECTION
- EXISTING ELECTRIC METER
- EXISTING LIGHT POLE
- EXISTING RAIN DRAIN
- EXISTING SENTRYCON DISK
- EXISTING WATER VALVE, METER OR SPIGOT
- EXISTING FIBER OPTICS
- EXISTING CONTOUR
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING FOREST LIMIT
- EXISTING FOREST TO BE REMOVED: 0.35 ACRES
- TEMPORARY ORANGE BLAZE FENCE

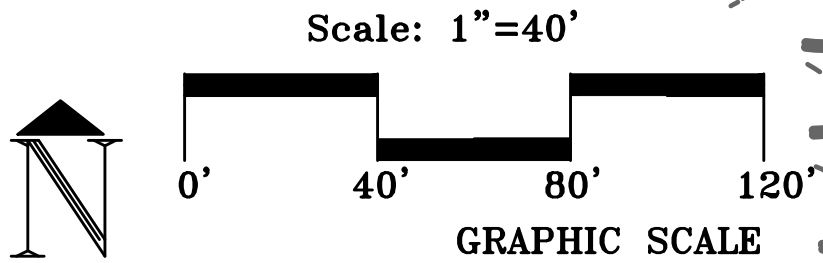
NO.	REVISION	DATE

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HOWARD CO. DEPT. OF REC. & PARKS  
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TELEPHONE NUMBER: 410 313-1695



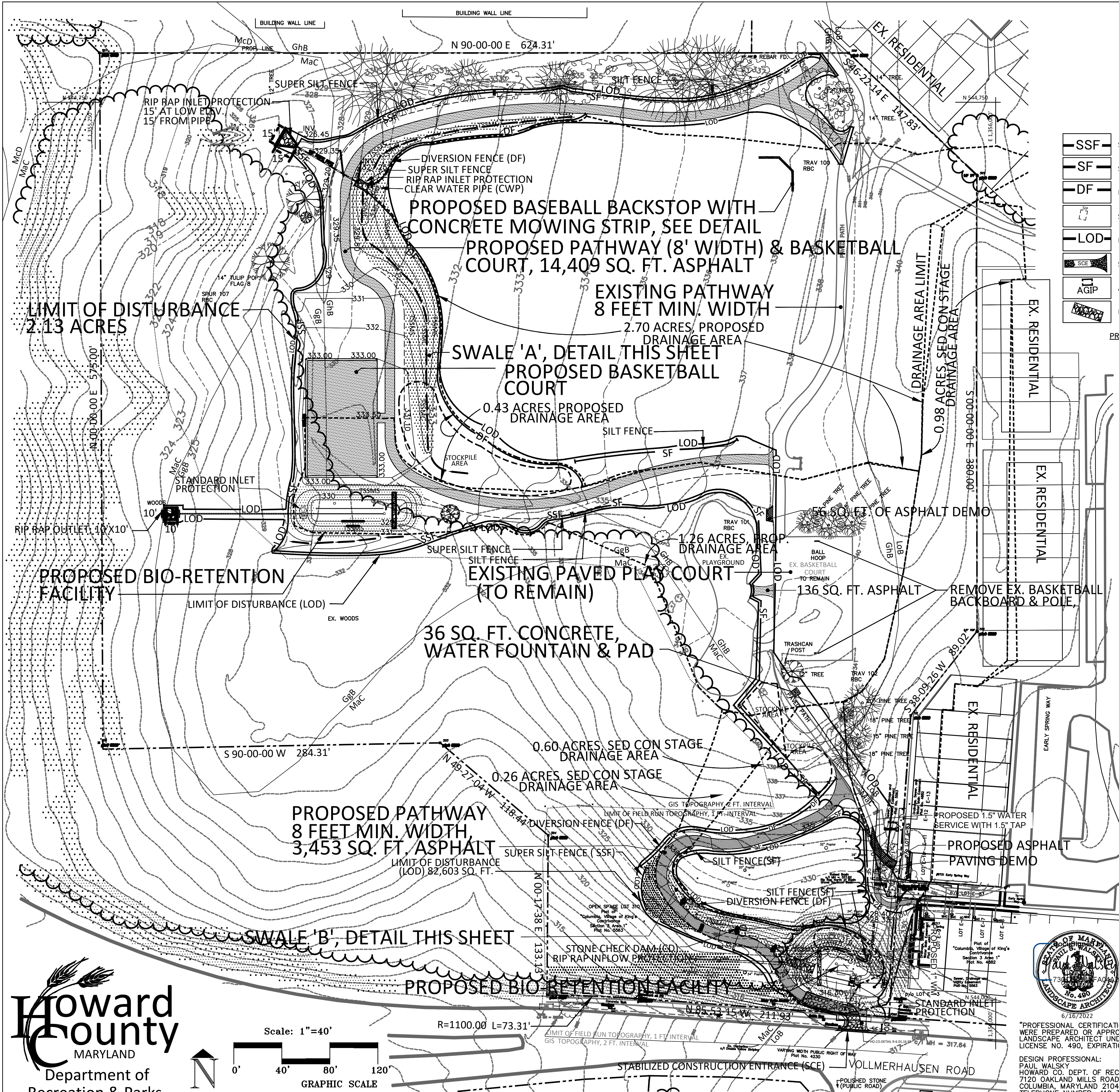
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
DocuSigned by: Chief, Development Engineering Division	6/22/2022 Date
DocuSigned by: Chief, Division of Land Development	6/22/2022 Date
DocuSigned by: Director	6/23/2022 Date



EXISTING CONDITIONS AND DEMOLITION PLAN  
ALTERNATIVE COMPLIANCE EXHIBIT  
**Huntington Park**

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OWNER: HOWARD COUNTY BOARD OF EDUCATION APRIL 18, 2022 SHEET 2 OF 15





SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
GgB	GLENELG LOAM, 3-8% SLOPES	B	0.24
GhB	GLENELG-URBAN LAND COMPLEX, 0-8% SLOPES	B	N/A
GmB	LEGORE-MONTALTO-URBAN LAND , 0-8% SLOPES	C	N/A
MaC	MANOR LOAM, 8-15% SLOPES	B	0.28

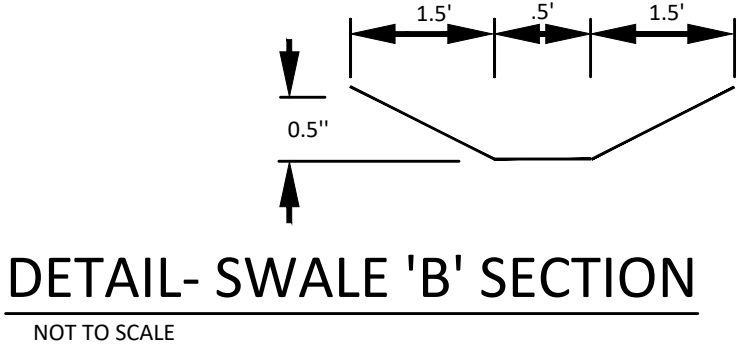
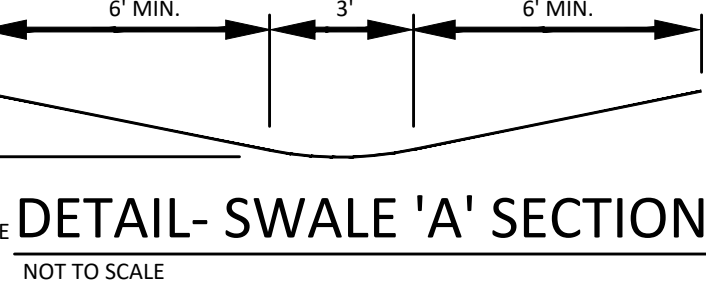
SEDIMENT CONTROL LEGEND

SSF	SUPER SILT FENCE	Clean Water Pipe
SF	SILT FENCE	STONE CHECK DAM
DF	DIVERSION FENCE	TEMPORARY SOIL STABILIZATION MATTING CHANNEL
	STANDARD INLET PROTECTION	TEMPORARY SOIL STABILIZATION MATTING SLOPE
LOD	LIMIT OF DISTURBANCE	SOILS LIMIT
SCE	STABILIZED CONSTRUCTION ENTRANCE	DRAINAGE AREA FOR SEDIMENT CONTROL
AGIP	AT GRADE INLET PROTECTION	SLOPES GREATER THEN 25%
	RIP RAP INLET PROTECTION	SLOPES BETWEEN 15 - 25%

PROPOSED FOREST TO BE REMOVED: 0.35 ACRES

LEGEND

	EXISTING STORM DRAIN PIPE & INLET
	EXISTING ELECTRIC OUTLET OR CONNECTION
	EXISTING ELECTRIC METER
	EXISTING LIGHT POLE
	EXISTING RAIN DRAIN
	EXISTING SENTRICON DISK
	EXISTING WATER VALVE, METER OR SPIGOT
	EXISTING FIBER OPTICS
	EXISTING GAS
	EXISTING CLEAN OUT
	EXISTING UTILITY POLE & GUY WIRE
	EXISTING MANHOLE
	DEMO EXISTING PAVING
	PROPOSED ASPHALT PAVING
	PROPOSED CONCRETE
	PROPOSED CONTOUR
	EXISTING CONTOUR
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN TREE
	EXISTING FOREST LIMIT
	SOILS



SEDIMENT CONTROL

Owners/Developer Certification:

"I/We hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE."

Owner's/Developer's Signature: Bruce Gist Date: 6/10/2022

Printed Name & Title

Design Certification:

"I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Designer's Signature: Paul S. Walsky Date: 6/16/2022

Paul S. Walsky Printed Name

MD Registration No. 11046 P.E., R.L.S., and/or L.S. (circle one)

Professional Certification:

"I hereby certify 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. 490 , Expiration Date: 6/17/2023

(Title block, certification, seal, and signature shall appear close to each other)

Howard SCD Signature Block:

This plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Alexander Bratich 6/23/2022

Howard Soil Conservation District Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 6/27/2022

Chief, Division of Land Development 6/23/2022

Director



"PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 490, EXPIRATION DATE: JUNE 17, 2023.

