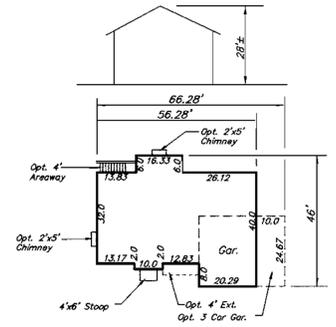
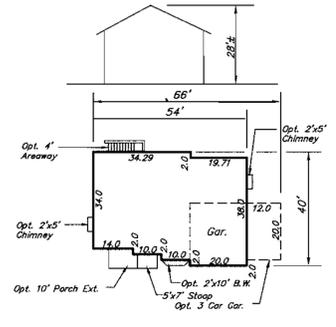


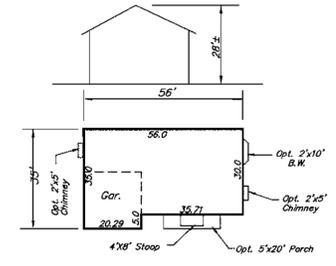
VICINITY MAP
SCALE: 1" = 2000'



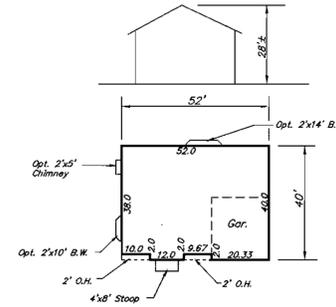
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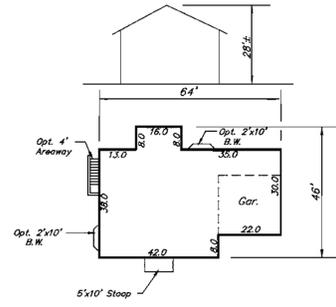
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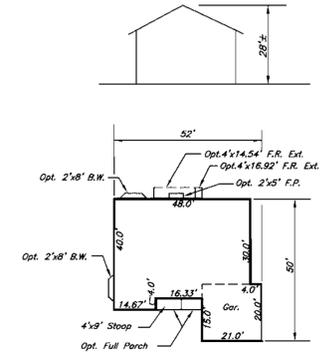
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BRENTWOOD



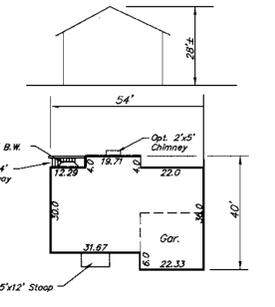
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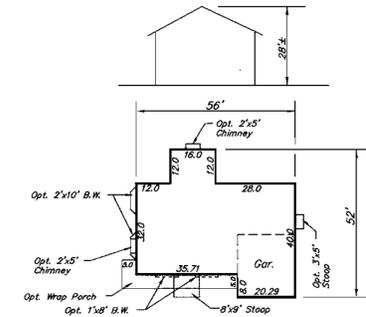
GREENBRIAR



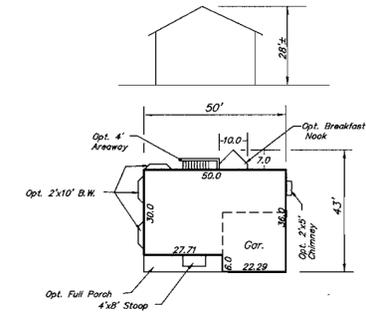
BRADFORD



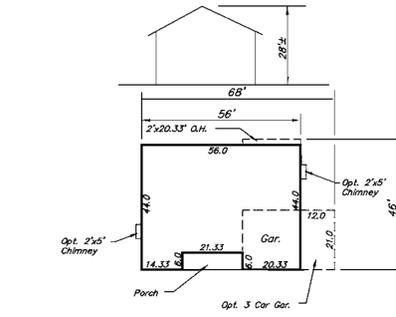
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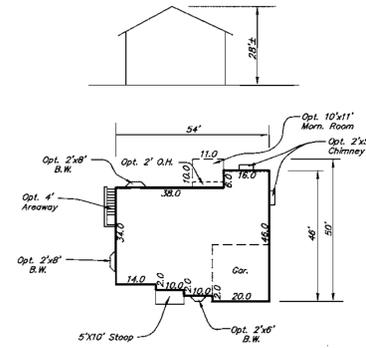
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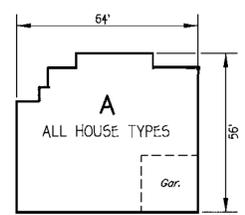
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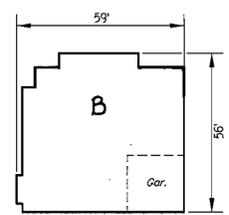
STERLING



