

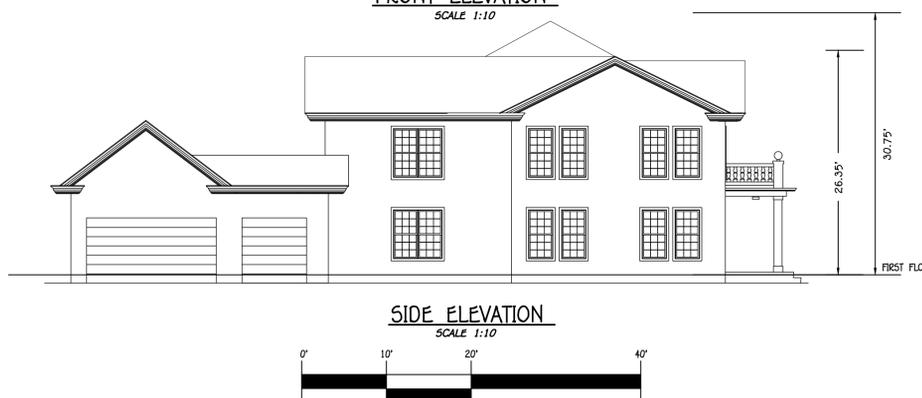
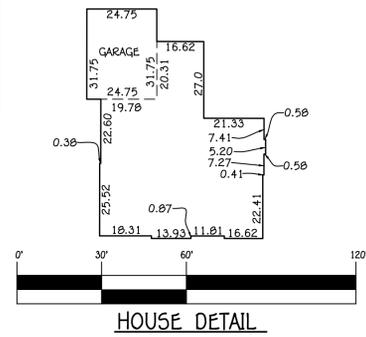
SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT, LANDSCAPE PLAN, & SEDIMENT CONTROL PLAN
3	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
4	STORMWATER MANAGEMENT NOTES AND DETAILS

Street Address Chart	
Lot/Parcel No.	Street Address
Parcel 520	8077 HARRIET TUBMAN LN.

SOILS LEGEND			
SOIL	NAME	CLASS	K-VALUE
Gfb	Gladstone-Urban Land complex, 0 to 8 percent slopes	A	0.28
Uub	Urban Land-Udorhents complex, 0 to 8 percent slopes	D	N/A

HOWARD COUNTY SOILS MAP 23; CLARKSVILLE SE QUADRANGLE

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
ROOF (1,440 Sq.Ft.)	206	332	2 DRYWELLS (M-5) PRIVATELY OWNED & MAINTAINED
DRIVEWAY & ROOF (4,672 Sq.Ft.)	644 (STORAGE)	698 (STORAGE)	1 MICRO-BIRETENTION FACILITY (M-6) PRIVATELY OWNED & MAINTAINED
TOTAL SITE	850	1109	



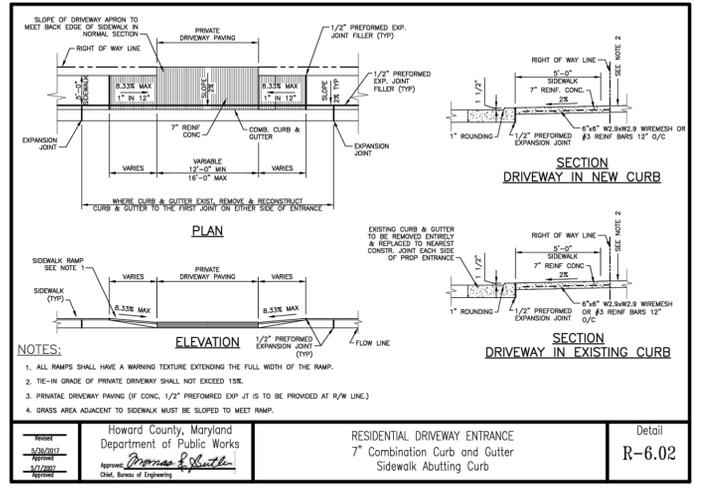
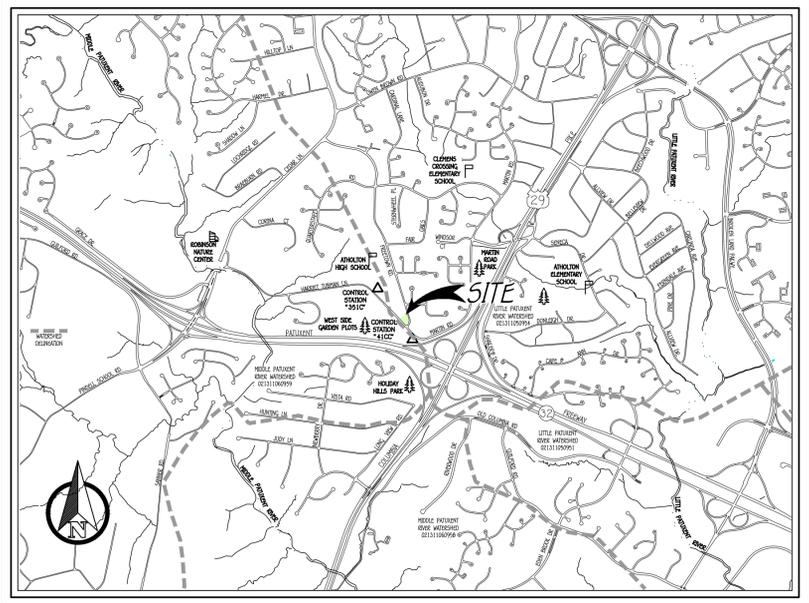
STORMWATER MANAGEMENT PRACTICE CHART								
AREA ID	DRAINAGE AREA SF.	IMPERVIOUS SF.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	MICRO BIO-RETENTION M-6 (Y/N)	BIO-RETENTION F-6 (Y/N)	DRY WELL M-5 (Y/N)	NON-ROOFTOP DISCONNECTION CREDIT (Y/N)
(M-5) 1	743	743	108	166	N	N	Y	N
(M-5) 2	697	697	100	166	N	N	Y	N
(M-6) 1	10,509	4,823	547 (STORAGE)	644 (STORAGE)	Y	N	N	N

