

PRINCE GEORGE'S COUNTY

9400 PEPPERCORN PLACE SUITE 600 LANDOVER, MARYLAND

KETTERING COMMUNITY ENVIRONMENTAL

ENHANCEMENT PROGRAM

C.I.P. NO. DV541475



THE PRINCE GEORGE'S COUNTY GOVERNMENT

DEPARTMENT OF ENVIRONMENTAL RESOURCES CONCEPT SECTION 00 PEPPERCORN PLACE, SIXTH FLOOR ANDOVER, MARYLAND 20785

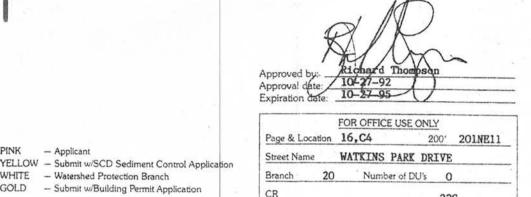
STORMWATER MANAGEMENT CONCEPT APPROVA

			APPROVA	L NO. 938003760		
Develop	ment Name: _	Kettering Community E	nvironmental	Program - Patuxent	Estuary	Demonstra
Applicar	nt's Name:	Prince George's Count	y Government	Program		
Enginee	r/Architect/Sur	veyor: Engineering Tech	nologies Asso	ociates, Inc.		
REQUIF	REMENTS:					
	Public storm	drainage/stormwater manageme	nt construction			
	Private storm	drainage/stormwater manageme	ent construction			
	Watershed Pr	otection Branch (WPB) design a	pproval			
5-50	a p 2 0	T 02 16 05 16 05 16 16 16 16 16 16 16 16 16 16 16 16 16				

Surface drainage/floodplain easemen

2-10 year attenuation

Stormwater management fee payment of \$ NONE in lieu of providing on-site attenuation/quality



SHEET INDEX

TITLE SHEET NO. TITLE SHEET. GENERAL NOTES, TRAVERSE DATUM, KEY PLAN AND MISCELLANEOUS DETAILS WETLAND MARSH WITH EXTENDED DETENTION PLAN AND EROSION AND SEDIMENT CONTROL PLAN. STREAMBED RE-ESTABLISHMENT PLAN AND EROSION AND SEDIMENT CONTROL PLAN. CHANNEL BED RE-ESTABLISHMENT PLAN AND PROFILE (STATION 0+00 - 7+50)CHANNEL BED RE-ESTABLISHMENT PLAN AND PROFILE (STATION 7+50 - TWIN 78 RCP)

BIORETENTION AREA DRAINAGE AREA MAP BIORETENTION AREA PLAN VIEWS AND SEDIMENT SEROSION CONTROL PLAN BIORETENTION AREA PLAN VIEWS AND SEDIMENT & EROSION CONTROL PLAN

BIORETENTION AREA PLAN VIEWS AND SECTION DETAILS.

BIORETENTION DETAILS. MISCELLANEOUS DETAILS.

MISCELLANEOUS SECTIONS AND PROFILES. 13

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

PLANTING PLAN FOR BIORETENTION AREAS.

PLANTING PLAN FOR BIORETENTION AREAS.

PLANTING PLAN FOR BIORETENTION AREAS.

PLANTING PLAN FOR WETLAND / STREAMBED

RE-ESTABLISHMENT AREAS.

PLANTING PLAN FOR CHANNEL REFORESTATION.

PLANTING PLAN FOR WETLAND MARSH WITH EXTENDED 20

PLANTING DETAILS SCHEDULES AND NOTES.

M-NCPPC Prince George's County Planning Department Natural Resources Division APPROVAL TREE CONSERVATION PLAN

VICINITY MAP SCALE: 1'' = 2000'P.G. CO. MAP 16, GRID C-4

CERTIFICATE OF COMPLIANCE

RIGHT-OF-WAY LINES SHOWN ON THESE PLANS DO NOT INCLUDE EASEMENTS, THEY ARE FOR ASSISTANCE IN INTERPRETING THE PLANS, THEY ARE NOT OFFICIAL . FOR OFFICIAL FEE RIGHT-OF-WAY AND EASEMENT INFORMATION SEE APPROPRIATE RIGHT-OF-WAY PLAT OR PLATS.

CERTIFICATE OF COMPLIANCE - I HEREBY CERTIFY THAT THE GRADING SHOWN HEREON CONFORMS WITH SUBTITLE FOUR, DIVISION THREE OF THE PRINCE GEORGE'S COUNTY BUILDING CODE.

THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE PURPOSES ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATION. CONTRACTORS SHALL NOTIFY "MISS UTILITY" TELEPHONE NUMBER 1-800-257-7777 FOR UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

I CERTIFY THAT THESE PLANS REPRESENT A PRACTICABLE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PRINCE GEORGE'S COUNTY WPB DESIGN MANUAL AND STANDARD SPECIFICATIONS, AND OTHER JURISDICTIONAL FEDERAL AND STATE PERMITS.

SIGNATURE: 10 MD. LICENSE NO. 15224 DATE: 2-1-93

NAME: DAVID B. ENNIS, P.E.

ENGINEERING TECHNOLOGIES ASSOCIATES, INC. ENGINEERS * PLANNERS * SURVEYORS 3458 ELLICOTT CENTER DRIVE SUITE #101 ELLICOTT CITY, MARYLAND 21043 PHONE: (410) 461-9910

OWNER'S / DEVELOPERS CERTIFICATION

WHITE - Watershed Protection Branch GOLD - Submit w/Building Permit Application

P.G.C. Form #3693 (Rev 11/91)

"I/WE HEREBY CERTIFY THAT I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN AND THAT ALL CLEARING, GRADING, CON-STRUCTION AND OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN DANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

NAME: STANE. WILDESEN P.E. TITLE: BRANCH MANAGER PHONE NO .: (301) 925-5900

Prince George's Soil Conservation District APPROVAL SEDIMENT CONTROL sc- 101-93 N/A SUPERVISOR DATE

PRINCE GEORGE'S COUNTY GOVERNMENT 9400 PEPPERCORN PLACE SUITE 600 LANDOVER, MARYLAND 20785

CONSULTANTS CERTIFICATE

"I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICABLE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PRINCE GEORGE'S SOIL CONSERVATION DISTRICT AND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER AND OR DEVELOPER.

SIGNATURE: LO. MD. LICENSE NO. 15224 DATE: 2/1/93 NAME: DAVID B. ENNIS, P.E.

> ENGINEERING TECHNOLOGIES ASSOCIATES, INC. ENGINEERS * PLANNERS * SURVEYORS 3458 ELLICOTT CENTER DRIVE SUITE #101 ELLICOTT CITY, MARYLAND 21043

> > PHONE: (410) 461-9910

TITLE SHEET

PATUXENT ESTUARY DEMONSTRATION PROJECT KETTERING COMMUNITY ENVIRONMENTAL ENHANCEMENT PROGRAM

ENGINEERING TECHNOLOGIES ASSOCIATES, INC. 3458 ELLICOTT CENTER DRIVE SUITE ELLICOTT CITY, MARYLAND 21043

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S.D. PIPES

DETENTION POND OIL GRIT SEP.

