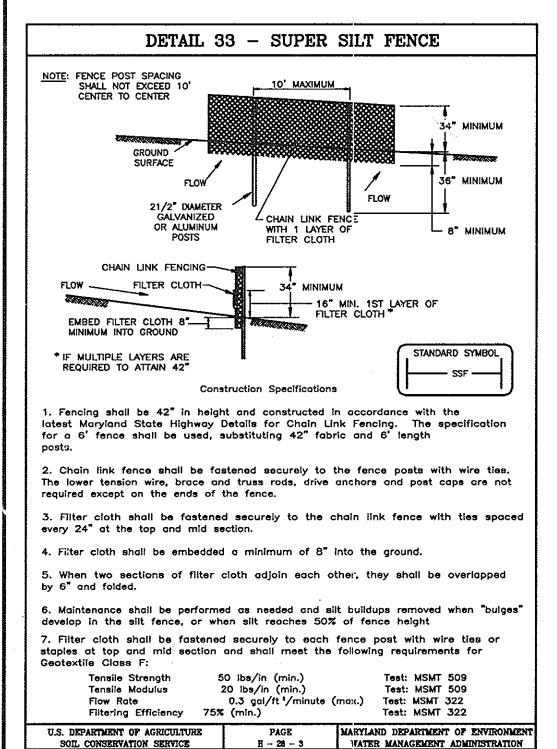
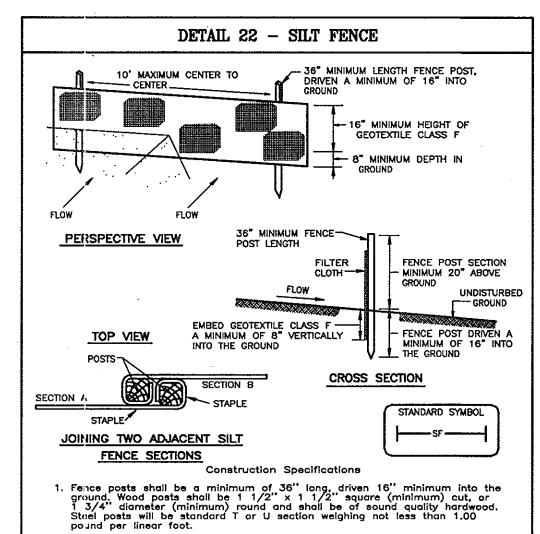


PAGE MARYLAND DEPARTMENT OF ENVIRONMEN

F - 17 - 3 WATER MANAGEMENT ADMINISTRATION





2. Geotextile shall be fastened securely to each fence post with wire ties or stuples at top and mid—section and shall meet the following requirements for Geotextile Class F:

75% (min.)

Where ends of geotextile fabric come together, they shall be overlapped, foided and stapled to prevent sediment bypass.

Tensile Strength

Tensile Modulus

SOIL CONSERVATION SERVICE

CONCRETE SAND

(CLEAN, SHARE

- SOD

Filtering Efficiency

Flow Rate

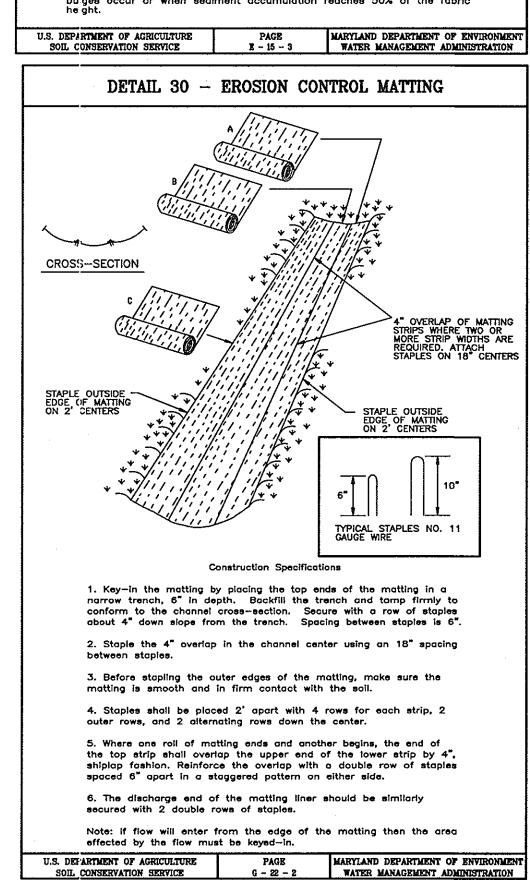
50 lbs/in (min.) 20 lbs/in (min.) 0.3 gal ft²/minute (max.)