Approved: Howard County Department Of Planning And Zoning
 DocuSigned by: **CHAD Edmondson** 9/9/2022
 Chief, Development Engineering Division
 Date: 9/9/2022
 DocuSigned by: **Amy Groman** 9/12/2022
 Chief, Division of Planning and Zoning
 Date: 9/12/2022
 Director - Department of Planning and Zoning

SITE DEVELOPMENT PLAN

VAN BIK PROPERTY

TAX MAP No. 41 GRID No. 6 PARCEL NO. 520
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



SITE ANALYSIS DATA CHART	
A.	TOTAL AREA OF THIS SUBMISSION = 0.634 AC. (PARCEL 520)
B.	LIMIT OF DISTURBED AREA = 19,616 SQ.FT. OR 0.45 AC.
C.	PRESENT ZONING DESIGNATION = R-5C (PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
D.	PROPOSED USE: RESIDENTIAL
E.	PREVIOUS HOWARD COUNTY FILES: ECP-21-044
F.	TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC.
G.	TOTAL AREA OF MODERATE STEEP SLOPES: 15%-24.9% = 225.5 Sq.Ft. (0.005 AC.)
H.	TOTAL AREA OF STEEP SLOPES: 25% OR GREATER = 0.00 AC.
I.	TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC.
J.	TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC.
K.	TOTAL AREA OF EXISTING FOREST = 22,899 Sq.Ft. (0.53 AC.)
L.	TOTAL AREA OF FOREST TO BE RETAINED = 6,636 Sq.Ft. (0.20 AC.) 37%
M.	TOTAL AREA OF LOTS / BUILDABLE PARCELS = 0.643 AC.
N.	TOTAL GREEN OPEN AREA = 21,429 Sq.Ft. (0.49 AC.)
O.	TOTAL IMPERVIOUS AREA = 6,600 Sq.Ft. (0.15 AC.)
P.	TOTAL AREA OF EXODIBLE SOILS = 0.005 AC.
Q.	TOTAL AREA OF ROAD DEDICATION = 0.00 AC.
R.	TOTAL NUMBER OF REQUIRED PARKING SPACES = 2.5
S.	TOTAL NUMBER OF REQUIRED PARKING SPACES = 6
T.	3 INTERNAL SPACES & 3 EXTERIOR SPACES.

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
X 4.42.5	SPOT ELEVATION
10' 50'	EXISTING STORM DRAIN
10' 50'	PROPOSED STORM DRAIN PIPE
EX. F.W.	EXISTING WATER LINE
2" S-O	EXISTING SEWER LINE
8" S-O	PROPOSED SEWER
8" W	PROPOSED WATER
8" W	EXISTING CABLE LINE
8" W	EXISTING GAS LINE
8" W	EXISTING OVERHEAD WIRE
8" W	PROPOSED PAVING/PATH
8" W	PROPOSED SIDEWALKS
8" W	FOREST CONSERVATION EASEMENT (REFORESTATION)
8" W	FOREST CONSERVATION EASEMENT FENCING
8" W	LIMIT OF DISTURBANCE
8" W	SILT FENCE
8" W	TREE PROTECTION FENCE
8" W	STABILIZED CONSTRUCTION ENTRANCE
8" W	EXISTING TREE LINE
8" W	PROPOSED TREE LINE
8" W	DRYWELL (M-5)-TYPICAL
8" W	SOIL LINES AND TYPES
8" W	EXISTING WETLANDS & WETLAND BUFFER
8" W	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
8" W	PROPOSED ROOF LEADER
8" W	SWM DRAINAGE DIVIDE
8" W	DEMOTES EXISTING TREES TO BE REMOVED
8" W	DEMOTES EXISTING TREES TO REMAIN
8" W	CRITICAL ROOT ZONE
8" W	DEMOTES 15%-24.9% SLOPES

