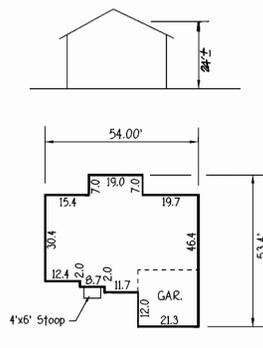
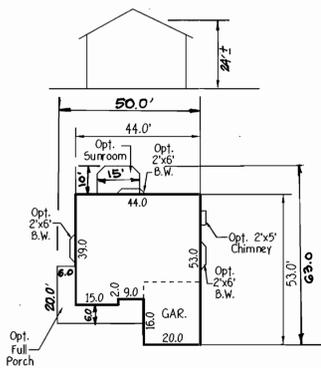


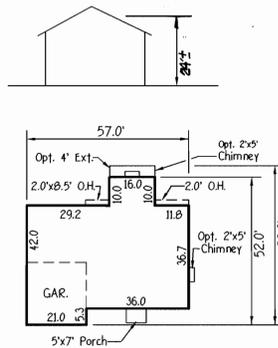
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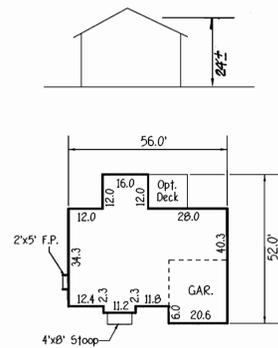
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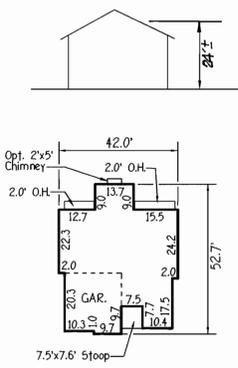
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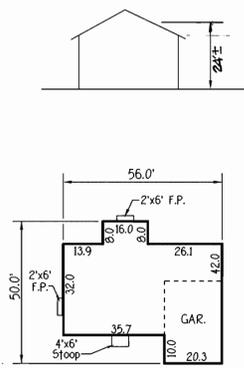
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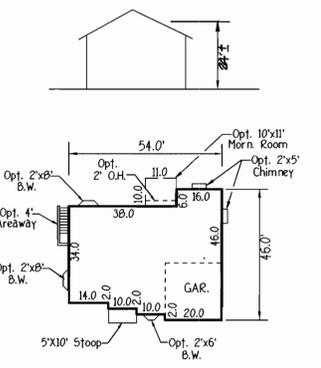
G-G



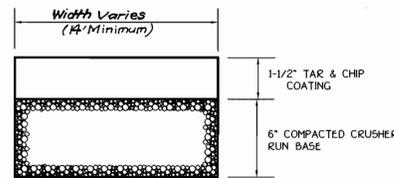
PATUXENT



SOUTHILL



WARWICK



COMMON DRIVEWAY DETAIL
NOT TO SCALE

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
97	8617 SUNBEAM PLACE
98	8621 SUNBEAM PLACE
99	8625 SUNBEAM PLACE
100	8626 SUNBEAM PLACE
101	8622 SUNBEAM PLACE
102	8618 SUNBEAM PLACE
103	8614 SUNBEAM PLACE
104	8610 SUNBEAM PLACE

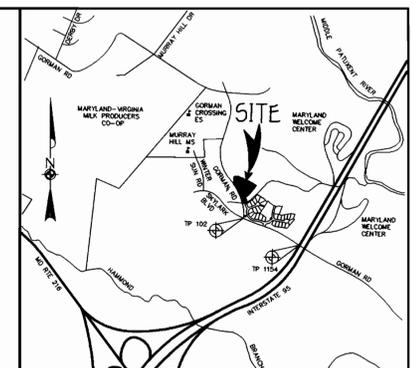
LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
+362.40	SPOT ELEVATION
-55F-55F	SUPER SILT FENCE
[WALK]	PROPOSED WALKOUT
[FENCE]	EXISTING SILT FENCE
[TREE]	EXISTING TREE LINE
[L.O.D.]	LIMIT OF DISTURBANCE
[CIRCLE]	EXISTING PERIMETER TREES TAKEN FROM F-01-140
[CIRCLE]	EXISTING STREET TREES TAKEN FROM F-01-140

INDEX CHART	
SHEET	DESCRIPTION
SHEET 1	TITLE SHEET, HOUSE TYPES, TEMPLATES
SHEET 2	SITE DEVELOPMENT PLAN
SHEET 3	SEDIMENT AND EROSION CONTROL PLAN
SHEET 4	SEDIMENT/EROSION CONTROL NOTES & DETAILS

BENCH MARKS

TP. 102 ELEV. 346.19
N. 536,499.165
E. 1,353,974.017
LOC. NEAR THE INTERSECTION OF
GORMAN RD. AND SKYLARK BLVD.

