

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (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 BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY AND BOUNDARY INFORMATION SHOWN IS TAKEN FROM FIELD RUN SURVEY WITH TWO FOOT CONTOUR INTERVALS PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED SEPTEMBER 2010.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 31AB AND 31DA WERE USED FOR THIS PROJECT.
- WATER FOR THIS PROJECT IS PUBLIC (CONT #64-W). SERVICE WILL BE PROVIDED FROM EXISTING WATER CONNECTION ON PROPERTY.
- SEWER FOR THIS PROJECT IS PUBLIC (CONT #419-S). SERVICE WILL BE PROVIDED FROM EXISTING SEWER CONNECTION ON PROPERTY.
- SWM WILL BE HANDLED BY USE OF TWO PRIVATELY OWNED AND MAINTAINED MICRO-BIORETENTION AREAS.
- EXISTING UTILITIES ARE BASED ON FIELD SURVEYS, HOWARD COUNTY GIS, AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE.
- THERE ARE NO FLOODPLAINS OR WETLANDS LOCATED ON THIS SITE.
- BUILDING TO HAVE INSIDE WATER METER SETTING
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP, DATED OCTOBER 13, 2011, AND WAS APPROVED ON 10/20/11
- REFERENCE PLAT "PLAN OF A SUBDIVISION OF A PROPERTY OF RUSSELL H. BAUGHER", PB 7, P. 4.
- CONDITIONAL USE BA #10-031C, APPROVED JULY 14TH, 2011, FOR CHILD DAY CARE (SECTION 131.N.13) INCLUDED THESE AS CONDITIONS OF APPROVAL:  
 A: THE 50' SETBACK ALONG THE NORTHERN PROPERTY LINE (ADJOINING GLEN MAR UNITED METHODIST CHURCH) IS REDUCED TO 20' IN ACCORDANCE WITH SECTION 131.N.13 g(2)(c).  
 B: THE 50' SETBACK ALONG THE WESTERN PROPERTY LINE (ADJOINING VACANT LOT) IS REDUCED TO 20' IN ACCORDANCE WITH SECTION 131.N.13 g(2)(c). A 6' HIGH PRIVACY FENCE AND LANDSCAPING BUFFER IS PROVIDED.  
 C: A BUILDING PERMIT FOR CONSTRUCTION AS APPROVED UNDER BA-10-031C MUST BE OBTAINED WITHIN TWO YEARS FROM THE DECISION AND ORDER (ON OR BEFORE 1-18-13) AND SUBSTANTIAL CONSTRUCTION COMPLETED WITHIN THREE YEARS FROM THE DECISION AND ORDER (ON OR BEFORE 1-18-14) OR THE CONDITIONAL USE WILL BECOME VOID.
- ULTIMATE CAPACITY: 55 CHILDREN
- OUTDOOR PLAY AREA: (75 SF / 2 CHILDREN) (55 CHILDREN) = 2,063 SF REQUIRED, 2,065 SF PROVIDED
- AREA WITHIN STRUCTURE SETBACKS: 9,291 SF  
 20% GREEN SPACE REQUIRED: 1,858 SF  
 GREEN SPACE WITHIN STRUCTURE SETBACKS: 3,478 SF  
 GREEN SPACE PROVIDED: 37.4%
- LOT SIZE REQUIRED: (55 CHILDREN) (500 SF / CHILD) = 27,500 SF  
 LOT SIZE PROVIDED: 27,985 SF
- ALL LIGHTING TO CONFORM TO SECTION 134 OF THE REGULATIONS. LIGHTING WILL BE DIRECTED DOWN AND AWAY FROM RESIDENTIAL PROPERTY. NO PARKING LOT LIGHTING IS PROPOSED.
- PERIMETER LANDSCAPING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL AND FENCING ALONG THE WESTERN PROPERTY LINE IN ACCORDANCE WITH THE DECISION RENDERED IN BA CASE NO. 10-031C. SURETY IN THE AMOUNT OF \$9,110.00 SHALL BE POSTED WITH THE DEVELOPERS AGREEMENT FOR THIS SITE SDP-12-031.
- LANDSCAPING NOT PERMITTED WITHIN 7'-1/2' OF EACH SIDE OF THE FIRE DEPARTMENT CONNECTION. PROVIDE A CLEAR UNOBSTRUCTED ACCESS PATH TO THE FIRE DEPARTMENT CONNECTION. NEPA-1 13.1.4
- THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE LOT HAS A TOTAL AREA OF 27,985 SQUARE FEET WHICH IS BELOW THE 40,000 REQUIREMENT THRESHOLD.
- THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS SITE.
- THE PROPOSED BUILDING WILL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- A KNOX BOX IS REQUIRED TO BE PLACED ON THE FRONT OF THE BUILDING. IT SHALL BE PLACED TO THE RIGHT OF THE MAIN ENTRANCE AT A RANGE OF 4'-5' IN HEIGHT AND NO MORE THAN 6' LATERALLY FROM THE DOOR. ITS LOCATION IS SHOWN ON THESE PLANS. THE BOX SHALL BE ELECTRONICALLY SUPERVISED TO NOTIFY THE OWNER THAT IT IS BEING ACCESSSED.  
 (INTEGRATED WITH THE FIRE ALARM SYSTEM).
- ALL CURB AND GUTTER TO BE STANDARD 7" COMBINATION CURB AND GUTTER, HOWARD COUNTY DETAIL R-3.01.
- ALL PAVING TO BE P-1 PAVING.
- HANDICAP RAMP TO BE HOWARD COUNTY STANDARD R-4.06.
- CONNECTION FROM MD 103 TO BAUGHER FARM ROAD WILL BE TERMINATED IN THE NEAR FUTURE. THIS LOT WILL ONLY BE ACCESSIBLE BY BAUGHER FARM ROAD AFTER THE TERMINATION OCCURS.
- A 10' MD RTE 103 R/W WIDENING WILL BE DONATED BY THE PROPERTY OWNER UPON REQUEST FROM THE MARYLAND SHA.
- THE DEVELOPER'S AGREEMENT CONVEYS A 20'x30' PUBLIC ACCESS EASEMENT TO HOWARD COUNTY, MD LOCATED ON THIS PROPERTY. RECORDED MARYLAND HOWARD COUNTY LAND RECORDS AS LIBER 1484 FOLIO 601, OCTOBER 19, 2012.

# SITE DEVELOPMENT PLAN

## GLOBAL CHILDREN MONTESSORI SCHOOL

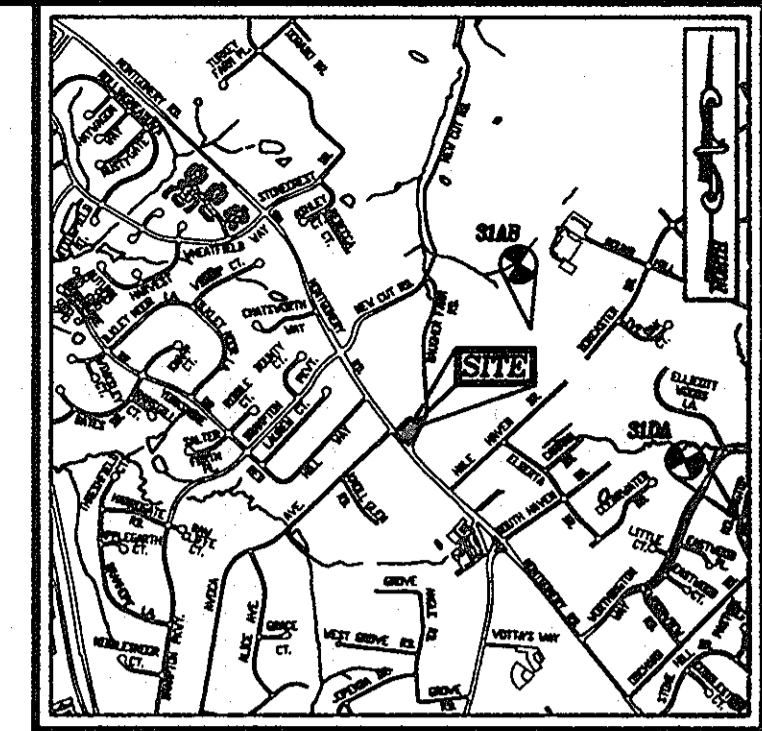
### 4790 BAUGHER FARM ROAD

#### PLAN OF SUBDIVISION OF A PROPERTY OF RUSSELL H. BAUGHER, LOT 1

L. 12531 / F. 295  
0.6424 ACRES

**LEGEND:**

	PROPERTY LINE
	RIGHT-OF-WAY LINE
	ADJACENT PROPERTY LINE
	EXISTING CURB AND GUTTER
	EXISTING TREELINE
	EXISTING FENCE
	EXISTING 10' PUBLIC SURFACE DRAINAGE AND UTILITY EASEMENT (PLAT #'S 17616-17620)
	PROPOSED SIDEWALK
	PROPOSED TREELINE
	PROPOSED CURB
	PROPOSED STREET LIGHT

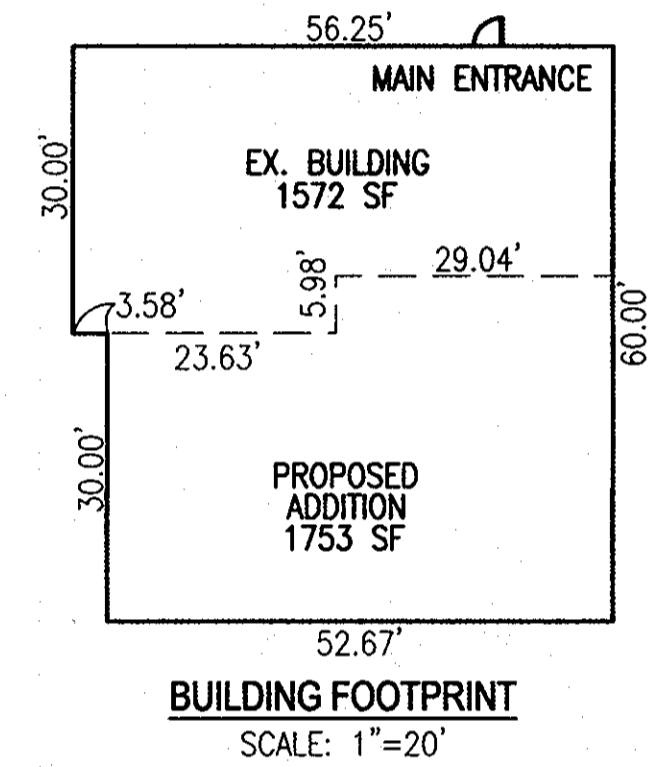


**VICINITY MAP**  
SCALE: 1"=200'  
ADC MAP COORDINATE: PG. 4936 B2

**BENCHMARKS**

HOWARD COUNTY BENCHMARK - 31AB (CONC. MONUMENT)  
 N 573984.47 E 1369949.46 ELEV. 499.93  
 LOCATION: IN AN ELECTRICAL TRANSMISSION TOWER EASEMENT 86' FROM TRANS. TOWER 281A AND 114.2' FROM TRANS. TOWER 281, APPROXIMATELY 0.2 MILES EAST OF #4641 NEW CUD ROAD

HOWARD COUNTY BENCHMARK - 31DA (CONC. MONUMENT)  
 N 571982.66 E 1372145.07 ELEV. 481.64  
 LOCATION: EAST SIDE OF ROLLING TOP ROAD, APPROXIMATELY 0.1 MILES NORTH OF ORCHARD ROAD.



**BUILDING FOOTPRINT**  
SCALE: 1"=20'

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/ AREA	LOT/ PARCEL
"RUSSELL H. BAUGHER"	-	LOTS 1 / PARCEL 415
LIBER/FOLIO/PLAT REF.	BLOCK NO/ZONE	TAX MAP/ELECT. DIST./CENSUS TR.
12531/295	NA 07	R-20 31 2ND 602800

**PETITIONER/OWNER**  
 VISHNAMPET AND PADMA VENKATRAMAN  
 4512 HIDDEN HOLLOW DR.  
 ELICOTT CITY, MD 21043  
 PHONE: (410) 280-2850