- General Notes:**
- SUBJECT PROPERTY ZONED R-5C PER 10/06/13 COMPREHENSIVE ZONING PLAN.
 - COORDINATES BASED ON NAD '83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 351C AND NO. 41CC.
 - SJA 351C N 553,504.392 E 1,346,160.575 Elev. = 414.346
 - SJA 41CC N 552,494.249 E 1,347,062.463 Elev. = 399.989
 - THIS PLAN IS BASED ON FIELD RUN NONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT 5/21/2020 BY FISHER, COLLINS & CARTER, INC.
 - B.R.L. DENOTES BUILDING RESTRICTION LINE
 - ALL AREAS ARE MORE OR LESS (+/-)
 - DISTANCES SHOWN ARE BASED ON SURFACE MEASUREMENT AND NOT REDUCED TO NAD '83 GRID MEASUREMENT.
 - DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
 - WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE);
 - SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1" - 1/2" MINIMUM);
 - GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS;
 - STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING);
 - DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE;
 - STRUCTURE CLEARANCE - MINIMUM 12 FEET;
 - MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
 - NO CEMETERIES EXIST ON THE SUBJECT PROPERTY BASED ON VISUAL OBSERVATION OR LISTED IN AVAILABLE HOWARD COUNTY CEMETERY INVENTORY MAP.
 - NO DWELLINGS OR HISTORIC STRUCTURES EXIST ON PARCEL 520.
 - THERE ARE NO WETLANDS, WETLAND BUFFERS, STREAM, STREAM BUFFERS, STEEP SLOPES OR FLOODPLAINS EXISTING ON-SITE. THE SITE IS NOTED AS "PRIMARILY WOODED" UNDER A LETTER OF FINDINGS PROVIDED BY ECO-SCIENCE PROFESSIONALS INC. DATED DECEMBER 7, 2020.
 - SITE IS NOT ADJACENT TO A SCENIC ROAD.
 - THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS OF THE FOREST CONSERVATION ACT IN ACCORDANCE WITH SECTION 16.1222(B)(1)(I) FOR DEVELOPMENT ON A SINGLE LOT SMALLER THAN 40,000 SQUARE FEET.
 - WATER AND SEWER SERVICE TO THESE LOTS WILL BE GRANTED UNDER THE PROVISIONS OF SECTION 16.1222 OF THE HOWARD COUNTY CODE.
 - PUBLIC WATER AND SEWER ALLOCATION WILL BE GRANTED AT THE TIME OF ISSUANCE OF THE BUILDING PERMIT IF CAPACITY IS AVAILABLE AT THAT TIME.
 - STORMWATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES 1 & 2.
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, FINANCIAL SURETY IN THE AMOUNT OF \$1,950 BASED ON 5 SHADE TREES @ \$300/SHADE, 3 EVERGREEN TREES @ \$150/TREE SHALL BE BONDED AS PART OF THE GRADING PERMIT.
 - A SLOPED STUDY WAS PERFORMED BY HARS GROUP IN DECEMBER 2020.
 - THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT AND WILL BE SERVED BY PUBLIC WATER AND SEWER (SEE CONTRACT NO. 12-W-2 AND 419-5).
 - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, FINANCIAL SURETY IN THE AMOUNT OF \$1,950 BASED ON 5 SHADE TREES @ \$300/SHADE, 3 EVERGREEN TREES @ \$150/TREE SHALL BE BONDED AS PART OF THE GRADING PERMIT.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MEHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
 - TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
 - DRIVEWAY SHALL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-6.06 IN THE VOL. IV DESIGN MANUAL.
 - SOILS INFORMATION BASED ON NRCS WEB SOIL SURVEY FOR HOWARD COUNTY, MARYLAND.
 - IN ACCORDANCE WITH SECTION 128 (2)(A)(1)(E) OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACK.
 - THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION	410.531.5533
BGE/CONTRACTOR SERVICES	410.850.4620
BGE/UNDERGROUND DAMAGE CONTROL	410.787.9068
MISS UTILITY	1.800.257.7777
COLONIAL PIPELINE COMPANY	410.795.1390
HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES	410.315.4900
HOWARD COUNTY HEALTH DEPARTMENT	410.313.2640
AT&T	1.800.252.1133
VERIZON	1.800.743.0033/410.224.9210
 - ANY DAMAGE TO PUBLIC RIGHT-OF-WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 - THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY NIK ASSOCIATES IN MAY, 2016 AND SUPPLEMENTED WITH HOWARD COUNTY GIS TOPOGRAPHY AT 2' CONTOUR INTERVAL.
 - EXISTING UTILITIES ARE BASED ON FIELD LOCATION OF VISIBLE STRUCTURES AND SUPPLEMENTED WITH HOWARD COUNTY GIS DATA.
 - SEWER HOUSE CONNECTION (SHC) ELEVATIONS ARE LOCATED AT THE PROPERTY LINE.
 - MAINTAIN 10 FEET OF SEPARATION BETWEEN THE WATER HOUSE CONNECTION (WHC) AND THE SEWER HOUSE CONNECTION (SHC) AT THE STREET RIGHT-OF-WAY.
 - SPECIMEN TREE NOTE: CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ADEQUATE PRE (DURING) AND POST CONSTRUCTION PRACTICES AND MEASURES AS DESCRIBED IN APPENDIX G OF THE LATEST HOWARD COUNTY FOREST CONSERVATION MANUAL WHEN WORKING IN THE VICINITY OF THE SPECIMEN TREE IDENTIFIED TO REMAIN WITHIN THIS PROJECT TO ENSURE THE SURVIVAL OF THE TREE.
 - NO STATE CHAMPION TREES OR TREES 75% OF THE DIAMETER OF A STATE CHAMPION EXISTS ON SITE.
 - THIS DEVELOPMENT IS SUBJECT TO SECTION 110.0.E. OF THE ZONING REGULATIONS. AT LEAST 10% OF THE DWELLING UNITS SHALL BE MODERATE INCOME HOUSING UNITS (MIHU) OR AN ALTERNATIVE COMPLIANCE WILL BE PROVIDED. THE DEVELOPER SHALL EXECUTE A MIHU AGREEMENT WITH THE DEPARTMENT OF HOUSING TO INDICATE HOW THE MIHU REQUIREMENT WILL BE MET. THE MIHU AGREEMENT WILL BE RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY, MARYLAND. THIS DEVELOPMENT WILL MEET MIHU ALTERNATIVE COMPLIANCE BY A PAYMENT OF A FEE-IN-LIEU TO THE DEPARTMENT OF HOUSING FOR EACH REQUIRED UNIT. MODERATE INCOME HOUSING UNIT (MIHU) TABULATION:

a. MIHU REQUIRED = (1 LOT X 10%) = 0.1 MIHU.
b. MIHU PROVIDED = DEVELOPER WILL PURSUE ALTERNATIVE COMPLIANCE BY PAYING A FEE-IN-LIEU TO THE HOWARD COUNTY HOUSING DEPARTMENT FOR THE UNITS REQUIRED BY THE DEVELOPMENT.

MODERATE INCOME HOUSING UNITS (MIHU) ALLOCATION EXEMPTIONS TRACKING	
Total Number of Lots/Units Proposed	1
Number of MIHU Required	0.1
Number of MIHU Provided Onsite (exempt from APFO allocations)	0
Number of APFO Allocations Required (remaining lots/units)	1
MIHU Fee-In-Lieu (indicate lot/unit numbers)	PARCEL 520 (1 UNIT)

THIS DEVELOPMENT IS SUBJECT TO THE MIHU FEE-IN-LIEU REQUIREMENT THAT IS TO BE CALCULATED AND PAID TO THE DEPARTMENT OF INSPECTIONS, LICENSES, & PERMITS AT THE TIME OF BUILDING PERMIT ISSUANCE BY THE PERMIT APPLICANT.

