

Seedbed Preparation: Loosen upper three inches of soil be raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: In lieu of soil test recommendations, use on the following

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sf).

2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by: Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tali Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/12 to 2 tons per acre (70 to 90 lbs/1000 sf) 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 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

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

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf). Seeding: For periods March 1 through April 30 and from August 15 through

November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period November 16 through 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 sf) 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 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction.
- (313-1855)2. All vegetative and structural practices are to be installed accordingly to the provisions of this plan and are to be in conformance with the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment
- Following initial soil disturbances or redisturbance, permanent or temporary stabilization shall be completed within: a) 72 hours for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 5 calendar days as to all other disturbed or graded areas on the project site.

4. All disturbed areas must be stabilized within the time period specified

for Soil Erosion and Sediment Control for Permanent Seedings (Sec. G-III) Sod (Sec. G-IV). Temporary Seeding (Sec. G-II) and Mulching (Sec. G-I). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

above in accordance with the 1994 Maryland Standards and Specifications

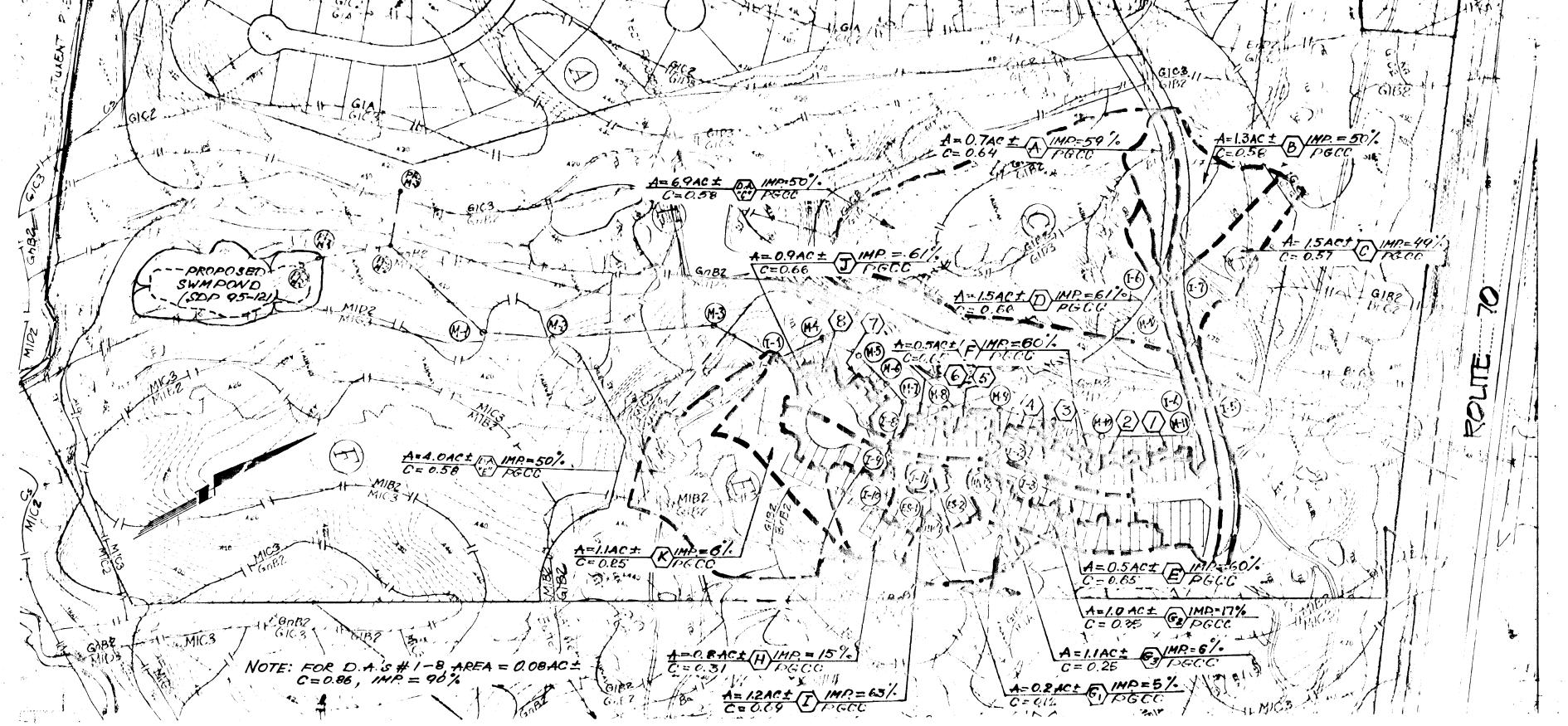
- 5. All sediment control structures are to remain in place and are to be naintained in operative condition until permissiol been obtained from the Howard County Sediment Control Inspector.
- Site Analysis: Total Area of Site: Area to be Disturbed Area to be roofed or paved: Area to be vegetatively stabilized:

