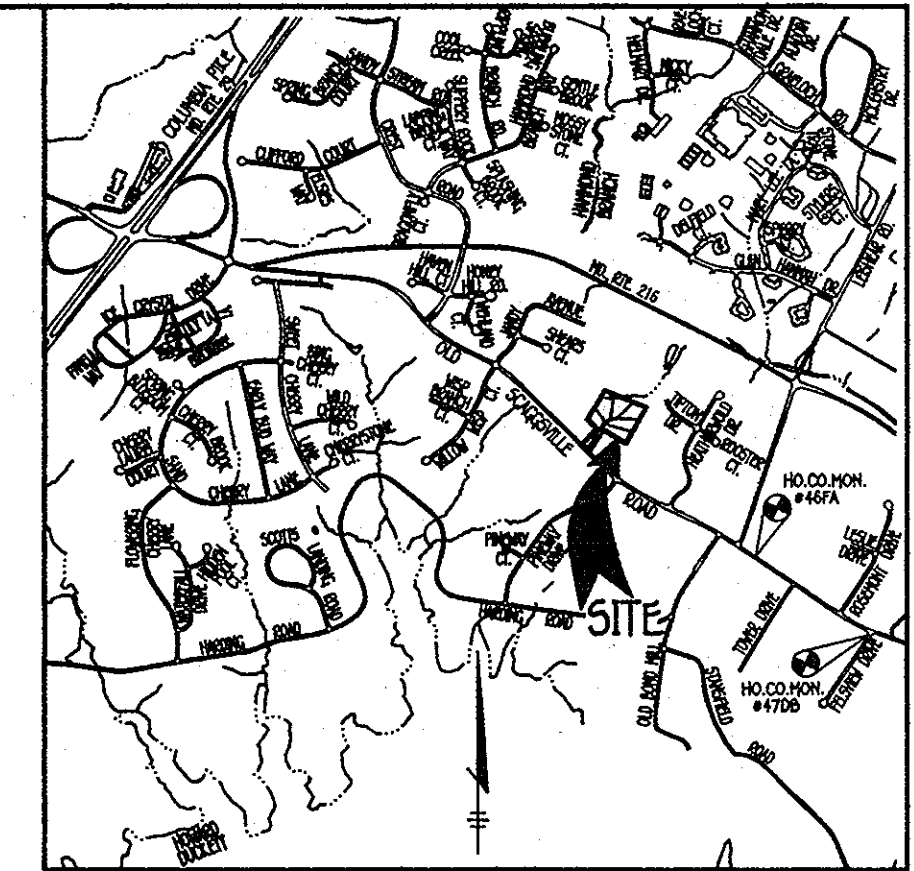


BENCH MARKS

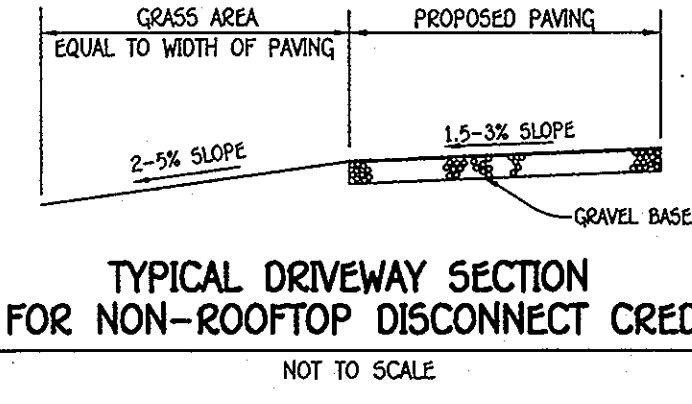
T.P. 46FA ELEV. 403.650
 N. 535,140.866
 E. 1,346,962.690
 LOC. NEAR INTERSECTION OF
 SCAGSVILLE RD. & TOWER DR.
 T.P. 470B ELEV. 398.560
 N. 534,316.917
 E. 1,348,131.250
 LOC. NEAR INTERSECTION OF
 SCAGSVILLE RD. & FELLSVIEW DR.



VICINITY MAP
 SCALE: 1" = 2000'
 HOWARD COUNTY ADC MAP
 MAP 19, QGD 07

LEVEL SPREADER DEVICE SUMMARY					
LS NO.	TRENCH LENGTH	TRENCH WIDTH & DEPTH	WQV VOLUME REQUIRED	WQV VOLUME PROVIDED	CREST ELEVATION
LS 2A	25 LF	1' X 1'	25 CF	25 CF	356.8
LS 2B	40 LF	1' X 1'	40 CF	40 CF	356.0
LS 3A	25 LF	1' X 1'	25 CF	25 CF	352.2
LS 3B	30 LF	1' X 1'	30 CF	30 CF	352.2
LS 3C	45 LF	1' X 1'	45 CF	45 CF	352.0
LS 4A	38 LF	1' X 1'	38 CF	38 CF	349.0
LS 4B	20 LF	1' X 1'	20 CF	20 CF	348.9
LS 4C	32 LF	1' X 1'	32 CF	32 CF	350.0
LS 5A	22 LF	1' X 1'	22 CF	22 CF	355.0
LS 5B	35 LF	1' X 1'	35 CF	35 CF	351.0
LS 6A	25 LF	1' X 1'	25 CF	25 CF	358.0
LS 6B	25 LF	1' X 1'	25 CF	25 CF	356.5

MINIMUM LOT SIZE CHART		
LOT NO.	GROSS AREA	MINIMUM LOT SIZE
2	40,453 SQ. FT.	1,931 SQ. FT.
3	35,120 SQ. FT.	2,315 SQ. FT.
4	34,539 SQ. FT.	2,748 SQ. FT.
5	31,295 SQ. FT.	1,898 SQ. FT.
6	29,209 SQ. FT.	1,476 SQ. FT.