TP. 1154 ELEV. 347.45
N. 536,018.069
E. 1,355,129.333
LOC. NEAR THE I-95 BRIDGE
ALONG GORMAN RD.



VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES

- SUBJECT PROPERTY ZONED R-ED PER 10/18/93 COMPREHENSIVE ZONING PLAN.
- TOTAL AREA OF SITE: 2.140 ACRES
- TOTAL NUMBER OF LOTS SUBMITTED: 8 (SINGLE FAMILY DETACHED)
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) FIVE WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THIS PROJECT IS SUBJECT TO HOWARD COUNTY FILES: 5-00-12, P-01-16, WP-01-39, WP-00-87, WP-01-99, F-01-140 WAS CONT. 34-3832-0, F-02-17.
- BOUNDARY SURVEY PERFORMED BY: DAFT McCUNE WALKER, INC. ON OR ABOUT JUNE, 1999
- HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS: HOWARD COUNTY MONUMENT 102 N 536,499.165 E 1,353,974.017 HOWARD COUNTY MONUMENT 1154 N 536,018.069 E 1,355,129.333
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THIS PLAN IS FOR HOUSE SITING AND LOT GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHT-OF-WAYS OF THIS S.D.P. ARE NOT USED FOR CONSTRUCTION. FOR CONSTRUCTION SEE APPROVED ROAD CONSTRUCTION PLANS F-01-140. AND/OR APPROVED WATER AND SEWER PLANS CONTRACT NO. 34-3832-0.
- CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
- 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:
A) WIDTH - 12 FEET (14 FEET SERVING MORE THAN ONE RESIDENCE).
B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING. (1 - 1/2" MINIMUM).
C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45-FOOT TURNING RADIUS.
D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H2S-LOADING).
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER SURFACE.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLAND OR STREAM BUFFERS. UNLESS, APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING OR HOWARD COUNTY, MARYLAND.
- STORMWATER MANAGEMENT WILL BE PROVIDED BY F-01-140.
- PERIMETER LANDSCAPING FOR LOTS 1 THRU 39 IS PROVIDED IN ACCORDANCE WITH A CERTIFIED LANDSCAPE PLAN ON FILE WITH THE APPROVED ROAD CONSTRUCTION DRAWINGS FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. PERIMETER LANDSCAPING SHOWN IS TAKEN FROM *Howard County File F-01-140*.
- THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65 dBA LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS, AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
- THE PROPOSED SUBDIVISION DESIGN IS SUBJECT TO WAIVER WP-00-107 APPROVED ON JUNE 14, 2000, A WAIVER TO THE MINIMUM PUBLIC ROAD FRONTAGE REQUIREMENT FROM 40 FEET TO 0 FEET FOR OPEN SPACE LOTS 12 & 13.
- THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL, FOR THIS SUBDIVISION HAS BEEN FULFILLED BY RETENTION OF EXISTING FOREST IN THE AMOUNT OF 1.58 ACRES WITH 1.41 ACRES OF CREDITED EASEMENT AND 0.17 ACRES OF NON-CREDITED (FLOODPLAIN) EASEMENT. FOREST CONSERVATION OBLIGATION WAS ADDRESSED UNDER F-01-140.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG/PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM DRIVEWAY.
- THIS PLAN SHALL BE SUBJECT TO THE FOURTH EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS.
- HOWARD COUNTY DRIVEWAY DETAIL R-6.03 AND R-6.05.



ENGINEER'S CERTIFICATE
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Earl Collins
Signature of Engineer Earl Collins Date 1-30-02

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

David Forester
Signature of Developer Dave Forester Date 1-30-02

Reviewed for HOWARD SCD and meets Technical Requirements.

