



**LEGEND**

- EXISTING CONTOUR --- 382
- PROPOSED CONTOUR --- 382
- SPOT ELEVATION +82.3
- DIRECTION OF FLOW →
- EXISTING TREES TO REMAIN (Symbol)
- PROPOSED TREELINE (Symbol)
- EXISTING STREET LIGHT (PER F-08-122) (Symbol)
- PROPOSED SIGN (PER F-08-122) (Symbol)
- PROPOSED 4" SEWER HOUSE CONNECTION PROP. 4" SHC
- PROPOSED 1" WATER HOUSE CONNECTION PROP. 1.5" WHC
- EXISTING EASEMENTS (Symbol)
- PROPOSED BIORETENTION FACILITY (Symbol)
- PROPOSED ROOF LEADER (4" PVC TYP. WITH DOWNSPOUT) (Symbol)

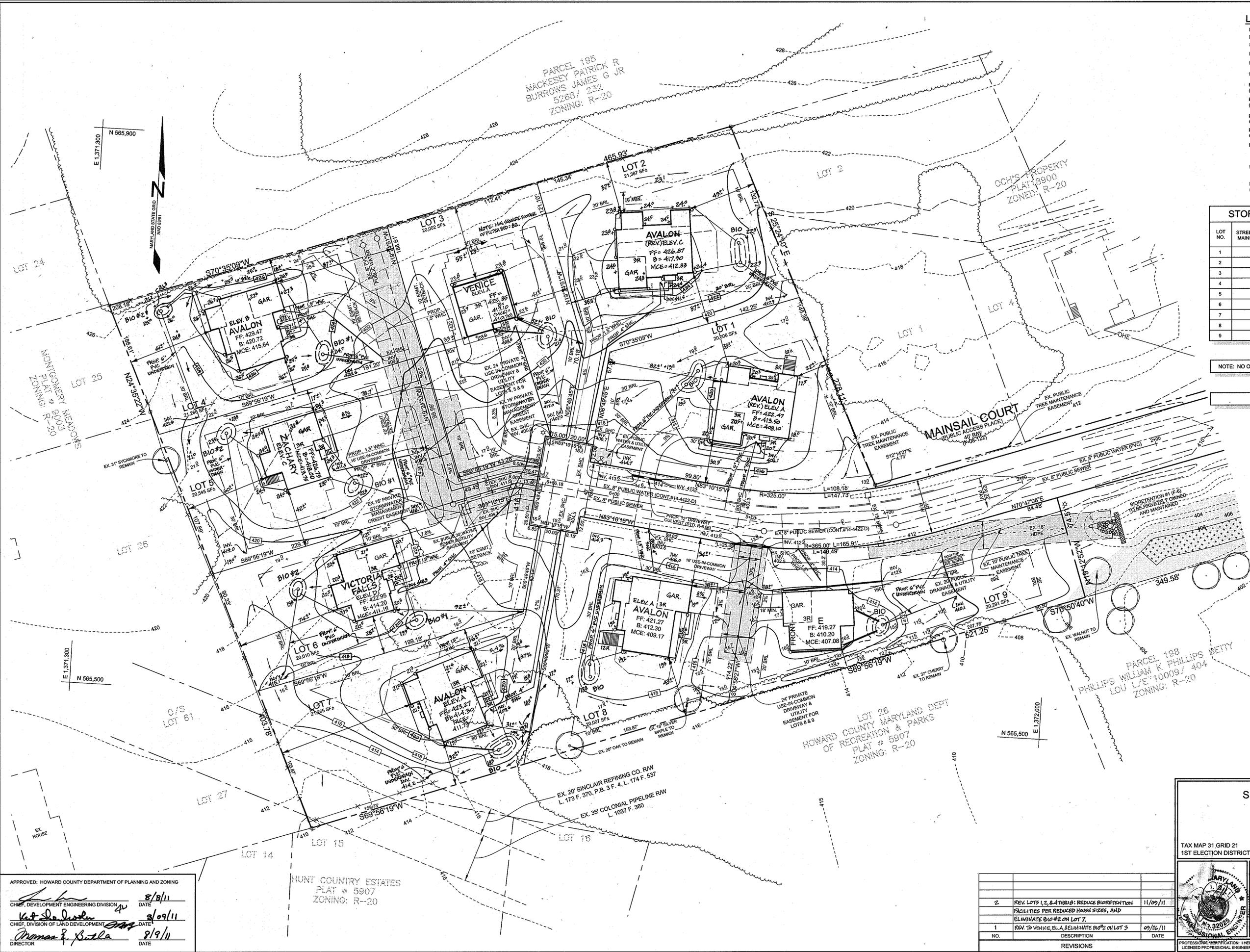
**STORMWATER MANAGEMENT PRACTICES**

LOT NO.	STREET ADDRESS MAINSAIL COURT	DISCONNECTION OF ROOFTOP RUN-OFF N <sub>1</sub> (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUN-OFF N <sub>2</sub> (Y/N)	MICRO-BIORETENTION (NUMBER)
1	5610	0	YES	1
2	5614	0	YES	1
3	5618	0	YES	1
4	5622	0	YES	2
5	5626	0	YES	2
6	5623	0	YES	2
7	5619	0	YES	1
8	5615	0	YES	1
9	5611	1	YES	1

NOTE: NO OVERLAND FLOW IS TO ENTER THE ON-LOT BIO-RETENTION FACILITIES.

NOTE: ALL ROOF LEADERS TO BE 4" PVC, SCHEDULE 40.

**NOTE:**  
FOR BIORETENTION DETAILS AND INFORMATION, SEE SHEET 6 OF 6 (LANDSCAPE & BIORETENTION PLAN AND DETAILS)



**OWNER**  
BONNIE ORCHARD L.L.C.  
8835-P COLUMBIA 100 PARKWAY  
COLUMBIA, MD 21045  
PHONE NO.: 410-730-1810

**DEVELOPER**  
NVR, INC.  
RYAN HOMES,  
BALTIMORE HOWARD DIVISION  
6031 UNIVERSITY BLVD., SUITE 250  
ELlicott CITY, MD 21043  
PHONE NO.: 443-574-1560

**SITE DEVELOPMENT PLAN  
BONNIE ORCHARD  
LOTS 1 THRU 9**

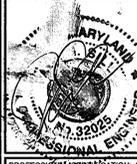
TAX MAP 31 GRID 21  
1ST ELECTION DISTRICT  
PARCEL 565 AND 585  
HOWARD COUNTY, MARYLAND

**Sill · Adcock & Associates · LLC**  
Engineers · Surveyors · Planners  