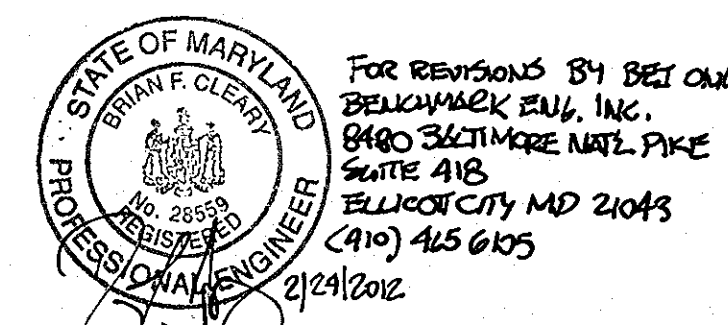


SITE ANALYSIS DATA CHART

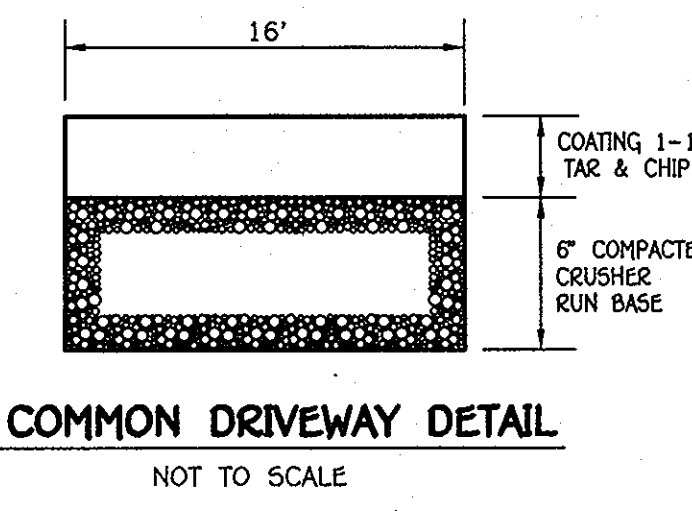
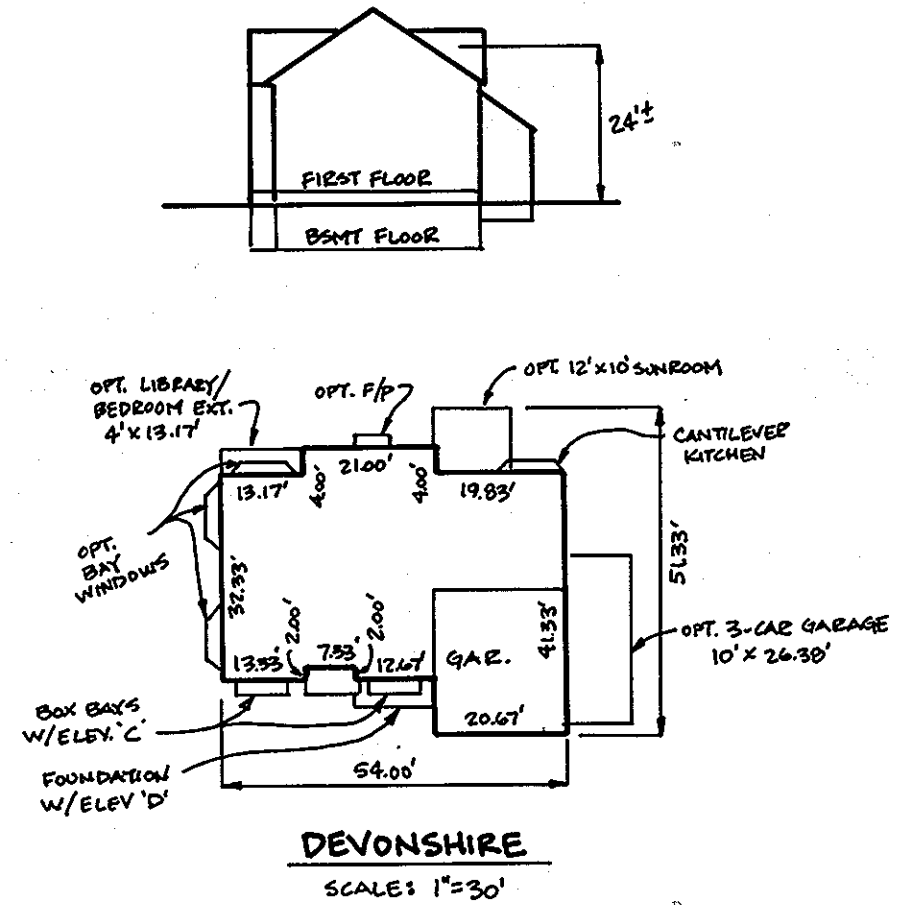
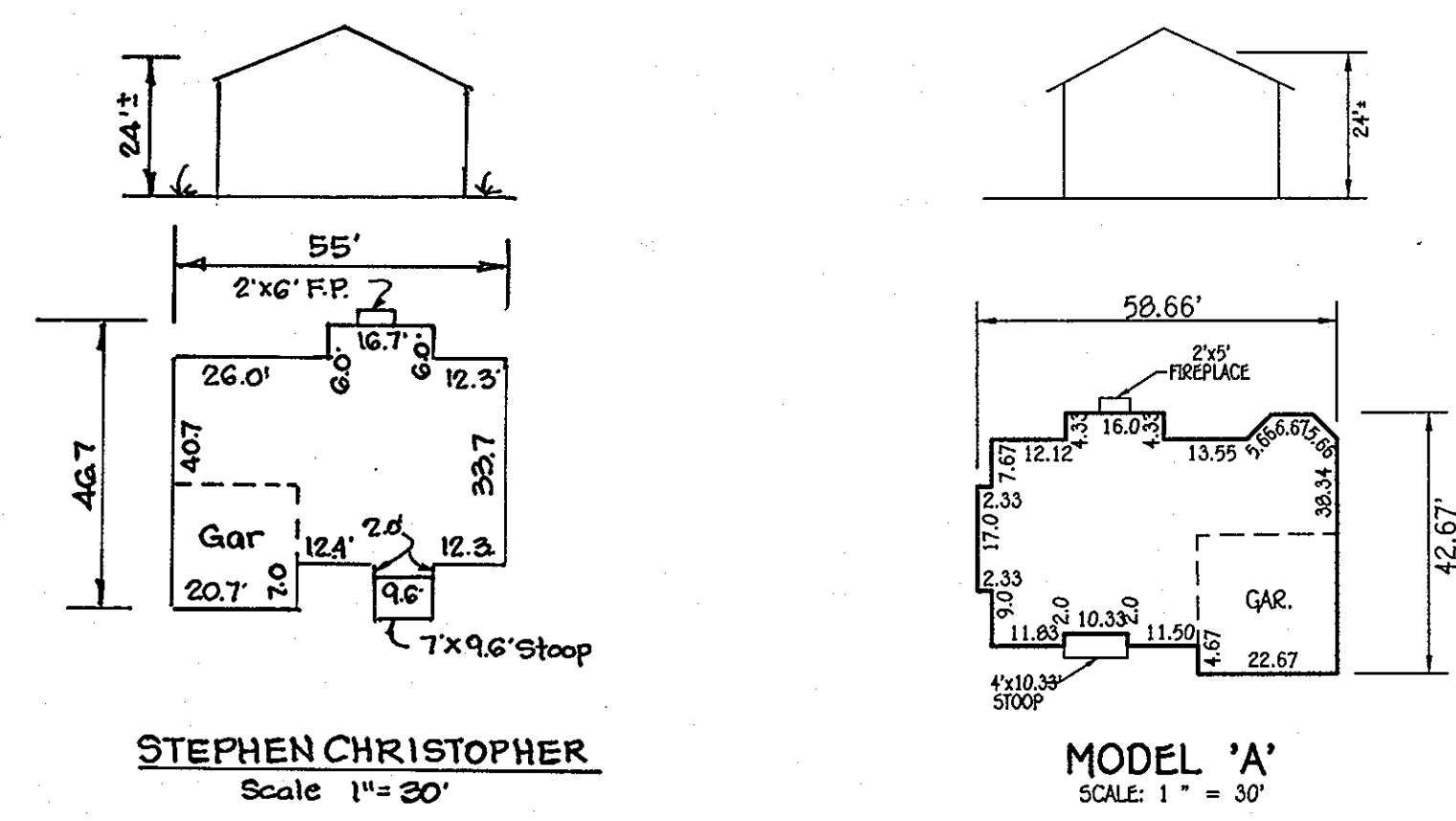
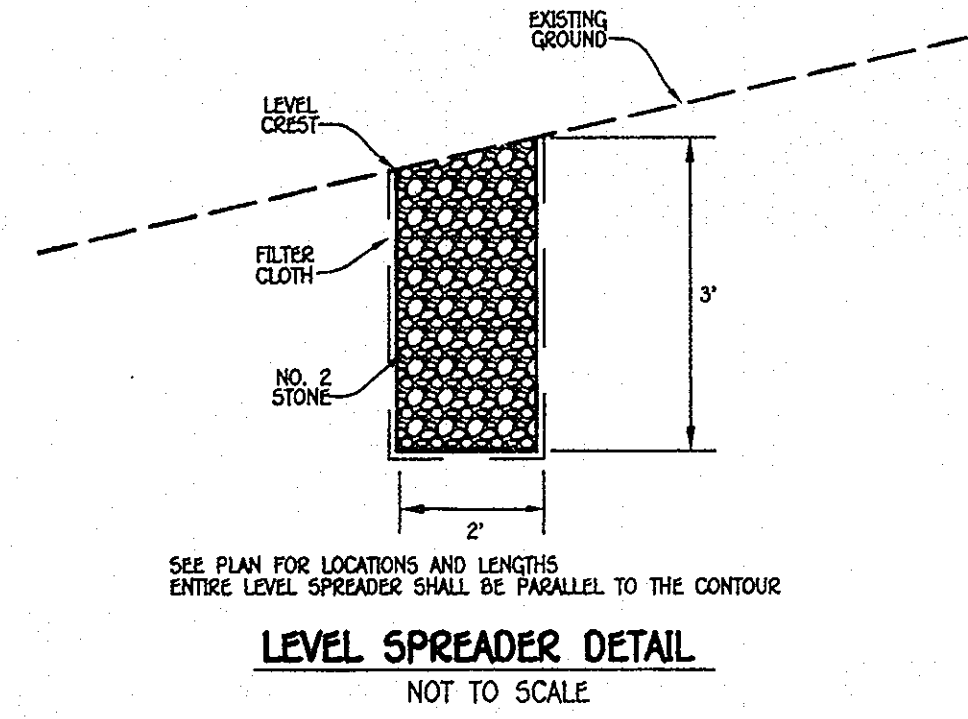
- A. TOTAL PROJECT AREA: 4.723 ACRES OR 205,734 SQUARE FEET.
- B. AREA OF SUBMISSION: 4.723 ACRES OR 205,734 SQUARE FEET.
- C. LIMITS OF DISTURBANCE: 1.834 ACRES OR 79,889 SQUARE FEET.
- D. PRESENT ZONING DESIGNATION: R-20.
- E. PROPOSED USES FOR SITE: RESIDENTIAL.