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10273 BALTIMORE NATIONAL PkE.
 ELLICOTT CITY, MARYLAND 21042
 (410) 461 - 2995



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 07/14/2023.
 Frank Mavalasian II 5/31/2022
 Signature Of Professional Land Surveyor DATE

OWNER/ BUILDER
 VAN LAL BIK & ISABEL BIAKHNEPAR BIK
 12207 SNOWDEN WOODS ROAD
 LAUREL, MD 20708
 (443-745-9505)

TITLE SHEET

VAN BIK PROPERTY
 8077 HARRIET TUBMAN LANE
 ZONED R-5C
 TAX MAP No. 41 GRID No. 06 PARCEL No. 520
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2022
 SHEET 1 OF 4

PROJECT	SECTION / AREA	PARCEL NO.			
VAN BIK PROPERTY	-	520			
DEED #	GRID #	ZONE	TAX MAP #	ELEC. DIST.	CENSUS TR.
19929/195	06	R-5C	41	FIFTH	605602

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)

- A. Soil Preparation
1. Temporary Stabilization
a. Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment...
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 diking 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.
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 diking or other suitable means.
f. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seeded preparation.
g. 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.
h. Topsoil application
i. Erosion and sediment control practices must be maintained when applying topsoil.
j. Uniformly distribute topsoil in a 5 to 6 inch layer and lightly compact to a minimum thickness of 4 inches.
k. Topsoil must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment.
l. Line materials must be ground limestone (hydrated or burnt lime) be substituted except when hydroseeding which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide).
m. 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. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/perimeter soil 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 furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be treated contains material toxic to plant growth.
d. The soil is so acidic that vegetation with limestone is not feasible.
4. 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.
b. Topsoil must be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of clinders, stones, slag, coarse fragments, gravel, sticks, rocks, trash, or other materials larger than 1 1/2 inches in diameter.
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 6 inch layer and lightly compact to a minimum thickness of 4 inches.
c. Topsoil must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment.
d. Line materials must be ground limestone (hydrated or burnt lime) be substituted except when hydroseeding which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide).
e. 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.

TEMPORARY SEEDING NOTES (B-4-4)

- 1. To stabilize disturbed soils with vegetation for up to 6 months.
2. To use fast growing vegetation that provides cover on disturbed soils.
3. 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.
4. Criteria
a. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardness Zone.
b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or riparian habitat treatment may be found in USDA-NRCS Technical Field Office Order, Section 342, Critical Area Planting.
c. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 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.
5. 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.
6. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance.
7. Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in areas where rapid establishment is necessary and when turf will receive medium to intensive management.
8. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in bluegrass lawns.
9. Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Home 477, Turfgrass Cultivar Recommendations for Maryland.
10. Choose certified material. Certified material is the best guarantee of cultivar purity.
11. 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.
12. Ideal times of seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1.
13. Ideal times of seeding for Turf Grass Mixtures Eastern MD: March 15 to June 1, August 1 to October 1.
14. Till areas to receive seed by diking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed.
15. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.
16. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.
17. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.

TEMPORARY SEEDING NOTES (B-4-4)

- 1. To stabilize disturbed soils with vegetation for up to 6 months.
2. To use fast growing vegetation that provides cover on disturbed soils.
3. 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.
4. Criteria
a. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardness Zone.
b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or riparian habitat treatment may be found in USDA-NRCS Technical Field Office Order, Section 342, Critical Area Planting.
c. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 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.
5. 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.
6. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance.
7. Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in areas where rapid establishment is necessary and when turf will receive medium to intensive management.
8. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in bluegrass lawns.
9. Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Home 477, Turfgrass Cultivar Recommendations for Maryland.
10. Choose certified material. Certified material is the best guarantee of cultivar purity.
11. 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.
12. Ideal times of seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1.
13. Ideal times of seeding for Turf Grass Mixtures Eastern MD: March 15 to June 1, August 1 to October 1.
14. Till areas to receive seed by diking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed.
15. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.
16. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.
17. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.

Table with 4 columns: Species, Application Rate (lb./ac), Seeding Dates, Seeding Depths. Rows include BARLEY, OATS, RYE.

Table with 4 columns: Hardness Zone, Seed Mixture (from Table B.1), Fertilizer Rate (10-20-20), Lime Rate. Rows include BARLEY, OATS, RYE.

PERMANENT SEEDING NOTES (B-4-5)

- A. Seed Mixtures
1. General Use
Figure B.3 and based on the site condition or purpose found on Table B.2. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary.
2. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or riparian habitat treatment may be found in USDA-NRCS Technical Field Office Order, Section 342, Critical Area Planting.
3. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
4. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 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.
5. 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.
6. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive maintenance.
7. Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in areas where rapid establishment is necessary and when turf will receive medium to intensive management.
8. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in bluegrass lawns.
9. Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Home 477, Turfgrass Cultivar Recommendations for Maryland.
10. Choose certified material. Certified material is the best guarantee of cultivar purity.
11. 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.
12. Ideal times of seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1.
13. Ideal times of seeding for Turf Grass Mixtures Eastern MD: March 15 to June 1, August 1 to October 1.
14. Till areas to receive seed by diking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed.
15. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.
16. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.
17. If soil moisture is deficient, supply new seedlings with adequate water for plant growth.