WARWICK

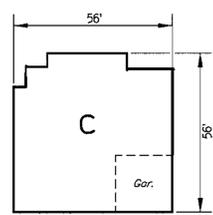


A
ALL HOUSE TYPES



B

BRADFORD
CARROLLTON I
CARROLLTON II / BRENTWOOD
CHANDLER
PLYMOUTH
PINEHURST / WITHOUT WRAP PORCH
NEWBURY
STERLING
WARWICK
WESTCHESTER



C

BRADFORD
CARROLLTON I
CARROLLTON II / BRENTWOOD
CHANDLER
PLYMOUTH
PINEHURST / WITHOUT WRAP PORCH
NEWBURY
STERLING
WARWICK
WESTCHESTER

BENCH MARKS

T.P. 10Z ELEV. 346.19
N. 535,499.156
E. 1,353,974.017
LOC. NEAR THE INTERSECTION
OF GORMAN RD. & SKYLARK BLVD.

T.P. 1154 ELEV. 347.45
N. 535,010.069
E. 1,359,129.333
LOC. NEAR I-95 BRIDGE
ALONG GORMAN ROAD

GENERAL NOTES

- SUBJECT PROPERTY ZONED R-ED PER 10/10/93 COMPREHENSIVE REZONING PLAN.
- TOTAL AREA OF SITE: 0.911 ACRES
- TOTAL NUMBER OF LOTS SUBMITTED: 4
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTION DIVISION AT (410)313-1000 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: P-01-16, S-00-12, WP-01-39, WP-00-87, WP-01-99, F-01-140, WGS CONT. *34-3032-D.
- THIS PLAN IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT JUNE, 1999 BY DAFT MCCLUNE WALKER, INC.
- HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC STATIONS.
HOWARD COUNTY MONUMENT 47E4 N 535045.130 E 1355431.196
HOWARD COUNTY MONUMENT 47D4 N 535405.459 E 1349362.707
HOWARD COUNTY MONUMENT 47G2 N 532938.964 E 1351224.095
HOWARD COUNTY MONUMENT 47CA N 532404.176 E 1351627.330
HOWARD COUNTY MONUMENT 47CB N 529917.205 E 1353526.730
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THIS PLAN IS FOR HOUSE SITING AND GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHTS-OF-WAY 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. 34-3032-D.
- CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
- STORMWATER MANAGEMENT WILL BE PROVIDED AS APPROVED ON THE ROAD CONSTRUCTION DRAWINGS FILED UNDER: F-01-140
- PERIMETER LANDSCAPING AND STREET TREES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL, AS SHOWN ON THE APPROVED ROAD CONSTRUCTION DRAWINGS FILED UNDER: F-01-140.
- THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY RETENTION OF FOREST RESOURCES. THE TOTAL ACREAGE OF RETENTION IS 23,699 ACRES. FOREST CONSERVATION EASEMENT FILED UNDER F-01-140 ROAD CONSTRUCTION DRAWINGS.
- STORMWATER MANAGEMENT FOR THE DEVELOPMENT INCLUDING FUTURE DEVELOPMENT OF PARCEL A IS PROVIDED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOL. 1, STORM DRAINAGE. STORMWATER MANAGEMENT PORTIONS OF OPEN SPACE LOTS 36 & 39 ARE BEING USED AS NATURAL AREA CONSERVATION CREDIT AREA. TO RECEIVE THE CREDIT, THE PROPOSED CONSERVATION AREA:
A) SHALL NOT BE DISTURBED DURING PROJECT CONSTRUCTION (E.G., CLEARED OR GRADED) EXCEPT FOR TEMPORARY IMPACTS ASSOCIATED WITH INCIDENTAL UTILITY CONSTRUCTION OR MITIGATION AND AFFORESTATION PROJECTS.
B) SHALL BE PROTECTED BY HAVING THE LIMITS OF DISTURBANCE CLEARLY SHOWN ON ALL CONSTRUCTION DRAWINGS ARE DELIMITED IN THE FIELD EXCEPT AS PROVIDED FOR ABOVE.
C) SHALL BE LOCATED WITHIN AN ACCEPTABLE CONSERVATION EASEMENT OR OTHER ENFORCEABLE INSTRUMENT THAT ENSURES PERPETUAL PROTECTION OF THE PROVIDED AREA. THE EASEMENT MUST CLEARLY SPECIFY HOW THE NATURAL AREA VEGETATION SHALL BE MANAGED AND BOUNDARIES WILL BE MARKED (NOTE: MANAGED TURF (E.G., PLAYGROUNDS, REGULARLY MAINTAINED OPEN AREAS) IS NOT AN ACCEPTABLE FORM OF VEGETATION MANAGEMENT), AND
D) SHALL BE LOCATED ON THE DEVELOPED PROJECT.
A CENTRAL PRIVATELY MAINTAINED STORMWATER WET POND IS BEING USED TO PROVIDE THE WATER QUALITY AND CHANNEL PROTECTION VOLUMES FOR THIS DEVELOPMENT.
- FOR DRIVEWAY ENTRANCE DETAILS REFER TO HO. CODES MAN. VOL. IV DETAILS R.6.03 & R.6.05.
- SITE DEVELOPMENT PLAN FOR SINGLE FAMILY DETACHED UNITS.
- THIS PLAN IS ~~GRANDFATHERED~~ TO THE FOURTH EDITION OF THE SUBDIVISION REGULATIONS SINCE IT WAS SUBMITTED PRIOR TO NOVEMBER 15, 2001.
- OPEN SPACE REQUIREMENTS FOR THESE LOTS HAVE BEEN PROVIDED UNDER: F-01-140.
- IN ACCORDANCE WITH SECTION 129 (A)(X) OF THE H.C.C.O. ZONING REGULATION, BAYWINDOWS, CHIMNEY OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACK, PORCHES OR DECKS, OPEN OR ENCLOSE MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
- OPEN SPACE REQUIREMENT FOR THESE LOTS HAS BEEN PROVIDED UNDER: F-01-140.

ADDRESS CHART

LOT NUMBER	STREET ADDRESS
13	9505 STAR MOON LANE
21	9508 STAR MOON LANE
26	9508 PURPLE CLOUD ROW
32	9509 PURPLE CLOUD ROW

LEGEND

SYMBOL	DESCRIPTION
-----	EXISTING CONTOUR 2' INTERVAL
+362.5	SPOT ELEVATION
-SF-SF-	SILT FENCE
-SFF-SFF-	SUPER SILT FENCE
[]	PROPOSED WALKOUT
[]	EROSION CONTROL MATTING
●●●●	PURPLE CLOUD ROW
---	EXISTING TREE LINE
L.O.D.	LIMIT OF DISTURBANCE
○	EXISTING STREET TREE 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	SED., EROSION CONTROL NOTES & DETAILS

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 SALTWATER NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
410-461-1895

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: *[Signature]* Date: 12/20/01

