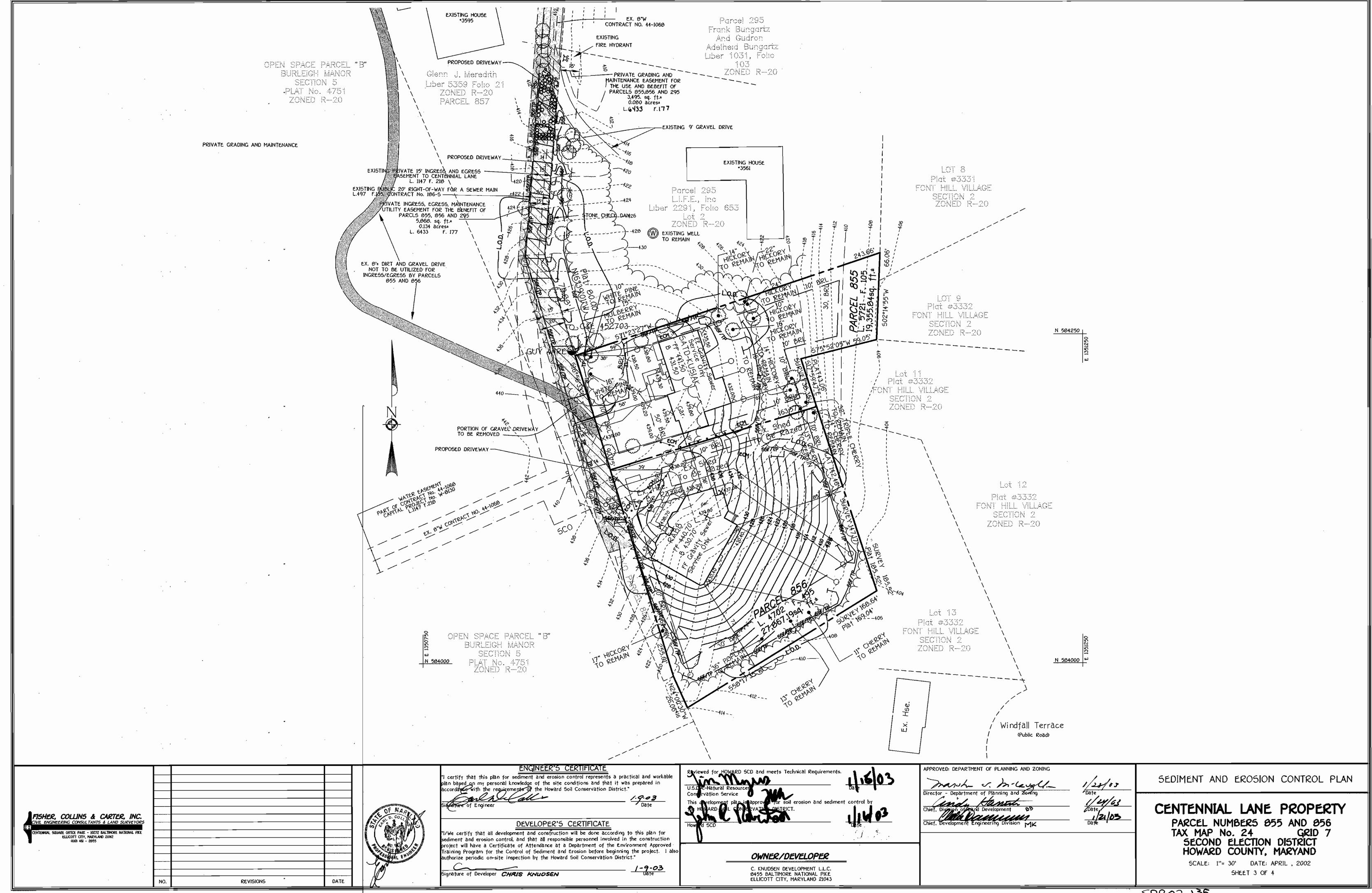


KASDSKPROA61687 Centennial Lane\61687 SDP-2 LOTS SHEET 2 dwg. 12/31/02 02:582

SDP 02-135



KASDSKPROJ/61687 Centennial Lane\61687 SEC-2 LOTS SHEET 3.dwg, 01/0

Using vegetation as cover for barren soil to protect it from forces that cause erosion

PURPOSE. Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and " run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding inno practice was be used on demades areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration Olup to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, nercolation, and groundwater recharge. Vegetation over time will investe and additional and areas are the control of the contro infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS Install erosion and sediment control structures (either temporary of permanent) such as diversions,

grade stabilization structures, berms, waterways, or sediment control basins.

ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses. ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee

Soil tests must be performed to determine the exact ratios and application rates for both lime and

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a *100 mesh sieve and 90-100% will pass through a *20 mesh sieve. Incorporate lime and fertilizer into the top 3-5° of soil by disking or other suitable means.

iv. Incorporate time and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation

i. Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
b. Apply fertilizer and lime as prescribed on the plans.
c. In corporate time and fertilizer into the top 3-5" of soil by disking or other suitable means.
ii. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:

Soil phi shall be less than 500 parts per million (ppm).

son pri snow be between 6.0 and 7.0. Soluble salts shall be less than 500 parts per million (ppm). The soil shall contain less than 40% clay, but enough fine grained material 0.30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (30% silt plus clay) would be acceptable.

newly disturbed areas.

plus clay) would be acceptable. Soil shall contain 1.5% minimum organic matter by weight. 501 single contain 1.5x minimum organic matter by weight.
 5. Soil must contain sufficient pore space to permit adequate root penetration.
 6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
 b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise toosened to a depth of 3-5° to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil

the surface area and to create horizontal erosion check slots to prevent topsoil from stiding down a slope.

Apply soil amendments as per soil test or as included on the plans.

Mix soil amendments into the top 3-5° of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on

D. Seed Specifications All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

until used. Temperatures above 19-50 t. cult weeken say, includes seed and fertilizer), broadcast or drop seeding. Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cuttipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.

b. Lime - use only ground agricultural limestone, (Up to 3 tone per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

c. Seed and fertilizer shall be mixed on the without interruption.

ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other.

Apply half the seeding rate in each direction.

Apply half the seeding rate in each direction.

Mulch Specifications (In order of preference)

i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, cated, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

ii. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

b. WCFM shall be dyed green or comfain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

c. WCFM, including dye, shall comfain no germination or growth inhibiting factors.

d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation

wood celulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The multi-material shall form a better-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedings. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.63 maximum and water holding capacity of 90% minimum. All water holding capacity of 90% minimum. All sterile straw mulch should be used in areas where one species of grass is desired.

SEQUENCE OF CONSTRUCTION

L OBTAIN GRADING PERMIT 2. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON PLAN 7 DAYS 3. CLEAR AND GRUB TO LIMITS OF DISTURBANCE 4 DAYS 4. INSTALL TEMPORARY SEEDING 5. CONSTRUCT BUILDINGS 6. TIME GRADE SITE AND INSTALL PERMANENT SEEDING AND LANOSCAPE 14 DAYS 7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERHISSION IS GRANTED BY E/S CONTROL INSPECTOR.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and mainfained until the seeding season returns and seeding can be performed in accordance with these specifications.
 ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch

shall be applied to a uniform loose depth of between 1° and 2°. Much applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a much anchoring tool is o be used, the rate should be increased to 2.5 tons/acre.

to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by account acres of the following methods).

preference), depending upon size of area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gattons of water.

of water.

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax

II. Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recom-mendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

Incremental Stabilization - Cut Slopes

i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes ii. Construction sequence (Refer to Figure 3 below):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.

b. Perform Phase 1 excavation, dress, and stabilize.

c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as

necessary. Perform final phase excavation, dress and stabilize. Overseed previously seeded

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization. Incremental Stabilization of Embankments - Fill Slopes

Embankments shall be constructed in lifts as prescribed on the plans.

TEMPORARY SEEDING NOTES

LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY

FOR THE PERIODS MARCH I THROUGH APRIL 30, AND AUGUST
15 THROUGH NOVEMBER 15, SEED WITH 17 BUSHEL PER ACRE OF
ANNUAL RYE 13.2 LBS./ACRE OF WEEPING LOVEGRASS LOT LBS./

LCHING:

APPLY 1 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQFT.)

OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING.

ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL.1,000 SQFT.)

OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 8 FEET OR

HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1,000 SQFT) FOR REFER TO THE 1980 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT

MINIMUM 6" OF 2"-3" AGGREGATE

OVER LENGTH AND WIDTH OF STRUCTURE

PROFILE

PLAN VIEW

1. Length - minimum of 50' (*30' for single residence lot).

DATE

residences to use geotextile.

Construction Specification

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior

5. Surface Water - all surface water flowing to or diverted toward construction

4. Stone - crushed aggregate (2° to 3") or reclaimed or recycled concrete

50' MINIMUM

LENGTH

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

equivalent shall be placed at least 6" deep over the length and width of the entrance.

mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has

to be sized according to the drainage. When the SCE is located at a high spot and

according to the amount of runoff to be conveyed. A 6" minimum will be required.

where construction traffic enters or leaves a construction site. Vehicles leaving

the site must travel over the entire length of the stabilized construction entrance

STABILIZED CONSTRUCTION ENTRANCE

entrances shall be piped through the entrance, maintaining positive drainage. Pipe

installed through the stabilized construction entrance shall be protected with a

has no drainage to convey a pipe will not be necessary. Pipe should be sized

Location - A stabilized construction entrance shall be located at every point

to placing stone. **The plan approval authority may not require single family

1,000 SQ.FT. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 20, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WEU.

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER 04 LBS./

SEEDBED PREPARATION:

SOIL AMENDMENTS:

** GEOTEXTILE CLASS 'C'

OR BETTER

L EXISTING GROUND

Embankments shall be constructed in lifts as prescribed on the plans.
 Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches
 15°, or when the grading operation ceases as prescribed in the plans.
 At the end of each day, femporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-crosive manner to a sediment trapping device.
 Construction sequence: Refer to Figure 4 (below).
 Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
 Place Phase 1 embankment, dress and stabilize.
 Place Phase 2 embankment, dress and stabilize.
 Place final phase embankment, dress and stabilize.
 Overseed previously seeded areas as recessary.

neas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

EXISTING PAVEMENT — EARTH FILL

STANDARD SYMBO

885CE

- PIPE AS NECESSARY

SEDIMENT CONTROL NOTES

D A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: 3) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1. b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER

1.0500 ACRES 0.3015 ACRES

2. Wire, snow fence, etc. for tree projection only. 3. Boundaries of Retention Area will be established as part of the forest

conservation plan review process.

4. Boundaries of Retention Area should be staked and flagged prior to

Device should be properly maintained throughout construction

4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. I, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50)

GERMINATION AND ESTABLISHMENT OF GRASSES.

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 VEGETATIVELY STABILIZED TOTAL CUT

0.7573 ACRES 12,250 CU. YDS. 21,256 CU.YDS. OFFSITE WASTE/BORROW AREA LOCATION ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING
 ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SCOMMENT 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 IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

I. Silt Fence to be heeled into the soil.

installing device.

Avoid root damage when placing anchor posts.

7. Protection signs are also required, see Figure C-4. 6. Locate fence outside the Crictical Root Zone.

PERMANENT SEEDING NOTES

"ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS: SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENOMENTS: APPLY TWO TONS PER ACRE-DOLOMITIC LIMESTONE (92 LBS/ 1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) 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./1,000 SQ.FT.) AND 500 LBS. PER ACRE (II.5 LBS./ 1,000 SQ.FT.) OF 10-20-20 FERTILIZER.

FOR THE PERIODS MARCH I THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS, PER ACRE 12.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE, FOR THE PERIOD MAY I THROUGH JULY 31, SEED WITH 60 LBS/ACRE (1.4 LBS./1.000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS, DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROJECT SITE BY: OPTION (I) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE 500; OPTION (3) -SEED WITH 100 LBS./ACRE KENTIKCKY 31 TALL FESCUE AND MUCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.

