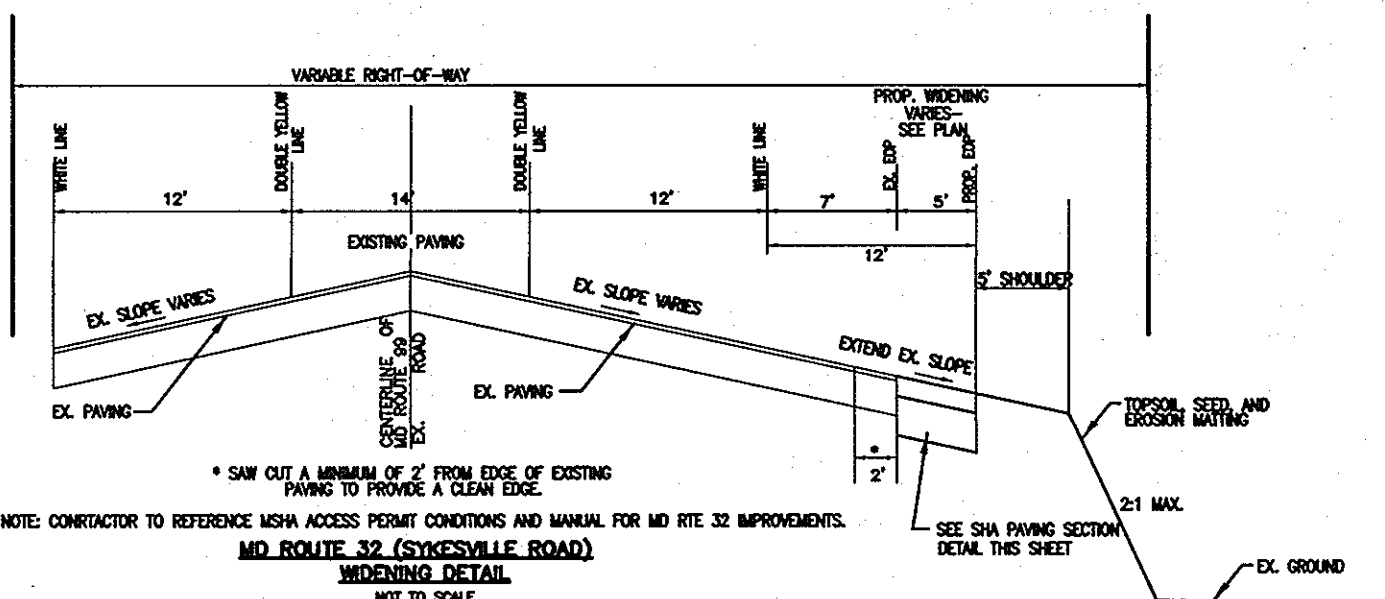


LEGEND:

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	CENTERLINE OF EX. STREAM
	EX. WETLAND BUFFER
	EX. STREAM BUFFER
	EX. UTILITY POLE
	EX. LIGHT POLE
	EX. MAILBOX
	EX. SIGN
	EX. SANITARY MANHOLE
	EX. SANITARY LINE
	EX. CLEANOUT
	EX. FIRE HYDRANT
	EX. WATER LINE
	EX. TREELINE
	EX. TREES
	PROP. TREELINE
	EX. FENCE
	PROP. PRIVATE SEPTIC EASEMENT
	PROP. PRIVATE WELL EASEMENT
	EX. WETLAND
	EX. PRIVATE SEPTIC EASEMENT
	EX. FOREST CONSERVATION EASEMENT (RETENTION)
	PROPOSED FOREST CONSERVATION



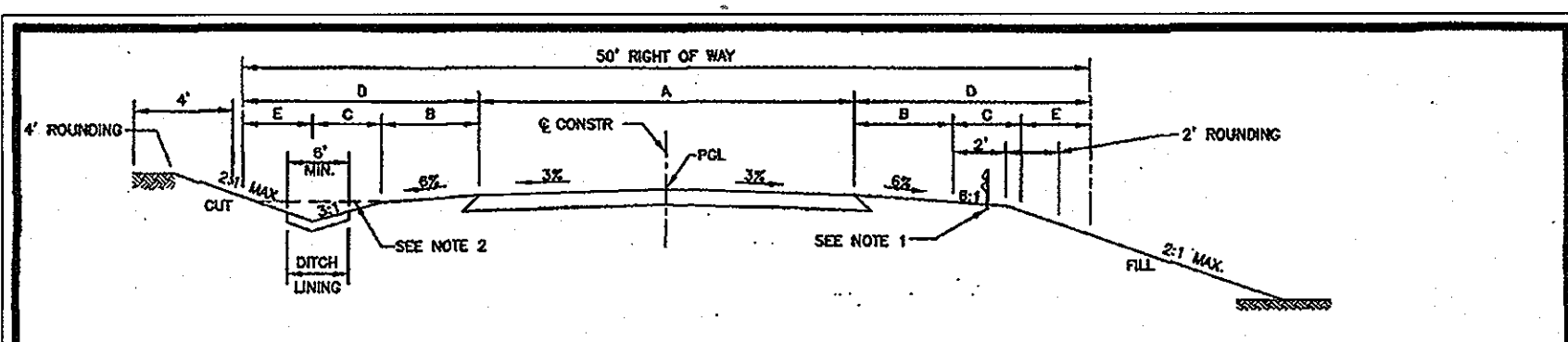
MD RTE 32 (SHA) PAVING SECTION
 N.T.S.

	2" HOT MIX ASPHALT SUPERPAVE 12.5mm SURFACE
	6" HOT MIX ASPHALT SUPERPAVE 19.0mm FOR BASE (2-3" LIFTS)
	12" BASE COURSE USING GRADED AGGREGATE (2-6" LIFTS)

(PG 64-22 MIX TO BE USED FOR THE HOT MIX ASPHALT)

OWNER
 CHRISTIAN FAMILY OUTREACH CENTER
 1475 MD RT. 32
 SYKESVILLE, MD 21784
 (443) 324-9806
 ATTN: MR. TIM KEANE

DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023
 ATTN: MR. MICHAEL PFAU



- NOTES:**
- TRAFFIC BARRIER W-BEAM AS REQUIRED (SEE DESIGN MANUAL II).
 - DITCH CROSS SECTION SLOPE MAY BE FLATTENED TO PROVIDE A SHOULDER AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF DRAINAGE IS SMALL, AS APPROVED BY EPA.
 - PROVIDE CURB AT INTERSECTIONS (SEE DESIGN MANUAL III).
 - NORMAL CROWN SECTIONS ARE SHOWN. SEE DESIGN MANUAL II FOR SUPERELEVATION REQUIREMENTS.
 - 4'-0" SHOULDER REQUIRES A PASSING AREA (SEE DETAIL R-101).

CLASSIFICATION	A	B	C	D	E	PAVING SECTION
MINOR COLLECTOR 1000 ADT	20'	4'	4'	11'	3'	P-3
ACCESS STREET 500 ADT	24'	4'	11'	5'	P-2	
ACCESS PLACE 300 ADT	22'	4'	11'	6'	P-2	

Howard County, Maryland
 Department of Public Works

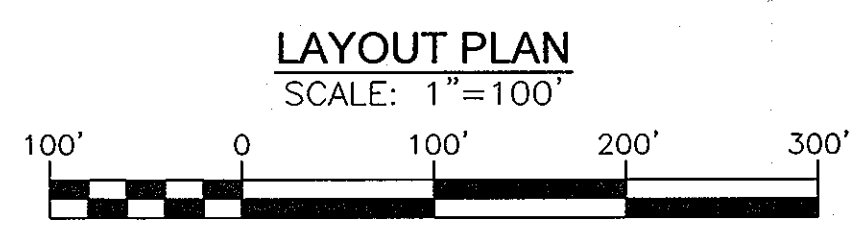
TYPICAL SECTIONS-Residential Streets
 Access Place, Access Street, Minor Collector
 Open Section (Outside Planned Service Area Only)

Detail
 R-1.01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12/17/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 12/18/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE



NO.	REVISION	DATE

FINAL SUBDIVISION PLAN
SITE LAYOUT PLAN
 KEANE PROPERTY
 LOTS 5, 6, 7, 8, AND NON-BUILDABLE
 PRESERVATION PARCELS 'A' & 'B'
 PARCEL 41 (L. 4105 / F. 168)
 A RE-SUBDIVISION OF CHRISTIAN
 FAMILY OUTREACH CENTER LOT 4
 ZONED: RR-DEO PARCELS: 41
 HOWARD COUNTY, MARYLAND