UNDERGROUND STORAG

LANDSCAPE

SD# 938003760

WATER QUALITY SYSTEM INFILTRATION RETENTION POND -

DEPARTMENT ENVIRONMENTAL RESOURCES WATERSHED PROTECTION BRANCH PRINCE GEORGE'S COUNTY, MARYLAND

REVISIONS

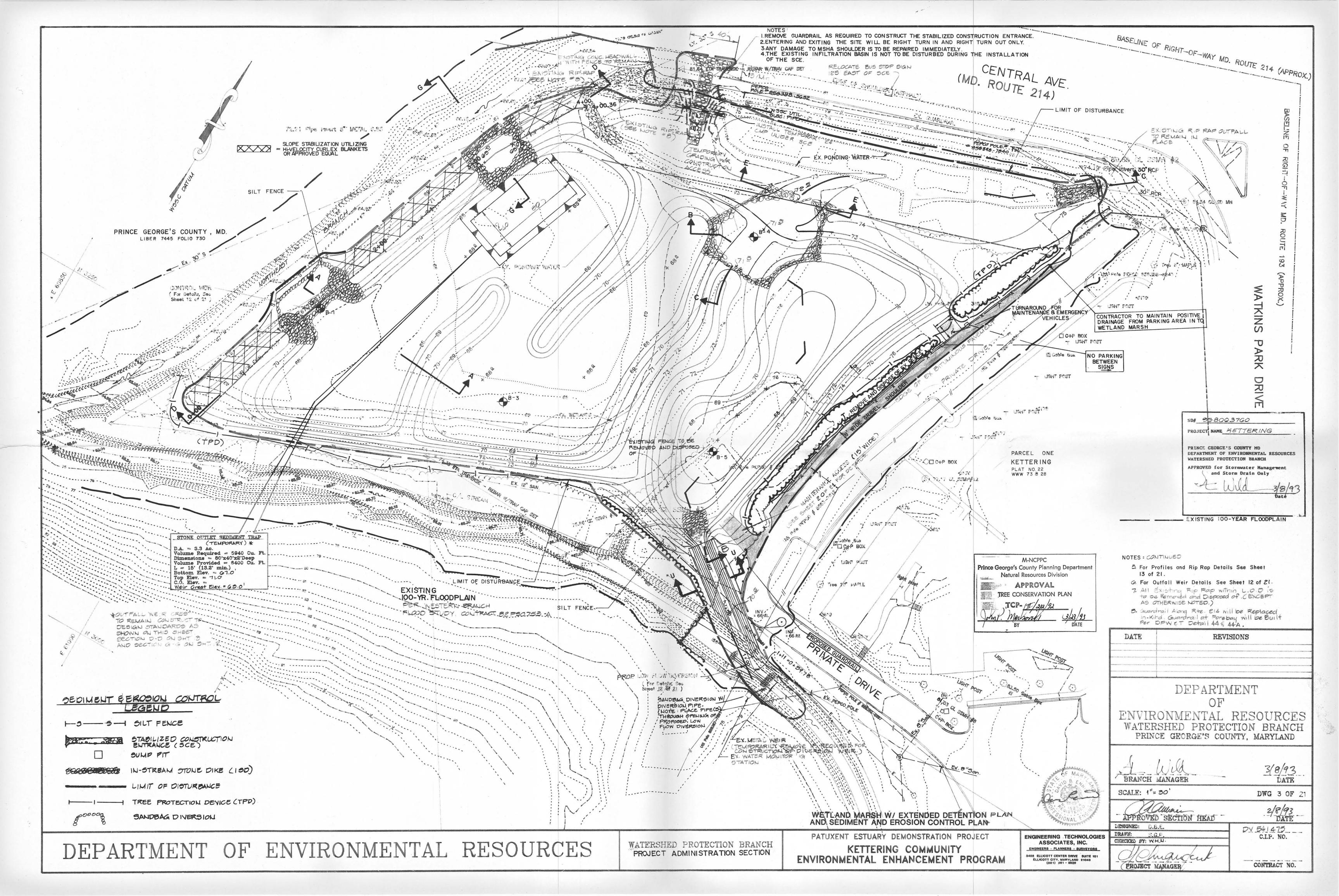
L. Wild - BRANCH MANAGER	_2	2/2 D	9/9 ATE	?
SCALE: As Shown	DWG	1	OF	2
	- Andrewson Company	Marketon .	NAME OF STREET	and the same

2/8/93 DATE (Clavaria APPROVED SECTION HEAD D.B.E. DY 541475_

WATERSHED PROTECTION BRANCH PROJECT ADMINISTRATION SECTION

DEPARTMENT OF ENVIRONMENTAL RESOURCES

C.I.P. NO. CHECKED BY: WHILE PROJECT MANAGER CONTRACT NO.



VEGETATIVE STABILIZATION

Permanent and Temporary Seeding, Sodding and Mulching

- Site Preparation Permanent or temporary stabilization shall be completed within (a.) seven calendar days as to the surface of all sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, sediment basins, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and (b.) fourteen days as to all other disturbed or graded areas on the project site.
- II. Seedbed Preparation and Seeding application

 The top layer of soil shall be loosened, limed and fertilized by raking, discing or harrowing or other acceptable means before seeding. Flat areas and slopes up to 3 to 1 grade shall be loose and friable to a depth of at least 3 inches. Slopes steeper than 3 to 1 shall have the top 1-3 inches of soil loose and friable before seeding. Flat areas and slopes up to 3 to 1 grade shall be loose and friable to a depth of at least 3 inches. Slopes steeper than 3 to 1 shall have the top 1-3 inches of soil loose and friable before seeding.
 - Apply seed uniformly with a cyclone seeder, drill cultipacker, seeder or hydroseeder on a firm moist seedbed.
- III. Soil Amendments

 Lime and fertilize according to soil tests. In lieu of soil test apply the following; 2 tons per acre or 92 lbs./1000 (permanent and sodding) sq.ft.

Limestone: 1 tourper acre or 46 1b/1000 sq. ft. (temporary) Fertilizer: 10-10-10 or equivalent at 1000 lbs. per acre or 23 lbs. per 1000 sq. ft. (permanent and sodding) 10-10-10 or equivalent at 600 lbs. per acre or 15 lbs./ 1000 sq. ft. (temporary).

IV. Sediment Control Practices Seeding
Seed: 'Kentucky 31' Tall Fescue 60 lbs/acre or 1.38 lbs/1000 sq. ft. and Italian (annual) ryegrass 40 lbs/acre or 92 1bs/1000 sq. ft.

V. Temporary Seeding: Per growing Season Italian or perennial ryegrass 40 lbs/acre or .92 lbs/ 1000 sg. ft 2/1 - 4/30 and 8/15 - 11/30 Millet 40 lbs/acre or .92 lbs/1000 sq. ft.

2/1 - 10/31 5/1 - 8/14 with irrigation.

VI. Permanent Seeding Residential and High Maintenance Areas

1. Kentucky Bluegrass, 'Plush', 'Birka', 'Parade', 'Vantage'. 'Columbia', 'Merion', 'Adelphi', 'South Dakota', 'Kenblue'. Any three varieties at 30 lbs. to make 90lbs/acre or 2 lbs/ 1000 sq. ft. and Red Fescue - 'Pennlawn' or Jamestown 10 1bs/1000 sq. ft.

2/1 - 4/30 and 8/15 - 10/31 'Kentucky 31' Tall Fescue 220-260 lbs/acre or 5-6 lbs/1000 sq. ft. 2/1 - 10/31 5/1 - 8/14 irrigation required.

B. Low Maintenance and Mining Areas
'Kentucky 31' Tall Fescue 40 lbs/acre or .92 lbs/1000 sq. ft. and 'Interstate' Sericea lespedeza (inoculated) 20 lbs/acre or .46 lbs/1000 sq. ft. 2/1 - 4/30 and 8/15 - 10/31

C. General and Large Acreage 'Kentucky 31' Tall Fescue 60 lbs./acre or 1.38 lbs/1000 sq. ft.

5/1 - 8/14

All seedings require mulching. Use mulch only during non-seeding dates until seeding can be done. Mulch shall be unrotted, unchopped small grain straw applied at a rate of 12 to 2 tons/acre or 70-90 1bs/1000 sq. ft. (2 bales). Mulch materials shall be relatively free of all kinds of weedbeds and shall be free of prohibited noxious weeds. Spread mulch uniformly mechanically or by hand. Mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by mulch nettings, mulch anchoring tool, peg and twine or liquid mulch binders. Liquid mulch binder shall be rapid curing cutback asphalt applied at a rate of 200 gal/acre or 5 gal. per 1000 sq. ft. Slopes 8 feet or more

high use 348 gal/acre or 8 gal./1000 sq. ft. VIII. Sodding
Class of turfgrass sod shall be Maryland or Virginia State certified, or Md. or Virginia State approved sod. Sod shall be harvested, delivered and installed within a period of 36 hours. Sod is to be laid with the long edges parallel to the contour with staggered joints with all ends tightly abutting and not over lapping. Sod shall be rolled and thoroughly water within eight hours of installation. Daily watering to maintain 4 inch depth of moisture for the first week is required in the absence of rainfall Sod is not to be applied on frozen ground.