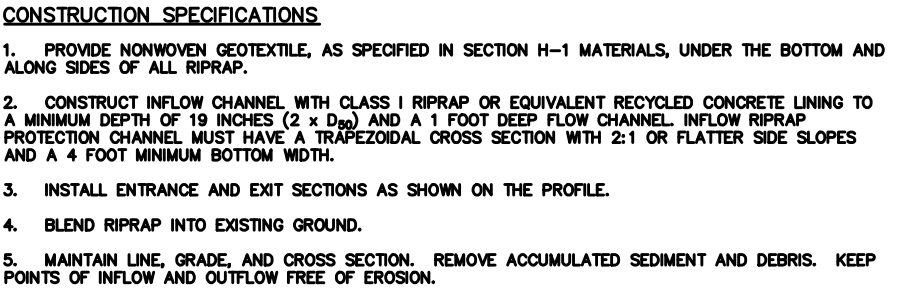
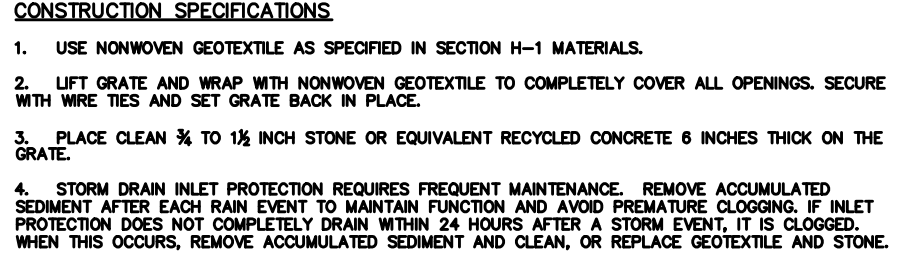
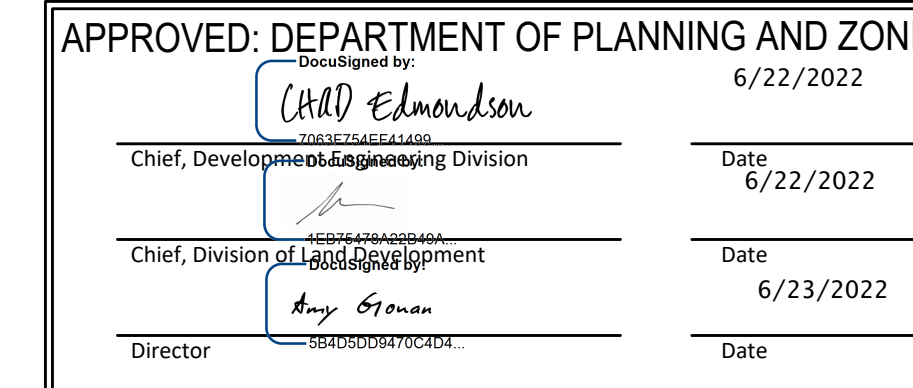
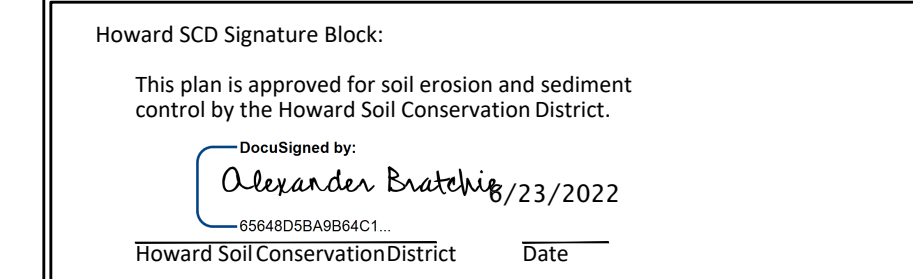
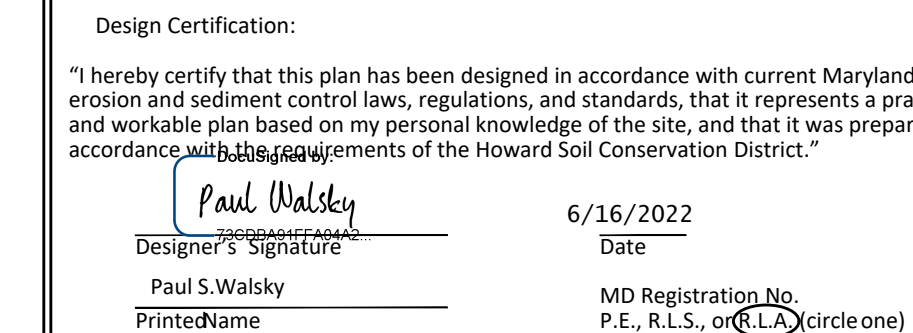
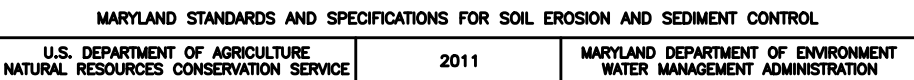
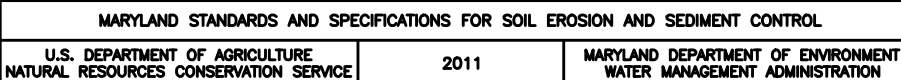
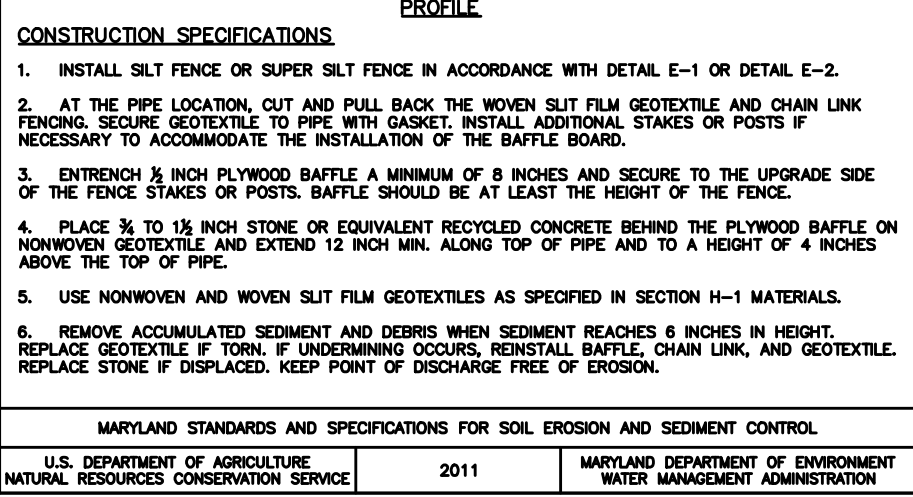
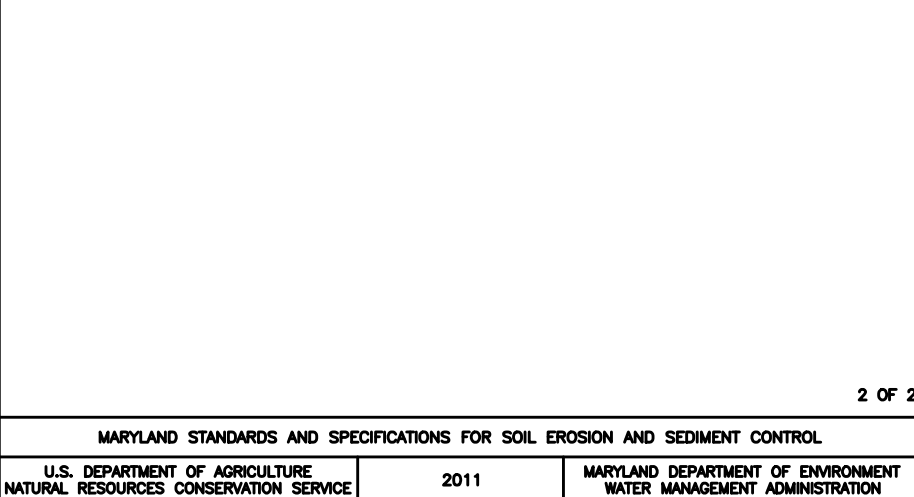
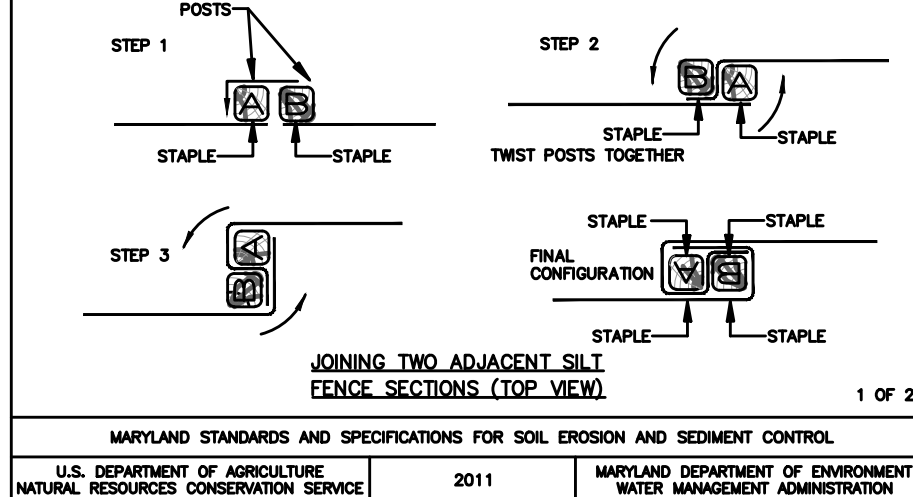
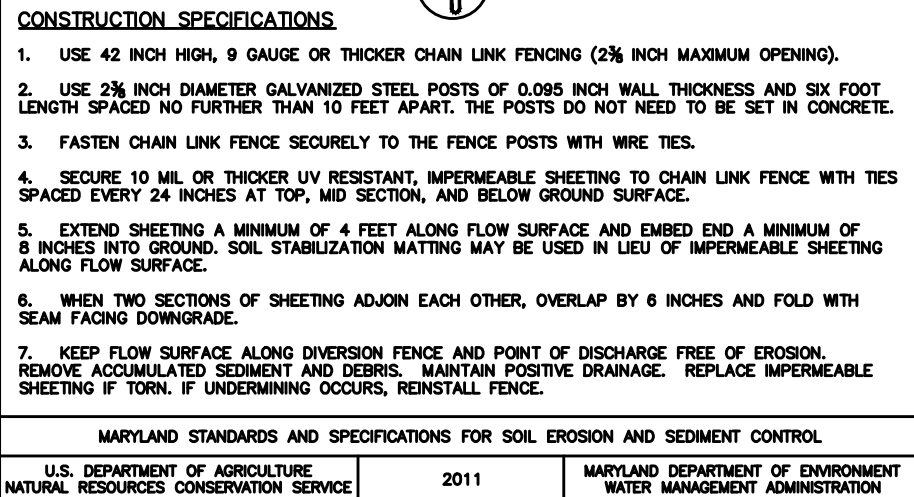
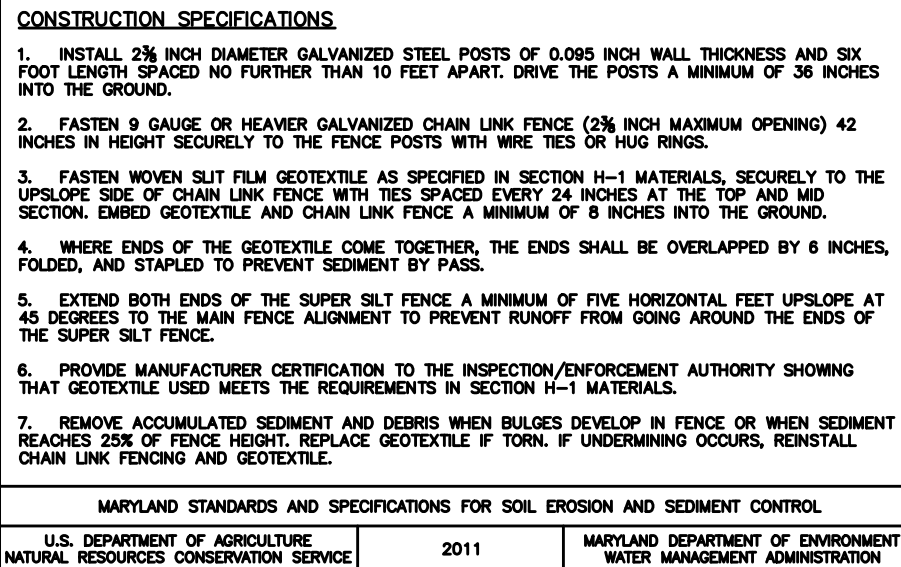
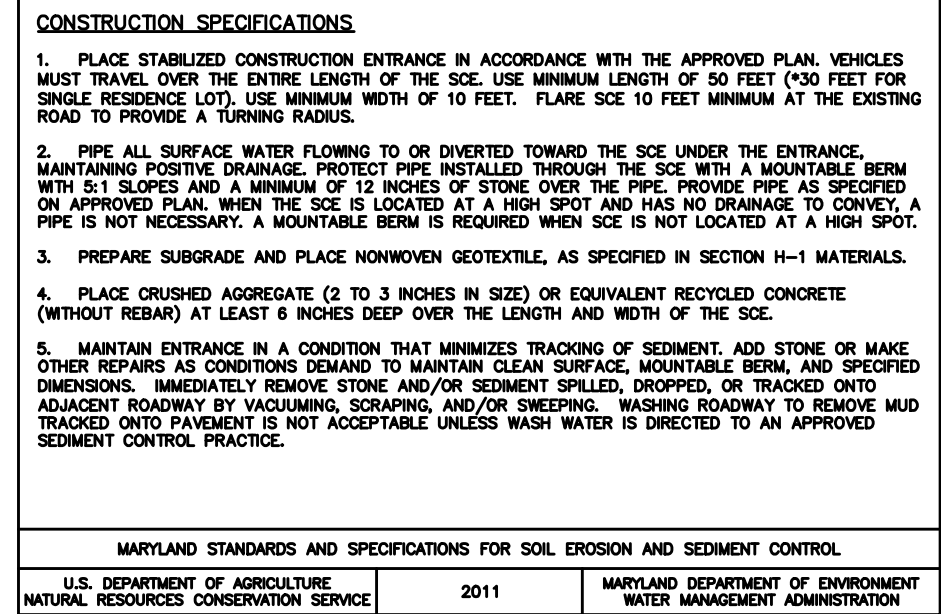
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GRADING, EROSION & SEDIMENT CONTROL PLAN  
ALTERNATIVE COMPLIANCE EXHIBIT

Huntington Park

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942 11.0 ACRES  
OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 3 OF 15



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EROSION & SEDIMENT CONTROL DETAILS  
ALTERNATIVE COMPLIANCE EXHIBIT  
**Huntington Park**

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 10.91 ACRES  
OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 4 OF 15



B-4-5 STANDARDS AND SPECIFICATIONS  
FOR  
PERMANENT STABILIZATION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA

A. SEED MIXTURES

1. GENERAL USE

- A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 – CRITICAL AREA PLANTING.
- C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
- D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY URSA FORM FERTILIZER (46-0-0) AT 1-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.

2. TURFGRASS MIXTURES

- A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
- B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
- I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE; FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
- II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE; FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/ CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
- III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE; FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
- IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE; FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:  
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

- WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 10 TO OCTOBER 1 (HARDINESS ZONES: SB, 6A)
- CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
- SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)

- D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1¼ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

1. GENERAL SPECIFICATIONS

- A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
- B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
- C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
- D. SOD MUST NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

2. SOD INSTALLATION

- A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
- B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
- C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEK OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
- D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.

3. SOD MAINTENANCE

- A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
- B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
- C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.



PERMANENT SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3):				ZONE 6b		FERTILIZER RATE (10-20-20)			LIME RATE
SEED MIXTURE (FROM TABLE B.3):				9					
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O		
1	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS OR EQUA	T.F. 60 LB / AC	MAR 1 TO MAY 15 AUG 15 TO OCT 15	1/4-1/2 IN	45 LB/AC (1 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	90 LB/AC (2 LB PER 1000 SF)	2 TONS/AC (80 LB PER 1000 SF)	
8	TALL FESCUE	T.F.100 LB / AC	FEB.15-APRIL 30 AUG.15-NOV.31						
11	DRIPPING RED FESCUE OR KENTUCKY BLUEGRASS OR EQUA	30 30 30							

R-4-2 STANDARDS AND SPECIFICATIONS  
FOR  
SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS

DEFINITION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

- A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS, OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRESSED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- B. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- C. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

- A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
- I. SOIL PH BETWEEN 6.0 AND 7.0.
- II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
- III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
- IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
- V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
- C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
- D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
- E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRAGILE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

- I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
- A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
- B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLURISH CONTINUING SUCCESSION OF MOISTURE AND PLANT NUTRIENTS.
- C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
- D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- E. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
- A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CONCRETE, STONES, SLAG, COARSE FRAGMENTS, GRASS STOKES, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
- B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERBERIS GRASS, QUACK GRASS, JOHNSON GRASS, NET SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
- C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
- A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
- B. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
- C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

B-4-3 STANDARDS AND SPECIFICATIONS  
FOR  
SEEDING AND MULCHING

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CONDITIONS WHERE PRACTICE APPLIES

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

CRITERIA

A. SEEDING

1. SPECIFICATIONS

- A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE 8.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- B. MULCH ALONE MAY BE APPLIED BEFORE THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
- C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

- A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
- I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
- II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDBED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.
- B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
- I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
- II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
- I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHORUS), 200 POUNDS PER ACRE; K2O (POTASSIUM), 200 POUNDS PER ACRE.
- II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
- III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
- IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

- A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
- B. WOOD CELLULOSE: FIBER MULCH (WFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
- I. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
- II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
- III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND DRAINAGE PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
- IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
- V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.8 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION

- A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
- C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

- A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
- I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
- II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II, TERRA TACK OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
- IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

Erosion and Sediment Control Narrative

Huntington Parks is a community facility located in the King's Contrivance area of Columbia, just west of the intersection of Maryland Route 32 and I-95. The existing park consists of pathways, one playground, one multi-purpose field and one basketball court. At the request of the adjacent community we are proposing to remove the existing basketball basket and construct a new court away from the existing residences. Additionally we are proposing a loop configured pathway to connect to the new basketball court from the existing pathway, install one baseball backstop near where there was an existing backstop and construct required stormwater bio-retention facilities.