APPLY 1 TO 2 TONS PER ACRE (IO TO 90 L85./1,000 5Q.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES & FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS. REPLACEMENTS AND RESEEDINGS.

* FOR PUBLIC PONDS SUBSTITUTE CHEMING CROWNETCH AT 15 LBS./ACRE AND KENTUCKY 31 TALL FESCUE AT 40 LBS/ACRE AS THE SEEDING REQUIRMENT. OPTIMUM SEEDING DATE FOR THIS MIXTURE IS MARCH I TO APRIL 30.

3. Before stapling the outer edges of the matting, make sure the

Staples shall be placed 2' apart with 4 rows for each strip, 2

5. Where one roll of matting ends and another begins, the end of

the top strip shall overlap the upper end of the lower strip by 4",

shiplap fashion. Reinforce the overlap with a double row of staples

Note: If flow will enter from the edge of the matting then the area

matting is smooth and in firm contact with the soil.

outer rows, and 2 alternating rows down the center.

spaced 6" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly

EROSION CONTROL MATTING

secured with 2 double rows of staples.

effected by the flow must be keyed-in

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug: no healed-in plants

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", thereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Cuidelines Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material. Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Confractor id responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities

All strubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans. Positive drainage shall be maintained in planting beds 2 percent slope).

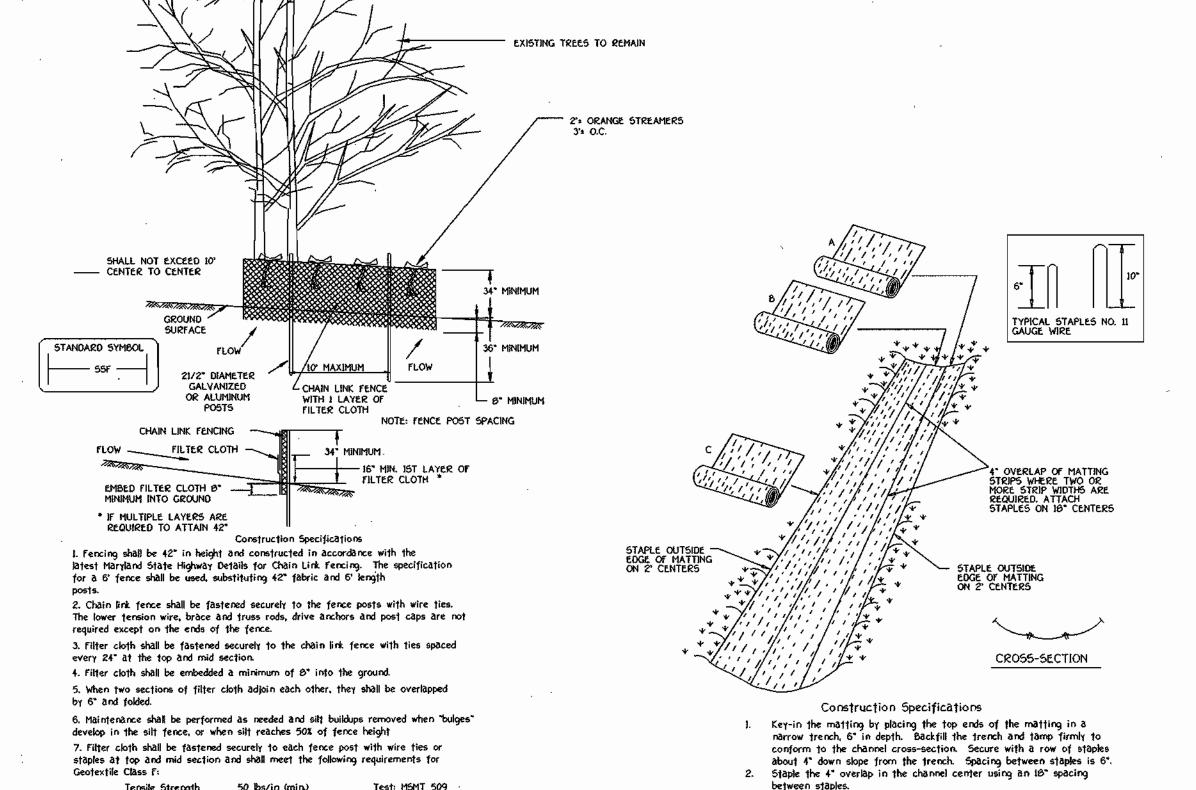
Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 ibs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall

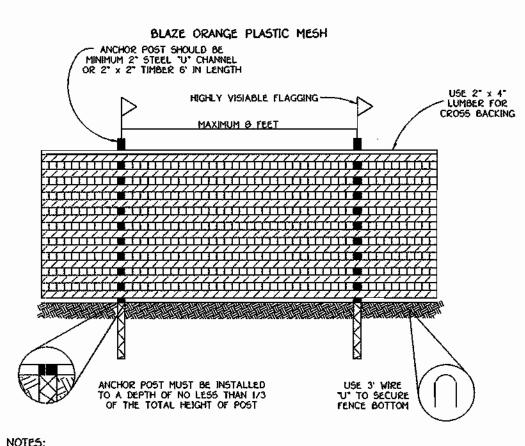
weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded

This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

TREE PLANTING DETAIL





FOREST PROTECTION DEVICE ONLY. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. ROOT DAMAGE SHOULD BE AVOIDED. PROTECTIVE SIGNAGE MAY ALSO BE USED.
DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL

FISHER. COLLINS & CARTER, INC. WARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIK ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055

REVISIONS

ENGINEER'S CERTIFICATE "I certify that this plan for erosion and sediment control represents a practical and workab 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 District."

Tensile Strenath

Tensile Modulus

Flow Rate

0 - 10%

10 - 20%

20 - 33%

33 - 50X

oigniture of Engineer

1231.02

20 bs/in (min.)

Design Criterià

SUPER SILT FENCE, TREE PROTECTION FENCE NOT TO SCALE

(muniix6m)

Unlimited

75% (min.)