NO.	REVISION	DATE

**SITE DEVELOPMENT PLAN  
COVER SHEET**

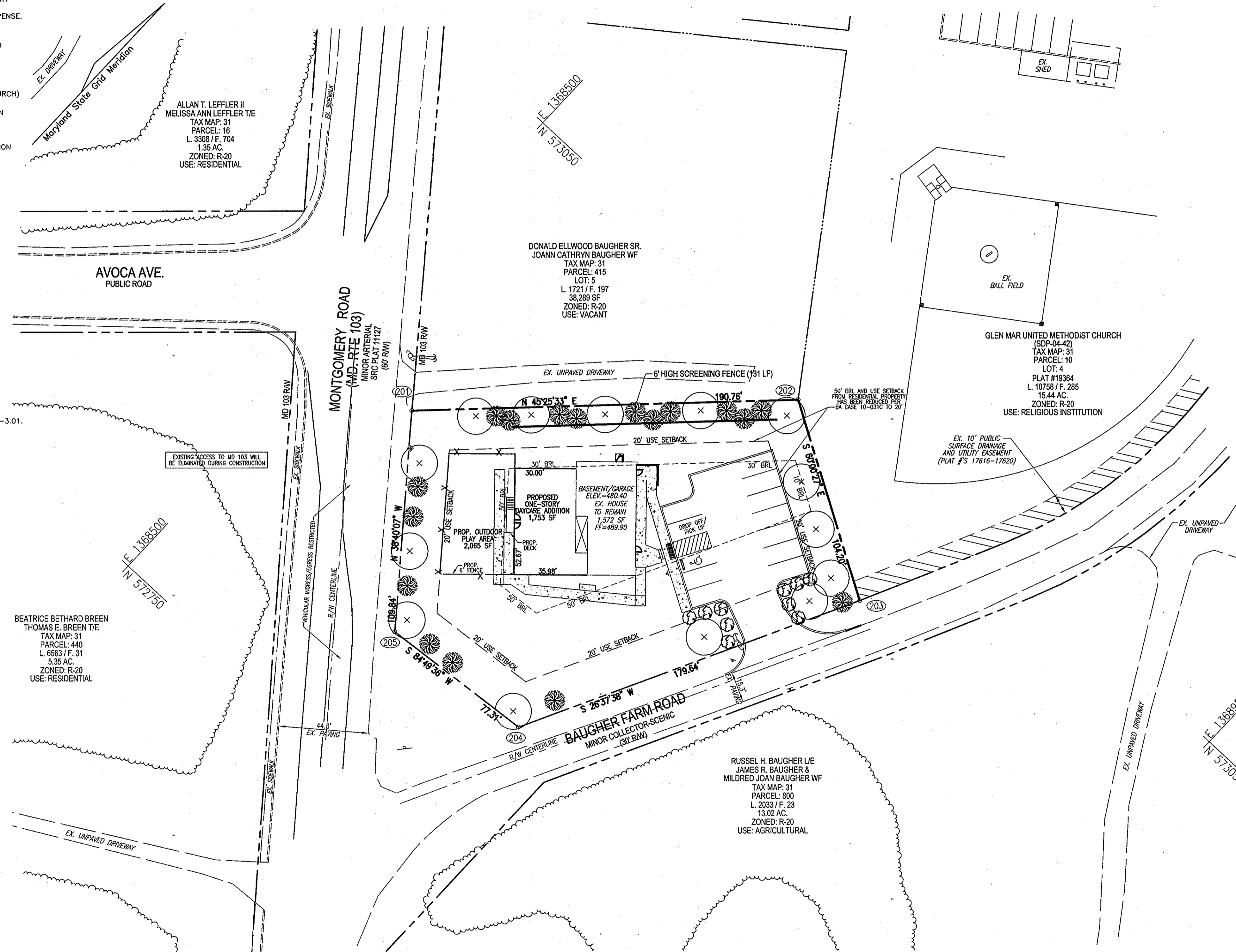
**GLOBAL CHILDREN MONTESSORI SCHOOL**  
 4790 BAUGHER FARM ROAD  
 PLAN OF A SUBDIVISION OF A PROPERTY OF RUSSELL H. BAUGHER, LOT 1  
 LIBER 12531 / FOLIO 295  
 0.6424 ACRES  
 ZONING: R-20  
 TAX MAP: 31 GRID: 07 PARCEL: 415 LOT: 1  
 DPZ REF'S: BA #10-031C, ECP-12-013 HOWARD COUNTY, MARYLAND

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

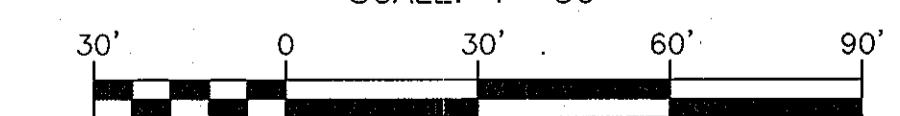


DESIGN BY: RHW  
 DRAWN BY: JMR  
 CHECKED BY: RHW  
 DATE: OCTOBER 2011  
 SCALE: AS SHOWN  
 W.O. NO.: 10-12

1 SHEET OF 5



**COVER SHEET**  
SCALE: 1"=30'



**ADDRESS CHART**

PREVIOUS ADDRESS:	PROPOSED ADDRESS:
4821 MONTGOMERY ROAD	4790 BAUGHER FARM ROAD

**SHEET INDEX**

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 5
SITE LAYOUT AND PROFILES	2 OF 5
SOILS, GRADING, SEDIMENT, AND EROSION CONTROL PLAN	3 OF 5
SITE, SEDIMENT, AND EROSION CONTROL NOTES AND DETAILS	4 OF 5
LANDSCAPE PLAN, NOTES AND DETAILS	5 OF 5

**COORDINATE TABLE**

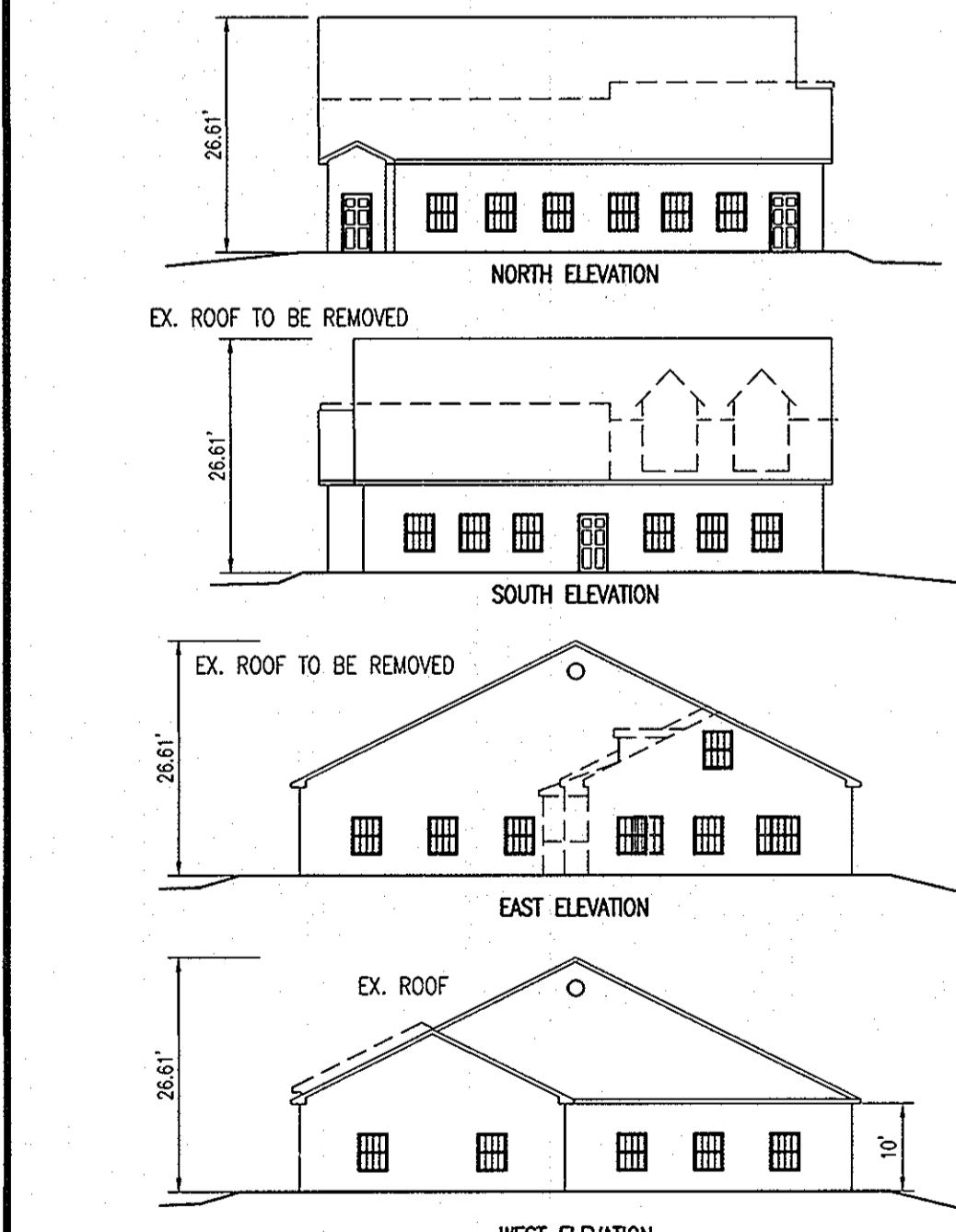
NO.	NORTH	EAST
201	572901.7398	1368549.9468
202	573035.6214	1368685.8332
203	572983.5334	1368776.0800
204	572822.9480	1368695.5698
205	572815.9773	1368618.5783

**PARKING TABULATION**

DAY CARE	SPACES/1,000 SF = 11 SPACES REQUIRED (3,325 SF)	12 SPACES PROVIDED

**SITE ANALYSIS DATA CHART**

A. TOTAL PROJECT AREA:	27,985 S.F. OR 0.6424 AC.
B. AREA OF PLAN SUBMISSION:	SAME AS ABOVE
C. LIMIT OF DISTURBED AREA:	26,627 S.F. OR 0.6113 AC.
D. PRESENT ZONING DESIGNATION:	R-20
E. PROPOSED USES FOR SITE AND STRUCTURES:	CHILD DAY CARE
F. DPZ FILE REFERENCES:	BA-10-031C, ECP-12-013
G. DEED REFERENCE:	L.12531 / F. 295



**BUILDING ELEVATIONS**  
NOT TO SCALE

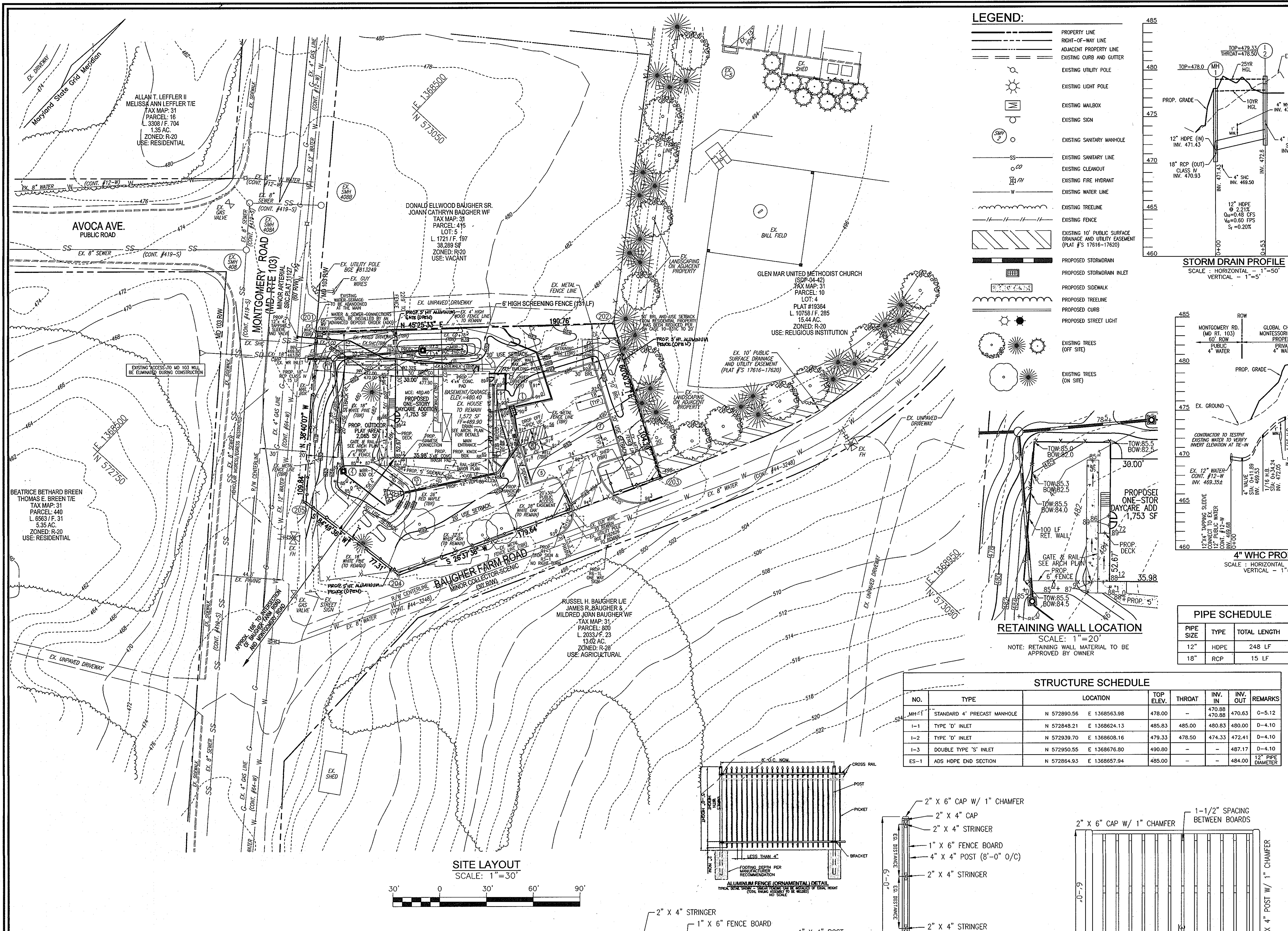
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* DATE: 10/26/12

CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* DATE: 11/21/12

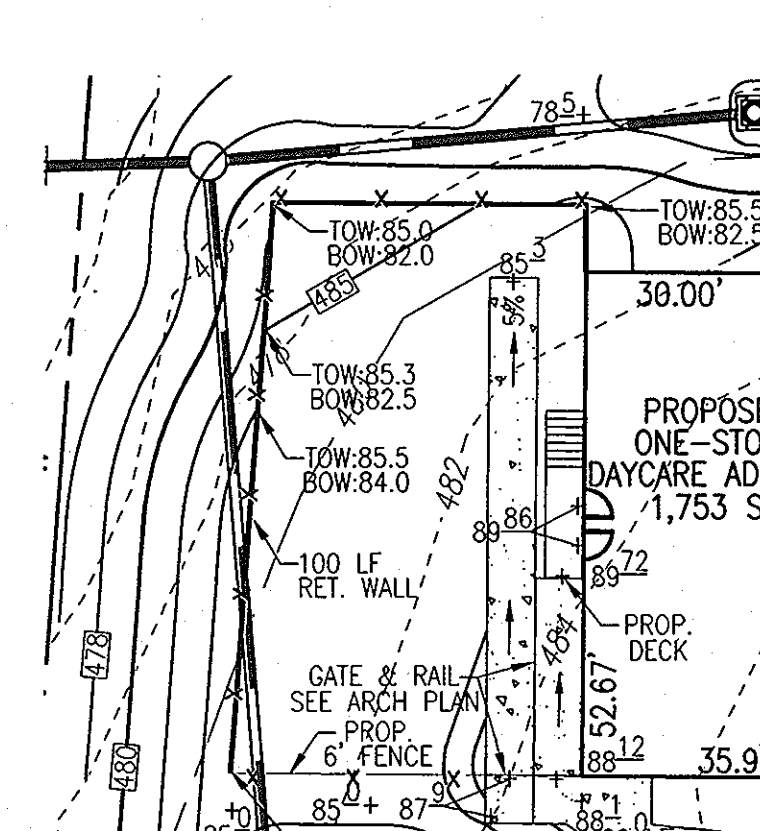
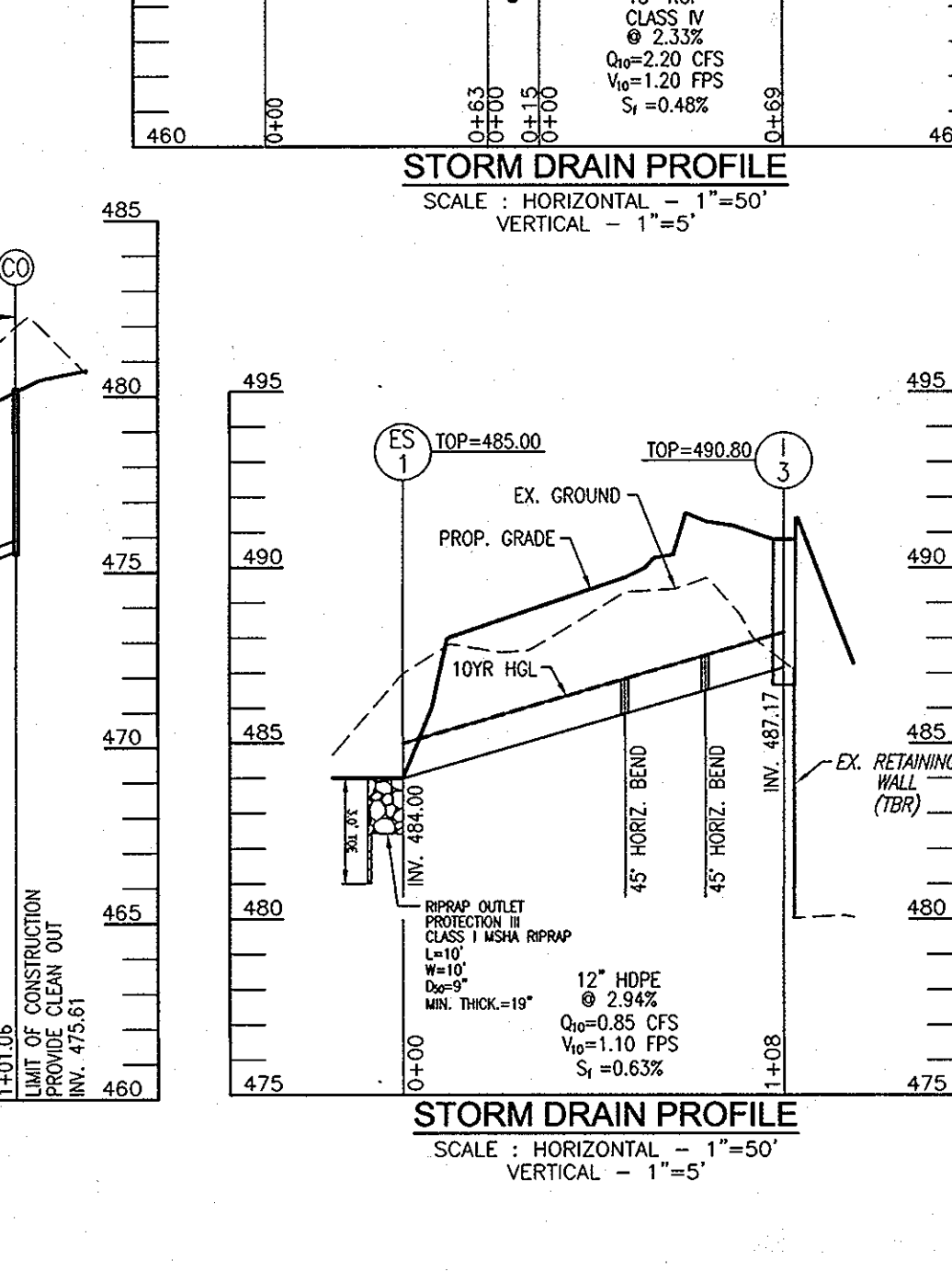
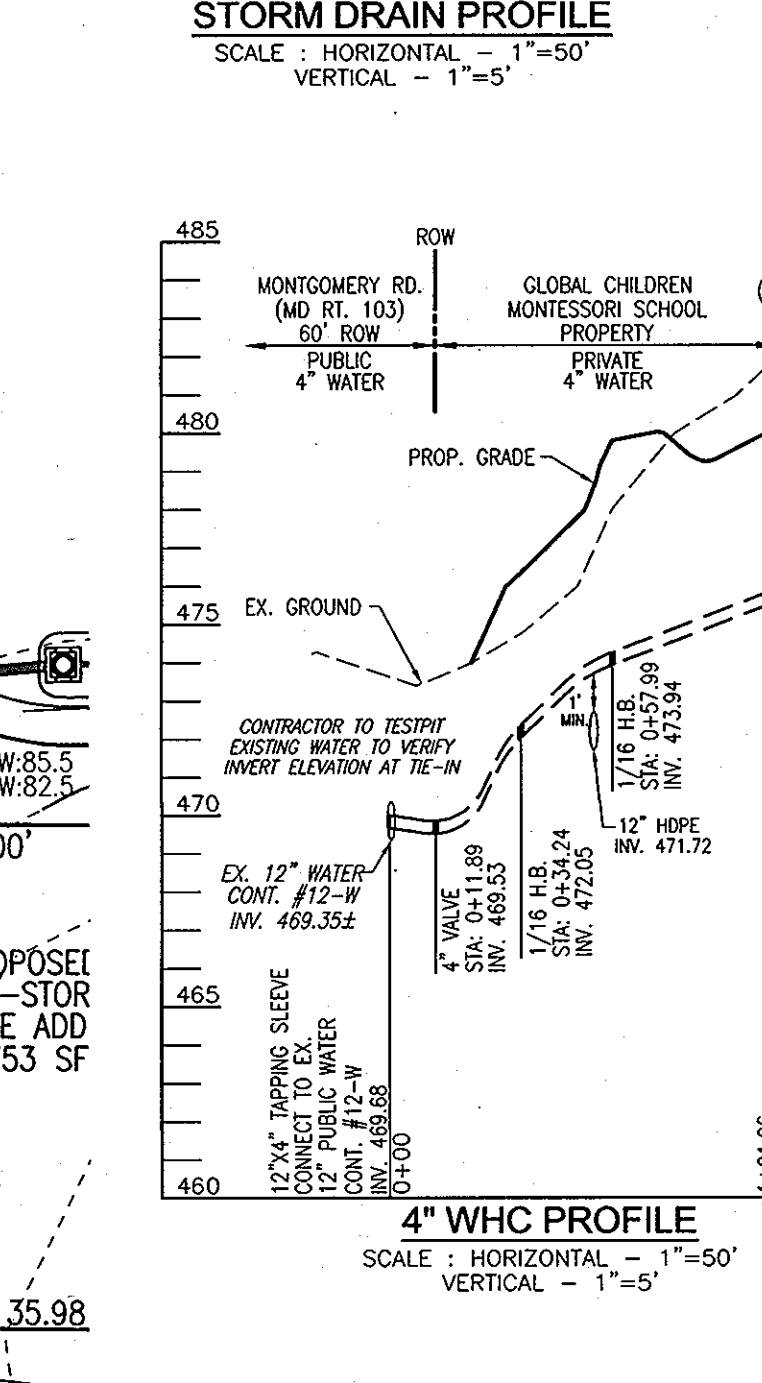
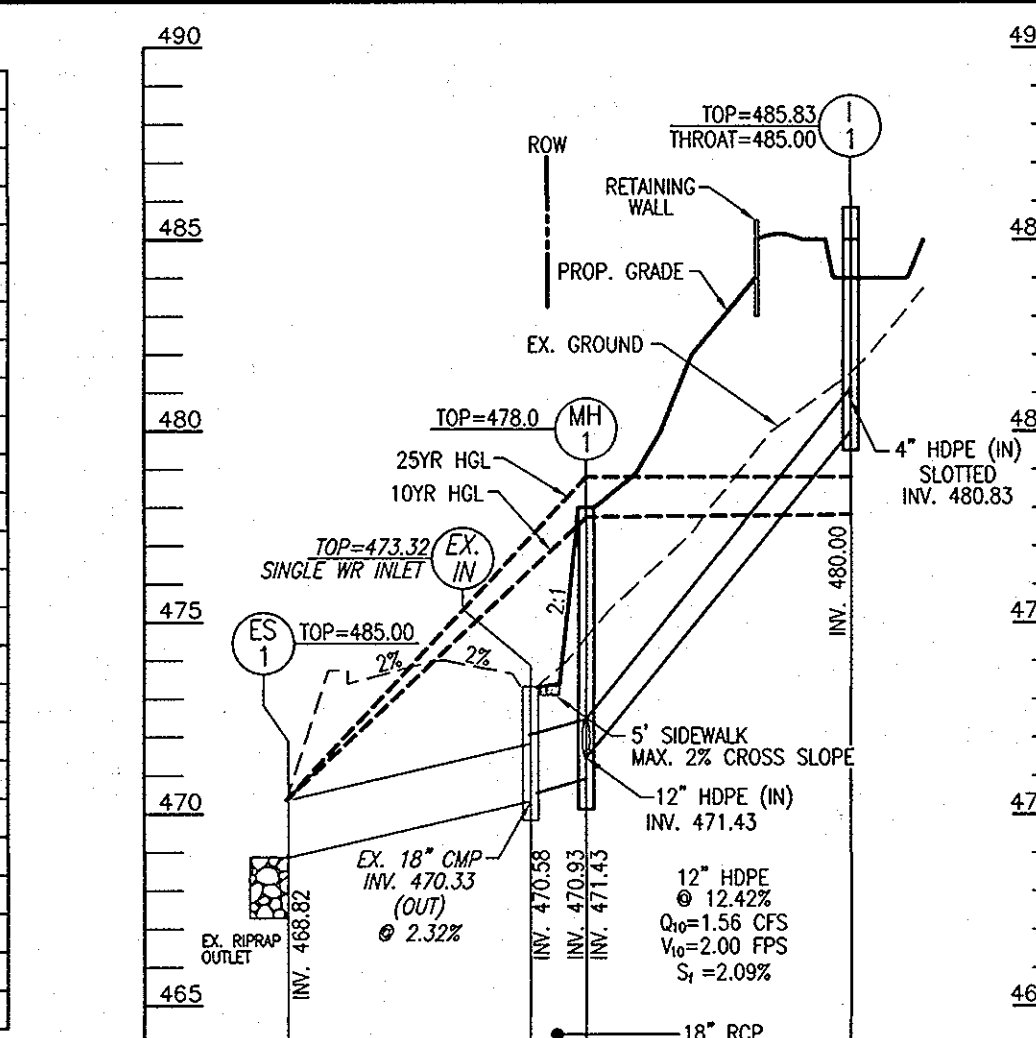
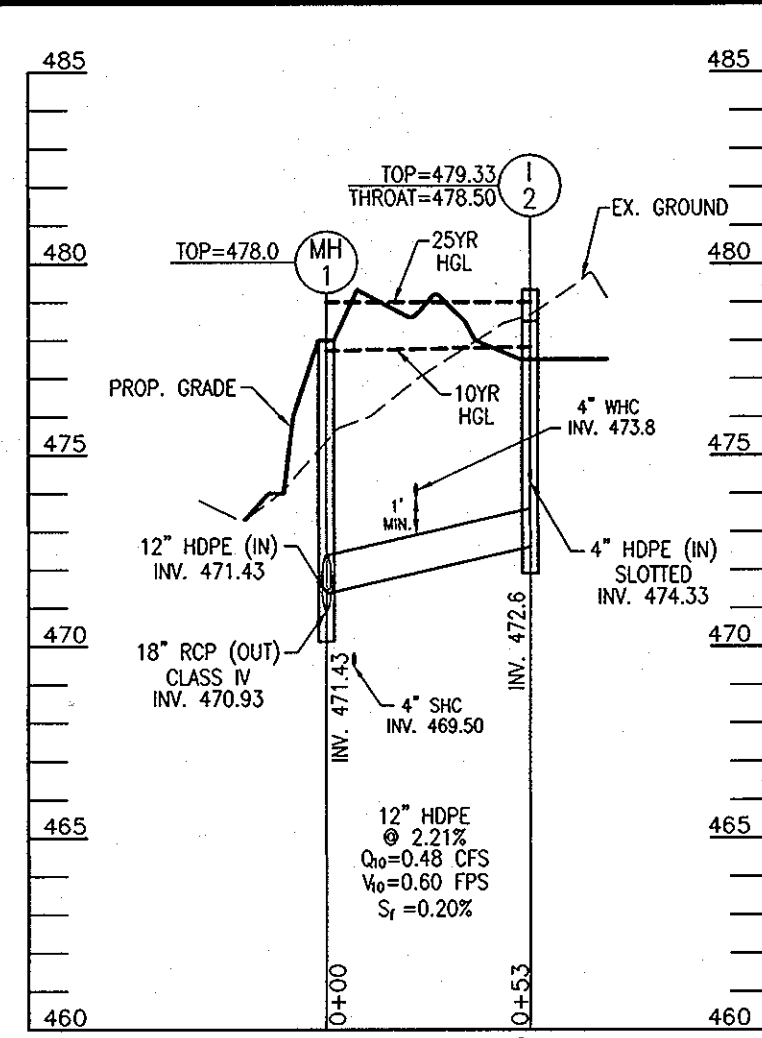
DIRECTOR: *[Signature]* DATE: 11/21/12