GENERAL NOTES

- SUBJECT PROPERTY ZONED R-20 PER THE 02/02/09 COMPREHENSIVE ZONING PLAN AND THE COMPLETE ZONING AMENDMENTS EFFECTIVE 07/28/06.
- TOTAL AREA OF SITE: 4.723 ACRES
- TOTAL NUMBER OF LOTS SUBMITTED: 6 SFD
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410)313-1860 AT LEAST FIVE (5) 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: F-09-095, SP-08-17, 5 CONT. NO. 5295, WAS CONT. NO. 24-4403-0.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH 2 FOOT CONTOUR INTERVALS PREPARED BY DAFT, McCUNE, WALKER, INC., JUNE, 2000.
- HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, HAWKLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATION HOWARD COUNTY MONUMENT 46FA N 535,140.866 E 1,346,962.690 HOWARD COUNTY MONUMENT 47HA N 534,316.917 E 1,348,131.250
- 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 APPROVED WATER AND SEWER PLANS CONTACT NO. 24-4403-0.
- CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
- FOREST CONSERVATION REQUIREMENTS HAVE BEEN ADDRESSED WITH F-09-095.
- FOR DRIVEWAY ENTRANCE DETAILS SEE HD CODES MANUAL VOL. IV DETAILS R.6.03 & R.6.05.
- THIS PLAN IS SUBJECT TO THE AMENDED 5TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED UNDER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT.
- IN ACCORDANCE WITH SECTION 12B OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16' FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS OR ENCLOSED MAY PROJECT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS. THE 15' MINIMUM DISTANCE BETWEEN STRUCTURES DOES NOT APPLY TO THOSE REFERENCED FEATURES NOR BETWEEN OPEN DECKS AND A DWELLING STRUCTURE OR ANOTHER DECK. AS AN ADVISORY, THE 15' DISTANCE DOES APPLY TO THE SECOND STORY OVERHANG.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR THE FOLLOWING DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE ANY MINIMUM REQUIREMENTS:
 - A) WIDTH - 12' (16' IF SERVING MORE THAN ONE RESIDENCE)
 - B) SURFACE - 6" OF COMPACTED CRUSHER RUN BASE W/TAR AND CHIP COATING (1-1/2" MIN.)
 - C) GEOMETRY HAVING 1% GRADE CHANGE, HAVING 10% GRADE CHANGE AND 45 FOOT TURNING RADII.
 - D) STRUCTURES - (BEDS/CULVERTS) CAPABLE OF SUPPORTING 25 GROSS TONS (182-TONS)
 - E) DRAINAGE ELEMENTS CAPABLE OF SAFETY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - G) MAINTENANCE SUFFICIENT TO INSURE ALL WEATHER USE.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, OR PLACEMENT OF NEW STRUCTURES IS PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR OTHER BUFFERS AND FOREST CONSERVATION EASEMENT AREAS.
- TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP, DATED JUNE 2006 AND APPROVED UNDER SP-08-17 ON JULY 24, 2008.
- NO CEMETERIES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND BASED ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
- THERE IS NO 100 YEAR FLOOD PLAN ON THIS PROPERTY.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- A PRIVATE ROAD STREET NAME SIGN (ENSEMBLY) THAT NEEDS TO BE INSTALLED AT THE INTERSECTION OF THE PRIVATE ROAD AND THE PUBLIC ROAD SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT (410) 313-5752 FOR DETAILS AND COST ESTIMATES.
- THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED APRIL 15, 2008 AND APPROVED UNDER SP-08-17 ON JULY 24, 2008.
- STORMWATER MANAGEMENT FOR THIS PROJECT WILL BE PROVIDED IN ACCORDANCE WITH THE CRITERIA CONTAINED IN THE 2000 HAWKLAND STORMWATER DESIGN MANUAL VOLUMES I & II, CHAPTER 5 "STORMWATER CREDITS FOR INNOVATIVE SITE PLANNING". SOME OF THE WQV AND REV WILL BE PROVIDED AND MAINTAINED BY UTILIZING NON-STRUCTURAL BEST MANAGEMENT PRACTICE IN ACCORDANCE WITH CHAPTER 5 OF THE DESIGN MANUAL. THE REMAINING REQUIREMENTS WILL BE ADDRESSED WITH LEVEL SPREADERS. CPV WAS NOT REQUIRED BECAUSE THE ONE (1) YEAR STORM IS LESS THAN THE 2.0 CFS HANDLED BY THE FORESTED AREAS AS APPROVED PER F-09-095.
- THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY A FEE-IN-LIEU PAYMENT OF \$22,069.00 BASED ON 0.70 ACRES X 43,560 SQ. FT./ACRE X \$0.75/SQ. FT. W/F-09-095.
- LANDSCAPING FOR THIS SUBDIVISION AND REQUIRED SURETY AMOUNT OF \$8,750.00, BASED ON TWENTY (20) SHADE TREES @ \$300/SHADE TREE AND TWENTY-FIVE (25) EVERGREENS @ \$150/ EVERGREEN TREE WILL BE PROVIDED WITH A DEVELOPER'S AGREEMENT WITH THE FINAL PLANS IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY LANDSCAPE MANUAL W/F-09-095.
- THIS PROPERTY IS LISTED IN THE HOWARD COUNTY HISTORIC SITES INVENTORY AS HO-707. THE PLAN WAS REVIEWED BY THE HISTORIC DISTRICT COMMISSION ON JUNE 5, 2008 AS CASE HDC-08-30. THE COMMISSION HAD NO OBJECTION TO THE PROPOSAL.
- THE USE-IN-COMMON DRIVEWAY MAINTENANCE AGREEMENTS FOR LOTS 1 THRU 6 HAVE BEEN RECORDED IN THE HOWARD COUNTY LAND RECORDS OFFICE SIMULTANEOUSLY WITH THE RECORDATION OF THIS SUBDIVISION.
- OPEN SPACE REQUIREMENTS ARE PROVIDED BY A FEE-IN-LIEU PAYMENT OF \$6,000.00 BASED ON 4 LOTS X \$1,500/LOT.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING.
- ALL SEWER HOUSE CONNECTION ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
- EXISTING UTILITIES ARE BASED ON WATER AND SEWER CONTRACT NO. 24-4403-0.



