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FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

WESLEY WOODS

SECTION TWO

LOTS 44 THRU 63 AND OPEN SPACE LOT 64 (A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B', "WESLEY WOODS, SECTION ONE", PLAT No. 14926)

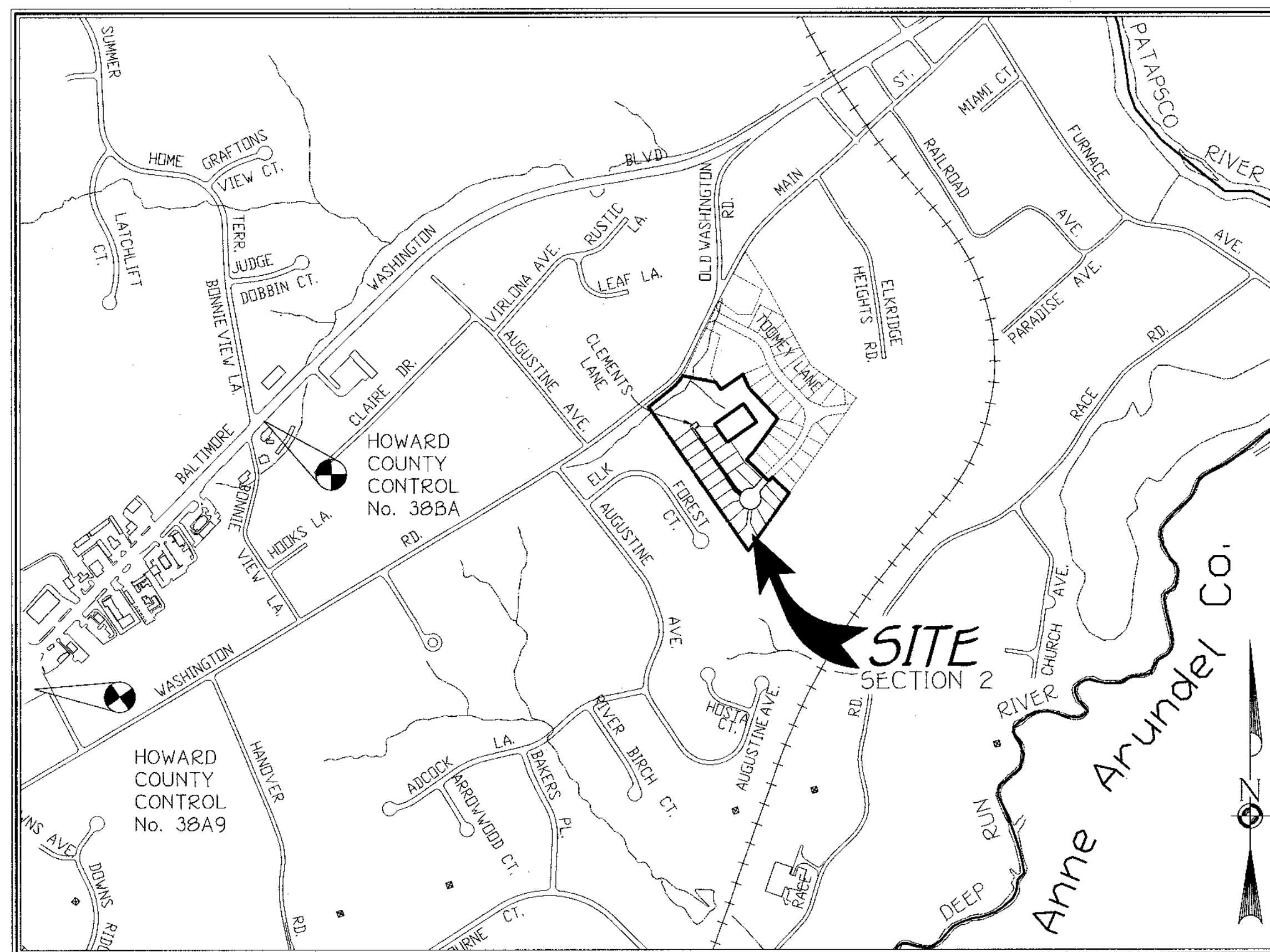
ZONED: R-12

STREET SIGN CHART				
STREET NAME	STATION	OFFSET	POSTED SIGN	SIGN CODE
TOOMEY LANE	C.L. STA. 14+41.14	4.5'R	ONE WAY	R6-2R
TOOMEY LANE	C.L. STA. 14+59.45	20'R	ONE WAY	R6-2R
CLEMENTS LANE	C.L. STA. 0+50	9'R	STOP	R1-1

ROAD CLASSIFICATION CHART		
ROAD	CLASSIFICATION	R/W WIDTH
TOOMEY LANE	PUBLIC ACCESS STREET	50'
CLEMENTS LANE	PRIVATE ACCESS PLACE	30' EASEMENT

STREET LIGHT CHART			
DWG. No.	STREET NAME	STATION	OFF-SET
2	TOOMEY LANE	C.L. STA. 14+40	-

NOTE:
STREETLIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN AND STREETLIGHT AND ANY TREE."



VICINITY MAP
SCALE: 1" = 600'

TAX MAP NO. 38 GRID NO. 4 PARCEL NO. 162

FIRST ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Sandy Hamrick 11/18/04
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. Mahan 11-3-04
 CHIEF, BUREAU OF HIGHWAYS DATE

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 15 WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY MESS UTILITIES AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- COORDINATES BASED ON NAD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 38A9 AND NO. 38BA.

Sta. No. 38A9	N 561127.617	E 1,399,810.581
Sta. No. 38BA	N 562,624.748	E 1,391,144.942
- AP.F.O. TRAFFIC STUDY PREPARED BY STREET TRAFFIC STUDIES, LTD. DATED MARCH, 2001. APPROVED UNDER 5 (1)-26.
- BACKGROUND INFORMATION:
 - SUBDIVISION NAME: WESLEY WOODS
 - TAX MAP NO.: 38
 - PARCEL NO.: 162
 - ZONING: R-12
 - ELECTION DISTRICT: FIRST
 - TOTAL TRACT AREA: 8.334 AC.
 - NO. OF BUILDABLE LOTS: 20
 - NO. OF OPEN SPACE LOTS: 1
 - AREA OF BUILDABLE LOTS: 4.175 AC.
 - AREA OF OPEN SPACE LOTS: 3.818 AC.
 - AREA OF 100 YEAR FLOODPLAIN: 0.532 AC.
 - AREA OF PUBLIC ROAD R/W: 0.341 AC.
 - PREVIOUS FILE NOs: 5 98-14, P 99-14, P 00-15, P 02-21 & P 03-06.
 - OPEN SPACE TABULATION FOR SECTION TWO:

GROSS AREA OF TRACT	8.334 AC.
REQUIRED OPEN SPACE	2.50 AC.
(10X FOR 8,400 SQ.FT. LOT SIZE OPTION)	
OPEN SPACE PROVIDED IN SECTION TWO	CREDITED = 3.517 AC.
	*NON-CREDITED = 0.301 AC.
	TOTAL = 3.818 AC.

■■■ DENOTES *NON-CREDITED* OPEN SPACE
 - 20' FT. ACCESS STRIP ADJACENT TO LOT 64 = 0.061 AC.
 - PRIVATE ACCESS EASEMENT TO LOTS 52-61 = 0.050 AC. (FOR TREE TURN AROUND AREA)
 - PRIVATE ACCESS EASEMENT TO TOOMEY PROPERTY = 0.190 AC.
 TOTAL = 0.301 AC.
- RECREATIONAL OPEN SPACE REQUIRED FOR SECTION TWO:
 (20 LOTS x 200 SQUARE FEET PER LOT) = 4,000 SQ.FT.
 RECREATIONAL OPEN SPACE PROVIDED IN SECTION TWO: 4,000 SQ. FT.
- NO CEMETERIES EXIST ON THE PROPERTY.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-99.
- THE FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1202 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS PROJECT HAS BEEN FULFILLED BY THE ON-SITE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.50 ACRES. THE REMAINING FOREST CONSERVATION OBLIGATION OF 2.26 AC. HAS BEEN PROVIDED BY 2.26 AC. OF OFF-SITE REFORESTATION LOCATED ON TALLEY PROPERTY, PARCEL 2, RE-03-02 D52, P.N. 1996, TAX MAP NO. B, GRID NO. 13, PARCEL NO. 392.
- STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 37B SPECIFICATIONS. SWM IS PROVIDED BY A COMBINATION OF THE EXISTING FACILITY (IF 00-15) AND A PROPOSED PRIVATELY MAINTAINED SURFACE SAND FILTER ON LOT 64.
- THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PUBLIC (CONTRACT NO. 14-1007-D). THE DRAINAGE AREA IS: THE PATAPSCO.
- THE SUBJECT PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- TOPOGRAPHIC INFORMATION ESTABLISHED AT TWO FOOT INTERVALS BASED ON AERIAL SURVEY PERFORMED BY WINGS AERIAL MAPPING COMPANY, INC. ON OR ABOUT MARCH, 1999.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM DRIVEWAY.

Use-In-Common Driveways Shall Be Provided Prior To Residential Occupancy To Ensure Safe Access For Fire And Emergency Vehicles Per The Following (Minimum) Requirements:

 - Width - 12 Feet (14 Feet Serving More Than One Residence).
 - Surface - Six (6) Inches Of Compacted Crusher Run Base With Tar And Chip Coat-Fing. (1-1/2" Minimum).
 - Geometry - Maximum 15% Grade, Maximum 10% Grade Change And 45-Foot Turning Radius.
 - Structures (Culverts/Bridges) - Capable Of Supporting 25 Gross Tons (125-Loading).
 - Drainage Elements - Capable Of Safely Passing 100 Year Flood With No More Than 1 Foot Depth Over Surface.
 - Structure Clearances - Minimum 12 Feet.
 - Maintenance - Sufficient To Ensure All Weather Use.
- WETLAND AND FOREST STAND DELINEATION INFORMATION WAS TAKEN FROM REPORTS PREPARED BY EXPLORATION RESEARCH, INC. DATED MARCH, 1998 AND APPROVED UNDER 5 98-14.
- SOILS INFORMATION TAKEN FROM SOIL MAP NO. 26, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY 1968 ISSUE.
- AS A CONSEQUENCE OF THIS PLAN'S SUBMISSION PRIOR TO NOVEMBER 15, 2001, THIS SUBDIVISION PLAN WILL BE GRANDFATHERED TO THE FOURTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- SUBJECT PROPERTY ZONED R-12 PER 02/02/04 COMPREHENSIVE ZONING PLAN.
- THERE ARE NO AREAS OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.
- NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE 100 YEAR FLOODPLAIN, WETLANDS, STREAM OR THEIR REQUIRED BUFFERS OR THE FOREST CONSERVATION EASEMENTS.
- THE LANDSCAPE SURETY IN THE AMOUNT OF \$ 16,770.00 FOR PERIMETER LANDSCAPE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL IS POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION.
- A NOISE STUDY WAS PREPARED BY WILDMAN ENVIRONMENTAL SERVICES DATED MARCH, 1998 AND APPROVED ON 12-9-98 UNDER 5 98-14 AND 5 01-26. THE NOISE STUDY APPROVED UNDER 5 01-24 FOR THE ADJACENT LUSH PROPERTY HAS SHOWN THAT THE RAILROAD LINE DOES NOT AFFECT THE LOTS SHOWN ON THIS SKETCH PLAN.
- EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD COUNTY CONTRACT DRAWINGS. EXISTING WATER AND SEWER CONTRACT NO. 14-3982-D.
- THE 100 YEAR FLOODPLAIN ON-SITE IS BASED ON FLOODPLAIN STUDY PREPARED BY FISHER, COLLINS & CARTER, INC. AND APPROVED ON 7/23/02.
- DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH THE SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF THE SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION OR BUILDING/GRADING PERMIT.

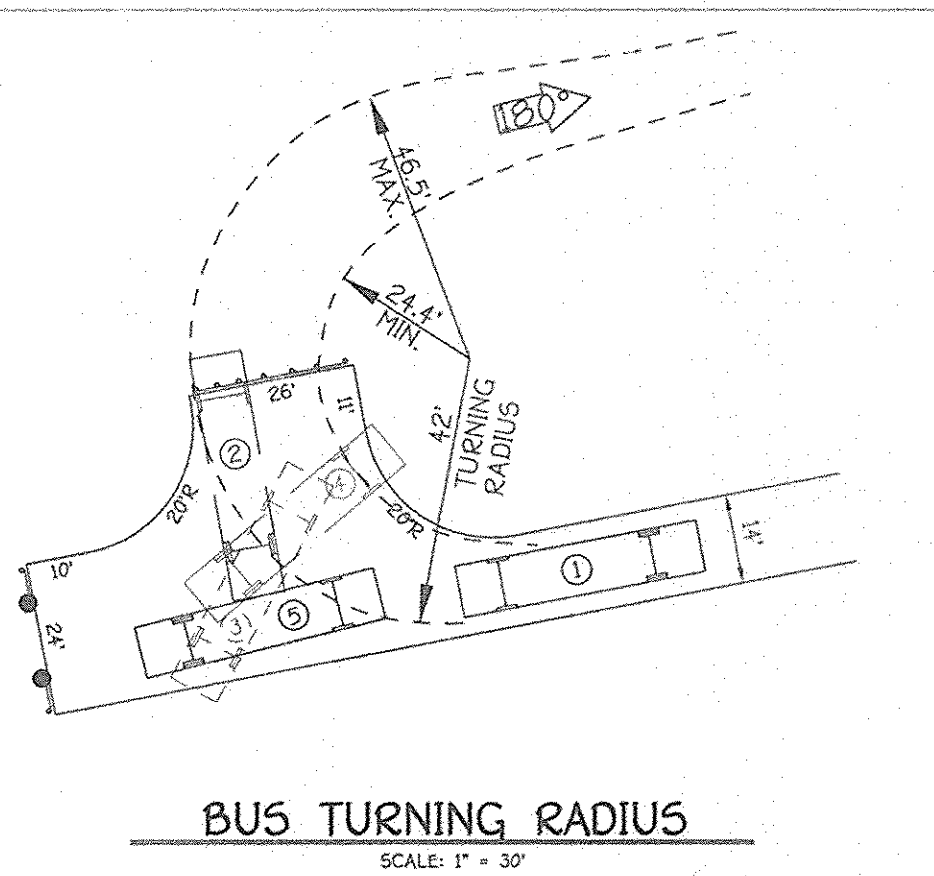
WESLEY WOODS
 SECTION TWO
 Lots 44 Thru 63 and Open Space Lot 64
 (A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B', WESLEY WOODS,
 SECTION ONE, PLAT No. 14926)

ZONED R-12
 TAX MAP NO. 38 PARCEL NO. 162 GRID NO. 4
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER 30, 2004
 SHEET 1 OF 13

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CONTINENTAL SQUARE OFFICE PARK 19772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042 SUITE 207-A
 410-461-2895



OWNER / DEVELOPER
 C & C DEVELOPMENT, L.L.C.
 10176 BALTIMORE NATIONAL PIKE
 SUITE 207-A
 ELLICOTT CITY, MD. 21042
 (410) 203-9900



WESLEY WOODS
SECTION TWO
Lots 44 Thru 63 and Open Space Lot 64
(A RESUBDIVISION OF BULK PARCEL 'B', WESLEY WOODS, SECTION ONE, PLAT NO. 14923 'S', ZONED R-12)

TAX MAP NO. 38 PARCEL NO. 162 GRID NO. 4
HOWARD COUNTY, MARYLAND

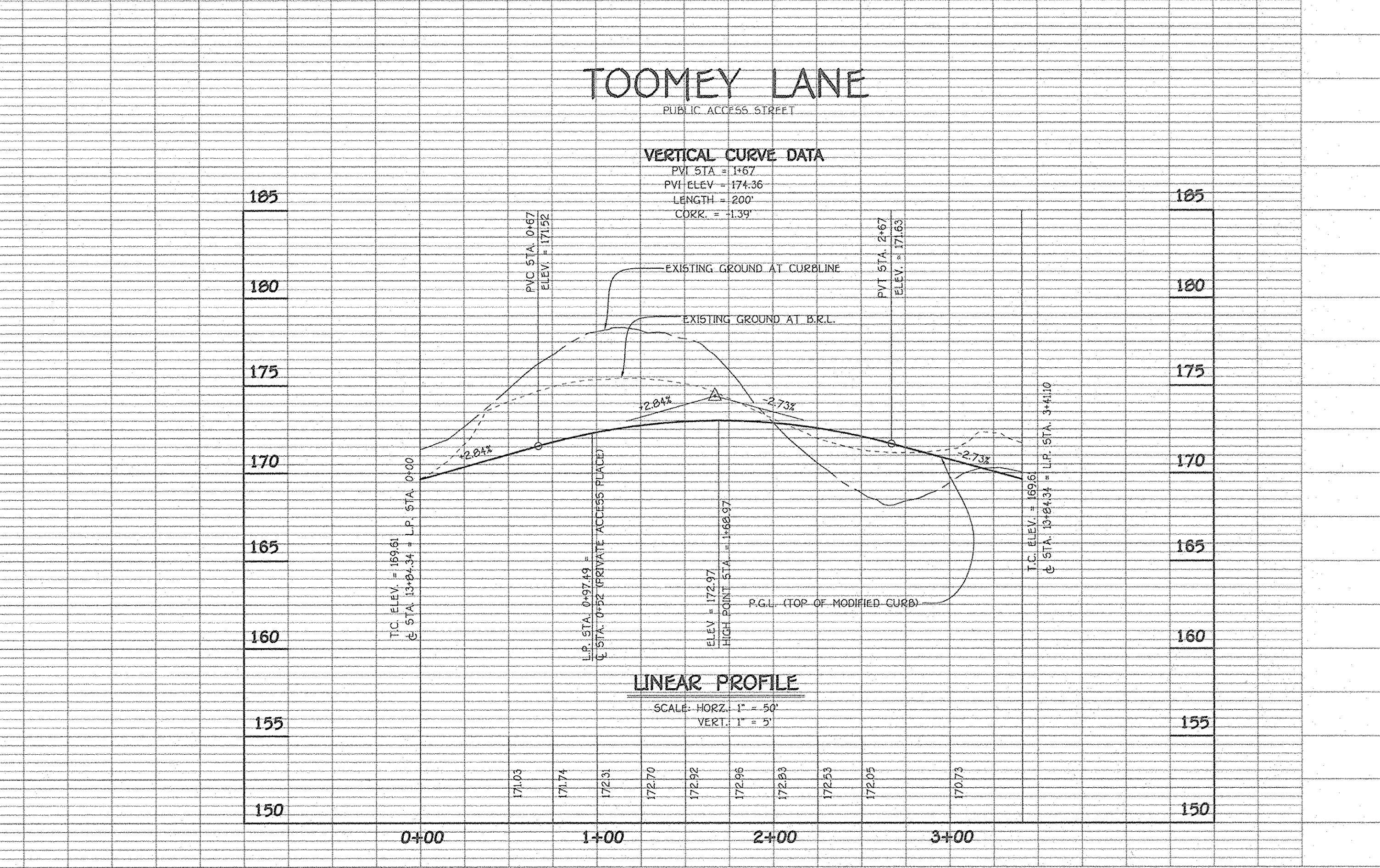
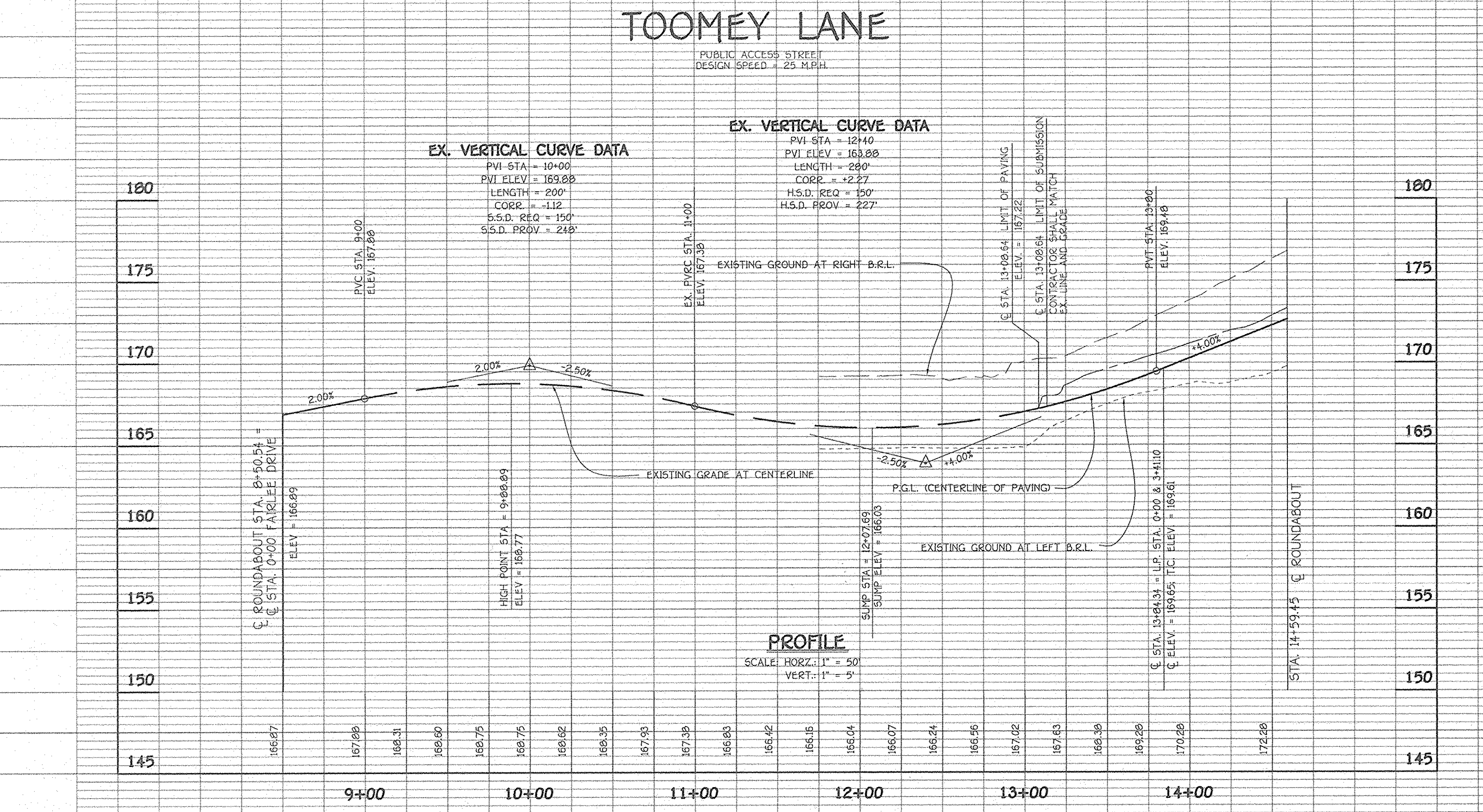
TOOMEY LANE
PLAN AND PROFILE