3300 North Ridge Road, Suite 160  
Ellicott City, Maryland 21043  
Phone: 443.325.7682 Fax: 443.325.7685  
Email: info@silladcock.com

DESIGN BY: DH  
DRAWN BY: DH  
CHECKED BY: PS  
SCALE: 1"=30'  
DATE: JULY 28, 2010  
PROJECT #: 10-030  
SHEET #: 2 of 6

NO.	DESCRIPTION	DATE
2	REV. LOTS 1, 2, & 4 THRU 8: REDUCE BIORETENTION FACILITIES PER REDUCED HOUSE SIZES, AND ELIMINATE BIO #2 ON LOT 7.	11/09/11
1	REV TO VENICE, ELA, & ELIMINATE BIO #3 ON LOT 3	09/26/11

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 8/8/11  
 CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 8/09/11  
 DIRECTOR *[Signature]* 8/9/11



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. 32025, EXPIRATION DATE: JUNE 20, 2013



SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	GROUP
BcC3	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED	C
CnB2	CHILLUM SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED	B
CnB2	CHILLUM FAIRFAX LOAMS, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED	B
luB	LUKA LOAM, LOCAL ALLUVIUM, 1 TO 5 PERCENT SLOPES	C
SIB2	SASSAFRAS LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED	B
SIC2	SASSAFRAS LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED	B
WoB2	WOODSTOWN SANDY LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED	C

LEGEND	
EXISTING CONTOUR	
PROPOSED CONTOUR	
EXISTING SPOT ELEVATION	
PROPOSED SPOT ELEVATION	
DIRECTION OF FLOW	
EXISTING TREETRINE	
LIGHT POLES	
STABILIZED CONSTRUCTION ENTRANCE	
SILT FENCE	
SUPER SILT FENCE	
LIMIT OF DISTURBANCE	
EROSION CONTROL MATTING	
SOIL BOUNDARY	
EXISTING EASEMENTS	
PROPOSED BIORETENTION FACILITY	
PROPOSED ROOF LEADER (4" PVC TYP. WITH DOWNSPOUT)	