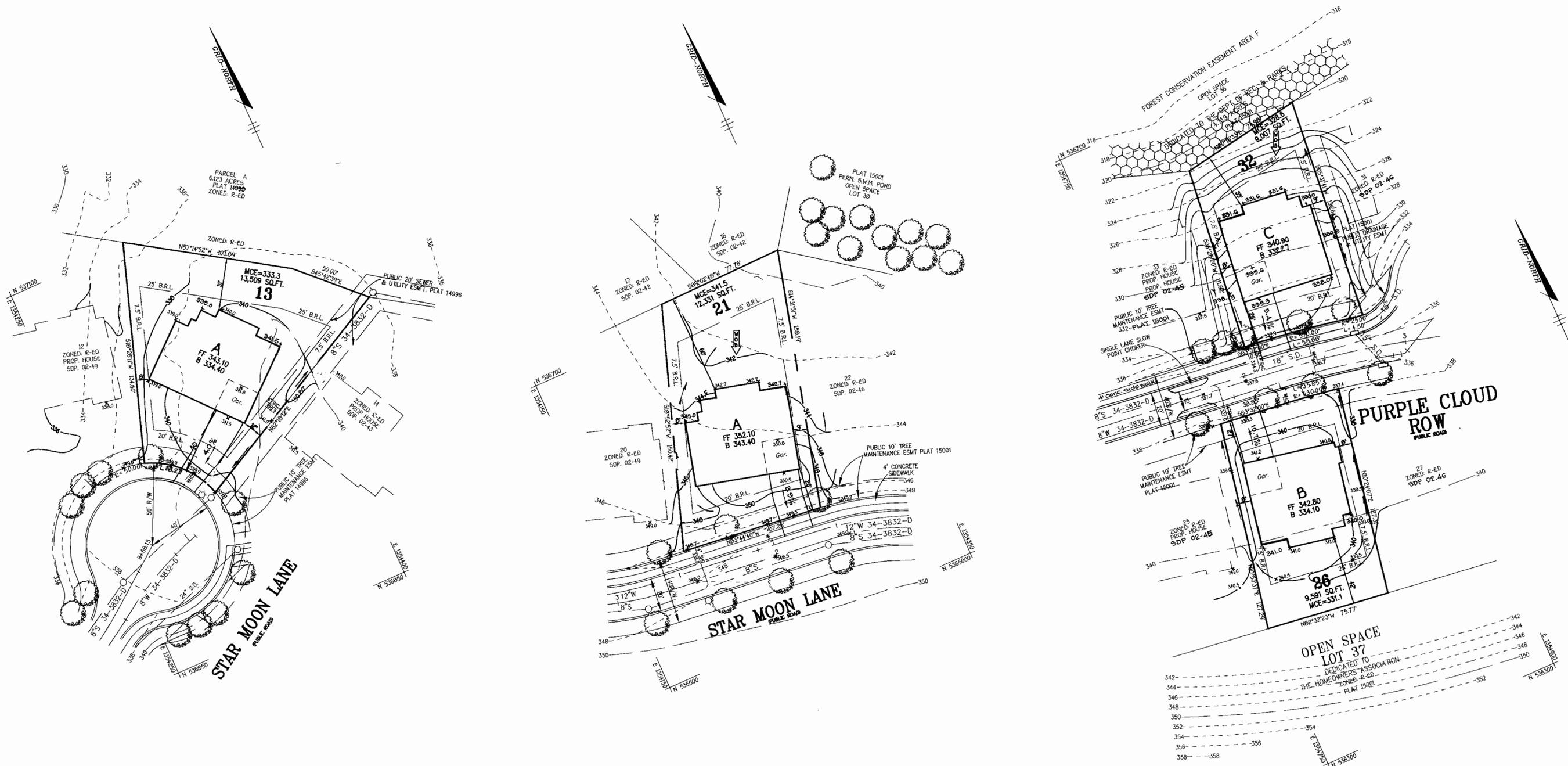
DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training 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: *[Signature]* Date: 10/24/01

Reviewed by HOWARD SCD and meets Technical Requirements.
[Signature] 11/28/02 Date
[Signature] 11/28/02 Date
OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-5100
BUILDER
DOUGLAS HOMES
P.O. BOX 628
ELLCOTT CITY, MARYLAND 21041
410-750-9522

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
[Signature] 11/30/02 Date
[Signature] 1/20/02 Date
[Signature] 2/14/02 Date
PROJECT EMERSON SECTION 1/1 LOTS NO. 13,21,26 & 32
PLAT 14994 THRU. 15001
BLOCK NO. 3, 8 & 9
ZONE R-ED
TAX/ZONE 47
ELEC. DIST. SIXTH
CENSUS TR. 60002
WATER CODE E-15
SEWER CODE 160000