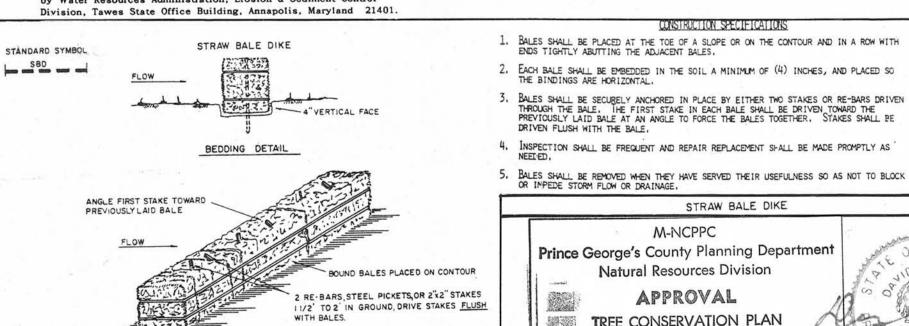
Irrigation - When soil moisture becomes deficient irrigate to prevent loss of stand of protective vegetation.

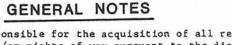
B. Repairs - If stand is inadequate for erosion control, overseed and fertilize using half of the rates originally applied. If stand is over 60% damaged, reestablish following original rates and

Note: Use of this information does not preclude meeting all of the requirements of the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control Vegetative Practices.

SEDIMENT CONTROL NOTES

- 1. All erosion and sediment control measures are to be constructed and maintained in accordance with applicable published "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control."
- 2. All sediment control measures to be adjusted to meet field conditions at the time of construction and be constructed prior to any grading or disturbance of existing surface material on balance of site.
- 3. Periodic inspection and maintenance of all sediment control structures must be provided to insure intended purpose is accomplished. Developer shall be responsible for all sediment leaving the property. Sediment control measures shall be in working conditions at the end of
- 4. All points of construction ingress and egress will be protected to prevent tracking of mud onto public ways.
- 5. All sediment will be prevented from entering any storm drainage system (through use of inlet protection) Contractor installing the above shall obtain and follow thee "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control" as distributed by Water Resources Administration, Erosion & Sediment Control





a. The developer is responsible for the acquisition of all required easements, right, and/or rights-of-way pursuant to the discharge from the sediment and erosion control practices, storm water management practices and the discharge of storm water onto or across and grading or other work to be performed on adjacent or downstream properties affected by this plan.

b. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a.) seven calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and b.) fourteen days as to all other disturbed or graded areas on the project site. The inplace sediment control measures will be maintained on a continuing basis until the site is permanently stabilized and all permit requirements

c. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested uron completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading insepction approvals may not be authorized until this initial approval by the inspection agency is made; and

d. Approval shall be requested upon final stabilization of all sites with disturbed areas in excess of 2 acres before removal of controls.

e. Disturbed surface area 6.2 Ac. Volume of spoil material 14.150 C.Y. 3
Volume of borrow material 700 yd 3.

predominant soil types and general description per PGSCD soil survey. Bo-Bibb Silt Loam; CmA, CmEZ, CmE3, CmB2-Collington Fine Sandy Loam My D3- Monmouth Clay Loam: MW-Mixed Alluvial Land.

BIORETENTION AREA SEEDING NOTES

DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

SITE PREPARATION:

Stabilize as per Standard Responsibility Note #3.

Temporary perimeter dikee and silt traps, etc., are to be provided as per this plan prior to grading operations with location adjustments to be made in the field as necessary and to be maintained at the end of the working day. The minimum area practical shall be disturbed for the minimum

3. <u>Permanent Seeding:</u>

Area to be seeded shall be loose and friable to a depth of at least 3°. The top layer shall be loosened by raking, disking or other acceptable means before seeding occurs. In lieu of soil test results, apply 100 pounds of dolomitic limestone and 25 pounds of 10-10-10 fertilizer per 1,000 square feet. Harrow or disk lime and fertilizer into the soil to a depth of at least 3: on slopes flatter that 3:1. No attempt should be made to drag any disked area to make the soil surface smooth after disking.

B. Seeding:
Apply 5-8 pounds per 1,000 square feet of Kentucky 31 tall fescue between February 1 and April 30 or between August 15 and October 31. Apply seed uniformly on a moist, firm seedbed with a cyclone seeded drill, cultipacker seeder or hydroseeder (slurry includes seeds and fertilizer, recommended on steep slopes only). Maximum seed depth should be 1/4" in clayey soils and 1/2" in sandy soils when using other than the hydroseeder method. Irrigate if soil moisture is deficient to support adequate growth, until vegetation is firmly established.

C. Mulching:

Mulch shall be unchopped, unrotted, small grain straw applied at a rate of 70 to 90 pounds per 1,000 square feet. Mulch materials shall be relatively free of all kinds of weeds and shall be free of prohibited noxious weeds. Spread mulch mechanically or uniformly by hand; mulch anchoring shall be accomplished immediately after mulch placement to minimize loss by wind or water. This may be done by peg and twine method, mulch anchoring tool, netting or liquid mulch binders.

4. Temporary Seeding:

100 pounds of dolomitic limestone per 1,000 square feet

15 pounds of 10-10-10 per 1,000 square feet Perennial rye, Italian rye - 0.92 pounds per 1,000 square feet (February 1 through April 30, or August 15 through November 1 Millet - 0.92 pounds per 1,000 square feet (May 1 through August 15)
Millet _ 0.92 pounds per 1,000 square feet (May 1 through

Same as 3 C above (November 2 through January 31)

No fills may be placed on frozen ground. All fill to be placed in approximately horizontal layers, each layer having a loose thickness of not more than 8°. All fill in roadways and parking areas is to be classified Type 2 as per Anne Arundel County Grading Ordinance, Section 12-02027, and compacted to 90% density; compaction to be determined by ASTM D-1557 (Modified Proctor). Any fill within building area is to be compacted to a minimum of 95% as determined by methods previously mentioned. All other fills shall be compacted sufficiently so as to be stable and prevent

Permanent sod is to be Kentucky 31 tall fescue, state approved sod; lime and fertilize per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the contour with all ends tightly abutting, joints are to be staggered between rows. Water and roll or tamp sed to insure positive root contact with the soil. All slopes greater than 3:1, as shown, are to be permanently sodded or protected with an erosion control netting. Additional watering for ment may be required. Sod is not to be applied on frozen ground.