**OWNER**  
 BONNIE ORCHARD L.L.C.  
 8835-P COLUMBIA 100 PARKWAY  
 COLUMBIA, MD 21045  
 PHONE NO.: 410-730-1810

**DEVELOPER**  
 NVR, INC.  
 RYAN HOMES  
 BALTIMORE HOWARD DIVISION  
 6031 UNIVERSITY BLVD., SUITE 250  
 ELLICOTT CITY, MD 21043  
 443.574.1560

**SEDIMENT & EROSION CONTROL PLAN**  
**BONNIE ORCHARD**  
 LOTS 1 THRU 9  
 TAX MAP 31 GRID 21  
 1ST ELECTION DISTRICT  
 PARCEL 565 AND 595  
 HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 8/8/11

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND  
 SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
  
 JOHN R. ROBERTS  
 HOWARD SCD  
 DATE: 8/4/11

**ENGINEER'S CERTIFICATE**  
 "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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."  
  
 PAUL M. SILL, PE, LEED AP  
 DATE: 8/8/11

**DEVELOPER'S CERTIFICATE**  
 "I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE  
 ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT  
 ALL 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."  
  
 DATE: 8-20-11

NO.	DESCRIPTION	DATE

**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
 Ellicott City, Maryland 21043  
 Phone: 443.325.7682 Fax: 443.325.7685  
 Email: info@silladcock.com

DESIGN BY: DH  
 DRAWN BY: DH  
 CHECKED BY: PS  
 SCALE: 1"=30'  
 DATE: JULY 28, 2010  
 PROJECT #: 10-030  
 SHEET #: 4 of 6

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2013

**21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOILS**

**DEFINITION**  
 PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

**PURPOSE**  
 TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE 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**  
 I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:  
 A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.  
 B. 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.  
 C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.  
 D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. 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**  
 I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:  
 I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER 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 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS OF BRICKS, ROCKS, TRASH, OR OTHER MATERIAL LARGER THAN 1" AND 1/2" IN DIAMETER.  
 II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.  
 III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 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.

**PERMANENT SEEDING NOTES**

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES  
 1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT THE TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT.)  
 2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT.) AND APPLY 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/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/1000 SQ FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOIL OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT.) FOR ANCHORING.

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

**TEMPORARY SEEDING NOTES**

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT.) FOR THE PERIOD MAY 1 THRU AUGUST 31, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.07 LBS/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 SOIL.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/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**