SITE DEVELOPMENT PLAN
EMERSON
SECTION 1 AREA 1
LOTS 13,21,26 & 32
TAX MAP No: 47 P/O PARCEL: 837
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: DECEMBER, 2001
SHEET 1 OF 4



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410-461-2855



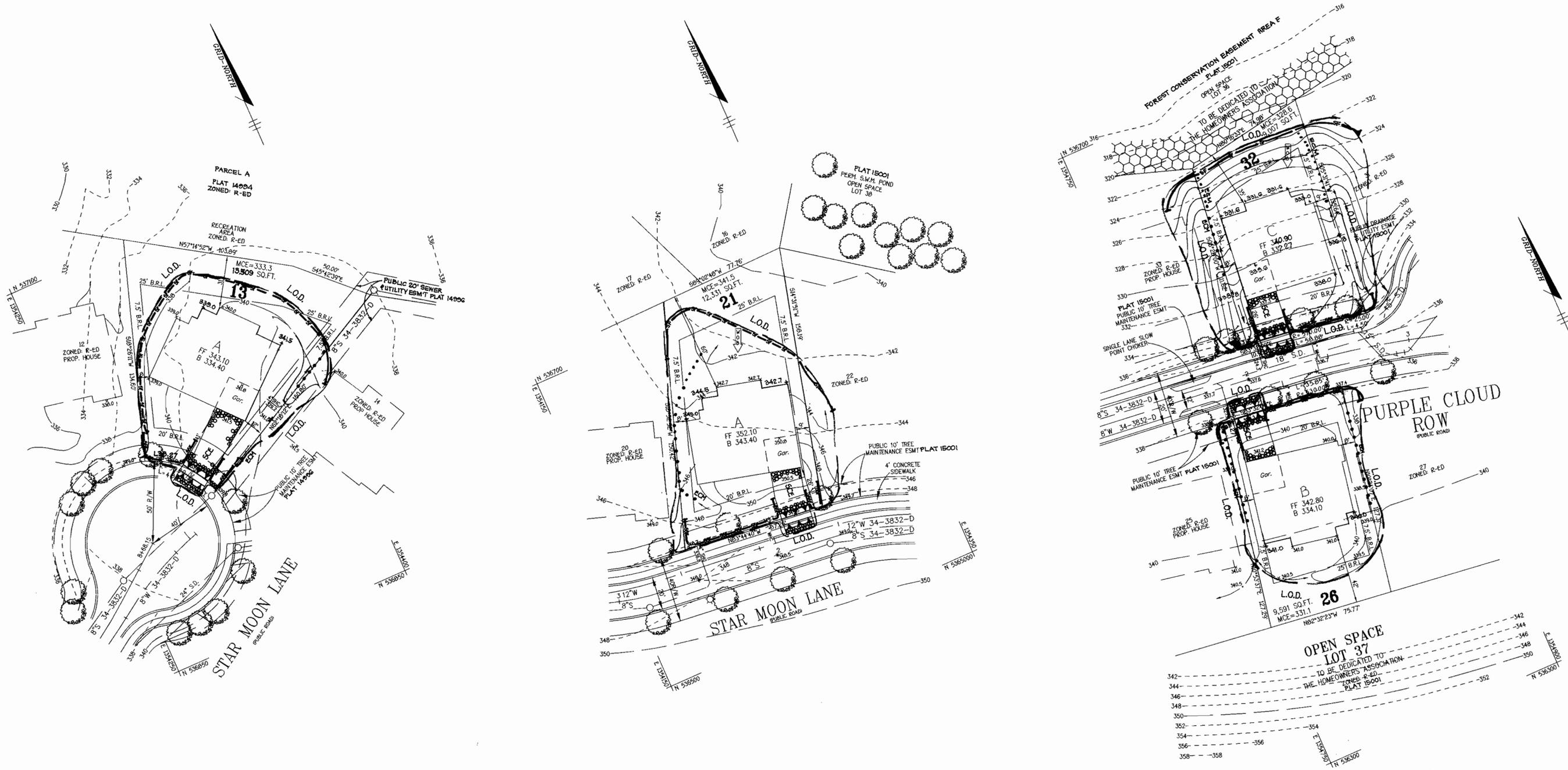
ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 Signature of Engineer: *Charles J. Crovo Sr.* Date: 12/26/01
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: *Dana Borg* Date: 12/26/01