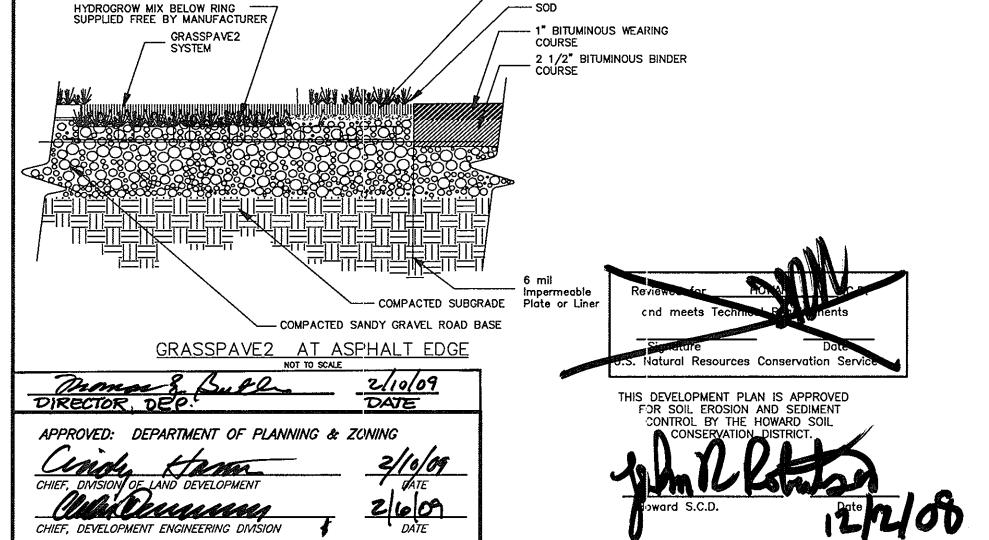
Test: MSMT 509

Test: MSMT 509

Test: MSMT 322

Test: MSMT 322





## DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and construction will be done according to this plan of development and plan for sediment and erosion control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginnin the project. I also authorize periodic on—site inspection by the Howard So Conservation District or their authorized agents, as are deemed necessary

### 21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

III. For sites having disturbed areas under 5 acres:

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

<u>Purpose</u> To provide a suitable soil medium for vegetable growth Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Definition** 

# Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter
- a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative
- 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
- c. The original soil to be vegetated contains naterial toxic to plant growth.
- d. The soil is so acidic that treatment with
- II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans. Construction and Material Specifications
- Topsoil salvaged from the existing site may be used provided that 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-SCS in cooperation with Maryland Agricultural Experimental Station.
- II. Topsoil Specifications Soil to be used as topsoil must meet the following:
- i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or a soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
- ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivv. thistle, or others as specified.
- iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

POSITIVE DRAINAGE SUFFICIENT TO DRAIN

PLAN VIEW

grade to an outlet. Spot elevations may be necessary for grades less than 1%

2. Runoff diverted from a disturbed area shall be conveyed to a sediment

3. Runoff diverted from an undisturbed area shall outlet directly into an

4. All trees, brush, stumps, obstructions, and other objectional material

shall be removed and disposed of so as not to interfere with the proper

5. The dike shall be excavated or shaped to line, grade and cross section as

required to meet the criteria specified herein and be free of bank projections

7. All earth removed and not needed for construction shall be placed so that

8. Inspection and maintenance must be provided periodically and after

2. Seed and cover with Erosion Control Matting or line with sod.

3. 4" - 7" stone or recycled concrete equivalent pressed into

1. All temporary earth dikes shall have uninterrupted positive

undisturbed, stabilized area at a non-erosive velocity.

or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

it will not interfere with the functioning of the dike.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

2:1 SLOPE OR FLATTER

CUT OR FILL SLOPE

1. Seed and cover with straw mulch.

DETAIL 1 — EARTH DIKE

b 2:1 SLOPE OR FLATTER

EXCAVATE TO PROVIDE

a-DIKE HEIGHT

c-FLOW WIDTH

d-FLOW DEPTH

PAGE WARYLAND DEPARTMENT OF ENVIRONMEN
A - 1 - 6 WATER MANAGEMENT ADMINISTRATION

REQUIRED FLOW WIDTH

DIKE A 18"