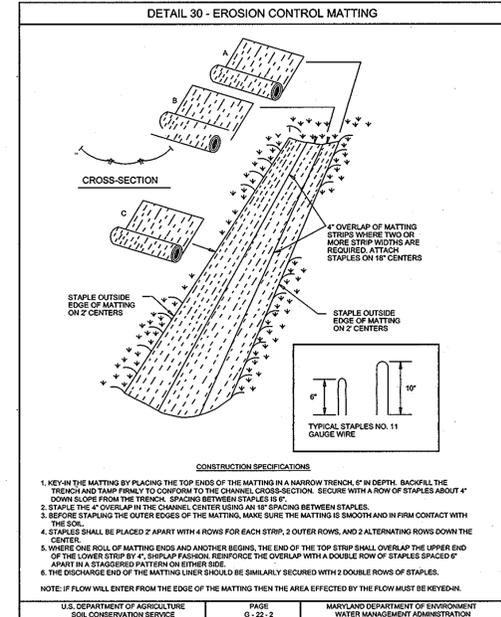
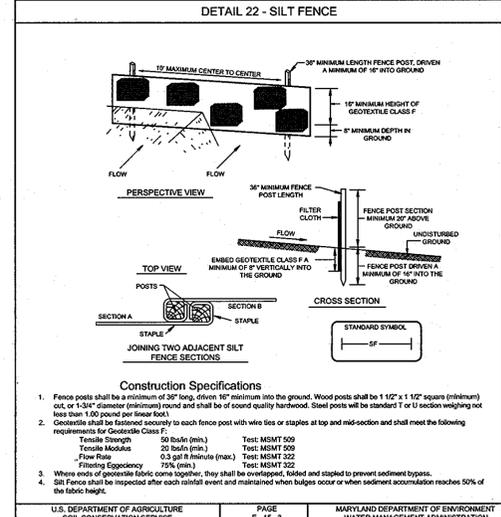
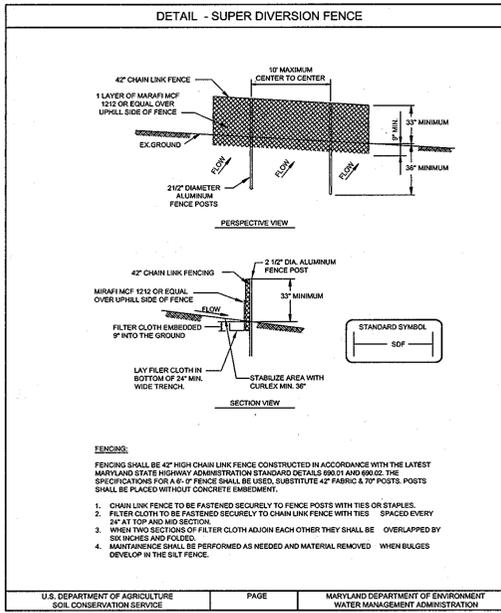
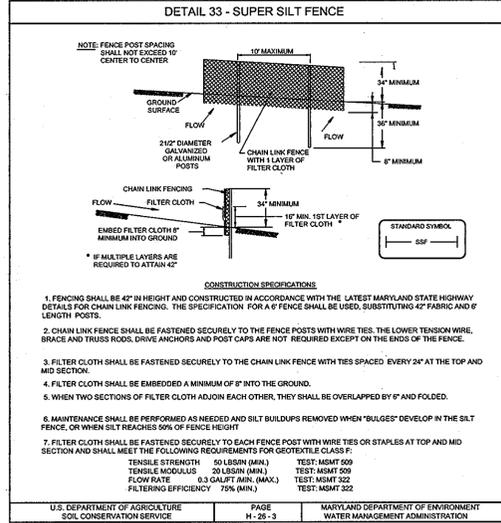
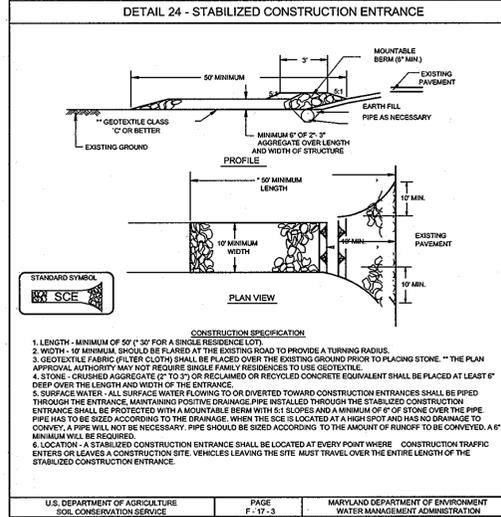
- OBTAIN GRADING PERMIT.
  - NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSE AND PERMITS AT (410) 313-1855 AT LEAST 24 HOURS BEFORE STARTING ANY WORK.
  - INSTALL STABILIZED CONSTRUCTION ENTRANCES AND ANY ADDITIONAL SILT FENCE OR SUPER SILT FENCE AS NECESSARY. ALSO, INSTALL SUPER SILT DIVERSION FENCE ALONG THE NORTH SIDE OF LIMIT OF DISTURBANCE FROM LOT 2 TO LOT 4, AS SHOWN ON PLAN. (1 WEEK)
  - COMPLETE CONSTRUCTION OF HOUSES. (1 YEAR)
  - COMPLETE FINE GRADING OF SITE TO GRADES INDICATED. (1 DAY)
  - INSTALL EROSION CONTROL MATTING IN SWALE AREAS AS NECESSARY. (1 DAY)
  - STABILIZE ALL REMAINING DISTURBED AREAS. (1 DAY)
  - WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE ALL SEDIMENT CONTROL MEASURES AND STABILIZE THE REMAINING DISTURBED AREA. (1 WEEK)
- NOTES:  
 1) FOLLOWING INITIAL SOIL DISTURBANCE OR ANY REDISTURBANCES, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:  
 A. 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES AND ALL SLOPES GREATER THAN 3:1.  
 B. 14 CALENDAR DAYS FOR ALL OTHER DISTURBED AREAS.  
 2) DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSE AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
- ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3:1, (B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPGRASSING SHALL BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, 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, SOIL, TEMPORARY SEEDING, AND MULCHING (SEC. 6). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA:	4,249 ACRES
AREA TO BE ROOFED OR PAVED:	3.90 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.83 ACRES
TOTAL CUT:	2.47 ACRES
TOTAL FILL:	4911 CY
OFFSITE WASTE/BORROW AREA LOCATION:	4490 CY