3RD ELECTION DISTRICT
 TAX MAP: 9 GRID: 17, & 18

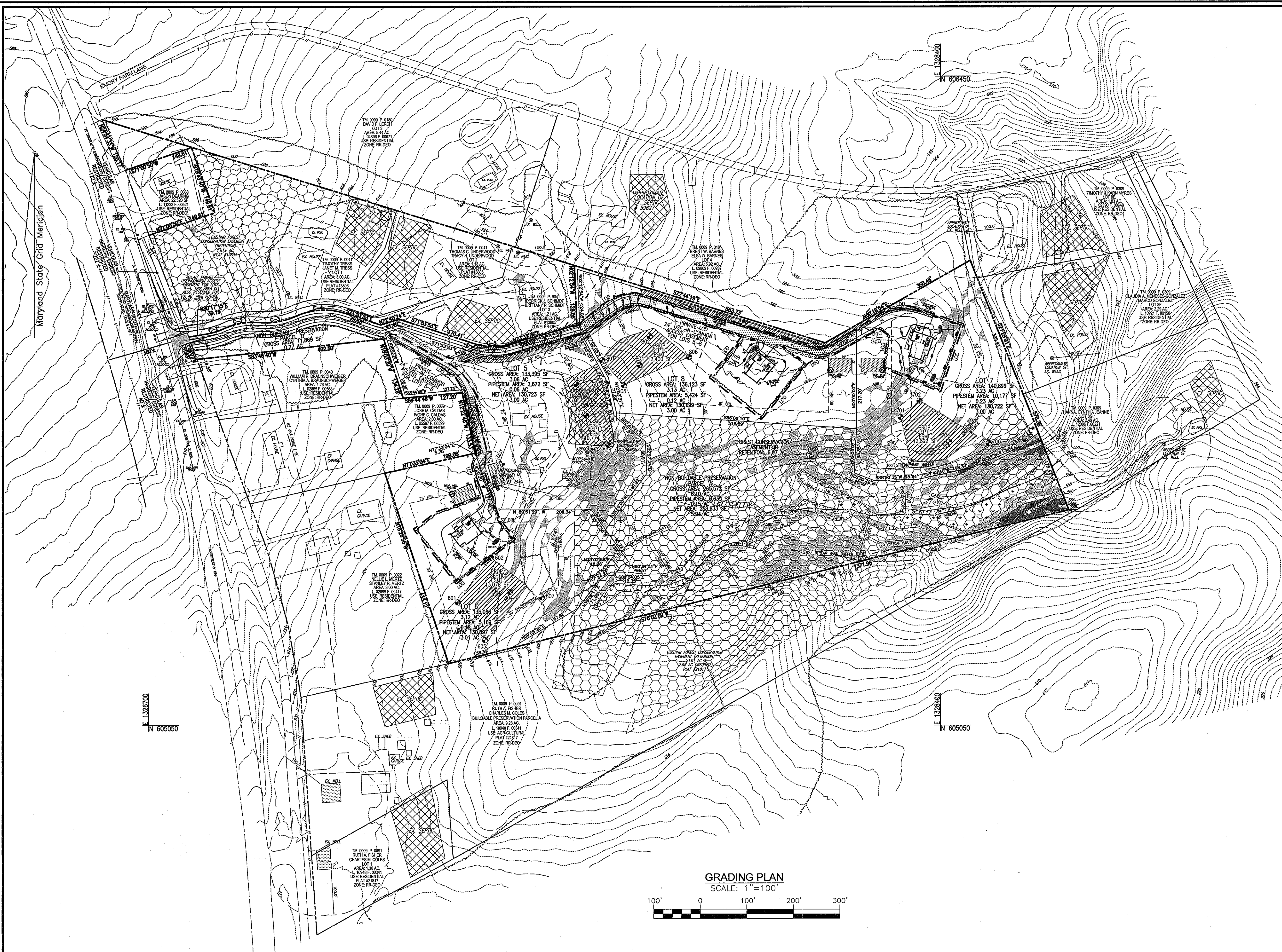
ROBERT H. VOGEL
ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: DECEMBER 2012
 SCALE: AS SHOWN
 W.O. NO.: 12-08

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. 31373, EXPIRATION DATE: 01-21-2015

2 SHEET OF 7

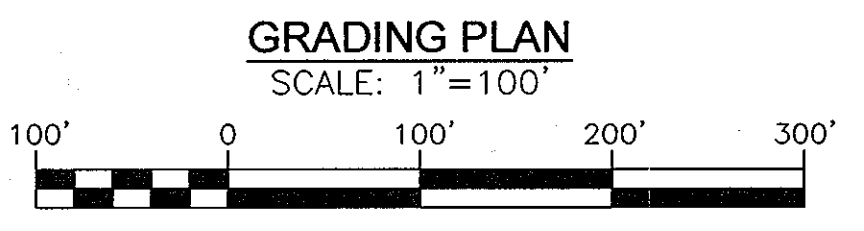


- LEGEND:**
- PROPERTY LINE
 - RIGHT-OF-WAY LINE
 - ADJACENT PROPERTY LINE
 - EXISTING CURB AND GUTTER
 - CENTERLINE OF EX. STREAM
 - EX. WETLAND BUFFER
 - EX. STREAM BUFFER
 - EX. UTILITY POLE
 - EX. LIGHT POLE
 - EX. MAILBOX
 - EX. SIGN
 - EX. SANITARY MANHOLE
 - EX. SANITARY LINE
 - EX. CLEANOUT
 - EX. FIRE HYDRANT
 - EX. WATER LINE
 - EX. TREELINE
 - EX. TREES
 - PROP. TREELINE
 - EX. FENCE
 - EX. 10' CONTOUR
 - EX. 2' CONTOUR
 - SOLS
 - EX. MODERATE SLOPES
 - EX. STEEP SLOPES
 - PROP. 10' CONTOUR
 - PROP. 2' CONTOUR
 - PROP. SPOT ELEVATION
 - PROP. SUPER SILT FENCE
 - PROP. LIMIT OF DISTURBANCE
 - PROP. STABILIZED CONSTRUCTION ENTRANCE
 - PROP. PRIVATE SEPTIC EASEMENT
 - PROP. PRIVATE WELL EASEMENT
 - EX. WETLAND
 - EX. PRIVATE SEPTIC EASEMENT
 - EX. FOREST CONSERVATION EASEMENT (RETENTION)
 - PASSED PERC TEST
 - PROPOSED FOREST CONSERVATION

OWNER
 CHRISTIAN FAMILY OUTREACH CENTER
 1475 MD RT. 32
 SYKESVILLE, MD 21784
 (443) 324-9806
 ATTN: MR. TIM KEANE

DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023
 ATTN: MR. MICHAEL PFUA

NO.	REVISION	DATE



**FINAL SUBDIVISION PLAN
 SOILS MAP, GRADING, EROSION,
 AND SEDIMENT CONTROL PLAN**

KEANE PROPERTY
 LOTS 5, 6, 7, 8, AND NON-BUILDABLE
 PRESERVATION PARCELS 'A' & 'B'
 PARCEL 41 (L. 4105 / F. 168)

A RE-SUBDIVISION OF CHRISTIAN
 FAMILY OUTREACH CENTER LOT 4

3RD ELECTION DISTRICT
 TAX MAP: 9 GRID: 17, & 18

ZONED: RR-DEO
 PARCELS: 41
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL
 ENGINEERING, INC.**
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	K-FACTOR
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	NO	0.20
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.20
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	0.37
GmB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	NO	0.37
McC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.24

PROFESSIONAL CERTIFICATE

DESIGN BY: RHY
 DRAWN BY: JMR
 CHECKED BY: RHY
 DATE: DECEMBER 2012
 SCALE: AS SHOWN
 W.O. NO.: 12-06

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. 12137, EXPIRATION DATE: 01-21-2015