The soils consist of Glenelg Loam (3-8% slopes), Glenelg-Urban Land Complex (0-8% slopes), Legore-Montaite-Urban Land (0-8% slopes) and Manor Loam (8-15% slopes).

The park comprises of 10.91 acres and was developed in the late 1980s. The proposed disturbance is 1.99 acres.

For storm water management we are proposing two micro-bioretenation basins located adjacent to the new basketball court and one located in an existing drainage sump.

The proposed erosion and sediment control measures include installing the following devices from the 2011 Standards and Specifications for Soil Erosion and Sediment Control by the Maryland Department of the Environment. They include super silt fence, silt fence, diversion fence, stabilized construction entrance, standard inlet protection, stone check dam and temporary soil stabilization.

\*PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 490, EXPIRATION DATE: JUNE 17, 2023.

DESIGN PROFESSIONAL:

ALEX W. WATKINS  
HOWARD CO. DEPT. OF REC. & PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
TELEPHONE NUMBER: 410 313-1695



6/16/2022

B-4-4 STANDARDS AND SPECIFICATIONS  
FOR  
TEMPORARY STABILIZATION

DEFINITION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES

EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3):			ZONE 6b		FERTILIZER RATE (10-20-20)	LIME RATE
SEED MIXTURE (FROM TABLE B.1):						
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS		
1	COOL SEASON ANNUAL PERGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF )	2 TONS/AC (90 LB PER 1000 SF )
2	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.		

B-4-8 STANDARDS AND SPECIFICATIONS  
FOR  
STOCKPILE AREA

DEFINITION

A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

PURPOSE

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTAINS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CONDITIONS WHERE PRACTICE APPLIES

STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

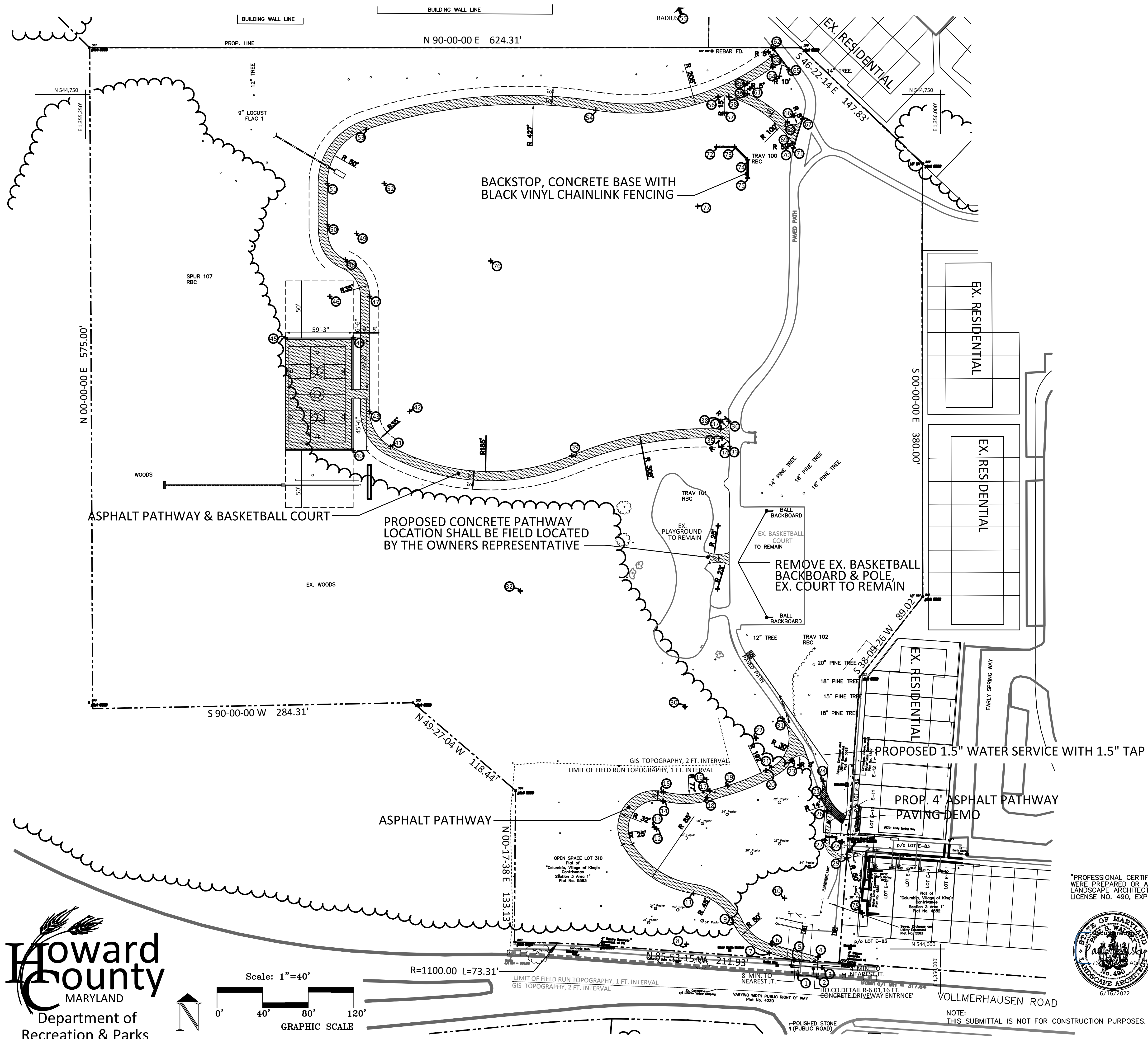
CRITERIA

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3.3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE









GEOMETRY TABLE			
PT.NO.	NORTHING	EASTING	DESCRIPTION
1	543976.88	1355875.41	PT
2	543975.75	1355891.36	PT
3	543983.70	1355896.00	PT
4	543992.84	1355892.71	PT
5	543990.40	1355871.45	PT
6	544003.99	1355852.15	PC
7	543996.27	1355799.03	PC
8	544004.16	1355792.25	RADIUS
9	544023.26	1355817.99	PC
10	544044.49	1355863.26	RADIUS
11	544048.72	1355783.48	PC
12	544105.44	1355751.09	RADIUS
13	544108.97	1355748.93	RADIUS
14	544129.80	1355756.73	PC
15	544137.98	1355756.93	PC
16	544148.73	1355794.91	RADIUS
17	544138.73	1355797.67	PC
18	544132.90	1355795.24	RADIUS
19	544143.37	1355813.41	PC
20	544156.77	1355846.91	PC
21	544159.41	1355851.88	PC
22	544185.00	1355838.30	RADIUS
23	544185.08	1355869.76	PC
24	544147.31	1355897.24	PT
25	544132.02	1355895.54	PT
26	544120.51	1355900.31	PT
27	544093.19	1355898.66	PT
28	544094.11	1355913.67	RADIUS
29	544079.70	1355917.78	PC
30	544212.60	1355775.92	RADIUS
31	544202.36	1355861.24	PC
32	544314.27	1355651.45	RADIUS
33	544441.15	1355815.15	PC
34	544441.13	1355808.09	RADIUS
35	544448.11	1355808.53	PC
36	544463.20	1355814.37	PC
37	544456.22	1355806.98	PC
38	544463.21	1355807.37	RADIUS
39	544433.09	1355676.58	PC
40	544437.39	1355484.86	PT
41	544441.02	1355517.76	PC
42	544471.84	1355534.36	RADIUS
43	544471.84	1355499.36	PC
44	544536.40	1355484.86	PT
45	544536.40	1355425.36	PT
46	544572.83	1355464.36	RADIUS
47	544572.83	1355464.36	PC
48	544605.06	1355478.00	PC
49	544628.08	1355487.75	RADIUS
50	544636.06	1355462.11	PC
51	544671.88	1355462.11	PC
52	544671.88	1355512.11	RADIUS
53	544719.30	1355496.28	PC
54	544736.12	1355697.61	PC
55	544941.61	1355729.82	RADIUS
56	544747.64	1355804.90	PC
57	544733.65	1355810.36	RADIUS
58	544748.07	1355814.42	PC
59	544750.62	1355830.82	PC
60	544759.57	1355830.43	PC
61	544755.10	1355832.85	RADIUS
62	544790.47	1355853.06	PC
63	544774.03	1355853.03	PC
64	544765.98	1355858.95	RADIUS
65	544771.78	1355867.09	PC
66	544731.34	1355871.56	RADIUS
67	544728.12	1355879.12	PC
68	544728.86	1355865.73	PC
69	544707.12	1355870.40	PC
70	544704.35	1355866.24	RADIUS
71	544703.28	1355871.12	PC
72	544703.99	1355803.58	PT
73	544703.99	1355819.56	PT
74	544692.67	1355830.87	PT
75	544676.67	1355830.87	PT
76	544603.89	1355605.49	RADIUS
77	544651.85	1355787.03	RADIUS
78	544031.65	1355931.61	RADIUS

- NOTE
- 1) THE GEOMETRIC LAYOUT INFORMATION FOR STORM WATER MANAGEMENT REQUIREMENTS AND WATER FOUNTAIN ARE LOCATED ON OTHER SHEETS.
  - 2) THE DETAILS FOR CONCRETE, ASPHALT, BASKETBALL COURT, ENTRANCE FROM VOLLMERHAUSEN ROAD AND REMOVABLE BOLLARD ARE LOCATED ON SHEET 6 OF 15.
  - 3) THE REMOVABLE BOLLARDS (QUANTITY - 2) SHALL BE FIELD LOCATED, FURNISHED BY OWNER AND INSTALLED BY THE CONTRACTOR.

NO.	REVISION	DATE

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 490, EXPIRATION DATE: JUNE 17, 2023.



DESIGN PROFESSIONAL:  
PAUL WALSKY  
HOWARD CO. DEPT. OF REC. & PARKS  
7120 OAKLAND MILLS ROAD  
COLUMBIA, MARYLAND 21046  
TELEPHONE NUMBER: 410 313-1695

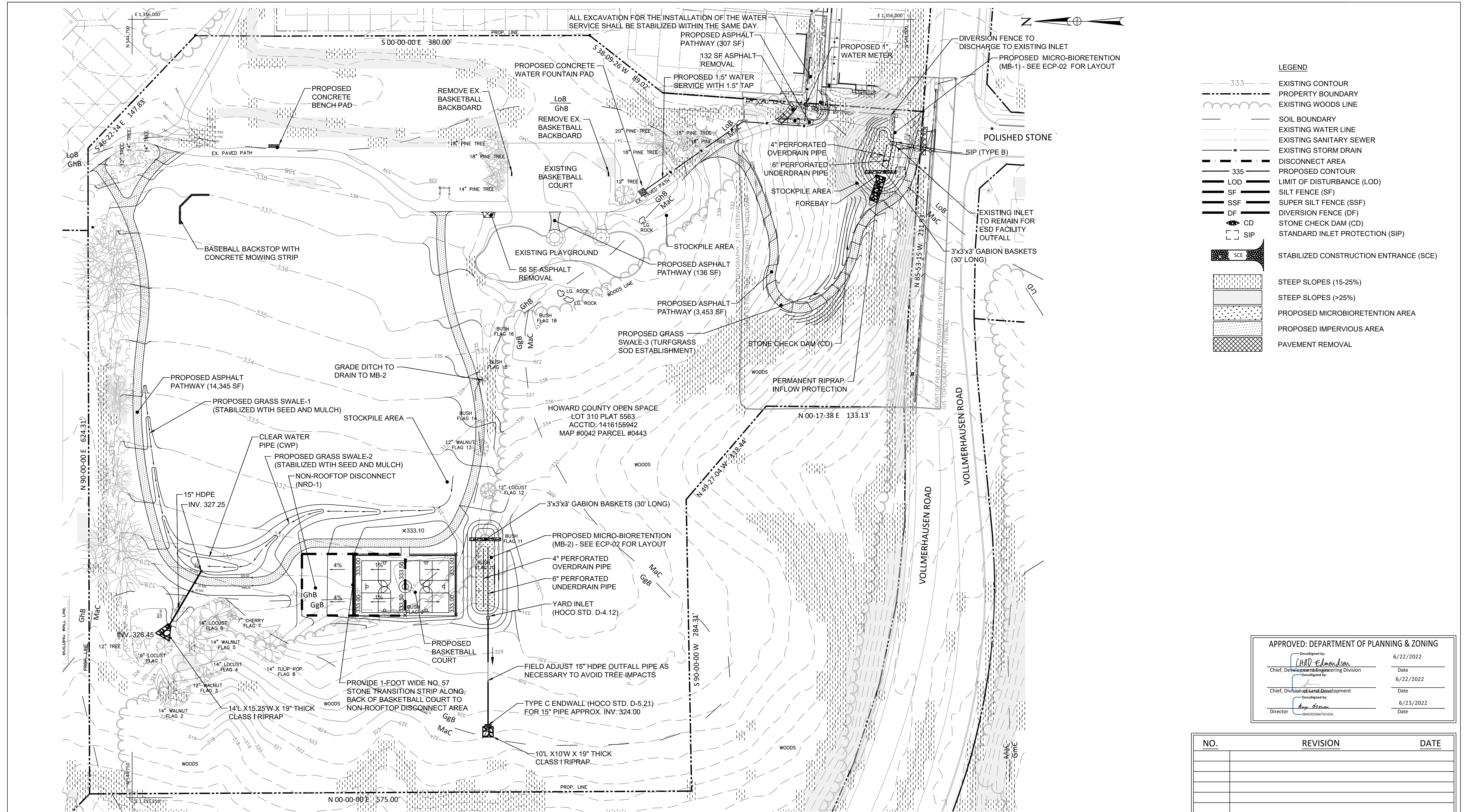
APPROVED: DEPARTMENT OF PLANNING & ZONING

DocuSigned by: <i>Paul Walsky</i> Chief, Department of Planning & Zoning Division	6/22/2022
DocuSigned by: <i>Paul Walsky</i> Chief, Division of Planning & Development	6/22/2022
DocuSigned by: <i>Paul Walsky</i> Director	6/23/2022