Steepness

0 - 10:1

10:1 - 5:1

5:1 - 3:1

Test: MSMT 509

Test: MSMT 322

Silt Fence Length

(mumix&m)

Unlimited

1,500 feet

250 feet

0.3 gal/ft /minute (max.) Test: M5MT 322

DEVELOPER'S CERTIFICATE 1/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any 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 beginning the project. I also authorize periodic on-site inspection by the Howard Soil

Conservation District." 11.30.02 ____ Signature of Developer CHRIS KNUDSEN

Regiewed for HOWARD SCD and meets Technical Requirements.

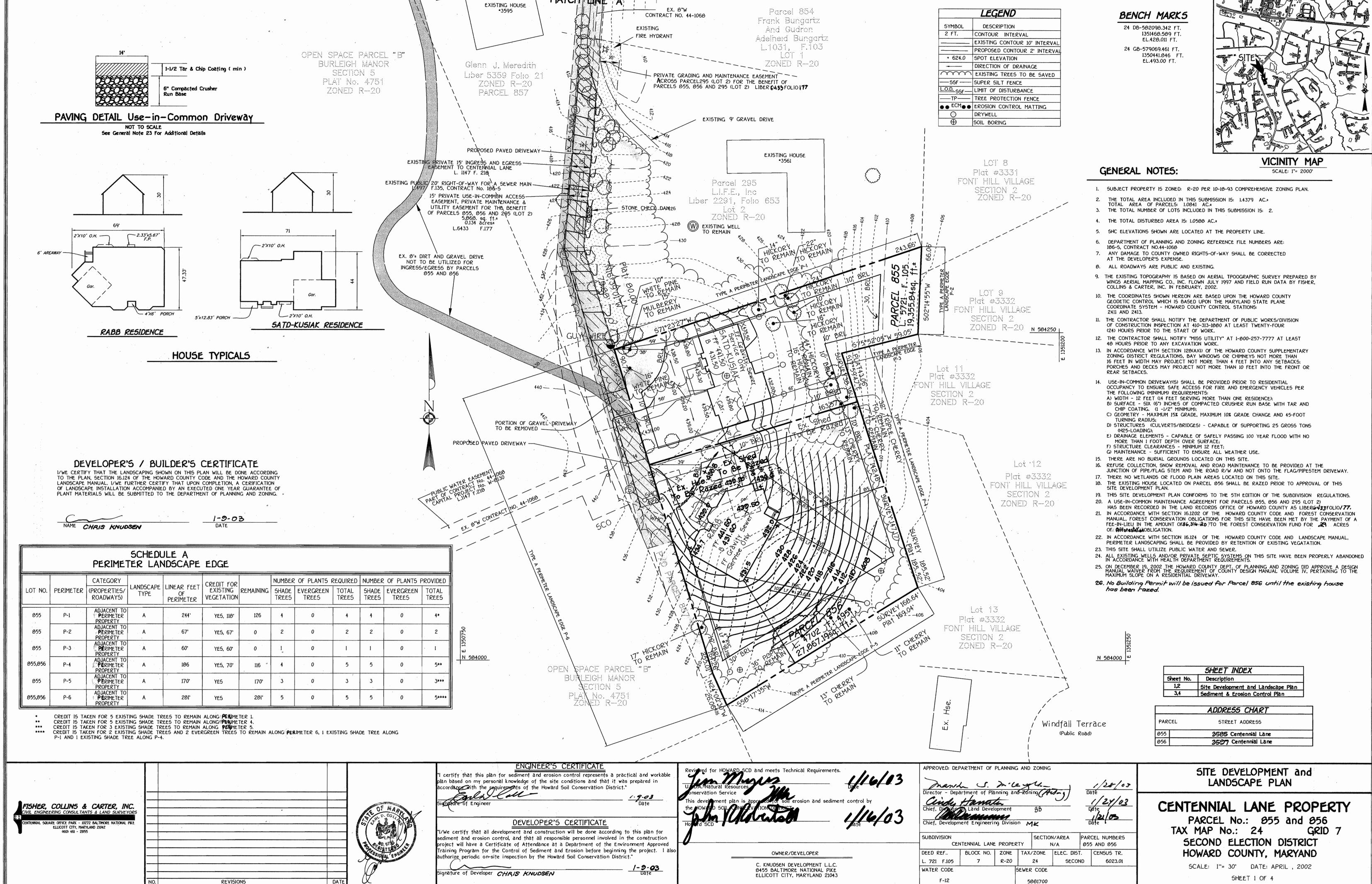
OWNER/DEVELOPER C. KNUDSEN DEVELOPMENT L.L.C. 8455 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21043 PPROVED: DEPARTMENT OF PLANNING AND ZONING 1/21/3 Date 1/21/03 Date 1/28/12 9ate irector - Department of Planning and Zoni