CLEMENTS LANE
PLAN

OWNER / DEVELOPER
C & C DEVELOPMENT, L.L.C.
10716 BALTIMORE NATIONAL PIKE
SUITE 207-A
ELLICOTT CITY, MD 21042
(410) 203-9500

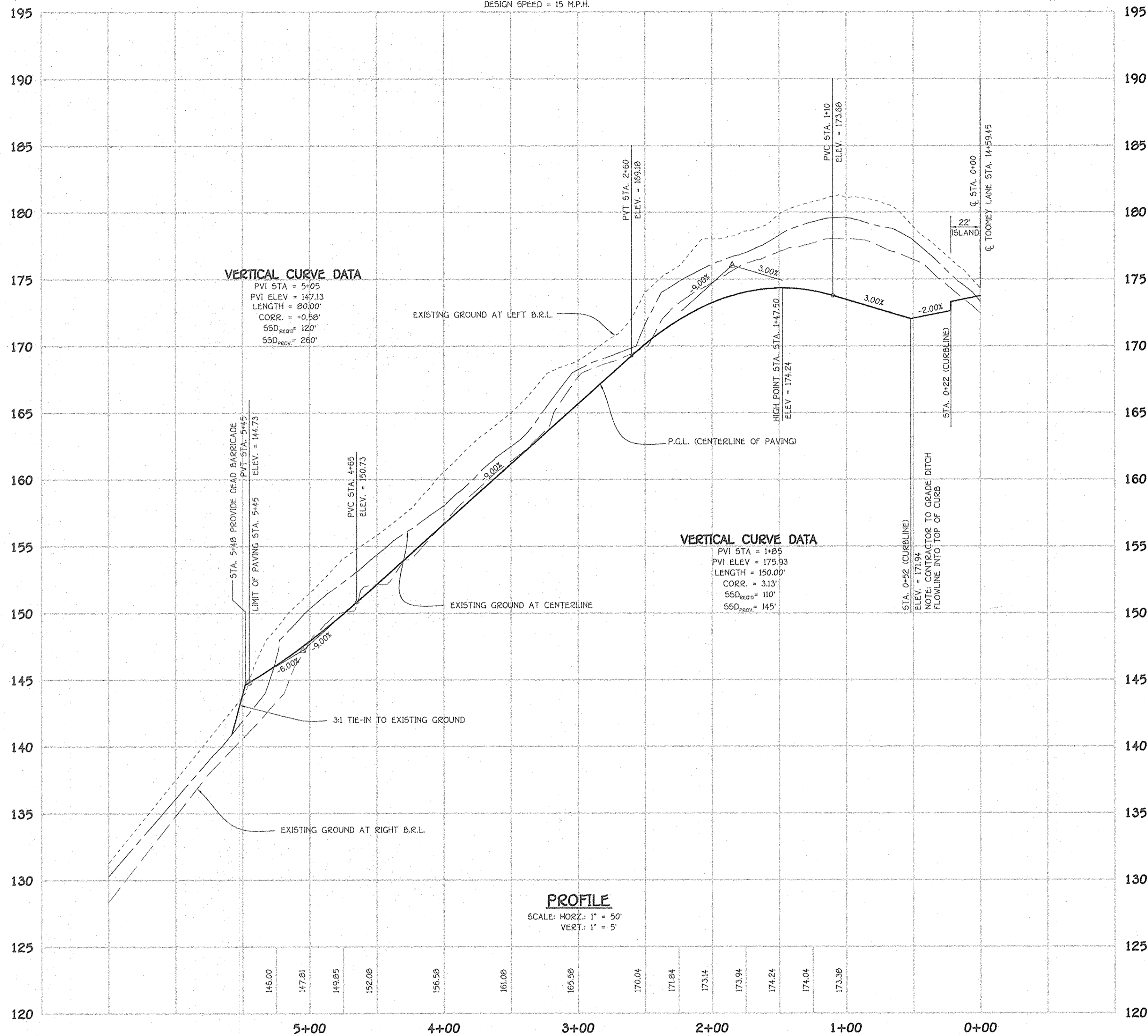
SCALE: AS SHOWN DATE: SEPT. 30, 2004 DWG. NO. 2 OF 13
DES. AMV. DRN. J.C.L. CHK. C.J.C.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461-3995



CLEMENTS LANE

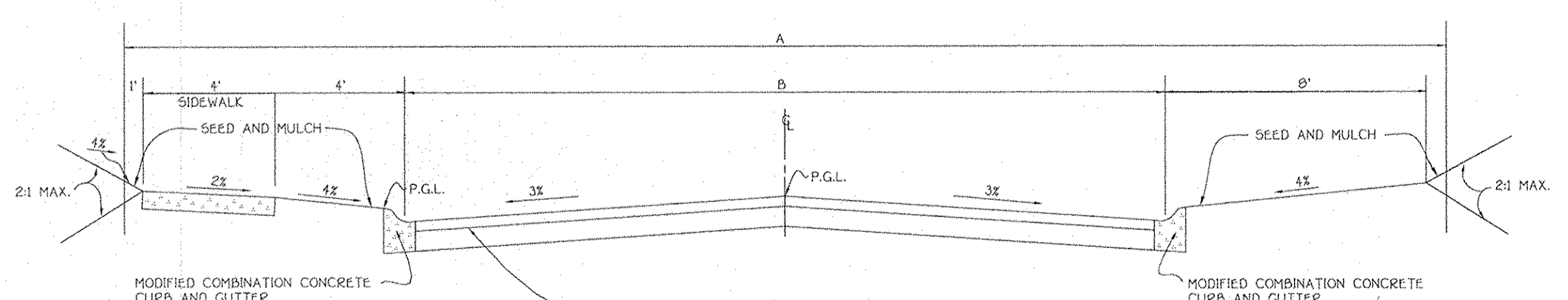
PRIVATE ACCESS PLACE
DESIGN SPEED = 15 MPH



VERTICAL CURVE DATA
PVI STA = 5+05
PVI ELEV = 147.13
LENGTH = 80.00'
CORR. = +0.50'
SSD_{DESIGN} = 120'
SSD_{POST} = 260'

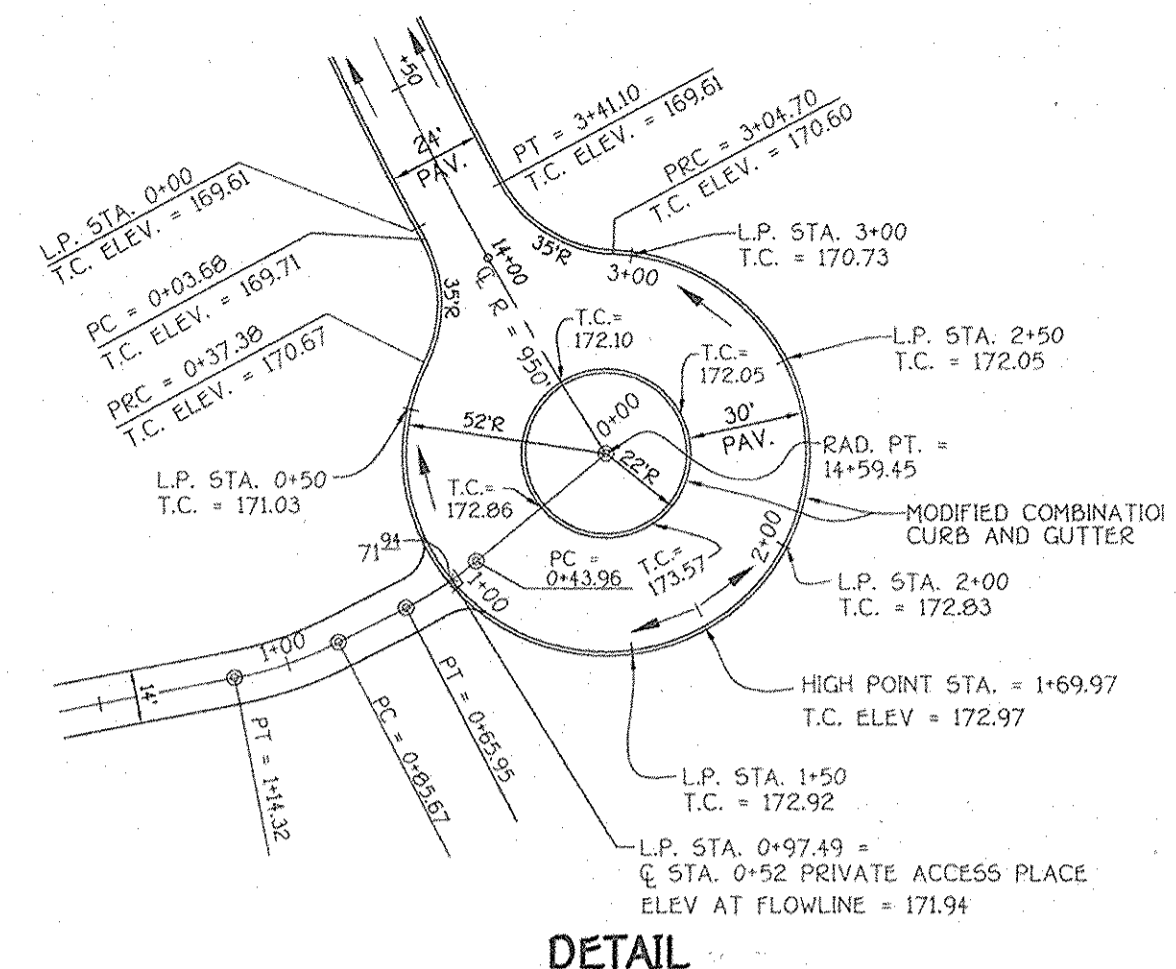
VERTICAL CURVE DATA
PVI STA = 1+85
PVI ELEV = 175.93
LENGTH = 150.00'
CORR. = 3.13'
SSD_{DESIGN} = 110'
SSD_{POST} = 145'

PROFILE
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

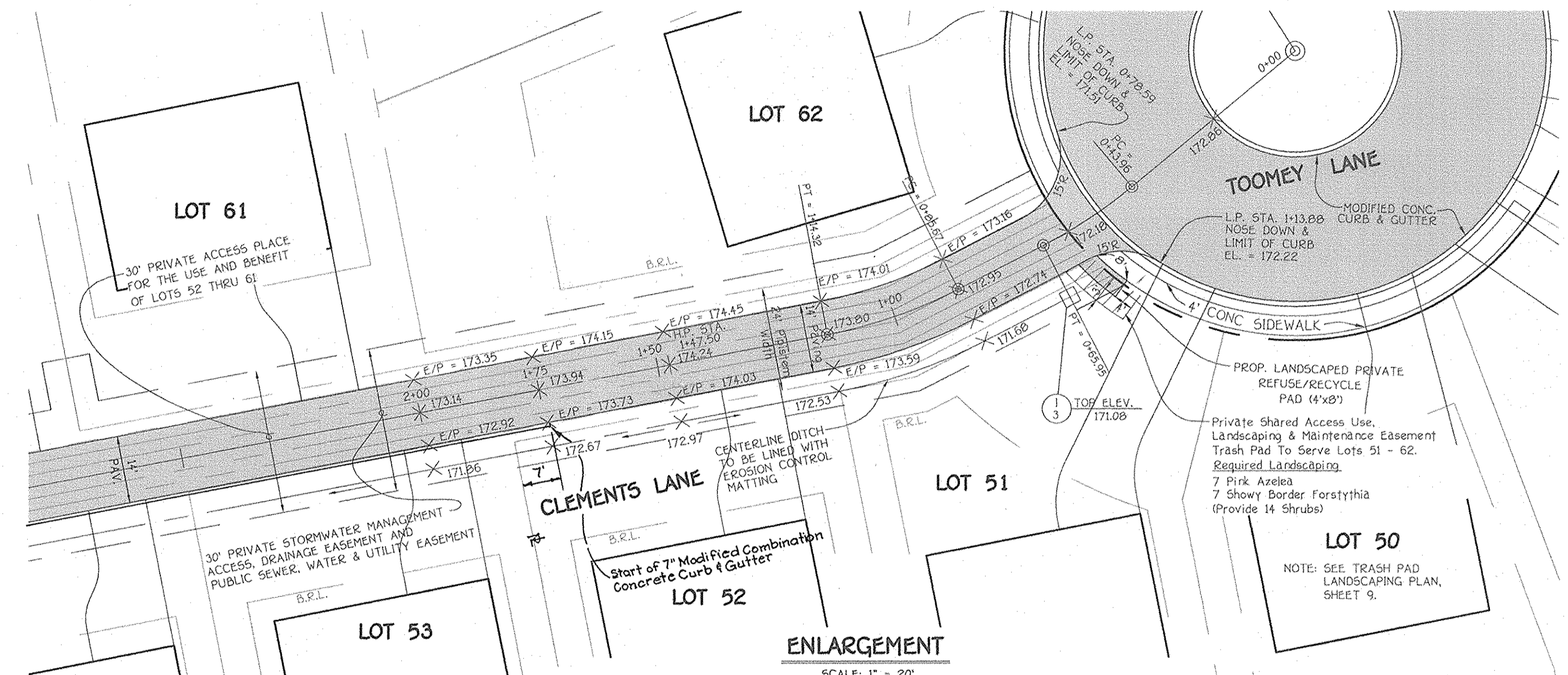


TYPICAL ROADWAY SECTION (ACCESS STREET)
NO SCALE

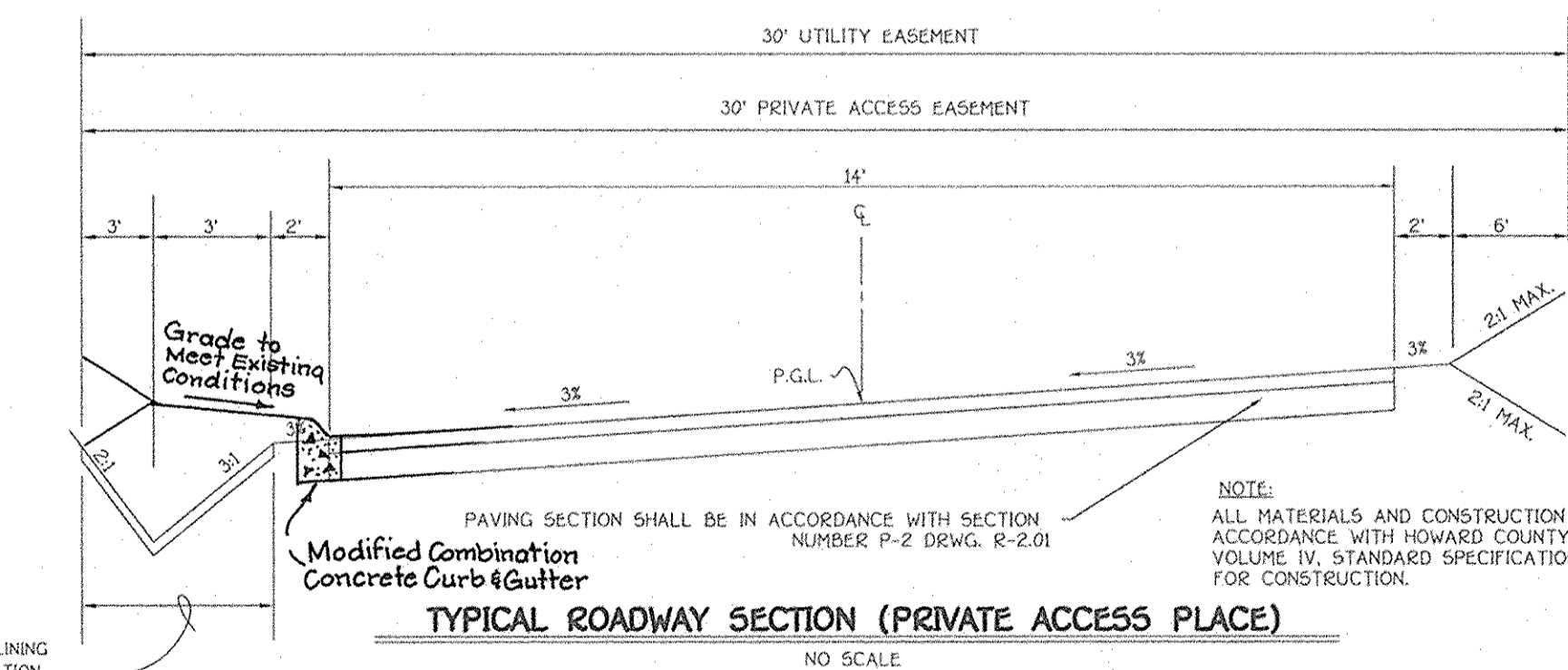
ROADWAY INFORMATION CHART						
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	A	B
TOOMEY LANE	PUBLIC ACCESS STREET	25 MPH	R-12	13+08.64 TO 14+59.45	40'	24'



DETAIL
SCALE: 1" = 50'



ENLARGEMENT
SCALE: 1" = 20'



TYPICAL ROADWAY SECTION (PRIVATE ACCESS PLACE)
NO SCALE

ROADWAY INFORMATION CHART						
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	EASEMENT	PAVING SECTION
CLEMENTS LANE	PRIVATE ACCESS PLACE	15 MPH	R-12	0+00 TO 5+62	30'	P-2

APPROVED: DEPARTMENT OF PUBLIC WORKS
William J. Mahan 11-3-04
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cathy Kamito 11/18/04
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mike DeLuca 11/18/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