Mining Operations:

Sediment control plans for mining operations must include the following seeding dates and

February 1 through April 30 and August 15 through October 31 use seed mixture of Kentucky 31 0.5 pounds per 1,000 square feet. For seeding dates of May 1 through August 14 use seed mixture of Kentucky 31 Tall Fescue at

he rate of 2 pounds per 1,000 square feet and Weeping Lovegrass at the rate of 0.1 pond per Use of this information does not preclude meeting all of the requirements of the current, Maryland Standards and Specifications for Soil Erosion and Sediment

Existing Grade Sandbag/Stone Diversion PLAN VIEW Description The work shall consist of installing a flow diversion structure when construction activities take place within the stream channel such as culvert construction or culvert replacement. 1. Sangbags: Sangbags shall consist of materials which are resistant to ultra-wiolet radiation, tearing and puncture and woven hightly enough to prevent leakage of fill material (f.e., sand, fine gravel, etc.). 2. Stone: Stone shall be washed and have a minimum diameter of 6 inches. 3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing. . Construction Requirements 1. All erosion and sediment control devices shall be installed as the 1. All erasion and sediment control devices shall be installed as the first order of work. 2. The height of the sandbag/stone diversion structure shall be one half the distance from the stream bed to the bank plus one foor, as indicated in section at a. The sandbags shall be placed on a smooth, prepared surface. 3. All excavated materials shall be disposed of in a SCO approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the MRA. 4. All dewatering of the construction area shall be pumped to a devatering basin (Plate MPQL.1) or otherwise approved on the plans by the MRA. 5. Shetlow shall be overlanded a minimum of 18 lacker.

Description

II. Material Specifications

III. Construction Requirements

be a woven or non-woven fabric

hydrocarbons, mildew, and rot

small riprap as indicated by

by inspecting authority.

In-Stream Stone Dike

Bioretention Area Sequence of Construction

2. Grade each site to elevations shown on plan. Construct curb

3. Stabilize grading within Limit of Disturbance except for

7. Fill Bioretention Area with planting soil and sand, as shown in the plans and detailed in the specifications.

9. Upon authorization from DER inspector, remove all sediment

Plant vegetation specified in the planting plan for

controls and stabilize all disturbed areas. Unblock curb

openings, and provide drainage to the Bioretention Areas.

openings, and/or remove and replace existing concrete as

specified on the plan. Curb openings shall be blocked or

other measures taken to prohibit drainage from entering

Remove Phase I sediment control devices at direction of DER

1. Install Phase I Silt Fence as shown on the plan.

-Construction time: 1/2 Day

-Construction time: 1 Day

-Construction time: 1/2 Day

-Construction time: 1/2 Day

-Construction time: 1/2 Day

-Construction time: 1/2 Day

-Construction time: 1 Day

-Construction time: 1/2 Day

-Construction time: 1/2 Day

Total Estimated Construction Time- 5.5 Days

Times listed are for construction of one Bioretention Area

Excavate Bioretention Area to proposed depth.

Bioretention Area.

5. Install Phase II silt fence

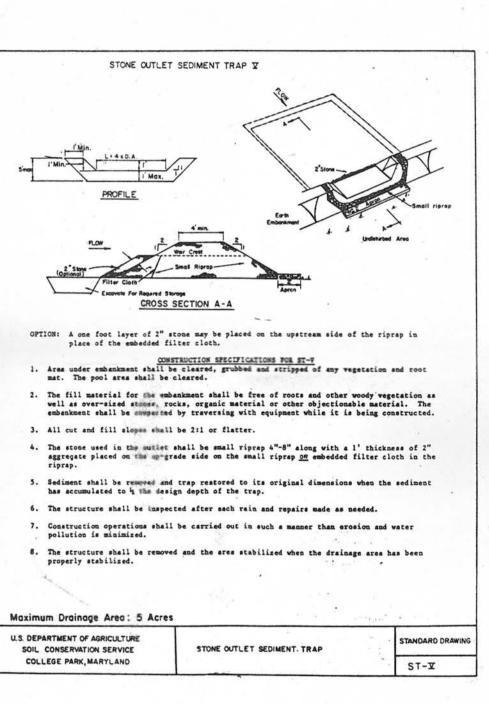
Bioretention Area.

inspector.

GABION BASKET ALTERNATIVE

II disturbed areas have been

STABILIZED CONSTRUCTION ENTRANCE STANDARD SYMBOL SCE The work encompasses the installation of an EXISTING in-stream stone dike to be used as a sediment filtering device for streams that generally carry wet weather flow. PAVEMEN PROFILE 1. Small Riprap - 8-12 inch washed stone and gravel shall be used. Filter Fabric - The filter cloth shall consisting only of continuous chain Existing ground polymeric filaments or yarns of polyester. The fabric shall be inert o commonly encountered chemicals, resistant. A one foot layer of 2" washed stone may be used instead of filter fabric. 3. Gabion Baskets - Class I gabion baskets 10 min PAVEMEN' hall meet the requirements listed in PLAN VIEW 1. Structure to be installed in-stream as first order of business to trap sediment generated during construction activities. 2. The top width of the dike is to be from CONSTRUCTION SPECIFICATIONS The distance between the dike and the disturbance is to be determined by flo Stone Size - Use 2º stone, or reclaimed or recycled concrete equivalent. rate of the waterway. Gabion baskets may be used In lieu of Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply). alternative section. 5. Structure is to remain in place until Thickness - Not less than six (6) inches. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs. stabilized in accordance with an approved sediment and erosion control Filter Cloth - Will be placed over the entire area prior to placing of stone Filter will not be required on a single family residence lot. 6. Entrapped sediment is to be excavated . Surface Water - All surface water flowing or diverted toward construction periodically and disposed of in a SCO entrances shall be piped across the entrance. approved disposal area outside the 10 year floodplain unless otherwise Maintenance - The entrance shall be maintained in a condition which will approved on the plans by the WRA. prevent tracking or flowing of sediment onto public rights-of-way. This may 7. Structure can be removed once approve require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto

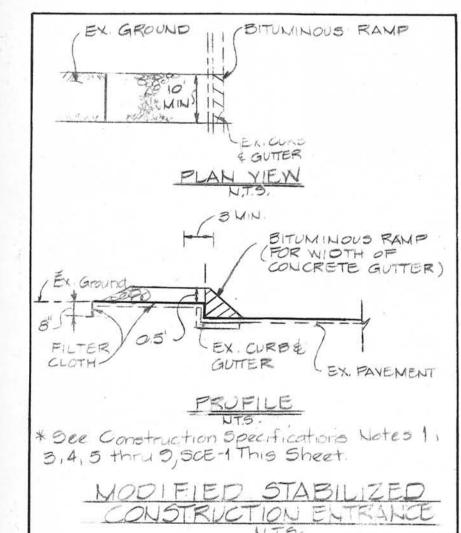


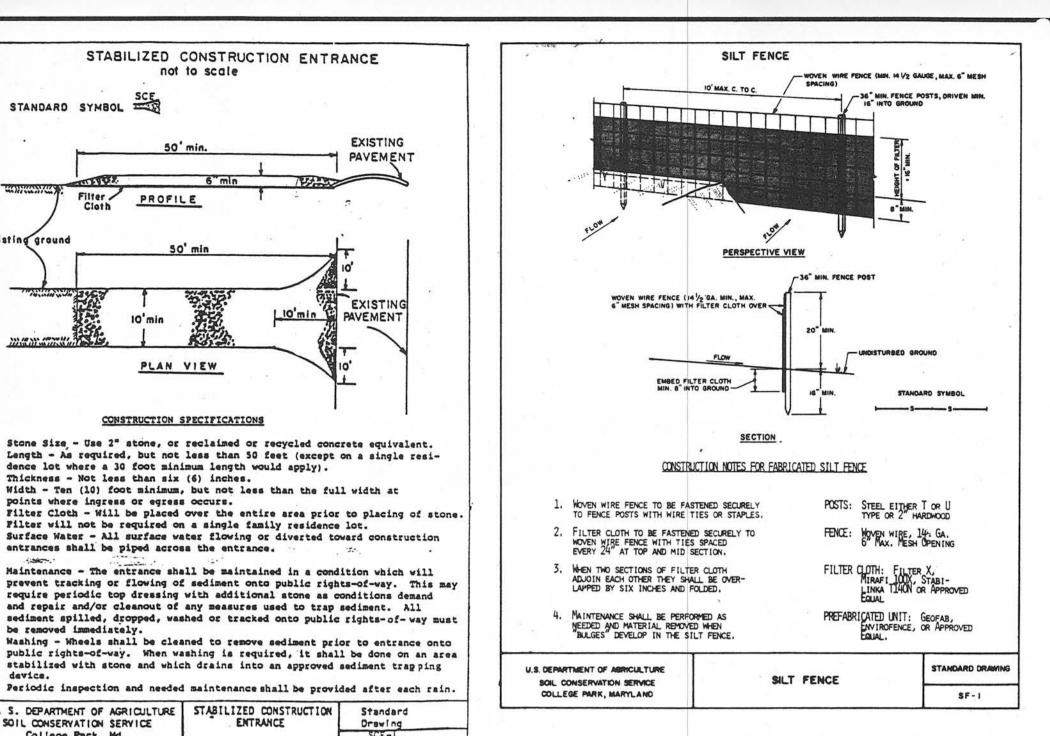
stabilized with stone and which drains into an approved sediment trapping