SEDIMENT/EROSION CONTROL NOTES & DETAILS

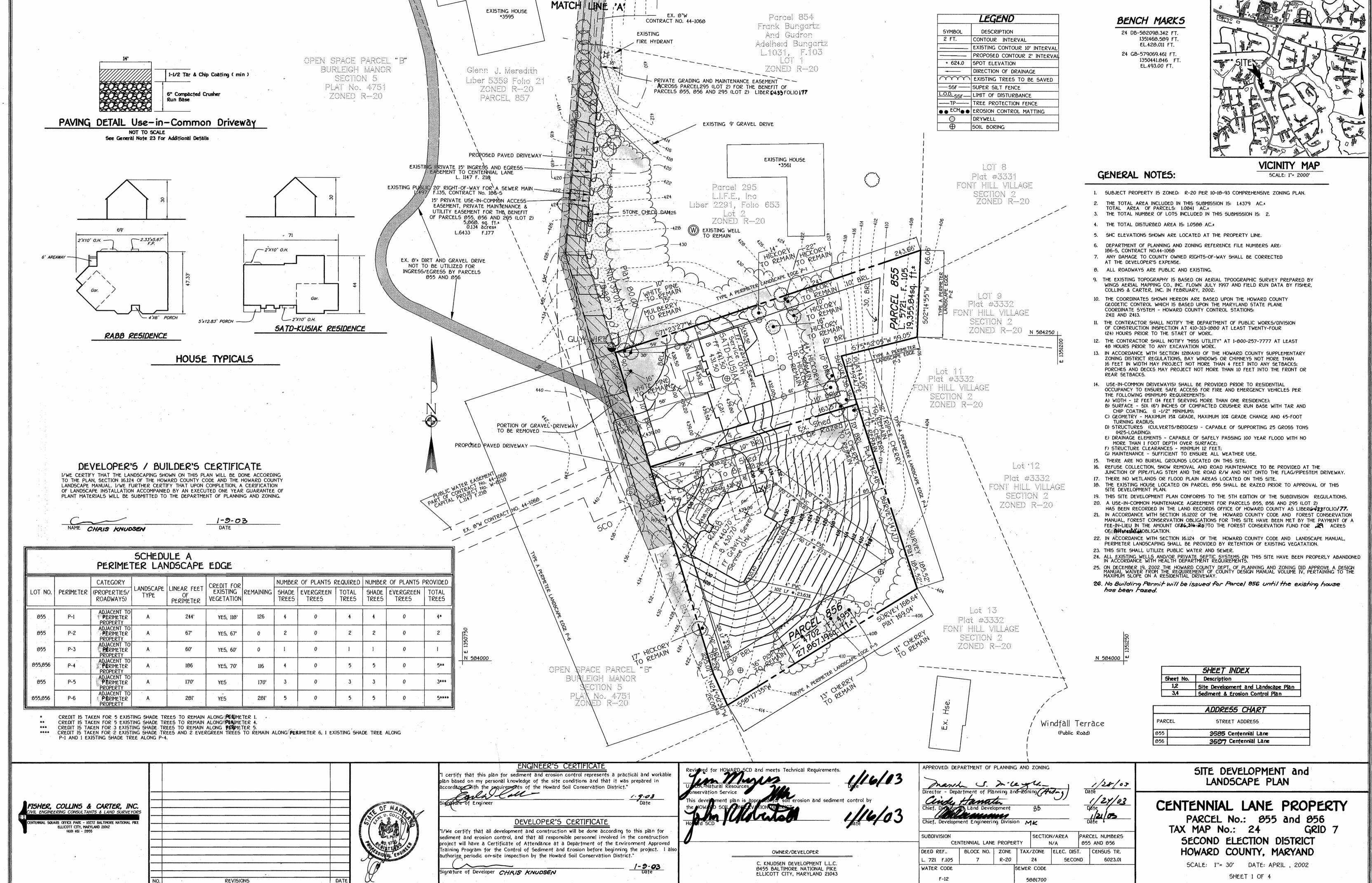
CENTENNIAL LANE PROPERTY

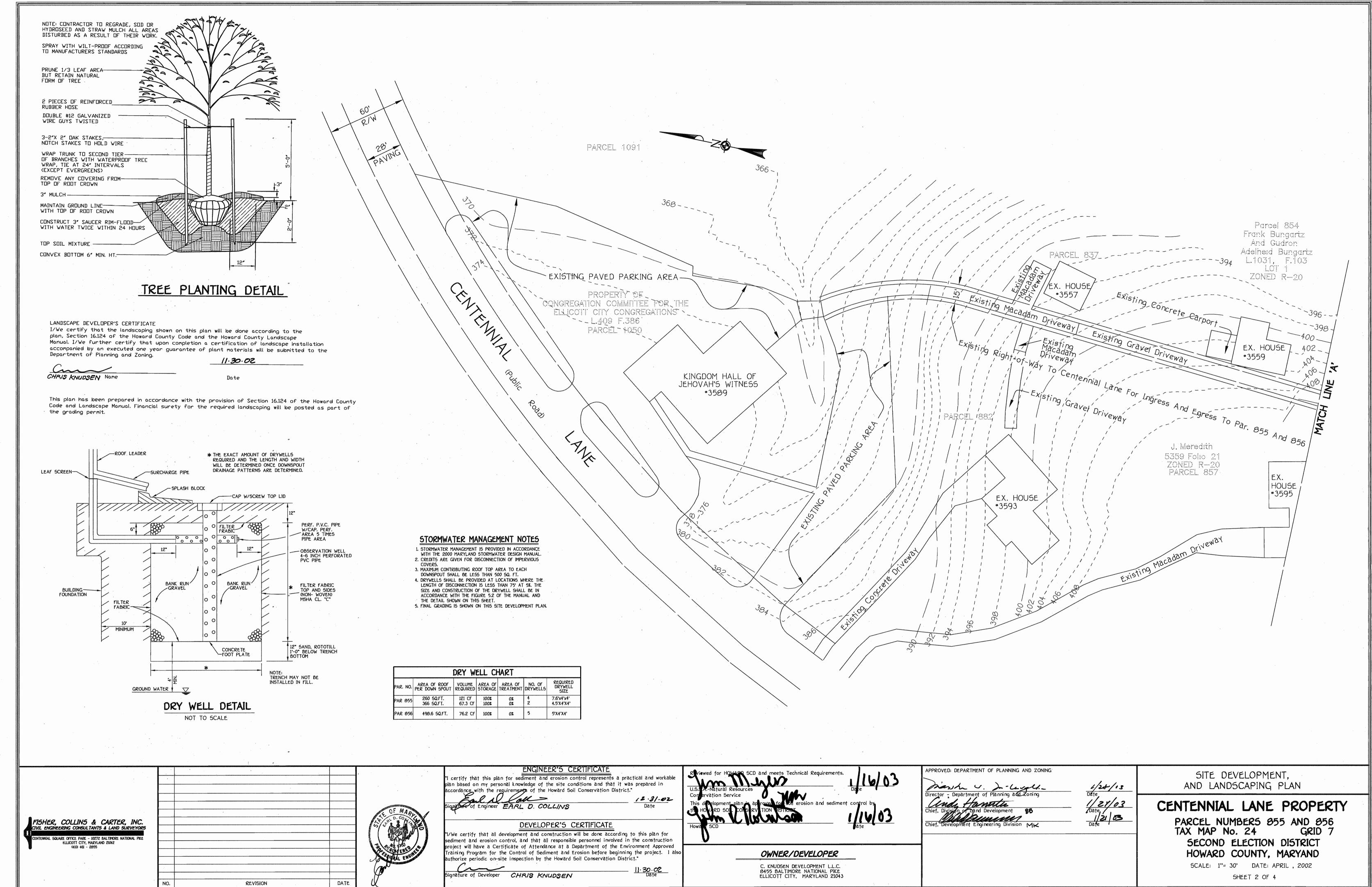
PARCEL NUMBERS 855 AND 856 TAX MAP No. 24 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYAND

> SCALE: 1"= 30' DATE: APRIL , 2002 SHEET 4 OF 4

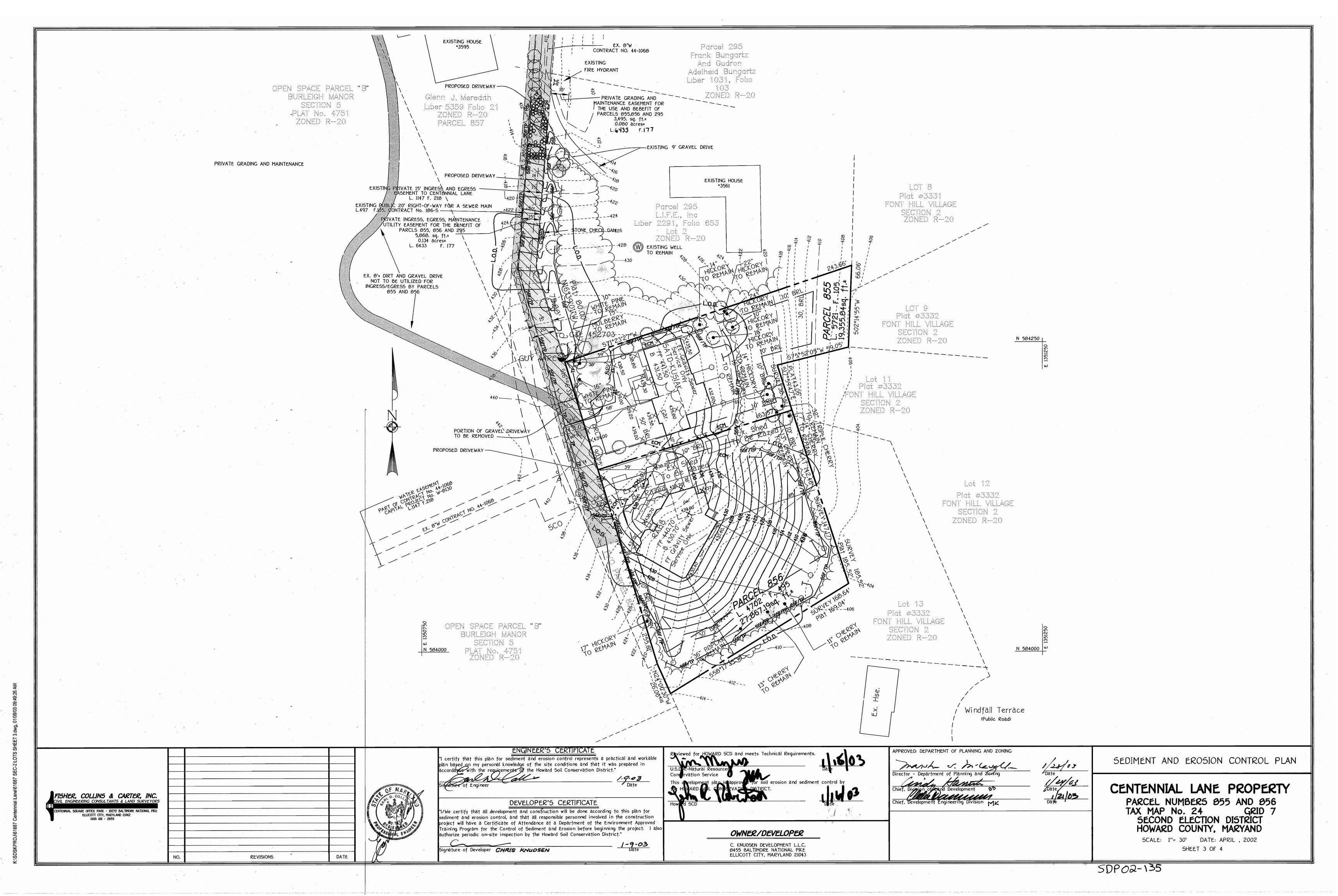








K-15DSKDBO 184687 Ceptennial Lable4687 SDD-21OTS SHEET 2 Aun 12/94/02 02:58-36



Using vegetation as cover for barren soil to protect it from forces that cause erosion

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and ... run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration Olup to one year, and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

Install erosion and sediment control structures (either temporary of permanent) such as diversions. arade stabilization structures, berms, waterways, or sediment control basins. ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites

having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications) Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according o the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a *100 mesh sieve and 90-100% will pass through a *20 mesh sieve. Incorporate time and fertilizer into the top 3-5" of soil by disking or other suitable means.

Seedbed Preparation
i. Temporary Seeding
a. Seedbed preparation shall consist of loosening soil to a depth of 3° to 5° by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.
c. In corporate time and fertilizer into the top 3-5" of soil by disking or other suitable means.
ii. Permanent Seeding
a. Minimum soil conditions required for permanent vegetative establishment:
1. Soil pH shall be between 6.0 and 7.0.

Soluble salts shall be less than 500 parts per million (ppm). The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt

plus clay) would be acceptable. Soil shall contain 1.5% minimum organic matter by weight. Soil must contain sufficient pore space to permit adequate root penetration. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from

sliding down a slope.

Apply soil amendments as per soil test or as included on the plans.

Mix soil amendments into the top 3-5° of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on

D. Seed Specifications i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective

Methods of Seeding:

i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not a seeding applied at the time of seeding. exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen P205 (phosphorous): 200 lbs/ac. K20 (potassium): 200 lbs/ac.

Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one

hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

Mulch Specifications (In order of preference)

Mulch Specifications (In order of preference)

i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

ii. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state. fibrous physical state.

MCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry. WCFM, including dye, shall contain no germination or growth inhibiting factors. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. he mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., phy range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

SEQUENCE OF CONSTRUCTION

I. OBTAIN GRADING PERMIT 2. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON PLAN 7 DAYS 3. CLEAR AND GRUB TO LIMITS OF DISTURBANCE 4 DAYS 4. INSTALL TEMPORARY SEEDING 2 DAYS 5. CONSTRUCT BUILDINGS 60 DAYS 6. FINE GRADE SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPE 14 DAYS 7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY E/S CONTROL INSPECTOR.

Mukhing Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1° and 2°. Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is

to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water. preference), depending upon size of area and erosion hazard:

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax

l, Terrà Tack AR or other approved equal may be used at rates recommended by the nanufacturer to anchor mulch. manujacturer to anchor mulch.

v. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

Incremental Stabilization - Cut Slopes All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15.

SEEDBED PREPARATION:

SPRING, OR USE SOD.

MINIMUM 6" OF 2"-3" AGGREGATE

OVER LENGTH AND WIDTH OF

STRUCTURE

50' MINIMUM

LENGTH

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

equivalent shall be placed at least 6" deep over the length and width of the entrance.

mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has

to be sized according to the drainage. When the SCE is located at a high spot and

according to the amount of runoff to be conveyed. A 6" minimum will be required.

entrances shall be piped through the entrance, maintaining positive drainage. Pipe

installed through the stabilized construction entrance shall be protected with a

has no drainage to convey a pipe will not be necessary. Pipe should be sized

Location - A stabilized construction entrance shall be located at every point

where construction traffic enters or leaves a construction site. Vehicles leaving

the site must travel over the entire length of the stabilized construction entrance

STABILIZED CONSTRUCTION ENTRANCE

to placing stone. **The plan approval authority may not require single family

PROFILE

PLAN VIEW

1. Length - minimum of 50' (*30' for single residence lot).

residences to use geotextile.

Construction Specification

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior

5. Surface Water - all surface water flowing to or diverted toward construction

4. Stone - crushed aggregate (2° to 3°) or reclaimed or recycled concrete

** GEOTEXTILE CLASS 'C'

OR BETTER

EXISTING GROUND

ii. Construction sequence (Refer to Figure 3 below): Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
 Perform Phase 1 excavation, dress, and stabilize.

Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary. Perform final phase excavation, dress and stabilize. Overseed previously seeded

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization. Incremental Stabilization of Embankments - Fill Slopes

Embankments shall be constructed in lifts as prescribed on the plans. ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches

15°, or when the grading operation ceases as prescribed in the plans.

iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge

of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to

of the embankment to intercept surface runoff and convey it down the slope in a non-erosive a sediment trapping device.

Construction sequence: Refer to Figure 4 (below).

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.

b. Place Phase 1 embankment, dress and stabilize.

c. Place Phase 2 embankment, dress and stabilize.

d. Place final phase embankment, dress and stabilize.

Overseed previously seeded areas a precessary.

TEMPORARY SEEDING NOTES

JOED PREPARAISM:
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR
OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./

SEEDING: FOR THE PERIODS MARCH I THROUGH APRIL 30, AND AUGUST

15 THROUGH NOVEMBER 15, SEED WITH 17 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEEPING LOVEGRASS (.07 LBS. ,000 SQ.FT. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL

APPLY ! TO 2 TONS PER ACRE (70 TO 90 LB5./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 0 FEET OR

HIGHER, USE 340 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR

REFER TO THE 1988 MARYLAND STANDARDS AND SPECIFICATION FOR

SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT

- MOUNTABLE

EXISTING PAVEMENT EARTH FILL

- PIPE AS NECESSARY

PAVEMEN

STANDARD SYMBO

##SCE

ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE

areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. Any interruptions in the operation or completing ration out of the seeding season will necessitate the application of temporary stabilization

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 46 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855). ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN

CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7
CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS
AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. I, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE. 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER

GERMINATION AND ESTABLISHMENT OF GRASSES. 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.

1.4379 ACRES

1.0500 ACRES 0.3015 ACRES

0.7573 ACRES

2. Wire, snow fence, etc. for tree protection only. 3. Boundaries of Retention Area will be established as part of the forest

4. Boundaries of Retention Area should be staked and flagged prior to

Device should be properly maintained throughout construction.

7) SITE ANALYSIS: TOTAL AREA OF SITE AREA DISTURBED
AREA TO BE ROOFED OR PAVED AREA TO BE VEGETATIVELY STABILIZED OFFSITE WASTE/BORROW AREA LOCATION

BY THE INSPECTION AGENCY IS MADE.

 ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. SAME DAY OF DISTURBANCE.
ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES,
APPROVAL 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

11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

I. Silt Fence to be heeled into the soil.

conservation plan review process.

inställing device. . Avoid root dämäge when pläcing änchor posts.

7. Protection signs are also required, see Figure C-4. B. Locate fence outside the Crictical Root Zone.

APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL

PERMANENT SEEDING NOTES

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS: SEEDBED PREPARATION:

LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. SOIL AMENDMENTS:

APPLY TWO TONS PER ACRE-DOLOMITIC LIMESTONE (92 LBS/ 1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1.000 SQ.FT.) 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 LB5./1,000 SQ.FT.) AND 500 LB5. PER ACRE (II.5 LB5./ 1,000 5Q.FT.) OF 10-20-20 FERTILIZER.

FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST I THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE, FOR THE PERIOD MAY I THROUGH JULY 31, SEED WITH 60 LBS/ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS, DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28. PROJECT SITE BY: OPTION (I) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING: OPTION (2) - USE SOO: OPTION (3) -SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW, ALL SLOPES SHOULD BE HYDROSEEDED.

APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNPOTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES & FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS. REPLACEMENTS AND RESEEDINGS.