**LEGEND:**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
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- EXISTING SANITARY LINE
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- EXISTING TREES (OFF SITE)
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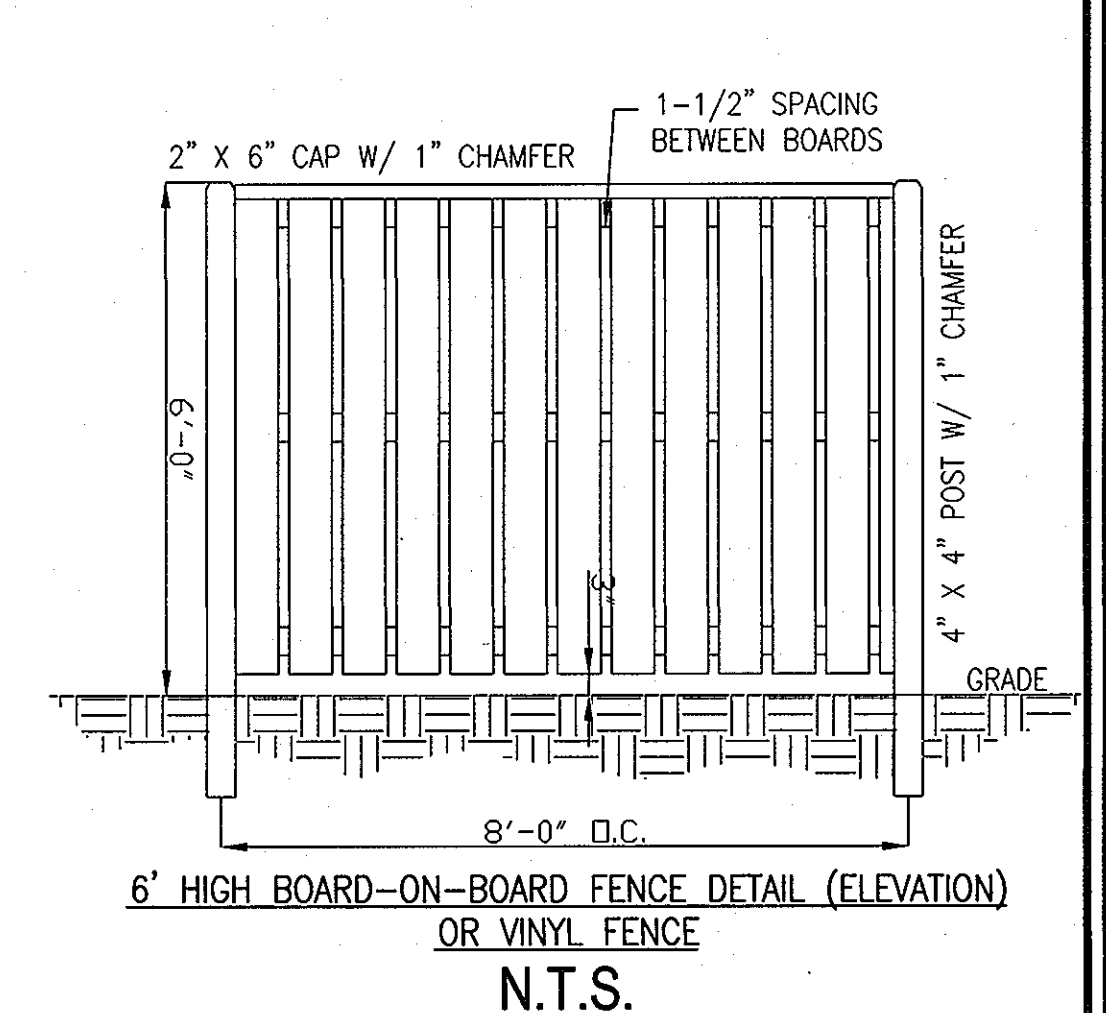
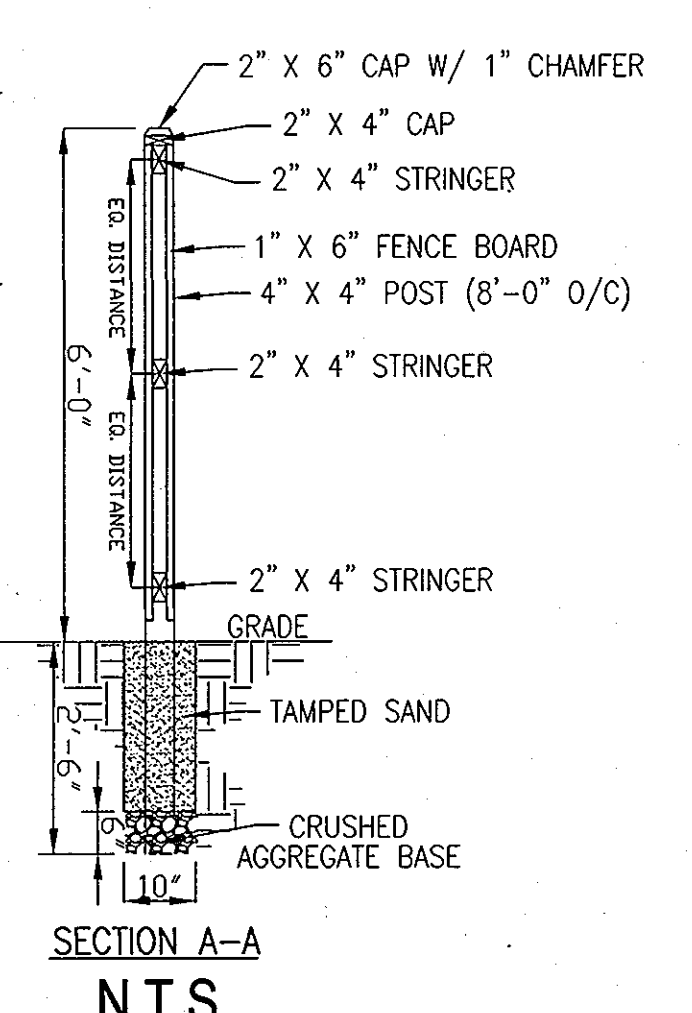
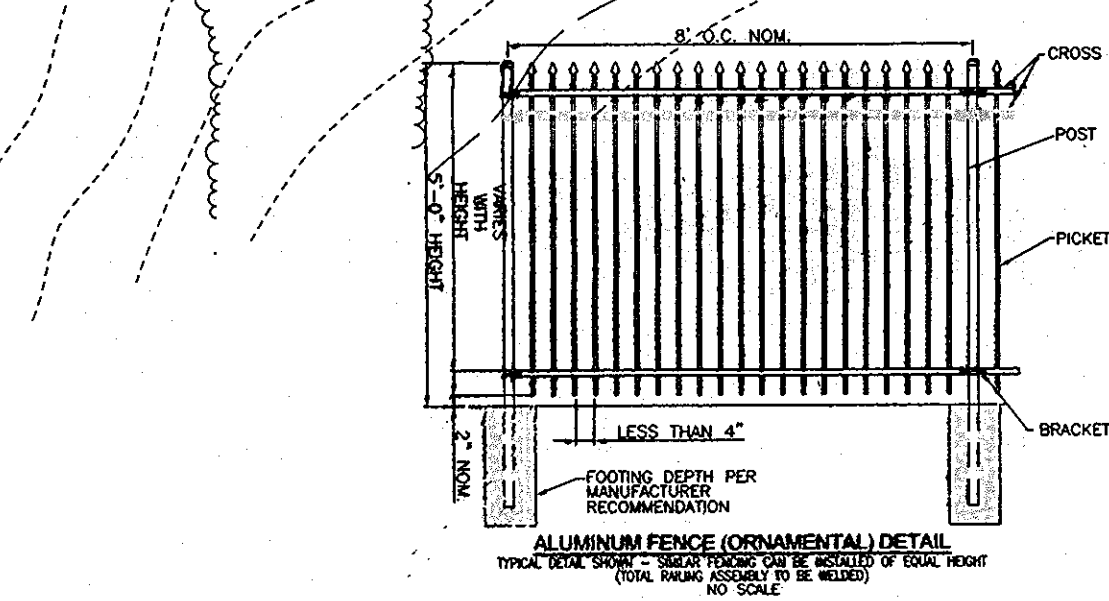
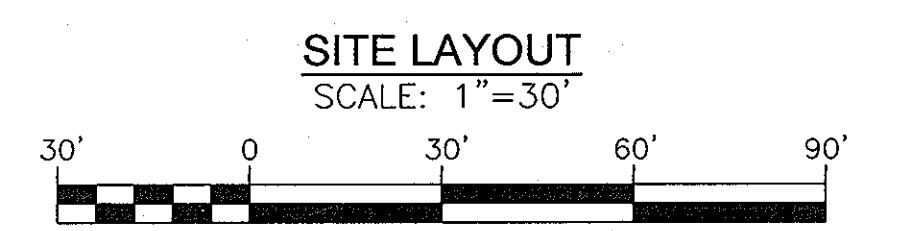


**PIPE SCHEDULE**

PIPE SIZE	TYPE	TOTAL LENGTH
12"	HDPE	248 LF
18"	RCP	15 LF

**STRUCTURE SCHEDULE**

NO.	TYPE	LOCATION	TOP ELEV.	THROAT	INV. IN	INV. OUT	REMARKS
JMH-1	STANDARD 4" PRECAST MANHOLE	N 572890.56 E 1368563.98	478.00	-	470.88	470.63	G-5.12
I-1	TYPE 'D' INLET	N 572848.21 E 1368624.13	485.83	485.00	480.83	480.00	D-4.10
I-2	TYPE 'D' INLET	N 572939.70 E 1368608.16	479.33	478.50	474.33	472.41	D-4.10
I-3	DOUBLE TYPE 'S' INLET	N 572950.55 E 1368676.80	490.80	-	487.17	484.00	D-4.10
ES-1	ADS HDPE END SECTION	N 572864.93 E 1368657.94	485.00	-	484.00	-	12" PIPE DIAMETER



**PETITIONER/OWNER**  
 VISHNAMPET AND PADMA VENKATRAMAN  
 4512 HIDDEN HOLLOW DR.  
 ELLICOTT CITY, MD 21043  
 PHONE: (410) 480-2850

NO.	REVISION	DATE
1	REVISE TO ADD 6\"/>	10/08/13

**SITE DEVELOPMENT PLAN**  
**SITE LAYOUT AND PROFILES**  
**GLOBAL CHILDREN MONTESSORI SCHOOL**  
 4790 BAUCHER FARM ROAD  
 PLAN OF A SUBDIVISION OF A PROPERTY  
 OF RUSSELL H. BAUCHER, LOT 1  
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**ROBERT H. VOGEL ENGINEERING, INC.**  
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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. 31373 EXPIRATION DATE: 01-21-2013

DESIGN BY: RHY.  
 DRAWN BY: JMR.  
 CHECKED BY: RHY.  
 DATE: OCTOBER 2011  
 SCALE: AS SHOWN  
 W.O. NO.: 10-17

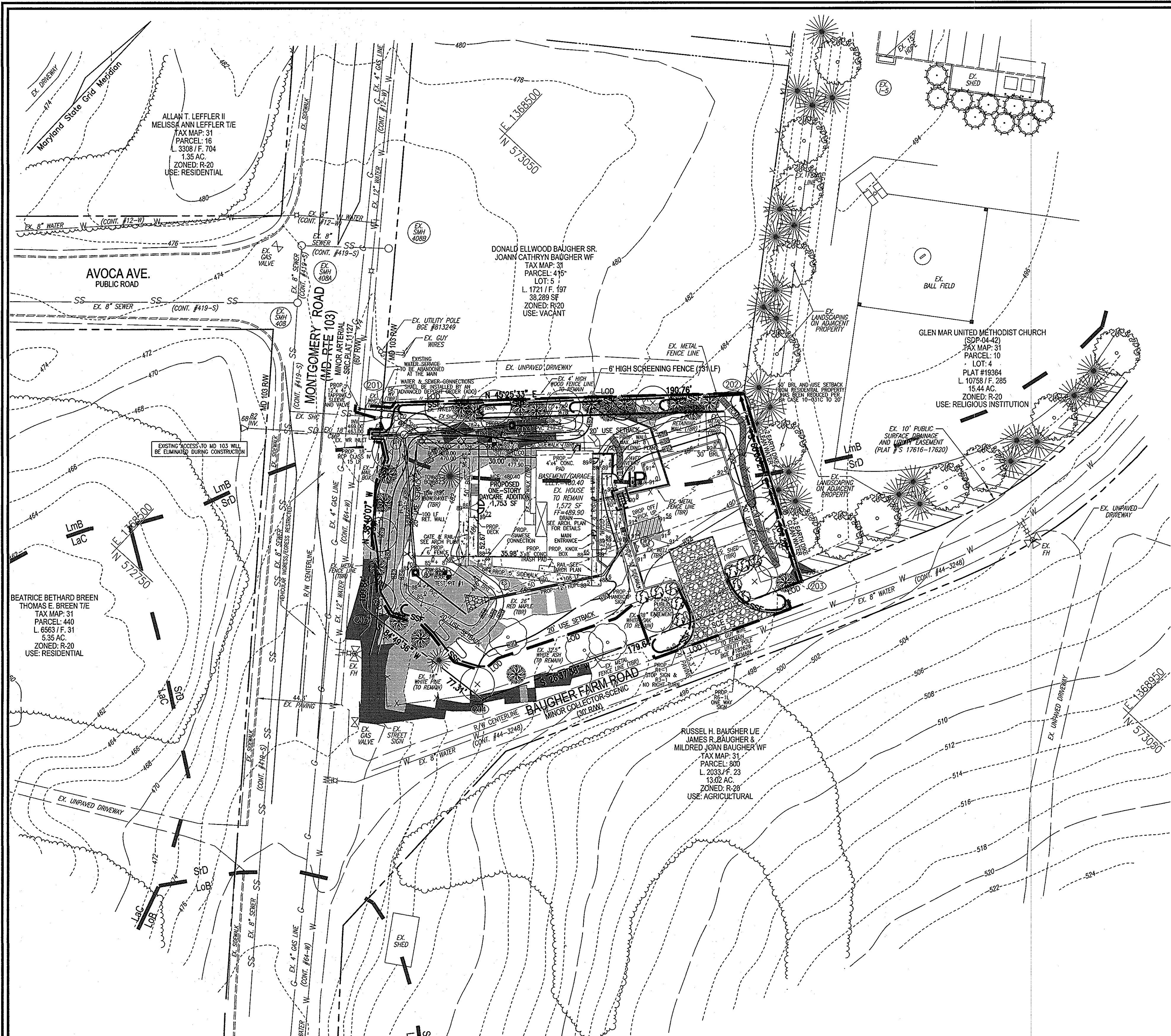
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/2/12

CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/2/12

DIRECTOR  
 DATE: 11/2/12





**PROJECT:** MONTGOMERY ROAD DAYCARE

TOTAL AREA (LOD):	0.61 AC
TARGET Pe:	1.60 IN
IMPERVIOUS:	31 PERCENT
SITE Rv:	0.33
SITE ESDv:	1166 CF

DRAINAGE AREA	IMPERVIOUS AREA	GRASS AREA	TOTAL AREA	PERCENT IMPERVIOUS	Rv	ESDv MIN	ESDv MAX	PERCENT OF SITE	TARGET ESDv
1	6310	6693	12943	0.49	0.49	169	439	0.24	285
2	2020	2174	4194	0.48	0.48	169	439	0.24	285
<b>TOTAL AREA</b>			<b>17137 SF</b>	<b>0.39 AC</b>				<b>100%</b>	<b>1166 CF</b>

**MONTGOMERY ROAD DAY CARE ENVIRONMENTAL CONCEPT PLAN**

**I. Introduction**

The subject site is located at the northwest corner of Baugher Farm Road and Montgomery Road (MD Route 103) in Ellicott City, Maryland. The site is zoned R-20 and is identified as Tax Map 31, Parcel 415, the address is 4821 Montgomery Road. The site area is 0.64 acres and the proposed limit of disturbance is 0.61 acres. The site fronts on a County road and a State road. It is adjacent to a vacant property zoned R-20 and the Glen Mar United Methodist Church property (specifically the recreational field). The subject property was recently approved as a Child Care facility through the Conditional Use process.