REVISIONS		
NO.	DESCRIPTION	DATE

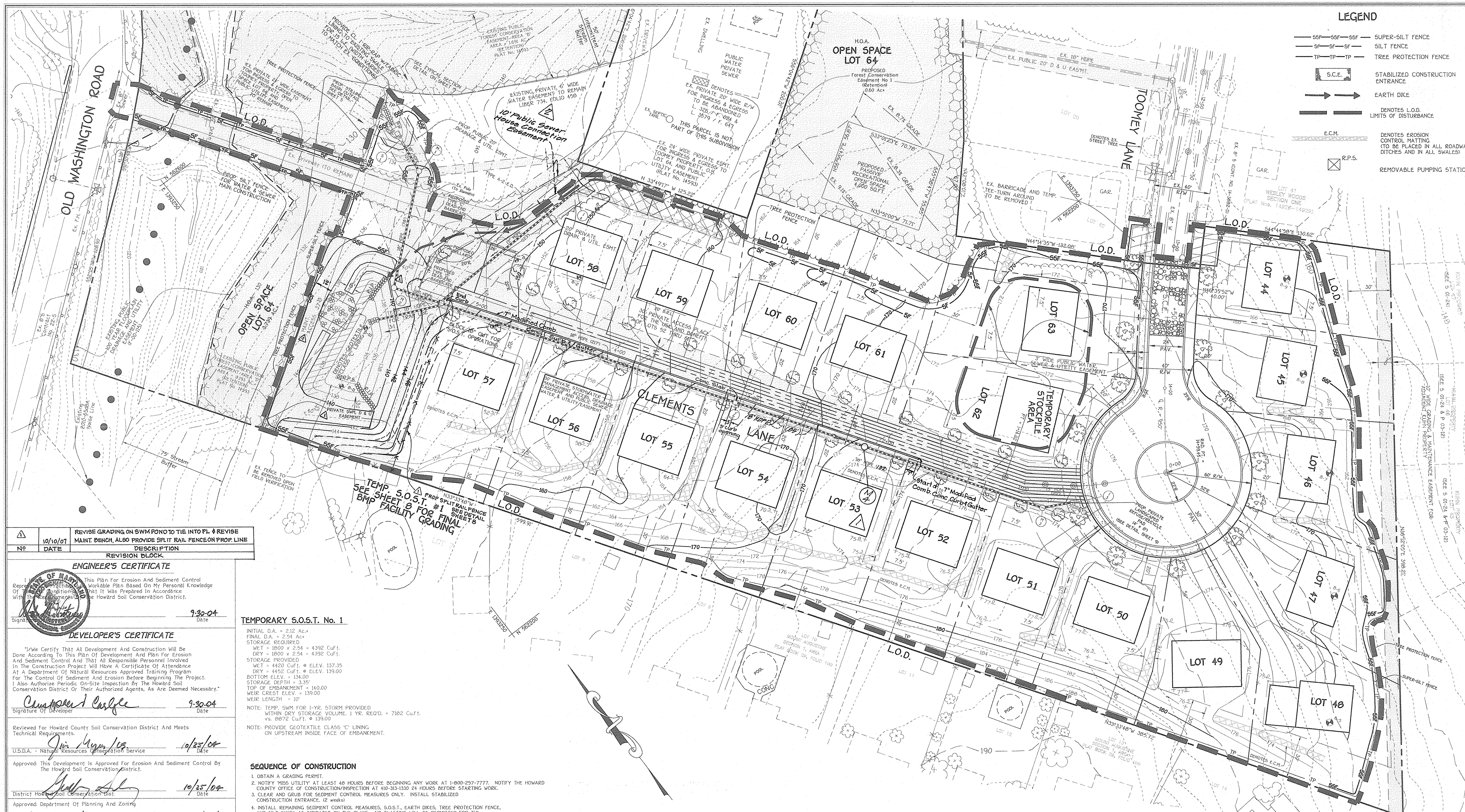
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
1001 W. ... BALTIMORE, MD 21202

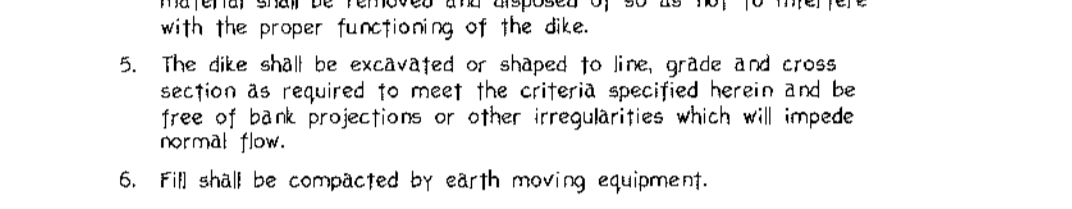
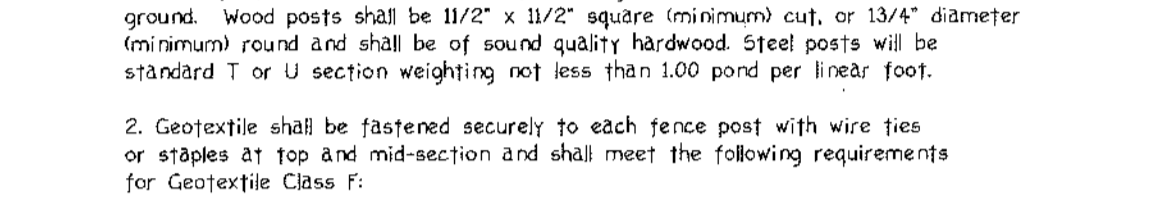
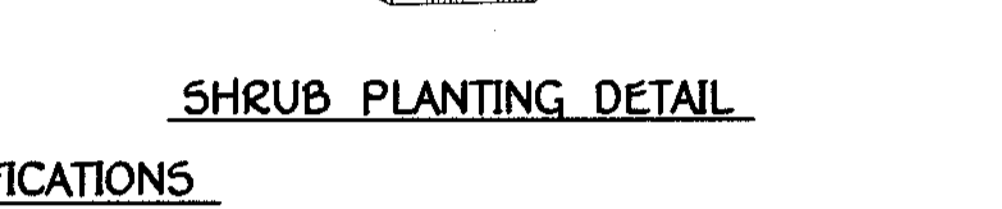
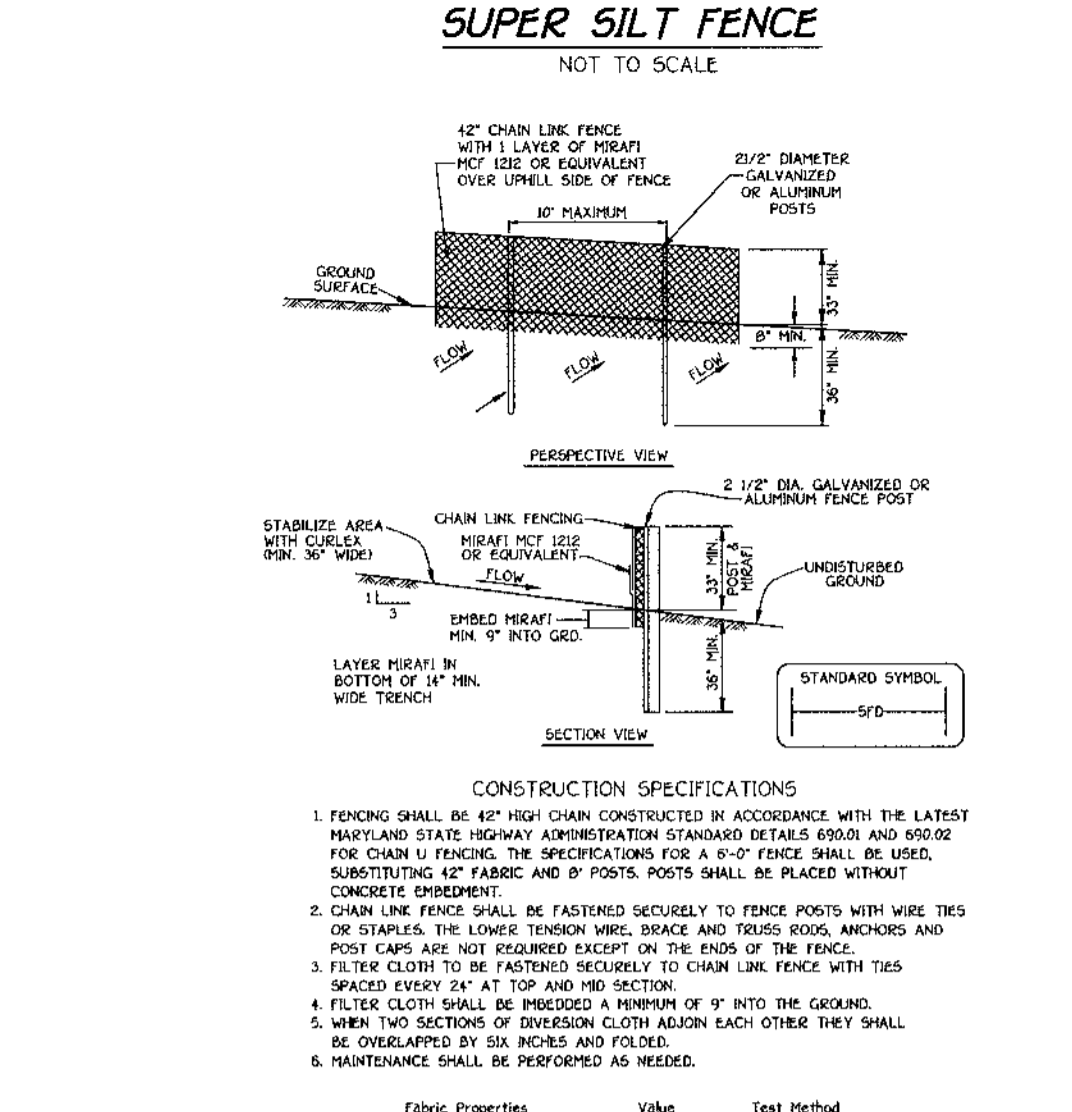
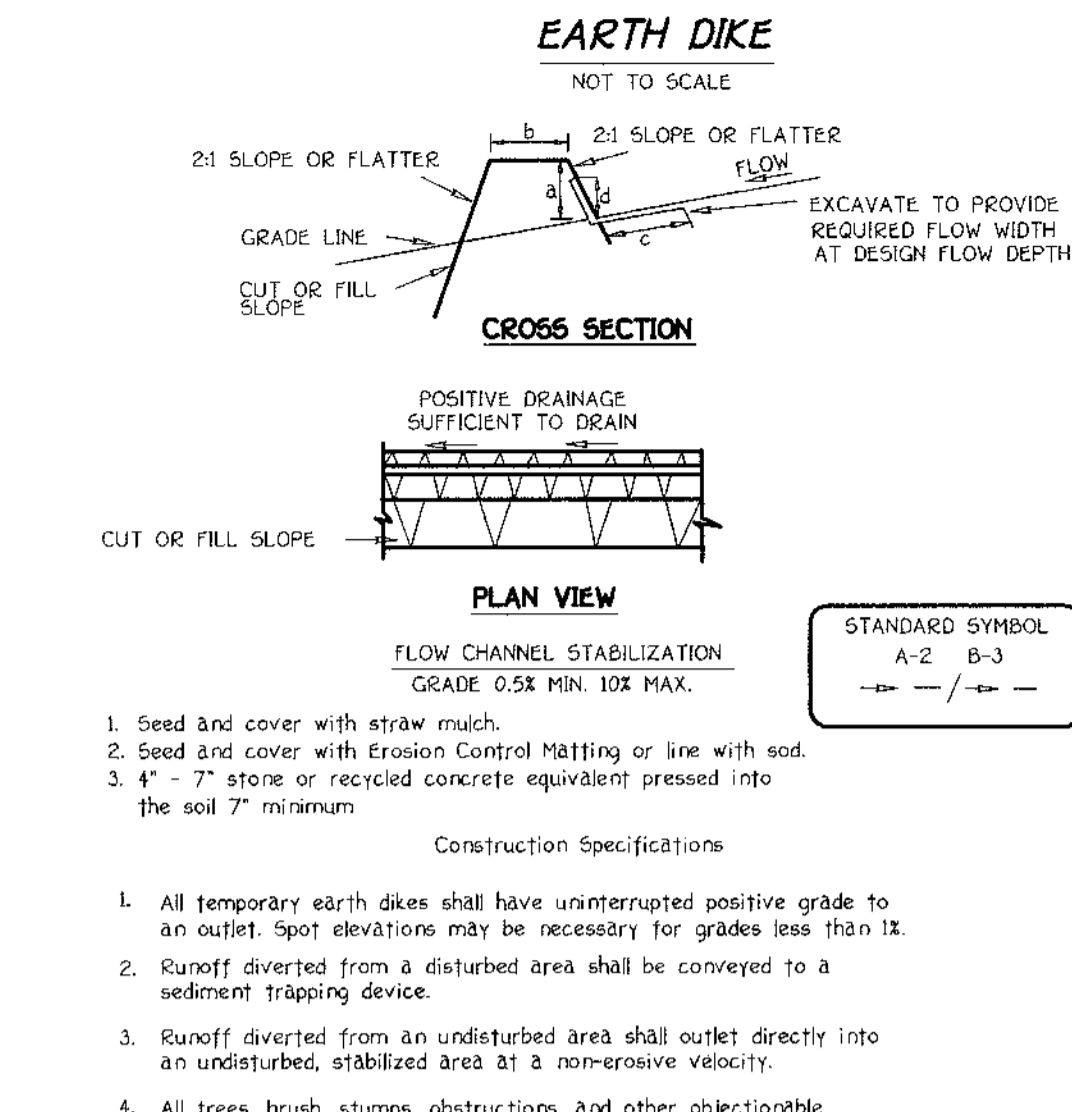
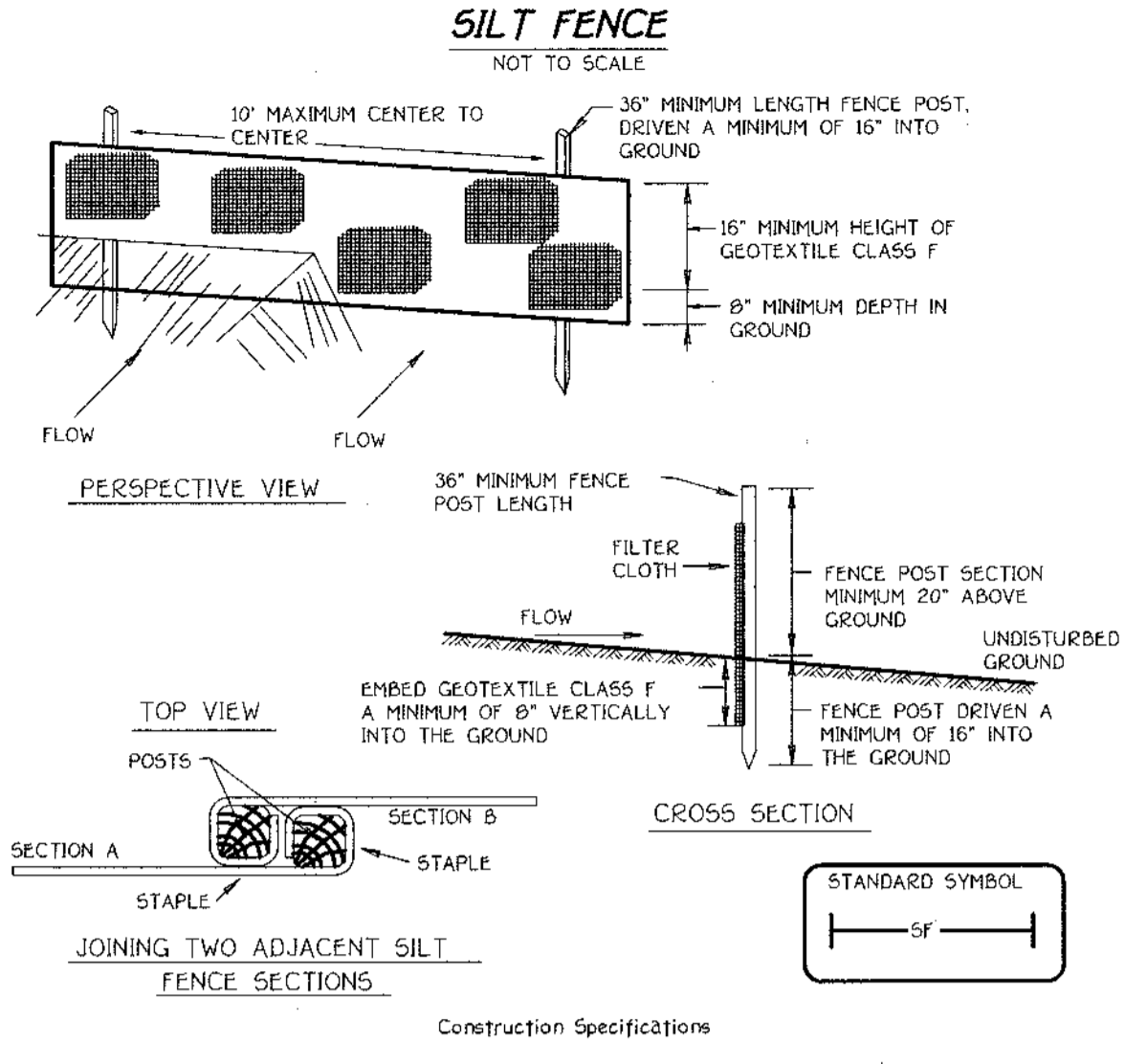
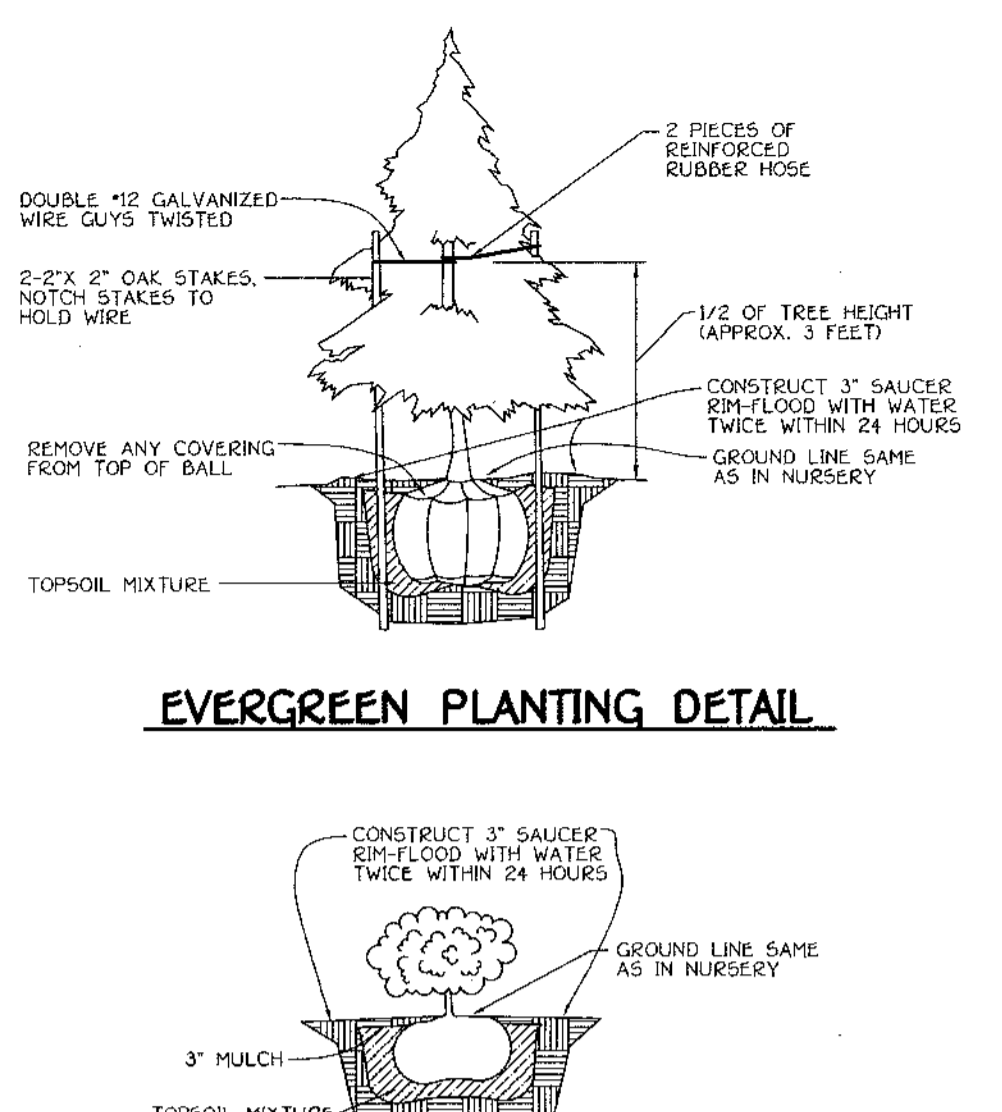
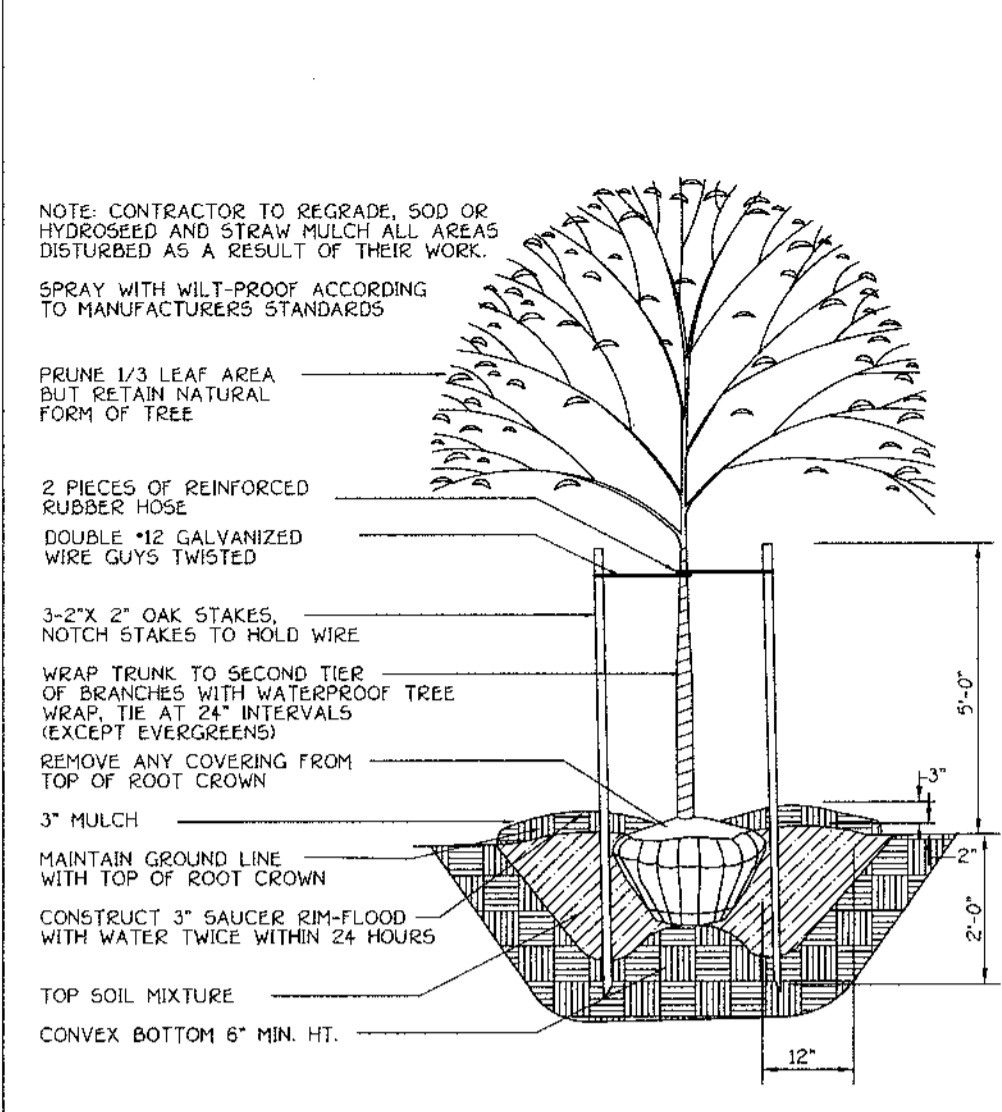
OWNER / DEVELOPER
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10776 BALTIMORE NATIONAL PIKE
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ELLCOTT CITY, MD 21042
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ROADWAY DETAILS
WESLEY WOODS
SECTION TWO
Lots 44 Thru 63 and Open Space Lot 64
(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B', WESLEY WOODS, SECTION ONE, PLAT NO. 14926)
ZONED R-12
PARCEL NO. 162 GRID NO. 4
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER 30, 2004
SHEET 3 OF 13