Jim Maguire 2/25/02 Date
USDA-Natural Resources Conservation Service

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

John K. Blawie 2/27/02 Date
Howard SCD

OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Hamata 3/7/02 Date
Chief, Division of Land Development

John K. Blawie 2/26/02 Date
Chief, Development Engineering Division

John K. Blawie 3/8/02 Date
Director, Department of Planning and Zoning

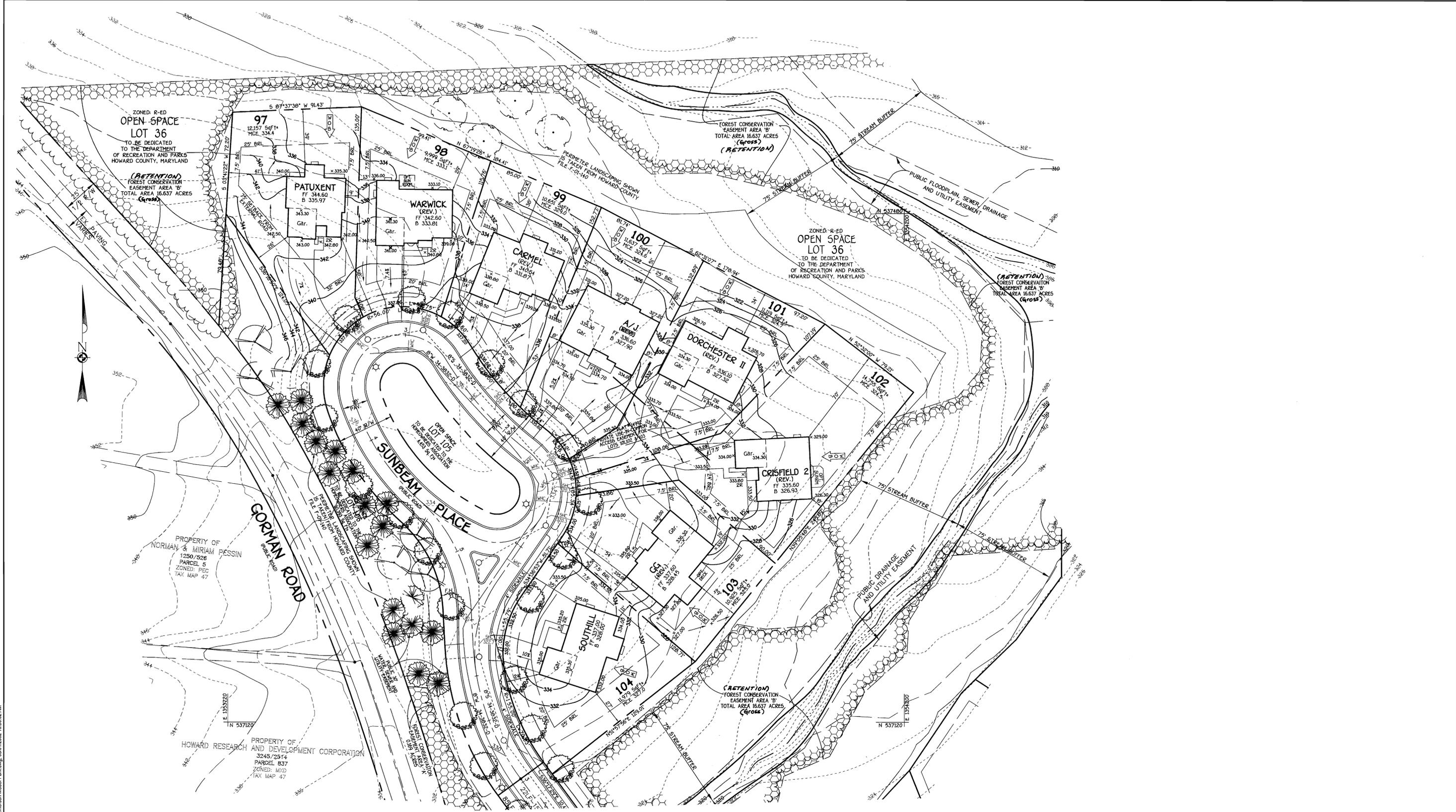
PROJECT: EMERSON SECTION: 1/1 LOTS NO.: 97 THRU 104

PLAT: 15254 AND 15255	BLOCK NO.: B AND 9	ZONE: R-ED	TAX/ZONE: 47	ELEC. DIST.: SIXTH	CENSUS TR.: 6068.02
WATER CODE: E-15	SEWER CODE: 160000				