Reviewed for HOWARD SCD and meets Technical Requirements.
 U.S.D.A.-Natural Resources Conservation Service
 Signature: *John M. ...* Date: 1/28/02
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *John L. ...* Date: 1/28/02
OWNER/DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-952-6000
BUILDER
 DOUGLAS HOMES
 P.O. BOX 628
 ELLICOTT CITY, MARYLAND 21041
 410-750-0522

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *...* Date: 1/30/02
 Chief, Development Engineering Division: *...* Date: 2/14/02
 Director, Department of Planning and Zoning: *...* Date: 2/14/02

PROJECT	SECTION	LOTS NO.			
EMERSON	1/1	13,21,26 & 32			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
14994	THRU. 15001	3,8 & 9	R-ED	47	SIXTH
WATER CODE	SEWER CODE				
E-15	160000				

SITE DEVELOPMENT PLAN
EMERSON
 SECTION 1 AREA 1
 LOTS 13,21,26 & 32
 TAX MAP No: 47 P/O PARCEL: 837
 SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1"= 30' DATE: DECEMBER, 2001
 SHEET 2 OF 4



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 11 FORTUNAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 584-2555



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: *Charles J. Grovo Sr.* Date: 12/26/01
 CHARLES J. GROVO SR.
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: *Dana Borg* Date: 10/20/01
 DANA BORG

Reviewed for HOWARD SCD and meets Technical Requirements.

Signature: *Jim Meyer* Date: 11/28/02
 U.S. Fish & Wildlife Service
 Conservation Service
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature: *John McClinton* Date: 11/28/02
 HOWARD SCD

OWNER/DEVELOPER
 THE HOWARD RESEARCH & DEVELOPMENT CORP.
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

BUILDER
 DOUGLAS HOMES
 P.O. BOX 628
 ELICOTT CITY, MARYLAND 21041
 410-750-0522

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: *John Shantz* Date: 1/31/02
 Chief, Division of Land Development

Signature: *John Shantz* Date: 1/20/02
 Chief, Development Engineering Division

Signature: *John Shantz* Date: 2/14/02
 Director, Department of Planning and Zoning

PROJECT	SECTION	LOTS NO.
EMERSON	1/1	13,21,26 & 32

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
14991 THRU 15001	3,8 & 9	R-ED	47	SIXTH	6060.02

WATER CODE	SEWER CODE
E-15	160000

SEDIMENT AND EROSION CONTROL PLAN

EMERSON
 SECTION 1 AREA 1
 LOTS 13,21,26 & 32

TAX MAP No: 47 P/O PARCEL: 037
 SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 SCALE: 1" = 30' DATE: DECEMBER, 2001
 SHEET 3 OF 4

200 STANDARDS AND SPECIFICATIONS

VEGETATIVE STABILIZATION

DEFINITION

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

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 on the plane 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 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 balance 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 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 analysis.
 - 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 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 such fineness that at least 50% will pass through a #20 mesh sieve and 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- Temporary Seeding**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment. If a harrow or chain of rollers is used, it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be prepared 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 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay, but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loess or serecia loess deposits 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 in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loose soil by dragging or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. 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 re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding such material on the project.
 - Seeds shall be made available to the inspector to verify type and rate of seed used.
 - Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species inoculated. Do not use more 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 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 cut/packer 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 available nitrogen; P205 (phosphorus) 200 lbs./acre; K20 (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 26. 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 Cut/packer Seeding** - Mechanized seeders that apply and cover seed with soil.
 - Cut/packer 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 bright in color, and shall not be musty, moldy, caked, decayed or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland WCFM Manual.
 - 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 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 1.5% maximum and water holding capacity of 50% minimum.
 - Only sterile straw mulch should be used in areas where one species of grass is desired.

- Seeded Preparation**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment. If a harrow or chain of rollers is used, it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be prepared 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.