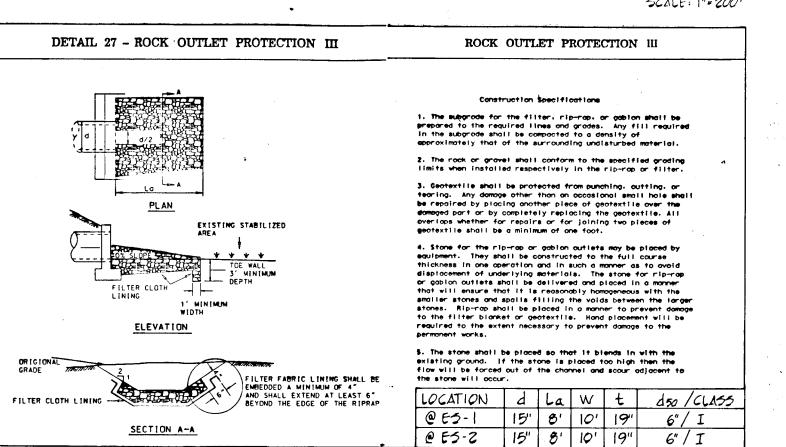
TOTAL CUT

TOTAL FILL

0.6 AC. 2.9 AC. 1,000 G.Y. 2 7.130 CY. 5

- 7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance. 8. Additional sediment controls must be provided, if deemed necessary by the
- Howard County DILP Sediment Control Inspector. Quantities and estimates shown are for sediment control purposes only.
- Contractor shall prepare his/her own quantity estimates to his/her satisfaction 10. OFF-SITE WASTE/BORROW AREA: ALL EXCESS MATERIAL SHALL BE TRANSMITTED TO A SUITABLE SPOIL SITE WITH APPROPRIATE SEDIMENT CONTROL MEASURES AS REQUIRED.





Anches posts Stands to minimas 3" starts-stands

SAPETY PENCE CONSTRUCTION SPECIFICATIONS 1). Contractor may use snow (ence or blaze orange plastic mesh fence where shown on plan 2). Safety fence to be a minimum 4 feet high. 3). Anchor post to be installed to a depth of at least 1/3 of the total height of the post. 4). Fence is to be built so as not so restrict flow into or out of trap.

TREE PROTECTION PONCE DETAIL

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Sequence of Construction (PhaseII)

Week 16-19

Phase 2 work may begin upon stabilization of the Phase 1 area that drains towards

Phase 2 and inlets #1-2 and 1-3 are open and functional. (8DP - 95 - 121 AND F - 96 - 150 MUST BE COMPLETED AND FUNCTIONAL PRIOR TO WORK BEGINNING ON PHASE T.

appropriate agencies.

Notify Howard County Construction Inspection Division (313-1880) at least five (5) working days prior to starting work. Install stabilized construction entrance and tree protection

devices, obtain inspection as required. Install all sediment & erosion control measures and devices for construction of roads and miscellaneous grading. All sediment control devices are to be inspected daily and after each rainfall. Renair sediment devices as required.

Clear and grub site after permission is granted by inspector Week 5-6 Week 6-9 Mass grade site. Construct Utilities (Water, Sewer and Storm Drain) Week 9-15 A) Construct 24" diversion pipe into trap #1 from inlet #I-8. Block pipe from I-8 to M-7.

When all contributing areas to a sediment device has been Week 20 stabilized and with the permission of the sediment control inspector, these devices may be removed and the area brought to original grades and stabilized. Notify Howard County Office of Inspections and Permits for

Construct curb and gutter and paving.

final inspection of completed project.