No	Revision	Date
1	Add curb & gutter detail	9-30-07





PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plan 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 slope 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 heated-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area", 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 legends.

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 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.

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.

Contractor is 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 site construction.

Bid shall be based 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 on the plan take precedence.

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 conform to the Landscape Guidelines.

Seed 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.

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 100 pound per linear foot.
2. Geotextile 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 Geotextile Class F:

Tensile Strength	50 lbs/in (min)	Test: NMT 509
Tensile Modulus	20 lbs/in (min)	Test: NMT 509
Flow Rate	0.3 gal / 1 / 7 minute (max)	Test: NMT 322
Filtering Efficiency	75% (min)	Test: NMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

Construction Specifications

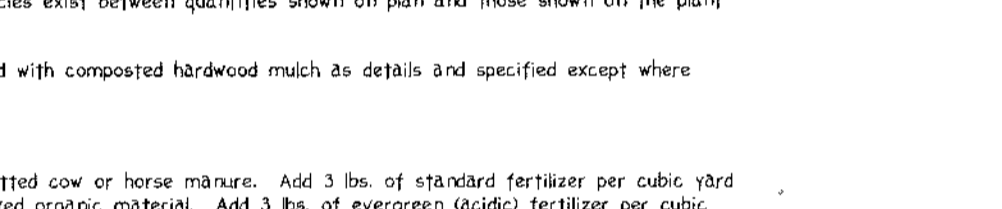
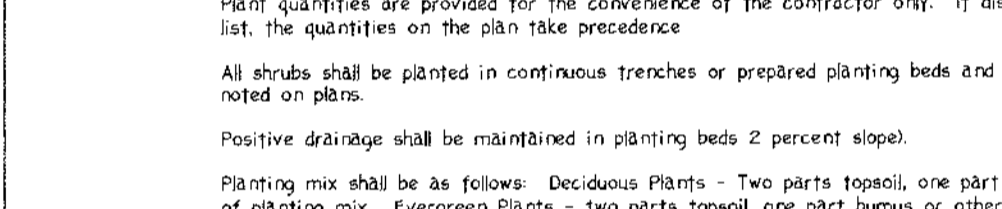
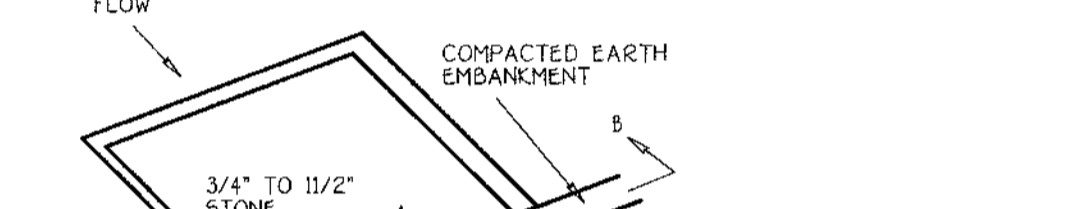
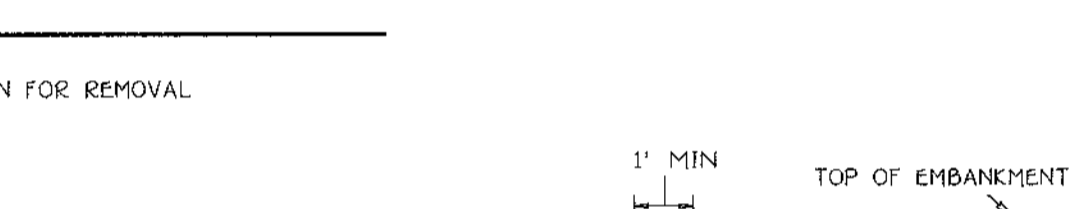
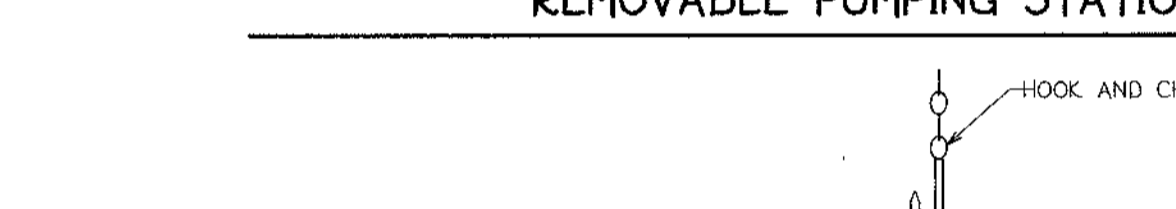
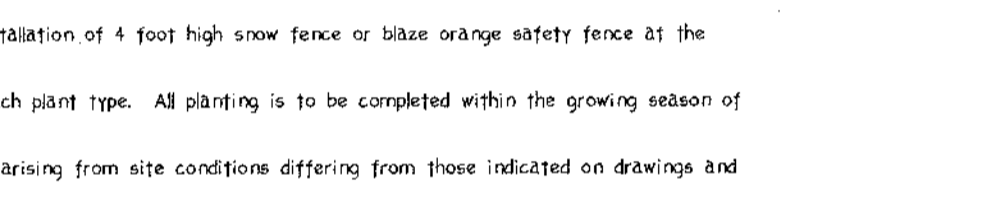
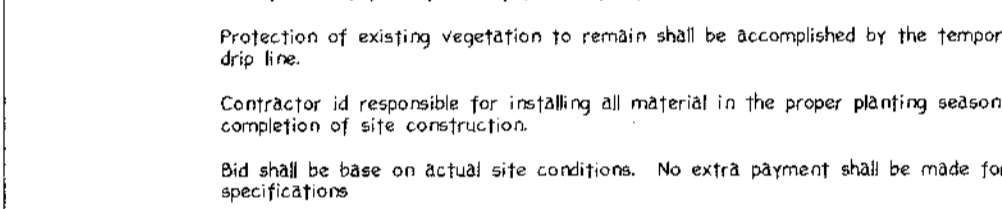
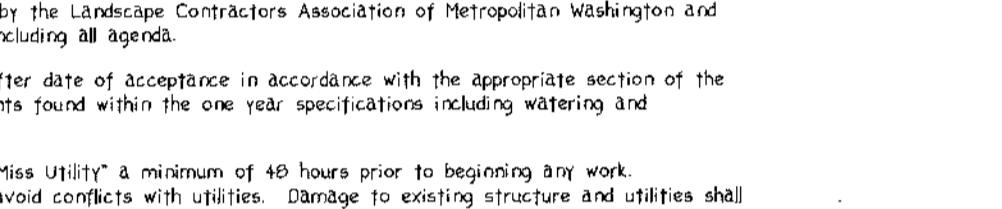
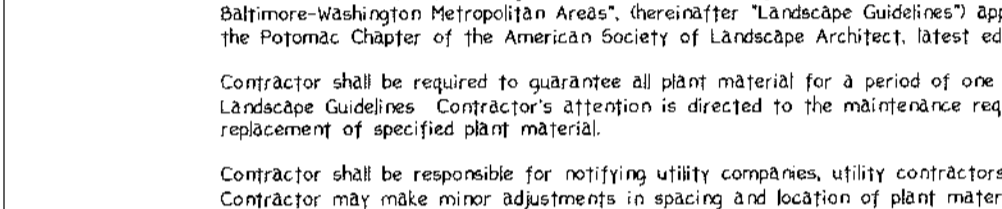
1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
- All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
- The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
- Fill shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

Dike A	Dike B	Design Criteria		Silt Fence Length (minimum)
		Slope	Stabilization	
2:1	2:1	100 FEET	100 FEET	1500 FEET
3:1	3:1	100 FEET	100 FEET	1000 FEET
4:1	4:1	100 FEET	100 FEET	500 FEET
5:1	5:1	100 FEET	100 FEET	250 FEET

CONSTRUCTION SPECIFICATIONS

- FENCING SHALL BE 4" CHAIN LINK FENCING CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 6800 AND 6900 FOR CHAIN LINK FENCING. THE SPECIFICATIONS FOR A 4" FENCE SHALL BE USED. SUBSTITUTING 4" FABRIC AND POSTS. POSTS SHALL BE PLACED WITHOUT CONCRETE OR BENTONITE.
- CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE BRACE AND TORSION WIRE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
- FILTER CLOTH TO BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- FILTER CLOTH SHALL BE PLACED A MINIMUM OF 8" INTO THE GROUND.
- WHERE TWO SECTIONS OF DRAINAGE CLOTH MEET EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
- MAINTENANCE SHALL BE PROVIDED AS NEEDED.

Fabric Properties	Value	Test Method
Grid Tensile Strength (lbs)	50	ASTM D682
Extension at Failure (%)	50	ASTM D682
Median Joint Strength (lbs)	600	ASTM D3356
Puncture Strength (lbs)	40	ASTM D3356
Mass Per Area (lbmsq)	0.3	ASTM D3356
Vertical	DOT 1775-51	US 516 Series
Horizontal	DOT 1775-51	US 516 Series
Unbalanced Retention Capacity (%)	90	DOT 1775-51



20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION
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 runoff 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 (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary soil stockpiles, cleared areas along utility 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, seeded 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

- Site Preparation
 - Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 - Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 - Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
- 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.
 - Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Fertilizer 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 warranty of the producer.
 - 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 size finesness that at least 20% will pass through a #100 mesh sieve and 95% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.

Seeded Preparation

- Seeded 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 tractors. 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.
- Apply fertilizer and lime as prescribed on the plans. Incorporate lime and fertilizer into the top 3-5" of soil by diking or other suitable means.

Permanent Seeding

- Minimum soil conditions required for permanent vegetative establishment:
 - 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 1000 ppm of soluble calcium, but enough fine grained material (0.075 mm plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loess or silt loess is to be obtained, then a silt loess (0.075 mm plus clay) would be acceptable.
 - Soil shall contain 1% 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 (Temporary Seeding) and Section 22 (Permanent Seeding).
- Areas previously graded in conformance with the drawings shall be maintained in a true and even grade. Then scratched or otherwise loosened to a depth of 3-5" to permit topsoil to the topsoil to the surface 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 diking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like sticks and branches, and reseed the area for seed and application, where site conditions will permit normal seeded preparation loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. 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. Seeded loosening may not be necessary on newly disturbed areas.

Seed Specifications

- All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to retesting 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 the job.
- Seed tags shall be made available to the inspector to verify type and rate of seed used.
- Inoculant: The inoculant test for nitrogen fixing bacteria in the seed must 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. After the inoculant is applied, use for four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 100 degrees Fahrenheit will make the inoculant less effective.

Methods of Seeding

- Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultivator seeder.
 - If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: 100 lbs. per acre total of soluble nitrogen, 200 lbs./acre P2O5 (phosphorous), 200 lbs./acre K2O (potassium), 200 lbs./acre.
 - 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 time. Do not use burnt or hydrated lime when hydroseeding.
 - Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
- Dry Seeding: This includes use of conventional drop or broadcast spreaders.
 - Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 26 or 27. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
 - Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
- Drill or Cultivator Seeding: Mechanized seeders that apply and cover seed with soil.
 - Cultivator seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeded must be firm after planting.
 - 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)

- Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable free in color, and shall not be moldy, rotted, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
- Wood Cellulose Fiber Mulch (WCFM)
 - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 - WCFM shall be dried 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. The mulch material shall form a bottle-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 concentrations levels that will be phytotoxic.
 - 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 1-4 maximum and water holding capacity of 100 minimum.

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

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

- If grading is completed outside of the seeding season, mulch also 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.
- 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 surface is not exposed to the sun. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
- 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 preference, depending upon size of area and erosion hazard):

- 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.
- Wood cellulose fiber may be used for mulch anchoring. 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.
- 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 applied uniform after binder application. Synthetic binders, such as Agric DLK (Agro-Tack), 2-70 Polymor, Terra Tack, Terra Tack AG 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 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'.
- 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 areas as necessary.

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 in the operation or completion 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.
- 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, 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 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 sill 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 necessary.

Note: Once the placement of fill 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 in the operation or completion of the seeding season will necessitate the application of temporary stabilization.

SECTION 2 - TEMPORARY SEEDING

Vegetation - Annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed Mixtures - Temporary Seeding

- Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.
- For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in Soil tests are not required for Temporary Seeding.

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	Fertilizer Rate (lb/1000sf)	Lime Rate (ton/1000sf)
1	BARLEY	122	3/1 - 5/15	1" - 2"	600 lb/acre (5 lb/1000sf)	2 tons/acre (200 lb/1000sf)
	OATS	96	8/15 - 10/15	1" - 2"		
	RYE	140		1" - 2"		

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed Mixtures - Permanent Seeding

- Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Document 342 - Critical Area Planning For special lawn maintenance areas, see Sections IV Soil and V Turfgrass.
- For sites having disturbed areas over 5 acres, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.
- For areas receiving low maintenance, apply uniform fertilizer (46-0-0) at 3 1/2 lbs./1000 sq. ft. (150 lb/acre) in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depth	Fertilizer Rate (lb/1000sf)	Lime Rate
3	TALL FESCUE (90%)	125	3/1 - 5/15	1" - 2"	90 lb/acre (2.0 lb/1000sf)	2 tons/acre (200 lb/1000sf)
	PERENNIAL RYE GRASS (50%)	15	8/15 - 10/15	1" - 2"		
	KENTUCKY BLUEGRASS (5%)	10		1" - 2"		
10	TALL FESCUE (90%)	120	3/1 - 5/15	1" - 2"	90 lb/acre (2.0 lb/1000sf)	2 tons/acre (200 lb/1000sf)
	HAIR FESCUE (50%)	30	8/15 - 10/15	1" - 2"		

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

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

Conditions Where Practice Applies

- This practice is limited to areas having 2:1 or flatter slopes where:
 - The texture of the exposed subsoil material is not adequate to produce vegetative growth.
 - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
 - The original soil to be vegetated contains material toxic to plant growth.
 - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these standards and specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if approved by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
 - For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (in days) to permit dissipation of phytotoxic materials.
 - Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

Topsoil Application

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope sill fence and sediment traps and basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained about 4" - 6" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
 - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted at the time of acquisition of the compost by the Maryland Department of the Environment under COMAR 06.06.06.
 - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
- Composted sludge shall be amended with potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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

ENGINEER'S CERTIFICATE

I certify that this Plan for Erosion And Sediment Control was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer in the State of Maryland. That it was prepared in accordance with the standards and specifications of the Howard Soil Conservation District.

Signature: *[Signature]* Date: **9-30-04**

DEVELOPER'S CERTIFICATE

I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources 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 Or Their Authorized Agents, As Are Deemed Necessary.