The site contains an existing residence, retaining wall, parking area, driveway and two sheds. The existing residence will remain and be expanded but the other features will be removed. There is an existing State Highway Administration inlet located close to the northwest property corner which currently accommodates the drainage from the site.

Eco-Science Professionals, Inc. (John Canoles, Environmentalist) performed a field investigation regarding woods, resources, wetlands, streams or other visible environmental features. The subject site is less than 15% impervious and therefore does not qualify under the "redemption" criteria. Therefore the Environmental Site Design is based on the proposed limit of disturbance is considered new development. The ESDv is based on the reduction of runoff to mimic "woods in good condition".

**II. METHODOLOGY**

Stormwater management for the project has been provided in accordance with the 2000 Maryland Stormwater Design Manual, 2007 Stormwater Management Act (Environmental Site Design), MDE Design Computations and Howard County requirements. The proposed improvements consist of the existing house, building expansion, parking lot, and sidewalks.

The offsite drainage flowing to the site will be diverted around the proposed development and will not be managed or treated. There are two predominant drainage areas which incorporate the impervious areas. There are limited grass areas which are not directed to a facility. The ESDv is computed for the entire project limit of disturbance.

The site consists of Hydrologic Soil Group type "B" soils. The weighted P<sub>g</sub> to mimic "woods in good condition" is 1.8 based on an overall development impervious percentage of 31. The resulting recharge factor (R<sub>v</sub>) is 0.33. Applying an overall limit of disturbance of 0.61 acres, the total ESDv required for this project is 1,315 cf (75% at 986 cf). The Rev required is 190 cf.

Two micro-bioretenement facilities are utilized to fulfill the ESDv requirement. Each drainage area provides ESDv which exceeds the minimum (P<sub>g</sub> = 1.0") and does not exceed the maximum (P<sub>g</sub> = 2.6"). The total ESDv provided by the two micro-bioretenement facilities meets the minimum required. Additionally, Rev is provided in the soil under the storage (per County policy).

**III. CONCLUSION**

The ESDv requirement of 1,315 cf (75% at 986 cf) for the proposed project is provided utilizing micro-bioretenement (1,073 cf). The required Rev of 190 cf will be provided by stone storage under each micro-bioretenement facility. Considering the size and configuration of the development we anticipate sediment control will be accommodated by perimeter silt fence.

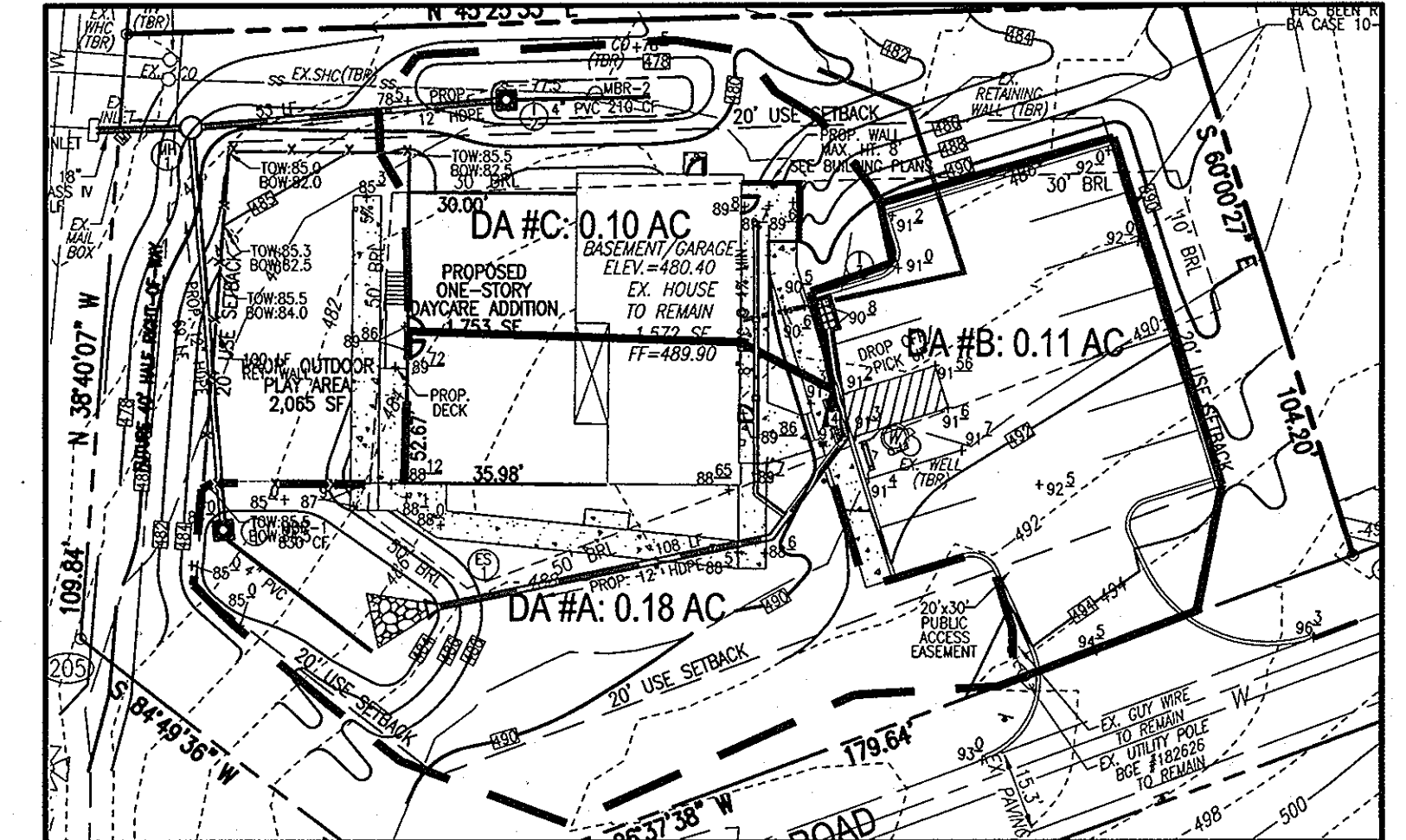
The Environmental Site Design for this project successfully incorporates the methodology present in the MDE's stormwater Design Manual, Chapter 5. This report and the associated Concept Plan successfully address the following:

- Map if all site resources
- Field verification of the natural resource map
- Proposed limits of clearing and grading
- Location of proposed impervious areas
- Location of existing and proposed utilities
- Preliminary estimates of stormwater requirements
- Preliminary location of ESD practices
- Stable conveyance of stormwater at potential outfall locations
- Narrative addresses:
  - Natural resource protection and enhancement
  - Maintenance of natural flow patterns
  - Reduction of impervious areas through better site design, alternative surfaces, and non-structural practices
  - Integration of erosion and sediment control into the stormwater strategy
  - Implementation of ESD planning techniques and practices to the MEP

**LEGEND:**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- EXISTING TREES (OFF SITE)
- EXISTING TREES (ON SITE)
- EXISTING FENCE
- EXISTING 10' PUBLIC SURFACE DRAINAGE AND UTILITY EASEMENT (PLAT #'S 17616-17620)
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED STREET LIGHT
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED TREE PROTECTION FENCE
- PROPOSED EROSION CONTROL MATTING
- PROPOSED EARTH DIKE
- MODERATE SLOPES (15% - 24.99%)
- STEEP SLOPE (>25%)

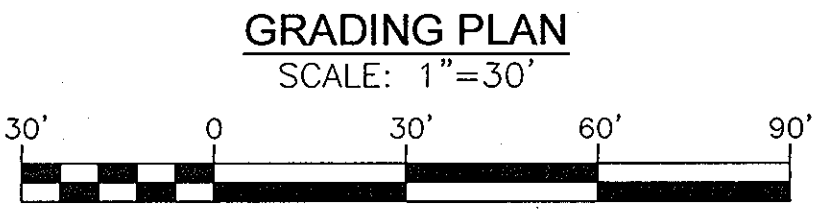
**DRAINAGE AREA MAP**  
SCALE: 1"=30'



**PETITIONER/OWNER**  
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**SOILS LEGEND**

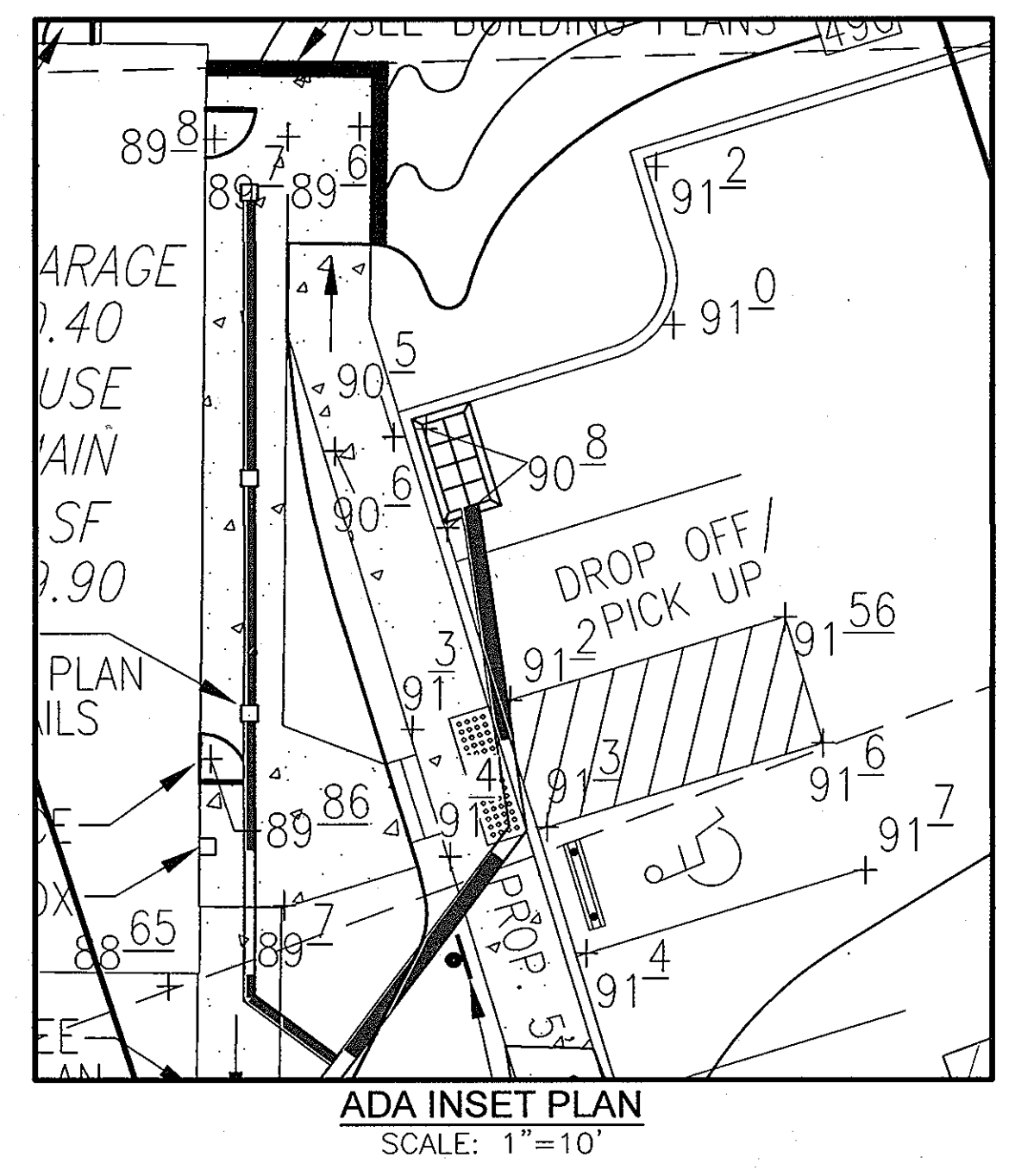
SYMBOL	NAME / DESCRIPTION	SOIL GROUP
LmC	LEGORE SILT LOAM, 8 TO 15 PERCENT SLOPES	B
LmB	LEGORE-MONTALTO SILT LOAMS, 3 TO 8 PERCENT SLOPES	B
LoB	LEGORE-MONTALTO-URBAN LAND COMPLEX, 0 TO 8 PERCENT SLOPES	B
SrD	SASSAFRAS AND CROOM SOILS, 10 TO 15 PERCENT SLOPES	B



**SWM CHART**

LOT #	ESDv REQUIRED	MICRO-BIORETENMENT VOLUME PROVIDED	TOTAL PROVIDED
1	877 CF	MBR-1 = 830 CF MBR-2 = 210 CF	1,040 CF

\* 1169 x 75% = 877 CF



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

10/26/12  
DATE

11/21/12  
DATE

11/21/12  
DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
HOWARD COUNTY HEALTH DEPARTMENT

HOWARD COUNTY HEALTH OFFICER

DATE

DATE

DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR EROSION AND SEDIMENT 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

DATE

BY THE ENGINEER:

"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."