LAYOUT AND GEOMETRY PLAN  
ALTERNATIVE COMPLIANCE EXHIBIT  
**Huntington Park**

9895 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.P. 18970/314 TAX ACCOUNTY: 18-155942  
OWNER: HOWARD COUNTY BOARD OF EDUCATION APRIL 18, 2022 SHEET 7 OF 15



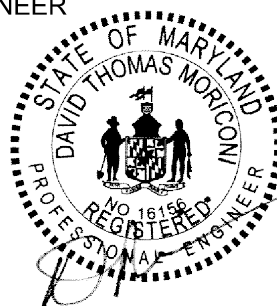


PROFESSIONAL CERTIFICATION:

"I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,

PREPARED BY  
**AECOM**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-7220

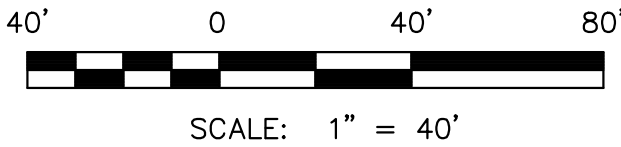
DESIGN PROFESSIONAL:  
DAVE MORICONI  
LICENSE NO. 16156  
EXPIRATION DAE: 8/28/2022



Moriconi,  
Dave

Digitally signed by Moriconi, Dave  
DN: cn=Moriconi, Dave  
email=dave.moriconi@aecom.com  
Date: 2022.08.18 15:20:07 -0400

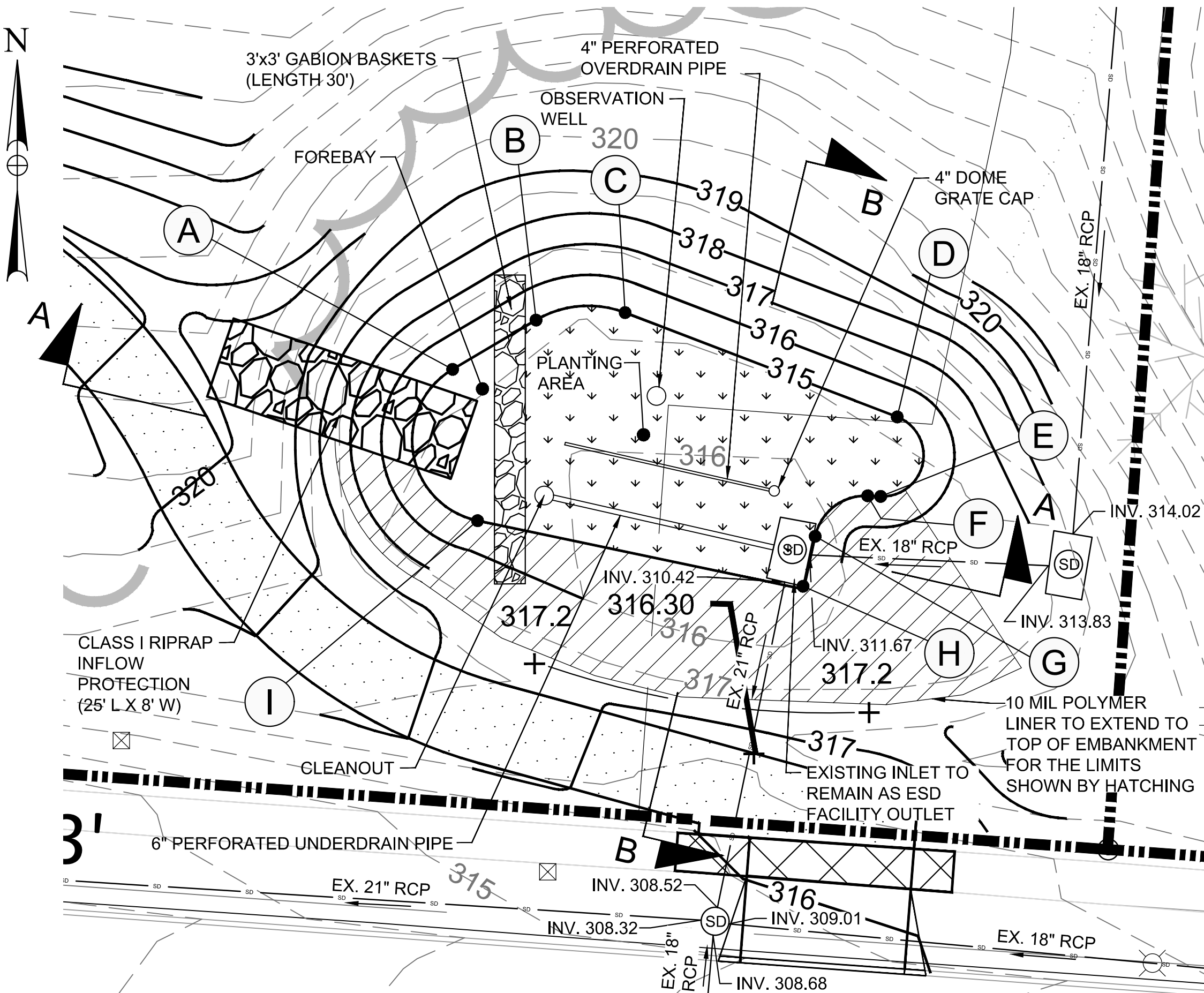
TOTAL LIMIT OF  
DISTURBANCE = 2.13 AC



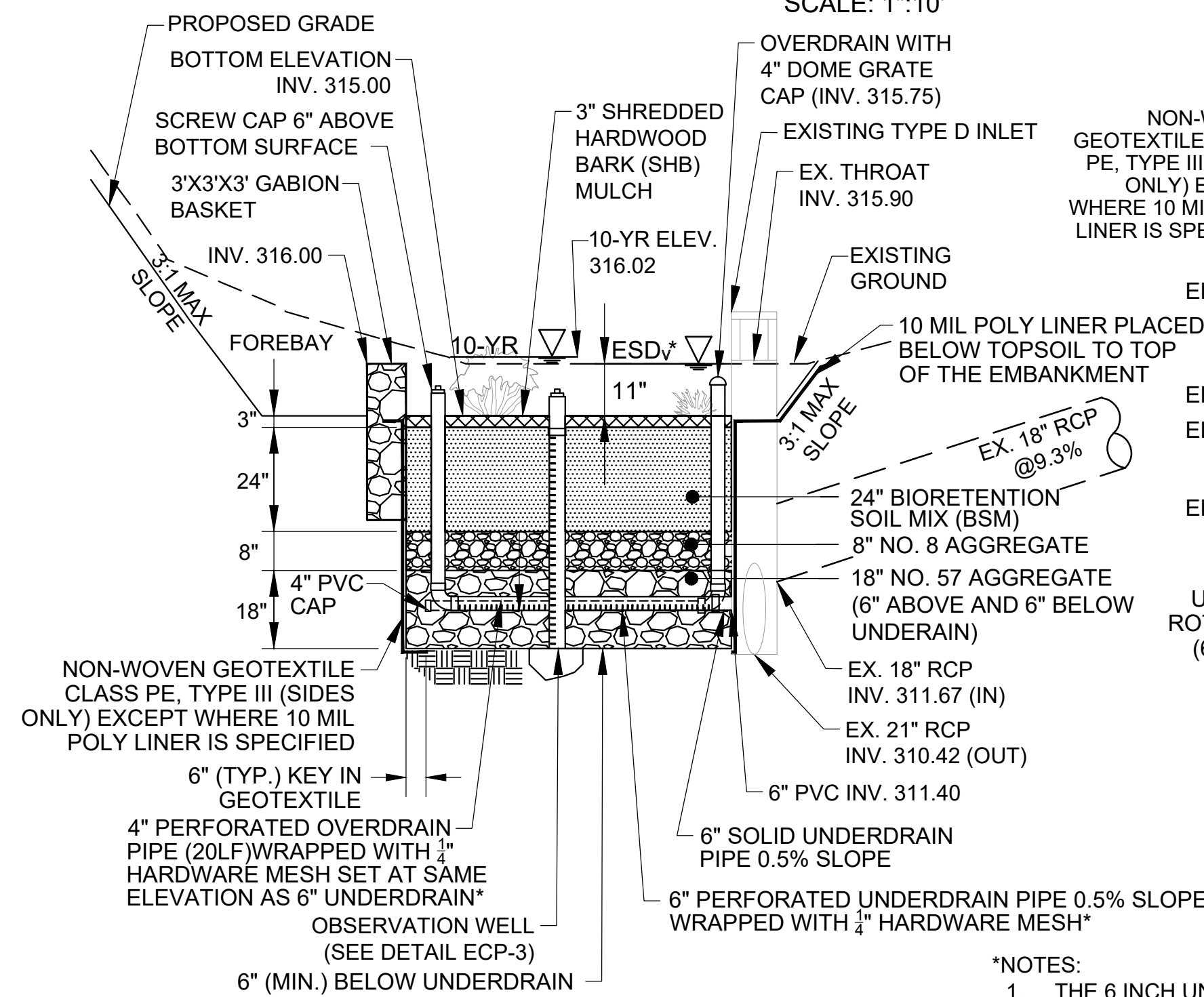
APPROVED: DEPARTMENT OF PLANNING & ZONING		
DocuSigned by: <i>Chad Edmondson</i> Chief, Development Engineering Division	6/22/2022	Date
DocuSigned by: Chief, Division of Land Development	6/22/2022	Date
DocuSigned by: <i>Angie Brown</i> Director	6/23/2022	Date

NO.	REVISION	DATE





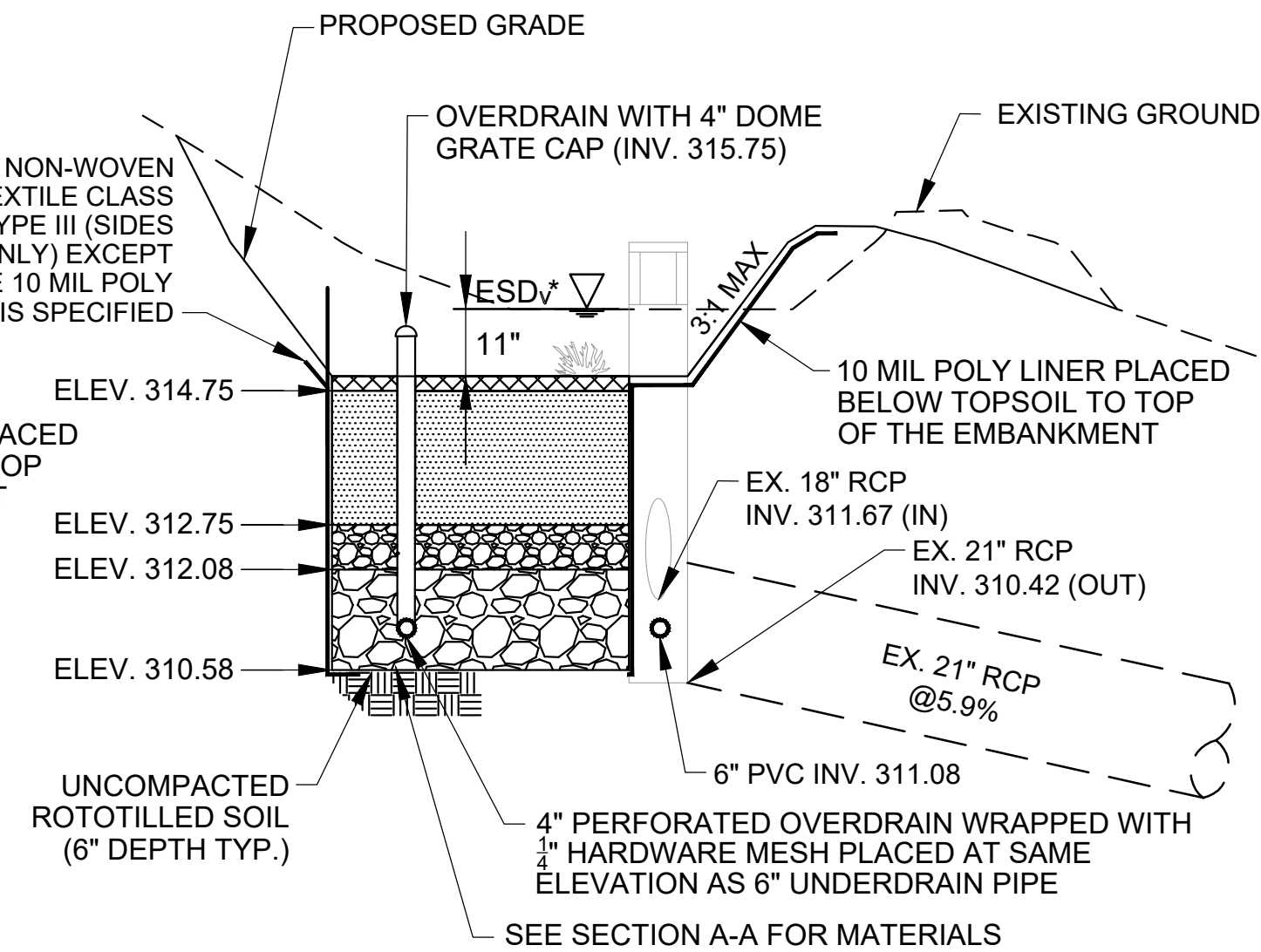
M-6 MICRO-BIORETENTION (MB-1)  
SCALE: 1"=10'



MICRO-BIORETENTION (MB-1) - SECTION A-A  
SCALE: NTS

- \*NOTES:
- THE 6 INCH UNDERDRAIN AND 4 INCH OVERDRAIN ARE TO BE PLACED AT THE SAME ELEVATION. SEE PLAN FOR LOCATION.
  - THE 6 INCH UNDERDRAIN AND 4 INCH OVERDRAIN SHOWN ON THE TYPICAL SECTION ARE NOT CONNECTED. THE VIEW DEPICTS THE 6 INCH UNDERDRAIN IN FRONT OF THE 4 INCH OVERDRAIN SYSTEM.