Signature of Developer: *[Signature]* Date: **9-30-04**

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

Signature: *[Signature]* Date: **10/25/04**

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Signature: *[Signature]* Date: **10/25/04**

Approved: Department Of Planning And Zoning

Signature: *[Signature]* Date: **11/16/04**

Chief, Division Of Land Development

Signature: *[Signature]* Date: **11/16/04**

Chief, Development Engineering Division

Signature: *[Signature]* Date: **11-3-04**

Approved: Howard County Department Of Public Works

Signature: *[Signature]* Date: **11-3-04**

Chief, Bureau Of Highways

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (315-1095).
- 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 MD. STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.
- 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, DICES, 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 CONTROL STRUCTURES MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1998 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (ISC, 50, 50) (ISC, 54), TEMPORARY SEEDING (ISC, 50), AND MULCHING (ISC, 92). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER 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.
- SITE ANALYSIS:

TOTAL AREA OF SITE	8.334 ACRES
AREA DISTURBED	4.930 ACRES
AREA TO BE ROOFED OR PAVED	1.74 ACRES
AREA TO BE VEGETATIVELY STABILIZED	3.24 ACRES
TOTAL CUT	10.500 CU.YDS.
TOTAL FILL	5.600 CU.YDS.
- OFFSITE WASTE/BORROW AREA LOCATION (TO BE DETERMINED IN FIELD)
- 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 DHEMD IS NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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 APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

WESLEY WOODS

SECTION TWO

Lots 44 Thru 63 and Open Space Lot 64

(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL BY WESLEY WOODS, SECTION ONE, PLAT NO. 14926)

ZONED R-12

TAX MAP NO. 3B PARCEL NO. 152 GRID NO. 4

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: SEPTEMBER 30, 2004

SHEET 7 OF 13

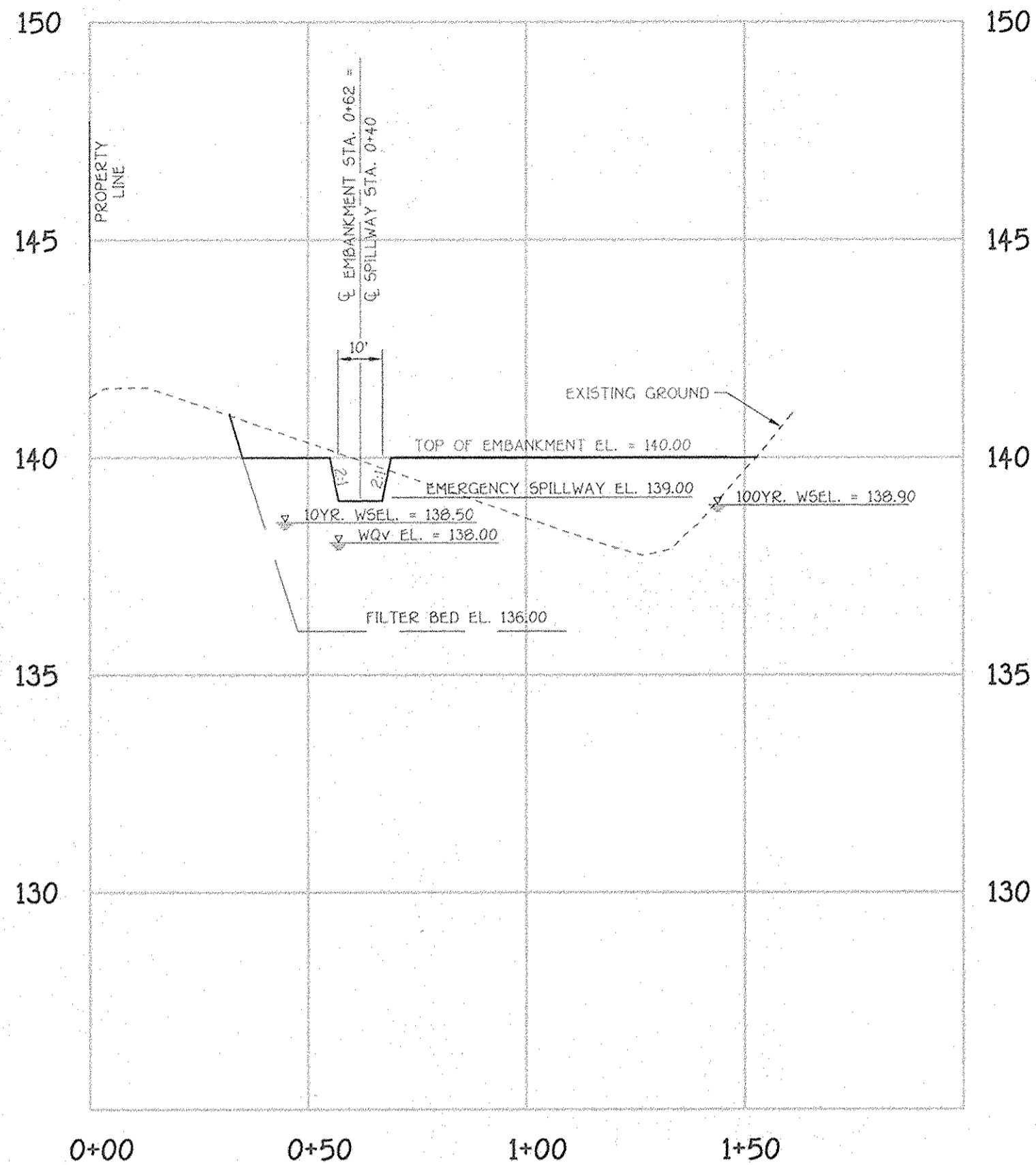
F 04-54

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 1072 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 484-2855



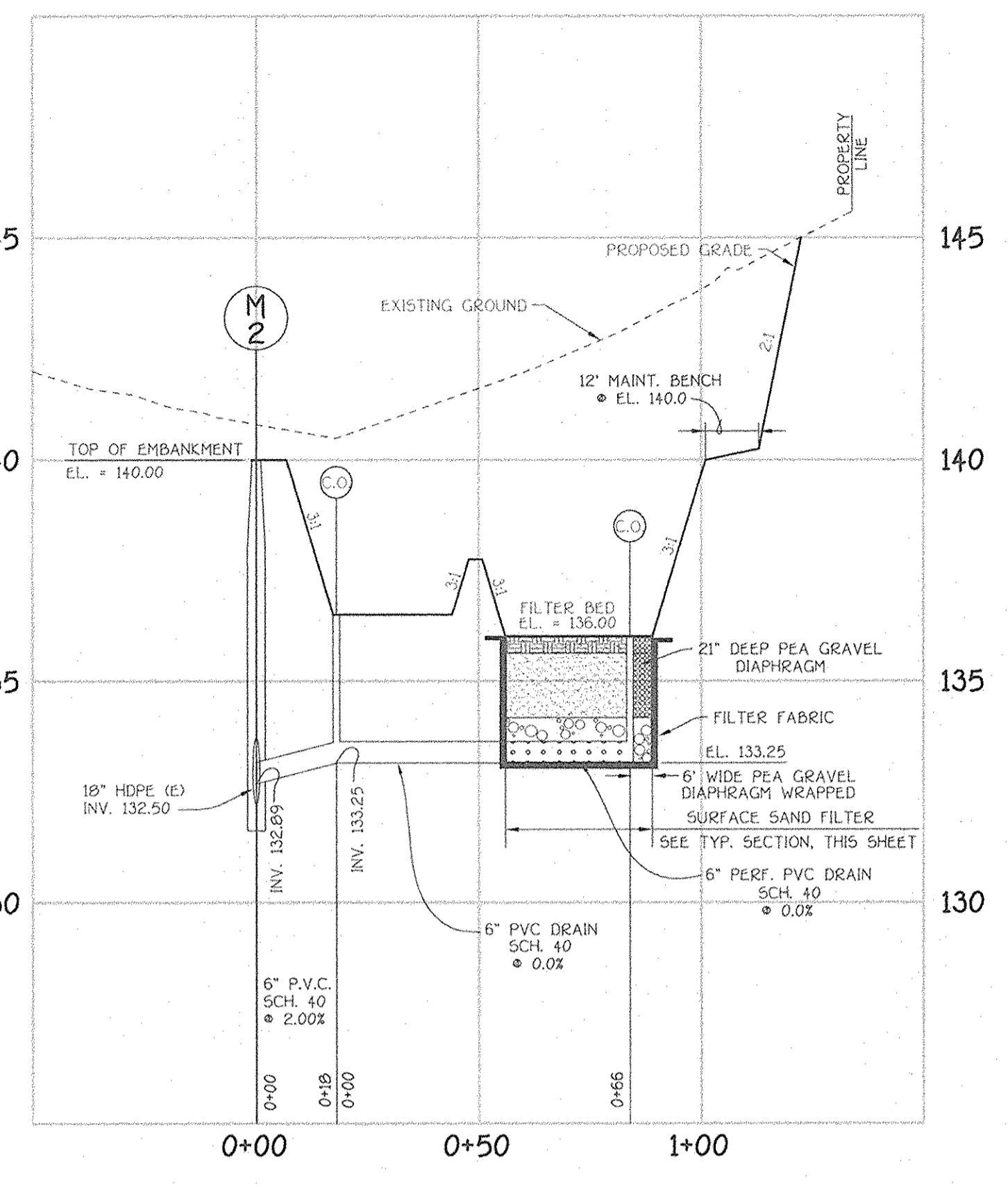
OWNER / DEVELOPER

C & C DEVELOPMENT, L.L.C.
10716 BALTIMORE NATIONAL PIKE
SUITE 207-A
ELLCOTT CITY, MD 21042
(410) 203-9900



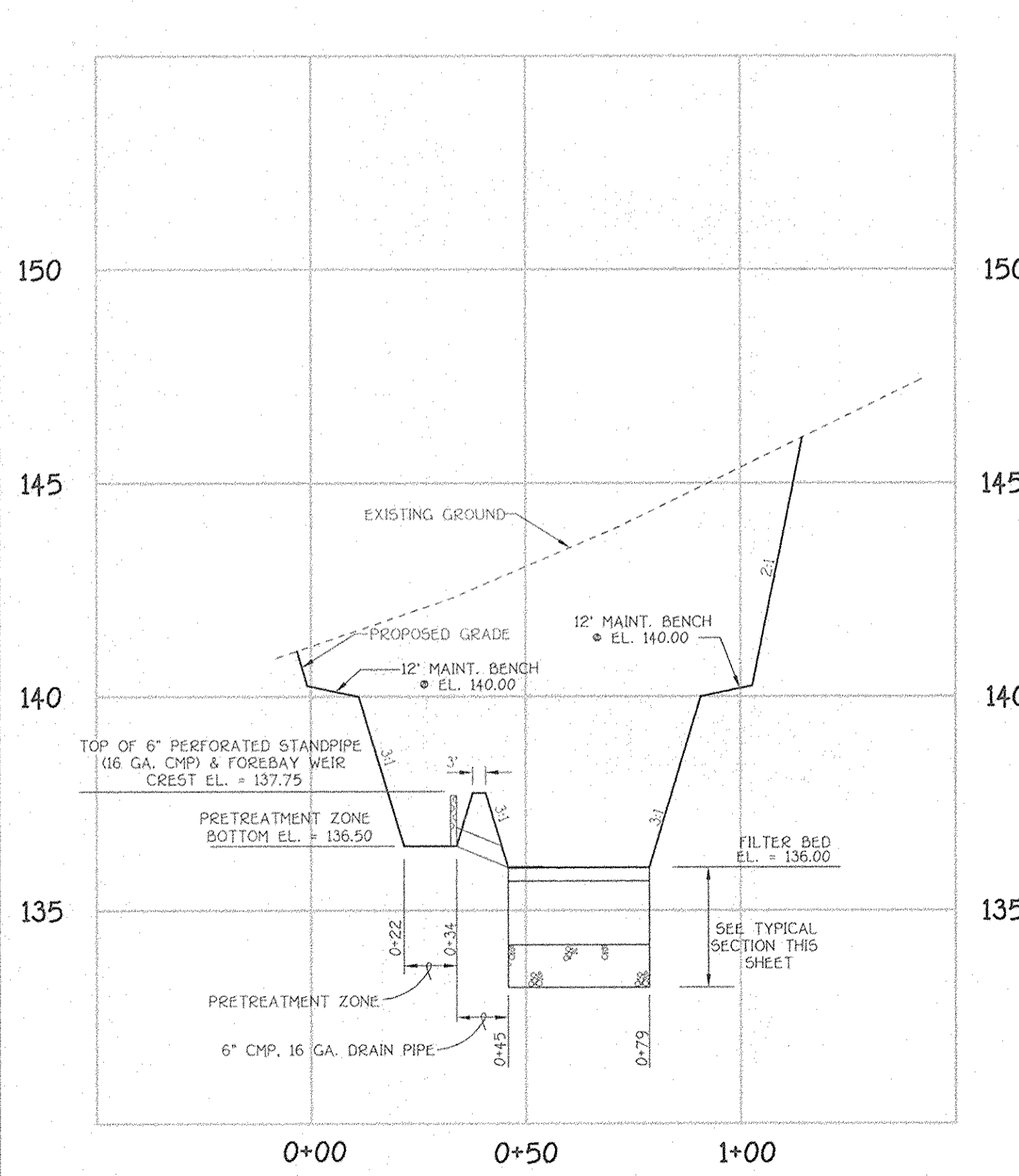
S.W.M. FACILITY PROFILE ALONG EMBANKMENT

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



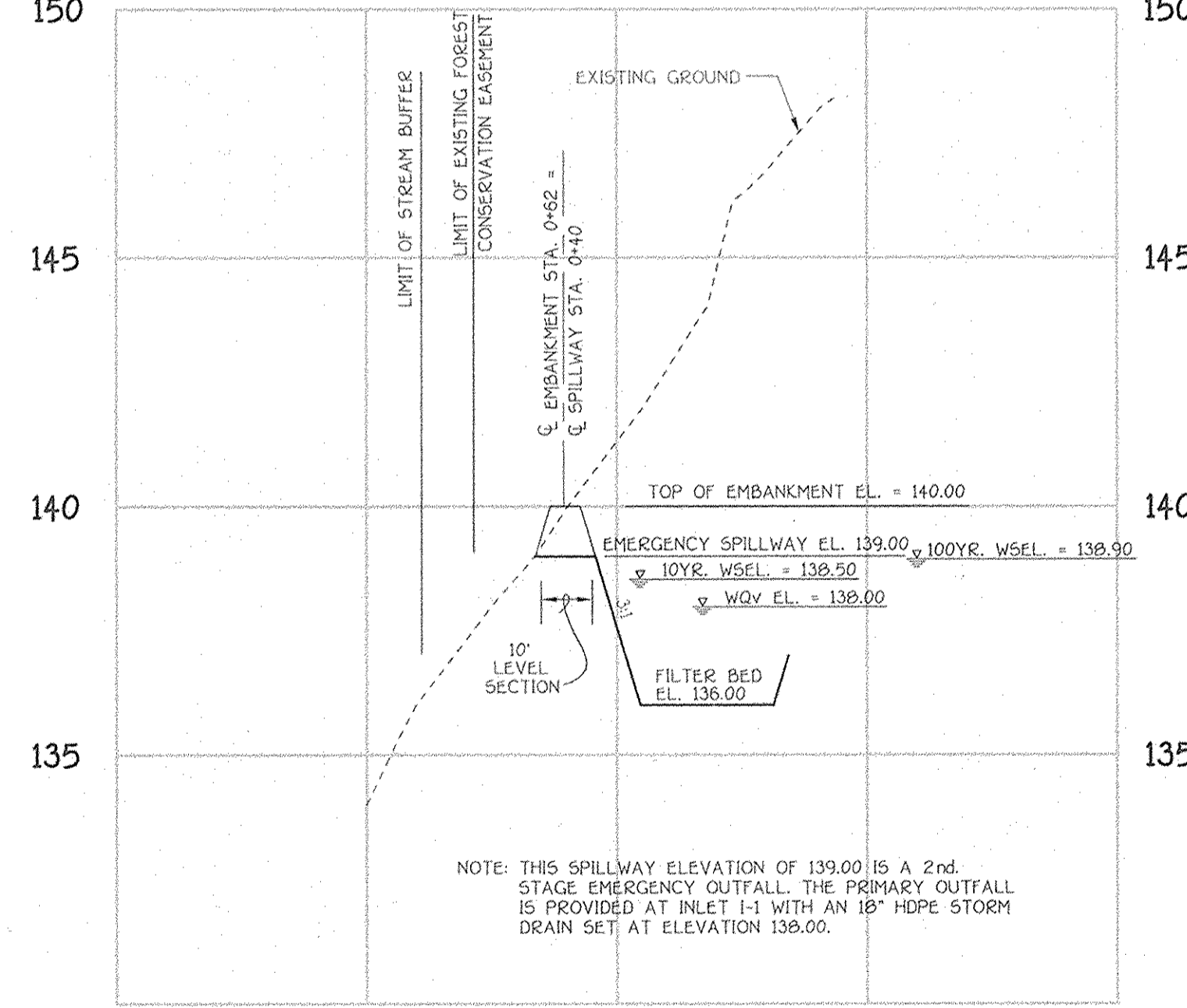
S.W.M. FACILITY PROFILE ALONG SECTION 'B-B'

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



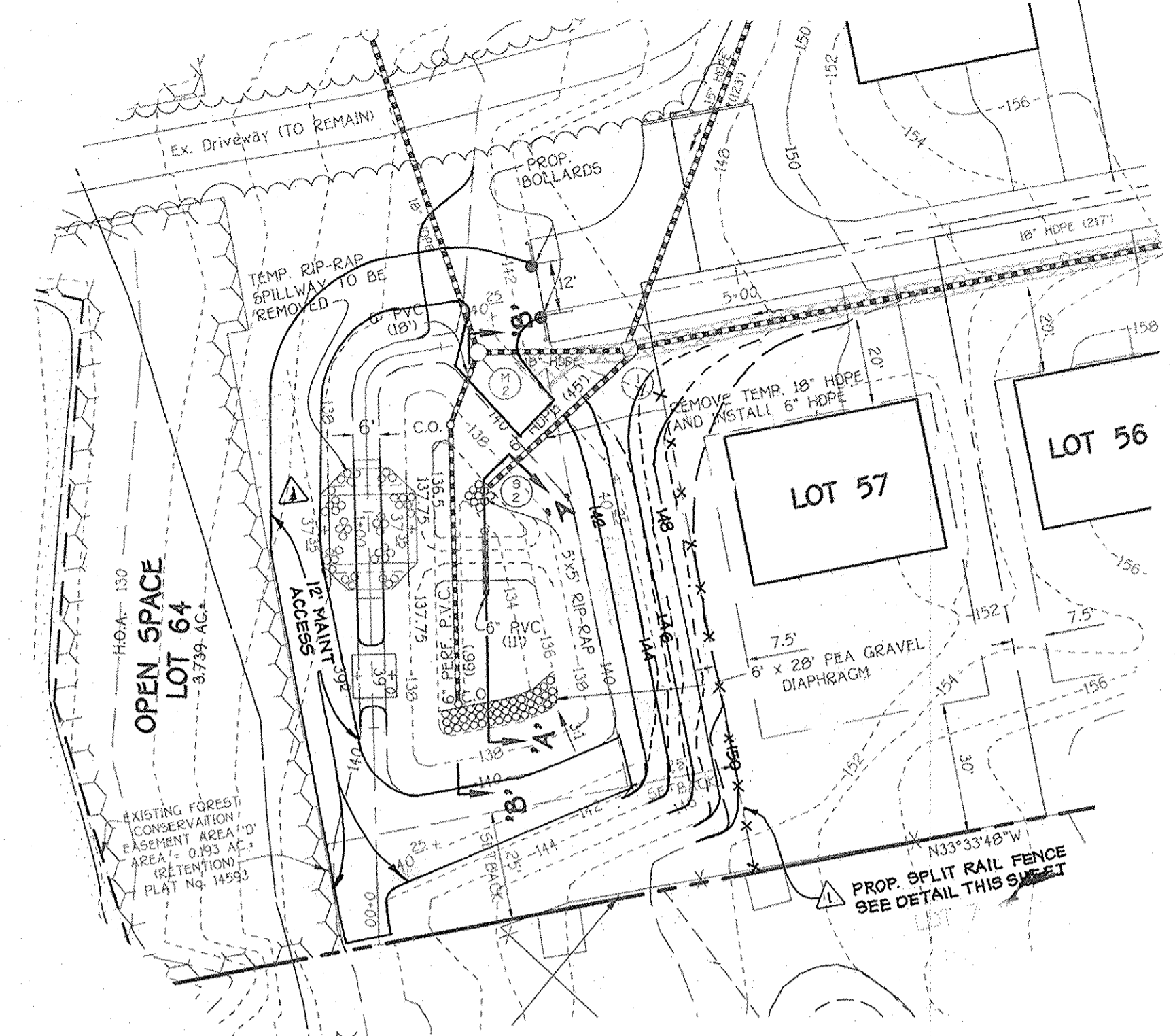
SECTION 'A-A' THRU S.W.M. FACILITY

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



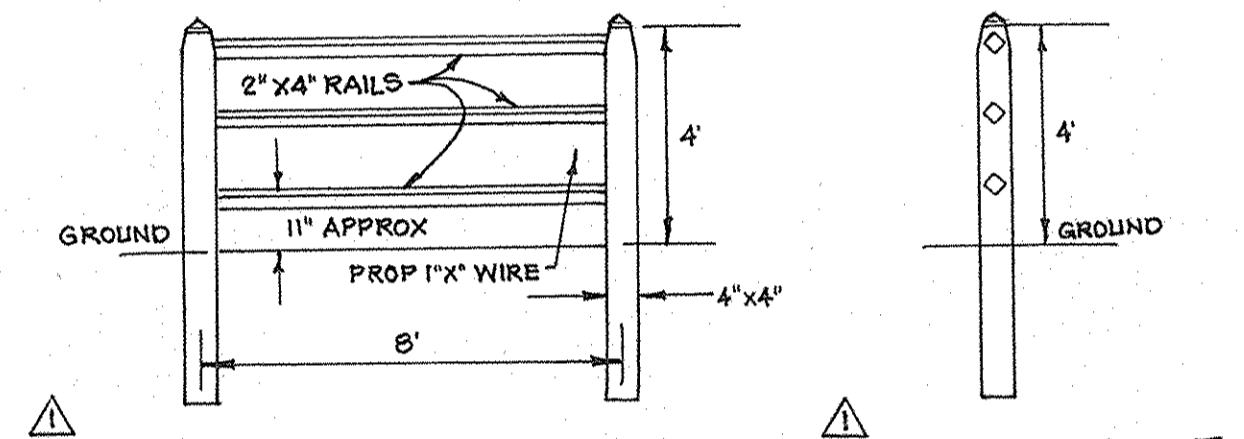
EMERGENCY SPILLWAY PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



PLAN

SCALE: 1" = 30'