- 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.
- "EARTHWORK QUANTITIES ARE SOLELY FOR THE PURPOSE OF CALCULATING FEES. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO THE START OF CONSTRUCTION.
- TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT.



**21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOILS**

**DEFINITION**  
 PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

**PURPOSE**  
 TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE 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**  
 I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:  
 A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.  
 B. 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.  
 C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.  
 D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. 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**  
 I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:  
 I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER 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 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS OF BRICKS, ROCKS, TRASH, OR OTHER MATERIAL LARGER THAN 1" AND 1/2" IN DIAMETER.  
 II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.  
 III. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 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.

- III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:  
 I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:  
 I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE PH TO LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.0 OR HIGHER.  
 II. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.  
 III. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.  
 IV. NO SOD 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 (14 DAYS MIN) TO PERMIT DISPERSION OF PHYTO-TOXIC MATERIALS.
- NOTE: TOPSOIL, SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- V. TOPSOIL APPLICATION  
 I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.  
 II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4"-8" HIGHER IN ELEVATION.  
 III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"-6" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.  
 IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION. WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE PREVENT TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

**OWNER**

BONNIE ORCHARD L.L.C.  
 8835-P COLUMBIA 100 PARKWAY  
 COLUMBIA, MD 21045  
 PHONE NO.: 410-730-1810

**DEVELOPER**

NVR, INC.  
 RYAN HOMES,  
 BALTIMORE HOWARD DIVISION  
 6031 UNIVERSITY BLVD., SUITE 250  
 ELLICOTT CITY, MD 21043  
 443.574.1560

**SEDIMENT & EROSION CONTROL NOTES AND DETAILS**  
**BONNIE ORCHARD**

LOTS 1 THRU 9

TAX MAP 31 GRID 21  
 1ST ELECTION DISTRICT

PARCEL 565 AND 595  
 HOWARD COUNTY, MARYLAND

**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
 Ellicott City, Maryland 21043  
 Phone: 443.325.7682 Fax: 443.325.7685  
 Email: info@silladcock.com

DESIGN BY: DH  
 DRAWN BY: DH  
 CHECKED BY: PS  
 SCALE: AS SHOWN  
 DATE: JULY 28, 2010  
 PROJECT #: 10-030  
 SHEET #: 5 OF 6

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. 20022, EXPIRATION DATE: JUNE 2013

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 8/9/11

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 8/10/11

DIRECTOR  
 DATE: 8/9/11

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HOWARD SCD  
 DATE: 8/11/11

ENGINEERS CERTIFICATE  
 "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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  
 PAUL M. SILL, P.E., LEED AP  
 DATE: 7/28/11

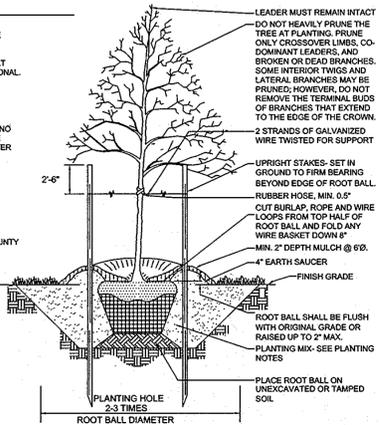
DEVELOPER'S CERTIFICATE  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED 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  
 DATE: 7-28-11