DATE

DATE

**SITE DEVELOPMENT PLAN**  
SOILS MAP, GRADING, SEDIMENT, AND EROSION CONTROL PLAN  
**GLOBAL CHILDREN MONTESSORI SCHOOL**  
4790 BAUGHER FARM ROAD  
PLAN OF A SUBDIVISION OF A PROPERTY OF RUSSELL H. BAUGHER, LOT 1  
LIBER 12531 / FOLIO 295

2ND ELECTION DISTRICT: 0.6424 ACRES  
TAX MAP: 31 GRID: 07  
DPZ REF'S: BA #10-031C, ECP-12-013

ZONING: R-20  
PARCEL: 415 LOT: 1  
FAX: 410-480-1896

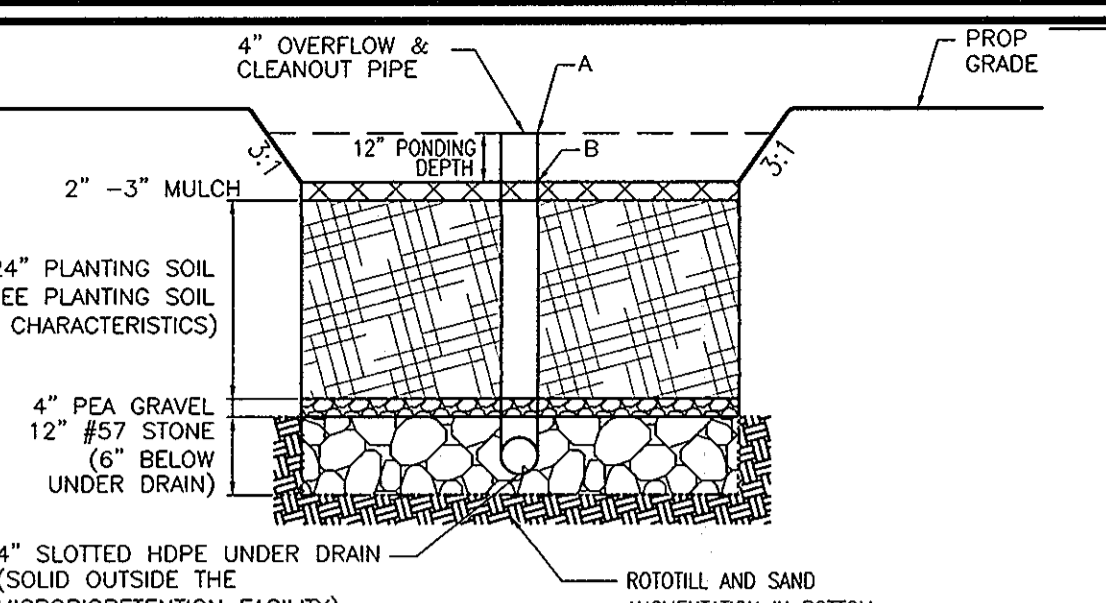
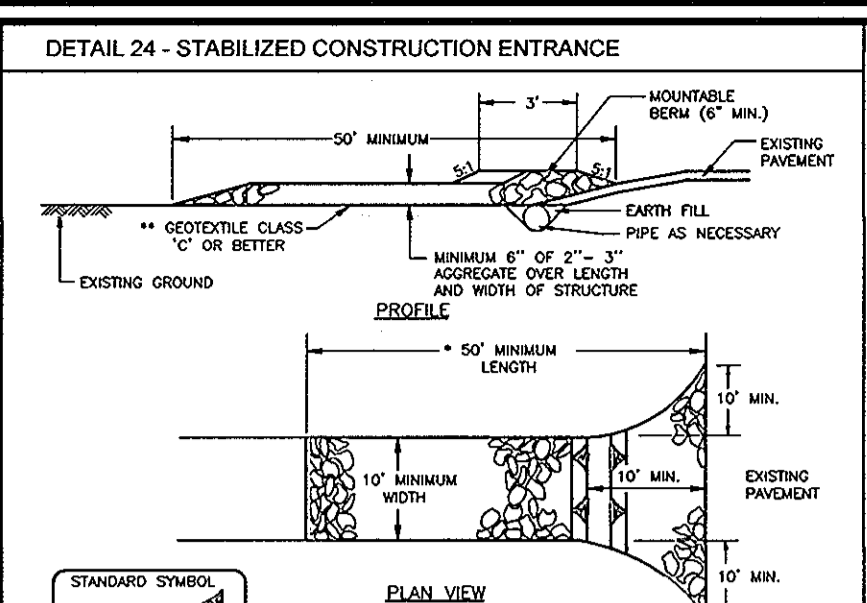
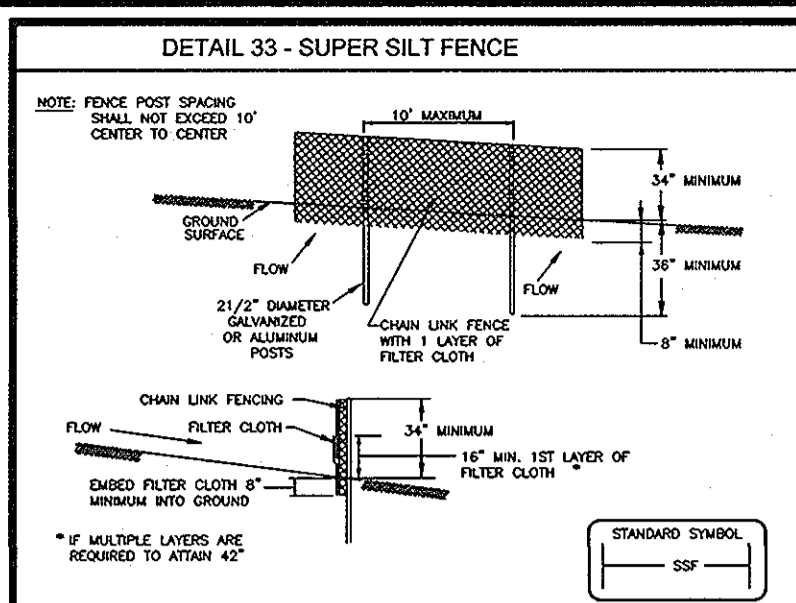
**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELICOTT CITY, MD 21043  
TEL: 410-461-7666

DESIGN BY: RHV  
DRAWN BY: JMR  
CHECKED BY: RHV  
DATE: OCTOBER 2011  
SCALE: AS SHOWN  
W.O. NO.: 10-17

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. 31373  
EXPIRATION DATE: 01-21-2013

3 OF 5





**SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	111 LF	67 LF
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	YES, 100%	YES, 100%
NUMBER OF TREES REQUIRED (SHADE TREES, EVERGREEN TREES)	(8 BUFFER) 3 SHADE TREES 3 EVERGREEN TREES	(8 BUFFER) 2 SHADE TREES 2 EVERGREEN TREES
NUMBER OF TREES PROVIDED (SHADE TREES, EVERGREEN TREES)		SEE BIORETENTION PLANT LIST*

\*SURETY FOR BIORETENTION PROVIDED IN THE BIDD COST ESTIMATE

**CONSTRUCTION SPECIFICATIONS**

- FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DESIGN FOR DRAIN LANE FENCING. THE SPECIFICATION FOR A FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6" LENGTH PIPES.
- CHAIN LINK FENCING SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE. THE LOWER TENSION WIRE, BRACE AND TENSION RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE BASE OF THE FENCE.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCING WITH STAPLES EVERY 24" AT THE TOP AND MID SECTION.
- FILTER CLOTH SHALL BE ENLARGED A MINIMUM OF 8" INTO THE GROUND.
- WHEN THE SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
- WARRANTY SHALL BE PERFORMED AS NEEDED AND NOT EXCEEDING 180 DAYS FROM THE DATE OF COMPLETION OF THE FENCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE FENCE THROUGHOUT THE WARRANTY PERIOD.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

**CONSTRUCTION SPECIFICATION**

- LENGTH - MINIMUM OF 50' (30' FOR A SINGLE RESIDUAL LOT).
- WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING SPACE.
- GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING THE SAND. THE FABRIC SHALL BE SECURED TO THE GROUND BY STAPLES AT 24" ON CENTER.
- STONE - CRUSHED AGGREGATE (2" TO 3") OR RECYCLED OR RECYCLED CONCRETE THE ENTRANCE.
- SURFACE WATER - ALL SURFACE WATER FLOWING TO OR OVER THE TOP OF CONSTRUCTION ENTRANCE SHALL BE PERMITTED THROUGH THE ENTRANCE. THE ENTRANCE SHALL BE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED WITH A MOUNTABLE BEAM WITH 2" SLOPES AND A MINIMUM OF 6" CLEARANCE. THE BEAM SHALL BE LOCATED AT A HIGH SPOT AND HAS NO DISJUNCTION TO CONVEY. A PIPE WITH 2" SLOPES SHALL BE INSTALLED THROUGH THE ENTRANCE TO CONVEY. A 6" MINIMUM WILL BE REQUIRED.
- VEHICLE - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EACH POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE DRIVEWAY OF THE STABILIZED CONSTRUCTION ENTRANCE.

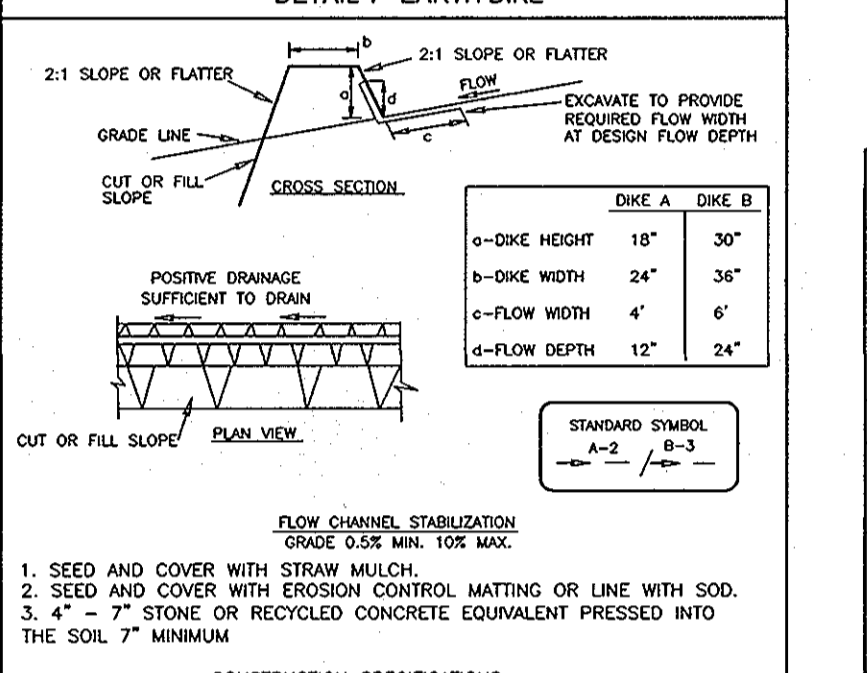
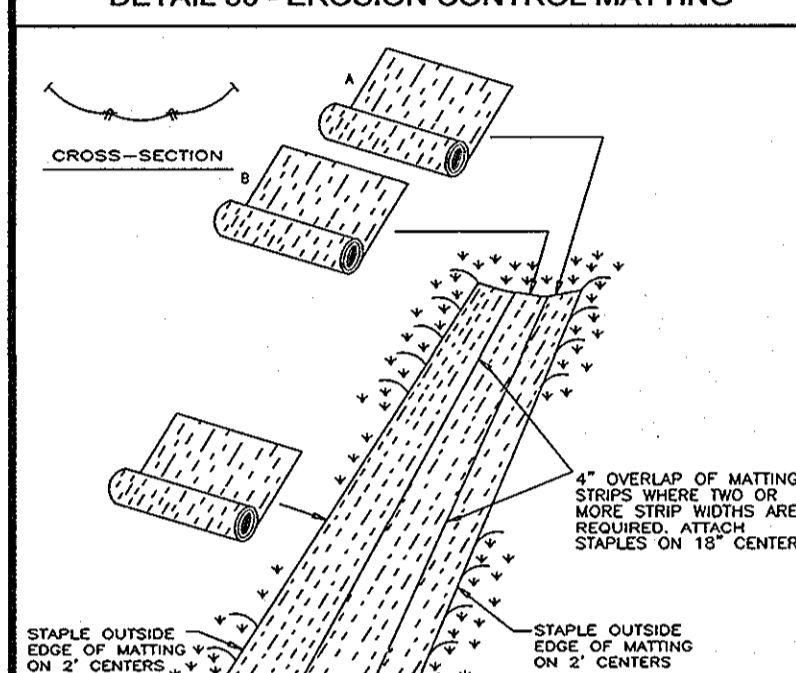
**OPERATION AND MAINTENANCE**

**SCHEDULE FOR BIO-RETENTION AREAS**

- THE OWNER SHALL MAINTAIN THE PLANT, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN PLANT MATING PERIODS.
- THE OWNER SHALL PERFORM A PLANT INSPECT IN THE SPRING AND FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED DEAD TREATMENT. REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE PLANT MATERIAL. TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY 2 TO 3 YEARS OR LEAVING THE SITE MUST TRAVEL OVER THE DRIVEWAY OF THE STABILIZED CONSTRUCTION ENTRANCE.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