SITE DEVELOPMENT PLAN

EMERSON
SECTION 1 AREA 1
LOTS 97 THRU 104

TAX MAP No: 47 P/O PARCEL: 837
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: JANUARY, 2002
SHEET 1 OF 4



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELKLOTT CITY, MARYLAND 21042
 410.461.2999

NO.	REVISION	DATE



ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Earl J. Collins
 Signature of Engineer EARL J. COLLINS 1-30-02 Date

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

David Forester
 Signature of Developer Dave Forester 1-30-02 Date

Reviewed for HOWARD SCD and meets Technical Requirements. 3/1/02 Date
Jan M. Ryan
 U.S. Fish & Wildlife Service
 Conservation Service

This development plan is approved for erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
John K. Plaut
 Howard SCD 3/1/02 Date

OWNER / DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cynthia Williams 3/1/02 Date
 Chief, Division of Land Development

Charles Williams 3/15/02 Date
 Chief, Development Engineering Division

Paul Smith 3/8/02 Date
 Director, Department of Planning and Zoning

PROJECT	SECTION	LOTS NO.
EMERSON	1/1	97 THRU 104

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
10254-4 15255	8 AND 9	R-ED	47	SIXTH	6060.02

WATER CODE	SEWER CODE
E-15	160000

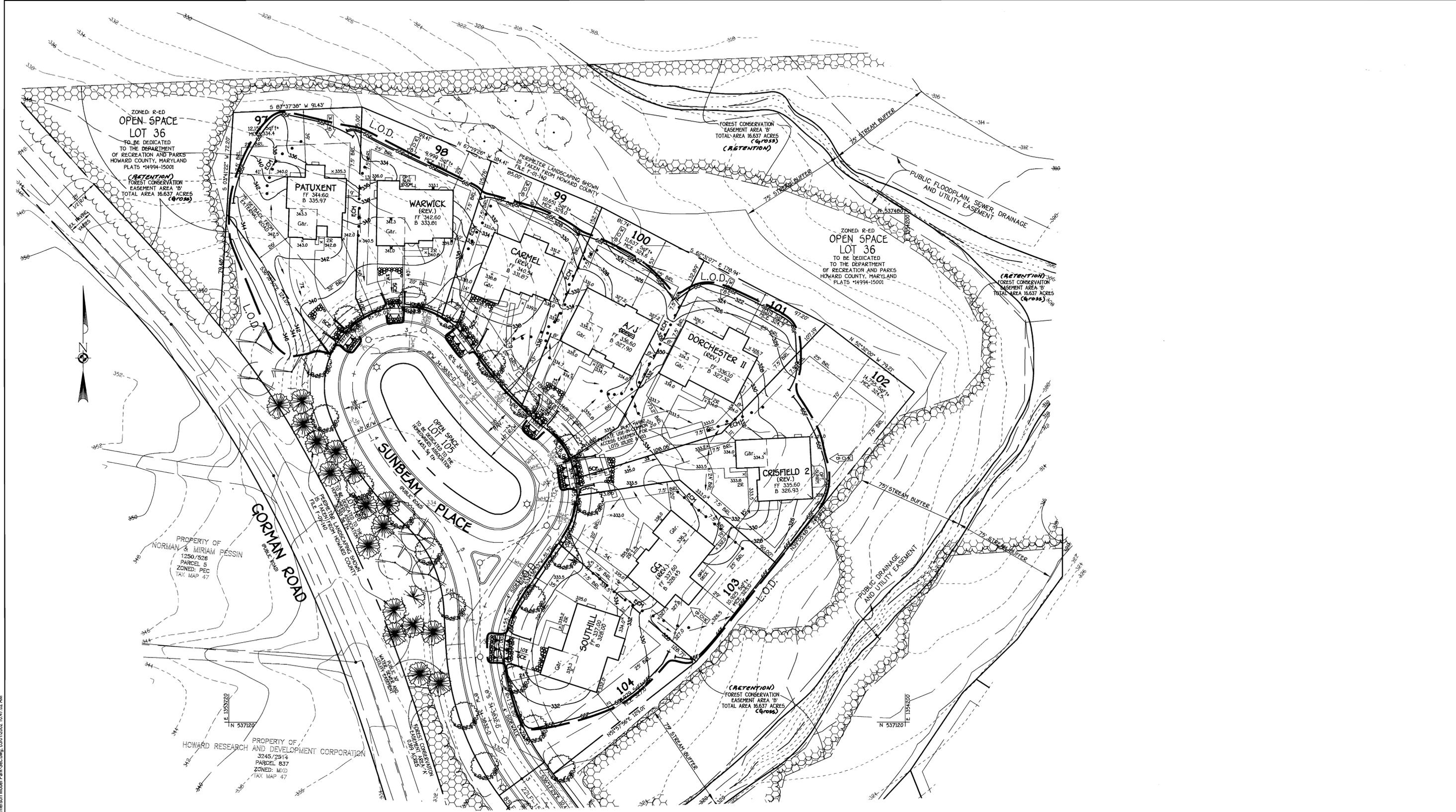
SITE DEVELOPMENT PLAN

EMERSON
 SECTION 1 AREA 1
 LOTS 97 THRU 104

TAX MAP No: 47 P/O PARCEL: 837
 SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1"= 30' DATE: JANUARY, 2002
 SHEET 2 OF 4

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SDP 02-60



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FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 4100 461 - 2955

NO.	REVISION	DATE



ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Earl D. Collins
 Signature of Engineer EARL D. COLLINS 1-30-02 Date

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

David Forester
 Signature of Developer Dave Forester 1-30-02 Date

Reviewed for HOWARD SCD and meets Technical Requirements.

Jan Mays 3/1/02
 U.S. Natural Resources Conservation Service Date

John K. Runko 3/1/02
 Howard SCD Date

OWNER / DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cindy Thomas 3/1/02
 Chief, Division of Land Development Date

John D. Williams 3/5/02
 Chief, Development Engineering Division Date

John D. Williams 3/8/02
 Director, Department of Planning and Zoning Date

PROJECT	SECTION	LOTS NO.
EMERSON	1/1	97 THRU 104

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
15254 & 15255	8 AND 9	R-ED	47	SIXTH	6068.02

WATER CODE	SEWER CODE
E-15	160000

SEDIMENT & EROSION CONTROL PLAN

EMERSON
 SECTION 1 AREA 1
 LOTS 97 THRU 104

TAX MAP No: 47 P/O PARCEL: 837
 SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1"= 30' DATE: JANUARY, 2002
 SHEET 3 OF 4

SDP 02-60

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 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 (0 to 1 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, 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 silt fences.
 - 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 area 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. 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 warranty of the producer.
 - Lime materials shall be ground limestone (hydrated or burnt lime) but 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 99-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- Seeded Preparation