Permanent Seeding Summary

Table with 4 columns: No., Species, Application Rate (lb./ac), Seeding Dates, Seeding Depths, Fertilizer Rate (10-20-20), Lime Rate. Rows include FILL, TALL FESCUE.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

- 1. General Specifications
a. Sod of turfgrass sod must be Maryland State Certified.
b. Sod must be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/8 inch.
c. Standard size sections of sod must be strong enough to support their own weight 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 (especially dry wet) may adversely affect its survival.
e. Sod must be harvested, delivered, and installed within a period of 36 hours.
f. Sod must be approved by an agronomist or soil scientist prior to its installation.
g. Sod installation
i. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
ii. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other.
iii. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints.
iv. 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.
2. Sod Maintenance
a. In the absence of adequate rainfall, water daily during the first week or so often and sufficiently as necessary to maintain moist soil to a depth of 4 inches.
b. After the first week, and watering is required as necessary to maintain adequate moisture content.
c. Do not mow until the soil is firmly rooted.
3. Sod Installation
a. Perform much anchoring immediately following application of much to minimize loss by wind or water.
b. A much anchoring tool is a tractor draw implement designed to punch and anchor much into the soil surface a minimum of 2 inches.
c. Wood cellulose fiber may be used for anchoring slurry.
d. Synthetic binders such as Acrylic DLR (Aqua-Lock), DCA-70, Feltsol, Terra Tox II, Terra Lock AR or other approved equal may be used.
e. Lightweight plastic netting may be specified over the much according to manufacturer recommendations.
4. Sod Maintenance
a. In the absence of adequate rainfall, water daily during the first week or so often and sufficiently as necessary to maintain moist soil to a depth of 4 inches.
b. After the first week, and watering is required as necessary to maintain adequate moisture content.
c. Do not mow until the soil is firmly rooted.
d. Sod Installation
i. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
ii. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other.
iii. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints.
iv. 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.
5. Sod Maintenance
a. In the absence of adequate rainfall, water daily during the first week or so often and sufficiently as necessary to maintain moist soil to a depth of 4 inches.
b. After the first week, and watering is required as necessary to maintain adequate moisture content.
c. Do not mow until the soil is firmly rooted.

STANDARD STABILIZATION NOTE

- FOLLOWING INITIAL SOIL DISTURANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
A) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1).
B) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

B-4-4-B STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

- A mound or pile of soil protected by appropriate designed erosion and sediment control measures.
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.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the up-slope side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence.
6. Runoff concentrates along the toe of the stockpile if an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup.
9. The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization.
10. Slopes must be maintained at no steeper than a 2:1 ratio.
11. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

TABLE B.1 TEMPORARY SEEDING FOR SITE STABILIZATION

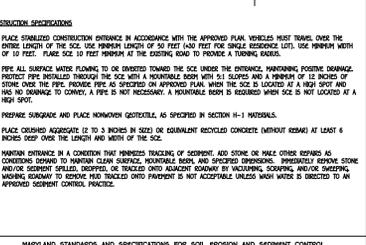
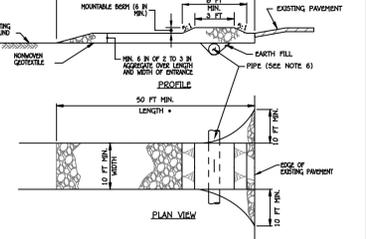
Table with columns: PLANT SPECIES, SEEDING RATE (LB./AC. and LB./1000 FT.2), SEEDING DEPTH (2) (INCHES), RECOMMENDED SEEDING DATES BY PLANT HARDNESS ZONE (5b AND 6a, 6b, 7a AND 7b).

- NOTES:
1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES.
2. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE, WHEN PLANTED AS A NURSE CROPP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT FOR SMALLER-SEEDED GRASSES (ANNUAL PERENNIALS).
3. GENERAL NOTE: SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE, WHEN PLANTED AS A NURSE CROPP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT FOR SMALLER-SEEDED GRASSES (ANNUAL PERENNIALS).
4. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE, WHEN PLANTED AS A NURSE CROPP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT FOR SMALLER-SEEDED GRASSES (ANNUAL PERENNIALS).
5. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE, WHEN PLANTED AS A NURSE CROPP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS AND WHEAT FOR SMALLER-SEEDED GRASSES (ANNUAL PERENNIALS).

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

- 1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field.
2. Upon completion of the installation of perimeter erosion and sediment controls, but any other earth disturbance or grading.
3. Prior to the start of another phase of construction or opening of another grading unit, d. Prior to the removal or modification of sediment control practices.
4. Other building or grading inspection approvals may not be authorized until this initial pre-construction meeting with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field.
5. All sediment control structures are to remain in place, and are to be maintained in operating condition until permission for their removal has been obtained from the CID.
6. Site Analysis:
TOTAL AREA OF SITE: 0.634 ACRES
AREA DISTURBED: 0.416 ACRES
AREA TO BE ROOFED OR PAVED: 0.15 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 0.48 ACRES
TOTAL CUT: 450 CU.YDS.
TOTAL FILL: 472 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION: 506 L.F.
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

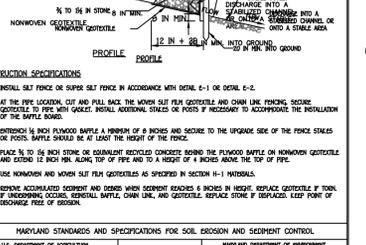
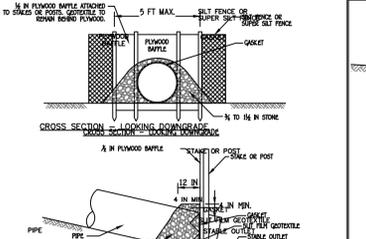
DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATIONS

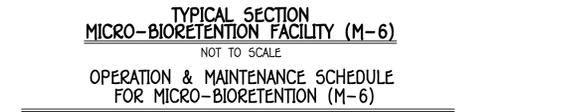
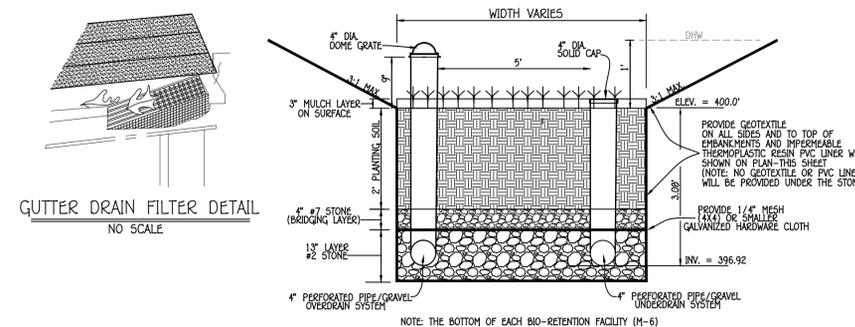
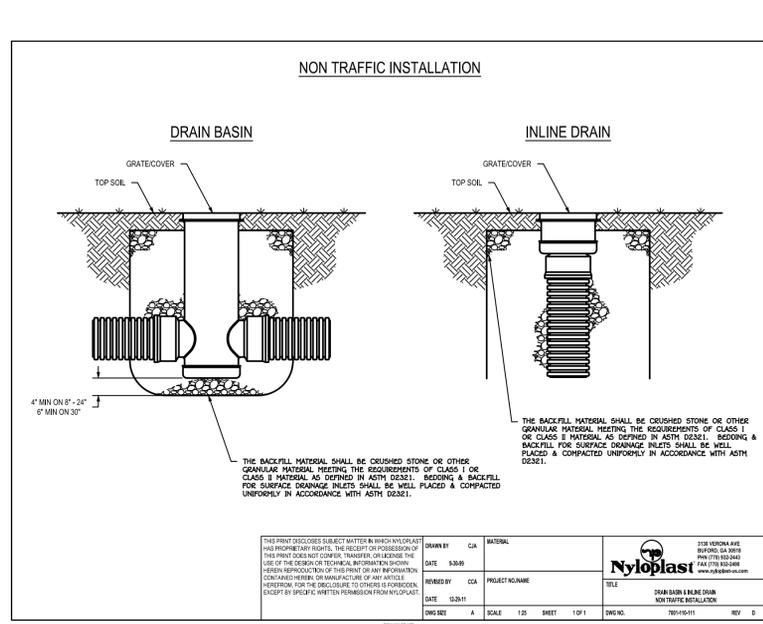
- 1. THE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SOIL. USE PERMANENT LIME OR SOFT SHOULDER FOR SHOULDER CONSTRUCTION. USE PERMANENT LIME OR SOFT SHOULDER FOR SHOULDER CONSTRUCTION.
2. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
3. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING.
4. EXTEND RIPPAP TO A MINIMUM HEIGHT OF 4 INCHES ABOVE THE TOP OF THE CHANNEL CROSS-SECTION.
5. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/4 TO 1 1/2 INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPPAP TO THE REQUIRED LINES AND COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
6. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPPAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPPAP.
7. CONSTRUCT RIPPAP OUTLET TO FULL CURVE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS.
8. CONSTRUCT APRON WITH OR SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS.
9. MAINTAIN LINE, GRADE, AND CROSS SECTION.
10. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. RIPPAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
12. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING.
13. EXTEND RIPPAP TO A MINIMUM HEIGHT OF 4 INCHES ABOVE THE TOP OF THE CHANNEL CROSS-SECTION.
14. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/4 TO 1 1/2 INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPPAP TO THE REQUIRED LINES AND COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
15. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPPAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPPAP.
16. CONSTRUCT RIPPAP OUTLET TO FULL CURVE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS.
17. CONSTRUCT APRON WITH OR SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS.
18. MAINTAIN LINE, GRADE, AND CROSS SECTION.
19. MAINTAIN LINE, GRADE, AND CROSS SECTION.