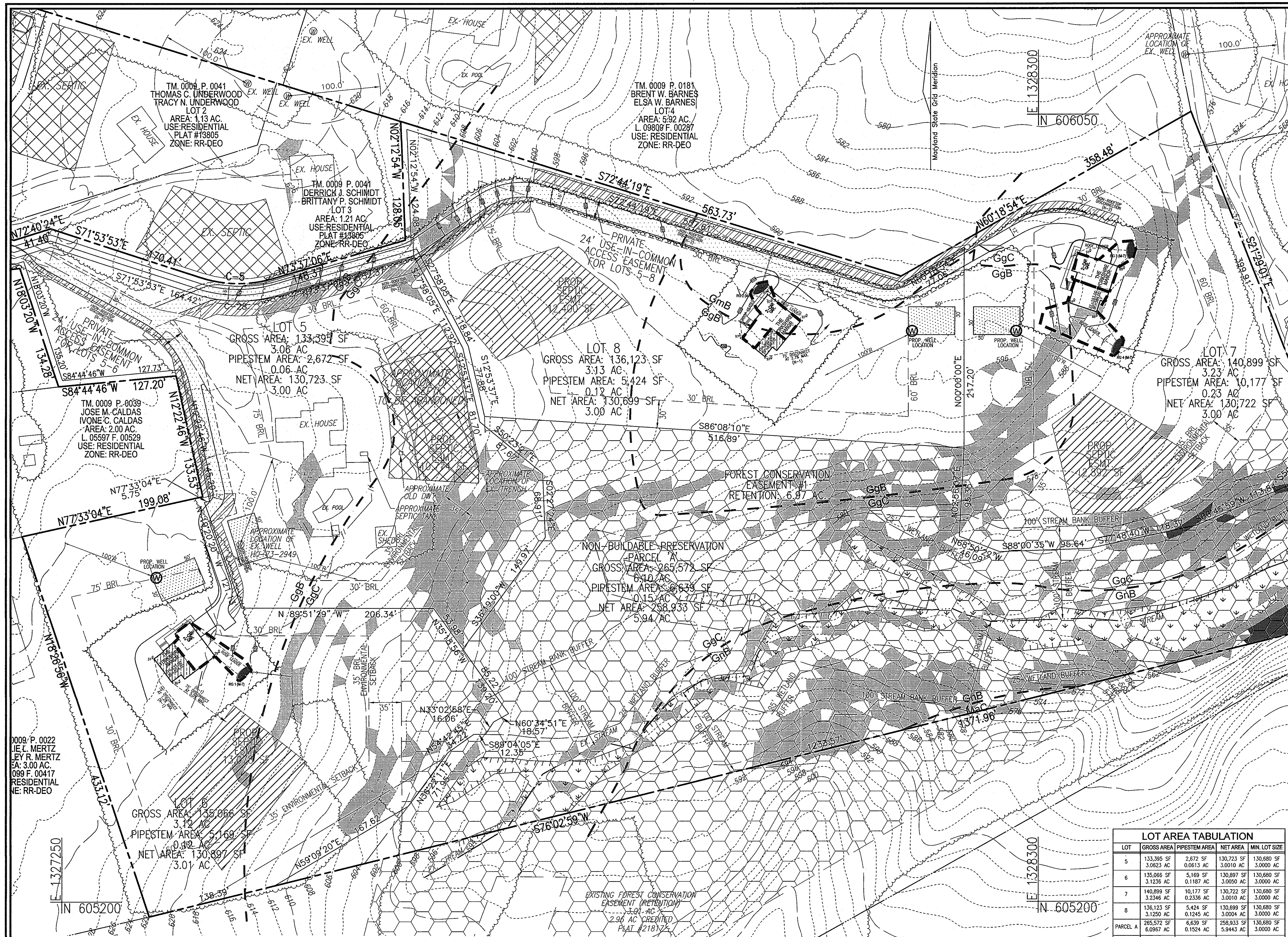
3 SHEET OF 7

12-12-12
 JEFFREY B. SMITH, PE No. 31373

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12/17/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 12/17/12
 CHIEF, DIVISION OF LAND DEVELOPMENT



LEGEND:

- PROPERTY LINE
- - - RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- CENTERLINE OF EX. STREAM
- EX. WETLAND BUFFER
- EX. STREAM BUFFER
- EX. UTILITY POLE
- ☉ EX. LIGHT POLE
- ☐ EX. MAILBOX
- ☐ EX. SIGN
- EX. SANITARY MANHOLE
- EX. SANITARY LINE
- EX. CLEANOUT
- EX. FIRE HYDRANT
- EX. WATER LINE
- EX. TREELINE
- EX. TREES
- PROP. TREELINE
- EX. FENCE
- EX. 10' CONTOUR
- EX. 2' CONTOUR
- S&E
- S&C
- ▨ EX. MODERATE SLOPES
- ▨ EX. STEEP SLOPES
- PROP. 10' CONTOUR
- PROP. 2' CONTOUR
- PROP. SPOT ELEVATION
- ▨ PROP. PRIVATE SEPTIC EASEMENT
- ▨ PROP. PRIVATE WELL EASEMENT
- ▨ PROP. DRY WELL
- ▨ PROP. NON-ROOFTOP DISCONNECT
- ▨ PROP. ROOFTOP DISCONNECT
- ▨ EX. WETLAND
- ▨ EX. PRIVATE SEPTIC EASEMENT
- ▨ EX. FOREST CONSERVATION EASEMENT (RETENTION)
- ▨ PROPOSED FOREST CONSERVATION

OWNER
 CHRISTIAN FAMILY OUTREACH CENTER
 1475 MD RT. 32
 SYKESVILLE, MD 21784
 (443) 324-9806
 ATTN: MR. TIM KEANE

DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023
 ATTN: MR. MICHAEL PFAU

NO.	REVISION	DATE

**FINAL SUBDIVISION PLAN
 STORMWATER MANAGEMENT PLAN**

KEANE PROPERTY
 LOTS 5, 6, 7, 8, AND NON-BUILDABLE
 PRESERVATION PARCELS 'A' & 'B'
 PARCEL 41 (L. 4105 / F. 168)
 A RE-SUBDIVISION OF CHRISTIAN
 FAMILY OUTREACH CENTER LOT 4
 ZONED: RR-DEO PARCELS: 41
 HOWARD COUNTY, MARYLAND

LOT AREA TABULATION

LOT	GROSS AREA	PIPESTEM AREA	NET AREA	MIN. LOT SIZE
5	133,395 SF 3.0623 AC	2,672 SF 0.0613 AC	130,723 SF 3.0010 AC	130,680 SF 3.0000 AC
6	135,066 SF 3.1236 AC	5,169 SF 0.1187 AC	130,897 SF 3.0050 AC	130,680 SF 3.0000 AC
7	140,899 SF 3.2346 AC	10,177 SF 0.2336 AC	130,722 SF 3.0010 AC	130,680 SF 3.0000 AC
8	136,123 SF 3.1250 AC	5,424 SF 0.1245 AC	130,699 SF 3.0004 AC	130,680 SF 3.0000 AC
PARCEL A	265,572 SF 6.0897 AC	6,639 SF 0.1524 AC	258,933 SF 5.9443 AC	130,680 SF 3.0000 AC
PARCEL B	11,876 SF 0.27 AC	NA	11,876 SF 0.27 AC	

SWM SUMMARY TABLE

TYPE	REQ'D	PROVIDED	ESDv (CF)	Rev (CF)	WQv	Cpv	Op10	Op100
HOUSE (28% IMPERVIOUS)	800	239	572**	197	197	*	*	*
DRIVEWAY (74% IMPERVIOUS)	2276	2276**	NA	559	559	*	*	*

* PER MDC SWM DESIGN MANUAL, IF ESDv REQUIREMENT ARE MET THEN CPV.
 ** PROVIDED BY NON-ROOFTOP DISCONNECT
 *** SEE RAIN GARDEN CHART

SWM PLAN
 SCALE: 1"=50'

RAIN GARDEN SIZING CHART

LOT	SIZE	VOLUME REQUIRED	VOLUME PROVIDED
6	8'x17'	132	136
7	8'x16'	249	256
8	9'x20'	180	180

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	K-FACTOR
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	NO	0.20
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.20
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	NO	0.37
GmB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	NO	0.37
McC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	NO	0.24

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12/17/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 12/18/12
 CHIEF, DIVISION OF LAND DEVELOPMENT

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET, ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: DECEMBER 2012
 SCALE: AS SHOWN
 W.O. NO.: 12-06

PROFESSIONAL CERTIFICATE
 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. 17013, EXPIRATION DATE 01-31-2015.

12-12-12
 JEFFREY B. SMITH, PE No. 31373

4 SHEET OF 7



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
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- EX. TREES
- PROP. TREELINE
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- EX. 2' CONTOUR
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- S&C2
- PROP. 10' CONTOUR
- PROP. 2' CONTOUR
- PROP. SPOT ELEVATION
- PROP. PRIVATE SEPTIC EASEMENT
- PROP. PRIVATE WELL EASEMENT
- EX. WETLAND
- EX. PRIVATE SEPTIC EASEMENT
- EX. FOREST CONSERVATION EASEMENT (RETENTION)
- PROP. SHADE TREES
- PROP. LANDSCAPE BUFFER
- PROPOSED FOREST CONSERVATION

OWNER
 CHRISTIAN FAMILY OUTREACH CENTER
 1475 MD RT. 32
 SYKESVILLE, MD 21784
 (443) 324-9806
 ATTN: MR. TIM KEANE

DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023
 ATTN: MR. MICHAEL PFAU

NO.	REVISION	DATE

FINAL SUBDIVISION PLAN

LANDSCAPE PLAN

KEANE PROPERTY
 LOTS 5, 6, 7, 8, AND NON-BUILDABLE
 PRESERVATION PARCELS 'A' & 'B'
 PARCEL 41 (L. 4105 / F. 168)

A RE-SUBDIVISION OF CHRISTIAN FAMILY OUTREACH CENTER LOT 4

3RD ELECTION DISTRICT TAX MAP: 9 GRID: 17, & 18 ZONED: RR-DEO PARCELS: 41 HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET TEL: 410.461.7666
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

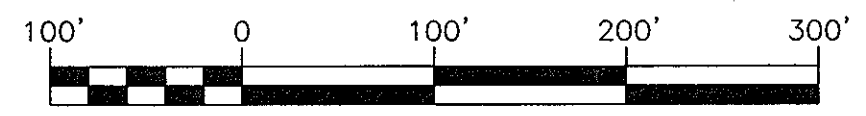
BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Michael Pfau
 SIGNATURE OF DEVELOPER

12/15/12
 DATE

LANDSCAPE PLAN
 SCALE: 1"=100'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 12/17/12
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[Signature] 12/18/12
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

PROFESSIONAL CERTIFICATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31373 EXPIRATION DATE 01-21-2013

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: DECEMBER 2012
 SCALE: AS SHOWN
 W.O. NO.: 12-06

5 SHEET OF 7

JEFFREY B. SMITH, PE No. 31373

21.0 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 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
 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 OR CONTRASTING 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 SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SITE 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:
 1. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY A SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.
 2. TOPSOIL SHALL BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE OR OTHERS AS SPECIFIED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
 3. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, OTHER 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:
 1. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION 1 - 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 SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRECIPITATED TO RAISE THE PH TO 6.5 OR HIGHER.
 B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 D. 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 DISSIPATION OF PHYTO-TOXIC MATERIALS.
 NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
 II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION-SECTION 1-VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 V. TOPSOIL APPLICATION
 WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS OVERSILLS, GRADE STABILIZATION STRUCTURES, EARTH ODDS, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" - 8" HIGHER IN ELEVATION.
 III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" - 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 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 BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