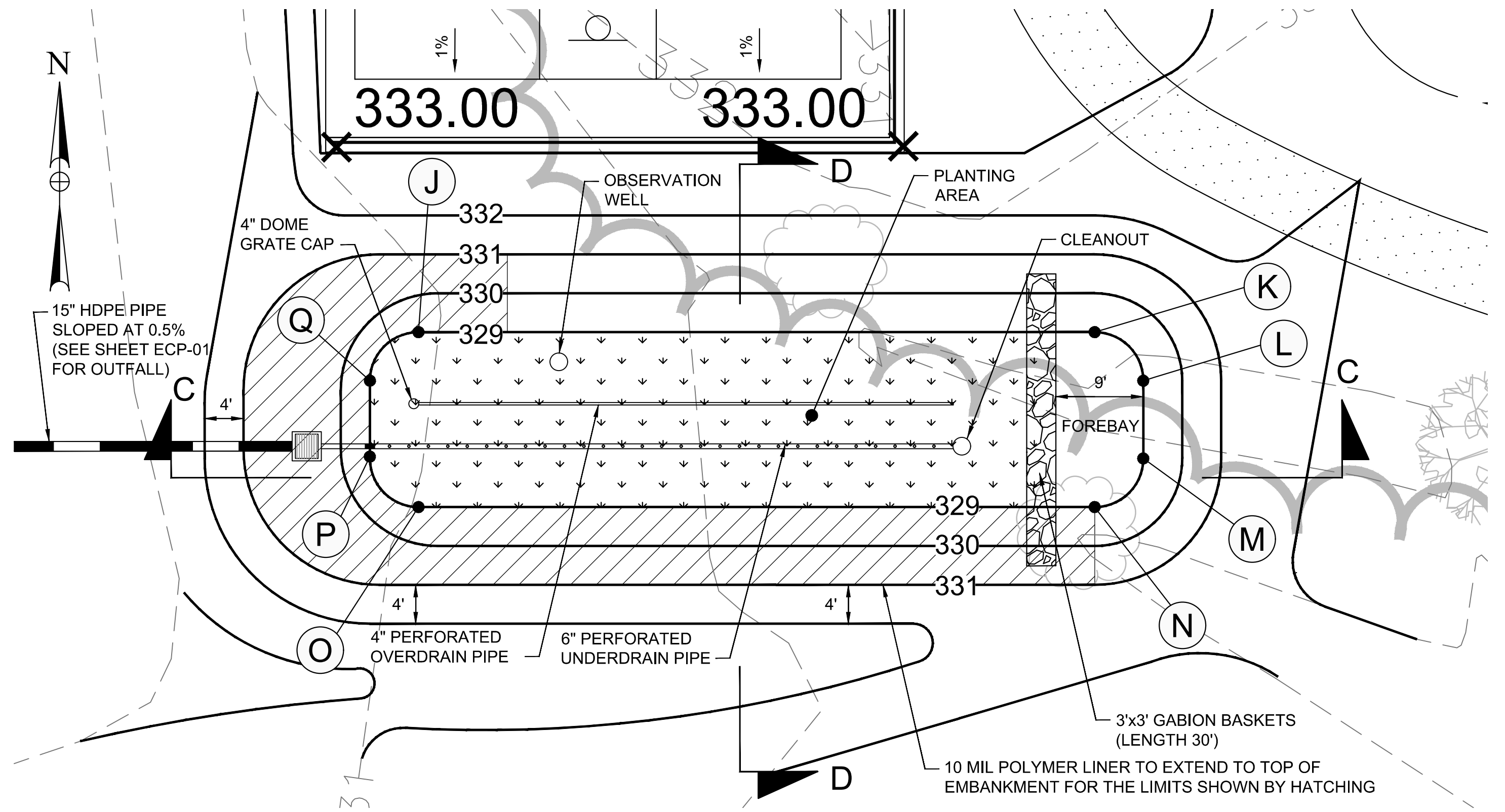
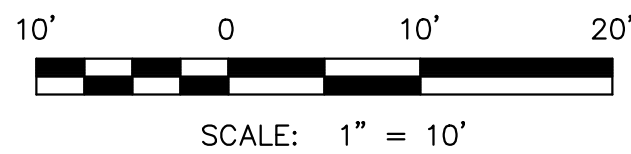
MICRO-BIORETENTION (MB-1) - SECTION B-B  
SCALE: NTS



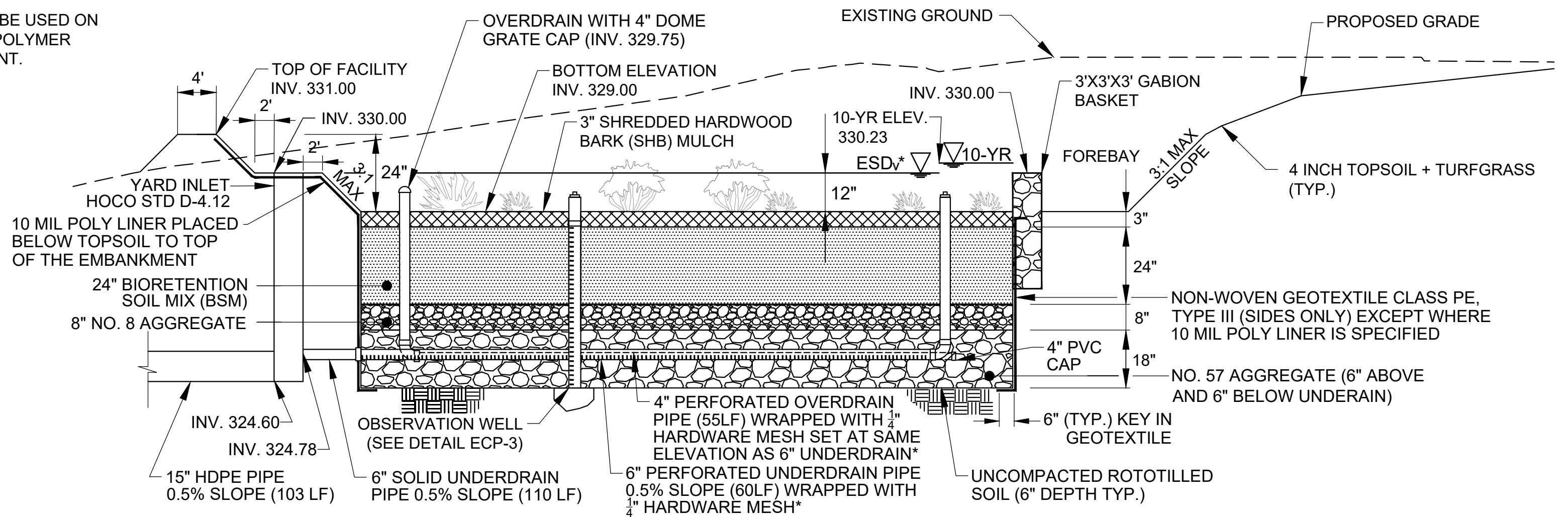
MICRO-BIORETENTION (MB-1) LAYOUT COORDINATES		
POINT	NORTHING	EASTING
A	544,034.56	1,355,847.45
B	544,039.35	1,355,855.57
C	544,040.08	1,355,864.23
D	544,029.94	1,355,890.69
E	544,022.20	1,355,889.08
F	544,022.26	1,355,887.82
G	544,018.32	1,355,882.71
H	544,013.17	1,355,881.60
I	544,019.84	1,355,849.88

MICRO-BIORETENTION (MB-2) LAYOUT COORDINATES		
POINT	NORTHING	EASTING
J	544,418.87	1,355,434.91
K	544,418.87	1,355,504.45
L	544,413.87	1,355,509.45
M	544,405.87	1,355,509.45
N	544,400.87	1,355,504.45
O	544,400.87	1,355,434.91
P	544,405.87	1,355,429.91
Q	544,413.87	1,355,429.91

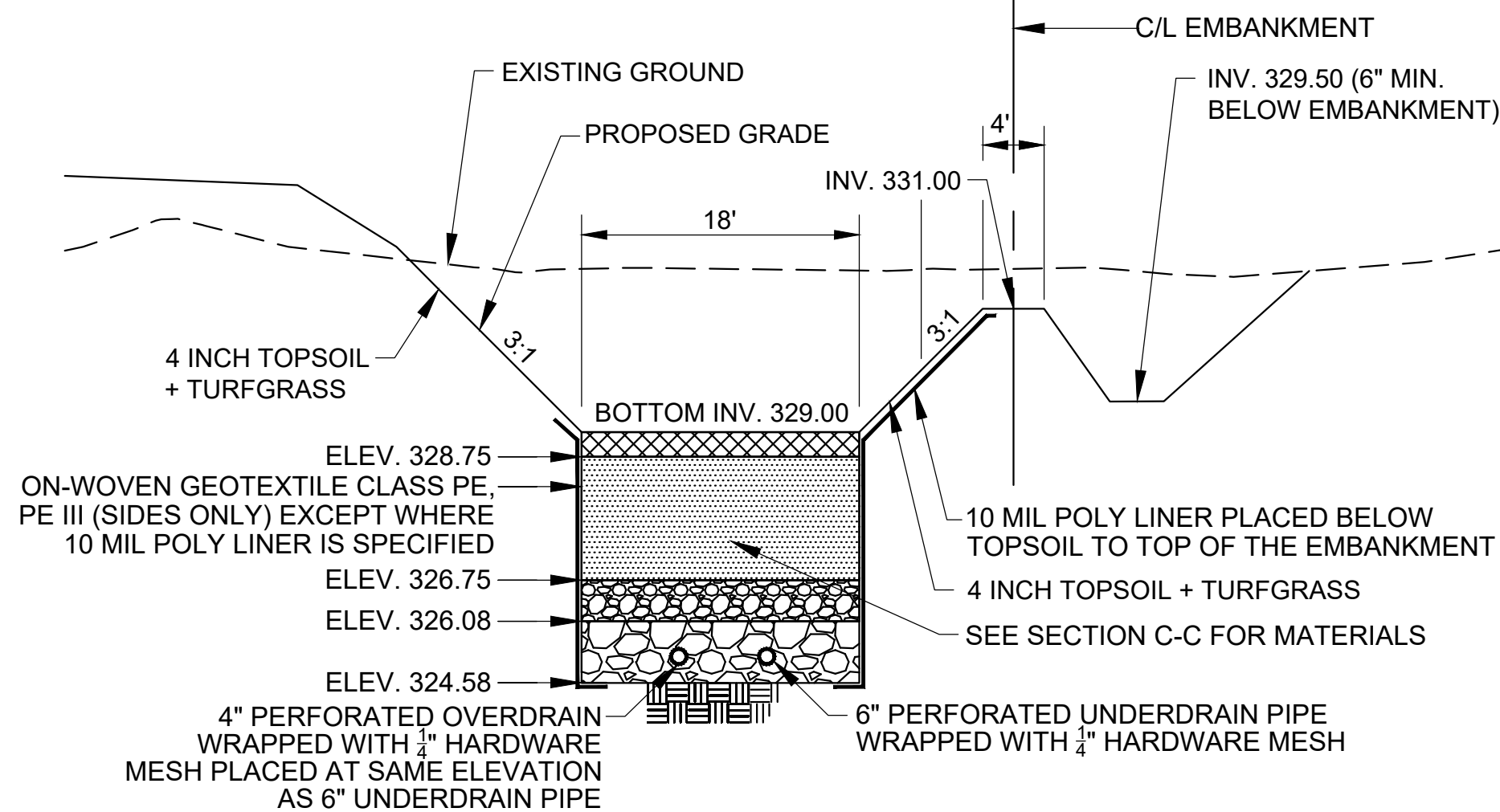
- NOTES:
- TEST PIT, LOCATE, AND PROTECT ALL UTILITIES PRIOR TO ANY SITE DISTURBANCE.
  - NON-WOVEN GEOTEXTILE CLASS PE, TYPE III SHALL BE USED ON ALL SIDES OF THE FACILITY EXCEPT WHERE 10 MIL POLYMER LINER IS SPECIFIED TO THE TOP OF THE EMBANKMENT.