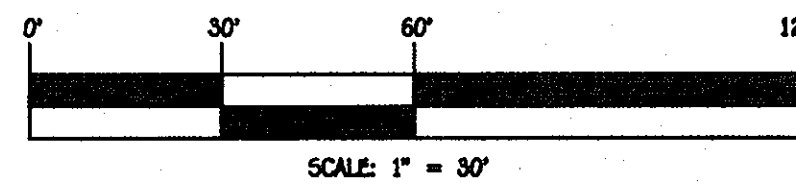
Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 28559, Expiration Date: 7/22/2013



LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
+362.2	SPOT ELEVATION
BASE	WALKOUT BASEMENT
SF	SILT FENCE
SSF	SUPER SILT FENCE
TP	TREE PROTECTION
S/TB	SILT FENCE/TREE PROTECTION
E	EROSION CONTROL MATTING

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
1	8411 LULLIAN LANE
2	8415 LULLIAN LANE
3	8419 LULLIAN LANE
4	8418 LULLIAN LANE
5	8414 LULLIAN LANE
6	8410 LULLIAN LANE

INDEX CHART	
SHEET	DESCRIPTION
SHEET 1	TITLE SHEET, NOTES, CHARTS & HOUSE TYPE
SHEET 2	SITE DEVELOPMENT PLAN, LOTS 1 THRU 6
SHEET 3	SEDIMENT/EROSION CONTROL PLAN LOTS 1 THRU 6
SHEET 4	SEDIMENT/EROSION CONTROL NOTES & DETAILS



BUILDER/DEVELOPER'S/ CERTIFICATE

I/WE CERTIFY THAT THE REQUIRED LANDSCAPING WILL BE DONE ACCORDING TO THE PLAN AND LOCATED AS DETERMINED AND APPROVED BY THE ARCHITECTURAL COMMITTEE IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF NOTICE ACCOMPANIED BY A COPY OF THE ARCHITECTURAL COMMITTEE APPROVED PLAN AND AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING FOR INSPECTION AND THE SUBSEQUENT RELEASE OF SURETY.

Stephen Forney 1-19-10
 STEVE FORNEY DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9797, EXPIRATION DATE: 3/3/10.

Terrill A. Fisher 1/18/10
 TERRILL A. FISHER 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."

Terrill A. Fisher 1/18/10
 Signature of Engineer TERRILL A. FISHER DATE

BUILDER/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."

Steve Forney 1-19-10
 Signature of Developer STEVE FORNEY DATE

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
John K. Robinson 2/1/10
 John K. Robinson Date

OWNER/BUILDER/DEVELOPER

HAMILTON REED
 3368 BRANTLY COURT
 GLENWOOD, MARYLAND 21738
 410-442-1751

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Victoria L. ... 2-24-10
 Chief, Division of Land Development Date
... 2-18-10
 Chief, Development Engineering Division Date
... 2/24/10
 Director - Department of Planning and Zoning Date

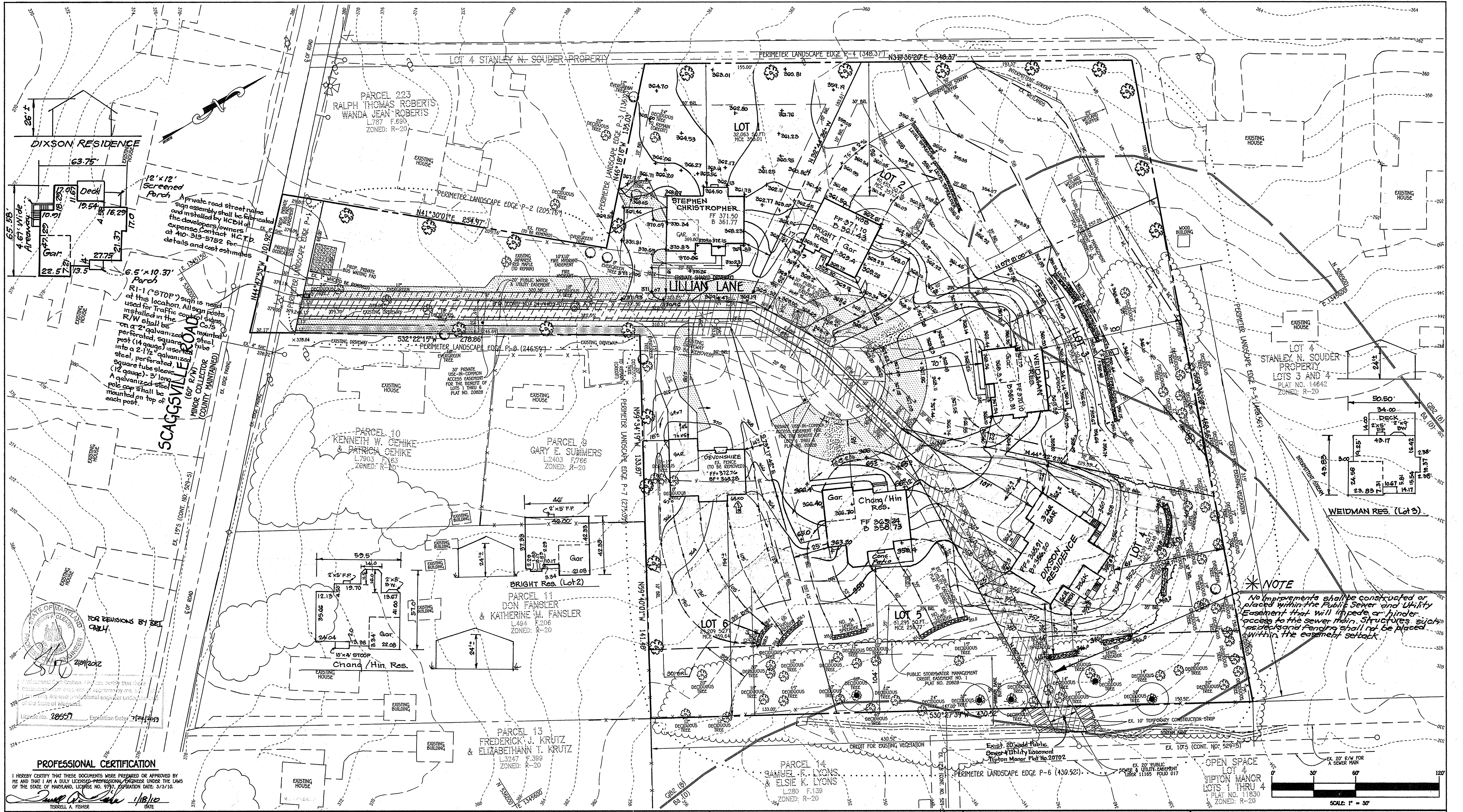
PROJECT	SECTION	LOTS NO.			
GUILFORD MEADOWS	N/A	1 THRU 6			
PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
20827 20828	11 & 12	R-20	46	SIXTH	6069.02
WATER CODE	SEWER CODE				
C-02	7390000				