TEMPORARY SEEDING NOTES

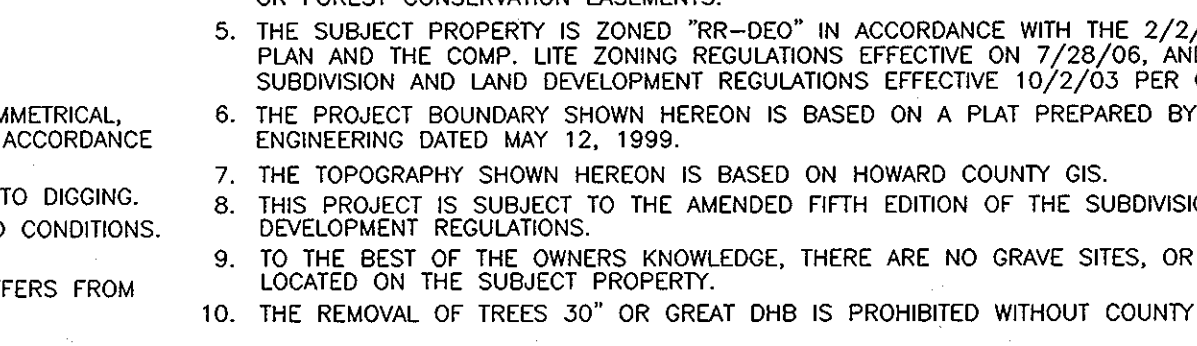
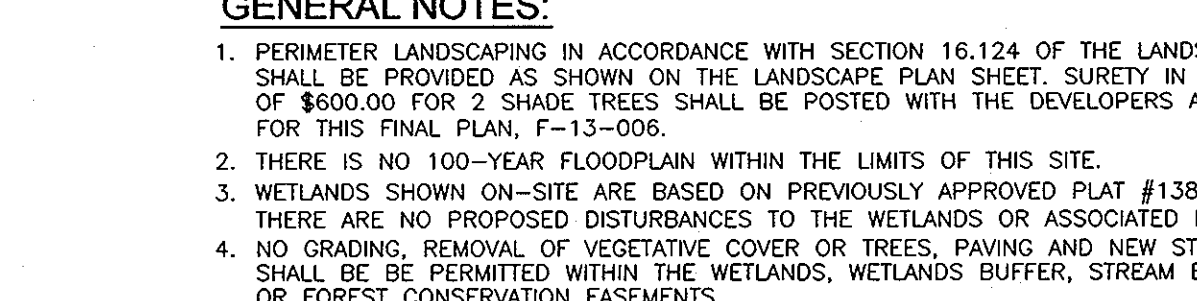
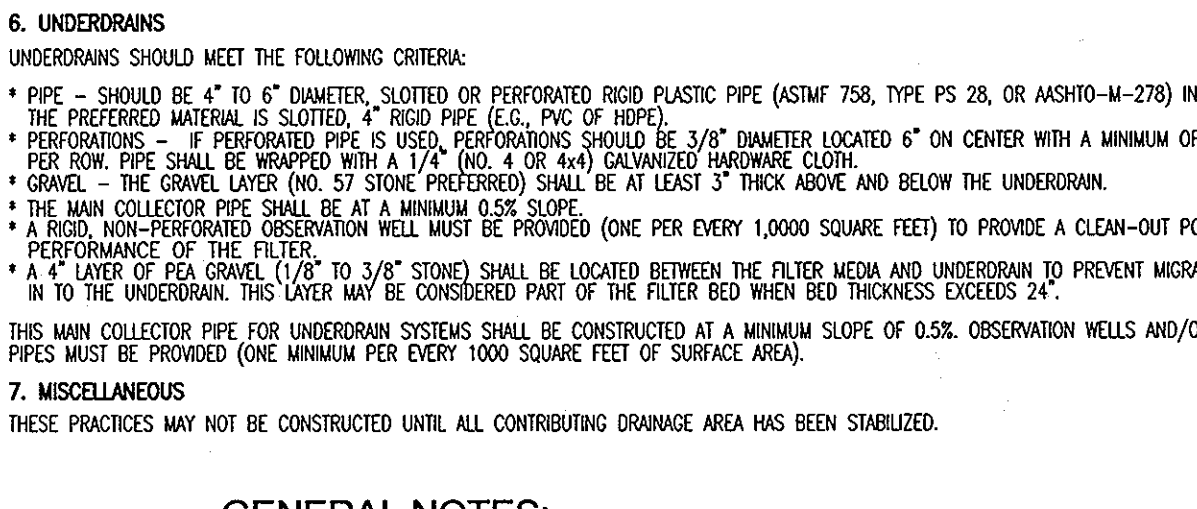
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.
 SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.).
 SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 SHELL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE MARCH 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ.FT.) FOR THE PERIOD NOVEMBER 1 THRU FEBRUARY 28. PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
 MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNROOTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 2 1/2 GALLONS PER ACRE (8 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 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./100 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 (8 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 (0.5 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 SOD, 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 UNROOTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 2 1/2 GALLONS PER ACRE (8 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.

LANDSCAPE NOTES

1. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING, ANY DEVIATION FROM THE 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 THE APPLICABLE PLANS.
 2. 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.
 3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.
 4. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE FINAL PLAN.
LANDSCAPE SCHEDULE NOTE:
 I. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HRO PLANTING SPECIFICATIONS.
 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
 3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
 4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