DETAIL 6 - GABION INFLOW PROTECTION

Construction and Material Specifications

21.0 STANDARD AND SPECIFICATIONS

OPSOIL

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low

Conditions Where Practice Applies

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

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require

apecial consideration and design for adequate stabilization. Areas having slopes steeper than 2:1

Placement of topsoff over a prepared subsoff prior to establishment of permanent vegetation

nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

This practice is fimited to areas having 2:1 or flatter slopes where:

furnish continuing supplies of moisture and plant nutrients

d. The soil is so acidic that treatment with limestone is not feasible

shall have the appropriate stabilization shown on the plans

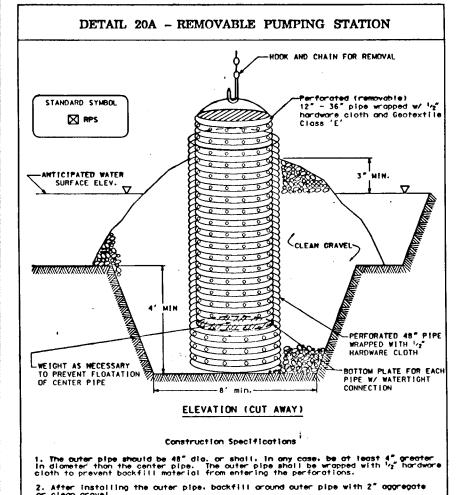
c. The original soil to be vegetated contains material toxic to plant growth.

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- 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 scoperation 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 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 11/4" in diameter.
- ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, 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 procedur
- II. For sites having disturbed areas under 5 acres:
- i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- III. For sites having disturbed areas over 5 acres:
- i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and time amendments required to bring the soil into compliance with the following:
- a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be perscribed to raise the pH to 6.5 or higher.
- b. Organic content of topsoil shall be not less than 1.5 percent by weight.
- e. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
- d. No sod or seed shall be relaced 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.
- Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientistand approved by the appopriate approval authority, may be used in lieu of natural topsoil.
- ii. Place tonsoil (if required) and apply soil amendments as specified in 20,0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
- - 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 areas to be topsoiled, which have been previously established, shall be naintained, 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 topsoiling or other operations shall be corrected in order to prevent the
- iv. Topsoil shall not be placed while 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.
- VI. Alternative for Permanent Seeding Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
- i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
- is a. Composted studge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements,
- the appropriate constituents must be added to meet the requirements prior to use.
- c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet
- iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 source feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

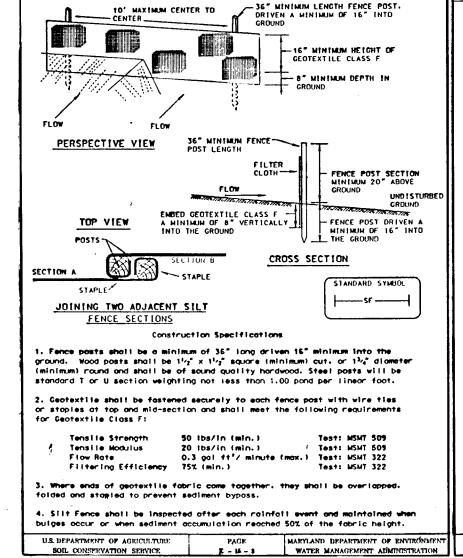


2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel. 3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be $\frac{1}{2}$ " X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wropped with $\frac{1}{2}$ " hardware cloth first, then wropped again with Geotextile Class E The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

SOIL CONSERVATION SERVICE D - 12 - 6 WATER MANAGEMENT ADMINISTRATION

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

HIEF. BUREAU OF HIGHWAYS



DETAIL 22 - SILT FENCE

DETAIL 1 - EARTH DIKE - D 2:1 SLOPE OR FLATTER DIKE A DIKE B O-DIKE HEICHT 18" POSITIVE DRAINAGE SUFFICIENT TO DRAIN D-DIKE WIDTH C-FLOW WIDTH d-FLOW DEPTH PLAN VIEW STANDARD SYMBO A-2 B-3 -- -/-- -FLOW CHANNEL STABILIZATION 1. Seed and cover with straw mulch. 2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive 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 undisturbed, stabilized area at a non-erosive velocity. 4. All trees, brush, stumps, obstructions, and other objectional material

5. The dike shall be excovated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow. 6. Fill shall be compacted by earth moving equipment. 7. All earth removed and not needed for construction shall be placed so that It will not interfere with the functioning of the dike. each rain event.