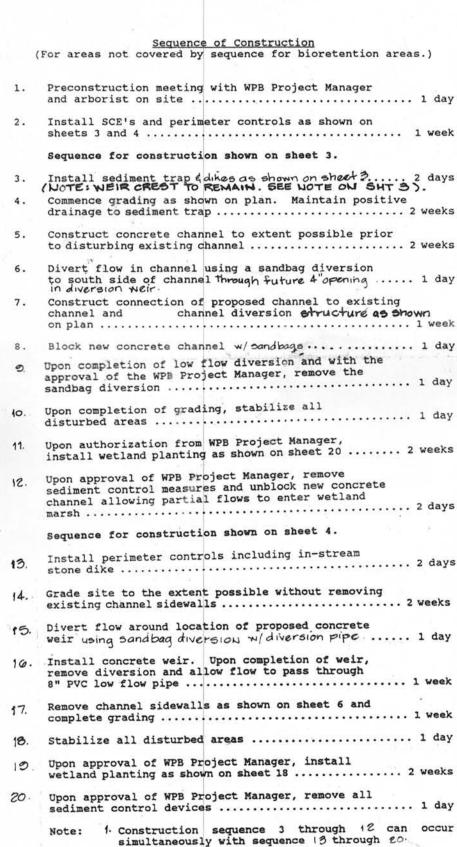
U. S. DEPARTMENT OF AGRICULTURE | STABILIZED CONSTRUCTION |

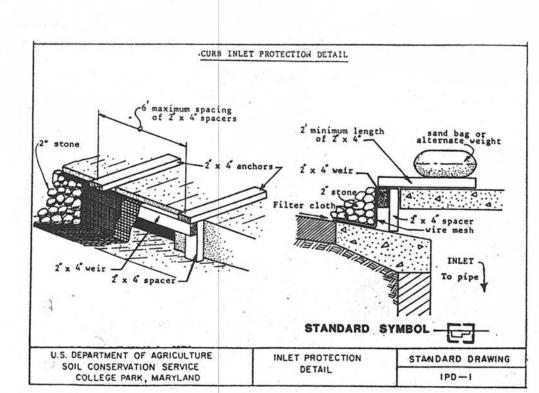
SOIL CONSERVATION SERVICE

College Park, Md





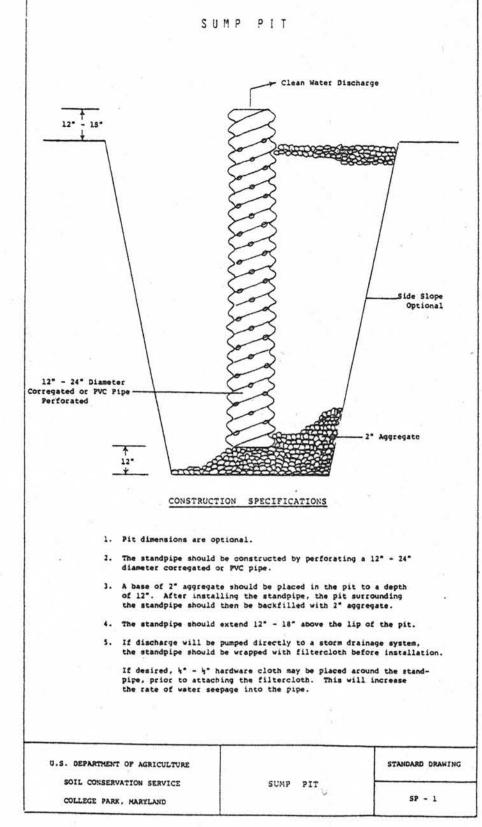


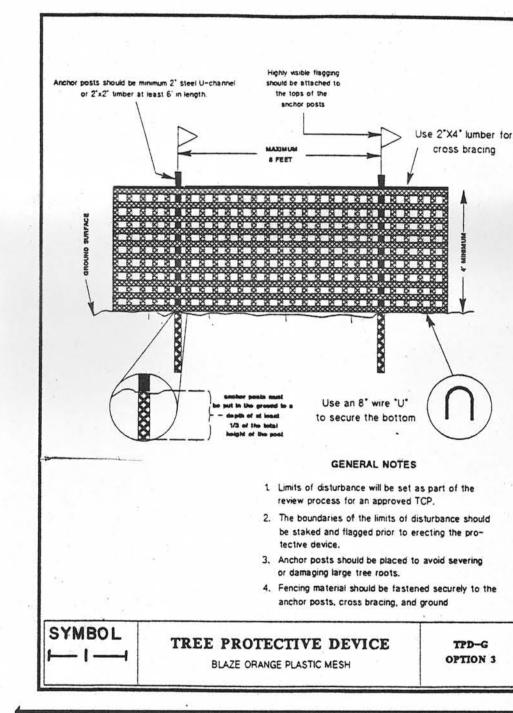


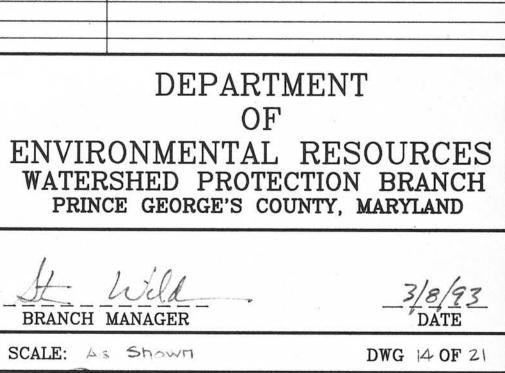
2. For Sequence of construction of Cedar Weirs

in Ex. Concrete Channel, See sht 5 OF 21.

TECHNOLOGIES ASSOCIATES, INC 3458 ELLICOTT CENTER DRIVE SUITE IOI ELLICOTT CITY, MD. 21043







2/8/93

DY 54 475

C.I.P. NO.

CONTRACT NO.

7-/DATE

REVISIONS

DATE

the MRA.