A-2 B-3

--- -/-<del>---</del> -

- Place topsoil (if required) and apply soil amend—
- ments as specified in 20.0 Vegetative Stabilization -Section I Vegetative Stabilization Methods and IV. For sites having disturbed areas over 5 acres:
- i. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments
- required to bring the soil into compliance with the
- he tested soil demonstrates a pH of less than the pH to 6.5 or higher.
  b. Organic content of topsoil shall be not less than 1.5 percent by weight.
  Topsoil having soluble salt content greater than

a. pH for topsoi: shall be between 6.0 and 7.5. If

- 00 parts per million shall not be used. d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 clays min.) to permit dissipation of phyto-toxic materials.
- NOTE: Topsoil substitutes or amendments, as recommended by a qualified agrenomist or soil scientist and approved by the appropriate approval authority, may be used in
- ii. Place topsoil (if required) and apply soil amendments specified in 20.0 Vegetative Stabilization—Section I— Vegetative Stabilization Methods and Materials.
- V. Topsoil Application
- i. When topsoiling, maintain needed erosion and sediment control practices such as diversions. Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins. ii. Grades on the greas to be topsoiled, which have been previously established, shall be maintained, albeit 4"— 8" higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4"-8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- iv. Topsoil shall not be place while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition hat may otherwise be detrimental to proper grading and seedbed preparation.

MAINTENANCE NOTES

ADDRESS DEAD MATERIAL.

HEAVY STORM EVENTS.

### PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE SEEDBED PREPARATION: Loosen upper three inches of soil by raking,

discing or other acceptable means before seeding, if not previously

SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules: 1) Preferred-Apply 2 tons per acre dolomitic limestone (92 lbs/100 sq.ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs./ 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At the time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq.ft.)

2) Acceptable—Apply 2 tons per acre dolomatic limestone (92 lbs/ 1000 sq.ft.) and apply 1000 lbs. per acre 10-10-10- fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disc into upper

SEEDING: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs/1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre well anchored straw mulch and seed as soon as possible n the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored

three inches of soil.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 ag. ft.) of unrotted small grain straw immediately after seeding.

Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

MAINTENANCE: Inspect all seeded areas and make needed repairs, replacements and reseedings.

### TEMPORARY SEEDING NOTES SEEDBED PREPARATION: Loosen upper three inches of soil by rakina.

discing or other acceptable means before seeding, if not previously

SOIL AMENDMENTS: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft). SEEDING: For periods March 1 thru April 30 and from August 15 thru

November 15, seed with 2 1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 1 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

MULCHING: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchorina.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PROP. GRADE

EXIST. GROUND-

STONE DIAPHRAGM

46' LONG 2' WIDE x 3' DEEP\_

12" WIDE SAND LAYER FOR

PRETREATMENT

15½" #7 GRAVEL

(7½"BELOW 4"PVC FOR

RECHARGE VOLUME)

ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYERS AND SOIL LAYERS IS REQUIRED. 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

SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, TREATMENT OF ALL DISEASED TREES

3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE

EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER

~2" MULCH

\INV=352.83

BIORETENTION FACILITY NO.

SCALE HOR: 1"=30' VERT: 1"=3'

4" PLAIN PVC SCH.40

1<u>1-20-08</u>

ELEV.=348

TOP PLANTING

MATERIAL EL=356.0

STONE DIAPHRAGM

172"#7 GRAVEL 4" ABOVE PIPE

-BOTTOM EL.=352.04

30' LG x 2' WIDE x 3' DEEP

-\_\_4"SLOTTED UNDER DRAIN SCH.40

93"BELOW PIPE INVERT

FOR RECHARGE VOLUME

AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.

BIO-RETENTION FACILITIES HAZARD CLASS A

TOP INLET=356,50

TOP=357.0

PROP. GRADE

EXIST. GROUND

INV=352.25

PROFESSIONAL CERTIFICATE

no. 7139, expiration date: 6-21-10.