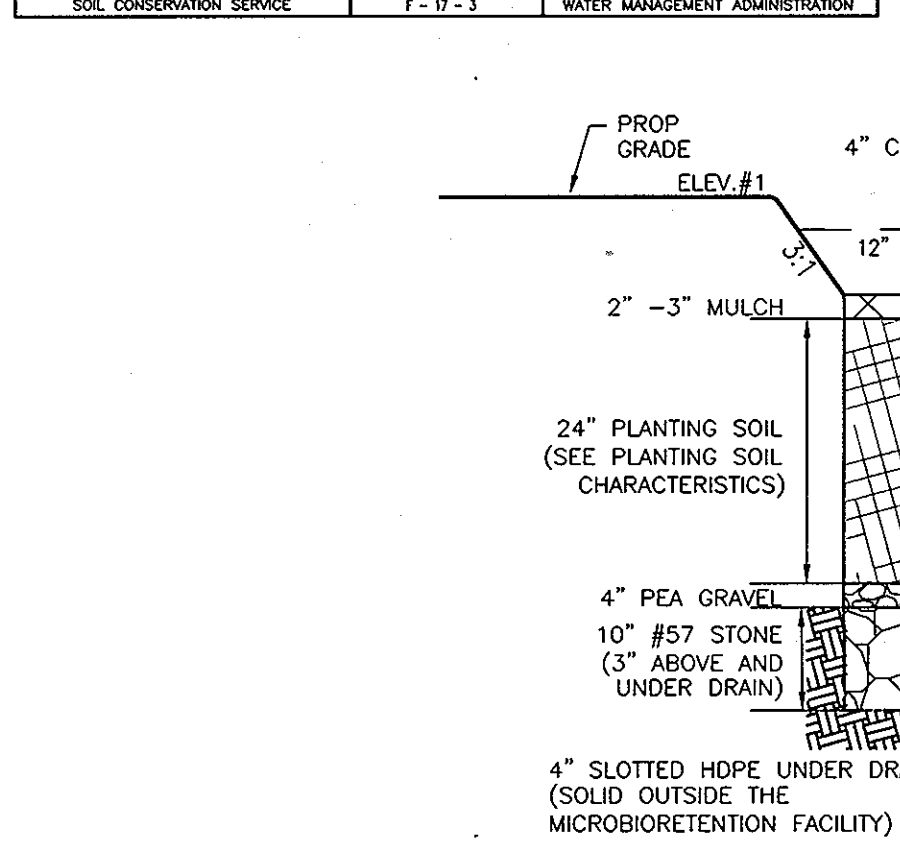
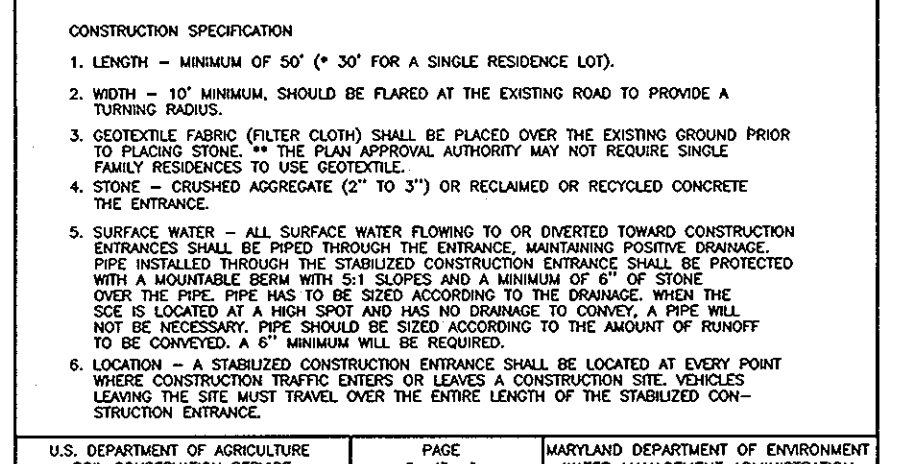
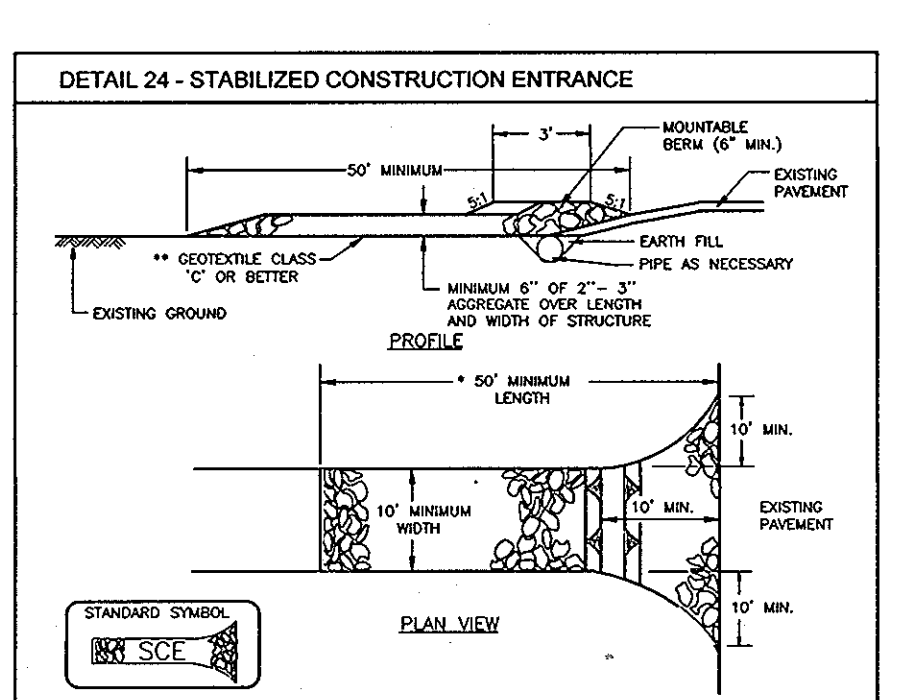
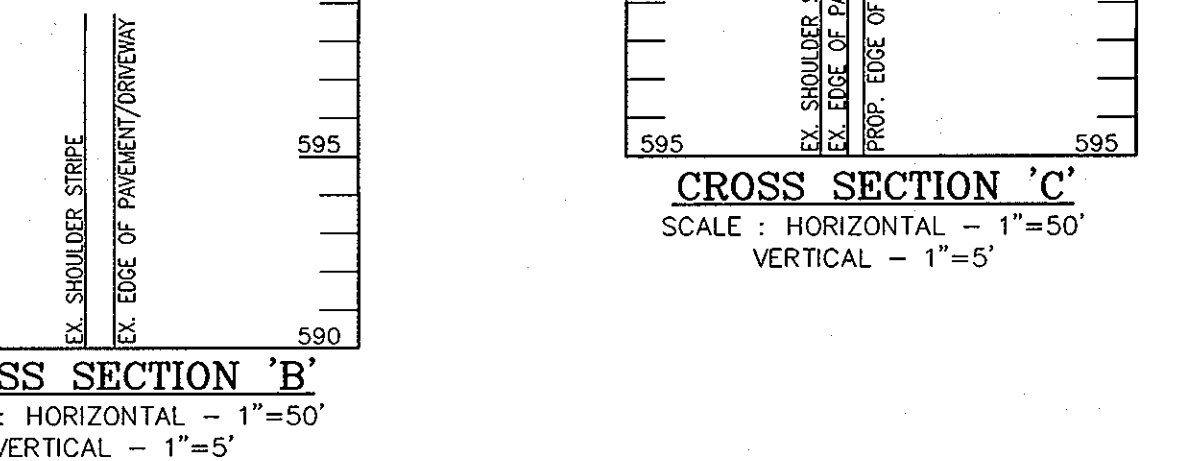
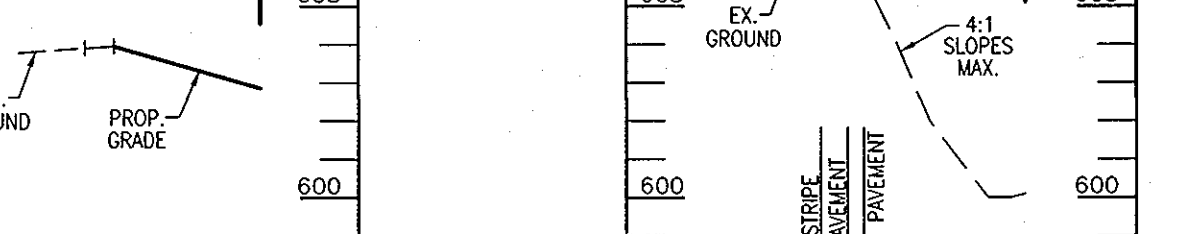
APPENDIX B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS
 THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
2. FILTERING MEDIA OR PLANTING SOIL
 THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR COMPOUND WITH THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.02.
 THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 1. COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
 2. ORGANIC CONTENT - MINIMUM USE BY WEIGHT (GDM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35%-40%) OR SANDY LOAM (50%), COARSE SAND (30%), AND COMPOST (40%).
 3. CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 4. PH RANGE - SHOULD BE BETWEEN 5.5 TO 7.0 AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
 THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL COME FROM BOTH THE EXISTING SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL, IF TOPSOIL IS IMPORTED, THEN A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
3. COMPACTURE
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTURE OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR WASH TRUCK EQUIPMENT, OR LIGHT EQUIPMENT WITH TUFF TIRE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTURE RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
 WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL WATER BEFORE PREPARING (ROTOTILLING) BASE.
 WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED FOR MAINTENANCE OPERATIONS TO THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
4. PLANT MATERIAL
 RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
5. PLANT INSTALLATION
 COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING AREAS TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTKNOT OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED 3/8" OF THE BALL IS ABOVE THE GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST 30 INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
 GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLANTS SHALL BE PLANTED THROUGH THE NON-GRASS GROUND COVER PLACING SPECIFICATIONS.
 THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS, EITHER AT A MINIMUM, DEFERS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
6. UNDERDRAINS
 UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 * PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F78, TYPE S28, OR ASTM-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G. PVC OR HDPE).
 * PERFORATIONS - IF PERFORATIONS ARE USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 4" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 6) GALVANIZED HARDWARE CLOTH.
 * SLOPE - THE GRAVEL LAYER (IF USED) PREPARED SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.
 * THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.
 * A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR THE PERFORMANCE OF THE FILTER.
 * A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".
 THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
7. MISCELLANEOUS
 THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



RAIN GARDEN ELEVATIONS

RAIN GARDEN	1	2	3	4	5	6	7	4" INV.	4" INV. OUTFALL
#1	626.0	625.8	624.8	624.55	622.55	622.22	621.39	621.64	621.0
#2	596.0	595.8	594.8	594.55	592.55	592.22	591.39	591.64	591.0
#3	589.0	588.8	587.8	587.55	585.55	585.22	584.39	584.64	584.0
#4	585.0	584.8	583.8	583.55	581.55	581.22	580.39	580.64	580.0