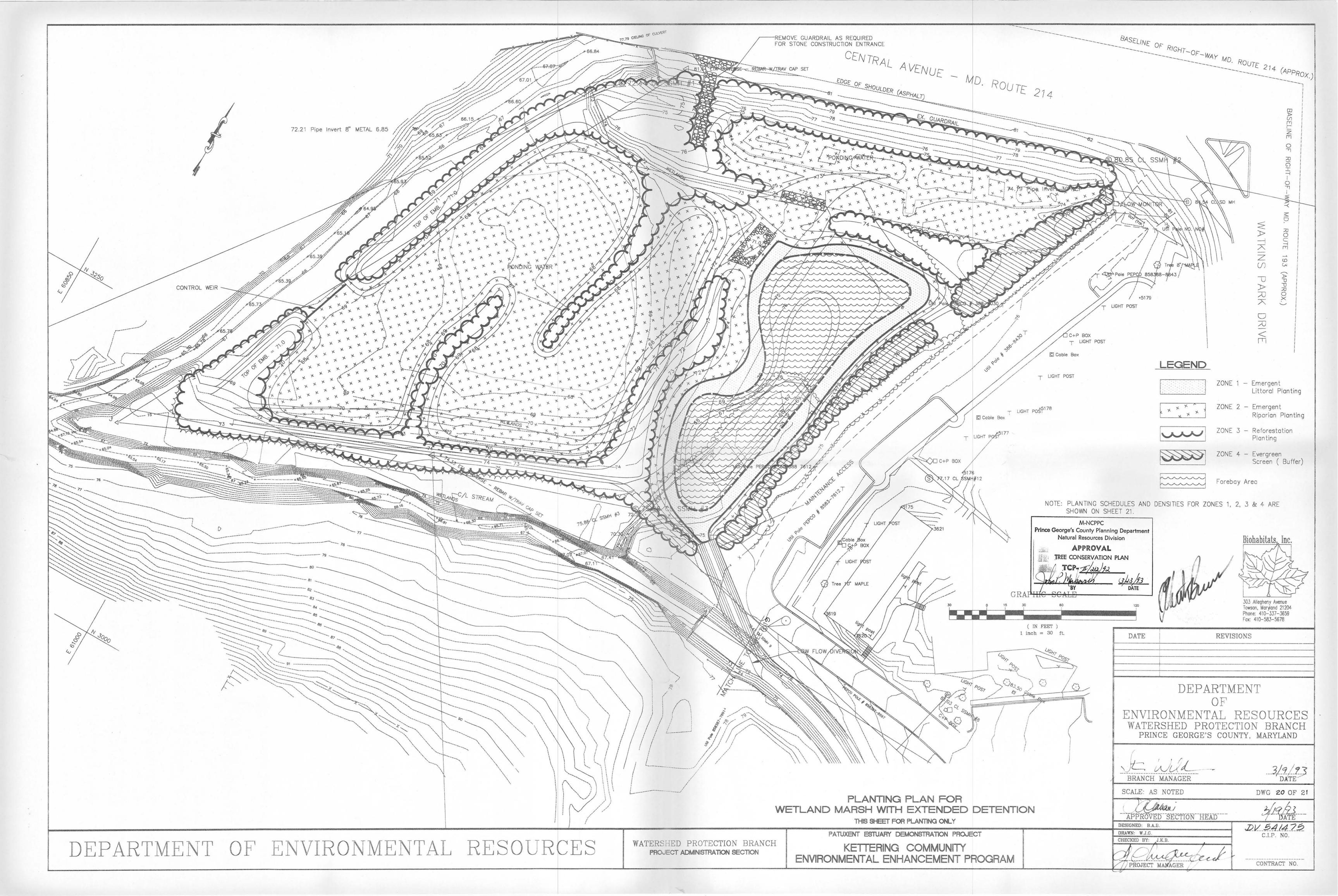
Sheeting shall be overlapped a minimum of 18 inches.

The diversion pipe shall have a minimum diameter of sufficient size to convey the normal stream flow.

If necessary, silt fence or strawbales shall be installed around the perimeter of the work area.

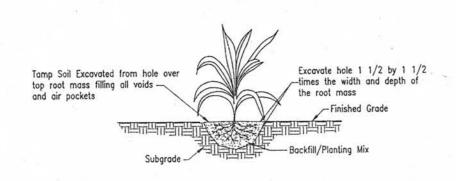
Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. TREE CONSERVATION PLAN Allevani TCP- 1/2/92 ANCHORING DETAIL APPROVED SECTION HEAD EROSION AND SEDIMENT CONTROL NOTES AND DETAILS DESIGNED: DRAWN: PATUXENT ESTUARY DEMONSTRATION PROJECT R.M.C ENGINEERING CHECKED BY: 3 4 DEPARTMENT OF ENVIRONMENTAL RESOURCES WATERSHED PROTECTION BRANCH PROJECT ADMINISTRATION SECTION KETTERING COMMUNITY ENVIRONMENTAL ENHANCEMENT PROGRAM PROJECT MANAGER

Sandbag Diversion With Diversion Pipe

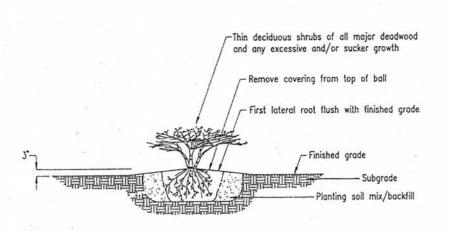


PLANTING DETAILS

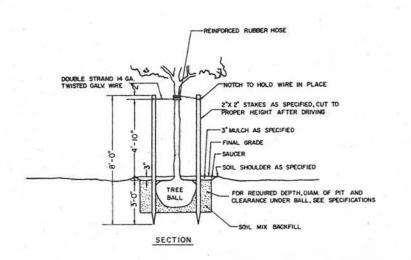
HERBACEOUS PLANTING DETAIL

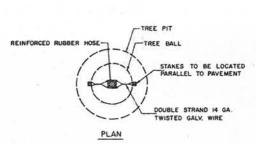


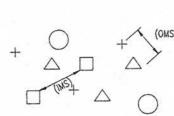
SHRUB PLANTING DETAIL



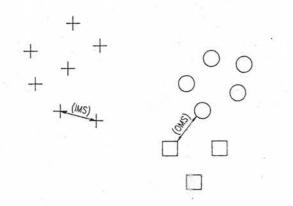
TREE PLANTING DETAIL - BALL & BURLAP







- 1. An overall minimum spacing distance (OMS) is assigned to the planting configuration (see plant schedule).
- 2. An individual minimum spacing distances (IMS) is assigned to each



- 1. Plants are arranged in clusters consisting of the same species. 2. Spacing between each cluster is determined by the overall minimum spacing distance (OMS).
- 3. Spacing between each species within each cluster is determined by the individual minimum spacing distance (IMS).

 4. Clusters, whenever possible, shall consist of odd numbers with no less than 3 and no more than 11 individual species.

PLANTING SCHEDULES

Ont Botanical Name

Herbaceous Vegetation

- BIORETENTION AREAS SEE SHEETS 15, 16, 17 FOR PLAN PLANT SCHEDULE Classification: N/A Size: 0.33 ac/ 14,417 sf Habitat: N/A Spacing (per acre) Spacing (per acre) Common Name 23 Acer rubrum 11 Fraxinus americana See Plan See Plan See Plan See Plan See Plan 2.5 cal. 2.5 cal. 2.5 cal. 2.5 cal. 2.5 cal. 2.5 cal. white ash green ash sweet gum Fraxinus pennsylvanica Liquidambar styraciflua Nyssa sylvatica Quercus palustris black gum pin oak willow oak Quercus phelios PLANT SCHEDULE Classification: N/A Size: 0.33 ac/ 14,417 sf Planting Area: Bioretention Area Minimum Spacing (per acre) Spacing (per acre) Ont Botanical Name See Plan Clethra alnifolia sweet pepperbush red osier dogwood Cornus stolonifera witch hazel inkberry Hamamelis virginica llex glabra winterberry common juniper Juniperus communis 'compressa' Juniperus horizontalis 'Bar Harbor' creeping juniper spicebush Lindera benzoin bayberry ninebark arrowwood nannyberry Physocarpus opulifolius Viburnum dentatum Viburnum lentago PLANT SCHEDULE Size: 0.33 ac/ 14,417 sf Classification: N/A Planting Area: Bioretention Area Spacing Spacing (per acre)