DETAIL E-4 CLEAR WATER PIPE THROUGH SILT FENCE OR SUPER SILT FENCE



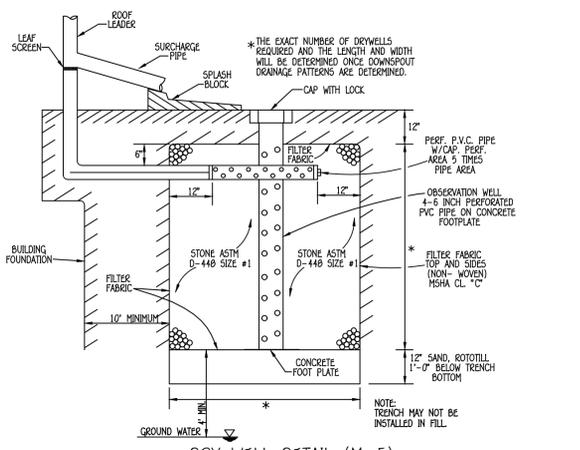
CONSTRUCTION SPECIFICATIONS

- 1. INSTALL SILT FENCE OR SUPER SILT FENCE IN ACCORDANCE WITH DETAIL E-1 OR DETAIL E-2.
2. AT THE PIPE LOCATION, CUT AN EQUAL RAKE THE WOMEN SILT FENCE GEOTEXTILE AND OWN LINE FORMING SEALS.
3. EXTEND 4 INCH PLYWOOD BATTLE A MINIMUM OF 6 INCHES AND SECURE TO THE UPGRADE SIDE OF THE FENCE STAKES.
4. PLACE 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT ROUGHENED CONCRETE OVER THE PLYWOOD BATTLE OF NONWOVEN GEOTEXTILE AND EXTEND 12 INCH MIN. ALONG TOE OF PIPE AND TO A HEIGHT OF 4 INCHES ABOVE THE TOP OF PIPE.
5. USE NONWOVEN WOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
6. EMBED GEOTEXTILE A MINIMUM OF 4 INCHES INTO THE GROUND, BACKFILL AND COMPACT WITH THE SOIL ON BOTH SIDES OF GEOTEXTILE.
7. USE WOOD POSTS (3/4 X 3/4 X 3/4 INCH MINIMUM) SOURCE OUT OF SOUND QUALITY HARDWOOD AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "P" OR "U" SECTION STEEL POSTS WEARING NOT LESS THAN 6 FEET APART.
8. USE WOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPGRADE SIDE OF FENCE POSTS WITH NAILS OR STAPLES AT 20 INCH INTERVALS.
9. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
10. EMBED GEOTEXTILE A MINIMUM OF 6 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FENCE.
11. STAPLE BOTH ENDS OF THE SILT FENCE A MINIMUM OF THE HORIZONTAL FEET UPWARDS AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE FENCE.
12. REPLACE ACCUMULATED SEDIMENT AND DEBRIS WHEN BUILDS UPWARD IN SILT FENCE OR WHEN SLOPES REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, GENERAL FENCE.
13. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, whichever is shorter.
14. All site work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
15. Disturbance shall not occur outside the L.O.D.
16. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
17. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
18. All site work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
19. Disturbance shall not occur outside the L.O.D.
20. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
21. Disturbance shall not occur outside the L.O.D.
22. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
23. Disturbance shall not occur outside the L.O.D.
24. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
25. Disturbance shall not occur outside the L.O.D.
26. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
27. Disturbance shall not occur outside the L.O.D.
28. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
29. Disturbance shall not occur outside the L.O.D.
30. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
31. Disturbance shall not occur outside the L.O.D.
32. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
33. Disturbance shall not occur outside the L.O.D.
34. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
35. Disturbance shall not occur outside the L.O.D.
36. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
37. Disturbance shall not occur outside the L.O.D.
38. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
39. Disturbance shall not occur outside the L.O.D.
40. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
41. Disturbance shall not occur outside the L.O.D.
42. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
43. Disturbance shall not occur outside the L.O.D.
44. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
45. Disturbance shall not occur outside the L.O.D.
46. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
47. Disturbance shall not occur outside the L.O.D.
48. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
49. Disturbance shall not occur outside the L.O.D.
50. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
51. Disturbance shall not occur outside the L.O.D.
52. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
53. Disturbance shall not occur outside the L.O.D.
54. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
55. Disturbance shall not occur outside the L.O.D.
56. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
57. Disturbance shall not occur outside the L.O.D.
58. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
59. Disturbance shall not occur outside the L.O.D.
60. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
61. Disturbance shall not occur outside the L.O.D.
62. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
63. Disturbance shall not occur outside the L.O.D.
64. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
65. Disturbance shall not occur outside the L.O.D.
66. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
67. Disturbance shall not occur outside the L.O.D.
68. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
69. Disturbance shall not occur outside the L.O.D.
70. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
71. Disturbance shall not occur outside the L.O.D.
72. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
73. Disturbance shall not occur outside the L.O.D.
74. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
75. Disturbance shall not occur outside the L.O.D.
76. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
77. Disturbance shall not occur outside the L.O.D.
78. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
79. Disturbance shall not occur outside the L.O.D.
80. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
81. Disturbance shall not occur outside the L.O.D.
82. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
83. Disturbance shall not occur outside the L.O.D.
84. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
85. Disturbance shall not occur outside the L.O.D.
86. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
87. Disturbance shall not occur outside the L.O.D.
88. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
89. Disturbance shall not occur outside the L.O.D.
90. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
91. Disturbance shall not occur outside the L.O.D.
92. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
93. Disturbance shall not occur outside the L.O.D.
94. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
95. Disturbance shall not occur outside the L.O.D.
96. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
97. Disturbance shall not occur outside the L.O.D.
98. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
99. Disturbance shall not occur outside the L.O.D.
100. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
101. Disturbance shall not occur outside the L.O.D.
102. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
103. Disturbance shall not occur outside the L.O.D.
104. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
105. Disturbance shall not occur outside the L.O.D.
106. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
107. Disturbance shall not occur outside the L.O.D.
108. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
109. Disturbance shall not occur outside the L.O.D.
110. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
111. Disturbance shall not occur outside the L.O.D.
112. A project is to be sequenced so that grading activities begin on one grading unit (minimum acreage of 20 ac. per grading unit) and proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the HSCD.
113. Disturbance shall not occur



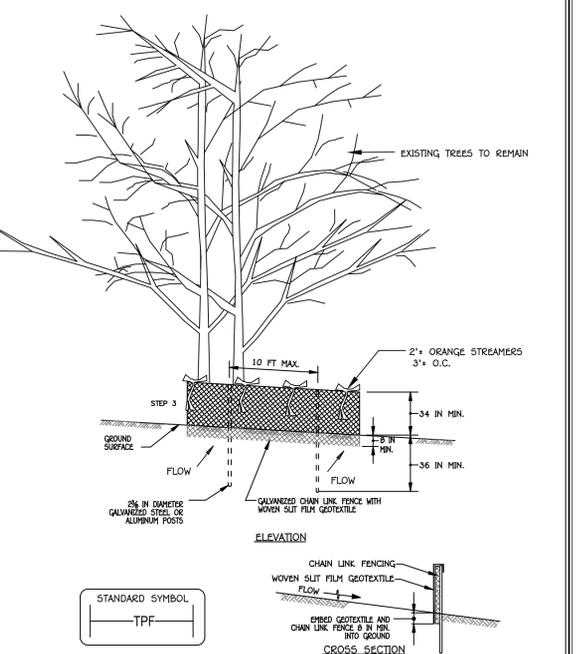
OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

- 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 MAXIMUM STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 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.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.



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

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- 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.



Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for WC), and Re v. In some instances where permeability is great, these facilities may be used for Qp as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

- > Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
- > Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bioretention facilities, see figure A.5 and Table A.4 for planting material guidance).
- > Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
- > Test soil conditions to determine if soil amendments are necessary.
- > Plants shall be located so that access is possible for structure maintenance.
- > Stabilize heavy flow areas with erosion control mats or sod.
- > Temporarily divert flows from seeded areas until vegetation is established.
- > See Table A.5 for additional design considerations.

Bio-retention

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 (shou 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 (EQAR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993). Soils should fall within the SM, ML, SC classifications of the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/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 seeds 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.

Table A.3 Planting Soil Characteristics

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 - P2O5)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	0 to 5%
Silt	30 to 55%
Sand	35 to 60%

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. Bioretention 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 bioretention 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 plants adapted to drier 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 ETAB, 1993 or Claytor and Schueler, 1997.