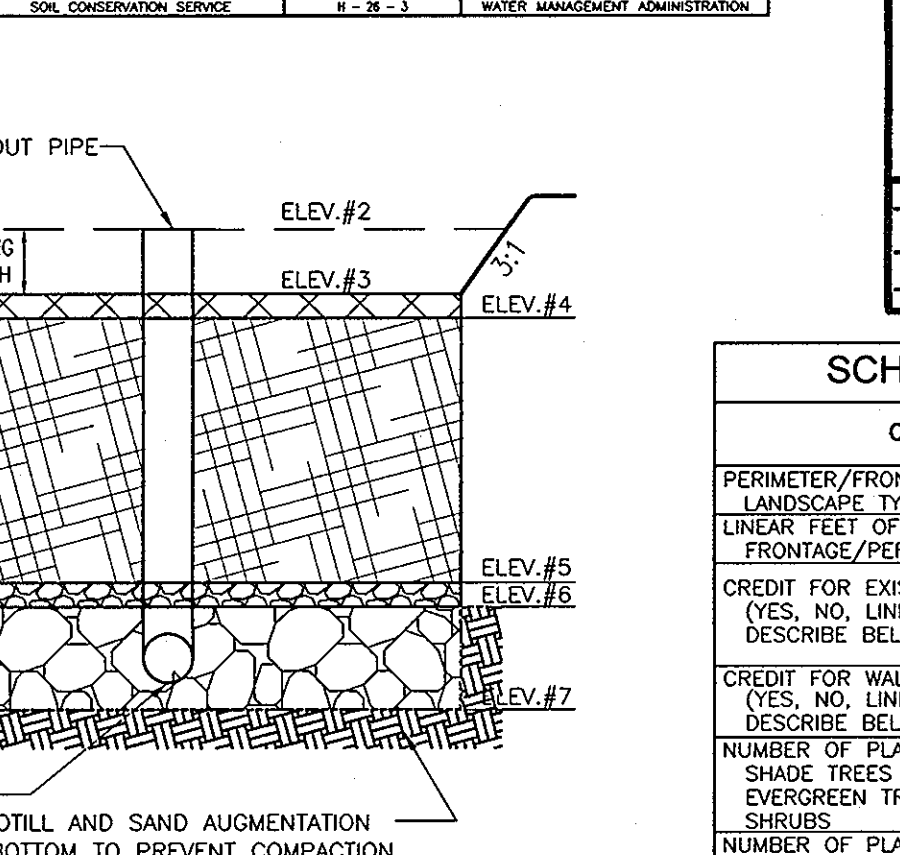
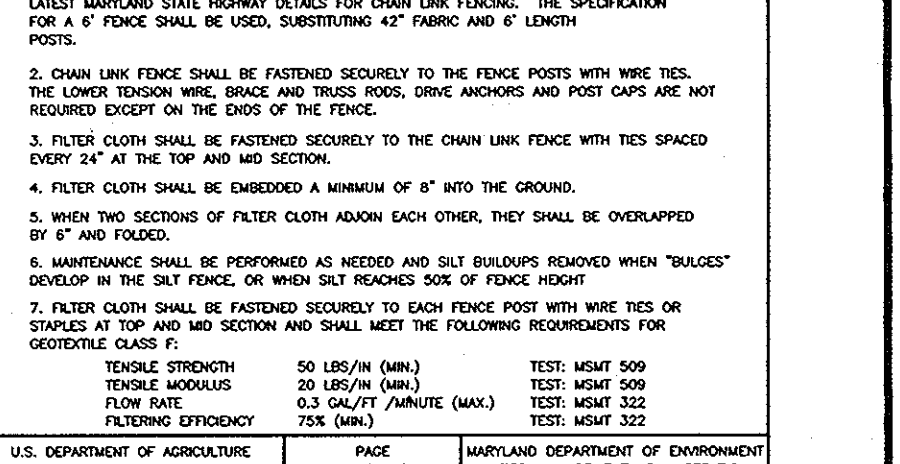
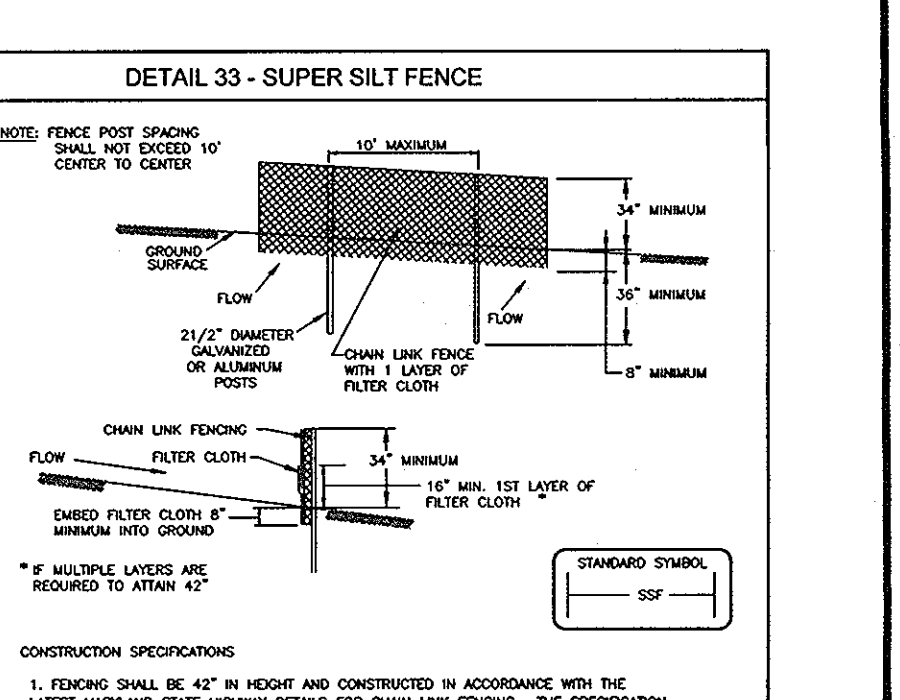
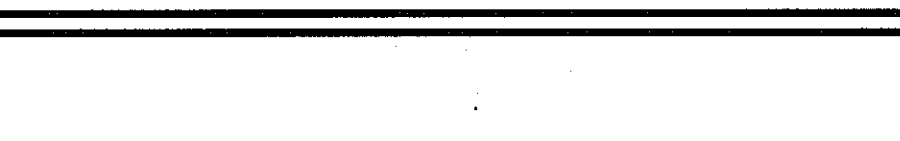
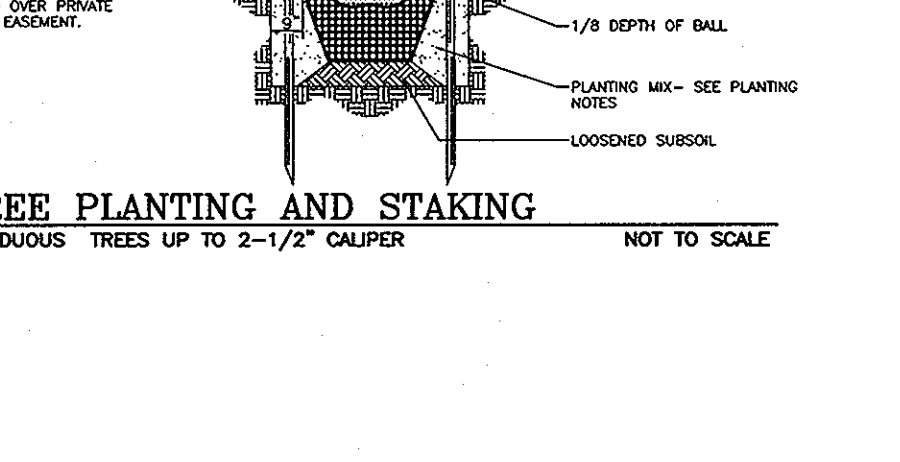
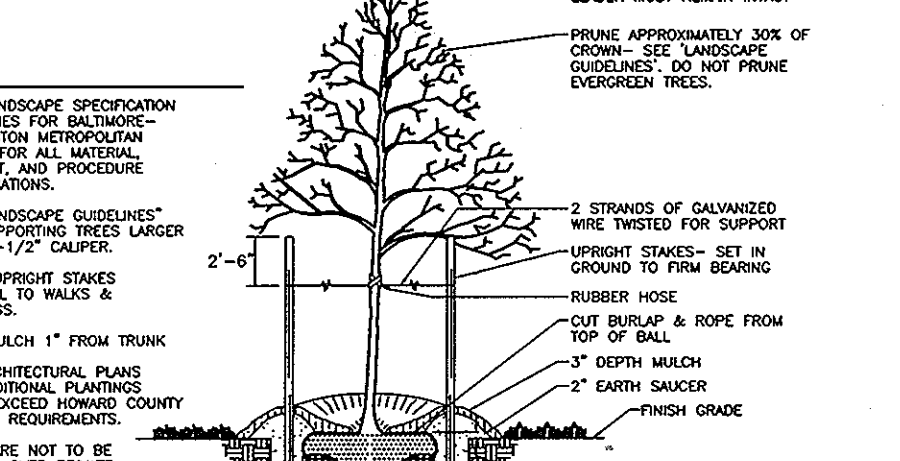
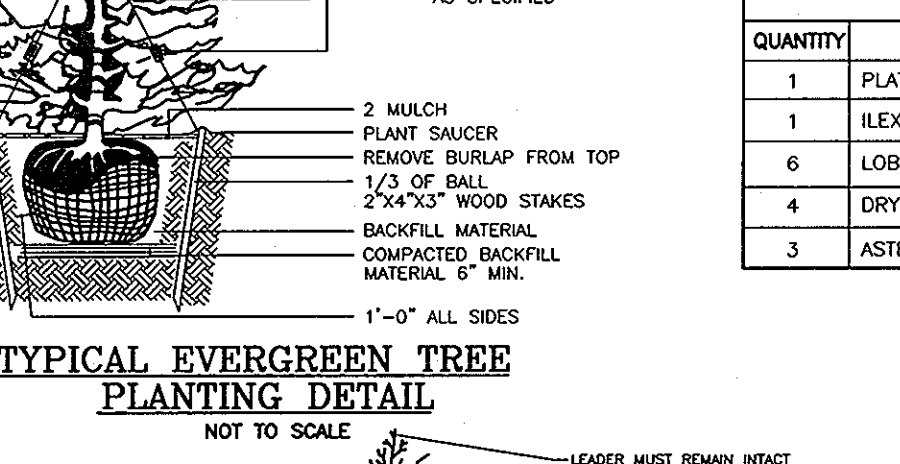


LANDSCAPE SCHEDULE

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
AR	2	ACER RUBRUM OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B

RAIN GARDEN PLANT LIST

QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
1	PLATANUS X ACERIFOLI(A)P	LONDON PLANE TREE	2 1/2"-3" Col.
1	ILEX GLABRA(I)G	INK BERRY	2'-3" HT.
6	LOBEIA CARDINALIS(L)C	CARDINAL FLOWER LOBELIA	1 GAL. CONTAINER
4	DROYPETERIS SP.(D)S	WOOD FERN	1 GAL. CONTAINER
3	ASTER NOVAE-ANGLIAE(A)N	NEW ENGLAND ASTER	1 GAL. CONTAINER