			I.		4.0		
		1 1	٠ ـــــ ،				
Consumer to	WET	LAND/	STREA	MI	BED-		
	DEC	GTABLE	GLIME	AIT	ADEA	G	heet 18 for Pi
	NCE	SIAPLI	SHIVIE	141	ANCA	SEES	HEET IS FOR PI
LAN	T SCHEDULE						
antin	g Area: Wetland/Streambed Reestablishment Ar	Zone: 1	Habitat: Riparia	n .	Classification:	Emergent	Size: 0.17 ac/ 7,4
nt	Botanical Name	Common Name	Unit	Size	Space Type	Overall Minimum Spacing (per acre)	Ind. Minimum Spacing (per acre)
erbace	eous Vegetation						
61	Asclepias incarnata	swamp milkweed	EA	p.p.	RAN	3,	5*
61 97	Carex stricta Juncus effusus	tussock sedge soft rush	EA EA	p.p.	RAN	3,	5°
74	Lobelia cardinalis	cardinal flower	- EA	p.p.	RAN	3'	7'
48	Scirpus cyperinus	woolgrass	EA	p.p.		0.35	
1.0 0.125	Agrostis alba Carex crinita	redtop fringed sedge	LBS LBS	Seed Seed	N/A N/A	N/A N/A	N/A N/A
OTES	: All plants shall be wet cultured.						
	Seed shall be a minimum of 72%	PLS.					
LAN	T SCHEDULE	h	· · ·				
	g Area: Wetland/Streambed Reestablishment Are		Habitat:, Riparian	Cla	assification: Scr	ub/Shrub	Size: 0.32 ac/ 14,1
-	——————————————————————————————————————	- 10 - 100				Overall	Ind. Minimum
					Space	Minimum Spacing	Spacing
nt	Botanical Name	Common Name	Unit	Size	Туре	(per acre)	(per acre)
hrubs							
36	Aronia arbutifolia	red chokeberry	Con	3-4"	RAN	8'	20*
36 36	Cephalanthus occidentalis Cornus amomum	buttonbush silky dogwood	Con	3-4'	RAN	8'	20'
36	llex verticillata	winterberry	Con	3-4"	RAN	8'	20° 20°
36 36	Sambucus canadensis Viburnum dentatum	common elder arrowwood	Con	3-4' 3-4'	RAN	8,	20.
OTE:	All plants shall be wet cultured.						
LAN	T SCHEDULE						
lantin	ng Area: Wetland/Streambed Reestablishment Are		Habitat: Upland	C	lassification: So	rub/Shrub	Size: 0.17 ac/ 7,3
					Casas	Overall Minimum	Ind. Minimum
int	Botanical Name	Common Name	Unit	Size	Space Type	Spacing (per acre)	Spacing (per acre)
hrubs			H H I I I I I I I I I I I I I I I I I I				
19	Ceanothus americanus	New Jersey tea	Con	3-4'	RAN	8'	20'
19	Hamamelis virginiana Kalmia latifolia	witch hazel mountain laurel	Con	3-4'	RAN	8'	20'
19	Lindera benzoin	spicebush	Con	3-4'	RAN	8'	20'
19 19	Rhododendron nudiflorum Viburnum dentatum	pink azalea arrowwood	Con	3-4'	RAN	8'	20'
PLAN	IT SCHEDULE LEGEND:						
			0 0	I			
	Balled & Burlap - pounds		Con - Cont EA - Each	ainer			
	ž.		CLR - Clus	ter			
PLS .	- Pure live seed minimum - 2 - 2 1/4 peat pots		RAN - Ran				

- CHANNEL REFORESTATION AREAS SEE SHEET 19 FOR PLAN

Trees	Botanical Name	Common Name	Unit	Size	Space	Overall Minimum Spacing	Ind. Minimum Spacing
				3120	Type	(per acre)	(per acre)
28							
	Amelanchier canadensis	shadbush	BB	1.0 cal.	RAN	12'	27'
28	Carpinus caroliniana	ironwood	BB	1.0 cal.	RAN	12'	27'
28	Cercis canadensis	red bud	BB	1.0 cal.	RAN	12"	27'
28	Chionanthus virginicus	fringe tree	BB	1.0 cal.	RAN	12'	27'
	Cornus florida	flowering dogwood	BB	1.0 cal.	RAN	12'	27'
Shrubs							
29	Aronia arbutifolia	red chokeberry	Con	3-4*	RAN	8'	27'
	Hamamelis virginiana		Con	3-4	RAN	8.	27
		witch hazel					
	llex verticitlata	winterberry	Con	3-4'	RAN	8'	27'
	Kalmia latifolia	mountain laurel	Con	3-4'	RAN	8'	27'
	Lindera benzoin	spicebush	Con	3-4'	RAN	8'	27'
	Physocarpus opulifolius	ninebark	Con	3-4'	BAN	8'	27'
28	Vaccinium corymbosum	highbush blueberry	Con	3-4'	RAN	8'	27'
28	Vaccinium stamineum	tali deerberry	Con	3-4"	RAN	8'	27'
28	Viburnum cassinoides	wild raisin	Con	3.4"	RAN	8'	27'
28	Viburnum dentatum	arrowwood	Con	3-4	RAN	8'	27'
28	Viburnum lentago	nannyberry	Con	3-4	RAN	8'	27'
	T SCHEDULE	ation Area Zone: 2	Habitat:	Upland	Classification:	Mesic	Size: 0.34 ac/ 14,693 s
	47				Space	Overall Minimum Spacing	Ind. Minimum Spacing
Ont	Botanical Name	Common Name	Unit	Size	Туре	(per acre)	(per acre)
						7-25-0	
401000							
Shrubs				20172			940
	Cornus amomum	silky dogwood	Con	3-4"	RAN	6"	15'
69	Cornus amomum Cornus stolonifera	silky dogwood red osier dogwood	Con	3-4	RAN	6.	15'
69 69	4 전 : '' (1 전) 전 : [- 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1 전 : 1						
69 69 69	Cornus stolonifera	red osier dogwood winterberry	Con	3-4"	RAN	6'	15'
69 69 69	Cornus stolonifera llex verticillata	red osier dogwood	Con	3-4° 3-4°	RAN	6°	15' 15'

-WETLAND MARSH WITH EXTENDED DETENTION

PLANT SCHEDULE Planting Area: Wetland Marsh with Zone: 1 Habitat: Littoral Zone Classification: Emergent Size: 0.17 ac/ 7,427 sf Extended Detention Ont Botanical Name Herbaceous Vegetation blueflag arrow arum duck potato common three-square 370 Iris versicolor 247 Peltandra virginica 247 Sagittaria latifolia p.p. p.p. p.p. 82 Scirpus americanus 82 Scirpus validus great buirush NOTES: All plants shall be wet cultured. CLR plants shall be randomly spaced, 7 per CLR.

SEE SHEET 20 FOR PLAN

Minimum

(per acre)

RAN RAN

1.0 cal. 1.0 cal. 6 - 8'

flowering dogwood

WATERSHED PROTECTION BRANCH

Minimum

Planti	ng Area:	Wetland Marsh with Extended Detention	Zone: 2	labitat: Riparia	in	Classification:	Emergent	Size: 1.86 ac/ 8	1,09
Qnt	Botanical	Name	Common Name	Unit	Size	Space Type	Overall Minimum Spacing (per acre)	Ind. Minimum Spacing (per acre)	
					-1		man land and a second		
Herbac	ceous Veget	ation	V						
Herbag	ACCUMANTAL DE		red top	LBS	Seed	N/A	N/A	N/A	
	Agrostis a	lba	red top nodding beggar-ticks	LBS LBS	Seed Seed	N/A N/A	N/A N/A	N/A N/A	
56.0	Agrostis a	lba	A Secretary and the second sec						
56.0 4.1	Agrostis a Bidens ce	liba mua iita	nodding beggar-ticks	LBS	Seed	N/A	N/A	N/A	
56.0 4.1 2.7	Agrostis a Bidens ce Carex crin Carex stri	liba mua iita	nodding beggar-ticks fringed sedge	LBS LBS	Seed Seed	N/A N/A	N/A N/A	N/A N/A	
56.0 4.1 2.7 2.7	Agrostis a Bidens ce Carex crin Carex stri Cephalant	liba rnua iita cta	nodding beggar-ticks fringed sedge tussock sedge	LBS LBS LBS	Seed Seed Seed	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	

NOTES: All plants shall be wet cultured.