M-6 MICRO-BIORETENTION (MB-2)  
SCALE: 1"=10'



MICRO-BIORETENTION (MB-2) - SECTION C-C  
SCALE: NTS



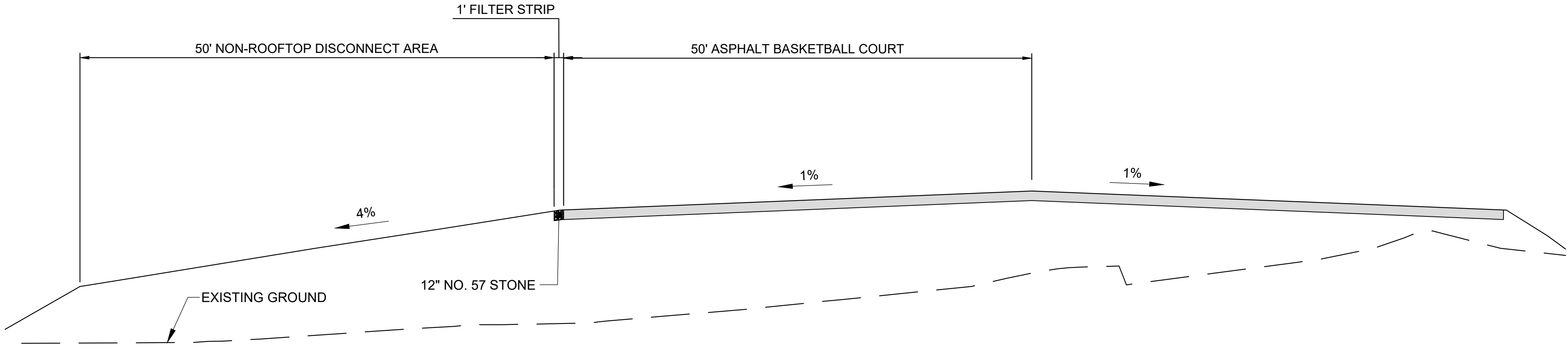
MICRO-BIORETENTION (MB-2) - SECTION D-D  
SCALE: NTS

- \*NOTES:
- THE 6 INCH UNDERDRAIN AND 4 INCH OVERDRAIN ARE TO BE PLACED AT THE SAME ELEVATION. SEE PLAN FOR LOCATION.
  - THE 6 INCH UNDERDRAIN AND 4 INCH OVERDRAIN SHOWN ON THE TYPICAL SECTION ARE NOT CONNECTED. THE VIEW DEPICTS THE 6 INCH UNDERDRAIN IN FRONT OF THE 4 INCH OVERDRAIN SYSTEM.

APPROVED: DEPARTMENT OF PLANNING & ZONING	
	6/22/2022
Chief, Development Engineering Division	6/22/2022
	Date
Chief, Division of Planning & Development	6/23/2022
Director	Date

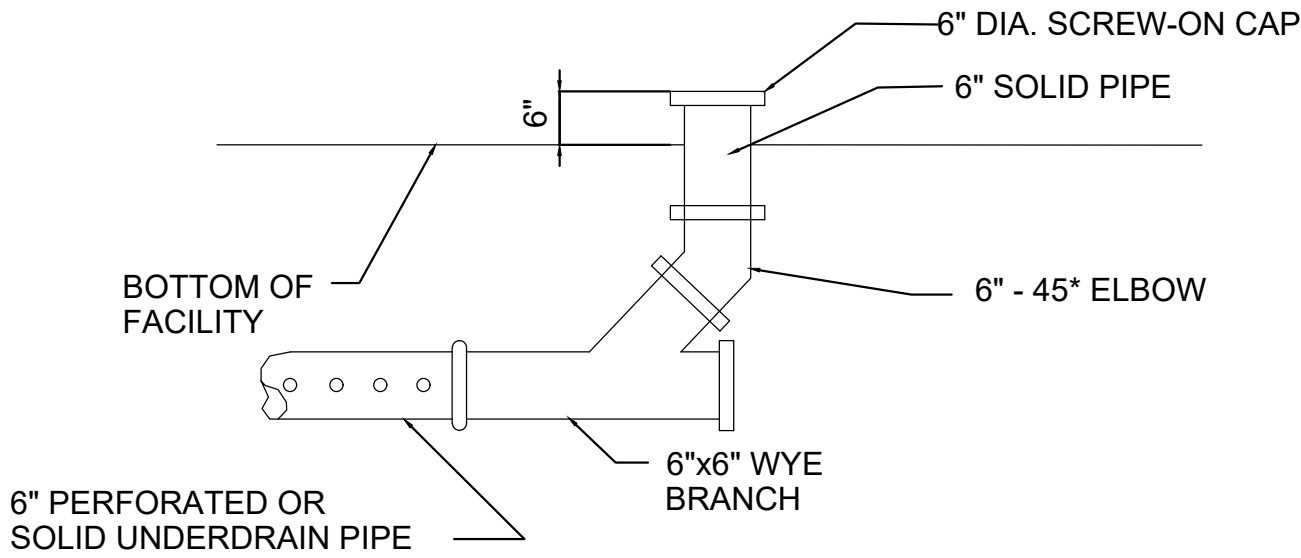
NO.	REVISION	DATE





NON-ROOFTOP DISCONNECT - TYPICAL SECTION

NOT TO SCALE

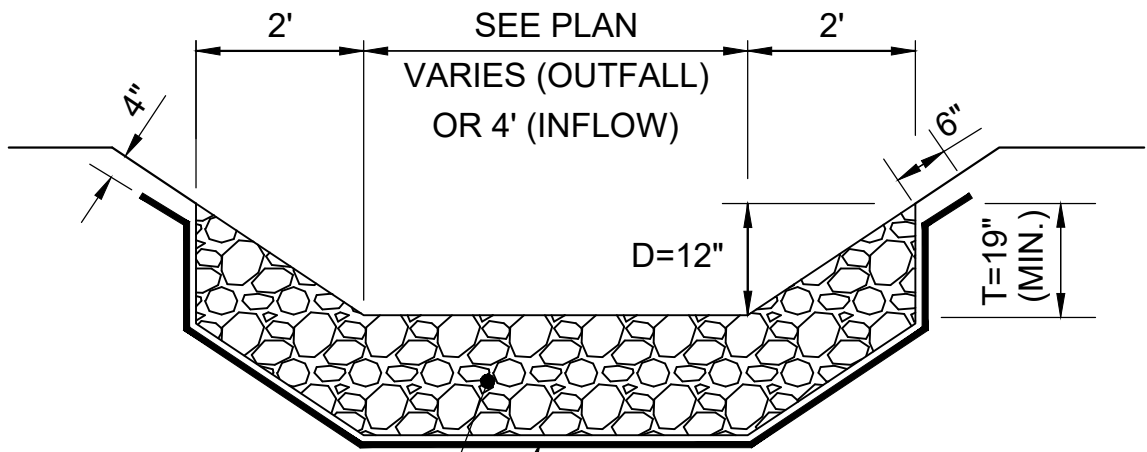


NOTES:

- 1.PROVIDE PERFORATED 6" PVC UNDERDRAIN BENEATH THE BIORETENTION AREA ONLY. THE REMAINDER SHALL BE SOLID 6" PVC PIPE.
- 2.COMpletely WRAP 6" PERFORATED UNDERDRAIN PIPE WITH FILTER FABRIC DURING INSTALLATION.

CLEANOUT (C.O.) DETAIL

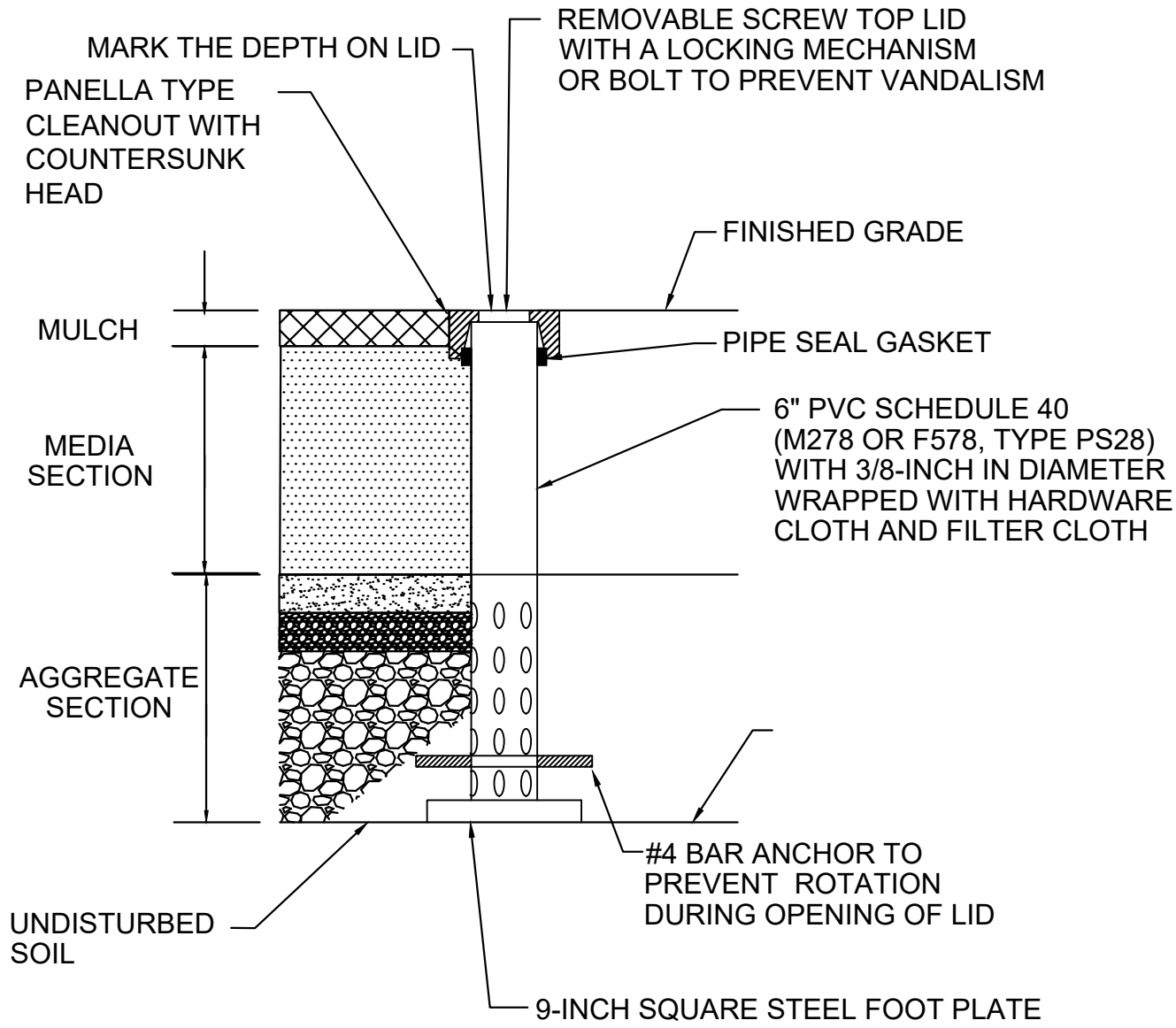
NOT TO SCALE



NOTE: GEOTEXTILE MUST EXTEND AT LEAST 6" FROM EDGE OF RIP-RAP AND BE EMBEDDED AT LEAST 4" AT SIDES OF RIPRAP

CLASS I RIPRAP OUTFALL AND INFLOW PROTECTION DETAIL

NOT TO SCALE



OBSERVATION WELL DETAIL

NOT TO SCALE

FACILITY SUMMARY TABLE - MICRO-BIORETENTION (M-6) MB-1	
WATERSHED	MIDDLE PATUXENT RIVER
STRUCTURE CLASSIFICATION	"A" (NOT A MD 378 POND)
STRUCTURE TYPE	MICRO-BIORETENTION (M-6)
WATER QUALITY TYPE	FILTERING
POI/LOI	2 & 3
DRAINAGE AREA TO FACILITY	0.80 AC
IMPERVIOUS AREA TREATED PROVIDED / REQUIRED (AC)	0.10 / 0.09
TARGET P <sub>e</sub> PROVIDED / REQUIRED (IN)	2.6 / 2.45
ESD <sub>v</sub> STORAGE PROVIDED / REQUIRED (CF)	1,265 / 756
WQ <sub>v</sub> STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE WQV MET
Rev STORAGE PROVIDED / REQUIRED (CF)	195 / 70
CP <sub>v</sub> STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE CPV MET
LEVEL OF MANAGEMENT REQUIRED	RECHARGE, WATER QUALITY
LEVEL OF MANAGEMENT PROVIDED	ESD TO THE MEP
FACILITY SUMMARY TABLE - MICRO-BIORETENTION (M-6) MB-2	
WATERSHED	MIDDLE PATUXENT RIVER
STRUCTURE CLASSIFICATION	"A" (NOT A MD 378 POND)
STRUCTURE TYPE	MICRO-BIORETENTION (M-6)
WATER QUALITY TYPE	FILTERING
POI/LOI	1
DRAINAGE AREA TO FACILITY	1.16 AC
IMPERVIOUS AREA TREATED PROVIDED / REQUIRED (AC)	0.33 / 0.34
TARGET P <sub>e</sub> PROVIDED / REQUIRED (IN)	2.6 / 2.60
ESD <sub>v</sub> STORAGE PROVIDED / REQUIRED (CF)	3,331 / 3,065
WQ <sub>v</sub> STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE WQV MET
Rev STORAGE PROVIDED / REQUIRED (CF)	564 / 306
CP <sub>v</sub> STORAGE PROVIDED / REQUIRED (CF)	ESD MET, THEREFORE CPV MET
LEVEL OF MANAGEMENT REQUIRED	RECHARGE, WATER QUALITY
LEVEL OF MANAGEMENT PROVIDED	ESD TO THE MEP
DESIGN SUMMARY TABLE	
LIMIT OF DISTURBANCE (AC)	2.13
EXISTING IMPERVIOUS AREA (AC)	0.03
NEW IMPERVIOUS AREA (AC)	0.43
RECONSTRUCTED IMPERVIOUS AREA (AC)	0.00
IMPERVIOUS AREA REMOVED (AC)	0.01
PROPOSED IMPERVIOUS AREA (AC)	0.45

APPROVED: DEPARTMENT OF PLANNING & ZONING	
Designed by <i>David Edmundson</i> Chief, Development Engineering Division	Date 6/22/2022
Reviewed by <i>David Edmundson</i> Chief, Division of Land Development	Date 6/23/2022
Director <i>Angie Gorman</i>	Date

NO.	REVISION	DATE

PROFESSIONAL CERTIFICATION:

"I HEREBY CERTIFY THAT DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,





Appendix B.4. Construction Specifications for Environmental Site Design Practices

B.4.C Specifications for Micro-Bioretentention. Rain Gardens, Landscape Infiltration & Infiltration Berms

1. Material Specifications

The allowable materials to be used in these practices are detailed in Table B.4.1.