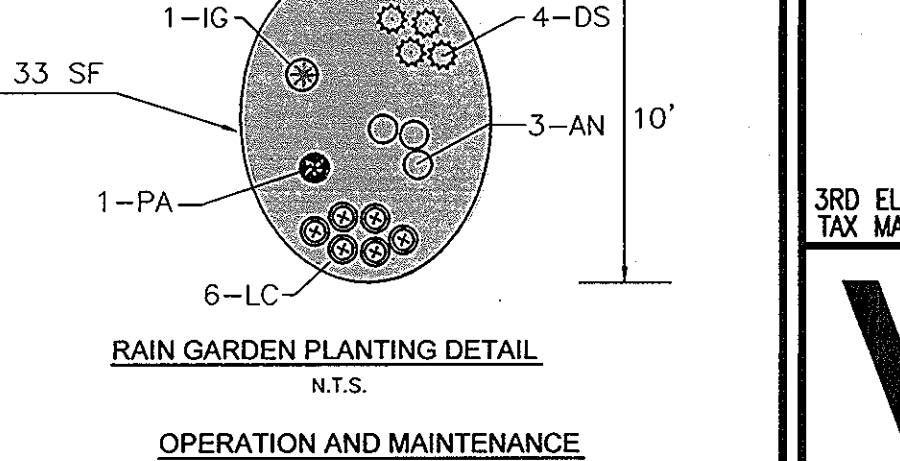


SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	1	2	3	4	TOTAL
PERIMETER/FRONTAGE DESIGNATION					
LINEAR FEET OF ROADWAY LANDSCAPE TYPE	1,449'	922'	578'	1,372'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES	YES	YES	YES	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED(LF REMAINING)	134'	0'	0'	0'	2
SHRUBS	1:60	2	1:60	1:60	0
SHRUBS PROVIDED	2	0	0	0	2
SHRUBS (2:1 SUBSTITUTION)					
SHRUBS (10:1 SUBSTITUTION)					
SHRUBS PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)					

OWNER
 CHRISTIAN FAMILY OUTREACH CENTER
 1475 MD RT. 32
 SYKESVILLE, MD 21784
 (443) 324-9806
 ATTN: MR. TIM KEANE
DEVELOPER
 TRINITY QUALITY HOMES, INC.
 3675 PARK AVENUE, SUITE 301
 ELLICOTT CITY, MD 21043
 (410) 480-0023
 ATTN: MR. MICHAEL PFAU

FINAL SUBDIVISION PLAN
 LANDSCAPE AND SITE NOTES AND DETAILS
 KEANE PROPERTY
 LOTS 5, 6, 7, 8, AND NON-BUILDABLE
 PRESERVATION PARCELS 'A' & 'B'
 PARCEL 41 (L 4105 / F.168)
 A RE-SUBDIVISION OF CHRISTIAN
 FAMILY OUTREACH CENTER LOT 4
 ZONED: RR-DEO
 PARCELS: 41
 HOWARD COUNTY, MARYLAND
 3RD ELECTION DISTRICT
 TAX MAP: 9 GRID: 17, & 18



PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
 DRAWN BY: JMR
 CHECKED BY: RHV
 DATE: DECEMBER 2012
 SCALE: AS SHOWN
 W.O. NO.: 12-06
 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. MY LICENSE NUMBER IS 12-12-12. EXPIRATION DATE 01-21-2013.

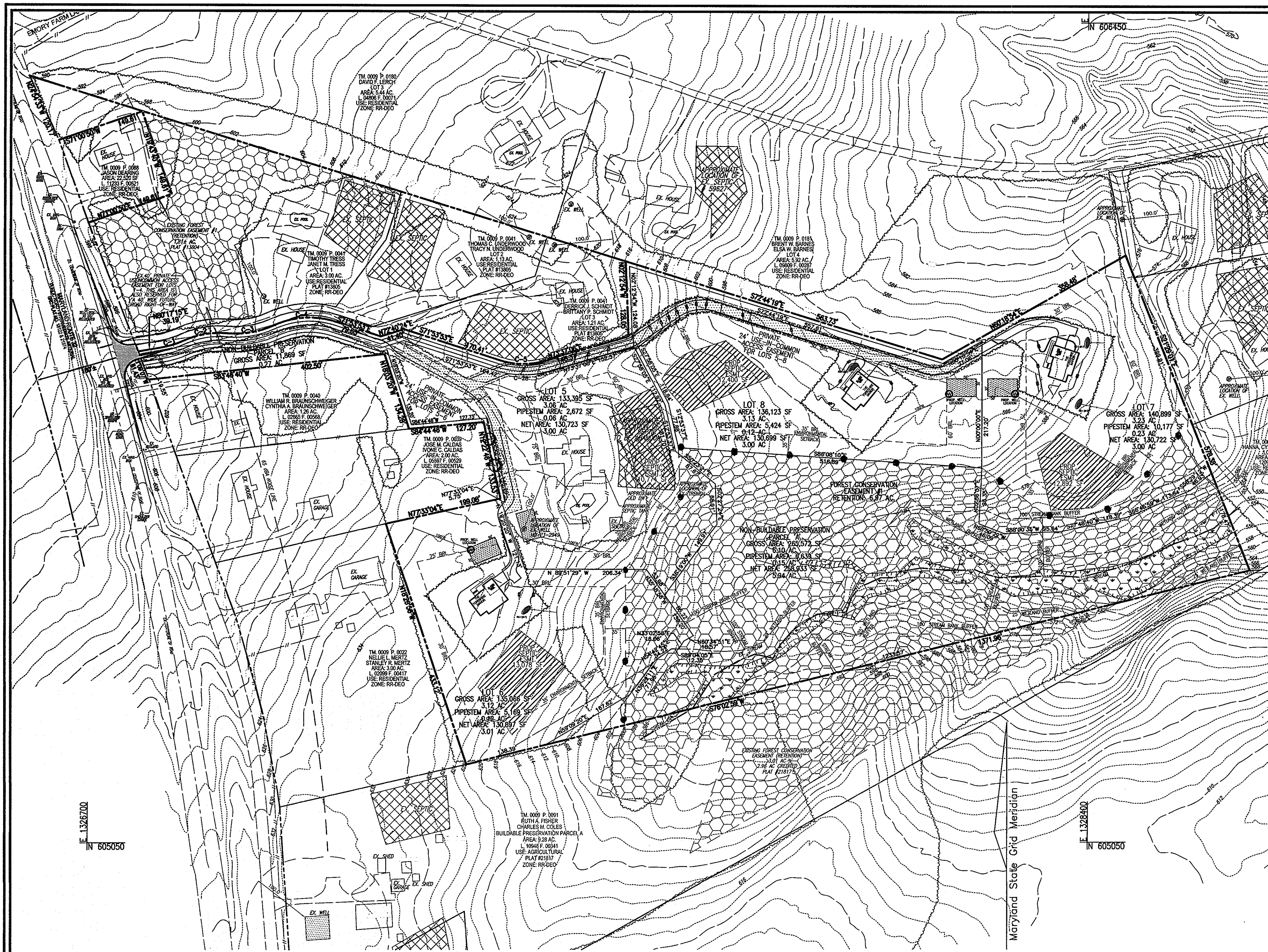
6 SHEET OF 7

BUILDER'S CERTIFICATE

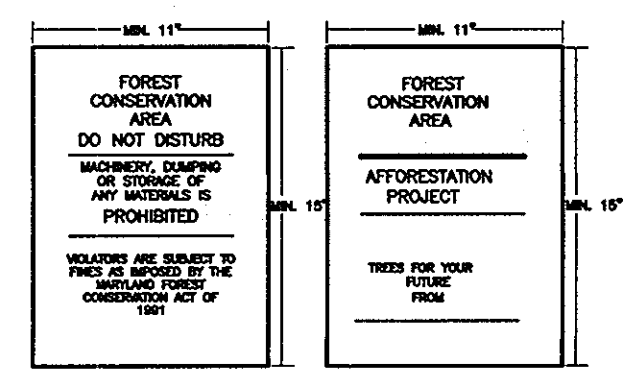
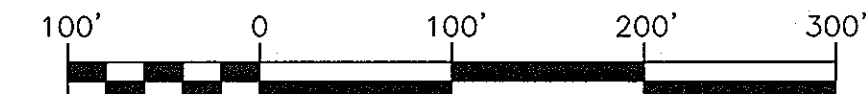
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE (1) YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 CHIEF, DIVISION OF LAND DEVELOPMENT

12/12/12
 12/12/12



LANDSCAPE PLAN
SCALE: 1"=100'



NOTE:
1. BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
2. SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET.
3. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
4. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
5. SIGN LOCATION SYMBOL.
SIGNAGE DETAIL
NOT TO SCALE