A = 1 - 6 WATER MANAGEMENT ADMINISTRATION

AND SEDIMENT CONTROL BY THE HOWARD COUNTY

APPROVED: THIS DEVELOPMENT IS APPROVED FOR EROSION

SOIL CONSERVATION DISTRICT

U.S. DEPARTMENT OF AGRICULTURE

BOIL CONSERVATION SERVICE

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

EARTH FIL ** GEDTEXTILE CLASS 'C'~ ------PIPE AS NECESSAR MINIMUM 6" OF 2"-3" AGGREGATE OVER LENGTH AND WIDTH OF STRUCTURE LEXISTING GROUND PROFILE STANDARD SYMBDL WESCHAM Length - minimum of 50' (#30' for single residence lot). . Width — 10° minimum, should be flored at the existing road to provide a turnin Geotextile fabric (filter cloth) shall be placed over the existing ground prior o placing stone. **The plan approval authority may not require single family . Stone — crushed aggregate (2" to 3") or rectalised or recycled concrete . Surface Water — all surface water flowing to ar diverted toward construction

entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6° of stone over the pipe. Pipe ha

to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required. Location - A stabilized construction entrance shall be located at every point here construction traffic enters or leaves a construction site. Vehicles leaving he site must travel over the entire length of the stabilized construction entrance U.S. DEPARTMENT OF AGRICULTURE BOIL CONSERVATION SERVICE. PAGE - MARYLAND DEPARTMENT OF ENVIRONMENT

P - 17 - 3 WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE
BOIL CONSERVATION SERVICE

STANDARD SYMBOL PERSPECTIVE VIEW PROFILE ALONG CENTERLINE Construction Specifications . Gabton inflow protection shall be constructed of 9° x 3' x 9° $^{\rm t}$ gobton baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes. 2. Geotextile Class C shall be installed under all gabion baskets.

3. The stone used to fill the gabion baskets shall be 4'' - 7''. . Gabions shall be installed in occordance with manufacturers recommendations. \$. Gabian inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

COMPACTED EARTH TOP OF EMBANKMENT METR LENGTH 4' MAX EXISTING FILE THE THE HEALTH FILE CROWN SECTION B-B PERSPECTIVE VIEW --- GEDTEXTILE |-- APRON (SEE NOTE) - BOTTOM ELEVATION 1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

DETAIL 9 - STONE OUTLET SEDIMENT TRAP - ST II

2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organi material or other objectionable material. The embankment shall be compocted by traversing with equipment while it is being 3. All cut and fill stopes shall be 2:1 or flatter. 4. The stone used in the outlet shall be small rip-rap 4" to 7" in on the upstream face of the outlet. Stone facing shall be as

necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet. 5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the in a suitable area and in such a monner that it will not erode. PAGE MARYLAND DEPARTMENT OF ENVIRONMENT
U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT
3 - 1 - 2 WATER MANAGEMENT ADMINISTRATION
SOIL CONSERVATION SERVICE C - 9 - 10 WATER MANAGEMENT ADMINISTRATION

. Construction of traps shall be corried out in such a manner that sediment pollution is aboted. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with Grade Stabilization Structure with seed and mutch upon trap completion and monitored and maintained erosion free during the life of the trop. 8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized. . Refer to Section D for specifications concerning trap dewatering.

STONE OUTLET SEDIMENT TRAP - ST II

. The atructure shall be inspected periodically and after each rain and

D. Minimum trap depth shall be measured from the weir elevation.

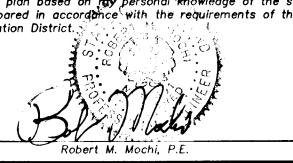
1. The elevation of the top of any dike directing water into the trap must qual or exceed the elevation of the trap embankment.

outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance

13. Dutlet - An outlet shall be provided. Including a means of conveying the scharge in an erosion free manner to an existing stable channel.

MARYLAND DEPARTMENT OF ENVIRON SOIL CONSERVATION SERVICE

ENGINEER'S CERTIFICATE I certify that this plan for erosion and sediment 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 County Soil

DEVELOPMENT ENGINEERING DIVISION FHIEF, DIVISION OF LAND DEVELOPMENT .

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

APPROVED: REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION

DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

U.S. DEPARTMENT OF AGRICULTURE

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done accordance

training program for the control of sediment and erosion before beginning the project. I also authorize periodic onsite inspection by the Howard County Soil Conservation District or their authorized agents, as are deemed necessary.

with this plan of development and plan for erosion and sediment control and

that all responsible personnel involved in the construction of this project will

have a certificate of attendance at a Department of the Environment approved

Conservation District.