TITLE SHEET

SINGLE FAMILY DETACHED GUILFORD MEADOWS LOTS 1 THRU 6
 ZONED: R-20
 PLAT NO'S: 20827 & 20828
 TAX MAP NO.: 46 PARCEL NO'S.: 6 & 12 GRID NO'S.: 11 & 12 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: NOVEMBER, 2009
 SHEET 1 OF 4



NO.	REVISION	DATE
2	ADD DEVONSHIRE MODEL (BEI)	2-23-2012
1	Add Stephen Christopher Model	7-20-11



NOTE
 No improvements shall be constructed or placed within the Public Sewer and Utility Easement that will impede or hinder access to the sewer main. Structures such as decks and fences shall not be placed within the easement setback.

FOR REVISIONS BY SET ONLY
 2/29/2012
 PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9777, EXPIRATION DATE: 3/3/10.
 License No. 28557 Expiration Date: 7/24/2013
 TERRYELL A. FISHER
 DATE: 1/18/10

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9777, EXPIRATION DATE: 3/3/10.
 TERRYELL A. FISHER
 DATE: 1/18/10

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: Terryell A. Fisher
 Date: 1/18/10

BUILDER/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: Steve Forney
 Date: 1-19-10

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 Signature: Jim K. Robertson
 Date: 2/1/10

OWNER/BUILDER/DEVELOPER
 HAMILTON REED
 3369 BRANTLEY COURT
 GLENWOOD, MARYLAND 21738
 410-442-1751

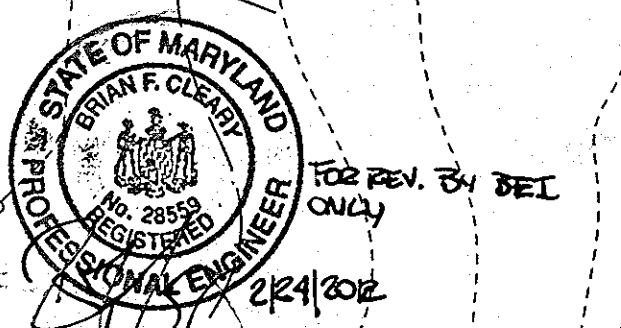
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: [Signature]
 Date: 2-24-10
 Chief, Development Engineering Division: [Signature]
 Date: 2-18-10
 Director - Department of Planning and Zoning: [Signature]
 Date: 2/24/10

PROJECT	SECTION	LOTS NO.			
GUILFORD MEADOWS	N/A	1 THRU 6			
PLAT	BLOCK NO.	ZONE	TAX/ZONING	ELEC. DIST.	CENSUS TR.
2027 2028	11 & 12	R-20	46	SIXTH	6069.02
WATER CODE	SEWER CODE				
C-02	7390000				

SITE DEVELOPMENT PLAN
 SINGLE FAMILY DETACHED
 GUILFORD MEADOWS
 LOTS 1 THRU 6
 ZONED: R-20
 PLAT NO'S. 2027 & 2028
 TAX MAP NO'S: 46 PARCEL NO'S: 6 & 12 GRID NO'S: 11 & 12
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 30' DATE: NOVEMBER, 2009
 SHEET 2 OF 4

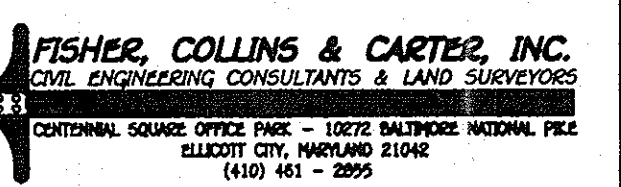
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 10772 BALTIMORE NATIONAL PIKE
 ELLETTT CITY, MARYLAND 21142
 (410) 461-2995





Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 28557 Expiration Date: 1/12/2012

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 9799, EXPIRATION DATE: 3/3/10.
 Terrell A. Fisher 1/18/10
 DATE