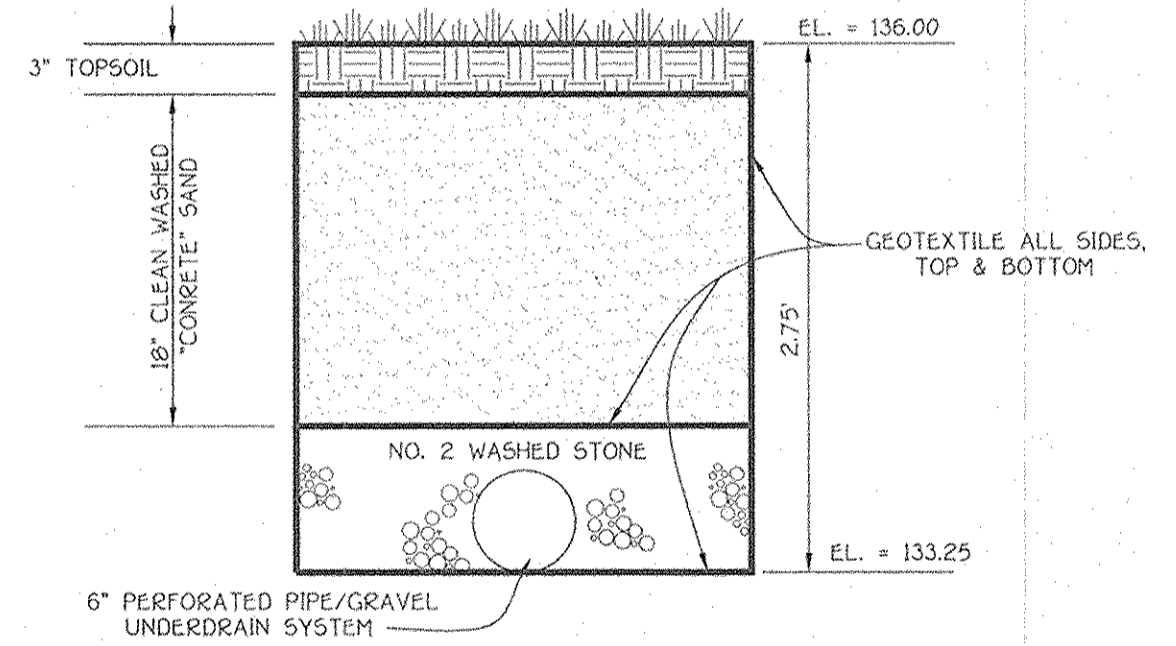


SPLIT RAIL FENCE DETAIL

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS

1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. THE OWNER MUST FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID.
8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



TYPICAL SECTION - SURFACE SAND FILTER

SCALE: 1" = 1'

SWM SUMMARY TABLE

TYPE OF REQUIREMENT	VOLUME REQUIRED	VOLUME PROVIDED AND NOTES
Revol	Recharge Vol. for Area B)	0.0945 Acres or 0.0081 acre-feet
WQvol	Study Line *2	0.0081 acres w/ X Area Method by use of Rain Gardens
Cpvol	Study Line *2	0.086 acre-feet 0.086 ac. Ft. via Rain Gardens
	Study Line *2	N/A
		<2.0 cfs

NOTE: Both Cp (Overbank Flood Protection or 10-year storm) and Cf (Extreme Flood Volumes of 100-year storm) are not required for this since this watershed area is not classified as one of the sensitive watershed areas for Howard County.

ENGINEER'S CERTIFICATE
This Plan For Erosion And Sediment Control...
Date: 9-30-04

DEVELOPER'S CERTIFICATE
I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control...
Signature Of Developer: [Signature] Date: 9-30-04

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.
Signature: [Signature] Date: 10/25/04

U.S.D.A. - Natural Resources Conservation Service
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
Signature: [Signature] Date: 10/25/04

District Howard Soil Conservation Dist.
Approved: Department Of Planning And Zoning
Signature: [Signature] Date: 11/19/04

Chief, Division Of Land Development
Signature: [Signature] Date: 11/16/04

Chief, Development Engineering Division
Approved: Howard County Department Of Public Works
Signature: N/A Date: [Blank]

Chief, Bureau Of Highways

Approved: Department Of Public Works
William F. Mohr
 Chief, Bureau Of Highways
 Date: 11-3-04

Approved: Department Of Planning And Zoning
Andy Farnham
 Chief, Division Of Land Development
 Date: 11/18/04

Michael J. ...
 Chief, Development Engineering Division
 Date: 11/16/04

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BUSH (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED	NUMBER OF PLANTS PROVIDED
						SHADE TREES	EVERGREEN TREES
P-1	ADJACENT TO PERIMETER	A	398.21'	NO	NO	7	0
P-2	ADJACENT TO PERIMETER	A	889.00'	YES, 142' OF EX. WOODS	NO	12	0
P-3	ADJACENT TO ROADWAY	B	262.06'	YES, 262' OF EX. WOODS	NO	0	0
P-4	REFUSE/RECYCLE PAD	E	16.00'	NO	NO	1	0

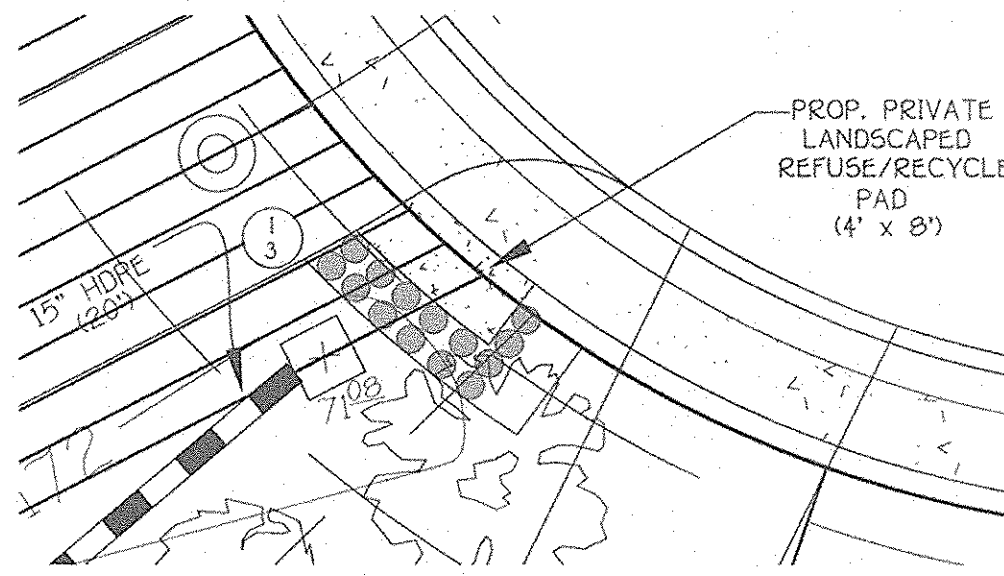
SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	D-1, 121'	D-2, 96'	D-3, 121'	D-4, 96'
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	YES 100% (FCE)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	NO
NUMBER OF TREES REQUIRED:				
SHADE TREES	2	2	0	2
EVERGREEN TREES	3	2	0	2
NUMBER OF TREES PROVIDED:				
SHADE TREES	2	2	0	2
EVERGREEN TREES	3	2	0	2

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
19	(Symbol)	ACEF RUBRUM OCTOBER GLORY OCTOBER RED MAPLE	2 1/2" - 3" CALIPER FULL CROWN B/B
6	(Symbol)	ACER SACCHARINUM GREEN MOUNTAIN GREEN MOUNTAIN MAPLE	2 1/2" - 3" CALIPER FULL CROWN B/B
26	(Symbol)	PLATANUS OCCIDENTALIS "BLOODGOOD" LONDON PLANT TREE	2 1/2" - 3" CAL. 1/2" APART ON 30' ACCESS EASEMENT (CLEMENS LANE)
7	(Symbol)	PINUS STROBUS EASTERN WHITE PINE	6" - 8" HT.
14	(Symbol)	ARDELIA X GRANDIFLORA GLOBBY ARDELIA AZALEA "BLANKS PINK"	18" - 24" SP.

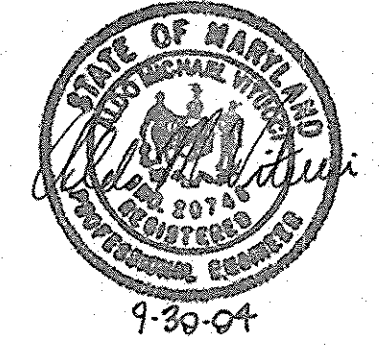
"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 18.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL." FINANCIAL SURETY FOR THE 32 REQUIRED LANDSCAPE TREES, 26 REQUIRED STREET TREES ALONG CLEMENS LANE AND 14 SHRUBS HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$16,770.00



DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA (Ac.)	"C" FACTOR	ZONED	% IMP.
I-1	A	0.76	0.44	R-12	33.8%
I-2	B	0.71	0.40	R-12	24.8%
I-3	C	0.22	0.45	R-12	25.0%
I-4	D	0.34	0.36	R-12	21.9%
EX. I-8	E	1.14		R-12	
EX. I-9	F	0.91		R-12	

NUMBER	DATE	DESCRIPTION
1	10/10/07	REVISE GRADING ON SWM POND TO TIE INTO PL 4 REVISE MAINT BENCH, ALSO PROVIDE SPLIT RAIL FENCE ON PROP. LINE



No.	Revision	Date
1	Added MH A	5-16-05
2	Revised location of SHC to serve Toomey Prop. elm 20 Private SHC easmt, added 10' Public SHC easmt, moved 20' Private D&U easmt 2' further away from prop house on Lot 58.	3-14-06

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 18272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 463-2995

OWNER / DEVELOPER
 C & C DEVELOPMENT, L.L.C.
 10176 BALTIMORE NATIONAL PIKE
 SUITE 207-A
 ELLICOTT CITY, MD. 21042
 (410) 203-9900

PLAN
 SCALE: 1" = 50'

NOTE: THIS SHEET IS FOR DRAINAGE AREA AND LANDSCAPING INFORMATION ONLY.

STORM DRAIN DRAINAGE AREA MAP AND LANDSCAPE PLAN
WESLEY WOODS
 SECTION TWO
 Lots 44 Thru 63 and Open Space Lot 64
 (A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'D', WESLEY WOODS, SECTION ONE, PLAT NO. 14928.)
 ZONED R-12
 TAX MAP NO. 38 PARCEL NO. 162 GRID NO. 4
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER 30, 2004
 SHEET 9 OF 13

Cindy Hannah
Chief, Division Of Land Development
John P. Canoles
Chief, Development Engineering Division

11/18/14
Date
11/16/14
Date

**FOREST CONSERVATION WORKSHEET
VERSION 1.0**

BASIC SITE DATA:

A. TOTAL TRACT AREA.....	0.33
B. AREA WITHIN 100 YEAR FLOODPLAIN.....	0.50
C. AREA OF EXISTING FOREST CONSERVATION.....	1.75
D. NET TRACT AREA.....	6.08

LAND USE CATEGORY: HDR

INFORMATION FOR CALCULATIONS:

E. AFFORESTATION THRESHOLD.....	15% x D =	0.91
F. FOREST CONSERVATION THRESHOLD.....	20% x D =	1.22

EXISTING FOREST COVER:

G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN).....	5.30
H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD.....	4.39
I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD.....	4.08

BREAK EVEN POINT:

J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION.....	2.03
K. CLEARING PERMITTED WITHOUT MITIGATION.....	3.27

PROPOSED FOREST CLEARING:

L. TOTAL AREA OF FOREST TO BE CLEARED.....	4.70	CANNOT EXCEED EXISTING
M. TOTAL AREA OF FOREST TO BE RETAINED (FCE NO. 1).....	0.60	

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD.....	1.02
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD.....	1.24
O. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD.....	0.0
R. TOTAL REFORESTATION REQUIRED.....	2.26
S. TOTAL AFFORESTATION REQUIRED.....	0.0
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED.....	2.26

**FOREST CONSERVATION EASEMENT NO. 1
(0.6 AC. RETENTION)**

NOTE: SURETY IN THE AMOUNT OF \$5,227.20 SHALL BE POSTED AS A PART OF THE DEVELOPER'S AGREEMENT FOR 0.60 AC. OR 26,136 SQ.FT. OF FCE NO. 1 (RETENTION).

FOREST SIGNAGE

FOREST CONSERVATION EASEMENT

UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.

TREES FOR YOUR FUTURE

15' MINIMUM

11' MINIMUM

▲ - STANDARD SYMBOL

FCP NOTES

- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
- Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
- Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
- There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
- No stockpiles, parking areas, equipment clearing areas, etc. shall occur within areas designated as Forest Conservation Easements.
- Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 10 feet of the proposed limits of disturbance.
- Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.
- All FCA calculations shown to the nearest 0.1 acre as per the FCA requirements.
- Planting plans, signage, fencing and details for Forest Conservation Easement reforestation areas will be provided on the Forest Conservation Plan.

NOTE:

THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS PROJECT HAS BEEN FULFILLED BY THE ON-SITE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 0.60 ACRES. THE REMAINING FOREST CONSERVATION OBLIGATION OF 2.26 AC. WILL BE PROVIDED BY OFF-SITE REFORESTATION LOCATED ON THE TALLEY PROPERTY AT 1525 DAISY ROAD IN WOODBINE, MARYLAND (TAX MAP NO. B, GRID NO. 13, PARCEL NO. 34).

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 3072 BALTIMORE NATIONAL PIKE
ELICOTT CITY, MARYLAND 21114
410.481.2895

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD06100448
John P. Canoles
JOHN P. CANOLES

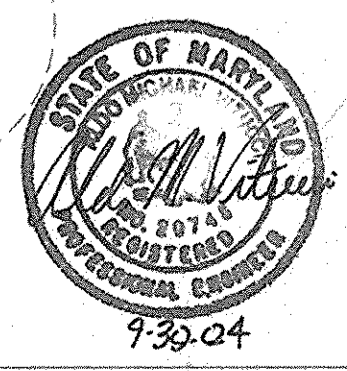
No.	Revision	Date
1	Added MH 4	5-16-05
2	Revised location of SWP to serve Toomey Prop. elim 10' Private SWP easmt, added 10' Pub SWP easmt moved 10' Dqul easmt away from prop house lot 24	9-14-08

OWNER / DEVELOPER
C & C DEVELOPMENT, L.L.C.
10776 BALTIMORE NATIONAL PIKE
SUITE 207-A
ELICOTT CITY, MD. 21042
(410) 203-9900

PLAN

SCALE: 1" = 50'

NUMBER	DATE	DESCRIPTION
1	10/10/07	REVISE GRADING ON SWM POND TO TIE INTO PL. & REVISE MAINT. BENCH, ALSO PROVIDE SPLIT RAIL FENCE ON PROP. LINE.
REVISION BLOCK		

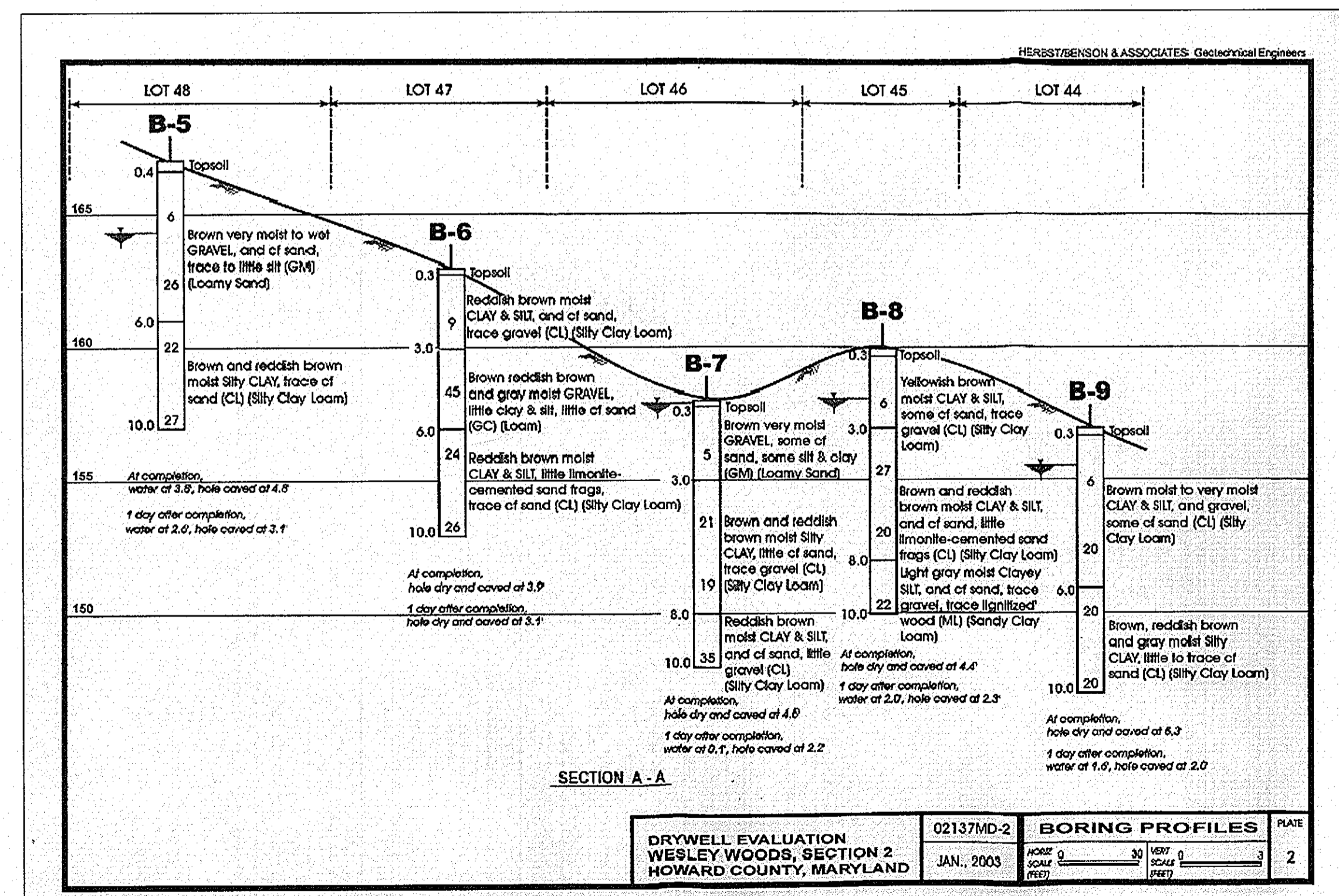
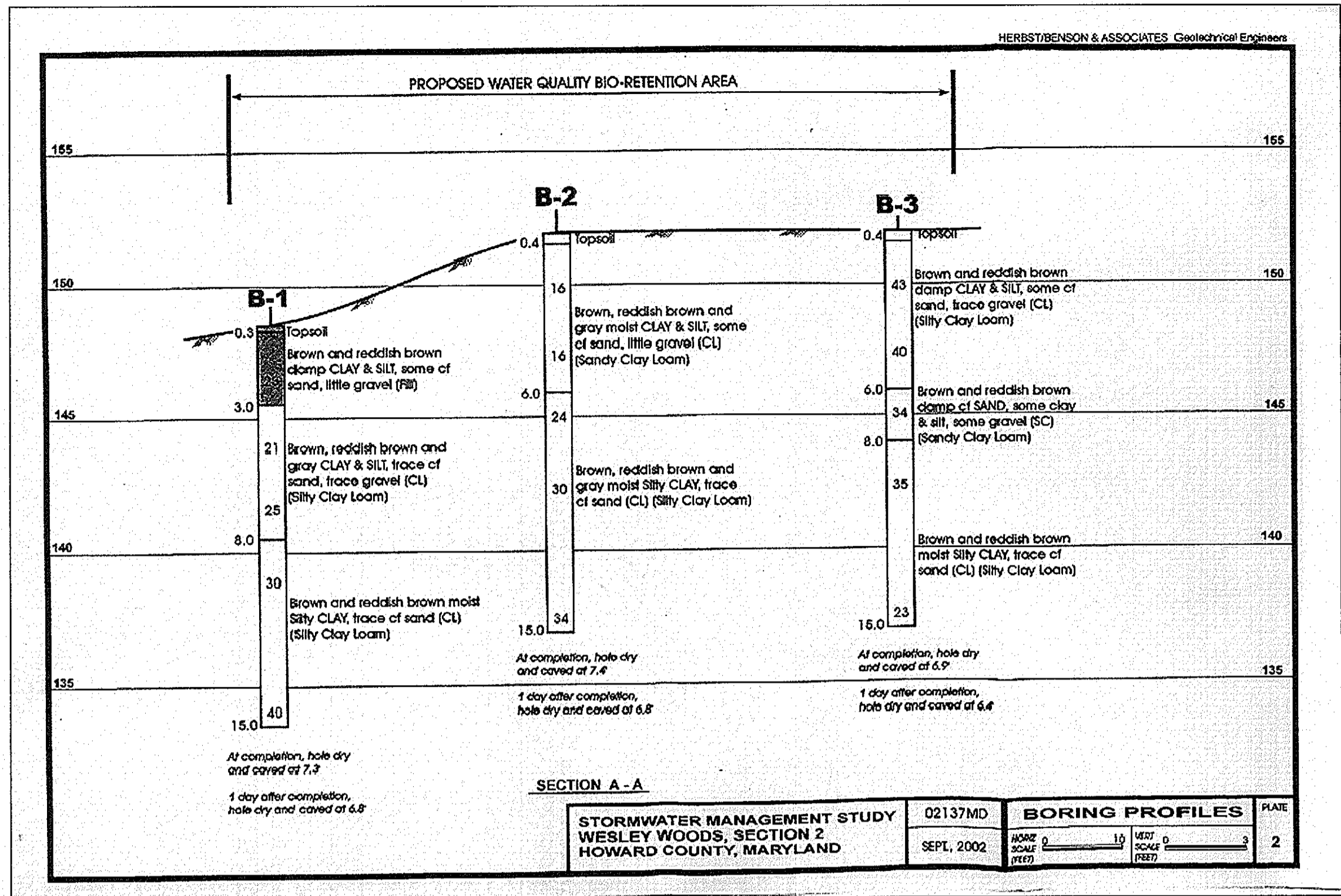