G. NELSON CLARK

I hereby certify that these documents were prepared or

engineer under the laws of the State of Maryland, license

**ENGINEER'S CERTIFICATE** 

hereby certify that this plan for Sediment and

Erosion Control represents a practical and workable

plan based on my personal knowledge of the site

conditions and that it was prepared in accordance

with the requirements of the Howard Soil Conservation

approved by me, and that I am a duly licensed professional

# SEDIMENT AND EROSION CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control stuctures, dikes, perimeter slopes and all slopes greater than 3:1 b) 14 days as to all other disturbed or graded areas on the project site.
- 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeters in accordance with Vol.1 Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm
- 5. All disturbed areas must be stabilized within the time period specified above, in accordance with the 1994 MARYLAND STAND-ARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings, sod, temporary seeding and mulching (Sec G). Temporary stabilization with mulch alone can only be done when
- recommended seeding dates do not allow for proper germination 6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. SITE ANALYSIS: Total Area of Site: \_\_\_\_ Area Disturbed:
Area to be roofed or paved: Area to be regetatively stabilized: Offsite Waste/Borrow Area Location:

- 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same
- Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
- 10. On all sites with disturbed areas in excess of 2 acres, approva of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- 11. Trenches for the construction of utilities shall be backfilled and stabilized within one working day, or is limited to three pipe lengths. 12. The total amount of earth dike =
- \* It is the responsibility of the contractor to identify the spoil/borrow site and notify and gain approval from the sediment control inspector of the site and it's

14. The total amount of silt fence:

2'-6" PLANTING

TOP\_EL=339.0. BOTTOM EL=336.5

J:\06-025 SOUDER PROP.(Ashley)\ASHLESDP.dwg (DETAIL)

\_\_INV=335.0

SLOTTED UNDER DRAIN

A PVC SCH40

~INV=335.83

EL=333.2±

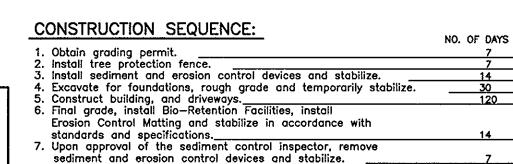
ELEV.=330

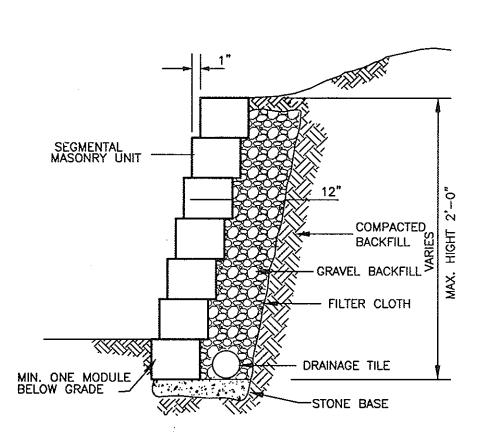
BIORETENTION FACILITY NO. 2

\_WATER TABLE

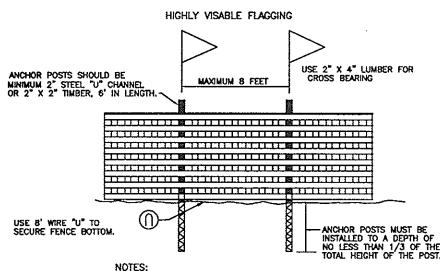
13. The total amount of super silt fence = 200 LF

grading permit number at the time of construction.



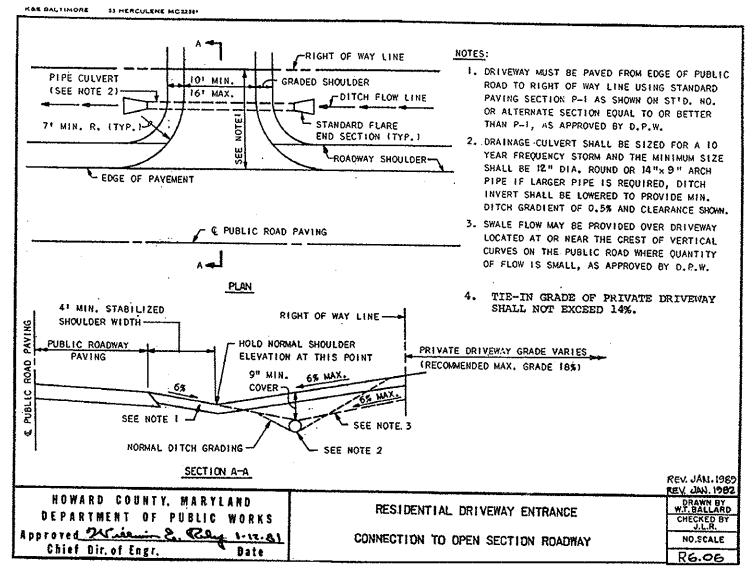


TYPICAL RETAINING WALL NOT TO SCALE



1. Forest protection device only.
2. Retention area will be set as part of the review process.
3. Boundaries of retention area should be stoked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protection signage should be used.
6. Device should be maintained throughout construction.