DI ANT SCHEDILLE

Cercis canadensis Cornus florida

Plantii	ng Area: Wetland Marsh with Extended Detention	Zone: 3	Habitat: Riparia	n	Classification:	Forested	Size: 1.05 ac/ 45,68
Ont	Botanical Name	Common Name	Unit	Size	Space Type	Overall Minimum Spacing (per acre)	Ind. Minimum Spacing (per acre)
Trees							
80	Acer rubrum	red maple	BB	2.5 cal	. RAN	12'	24'
48	Betula nigra	river birch	BB	2.5 cal	. RAN	12'	31'
64	Fraxinus pennsylvanica	green ash	BB	2.5 cal	. RAN	12'	27'
32	Liquidamber styraciflua	sweet gum	BB	2.5 cal	. RAN	12"	38'
32	Nyssa sylvatica	black gum	BB	2.5 cal	. RAN	12"	38'
32	Platanus occidentalis	American sycamore	BB	2.5 cal		12"	38'
32	Quercus palustris	pin oak	BB	2.5 cal	. RAN	12'	38'
Shrubs							
92	Cornus arromum	silky dogwood	Con	3-4"	BAN	10'	22'
114	llex verticilata	winterberry	Con	3-4"	RAN	10'	20'
114	Lindera benzoin	spicebush	Con	3-4"	RAN	10'	20'
46	Sambucus canadensis	common elder	Con	3-4"	RAN	10"	32'
92	Viburnum dentatum	arrowwood	Con	3-4*	RAN	10"	22'
	water in the same of the same of						
NOTE:	All plants shall be wet cultured.						
PLAN	T SCHEDULE						

PLANT SCHEDULE

lant	ing Area: Channel Refores	tation Area Zone: 3	Habitat:	Upland	Classification	n: Mesic	Size: 0.13 ac/ 5,688 s
Ont	Botanical Name	Common Name	Unit	Size	Space Type	Overall Minimum Spacing (per acre)	Ind. Minimum Spacing (per acre)
terba	ceous Vegetation						
0.3	Andropogon gerardi	big blue stern	LBS	seed	N/A	N/A	N/A
	Andropogon virginicus	broom sedge	LBS	seed	N/A	N/A	N/A
0.3	Agrostis alba	redtop	LBS	seed	N/A	N/A	N/A

Plant	ing Area: Channel Reforest	ation Area Zone: 4	Habitat	: Upland	Classification:	Mesic	Size: 0.36 ac/ 15,758 s
Ont	Botanical Name	Common Name	Unit	Size	Space Type	Overall Minimum Spacing (per acre)	Ind. Minimum Spacing (per acre)
Overs	tory Trees						
1	Fagus grandifolia	American beech	88	2.5 cal.	See Plan	N/A	N/A
3	Fraxinus americana	white ash	BB	2.5 cal.	See Plan	N/A	N/A
2	Juglans nigra	black walnut	BB	2.5 cal.	See Plan	N/A	N/A
2	Liriodendron tulipifera	tulip poplar	BB	2.5 cal.	See Plan	N/A	N/A
2	Quercus alba	white oak	BB	2.5 cal.	See Plan	N/A	N/A
3	Quercus palustris	pin oak	BB	2.5 cal.	See Plan	NIA	N/A
2	Quercus phellos	willow oak	BB	2.5 cal.	See Plan	N/A	N/A
Under	story Trees						
5	Amelanchier canadensis	shadbush	BB	1.0 cat.	See Plan	N/A	N/A
6	Cercis canadensis	red bud	BB	1.0 cal.	See Plan	N/A	N/A
3	Cornus florida	flowering dogwood	BB	1.0 cal.	See Plan	N/A	N/A
4	llex opaca	American holly	BB	1.0 cal.	See Plan	N/A	N/A
3	Malus Zumi	Zumi crabapple	BB	1.0 cal.	See Plan	N/A	N/A

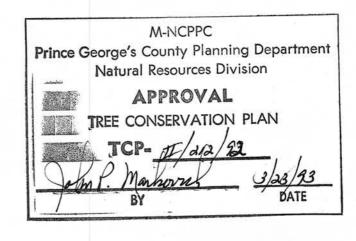
GENERAL NOTES

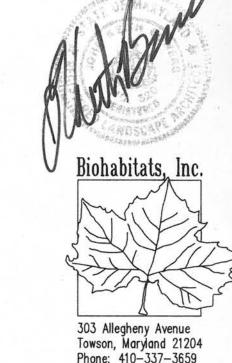
- 1. All operations pertinent to the soil preparation, planting and seeding of the areas within and adjacent to the basin shall be accomplished in accordance with the plan and specifications.
- 2. Planting and seeding operations shall follow final grading and necessary soil preparation in successive order as nearly as possible pending critical seasons for planting and seeding and weather
- 3. The Contractor shall notify MISS UTILITY (1-800-257-7777) and the local county jurisdictions at least 72 hours (three full working days) in advance of beginning any work pertinent to planting or seeding, for verification of the depth and horizontal location of all underground utilities within the limits of work.
- 4. The Contractor shall verify the quantities of plant materials shown on the plan and plant list and shall be prepared to furnish the quantities as shown. No changes in plant material, quantity, quality, variety or size shall be made without the permission of the Prince Georges County Watershed Protection Branch.
- 5. Should the Contractor discover any discrepancies or have any questions concerning data on the drawings, he shall contact the Prince George's County representative at (301) 461-9920 immediately prior to beginning or continuing any work and shall not proceed any further until the particular item is clarified.

WOODLAND CONSERVATION NOTES

- ON TAX MAP 68, PARCEL 66 (PEPCO R/W) AND PLATS 7595 AND 7597 (KETTERING CONDOMINIUM PLATS) ARE EXEMPT FROM THE TREE CONSERVATION BECAUSE THERE ARE NO TREES PRESENT.
- ALL TRESS TO BE REMOVED ARE IN THE 100 YEAR FLOOD PLAIN AND WILL BE REPLACED ON AN ACRE TO ACRE BASIS.
- FOR THIS PROJECT, GROSS TRACT AREA IS EQUAL TO THE LIMIT OF DISTURBANCE.

GROSS TRACT AREA = 6.2 AC. WOODLAND CLEARED = 0.36 AC. (ALL IN FLOOD PLAIN) REFORESTATION = 2.04 AC (0.68 AC. IN FLOOD PLAIN)





Phone: 410-337-3659 Fax: 410-583-5678

DATE	REVISIONS
3.1.93	add Channel Reforestation Area/Zone 2

DEPARTMENT

ENVIRONMENTAL RESOURCES WATERSHED PROTECTION BRANCH PRINCE GEORGE'S COUNTY, MARYLAND

BRANCH MANAGER

3/8/93 DATE DWG 21 OF 21

DV 541475

2/8/93

C.I.P. NO.

CONTRACT NO.

DATE

Clavasi APPROVED SECTION HEAD

SCALE: AS NOTED

DESIGNED: DRAWN: CHECKED BY: & bugudens PROJECT MANAGER

PLANTING DETAILS, SCHEDULES, AND NOTES Prepared By: PATUXENT ESTUARY DEMONSTRATION PROJECT

KETTERING COMMUNITY ENVIRONMENTAL ENHANCEMENT PROGRAM

ENGINEERING TECHNOLOGIES ASSOCIATES, INC. 3458 ELLICOTT CENTER DRIVE SUITE 101 ELUCOTT CITY, MARYLAND 21043 PHONE: (410) 461-9920