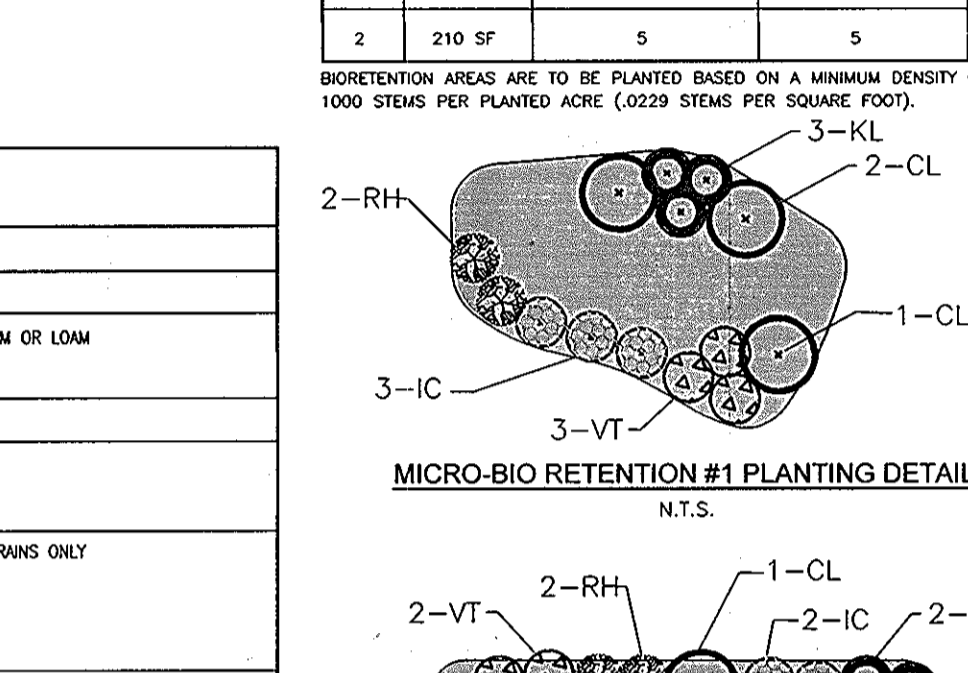
**BIORETENTION PLANTING SCHEDULE**

KEY	SYM	QTY	BOTANICAL NAME/COMMON NAME	SIZE	REMARKS
CL	CL	5	CLADRASTIS LUTEA 'SWITCH' SWEETSHADE YELLOWWOOD	1 1/2" x 2" CAL	B & B
IC	IC	5	REDI GUBBA COMPACT DWARF IRDEBERY	3 GALLON	CONT
VI	VI	5	VIBURNUM TROLOBIUM AMERICAN HEDGEHOG CRANBERRY	5 GALLON	CONT
KL	KL	5	MAJIMA LATIFOLIA MOUNTAIN LAUREL	5 GALLON	CONT
RH	RH	4	QUERCUS HY. 'GLADES' OR 'WHITE ROSEBUD' GLADES OR WHITE ROSEBUD HYBRID REDWOOD	3 GALLON	CONT



**MATERIALS SPECIFICATIONS FOR BIO-RETENTION**

MATERIAL	SPECIFICATION	SIZE	NOTES
FLANKINGS		N/A	FLANKINGS ARE SITE-SPECIFIC
PLANTING SOIL (2.5' TO 4' DEEP)	SAND 35-40% SILT 35-40% CLAY 0-5%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM OR LOAM
MULCH	SHREDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL (UNDERDRAIN AND CURTAIN DRAIN)	PEA GRAVEL ASTM-D-688 ORNAMENTAL STONE WASHED COBBLES	PEA GRAVEL NO. 6 STONE 2" TO 5"	
GEOTEXTILE	CLASS 'C'-APPARENT OPENING SIZE (ASTM-D-4753), GMS TENSILE STRENGTH (ASTM-D-4633), PUNCTURE RESISTANCE (ASTM-D-4633)	N/A	FOR USE AS NECESSARY BENEATH UNDERDRAINS ONLY
UNDERDRAIN GRAVEL	ASTM-D-43	0.375" TO 0.75"	
UNDERDRAIN PIPING	F 75# TYPE PS 28 OR ASD10 M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SURSIS	3/8" PERFOR. @ 6" O.C., 4 HOLES PER ROW MIN. OF 3" OF OPENING
FOUNDED IN PLACE CONCRETE (IF REQUIRED)	MSHA MIN. NO. 3; 14-3500 PSI @ 28 DAYS, NORMAL WEIGHT, AIR-ENTRAINED, REINFORCING TO MEET ASTM-615-00	N/A	ON-SITE TESTING OF POUR-IN-PLACE CONCRETE REQUIRED: 28 DAY STRENGTH AND SLUMP TEST; ALL CONCRETE DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS. DESIGN DRAWINGS SEALED AND APPROVED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MARYLAND - DESIGN TO INCLUDE WEARING AND CURB, 300#/SQ. FT. VERTICAL LOADING (8" OR 10" ALLOWABLE HORIZONTAL MOVEMENT BASED ON SOIL PRESSURES); AND ANALYSIS OF POTENTIAL CRACKING.
SAND (1" DEEP)	ASTM-D-6 OR ASTM-C-33	0.007" TO 0.004"	SAND SUBSTITUTIONS SUCH AS DOLOMITE AND GRANSTONE #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLOMITE SAND. SUBSTITUTIONS ARE ACCEPTABLE, NO TRUCK DUST CAN BE USED FOR SAND



**CONSTRUCTION SPECIFICATIONS**

- TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE AT THE TOP OF THE DIKE. THE DIKE SHALL BE CONSTRUCTED WITH A MINIMUM OF 2' TO 3' HIGHER THAN THE ADJACENT GROUND.
- DIKES SHALL BE CONSTRUCTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SOFT SPOT.
- DIKES SHALL BE CONSTRUCTED FROM AN UNDISTURBED AREA SHALL OBTAIN DIRECTLY INTO AN UNDISTURBED, STABILIZED AREA AT A NON-CROSSING VELOCITY.
- ALL TRENCHES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBSTRUCTIONAL MATERIAL SHALL BE REMOVED AND DEPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
- THE DIKE SHALL BE CONSTRUCTED TO BE INSPECTED BY THE INSPECTION AGENCY AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROBLEMS WHICH MAY INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
- FILL SHALL NOT BE COMPACTED BY EARTH MOVING EQUIPMENT.
- THE DIKE SHALL BE CONSTRUCTED TO BE INSPECTED BY THE INSPECTION AGENCY AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROBLEMS WHICH MAY INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
- INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

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- INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

**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 (32 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 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 UNROTTED SMALL GRASS 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 PERMANENT SEEDING NOTES.

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

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

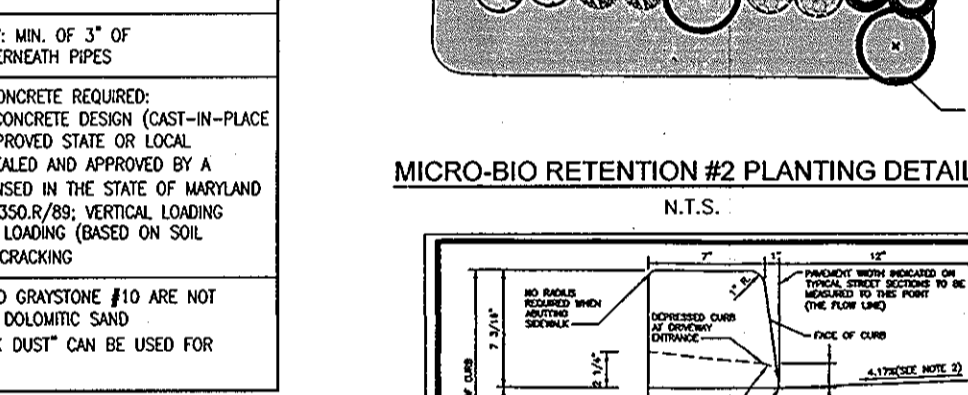
SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

- PREFERRED-APPLY 2 TONS PER ACRE DOLOMITE 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.).
- ACCEPTABLE-APPLY 2 TONS PER ACRE DOLOMITE 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 PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 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 (.05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING (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 UNROTTED SMALL GRASS 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.



**EROSION CONTROL MATTING**

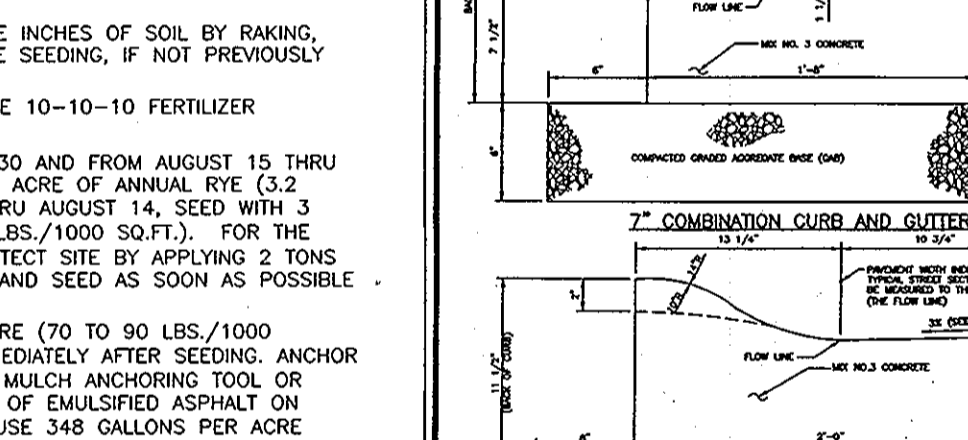
- KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 8" IN DEPTH. STAPLE THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
- STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
- BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
- STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP. 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
- WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY A SHIRAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES AT THE DISJUNCTION. THE 4" OVERLAP SHALL BE SECURED WITH 2 ROWS OF STAPLES.
- NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

**CONSTRUCTION SPECIFICATIONS**

- TEMPORARY EARTH DIKES SHALL HAVE UNINTERRUPTED POSITIVE GRADE AT THE TOP OF THE DIKE. THE DIKE SHALL BE CONSTRUCTED WITH A MINIMUM OF 2' TO 3' HIGHER THAN THE ADJACENT GROUND.
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- ALL TRENCHES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBSTRUCTIONAL MATERIAL SHALL BE REMOVED AND DEPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIKE.
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- INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

**SEQUENCE OF CONSTRUCTION**

- OBTAIN HOWARD COUNTY GRADING PERMIT. (2 DAYS)
- NOTIFY HOWARD COUNTY AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. (1 WEEK)
- CONDUCT A PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR PRIOR TO ANY LAND DISTURBANCE. (1 WEEK)
- INSTALL ALL SUPER SILT FENCE & CLEAN WATER OVERFLOW DIKE (4 DAYS)
- INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BEAM. (2 DAYS)
- BEGIN PROEP. BUILDING CONSTRUCTION (16 WEEKS)
- BEGIN CONSTRUCTION OF PARKING LOT ON EAST SIDE OF BUILDING. INCLUDING STORM DRAINS PROVIDE INLET PROTECTION CONSTRUCT WATER AND SEWER SERVICE TO THE BLDG (2 WEEKS)
- BEGIN INSTALLING CURB AND GUTTER, ONCE INSTALLED BASE COURSE CAN BE INSTALLED. (2 WEEKS)
- COMPLETE PROPOSED BUILDING (1 WEEK)
- COMPLETE BIORETENTION CONSTRUCTION. (WRF) CANNOT BE COMPLETED UNTIL CONTRIBUTING DRAINAGE AREA IS STABILIZED. (1 WEEK)
- INSTALL ALL PAVING SURFACE COURSE. (2 DAYS)
- FINE GRADE AND STABILIZE ALL AREAS AF PARCEL INCLUDING ANY EXPOSED EARTH AREAS REMOVE ALL TRASH JUNK AND DEBRIS FROM ENTIRE PARCEL. INSTALL BIORETENTION. (1 WEEK)
- LANDSCAPING. (2 WEEKS)
- APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR. (2 DAYS)



**APPENDIX B.3. CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS**

**1. MATERIAL SPECIFICATIONS**

THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.3.2.

**2. 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 DUMPED WITHIN THE BIORETENTION AREA 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 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

PH RANGE: 5.2 - 7.0  
ORGANIC MATTER: 1.5 - 4% (BY WEIGHT)  
MAGNESIUM: 35 LB./AC  
PHOSPHORUS (PHOSPHATE - P2O5) 75 LB./AC  
POTASSIUM (POTASH - K2O) 85 LB./AC  
SOLUBLE SALTS: NIT TO EXCEED 500 PPM

ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TEST OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL WAS EXCAVATED.

SINCE DIFFERENT LAB CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY. SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.

**3. COMPACTION**

IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE PNEUMATIC TIRE TRUCKS. IF BIORETENTION AREAS ARE EXCAVATED USING LOADERS, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE TYPE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTILL TO 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE REQUIRED SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.

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 AROUND THE PERIMETER OF 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 BIORETENTION AREAS CAN BE FOUND IN APPENDIX A, SECTION A.2.3. OF THE 2000 MARYLAND STORMWATER DESIGN MANUAL.

**5. PLANT INSTALLATION**

MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED 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.

ROOT STOKING OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED 1/8TH OF THE BALL'S ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS.

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 PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING 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 DEFERS, OR AT A MINIMUM, DEFERS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTILL UREA FERTILIZER AT A RATE OF 2 POUNDS OF NITROGEN PER 1000 SQUARE FEET.

**6. UNDERDRAINS**

UNDERDRAINS ARE TO BE PLACED ON A 3"-0" WIDE SECTION FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.

THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELL AND/OR CLEAN-OUT PIPE MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

**7. MISCELLANEOUS**

THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

**2.10 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:
  - 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 LIMESTONE 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 SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SITE TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY CUMULATIVE SUPPLIES OF MOISTURE AND PLANT NUTRIENTS. AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
  - 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 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 SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL. IF SUCH TREATMENT 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 APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

- PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0 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 DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
    - 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.
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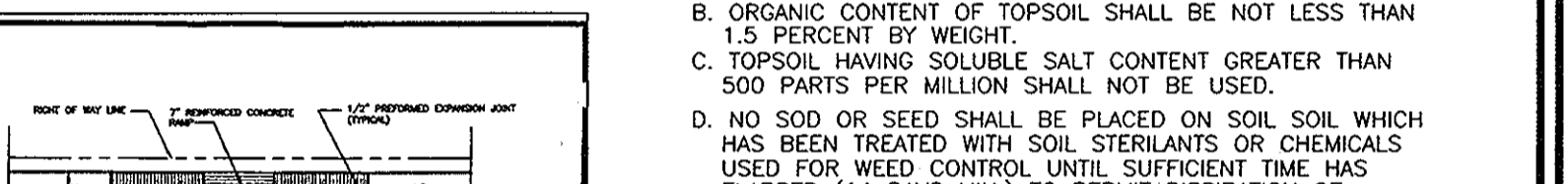
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**NOTES:**

- PERIMETER LANDSCAPING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL AND FENCING ALONG THE WESTERN PROPERTY LINE IN ACCORDANCE WITH THE DECISION RENDERED IN BA CASE NO. 10-031C. SURETY IN THE AMOUNT OF \$9,110.00 SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SITE PLAN SDP-12-031.
- THE OWNER, TENANT AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING, PLANT MATERIALS, BERRIES, 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 REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS LISTED HEREWITH AND APPROVED FOR THIS SITE SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE 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 REMOVAL OF TREES 30" OR GREATER DBH IS PROHIBITED WITH OUT COUNTY APPROVAL.
- NO LANDSCAPING TO BE INSTALLED WITHIN ANY PUBLIC EASEMENT FOR WATER, SEWER, OR STORMDRAIN.
- THIS PROJECT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BECAUSE THE LOT HAS A TOTAL AREA OF 27,985 SQUARE FEET WHICH IS BELOW THE 40,000 REQUIREMENT THRESHOLD.
- ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AM SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE WITH HED PLANTING SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

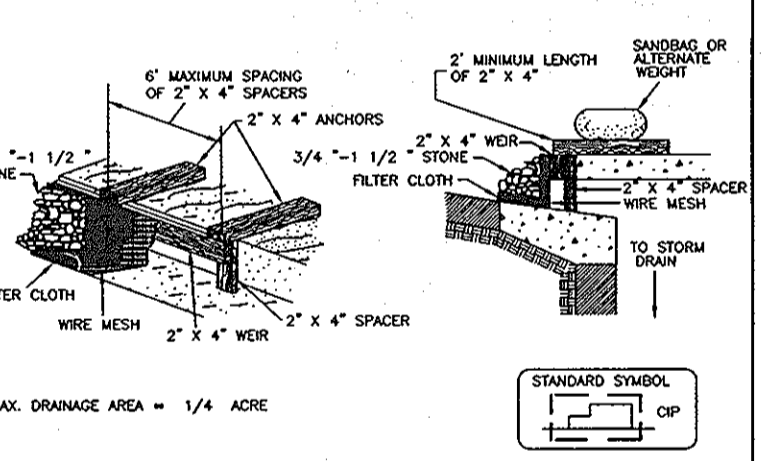
**SCHEDULE A: PERIMETER LANDSCAPE EDGE**

CATEGORY	ADJACENT TO PERIMETER PROPERTIES/ROADWAYS						TOTAL
	1	2	3	4	5	6	
PERIMETER/FRONTAGE DESIGNATION	B	E	F	B	A	C	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	286'	19'	19'	19'	104'	191'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES*	NO	NO	NO	NO	NO	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	
FENCE PER BA CASE NO. 10-031C	NO	NO	NO	NO	NO	YES**	
NUMBER OF PLANTS REQUIRED (IF REMAINING)	286'	19'	19'	19'	104'	191'	
SHADE TREES	150	1140	1140	1150	1100	2	16
EVERGREEN TREES	140	7	—	140	1	10	18
SHRUBS	—	14	5	14	5	—	10
NUMBER OF PLANTS PROVIDED							
SHADE TREES	4*	1	1	1	2	5	14
EVERGREEN TREES	6*	—	—	—	1	10	17
OTHER TREES (2:1 SUBSTITUTION)	—	—	—	—	—	—	10
SHRUBS (10:1 SUBSTITUTION)	—	5	—	—	—	—	10
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED							
* CREDIT IS BEING TAKEN FOR AN EXISTING 28" WHITE OAK, 32.5" WHITE ASH, AND A 16" WHITE PINE							
** FENCING SURETY: \$10 x 131 LF = \$1,310							

**LANDSCAPE SCHEDULE**

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
+	AR	14 ACER RUBRUM 'SOMERSET' SOMERSET RED MAPLE (SEEDLESS)	2 1/2"-3" CAL.	B & B
PS	17	PINUS STROBUS EASTERN WHITE PINE	6"-8" HT.	B & B
TD	10	TAXUS MEDIA 'DENSIFORMIS' DENSIFORMIS YEW	2 1/2"-3" HT.	B & B

**DETAIL 23C - CURB INLET PROTECTION (COG OR COS INLETS)**



- CONSTRUCTION SPECIFICATIONS**
- ATTACH A CONTINUOUS PIECE OF WIRE MESH (20" MINIMUM WIDTH BY THROAT LENGTH PLUS 2" TO THE 2" X 4" HIGH OVERHANGING THROAT LENGTH PLUS 2" AS SHOWN ON THE STANDARD DRAWING).
  - PLACE A CONTINUOUS PIECE OF GEOTEXTILE CLASS E TO THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH IT TO THE 2" X 4" WED.
  - SECURELY NAIL THE 2" X 4" WED TO A 6" LONG VERTICAL SPACER TO BE LOCATED BETWEEN THE WED AND THE INLET FACE (4" APART).
  - PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2" LENGTHS OF 2" X 4" TO THE TOP OF THE WED AT SPACER LOCATIONS). THESE 2" X 4" ANCHORS SHALL EXTEND ABOVE THE WED AND BE HELD IN PLACE BY SHOOKS OR ALTERNATE MEANS.
  - THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM 1" BEYOND BOTH EDGES OF THE THROAT OPENING.
  - FROM THE 1/2" X 1/2" WIRE MESH AND THE GEOTEXTILE FABRIC TO THE CONCRETE CURB AND AGAINST THE FACE OF THE CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 3/4" X 1 1/2" STONE OVER THE WIRE MESH AND GEOTEXTILE TO STOP A BARRIER TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE GEOTEXTILE.
  - THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT.
  - ASSURE THAT STORM FLOOD DOES NOT SPRING THE INLET BY INSTALLING A TEMPORARY FATHO OR ASPHALT DICE TO DIRECT THE FLOW TO THE INLET.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-10-18 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

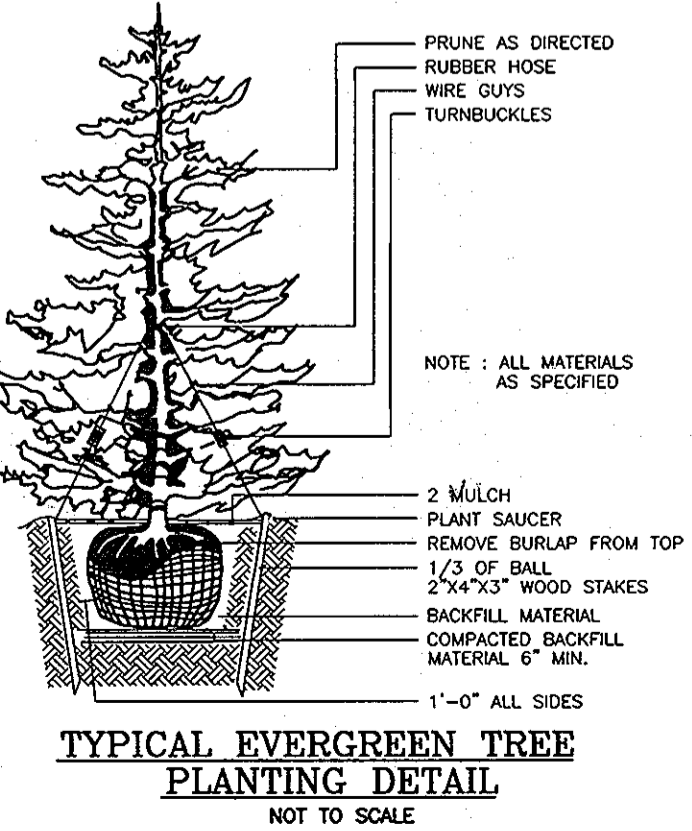
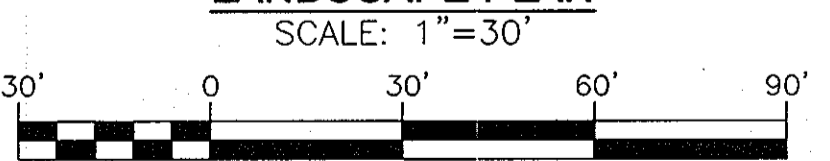
**BUILDER'S CERTIFICATE**

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.

Signature: *Padma Venkatraman*  
 DATE: \_\_\_\_\_  
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 11/21/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 11/21/12  
 DIRECTOR



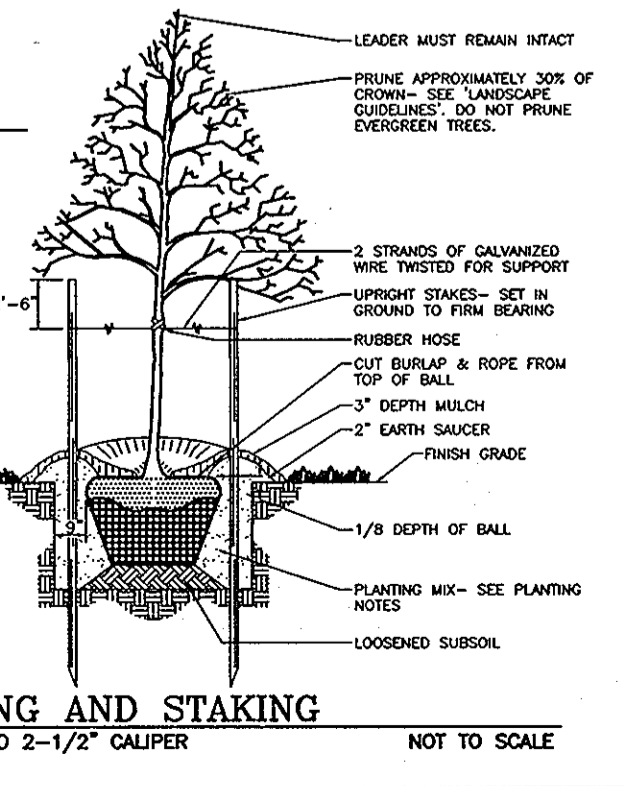
**LANDSCAPE PLAN**



**TYPICAL EVERGREEN TREE PLANTING DETAIL**  
NOT TO SCALE

**NOTES:**

- SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR MAINTAINING WASHINGTON METROPOLITAN ASPECT FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS."
- SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
- PLACE UPRIGHT STAKES PARALLEL TO WINDS & BULWARKS.
- KEEP BRANCH 1" FROM TRUNK.
- SEE ARCHITECTURAL PLANTS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- TREES ARE NOT TO BE PLANTED OVER PRE-EXISTING SERVICE EASEMENTS.

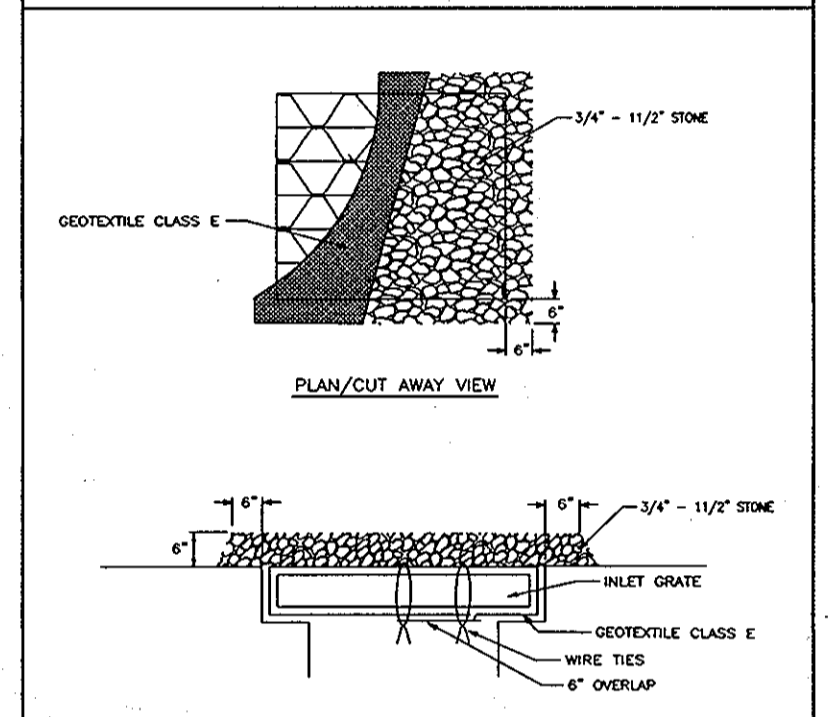


**TREE PLANTING AND STAKING**  
DECIDUOUS TREES UP TO 2-1/2" CALIPER NOT TO SCALE

**LEGEND:**

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING CURB AND GUTTER
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING SANITARY MANHOLE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING SANITARY LINE
- EXISTING CLEANOUT
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING TREELINE
- EXISTING TREES (OFF SITE)
- EXISTING TREES (ON SITE)
- EXISTING FENCE
- EXISTING 10' PUBLIC SURFACE DRAINAGE AND UTILITY EASEMENT (PLAT #'S 17616-17620)
- PROPOSED STORMDRAIN
- PROPOSED STORMDRAIN INLET
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED STREET LIGHT
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- MODERATE SLOPES (15% - 24.99%)
- STEEP SLOPE (>25%)
- PROPOSED LANDSCAPE BUFFER
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS

**DETAIL 23B - AT GRADE INLET PROTECTION**



**CONSTRUCTION SPECIFICATIONS**

- Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
- Place 3/4" to 1 1/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-10-18 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**PETITIONER/OWNER**

VISHNAMPET AND PADMA VENKATRAMAN  
 4512 HIDDEN HOLLOW DR.  
 ELLICOTT CITY, MD 21043  
 PHONE: (410) 480-2850

NO.	REVISION	DATE
1	REVISE TO ADD 5' HIGH ALUMINUM FENCE ALONG THE PROPERTY BOUNDARY	10/08/13

**SITE DEVELOPMENT PLAN**  
**LANDSCAPE PLAN, NOTES**  
**AND DETAILS**  
**GLOBAL CHILDREN MONTESSORI SCHOOL**  
 4790 BAUGH FARM ROAD  
 PLAN OF A SUBDIVISION OF A PROPERTY  
 OF RUSSELL H. BAUGHNER, LOT 1  
 LIBER 12531 / FOLIO 295  
 0.6424 ACRES  
 ZONING: R-20  
 TAX MAP: 31 GRID: 07  
 DPZ REF'S: BA #10-031C, ECP-12-013  
 PARCEL: 415 LOT: 1  
 HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 9407 MAIN STREET, ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666 FAX: 410.461.6966

DESIGN BY: RLV  
 DRAWN BY: JMR  
 CHECKED BY: RLV  
 DATE: OCTOBER 2011  
 SCALE: AS SHOWN  
 W.D. NO.: 10-17

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. 31373  
 EXPIRATION DATE: 01-21-2013

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