**ON-SITE FOREST CONSERVATION PLAN
WESLEY WOODS
SECTION TWO
Lots 44 Thru 63 and Open Space Lot 64
(A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B', WESLEY WOODS, SECTION ONE, PLAT NO. 14926)**
ZONED R-12
TAX MAP NO. 30 PARCEL NO. 162 GRID NO. 4
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: SEPTEMBER 30, 2004
SHEET 10 OF 13

APPROVED: DEPARTMENT OF PUBLIC WORKS
William R. Mahan 11-3-04
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Andy Harms 11/15/04
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Dammann 11/16/04
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



TEST PIT DATA			
TEST PIT NO.	DEPTH FROM	(FT.) TO	SOIL DESCRIPTIONS AND REMARKS
B-10	0	0.5	TOPSOIL
	0.5	2.5	BROWN VERY MOIST SILT & CLAY, SOME CF SAND, TRACE GRAVEL (ML) LOAM
	2.5	7.0	BROWN, REDDISH BROWN AND GRAY MOIST SILTY CLAY, LITTLE CF SAND (CL) (SILTY CLAY LOAM)
	7.0	8.0	REDDISH BROWN VERY MOIST CF SAND, AND CLAY & SILT, SOME GRAVEL (SM) (SILT LOAM) HAND AUGER REFUSAL AT 8.0'
AT COMPLETION, HOLE DRY AND CAVED AT 8.0' ONE DAY AFTER COMPLETION, WATER AT 1.0' CAVED AT 6.5'			
B-11	0	0.3	TOPSOIL
	0.3	4.5	BROWN VERY MOIST TO MOIST CLAY & SILT, SOME CF SAND, LITTLE GRAVEL (CL) (CLAY LOAM)
	4.5	6.0	REDDISH BROWN MOIST CLAY & SILT, SOME OF SAND, LITTLE LIMONITE-CEMENTED SAND FRAGS (CL) (CLAY LOAM)
	6.0	8.0	TAN MOIST MF SAND, TRACE SILT (SP-SM) (SAND)
AT COMPLETION, HOLE DRY AND CAVED AT 8.0' 1 DAY AFTER COMPLETION, HOLE DRY AND CAVED AT 8.0'			

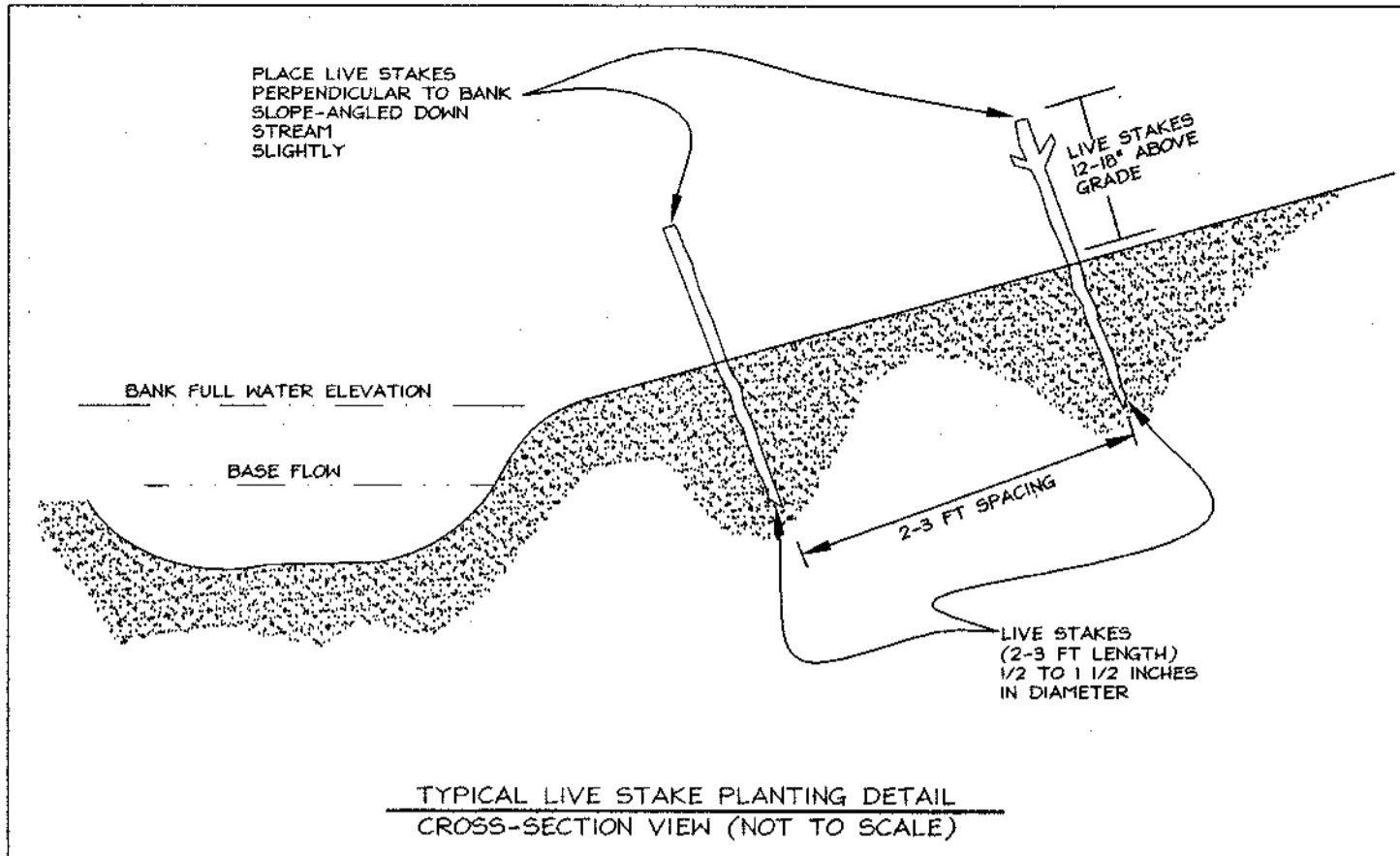
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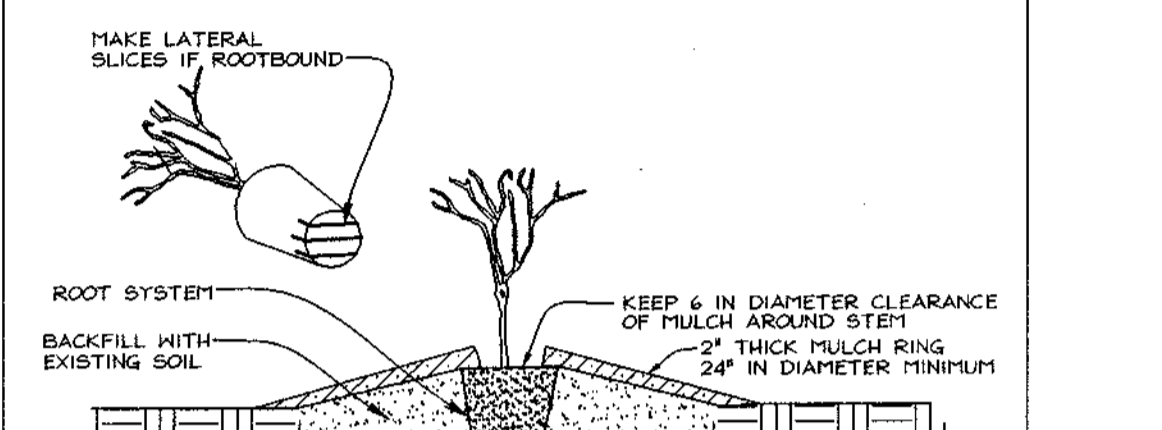
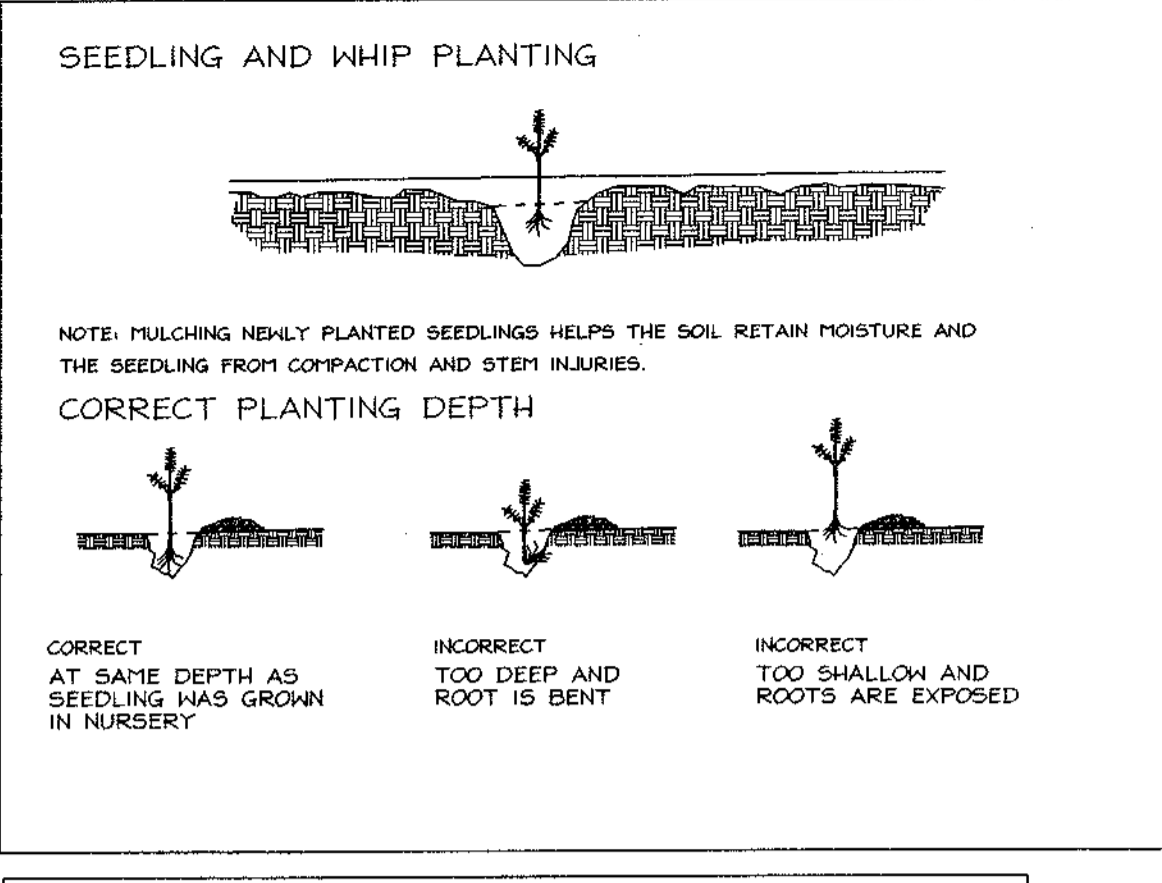
SOIL BORINGS
WESLEY WOODS
 SECTION TWO
 Lots 44 Thru 63 and Open Space Lot 64
 (A RESUBDIVISION OF NON-BUILDABLE BULK PARCEL 'B', WESLEY WOODS,
 SECTION ONE, PLAT No. 14926)
 ZONED R-12
 TAX MAP NO. 38 PARCEL NO. 162 GRID NO. 4
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: SEPTEMBER 30, 2004
 SHEET 11 OF 13 F 04-54

KEY	TYPE OF COMMUNITY	SOIL INFORMATION		EXISTING VEGETATION (Type and approx. %)	STAND CHARACTERISTICS			FOREST AREA IN SENSITIVE ENVIRONMENTS		
		TYPICAL FOREST COVER	WOODLAND SUITABILITY INDEX		SIZE AVG. DIAM.	AGE	GENERAL CONDITIONS			
F-1	Upland Hardwoods	M1B2	Mixed upland Hardwoods	65-74 65-74 75-84	fair fair good	Black oak 60% White oak 20% Mockernut Hickory 20%	12-18 10-16 6-12	48-72 50-80 36-72	Poor Heavy understory grazing	1.2 Ac. Steep slopes 15-25%
OF-1	Open Field	2	Mixed upland Hardwoods	75-84 65-74	good good		N/A	N/A	N/A	N/A
C-1	Crop Field	2	Mixed upland Hardwoods	75-84 65-74	good good		N/A	N/A	N/A	N/A
C-2	Crop Field	32.21	Mixed upland Hardwoods	75-84 65-74	good good		N/A	N/A	N/A	N/A
L-1	Laun (Farm Stead)	2.86	Mixed upland Hardwoods	65-74	fair		N/A	N/A	N/A	N/A
L-2	Laun	1.62	Mixed upland Hardwoods	65-74	fair		N/A	N/A	N/A	N/A



SPECIFICATIONS FOR LIVE STAKING

- All cuttings shall be freshly cut from live woody plants of the species indicated, such as willow, alder, and shrub dogwood, during the dormant season.
- Basal end of stake should be cut on an angle with the top cut square.
- Prepare cuttings from dormant 5 in. to 2 in. diameter stock cut in 18 in. to 3 feet long stakes.
- Keep cuttings moist at all times.
- Install stakes with deadblow hammer, angled downstream, on 3.0 ft. centers.
- Replace live stakes that split or become mushroomed.
- Install stakes with buds pointing upwards.



Reforestation Area Planting Notes

- Initial planting inspection and certification required. Planting contractor to notify ERI qualified professionals 24 hours in advance of planting.
- Reforestation areas may be planted as soon as reasonable to do so. Late winter-early spring plantings are preferred. Earliest planting dates will vary from year to year but planting may generally begin as soon as the ground is no longer frozen. Alternate planting dates may be considered as conditions warrant.
- Soil amendments and fertilization recommendations will be made based upon the results of soil analysis for nitrogen, phosphorus, potassium, organic matter content and pH. If required, fertilizer will be provided using a slow release, soluble 16-8-16 analysis designed to last 5-8 years contained in polyethylene perforated bags such as manufactured by ADCO Fertilizers, P.O. Box 310 Hollis, N.Y. 11423 or approved equivalent.
- Plant materials shall be planted in accordance with the planting diagram, planting details and planting schedule.
- Plant stock must be protected from desiccation at all times prior to planting. Materials held for planting shall be moistened and placed in cool shaded areas until ready for placement.
- Planting materials shall be nursery grown and inspected prior to planting. Plants not conforming to the American Standards for Nursery Stock specifications for size, form, vigor, or roots, or due to trunk wounds, breakage, desiccation, insect or disease must be replaced.
- Newly planted trees may require watering at least once per week during the first growing season depending on rainfall in order to get established. The initial watering operation should allow for watering during installation to completely soak backfill materials.
- Mulch shall be applied in accordance with the diagram provided and shall consist of composted, shredded hardwood bark mulch, free of wood alcohol.
- Planting holes should be excavated to a minimum diameter of 2.5 to 3 times the diameter of the root ball or container. Mechanical auguring is preferred with scarification of the sides of each hole.
- All nursery stock may be sprayed with deer repellent containing Bitrex such as Repellex(TM). All nursery stock to be grown with deer repellent tablets in growing medium, such as Repellex Tablets.

Forest Stand Narrative

F-1 This forest stand is 4.99 Ac. in size and contains steep slopes. The canopy is dominated by black oak, Quercus velutina, white oak, Quercus alba and mockernut hickory, Carya tomentosa. The area is currently grazed and the understory is sparse.

L-1 This 2.86 Ac. area surrounds an existing house and various farm out buildings. The area contains lawn and ornamental tree plantings. Its environmentally sensitive areas are covered by L-1.

L-2 This 1.62 Ac. area surrounds an existing house located on the south west corner of the property. The area contains lawn and various ornamental tree plantings. The area contains no environmentally sensitive areas.

C-1 This 27.16 Ac. crop area is currently in active crop production. The area contains environmentally sensitive areas.

C-2 This 32.21 Ac. crop area is currently in active crop production. The area contains environmentally sensitive areas including streams and riparian buffers.

OF-1 This 4.01 Ac. open field area contains grazing pastures and open field. The area contains wetlands, streams and associated buffers.

Planting Area Description
The proposed 2.26 Ac. planting area is proposed entirely within an intermittent stream buffer. The current land use is in row crop production, making it an ideal area to plant and provide a forested stream buffer.

Planting will utilize a variety of sizes and species as shown in the proposed planting schedule. Live stake plantings (equivalent to bank root seedling) will occur along the stream banks. The larger stock will be placed further inland. The entire area will be stabilized with the described seed mix cover crop. The planting as specified will more than satisfy the requirements for the project.

FOREST CONSERVATION EASEMENT TABLE

EASEMENT	TYPE	AREA (ACRES)
Reforestation Planting	Mixed Zone 1 & 2	2.26
TOTAL		2.26

Easement 1: PLANTING AREA: 2.26 Ac.

Qty	Botanical Name	Common Name	Size	Credit/Plant	Total Credit
1	Acer rubrum	Red Maple	3" cal.	435.6	435.6
25	Acer rubrum	Red Maple	1" cal.	217.8	5445
20	Amelanchier canadensis	Serviceberry	2-3' ht.	125.0	2500
1	Betula nigra	River Birch	2" cal.	435.6	435.6
3	Betula nigra	River Birch	1" cal.	217.8	653.4
25	Carpinus caroliniana	American Hornbeam	1" cal.	217.8	5445
50	Cercis canadensis	Redbud	1" cal.	217.8	10890
2	Fagus grandifolia	American Beech	2" cal.	435.6	871.2
25	Fagus grandifolia	American Beech	1" cal.	217.8	5445
25	Fraxinus pennsylvanica	Green Ash	1" cal.	217.8	5445
13	Juniperus virginiana	Eastern Redcedar	3' ht.	125.0	1625
25	Liquidambar styraciflua	Sweetgum	1" cal.	217.8	5445
2	Liriodendron tulipifera	Tulip Poplar	2" cal.	435.6	871.2
12	Magnolia virginiana	Sweetbay Magnolia	1" cal.	217.8	2613.6
25	Nyssa sylvatica	Black Gum	1" cal.	217.8	5445
13	Pinus taeda	Loblolly Pine	1" cal.	217.8	2831.4
50	Platanus occidentalis	Sycamore	1" cal.	217.8	10890
25	Quercus alba	White Oak	1" cal.	217.8	5445
1	Quercus borealis	Red Oak	3" cal.	435.6	435.6
1	Quercus palustris	Pin Oak	3" cal.	435.6	435.6
25	Quercus phellos	Willow Oak	1" cal.	217.8	5445
20	Aronia melanocarpa	Chokeberry	3-4' ht.	62	1240
10	Cephalanthus occidentalis	Buttonbush	2-3' ht.	62	620
44	Cornus sericea	Redosier Dogwood	3' ht.	62	2728
22	Ilex glabra	Inkberry	2-3' ht.	62	1364
24	Ilex verticillata	Winterberry	2-3' ht.	62	1488
10	Lindera benzoin	Spicebush	2-3' ht.	62	620
30	Viburnum dentatum	Arrowwood	2-3' ht.	62	1860
3	Viburnum lentago	Nannyberry	2-3' ht.	62	186
30	Viburnum prunifolium	Blackhaw	2-3' ht.	62	1860
20	Viburnum trilobum	Cranberrybush	2-3' ht.	62	1240
75	Viburnum dentatum	Arrowwood	live stake	62	4650
30	Salix discolor	Pussy Willow	live stake	62	1860

687 Total Plantings 98,764.2 s.f. = 2.27 Ac.

Native Seed Mix

Percentage	Botanical Name	Common Name
25%	Agrostis alba	Redtop
25%	Carex vulpinoideis	Fox Sedge
25%	Alopecurus pratensis	Meadow Fox Tail
20%	Andropogon scoparius	Little Bluestem
5%	Chrysanthemum leucanthemum	Ox Eye Daisy

Reforestation Area Monitoring Notes

- Monthly visits during the first growing season are to assess the success of the plantings and to determine if supplemental watering, pest control, invasive plant management, mowing or other actions are necessary. Early spring visits will document winter kill and autumn visits will document summer kill.
- The minimum survival rate shall be 75% of the total number of trees planted per acre at the end of the two year maintenance period. Wild tree seedlings from natural regeneration on the planting site may be counted up to 50% toward the total survival number if they are healthy native species at least 12 inches tall.
- Survival will be determined by a stratified random sample of the plantings. The species composition of the sample population should be proportionate to the amount of each species in the entire planting to be sampled.
- Effective monitoring will assess plant survivability during the first growing season and make recommendations for reinforcement planting if required at that time.