 - Temporary Seeding
 - 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 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.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 - Permanent Seeding
 - Minimum soil conditions required for permanent vegetative establishment:
 - Soil pH shall be between 5.0 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 leucaena or sericea lespedeza 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.
 - Areas previously graded conforming 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 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 seeded preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Deep seed (seeder) 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. Seeding 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 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 the job.
 - Seed test shall be 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.

- Methods of Seeding
 - Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cutlifter seeder.
 - 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/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 265 or 26. The seeded area shall then be rolled with 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.

- Mulch Specifications (in order of preference)
 - 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 dry 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 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 and fertilizer and other additives to form a homogeneous slurry. The 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 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 15% 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.

- Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside of the seeding season, mulch 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 soil surface is not exposed. 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 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 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.
 - 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 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 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 control berms:
 - 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 of completing the operation of the seeding shall 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 silt fence on low side of fill as shown in Figure 3, unless other methods shown on the plans address this area.
 - Place Phase 1 embankment, dress and stabilize.
 - Place Phase 2 embankment, dress and stabilize. Overseed previously seeded areas as necessary.
 - 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 of completing the operation of the seeding season will necessitate the application of temporary stabilization.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.
Seeded Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrattled small grain straw immediately after seeding.
Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

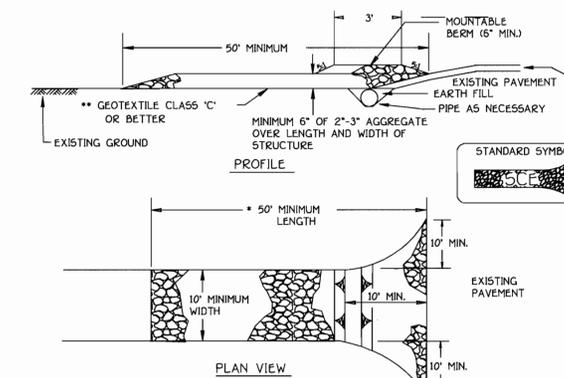
SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT	7 DAYS
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	4 DAYS
7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY E/S CONTROL INSPECTOR.	7 DAYS