2. Filtering Media or Planting Soil

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretentention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range – Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are

Appendix B.4. Construction Specifications for Environmental Site Design Practices

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12” to 18”. Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. Plant Material

Recommended plant material for micro-bioretentention practices can be found in Appendix A, Section A.2.3.

5. Plant Installation

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2” to 3”. Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8<sup>th</sup> of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Trees shall be braced using 2” by 2” stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

6. Underdrains

Underdrains should meet the following criteria:

- Pipe- Should be 4” to 6” diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4” rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be ¾” diameter located 6” on center with a minimum of four holes per row. Pipe shall be wrapped with a ¼” (No. 4 or 4x4) galvanized hardware cloth.
- Gravel – The gravel layer (No. 57 stone preferred) shall be at least 3” thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,0000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4” layer of pea gravel (¼” to ¾” stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24”.

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

7. Miscellaneous

These practices may not be constructed until all contributing drainage area has been stabilized

Supp. 1 B.4.4

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretentention, Rain Gardens & Landscape Infiltration-			
Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2” to 4” deep]	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8” TO 3/8”)	
Curtain drain	ornamental stone: washed cobbles	stone: 2” to 5”	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	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 ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f’ <sub>c</sub> = 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) <i>not using previously approved State or local standards</i> requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 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.

B.4.7 Supp. 1

MICRO-BIORETENTION (M-6) STRUCTURE INSPECTION SCHEDULE

1. THE PERMITTEE SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), (410)-313-1855, AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION OF THE STORMWATER MANAGEMENT STRUCTURES AND PRACTICES.
2. PRIOR NOTIFICATION SHALL BE GIVEN TO THE CERTIFYING ENGINEER SO THAT INSPECTIONS MAY BE MADE AT THE FOLLOWING STAGES
  - a. UPON COMPLETION OF EXCAVATION TO THE SUBFOUNDATION AND WHERE REQUIRED, INSTALLATION OF STRUCTURAL SUPPORTS OR REINFORCEMENT FOR STRUCTURES, INCLUDING BUT NOT LIMITED TO: INLET/OUTLET STRUCTURES AND ANTI-SLEEP STRUCTURES, WATERTIGHT CONNECTORS ON PIPES; AND TRENCHES FOR ENCLOSED STORM DRAINAGE FACILITIES
  - b. DURING PLACEMENT OF THE REINFORCING AND CONCRETE, STONE, FILTER FABRIC, FOOTPLATE, PERFORATED AND NONPERFORATED PIPE, AND PERMEABLE SOIL
  - c. DURING BACKFILL OF FOUNDATIONS AND TRENCHES
  - d. UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION

NO WORK SHALL PROCEED UNTIL THE ENGINEER INSPECTS AND APPROVES THE WORK PREVIOUSLY COMPLETED.

3. A COPY OF ALL MATERIAL SUPPLY TICKETS MUST BE GIVEN TO THE DESIGNATED ENGINEER IN CHARGE OF THE AS-BUILTS.

MICRO-BIORETENTION (M-6) OPERATION AND MAITENANCE SCHEDULE

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 A.4.2.
2. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND 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. INSPECT CLEAN OUTS AND OBSERVATION WELLS ALONG WITH OVERFLOW INLETS AND OUTFALL/EXIT PIPES AT LEAST ONCE A MONTH AND AFTER HEAVY STORMS.
5. SILTS AND SEDIMENT SHOULD BE REMOVED FROM THE SURFACE OF THE FILTER BED WHEN ACCUMULATION EXCEEDS ONE (1) INCH. CHECK FOR DEWATERING WITHIN 48 HOURS.

APPROVED: DEPARTMENT OF PLANNING & ZONING	
DocuSigned by: <i>David Edmondson</i> Chief, Development Engineering Division	6/22/2022
DocuSigned by: <i>David Edmondson</i> Chief, Division of Land Development	Date 6/22/2022
DocuSigned by: <i>David Edmondson</i> Director	Date 6/23/2022

NO.	REVISION	DATE



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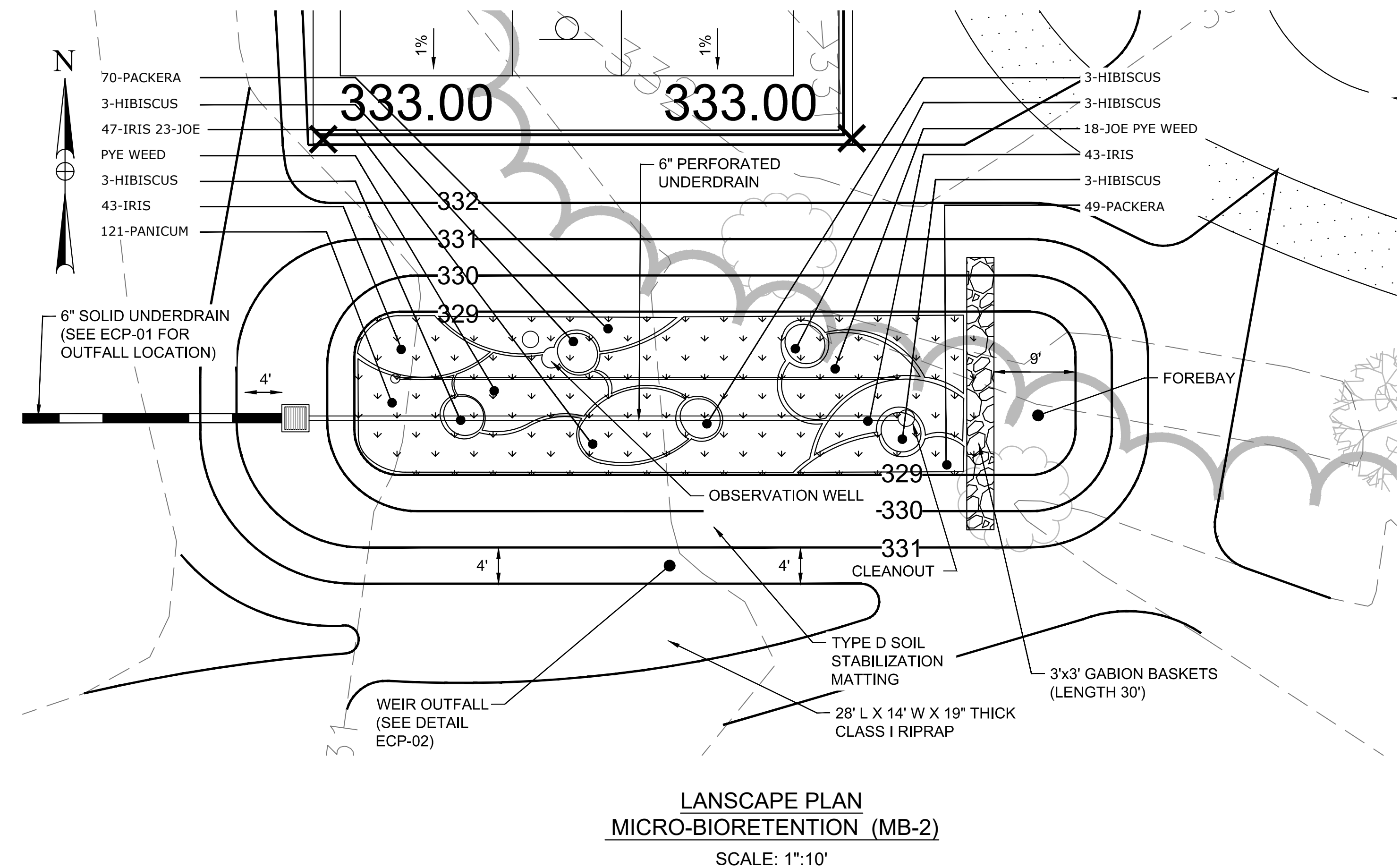
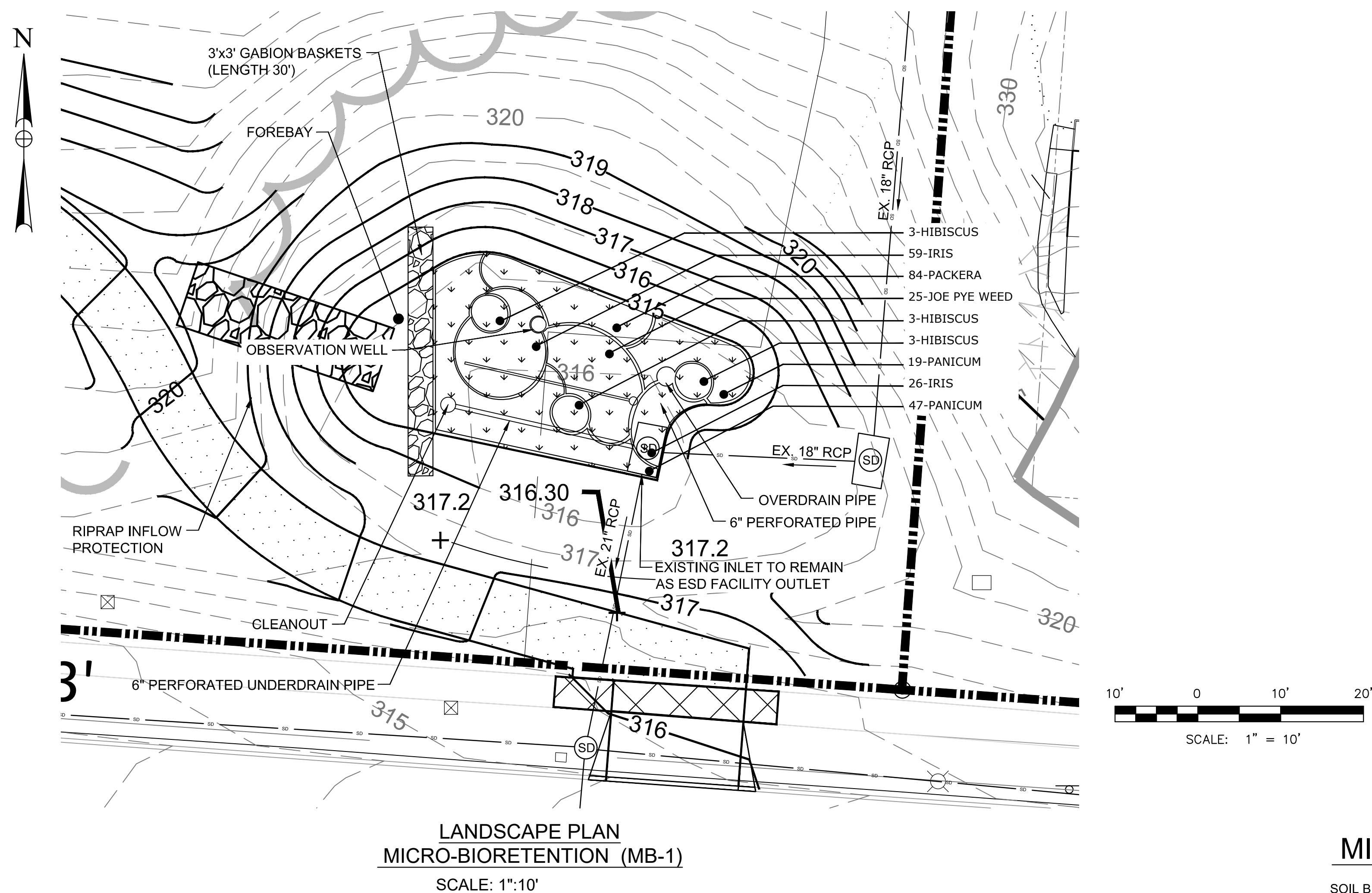


DESIGN PROFESSIONAL:  
DAVE MORICONI  
LICENSE NO. 16156  
EXPIRATION DAE: 8/28/2022



Moriconi, Dave  
Digitally signed by Moriconi, Dave  
DN: cn=Dave Moriconi, o=AECOM, email=dave.moriconi@aecom.com, Date: 2022.06.09 09:03:04 -0400





## MASTER PLANT SCHEDULE

REQUIREMENT	QUANTITY	BOTANICAL NAME/COMMON NAME	ROOT & MINIMUM SIZE	REMARKS
MICRO-BIORETENTION	66	EUPATORIUM DUBIUM 'LITTLE JOE' / 'LITTLE JOE' JOE PYE WEED	1 QT. CONTAINER	24 INCHES O. C. SPACING
	24	HIBISCUS MOSCHEUTOS / MARSH HYBISCUS	1 QT. CONTAINER	30 INCHES O. C. SPACING
	218	IRIS VISCOLOR / BLUE FLAG	1 QT. CONTAINER	15 INCHES O. C. SPACING
	203	PACKERA AUREUS / GOLDEN RAGWORT	2" PLUG	12 INCHES O. C. SPACING
	187	PANICUM VERGATUM / SWITCHGRASS	1 GAL. CONTAINER	24 INCHES O. C. SPACING

**Table A.3 Planting Soil Characteristics**  
(Adapted from EQR, 1996; ETAB, 1993)

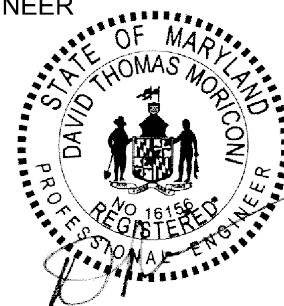
Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P <sub>2</sub> O <sub>5</sub> )	75 lbs. per acre, minimum
Potassium (potash - K <sub>2</sub> O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25%
Silt	30 to 55%
Sand	35 to 60%

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PREPARED BY  
**AECOM**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-7220

DESIGN PROFESSIONAL:  
DAVE MORICONI  
LICENSE NO. 16156  
EXPIRATION DAE: 8/28/2022



Moriconi,  
Dave

Digitally signed by Moriconi, Dave  
DN: cn=Moriconi, Dave,  
ou=USHSN/D1,  
email=dave.moriconi@secom.com  
Date: 2022.06.08 09:55:20 -0400

## MICRO-BIORETENTION LANDSCAPE GUIDELINES

### SOIL BED CHARACTERISTICS

THE CHARACTERISTICS OF THE SOIL FOR THE BIORETENTION FACILITY ARE PERHAPS AS IMPORTANT AS THE FACILITY LOCATION, SIZE, AND TREATMENT VOLUME. THE SOIL MUST BE PERMEABLE ENOUGH TO ALLOW RUNOFF TO FILTER THROUGH THE MEDIA, WHILE HAVING CHARACTERISTICS SUITABLE TO PROMOTE AND SUSTAIN A ROBUST VEGETATIVE COVER CROP. IN ADDITION, MUCH OF THE NUTRIENT POLLUTANT UPTAKE (NITROGEN AND PHOSPHORUS) IS ACCOMPLISHED THROUGH ABSORPTION AND MICROBIAL ACTIVITY WITHIN THE SOIL PROFILE. THEREFORE, SOILS MUST BALANCE THEIR CHEMICAL AND PHYSICAL PROPERTIES TO SUPPORT BIOTIC COMMUNITIES ABOVE AND BELOW GROUND.

THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BE LESS THAN 25% BY VOLUME [ENVIRONMENTAL QUALITY RESOURCES (EQR), 1996; ENGINEERING TECHNOLOGY INC. AND BIOHABITATS, INC. (ETAB), 1993]. SOILS SHOULD FALL WITHIN THE SM, ML, SC CLASSIFICATIONS OR THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.57"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR COMAR FROM NOXIOUS WEEDS (E.G., JOHNSON GRASS, MUGWORT, NUTSEDGE, AND CANADA THISTLE OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.) SHOULD NOT BE PRESENT IN THE SOILS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN 12" TO 18" LIFTS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET OR TRAVERSED BY DOZER TRACKS). THE SPECIFIC CHARACTERISTICS ARE PRESENTED IN TABLE A.3.

MULCH LAYER




THE MULCH LAYER PLAYS AN IMPORTANT ROLE IN THE PERFORMANCE OF THE BIORETENTION SYSTEM. THE MULCH LAYER HELPS MAINTAIN SOIL MOISTURE AND AVOIDS SURFACE SEALING WHICH REDUCES PERMEABILITY. MULCH HELPS PREVENT EROSION, AND PROVIDES A MICROENVIRONMENT SUITABLE FOR SOIL BIOTA AT THE MULCH/SOIL INTERFACE. IT ALSO SERVES AS A PRETREATMENT LAYER, TRAPPING THE FINER SEDIMENTS WHICH REMAIN SUSPENDED AFTER THE PRIMARY PRETREATMENT.

THE MULCH LAYER SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH OR CHIPS. THE MULCH LAYER SHOULD BE WELL AGED (STOCKPILED OR STORED FOR AT LEAST 12 MONTHS), UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. GRASS CLIPPINGS SHOULD NOT BE USED AS A MULCH MATERIAL.

## PLANTING GUIDANCE

PLANT MATERIAL SELECTION SHOULD BE BASED ON THE GOAL OF SIMULATING A TERRESTRIAL FORESTED COMMUNITY OF NATIVE SPECIES. BIOTRETIONMENT SIMULATES AN UPLAND-SPECIES ECOSYSTEM. THE COMMUNITY SHOULD BE DOMINATED BY TREES, BUT HAVE A DISTINCT COMMUNITY OF UNDERSTORY TREES, SHRUBS AND HERBACEOUS MATERIALS. BY CREATING A DIVERSE, DENSE PLANT COVER, A BIOTRETIONMENT FACILITY WILL BE ABLE TO TREAT STORMWATER RUNOFF AND WITHSTAND URBAN STRESSES FROM INSECTS, DISEASE, DROUGHT, TEMPERATURE, WIND, AND EXPOSURE.

THE PROPER SELECTION AND INSTALLATION OF PLANT MATERIALS IS KEY TO A SUCCESSFUL SYSTEM. THERE ARE ESSENTIALLY THREE ZONES WITHIN A BIORETENTION FACILITY (FIGURE A.5). THE LOWEST ELEVATION SUPPORTS PLANT SPECIES ADAPTED TO STANDING AND FLUCTUATING WATER LEVELS. THE MIDDLE ELEVATION SUPPORTS PLANTS THAT LIKE DRIER SOIL CONDITIONS, BUT CAN STILL TOLERATE OCCASIONAL INUNDATION BY WATER. THE OUTER EDGE IS THE HIGHEST ELEVATION AND GENERALLY SUPPORTS PLANT ADAPTED TO DRYER CONDITIONS. A SAMPLE OF APPROPRIATE PLANT MATERIALS FOR BIORETENTION FACILITIES ARE INCLUDED IN TABLE A.4. THE LAYOUT OF PLANT MATERIAL SHOULD BE FLEXIBLE, BUT SHOULD FOLLOW THE GENERAL PRINCIPALS DESCRIBED IN TABLE A.5. THE OBJECTIVE IS TO HAVE A SYSTEM WHICH RESEMBLES A RANDOM AND NATURAL PLANT LAYOUT, WHILE MAINTAINING OPTIMAL CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. FOR A MORE EXTENSIVE BIORETENTION PLAN, CONSULT ETA&B, 1993 OR CLAYTOR AND SCHUELER, 1997.

APPROVED: DEPARTMENT OF PLANNING & ZONING	
<p>DocuSigned by:              Chad Edmondson</p>	6/22/2022
Chief, Development and Planning Division	Date
<p>DocuSigned by:              [illegible]</p>	6/22/2022
Chief, Division of Land Development	Date
<p>DocuSigned by:              Amy Gowan</p>	6/23/2022
Director	Date
SB405009470C40M	

[illegible]

LANDSCAPE PLAN  
ALTERNATIVE COMPLIANCE EXHIBIT  
**Huntington Park**

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.0 ACRES  
OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 12 OF 15

EP-22-008 WP-22-001





**LEGEND**

- POINT OF INVESTIGATION (POI)
- LINE OF INVESTIGATION (LOI)
- DRAINAGE AREA DIVIDE
- POI/LOI DESIGNATION
- EXISTING CONTOUR
- PROPERTY BOUNDARY
- EXISTING WOODS LINE
- SOIL BOUNDARY
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM DRAIN
- DISCONNECT AREA
- PROPOSED CONTOUR
- LOD
- SF
- SSF
- STEEP SLOPES (15-25%)
- STEEP SLOPES (>25%)
- PROPOSED MICROBIORETENTION AREA
- PROPOSED IMPERVIOUS AREA
- PAVEMENT REMOVAL

**DRAINAGE AREA DATA**

5.54 AC	1	85.6% - OPEN 4.4% - WOODS 5.0% - IMPERVIOUS 5.0% - RESIDENTIAL
HSG B - 85.9% HSG C - 14.1%		
0.86 AC	2	24.4% - OPEN 72.6% - WOODS 3.0% - IMPERVIOUS
HSG B - 94.8% HSG C - 5.2%		
1.50 AC	3	59.7% - OPEN 13.2% - WOODS 1.6% - IMPERVIOUS 25.5% - RESIDENTIAL
HSG B - 28.4% HSG C - 71.6%		

**EXISTING CONDITIONS DRAINAGE AREA SUMMARY**

POI/LOI	DA (ac.)	Tc (hr)	RCN
LOI1	5.54	0.288	65
POI2	0.86	0.218	58
POI3	1.5	0.253	74

**APPROVED: DEPARTMENT OF PLANNING & ZONING**

Reviewed by: 70837745F41409  
Chief, Development Engineering Division Date: 6/22/2022

Reviewed by: 98405050470C4D4  
Chief, Division of Land Management Date: 6/23/2022

Director Date:

NO.	REVISION	DATE



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PREPARED BY: **AECOM**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-7220

DESIGN PROFESSIONAL:  
DAVE MORICONI  
LICENSE NO. 16156  
EXPIRATION DAE: 8/28/2022

Moriconi, Dave  
Digitally signed by Moriconi, Dave  
DN: cn=Moriconi, Dave, email=dave.moriconi@aecom.com, c=US  
Date: 2022.06.09 09:55:37 -0400

**EXISTING DRAINAGE AREA MAP  
ALTERNATIVE COMPLIANCE EXHIBIT  
Huntington Park**

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.0 ACRES  
OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 13 OF 15





**LEGEND**

POINT OF INVESTIGATION (POI)

LINE OF INVESTIGATION (LOI)

DRAINAGE AREA DIVIDE

POI/LOI DESIGNATION

EXISTING CONTOUR

PROPERTY BOUNDARY

EXISTING WOODS LINE

SOIL BOUNDARY

EXISTING WATER LINE

EXISTING SANITARY SEWER

EXISTING STORM DRAIN

DISCONNECT AREA

PROPOSED CONTOUR

LIMIT OF DISTURBANCE (LOD)

SILT FENCE (SF)

SUPER SILT FENCE (SSF)

STEEP SLOPES (15-25%)

STEEP SLOPES (>25%)

PROPOSED MICROBIORETENTION AREA

PROPOSED IMPERVIOUS AREA

PAVEMENT REMOVAL

DRAINAGE AREA DATA			
5.54 AC	1	81.7% - OPEN	2.3% - WOODS
		11.0% - IMPERVIOUS	5.0% - RESIDENTIAL
HSG B - 85.9%			
HSG C - 14.1%			
0.48 AC	2	30.3% - OPEN	63.4% - WOODS
		6.4% - IMPERVIOUS	
HSG B - 93.3%			
HSG C - 6.7%			
1.88 AC	3	73.8% - OPEN	5.9% - IMPERVIOUS
		20.3% - RESIDENTIAL	
HSG B - 42.3%			
HSG C - 57.7%			

PROPOSED CONDITIONS DRAINAGE AREA SUMMARY			
POI / LOI	DA (ac.)	Tc (hr)	RCN (REDUCED RCN)
LOI1	5.54	0.288	65 (63)
POI2	0.48	0.218	60 (N/A)
POI3	1.88	0.253	74 (72)

APPROVED: DEPARTMENT OF PLANNING & ZONING

6/22/2022

David Moriconi

Chief, Development Engineering Division

Date: 6/22/2022

Amy Gowan

Chief, Division of Land Development

Date: 6/23/2022

Director

6/23/2022

SOILS TABLE							
MAP UNIT	MAP UNIT NAME	SLOPES	HYDROLOGIC SOIL GROUP	K-FACTOR	DRAINAGE CLASS	SOIL ERODIBILITY	HYDRIC RATING
GgB	GLENELG LOAM	3 TO 8% SLOPES	B	0.24	WELL DRAINED	MODERATE	NOT HYDRIC
GhB	GLENELG-URBAN LAND COMPLEX	0 TO 8% SLOPES	B	N/A	N/A	NOT RATED	NOT HYDRIC
LoB	LEGORE-MONTALTO-URBAN LAND	0 TO 8% SLOPES	C	N/A	WELL DRAINED	MODERATE	NOT HYDRIC
Mac	MANOR LOAM	8 TO 15% SLOPES	B	0.28	WELL DRAINED	MODERATE	NOT HYDRIC



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PREPARED BY

**AECOM**

4 NORTH PARK DRIVE  
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TEL: (410) 785-7220

DESIGN PROFESSIONAL:

DAVE MORICONI  
LICENSE NO. 16156  
EXPIRATION DAE: 8/28/2022

Moriconi, Dave

PROPOSED DRAINAGE AREA MAP  
ALTERNATIVE COMPLIANCE EXHIBIT

**Huntington Park**

9695 CLOCK TOWER LANE, COLUMBIA, MARYLAND 21046 ZONING: NEW TOWN ELEC. DIST.: 3  
MAP 42 GRID 23 PARCEL 443 LOT 310 L.F.18973/314 TAX ACCOUNT: 16-155942, 11.0 ACRES  
OWNER: HOWARD COUNTY BOARD OF EDUCATION MAY 16, 2022 SHEET 14 OF 15

EP-22-008 WP-22-001







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Anthony Cataldo

acataldo@howardcountymd.gov

Division Chief

Howard County Government

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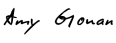
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Signing Complete	Security Checked	6/23/2022 10:35:03 AM
Completed	Security Checked	6/23/2022 10:35:12 AM
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- i. decline to sign a document from within your DocuSign session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an e-mail to [glovelace@howardcountymd.gov](mailto:glovelace@howardcountymd.gov) and in the body of such request you must state your e-mail, full name, US Postal Address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

**Required hardware and software**

Operating Systems:	Windows® 2000, Windows® XP, Windows Vista®; Mac OS® X
Browsers:	Final release versions of Internet Explorer® 6.0 or above (Windows only); Mozilla Firefox 2.0 or above (Windows and Mac); Safari™ 3.0 or above (Mac only)
PDF Reader:	Acrobat® or similar software may be required to view and print PDF files
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	Allow per session cookies

\*\* These minimum requirements are subject to change. If these requirements change, you will be asked to re-accept the disclosure. Pre-release (e.g. beta) versions of operating systems and browsers are not supported.

**Acknowledging your access and consent to receive materials electronically**



To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please verify that you were able to read this electronic disclosure and that you also were able to print on paper or electronically save this page for your future reference and access or that you were able to e-mail this disclosure and consent to an address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format on the terms and conditions described above, please let us know by clicking the 'I agree' button below.

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