- 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 analysis.
 - 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 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 such fineness that at least 50% will pass through a #20 mesh sieve and 90-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- Temporary Seeding**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment. If a harrow or chain of rollers is used, it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be prepared 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 6.0 and 7.0.
 - Soluble salts shall be less than 500 parts per million (ppm).
 - The soil shall contain less than 40% clay, but enough fine grained material (30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if loess or serecia loess deposits 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 in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
 - Apply soil amendments as per soil test or as included on the plans.
 - Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Where site conditions will not permit normal seeded preparation, loose soil by dragging or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. 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 re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding such material on the project.
 - Seeds shall be made available to the inspector to verify type and rate of seed used.
 - Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species inoculated. Do not use more 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 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 cut/packer 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 available nitrogen; P205 (phosphorus) 200 lbs./acre; K20 (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 26. 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 Cut/packer Seeding** - Mechanized seeders that apply and cover seed with soil.
 - Cut/packer 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 bright in color, and shall not be musty, moldy, caked, decayed or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland WCFM Manual.
 - 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 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 1.5% maximum and water holding capacity of 50% minimum.
 - Only sterile straw mulch should be used in areas where one species of grass is desired.

- Seeded Preparation**
 - Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment. If a harrow or chain of rollers is used, it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be prepared in an irregular condition with ridges running parallel to the contour of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
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 - 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.
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- Mulching Seeded Areas** - Mulch shall be applied to all seeded areas immediately after seeding.
 - If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 - 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 depth so that the soil surface is not exposed. If a mulch anchoring tool is 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 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 binder shall be used for anchoring straw mulch. 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 Petroseal, Terra Tax II, Terra Tack AK 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.
 - Place final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