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 (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. 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. 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 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.
- 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:

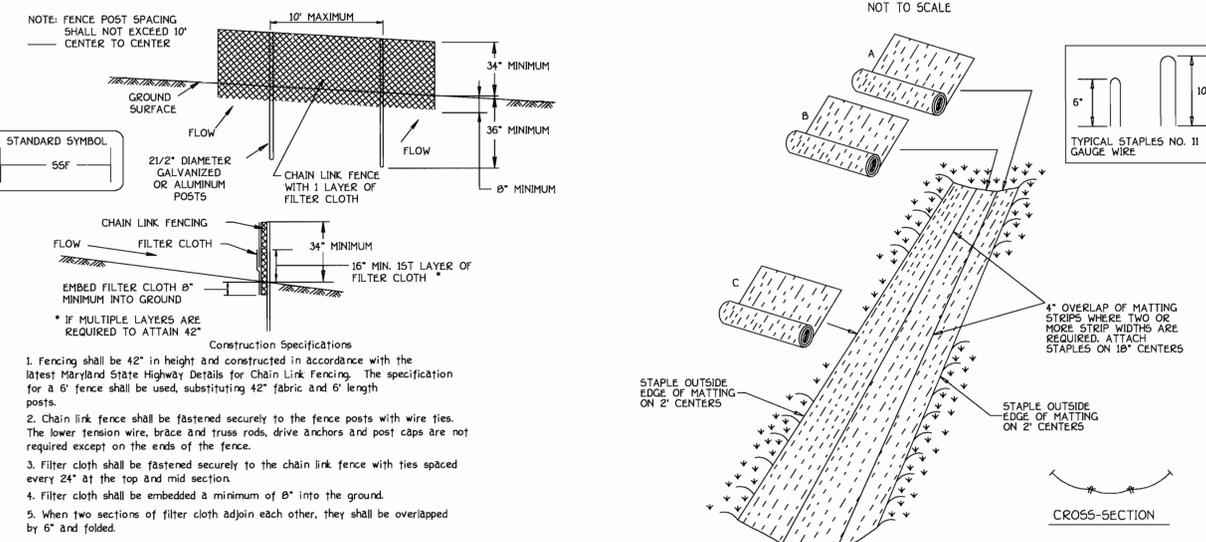
TOTAL AREA OF SITE	2,140 ACRES
AREA DISTURBED	1,717 ACRES
AREA TO BE ROOFED OR PAVED	0,627 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1,090 ACRES
TOTAL CUT	5,027 CU.YDS.
TOTAL FILL	6,940 CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	CU.YDS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY 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.
- 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.



- Construction Specification
- Length - minimum of 50' (*30' for single residence lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
 - Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
 - Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCF is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

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



- Construction Specifications
- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
 - Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
 - Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
 - Filter cloth shall be embedded a minimum of 8" into the ground.
 - When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
 - Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
 - 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 Geotextile Class F:

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

SUPER SILT FENCE

NOT TO SCALE

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

EROSION CONTROL MATTING

NOT TO SCALE

SEDIMENT/EROSION CONTROL NOTES & DETAILS

EMERSON
 SECTION 1 AREA 1
 LOTS 97 THRU 104

TAX MAP No: 47 P/O PARCEL: B37
 SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JANUARY, 2002
 SHEET 4 OF 4

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10772 BALDORNE NATIONAL FEE
 ELICOTT CITY, MARYLAND 21042
 MD REG. NO. 1095



ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer: Earl D. Collins
 Date: 1-30-02

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

Signature of Developer: Dave Forester
 Date: 1-30-02

Reviewed for HOWARD SCD and meets Technical Requirements.
 Signature: Jim Meyer
 Date: 2/23/02

Signature: Jim R. Roberts
 Date: 2/25/02

OWNER / DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATENT PARKWAY
 COLUMBIA, MARYLAND 21044

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: [Name]
 Date: 3/7/02

Signature: [Name]
 Date: 2/20/02

Signature: [Name]
 Date: 3/8/02

PROJECT	SECTION	LOTS NO.
EMERSON	1/1	97 THRU 104
PLAT	BLOCK NO.	ZONE
15254 AND 15255	B AND 9	R-ED
WATER CODE	TAX/ZONE	ELEC. DIST.
E-15	47	SIXTH
	SEWER CODE	CENSUS TR.
	160000	6068.02