FOREST CONSERVATION NOTES

- PRE-CONSTRUCTION ACTIVITIES**
- PRIOR TO THE START OF ANY CONSTRUCTION DEFINE THE LIMITS OF DISTURBANCE AND THE SOIL PROTECTION ZONE (CRITICAL ROOT AREA) FOR THE FOREST RETENTION AREAS (SEE APPENDIX 'C' OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL).
 - PRIOR TO THE START OF ANY CONSTRUCTION (INCLUDING CLEARING) ADJACENT TO THE SOIL PROTECTION ZONE, INSTALL BLAZE ORANGE FENCE.
 - INSTALL ALL FOREST CONSERVATION AREA SIGNS AS SHOWN ON THIS SP.
 - ALL SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION TO PREVENT SEDIMENT FROM ENTERING THE FOREST CONSERVATION AREAS. SUPER SILT FENCE SHALL BE INSTALLED ON THE UPHILL SIDE OF ALL FOREST RETENTION AREAS. BECAUSE THE LOD OCCURS WITHIN 50 FEET OF ALL PROPOSED FOREST CONSERVATION RETENTION AREAS FOR THIS PROJECT, SUPER SILT FENCE SHALL BE INSTALLED ALONG THE LOD ADJACENT TO ALL FIVE FOREST CONSERVATION EASEMENT AREAS.
 - ALL FENCING, BLAZE-ORANGE OR "SUPER" SILT, SHALL BE CLEANED AND MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS SITUATION WARRANTS ON A REGULAR BASIS THROUGH THE CONSTRUCTION PERIOD.
 - A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNING AS REQUIRED, WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.
- CONSTRUCTION PHASE**
- DURING CONSTRUCTION, MONITOR ANY UNAUTHORIZED USE OF FOREST RETENTION AREAS. ANY USE OF FOREST RETENTION AREAS FOR THE FOLLOWING ACTIVITIES OR OTHER INTRUSIONS SHALL BE A VIOLATION OF THE APPROVED FOREST CONSERVATION PLAN:
- STORAGE OF EQUIPMENT AND MATERIALS
- DISPOSAL OF CONSTRUCTION MATERIALS
- WASHING OF EQUIPMENT, DISPOSAL OF WASTEWATER FROM CONCRETE OPERATIONS, ETC.
- EMPLOYEE PARKING
- TEMPORARY STRUCTURES SUCH AS TRAILERS, SANITARY FACILITIES, ETC.
- ROOT INJURY
- FLOODED CONDITIONS
- DROUGHT CONDITIONS
 - DURING CONSTRUCTION, INSPECT AND ENFORCE THE LIMITS OF DISTURBANCE AND REQUIRED PROTECTION MEASURES.
 - IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
 - ANY DAMAGES TO RETAINED TREES DUE TO CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT THE DIRECTION OF THE QUALIFIED PROFESSIONAL.
 - FOREST CONSERVATION AREAS TO BE INSPECTED AND CERTIFIED FOR COMPLETION OF THE FOREST CONSERVATION PLAN REQUIREMENTS BY A QUALIFIED PROFESSIONAL.
- POST CONSTRUCTION**
- POST CONSTRUCTION ACTIVITIES TO BE PROVIDED FOR A MINIMUM OF 2 YEARS.
 - INSPECTIONS SHALL BE CARRIED OUT AT THE BEGINNING AND END OF THE GROWING SEASON TO PINPOINT ANY PROBLEMS, MONITOR SURVIVAL RATES, AND SPECIFY REMEDIAL ACTIONS NEEDED TO CORRECT EXISTING PROBLEMS.
 - POST CONSTRUCTION MANAGEMENT PROGRAMS OF FOREST CONSERVATION AREAS MUST BE ESTABLISHED AND INCLUDE MAINTENANCE OF ALL FENCES, SIGNS AND OTHER DEVICES DELINEATING FOREST CONSERVATION AREAS, AS WELL AS THE FOLLOWING OTHER MEASURES:
STRESS REDUCTION:
- ROOT PRUNING
- CROWN REDUCTION OR PRUNING
- WATERING
- FERTILIZATION
- MULCHING
- PEST CONTROL
- CONTROL OF UNDESIRABLE COMPETING SPECIES
- THINNING AND PRUNING TO ENCOURAGE PROPER GROWTH
REPAIR OF TREE DAMAGES:
- ROOT REPAIR
- REMOVAL OF DEAD OR DAMAGED MATERIAL/LIMBS
- SOIL AERATION
- REMOVAL OF DEAD OR DYING TREES POSING AN IMMEDIATE SAFETY HAZARD
- AS PER THE SEDIMENT CONTROL PLAN, AND UNDER THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE TEMPORARY SEDIMENT CONTROL MEASURES AND FENCING. FOREST CONSERVATION SIGNS SHALL NOT BE REMOVED.
 - AN INSPECTION SHALL TAKE PLACE AT THE END OF YEAR ONE OR BEFORE THE SECOND ENROLLING SEASON TO EVALUATE SURVIVAL RATES AND APPROPRIATE ACTIONS TAKEN TO ACHIEVE REQUIRED SURVIVAL RATES.
 - AT THE CONCLUSION OF THE POST-CONSTRUCTION PERIOD, THE QUALIFIED PROFESSIONAL SHALL CERTIFY ALL FOREST CONSERVATION AREAS, SURVIVAL RATES DATA, AND VERIFY ALL PERTINENT PROTECTION MEASURES AND IN PLACE. UPON INSPECTION BY LOCAL STATE PRODUCT INSPECTOR APPROVAL, THE DEVELOPER SHALL BE RELEASED OF ALL SURETIES AND FUTURE OBLIGATIONS.
 - EDUCATION MATERIAL MUST BE PROVIDED TO OWNERS AND/OR OCCUPANTS ABOUT PROPER USE OF FOREST CONSERVATION AREAS. SUCH EDUCATION MATERIAL SHOULD INCLUDE A PLAN LOCATING ALL PROTECTED AREAS ON-SITE AND A DESCRIPTION OF

LEGEND:

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	CENTERLINE OF EX. STREAM
	EX. WETLAND BUFFER
	EX. STREAM BUFFER
	EX. UTILITY POLE
	EX. LIGHT POLE
	EX. MAILBOX
	EX. SIGN
	EX. SANITARY MANHOLE
	EX. SANITARY LINE
	EX. CLEANOUT
	EX. FIRE HYDRANT
	EX. WATER LINE
	EX. TREENLINE
	EX. TREES
	PROP. TREENLINE
	EX. FENCE
	EX. 10' CONTOUR
	EX. 2' CONTOUR
	SOILS
	PROP. 10' CONTOUR
	PROP. 2' CONTOUR
	PROP. SPOT ELEVATION
	PROP. PRIVATE SEPTIC EASEMENT
	PROP. PRIVATE WELL EASEMENT
	EX. WETLAND
	EX. PRIVATE SEPTIC EASEMENT
	EX. FOREST CONSERVATION EASEMENT (RETENTION)

Forest Conservation Worksheet 2.2

Net Tract Area						
A. Total Tract Area	A = 18.90					
B. Deductions	B =					
C. Net Tract Area	C = 18.90					
Land Use Category						
ARA	MDR	IDA	HDR	MPD	CIA	
0	1	0	0	0	0	
D. Afforestation Threshold (Net Tract Area x 20%)		D = 3.78				
E. Conservation Threshold (Net Tract Area x 25%)		E = 4.73				
Existing Forest Cover						
F. Existing Forest Cover within the Net Tract Area	F = 15.94					
G. Area of Forest Above Conservation Threshold	G = 11.22					
Break Even Point						
H. Break Even Point	H = 6.97					
I. Forest Clearing Permitted Without Mitigation	I = 8.97					
Proposed Forest Clearing						
J. Total Area of Forest to be Cleared	J = 8.97					
K. Total Area of Forest to be Retained	K = 6.97					
Planting Requirements						
L. Reforestation for Clearing Above the Conservation Threshold	L = 0.00					
M. Reforestation for Clearing Below the Conservation Threshold	M = 0.00					
N. Credit for Retention above the Conservation Threshold	N = 0.00					
P. Total Reforestation Required	P = 0.00					
Q. Total Afforestation Required	Q = 0.00					
R. Total Planting Requirement	R = 0.00					

FOREST CONSERVATION REQUIREMENTS AS SET FORTH IN SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL, NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. FOREST CONSERVATION OBLIGATIONS FOR THIS SITE SHALL BE FULFILLED BY THE PLACEMENT OF 6.97 ACRES OF RETENTION INTO AN ON-SITE EASEMENT WHICH IS SUFFICIENT TO MEET THE BREAK-EVEN POINT OF 6.97 ACRES OF RETENTION. NO SURETY IS REQUIRED FOR RETENTION.

OWNER
CHRISTIAN FAMILY OUTREACH CENTER
1475 MD RT. 32
SYKESVILLE, MD 21784
(443) 324-9806
ATTN: MR. TIM KEANE

DEVELOPER
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE, SUITE 301
ELLCOTT CITY, MD 21043
(410) 480-0023
ATTN: MR. MICHAEL PFAU

NO.	REVISION	DATE

FINAL SUBDIVISION PLAN
FOREST CONSERVATION PLAN & DETAILS

KEANE PROPERTY
LOTS 5, 6, 7, 8, AND NON-BUILDABLE
PRESERVATION PARCELS 'A' & 'B'
PARCEL 41 (L. 4105 / F.168)
A RE-SUBDIVISION OF CHRISTIAN
FAMILY OUTREACH CENTER LOT 4
ZONED: RR-DEO
PARCELS: 41
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET TEL: 410.461.7666
ELLCOTT CITY, MD 21043 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE

DESIGN BY: RHV
DRAWN BY: JMR
CHECKED BY: RHV
DATE: DECEMBER 2012
SCALE: AS SHOWN
W.O. NO.: 12-06

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. EXPIRATION DATE: 01-21-2015

7 SHEET OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE 12/17/12
CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] DATE 12/18/12
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature]
JOHN CANOLES
DNR QUALIFIED PROFESSIONAL