NO.	REVISION	DATE
1	SHOW DEVONSHIRE ON LOT 6. REVISION LOCATION & GRADING (P-1)	2-23-2012



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: Terrell A. Fisher 1/18/10 Date
BUILDER/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: Corey Forney 1-19-10 Date

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.
 Signature of District Director: [Signature] 2/1/10 Date
OWNER/BUILDER/DEVELOPER
 HAMILTON REED
 3368 BRANTLY COURT
 GLEENWOOD, MARYLAND 21738
 410-442-1751

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief of Land Development: Kat Sheeple 2-21-10 Date
 Chief Development Engineering Division: [Signature] 2-18-10 Date
 Director - Department of Planning and Zoning: [Signature] 2/24/10 Date

PROJECT	SECTION	LOTS NO.
QUILFORD MEADOWS	N/A	1 THRU 6

PLAT	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
20227	11 & 12	R-20	46	SIXTH	6069.02

WATER CODE: C-02 SEWER CODE: 7390000

SEDIMENT/EROSION CONTROL PLAN
 SINGLE FAMILY DETACHED
QUILFORD MEADOWS
 LOTS 1 THRU 6
 ZONED: R-20
 PLAT NO'S. 20827 & 20828
 TAX MAP NO.: 46 PARCEL NO'S.: 6 & 12 GRID NO'S.: 11 & 12
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: 1" = 30' DATE: NOVEMBER, 2009
 SHEET 3 OF 4

SDP 10-19

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 (Up to one year), and Permanent Seeding, for long term vegetative cover. Extension of Applicable Area for Temporary Seeding are Temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dunes, 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, evapotranspiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into vegetative areas.

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 stabilization.
 - Seeds required soil tests to determine soil amendment composition and application rates for sites having disturbed areas over 5 acres.
- Soil Amendment**
 - 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 authority. Fertilizer 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 90% calcium oxide (calcium oxide plus calcium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
 - Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

- Seedbed Preparation**
 - Temporary Seeding
 - Seedbed preparation shall consist of loosening soil to a depth of 3" to 9" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or ripers mounted on tracked equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Areas greater than 1/4 acre (less than 3.1) should be graded 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 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 for loess or special loess-like soils to be planted, then a sandy soil (<20% 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 drainage 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 indicated on the plans.
 - Use soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be rolled 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, loose surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be planted by a dune building method. 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 6 months immediately preceding the date of sowing. The date of sowing shall be indicated on the plans.
 - Incubant - The incubant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Incubant shall not be used later than the date indicated on the container. Add fresh incubant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep incubant as cool as possible until used. Temperature above 75-80° F. can weaken bacteria and make the incubant less effective.
- Methods of Seeding**
 - Hydroseeding - Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeds, or a cultipacker seeder.
 - If fertilizer is being applied at the time of seeding, the application rates and amounts will not exceed the following: Nitrogen, maximum of 100 lbs. per acre (total of soluble nitrogen, P2O5 (phosphorus), 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 specifications or tables 205 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 Cultipacker Seeding - Mechanized seeders that apply and cover seed with soil.
 - Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seeding 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, rice or oat straw, reasonable bright in color, and shall not be musty, rotting, chaffed, decayed, or excessively dry and shall be free of noxious weed seeds as specified in the Maryland State Seed Law.
 - Wood Cellulose Fiber Mulch (WCFM)
 - WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical sheet.
 - WCFM shall be dyed green or contain a green dye that will provide an appropriate color to facilitate visual inspection of the application.
 - 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 water-like matrix around the seed, fertilizer and other additive and ensure 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 of concentration levels that will be phytotoxic.
 - WCFM must conform to the following physical requirements: Fiber length to approximately 12 mm., diameter 1.0 mm., density 0.85, ash content of 1.5% maximum and water holding capacity of 90% minimum.

- 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 precise amendments and for sites having disturbed areas over 5 acres shall conform to the following requirements:
 - Composted sludge shall be applied 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 26.06.06.
 - 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 a compost does not meet these requirements, the appropriate constituents must be added to meet the requirements for use.
 - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
 - Composted sludge shall be applied with a petroleum fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.
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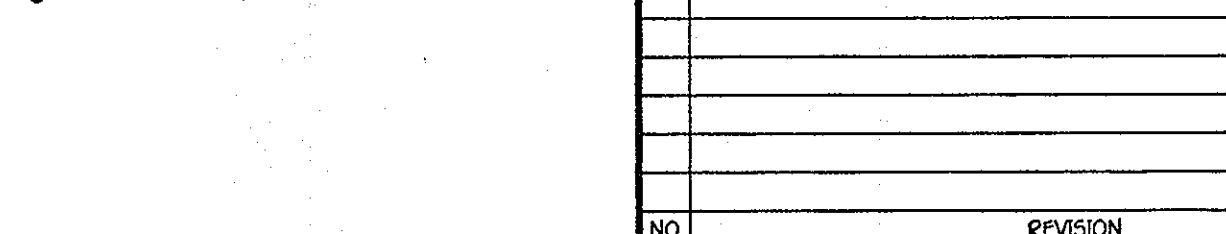
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NO.	REVISION	DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
BELLGATE CITY, MARYLAND 21142
(410) 661 - 2992



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/parent 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 lime 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 obtained from the existing site and used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be added 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 silty soils may be used if recommended 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 2% by volume of cinders, stones, slag, coarse aggregates, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutcase, 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 100-400 lbs/acre (200-400 pounds per 1,000 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 steeper than 2:1, the following procedures shall be used:
 - 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 detailing fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for forest soil 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 (45 days min.) to permit dissipation of phytotoxicity.
 - 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 season will necessitate the application of temporary stabilization.