MIRCO-BIORETENTION INFO CHART

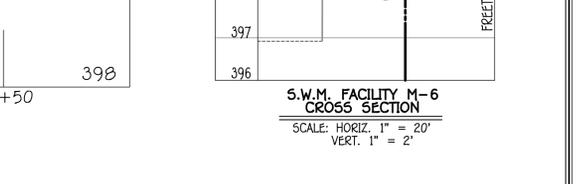
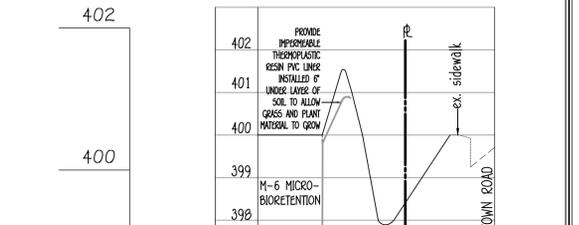
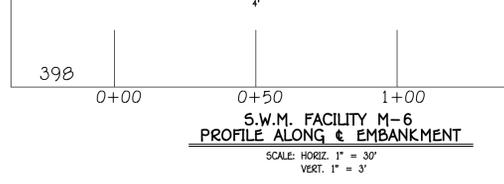
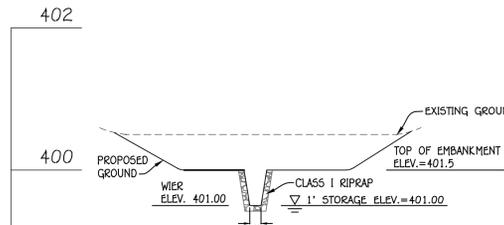
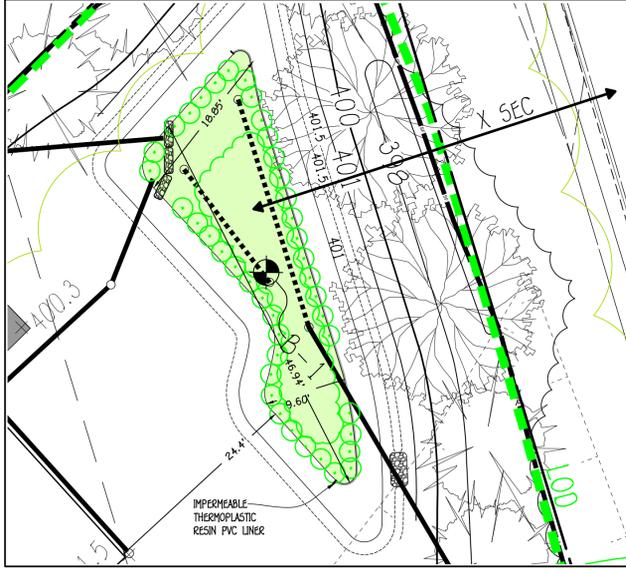
Description	BMP	DA to BMP	Top El.	Bot. El.	Area (Bottom)
Micro-Bio #1	M-6	10,509 Sq.Ft.	401	400	465 Sq.Ft.

DRYWELL CHART

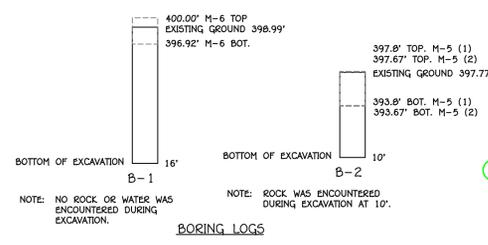
DRYWELL NO.	AREA OF ROOF	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W	D
1	743 SQ. FT.	106 C.F.	166 C.F.	100%*	11.5x	9'x	4'
2	697 SQ. FT.	100 C.F.	166 C.F.	100%*	11.5x	9'x	4'

STORMWATER MANAGEMENT SUMMARY

AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
ROOF (1,440 Sq.Ft.)	206	332	2 DRYWELLS (M-5) PRIVATELY OWNED & MAINTAINED
DRIVEWAY & ROOF (4,595 Sq.Ft.)	644 (STORAGE)	858 (STORAGE)	1 MICRO-BIORETENTION FACILITY (M-6) PRIVATELY OWNED & MAINTAINED
TOTAL SITE	850	1189	

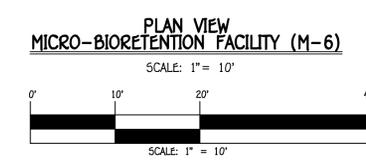


Approved: Howard County Department Of Planning And Zoning
 DocuSigned by: **CHAD Edmondson** 9/9/2022
 Chief, Development Engineering Division
 Chief, Division of Planning and Development
 Director - Department of Planning and Zoning



PLANT MATERIAL- BIO-RETENTION M-6 (1)

QUANTITY	NAME	MAXIMUM SPACING (FT.)
80 (239 sq.ft.)	GRASSES	36" o.c.
42	SHRUBS	36"-40" o.c.



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 12273 BALTIMORE NATIONAL PIKE
 ELLSWORTH CITY, MARYLAND 21042
 (410) 461 - 2995

NO.	REVISION	DATE	X

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 07/14/2023.
 Frank Mandulian II 5/31/2022
 Signature Of Professional Land Surveyor DATE

OWNER/ BUILDER
 VAN LAL BIK & ISABEL BIAKHENEMPAR BIK
 12207 SNOWDEN WOODS ROAD
 LAUREL, MD 20708
 (443-745-9505)

PROJECT	SECTION / AREA	PARCEL NO.			
VAN BIK PROPERTY	-	520			
DEED #	GRID #	ZONE	TAX MAP #	ELEC. DIST.	CENSUS TR.
18929/195	06	R-5C	41	FIFTH	605602

STORMWATER MANAGEMENT NOTES AND DETAILS
VAN BIK PROPERTY
 8077 HARRIET TUBMAN LANE
 ZONED R-5C
 TAX MAP No. 41 GRID No. 06 PARCEL No. 520
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: MAY, 2022
 SHEET 4 OF 4