Forest Tree Protection and Management Notes

- Any significant changes made to the Forest Conservation Plan shall be made with the prior approval of the Howard County Dept. of Planning and Zoning.
- Forest protection and management to be in accordance with a forest management plan. The plan shall be prepared by a MID licensed forester to facilitate the landowner's management objectives, such as wildlife management, water quality, aesthetics, forest products, etc.
- Future forest harvests may be conducted under a Howard County approved forest harvest plan, prepared by a MID licensed forester.

Plant Selection and Density Spacing Requirements.

Planting Material Size and Density Spacing: Planting size and density shall be varied with a combination of planting stock, which will be determined at the time of planting. Planting quantity and spacing are based on square footage credit, which varies by material size. A total of 43,560 sq. ft. of planting credit must be fulfilled for each acre planted. This credit can be fulfilled with any combination of material size in accordance with the following chart.

Plant Material Size Table

Material Size	Spacing	TPA	Sq. Ft.	Credit per Plant	Comments
2" caliper trees	20' x 20'	100	400	435.6	B & B
1" caliper trees	15' x 15'	200	225	217.8	B & B
seedlings or whips 1 1/2" x 1 1/2"	8' x 8'	350	125	125	Container 1-3 gal. w/shelters
seedlings or shrubs 8' x 8'	7' x 7'	700	62	62	Bare root

Plant Selection: Within the planting areas, two zones of planting have been identified, based on soil mapping units, typical forest cover type listed, soil moisture regime and slope. Zone 1 consists of upland locations and Zone 2 consists of bottomland flood plain and wetland locations. The composition of the planting in these zones is to be composed of species listed on the planting schedule or substitutes from the species list below, for Zones 1 & 2. Each planting area may contain a combination of 80% over story species and 20% understory species, intermixed evenly through out the planted areas. A minimum of 2 different species must be planted in the overstory and a minimum of two different species must be planted in the understory, within each planting area, to create a multi-species, multi-layers system. A minimum of 5 (five) different species must be used overall.

Zone 1: Bottomland Planting Areas

Overstory Planting Species List

COMMON NAME	SCIENTIFIC NAME
box elder	Acer negundo
red maple	Acer rubrum
green ash	Fraxinus pennsylvanica
black willow	Salix nigra
river birch	Betula nigra
willow oak	Quercus phellos
big tooth aspen	Populus grandidentata
mockernut hickory	Carya tomentosa
pin oak	Quercus palustris
American sycamore	Platanus occidentalis
American elm	Ulmus americana

Understory Planting Species List

COMMON NAME	SCIENTIFIC NAME
maple leaf viburnum	Viburnum acerifolium
southern arrow wood	Viburnum dentatum
smooth sumac	Rhus glabra
red mulberry	Morus rubra
sweet pepper bush	Chethra alnifolia
smooth alder	Ainus serrulata
American hornbeam	Carpinus caroliniana
red chokeberry	Aronia arbutifolia
black chokeberry	Aronia melanocarpa

Zone 2: Upland Planting Areas

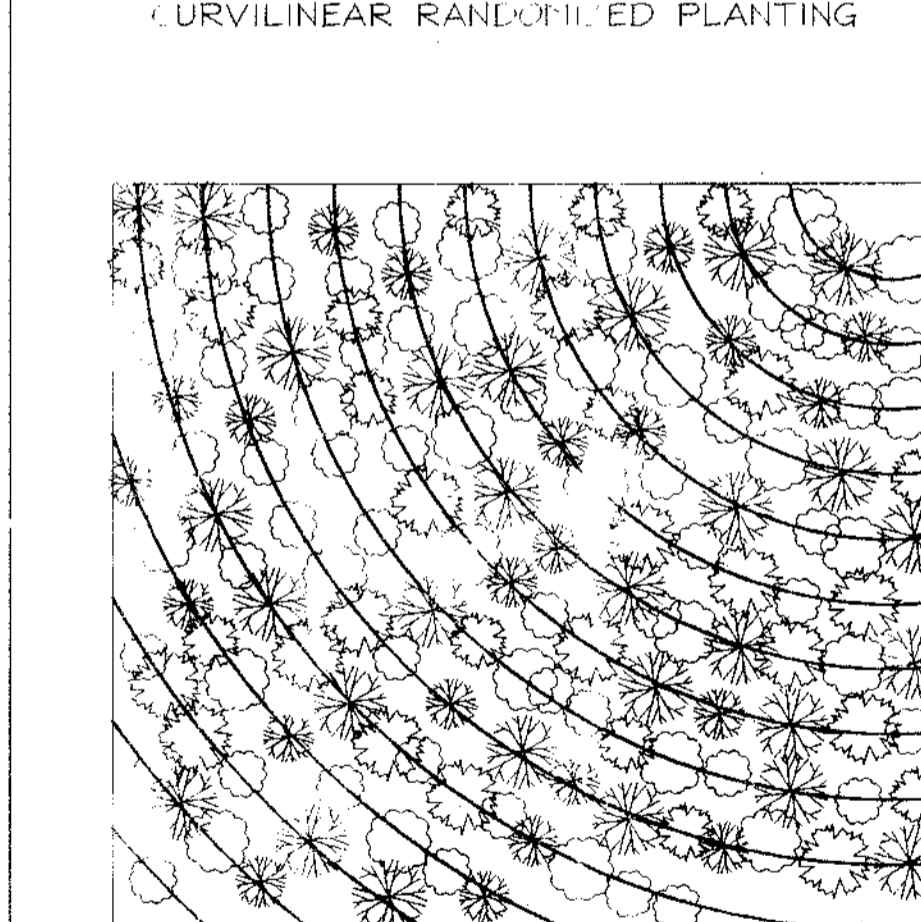
Overstory Planting Species List

COMMON NAME	SCIENTIFIC NAME
red maple	Acer rubrum
black oak	Quercus velutina
white oak	Quercus alba
northern red oak	Quercus rubra
yellow poplar	Liriodendron tulipifera
white pine	Pinus strobus
eastern redcedar	Juniperus virginiana

Understory Planting Species List

COMMON NAME	SCIENTIFIC NAME
service berry	Amelanchier canadensis
red bud	Cercis canadensis
American holly	Ilex opaca
witch hazel	Hamamelis virginiana
hack berry	Celtis occidentalis
black haw	Viburnum prunifolium
American dogwood	Cornus florida

CURVILINEAR RANDOMIZED PLANTING

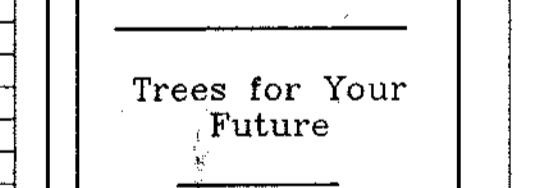
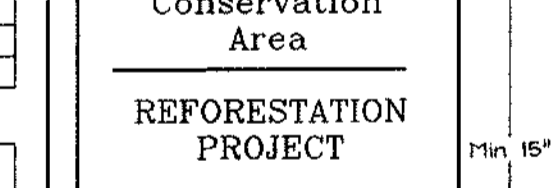
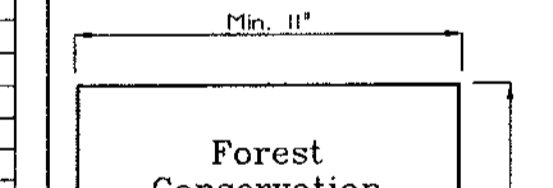
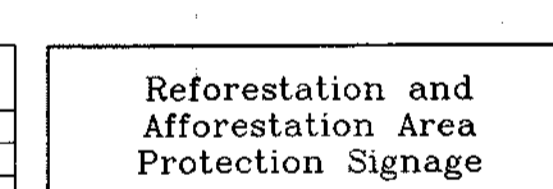


PLANT PLACEMENT DETAIL NOT TO SCALE

- MIX TREE AND SHRUB SPECIES AS POSSIBLE
- SET THE GUIDE CURVILINEAR AS POSSIBLE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

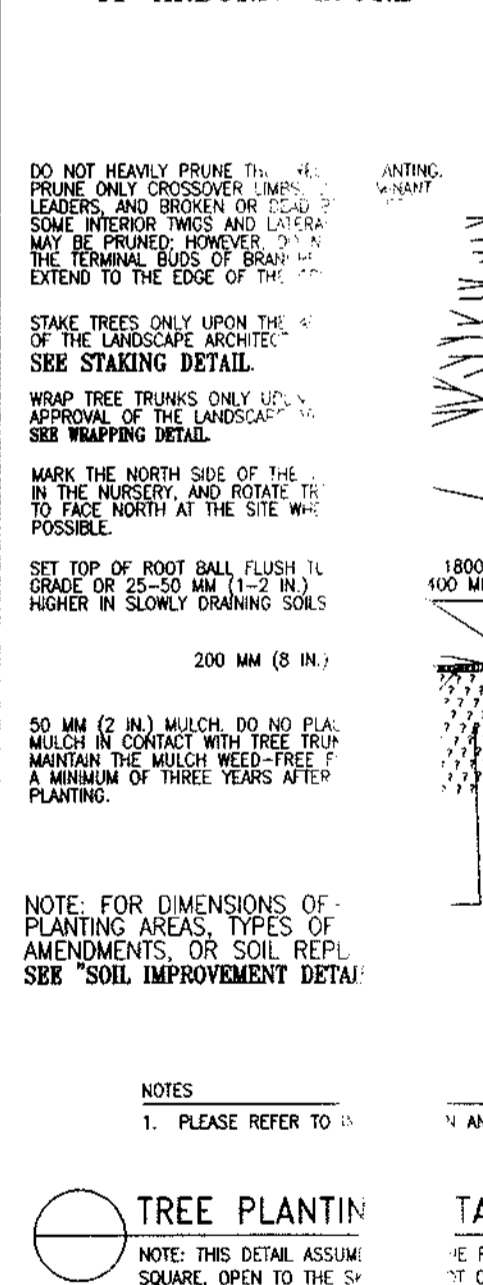
Olivia Drummond, CHIEF, DEVELOPMENT ENGINEER, DATE 11/16/04
Cinda Hamant, CHIEF, DIVISION OF LAND DEVELOPMENT, DATE 11/18/04



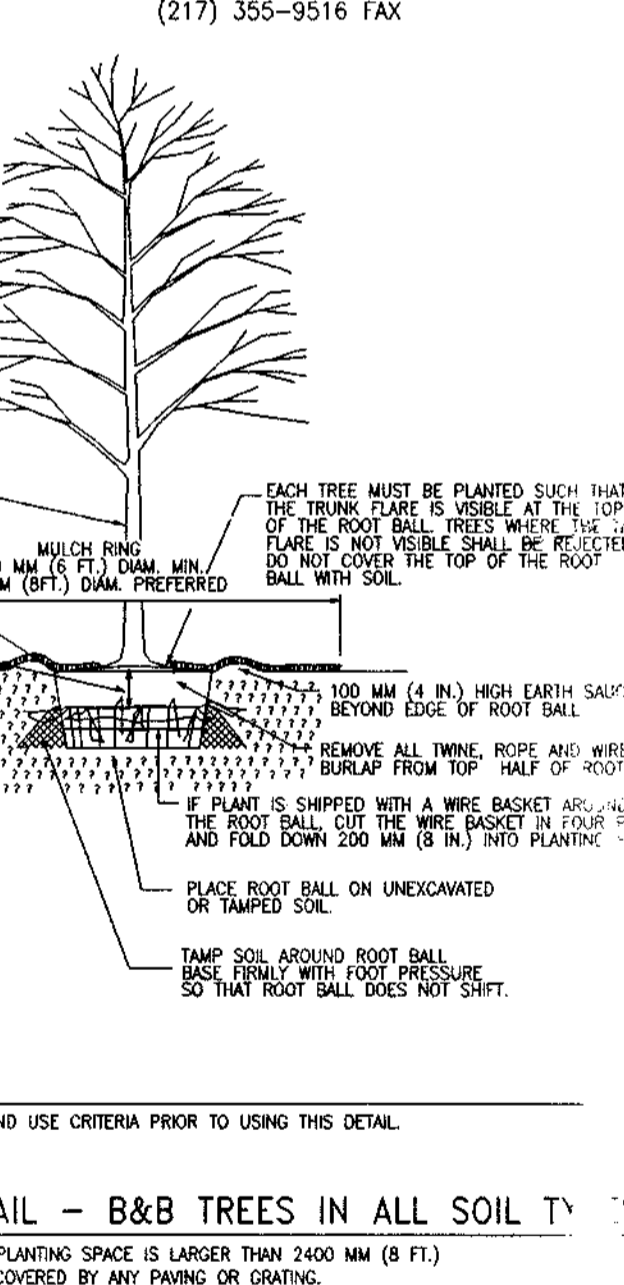
SIGN DETAIL: PERMANENT SIGN

SIGNAGE NOTE: ALL TREE PROTECTION SIGNS SHALL BE PLACED ON METAL 1" POSTS OR PRESSURE TREATED WOOD POLES. NO ATTACHMENT OF SIGNS TO TREES IS PERMITTED.

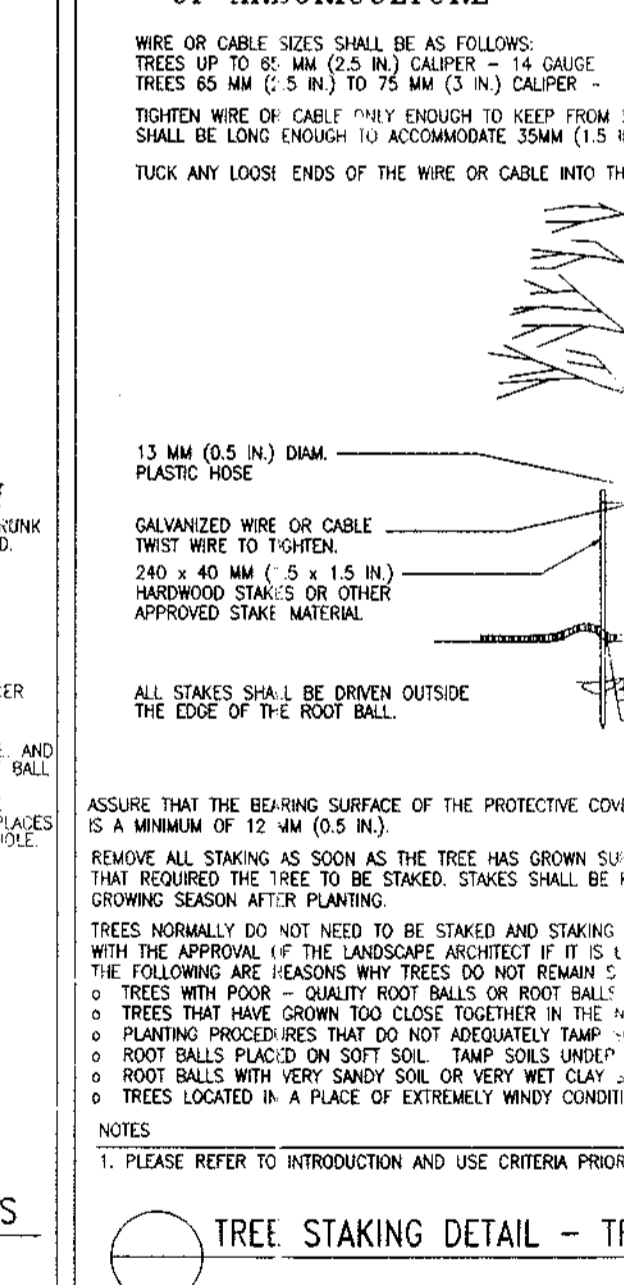
INTERNATIONAL SOCIETY OF ARBORICULTURE



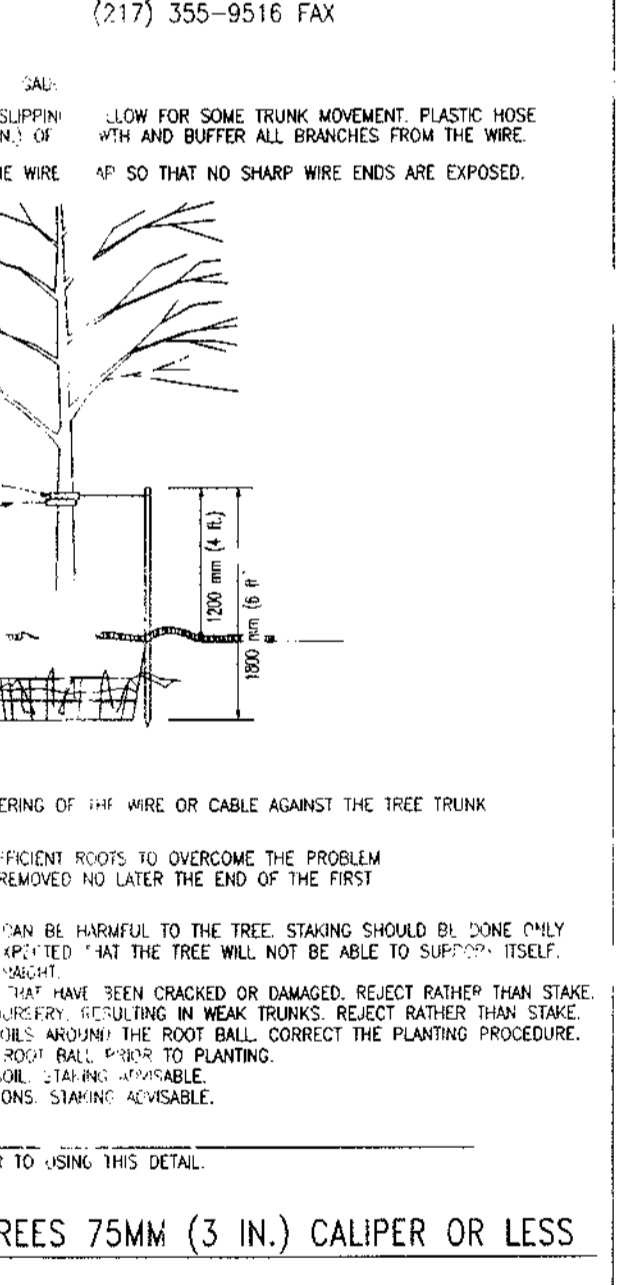
INTERNATIONAL SOCIETY OF ARBORICULTURE



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INTERNATIONAL SOCIETY OF ARBORICULTURE



FSH Associates

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Tel: 410-750-2251 Fax: 410-750-7350
E-mail: FSHAssociates@cs.com

OFFSITE FOREST MITIGATION PLAN for WESLEY WOODS SECTION 2 LOTS 44-63 AND OPEN SPACE LOT 64 on Talley Property Parcel 2, RE-03-02 DS2, P.N. 15816, TM 8, TM PARCEL 392

TAX MAP 8 GRID 13 4TH ELECTION DISTRICT PARCEL 392 HOWARD COUNTY, MARYLAND

OWNER: Talley Family LLP
1525 Daisy Road, Hooobline, MD 21747, 410-442-2300

DESIGN BY: DBH
DRAWN BY: DBH
CHECKED BY: SLH
SCALE: As Shown
DATE: Sept 30, 2004
H.O. No.: 3092
SHEET No.: 13 OF 13