- 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 precise amendments and for sites having disturbed areas over 5 acres shall conform to the following requirements:
 - Composted sludge shall be applied 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 26.06.06.
 - 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 a compost does not meet these requirements, the appropriate constituents must be added to meet the requirements for use.
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EROSION CONTROL MATTING
NOT TO SCALE

BLAZE ORANGE PLASTIC MESH TREE PROTECTION DETAIL
NOT TO SCALE

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 County Conservation District."

Signature of Engineer: *Terrell A. Fisher* Date: *1/18/10*

BUILDER/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 Approval from the Howard County 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: *Steve Jorney* Date: *1-19-10*

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed by a short-term vegetative cover is needed.

Seedbed Preparation - Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, but 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 ryegrass (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 170 to 90 lbs. per 1000 sq.ft.) of unrotted 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 gal. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Construction Specifications

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

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-term vegetative cover is needed.

Seedbed Preparation - Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, but not previously loosened.

Soil Amendments - In lieu of soil test recommendations, use one of the following schedules:

- 1) For October 15, seed with 60 lbs. per acre (14 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:
 - 2) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
 - Use sod.
 - Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching - Apply 1-1/2 to 2 tons per acre 170 to 90 lbs. per 1000 sq.ft.) of unrotted 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 gal. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance - Inspect seedbed areas and make needed repairs, replacements and reseedings.

SEDIMENT CONTROL NOTES

1) 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 (313-1695).

2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE IN ACCORDANCE WITH 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 THEREOF.

3) 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 THEREOF.

4) CALENDAR DAYS FOR ALL PERMITS, SEDIMENT CONTROL, STRUCTURES, SIGNS, FENCES, SLOTTED AND ALL SLOPES STEEPER THAN 3:1, 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

5) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEM IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

6) 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.

7) 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.

8) SITE ANALYSIS:
TOTAL AREA OF SITE: 4,653 ACRES
AREA DISTURBED: 1,834 ACRES
AREA TO BE ROOFED OR PAVED: 0,546 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 1,269 ACRES
TOTAL CUT: 0 CU.YDS.
TOTAL FILL: 0 CU.YDS.

9) OFFSITE WASTE/BODYSIDE AREA LOCATION STOCKPILING WILL NOT BE PERMITTED ON SITE.

10) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

11) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

12) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 5 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMITS, 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 FROM THE INSPECTION AGENCY IS MADE.

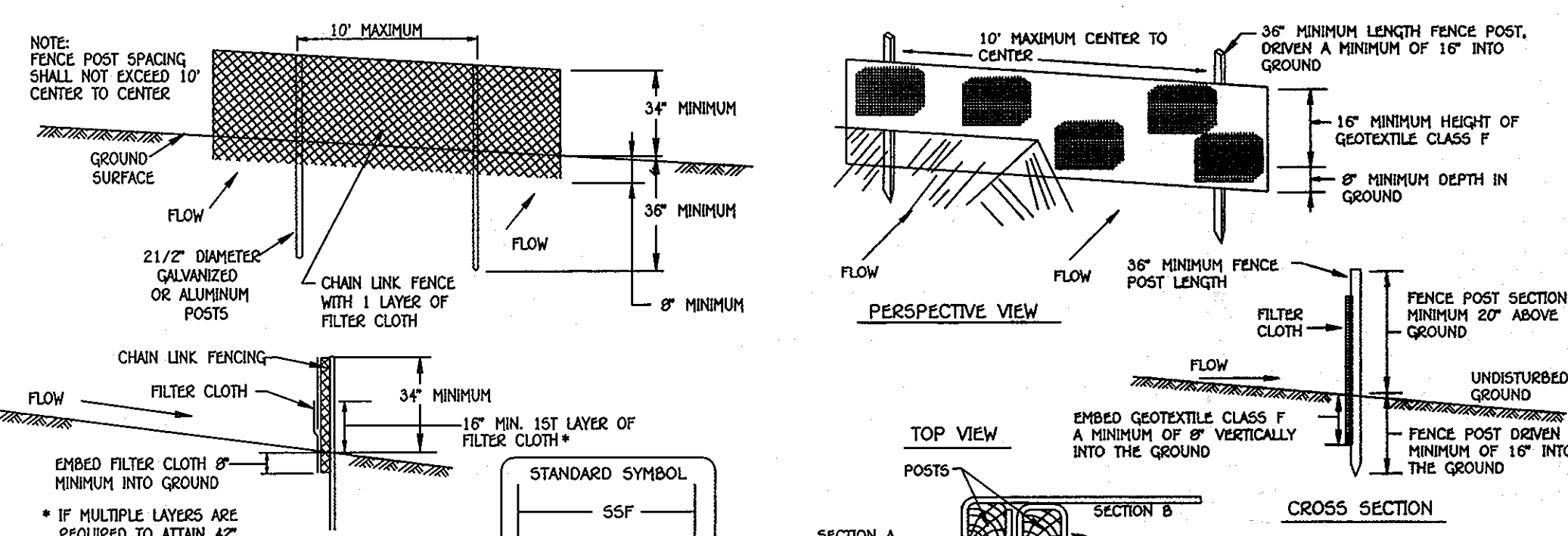
13) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SEQUENCE OF CONSTRUCTION

1. CLEAR GRADING PERMIT
2. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS SHOWN ON PLAN
3. OBTAIN GRADING AND EROSION CONTROL DEVICES
4. INSTALL TEMPORARY SEEDING
5. CONSTRUCT BUILDINGS
6. FINISH GRADE SITE AND INSTALL PERMANENT SEEDING AND LANDSCAPE
7. REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY E/S CONTROL INSPECTOR.

SILT FENCE AND TREE PROTECTION
NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway details for Chain Link. The specification for a 6" fence shall be used, substituting 42" fabric and 6" length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties.
3. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the