- Incremental Stabilization - 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 less, or when the operation ceases as prescribed by the plans.
 - At the end of each day, temporary berms and pipe slope drains shall 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 5, unless other methods shown on the plans address this area.
 - Place Phase 1 excavation, dress and stabilize.
 - Place Phase 2 embankment, dress and stabilize.
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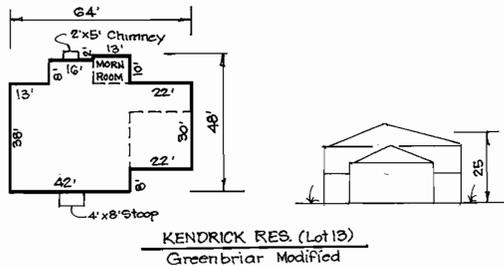
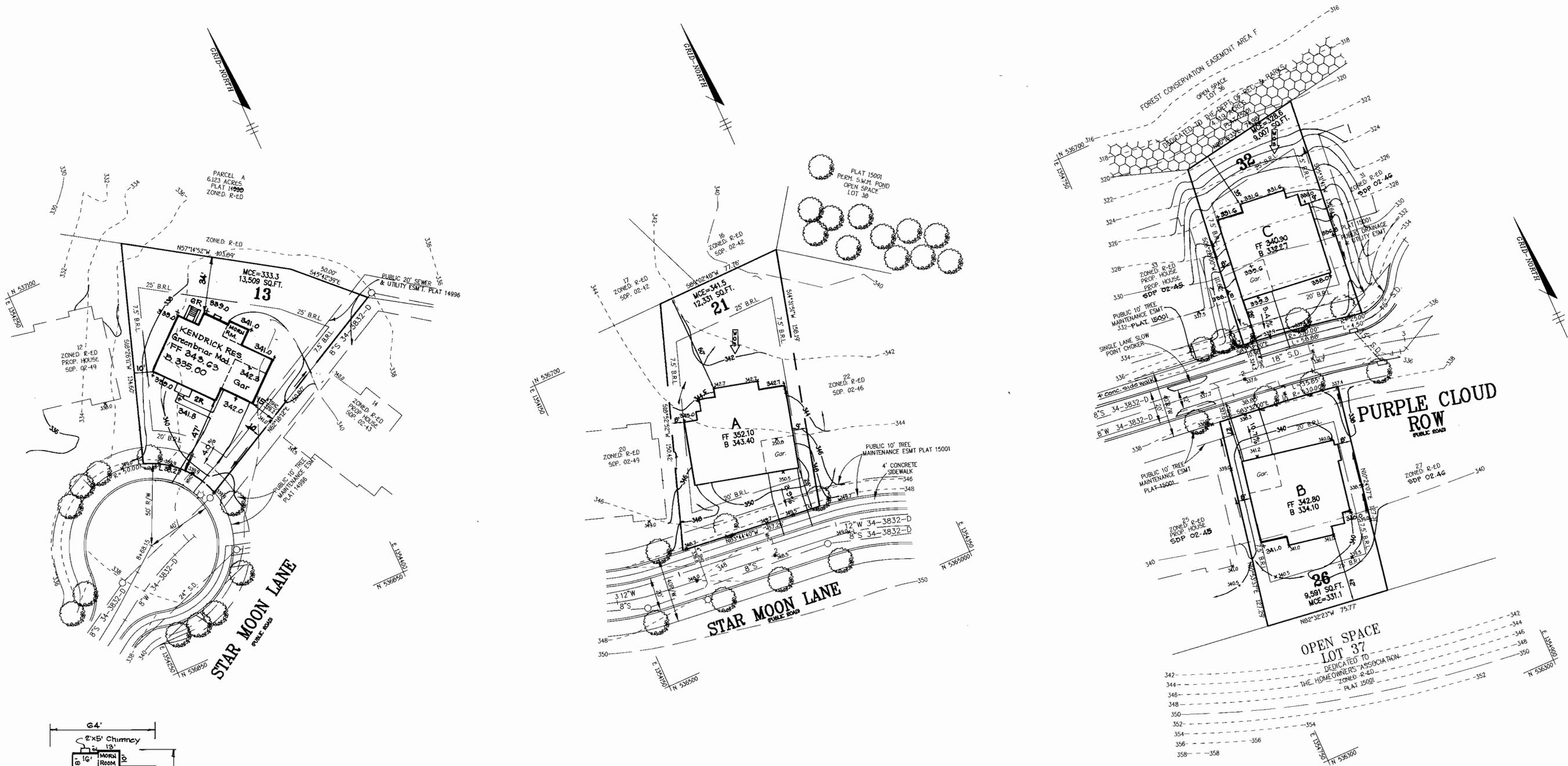
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KENDRICK RES. (Lot 13)
Greenbriar Modified

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE
ELLCOTT CITY, MARYLAND 21042
4100 461 - 2095



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: *Charles J. Crovo Sr.* Date: 12/26/01
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: *Dana Borg* Date: 10/26/01

Reviewed for HOWARD SCD and meets Technical Requirements.
Jim Meyer 1/28/02 Date
Natural Resources Conservation Service
This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
John R. Kintner 1/28/02 Date
Howard SCD
OWNER/DEVELOPER
THE HOWARD RESEARCH & DEVELOPMENT CORP.
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-932-6000
BUILDER
DOUGLAS HOMES
P.O. BOX 629
ELLCOTT CITY, MARYLAND 21041
410-750-0522

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Chris Stranahan 1/31/02 Date
Chief, Division of Land Development
Charles Stranahan 1/30/02 Date
Chief, Development Engineering Division
Joseph J. Sauer 2/1/02 Date
Director, Department of Planning and Zoning
PROJECT: EMERSON SECTION: I/1 LOTS NO.: 13,21,26 & 32
PLAT: 14994 THRU: 15001 BLOCK NO.: 3,8 & 9 ZONE: R-ED TAX/ZONE: 47 ELEC. DIST.: SIXTH CENSUS TR.: 6009.02
WATER CODE: E-15 SEWER CODE: 160000

SITE DEVELOPMENT PLAN
EMERSON
SECTION 1 AREA 1
LOTS 13,21,26 & 32
TAX MAP No: 47 P/O PARCEL: 837
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1"= 30' DATE: DECEMBER, 2001
SHEET 2 OF 4

NO	Rev. desc	Date
1	Rev. hcc 4 qrd. Lot 13, add hse type	2-11-02