NO.	DESCRIPTION	DATE
	REVISIONS	

**NOTES**

- CONSULT INTERNATIONAL SOCIETY OF ARBORICULTURE GUIDELINES FOR FURTHER DETAILS OF PLANTING SPECIFICATIONS, OR CONSULT WITH A QUALIFIED PROFESSIONAL.
- EACH TREE SHALL BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
- STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING.
- PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
- KEEP MULCH 1" FROM TRUNK.
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



**TYPICAL TREE PLANTING AND STAKING**  
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE

- LEADER MUST REMAIN INTACT. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROWN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUSS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
- UPRIGHT STAKES: SET IN GROUND TO FIRM BRANCHING BEYOND EDGE OF ROOT BALL.
- RUBBER HOSE, MIN. 0.5" CUT BURLAP ROPE AND WIRE LOOPS FROM TOP HALF OF ROOT BALL AND FOLD ANY WIRE BASKET DOWN 4" MIN. 2" DEPTH MULCH @ 6".
- 4" EARTH SAUCER
- FINISH GRADE
- ROOT BALL SHALL BE FLUSH WITH ORIGINAL GRADE OR RAISED UP TO 2" MAX. PLANTING MIX: SEE PLANTING NOTES
- PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL

**TYPICAL TREE PLANTING AND STAKING**

EVERGREEN TREES NOT TO SCALE

LANDSCAPE SCHEDULE (STREET SCREENING)				
KEY	QUANTITY	BOTANICAL NAME	SIZE	NOTE
	10	NELLIE STEVENS HOLLY ILEX 'NELLIE R. STEVENS'	5' TO 6'	B & B
	8	OCTOBER GLORY RED MAPLE ACER RUBRUM 'OCTOBER GLORY'	2 1/2"-3" CAL.	B & B

SCHEDULE A PERIMETER LANDSCAPE EDGE			
CATEGORY	ADJACENT TO ROADWAYS		
PERIMETER/FRONTAGE DESIGNATION	LOT 8	LOT 9	
LANDSCAPE TYPE			
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	146 FT.	225 FT.	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	
REMAINING PERIMETER LENGTH			
NUMBER OF PLANTS REQUIRED			
SHADE TREES	1:50 = 3	1:50 = 5	
EVERGREEN TREES	1:40 = 4	1:40 = 6	
NUMBER OF PLANTS PROVIDED			
SHADE TREES	3	5	
EVERGREEN TREES	4	6	

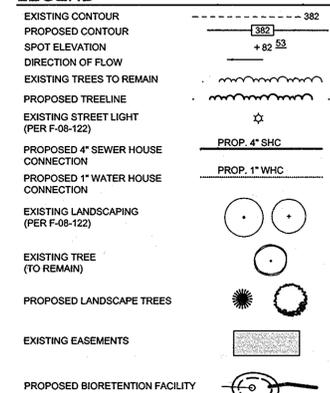
**LANDSCAPE NOTES**

- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.
- THE OWNER, TENANT, AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- FINANCIAL SURETY FOR PERIMETER LANDSCAPING OBLIGATIONS HAVE BEEN PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL UNDER F-08-122. THE FINANCIAL SURETY FOR THE LANDSCAPE STREET SCREENING WILL BE POSTED WITH THE BUILDER'S GRADING PERMIT IN THE AMOUNT OF \$1500 (3 SHADE TREES AND 4 EVERGREENS) FOR LOT 8 AND \$2400 (5 SHADE TREES AND 6 EVERGREENS) FOR LOT 9. STREET AND PERIMETER LANDSCAPING REQUIREMENTS FOR THIS PROJECT HAVE BEEN PROVIDED UNDER F-08-122.

**MATERIALS SPECIFICATIONS FOR BIORETENTION FACILITIES**

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLANT LIST THIS SHEET	N/A	PLANTINGS ARE SITE-SPECIFIC. SEE PLANT LIST THIS SHEET.
PLANTING SOIL (2.5' TO 4' DEEP)	SAND 35% - 60% SILT 0% - 25% GROUND COMPOST 40%-50%	N/A	
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN, IF REQUIRED	PEA GRAVEL: ASTM-D-448	PEA GRAVEL: NO. 6 STONE: 2" TO 5"	
GEOTEXTILE	CLASS "SE" - APPARENT OPENING SIZE (ASTM-D-4751), GRAB TENSILE STRENGTH (ASTM-D-4533), PUNCTURE RESISTANCE (ASTM-D-4833)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	6" RIGID SCHEDULE 40 PVC OR SDR35	3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 1" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES

**LEGEND**

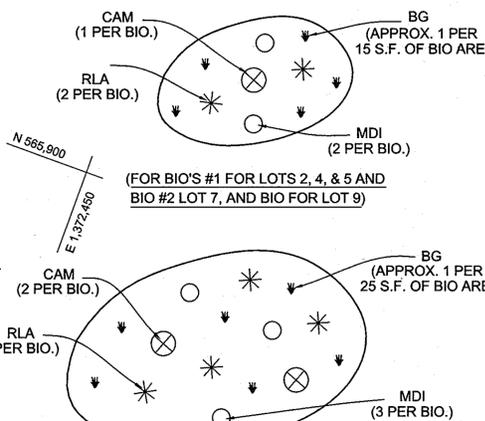


**BIORETENTION FACILITIES DATA CHART**

LOT	TOP OF BERM	TOP OF MULCH	INVERT H	INVERT I	SPILLWAY ELEV.
1	419.2	418.2	415.97	414.7	419.2
2	422.9	421.0	419.07	417.9	422.9
(BIO #1)	423.6	420.4	417.57	417.0	421.4
(BIO #2)	424.7	423.7	420.87	420.67	425.5
(BIO #3)	426.0	425.0	422.17	421.6	426.0
(BIO #4)	422.6	421.6	418.77	418.1	422.6
5	423.5	422.5	419.67	419.0	423.6
(BIO #1)	419.9	418.9	416.07	415.1	419.9
(BIO #2)	419.8	418.8	415.97	415.1	419.8
(BIO #3)	418.5	417.5	414.67	414.0	418.6
(BIO #4)	418.9	417.9	415.07	413.9	418.4
8	419.2	418.2	415.97	414.3	419.2
9	415.8	414.8	411.97	410.3	415.3