* FOR PUBLIC PONDS SUBSTITUTE CHEMUNG CROWNVETCH AT 15 LOS./ACRE AND KENTUCKY 31 TALL FESCUE AT 40 LBS/ACRE AS THE SEEDING REQUIRMENT OPTIMUM SEEDING DATE FOR THIS MIXTURE IS MARCH 1 TO APRIL 30.

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug: no healed-in plants

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material. Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 40 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor. Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities

Contractor id responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans. Positive drainage shall be maintained in planting beds 2 percent slope).

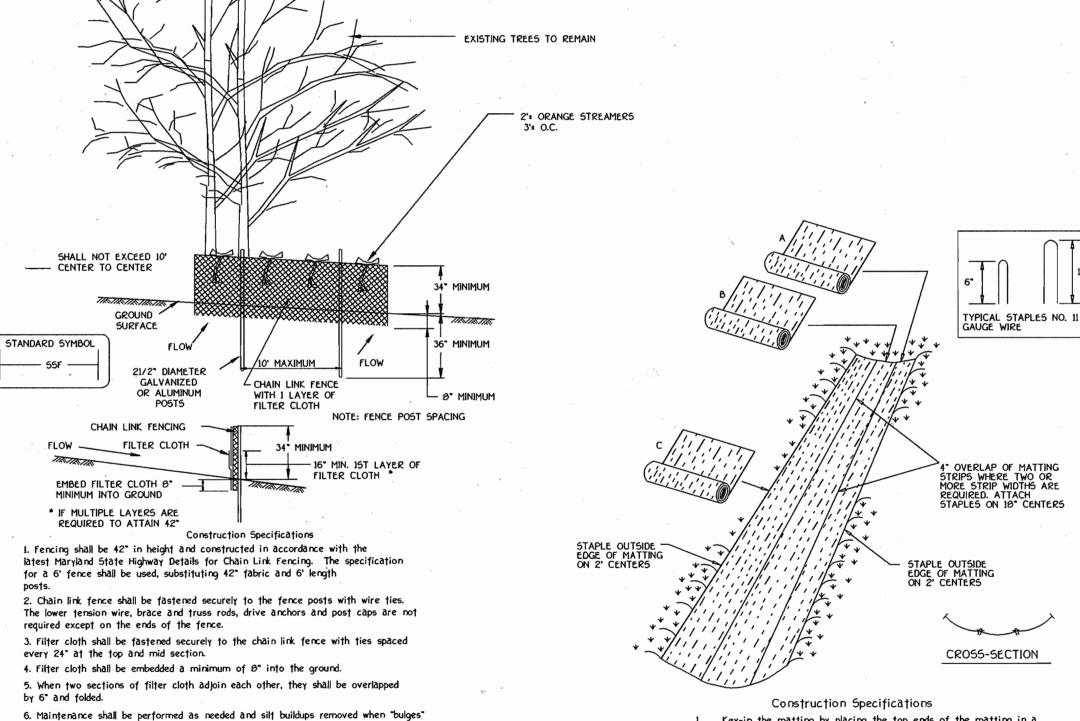
Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific around cover to be treated

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

TREE PLANTING DETAIL



1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6° in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6". 2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center. 5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4".

shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side. 6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples. Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in

EROSION CONTROL MATTING NOT TO SCALE

BLAZE ORANGE PLASTIC MESH ANCHOR POST SHOULD BE MINIMUM 2" STEEL "U" CHANNEL OR 2" x 2" TIMBER 6" IN LENGTH HIGHLY VISIABLE FLAGGING -MAXIMUM & FEET USE 3' WIRE "U" TO SECURE ANCHOR POST MUST BE INSTALLED O A DEPTH OF NO LESS THAN 1/3 OF THE TOTAL HEIGHT OF POST NOTES:

FOREST PROTECTION DEVICE ONLY.
RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. PROTECTIVE SIGNAGE MAY ALSO BE USED. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION

TREE PROTECTION DETAIL

FISHER, COLLINS & CARTER, INC. III. ENGINEERING CONSULTANTS & LAND SURVEYOR ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2855

REVISIONS

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workab 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 District."

Tensile Strength

Tensile Modulus

0 - 10%

10 - 20%

20 - 33%

33 - 50%

Filtering Efficiency

Steepness

0 - 10:1

10:1 - 5:1

5:1 - 3:1



12.31.02

DEVELOPER'S CERTIFICATE I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any 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

develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth shall be fastened securely to each fence post with wire ties or

staples at top and mid section and shall meet the following requirements for

50 lbs/in (min.)

Design Criteria

SUPER SILT FENCE, TREE PROTECTION FENCE

NOT TO SCALE

Slope Length

(maximum)

Unlimited

200 feet

100 feet

50 feet

20 lbs/in (min.)

Test: MSMT 509

Test: MSMT 509

Test: MSMT 322

Silt Fence Length

(maximum)

Unlimited

1.500 feet

1,000 feet

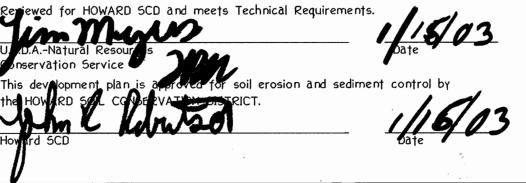
500 feet

250 feet

0.3 gal/ft /minute (max.) Test: MSMT 322

Conservation District. ____ Signature of Developer CHRIS KNUDSEN

beginning the project. I also authorize periodic on-site inspection by the Howard Soil 11.30.02



C. KNUDSEN DEVELOPMENT L.L.C. 8455 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21043

OWNER/DEVELOPER

PPROVED: DEPARTMENT OF PLANNING AND ZONING 1/21/13 Date 1/21/03 Date 1/28/12 Bate irector - Department of Planning and Zoning

SEDIMENT/EROSION CONTROL NOTES & DETAILS

CENTENNIAL LANE PROPERTY

PARCEL NUMBERS 855 AND 856 TAX MAP No. 24 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYAND

> SCALE: 1"= 30' DATE: APRIL, 2002 SHEET 4 OF 4