BLAZE ORANGE PLASTIC MESH TYPICAL TREE PROTECTION FENCE DETAIL





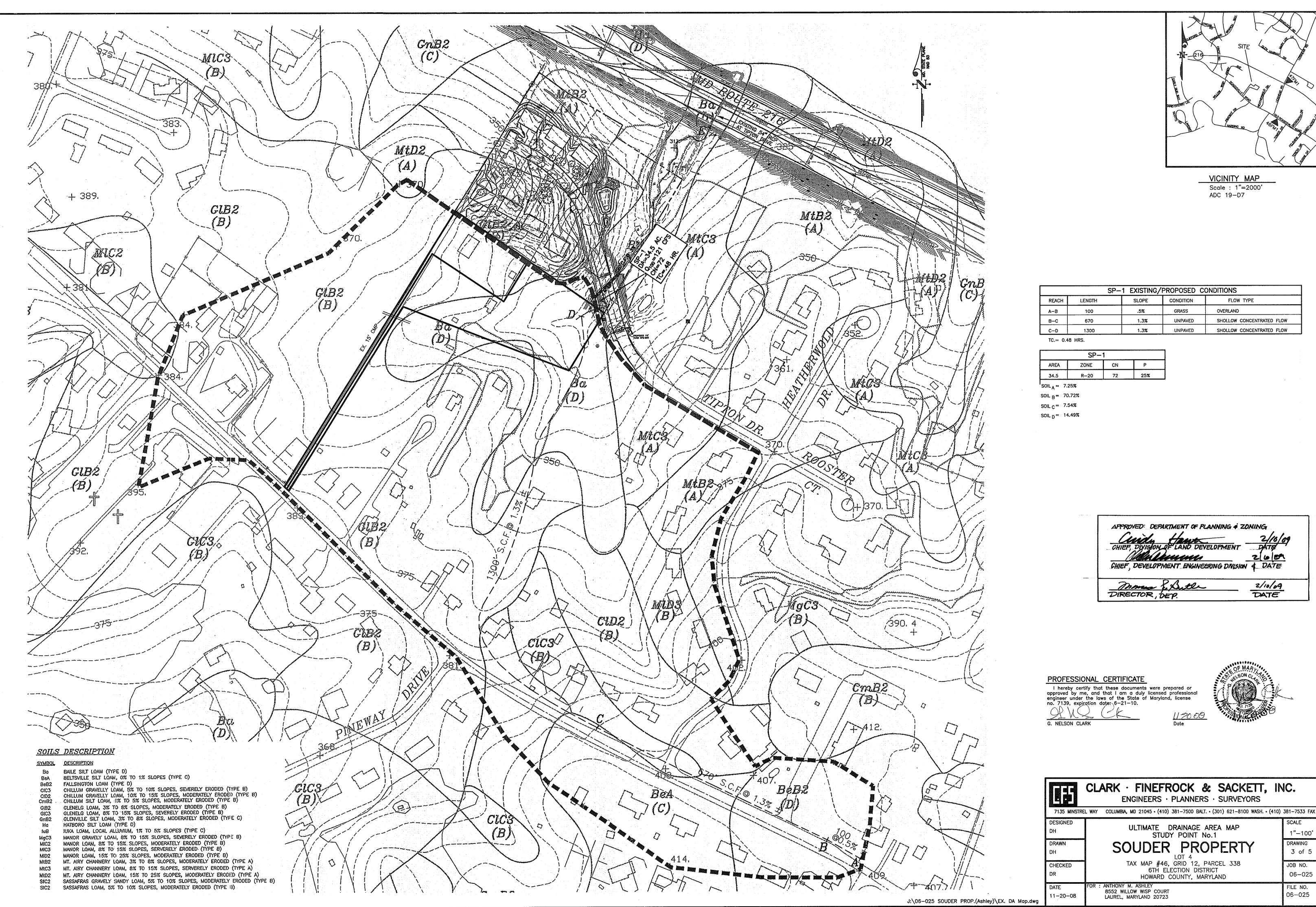
DESIGNED SCALE SPECIFICATIONS DETAILS DRAWN 2 of 5 TAX MAP #46. GRID 12, PARCEL 338 CHECKED JOB NO. 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND FILE NO. 8552 WILLOW WISP COURT

EXIST. GROUND

1"-30' DRAWING 06-025 06-025 11-20-08

SPD-07-123

LAUREL, MARYLAND 20723



Construction of the system of the state of the property of the state o