**TYPICAL BIORETENTION PLANT LIST**

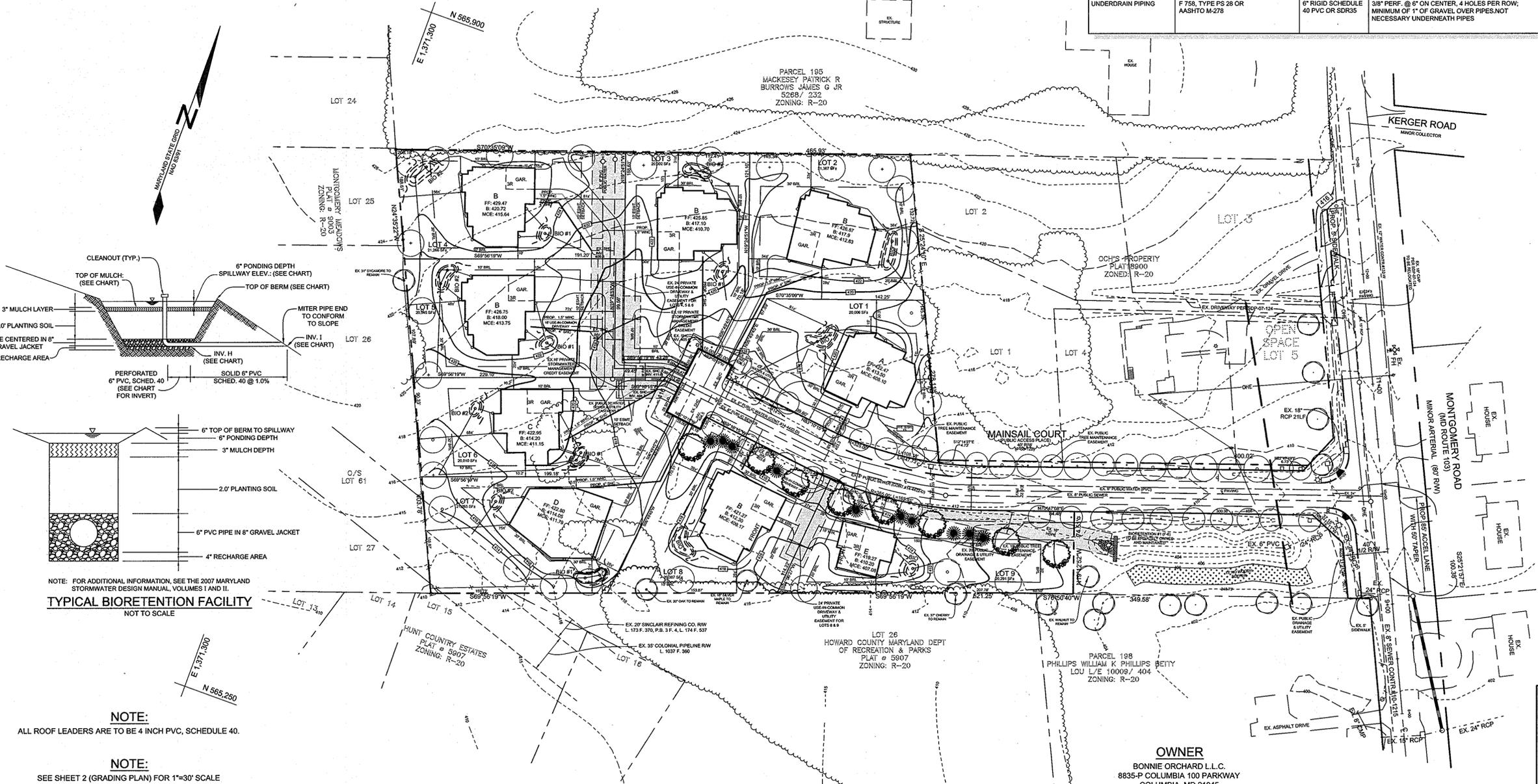
KEY	BOTANICAL NAME	COMMON NAME	SPACING
<b>SHRUBS</b>			
CAM	CORNUS AMOMUM	SILKY DOGWOOD	SEE SKETCH TO BELOW
<b>HERBACEOUS SPECIES</b>			
MDI	MONARDA DIDYMA	BEEBALM	SEE SKETCH TO BELOW
RLA	RUDEBECKIA LACINIATA	TALL CONEFLOWER	SEE SKETCH TO BELOW
BG	ELYMUS HYSTRIX	BOTTLEBRUSH GRASS	SEE SKETCH TO BELOW



**TYPICAL BIORETENTION PLANTING DETAILS**

(FOR ALL BIORETENTION FACILITIES EXCEPT AS NOTED IN DETAIL TO ABOVE)

NOT TO SCALE



**OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION AREA**

**PLAN VIEW**

SCALE: 1" = 50'

- ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
- SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
- MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 OR 3 YEARS.
- SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

**OWNER**

BONNIE ORCHARD L.L.C.  
8835-P COLUMBIA 100 PARKWAY  
COLUMBIA, MD 21045  
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6031 UNIVERSITY BLVD, SUITE 250  
ELLICOTT CITY, MD 21043  
443.574.1600

NO.	DESCRIPTION	DATE
2	REV. LOTS 1, 2, 4, 7, 8: REDUCE BIORETENTION FACILITIES PER REDUCED HOUSE SIZES, AND ELIMINATE BIO #2 ON LOT 7.	11/09/11
1	LOT 3: ELIMINATE BIO #2, REV. BIO FAC. CHART	09/26/11

**LANDSCAPE & BIORETENTION PLAN AND DETAILS**

**BONNIE ORCHARD**

LOTS 1 THRU 9

TAX MAP 31 GRID 21  
1ST ELECTION DISTRICT

PARCEL 565 AND 595  
HOWARD COUNTY, MARYLAND



**Sill-Adcock & Associates - LLC**  
Engineers - Surveyors - Planners  
3300 North Ridge Road, Suite 160  
Ellicott City, Maryland 21043  
Phone: 443.325.7682 Fax: 443.325.7685  
Email: info@saalland.com

DESIGN BY: DH  
DRAWN BY: DH  
CHECKED BY: PS  
SCALE: AS SHOWN  
DATE: JULY 28, 2010  
PROJECT #: 10-030  
SHEET #: 6 of 8

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32005, EXPIRATION DATE: JUNE 20, 2015