

SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	PRELIMINARY PLAN
3	PRELIMINARY GRADING AND SEDIMENT CONTROL PLAN
4	PRELIMINARY LANDSCAPE PLAN, NOTES AND DETAILS
5	PRELIMINARY ROAD PROFILE
6	RAIN GARDEN DETAILS

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 FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON 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 IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY PATTON HARRIS RUST & ASSOCIATES DATED SEPTEMBER 27, 2005.
- 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. 06C6 AND 06CA WERE USED FOR THIS PROJECT.
- WATER IS PRIVATE.
- SEWER IS PRIVATE.
- THE STORMWATER MANAGEMENT REQUIREMENTS FOR THIS SITE WILL BE PROVIDED BY THE NATURAL AREA CONSERVATION CREDIT. THE DISCONNECTION OF NON-ROOFTOP RUNOFF CREDIT AND THE DISCONNECTION OF ROOFTOP RUNOFF CREDIT USING RAINGARDENS (1 PER 1,000 SF OF ROOF AREA). A STORMWATER MANAGEMENT SYSTEM HAS BEEN DEVELOPED AND APPROVED UNDER F-06-148 ON NOVEMBER 13, 2006.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL 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 CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THE 100-YEAR FLOODPLAIN STUDY HAS BEEN APPROVED UNDER F-06-148 ON NOVEMBER 13, 2006.
- WETLAND LOCATIONS ARE AS DELINEATED IN THE FIELD BY BRAY HILL, LLC IN AUGUST 2005.
- A TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS DATED SEPTEMBER 2005 AND APPROVED ON MAY 3, 2006.
- A NOISE STUDY FOR THIS PROJECT IS NOT REQUIRED.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PATTON HARRIS RUST & ASSOCIATES DATED SEPTEMBER 2005.
- SUBJECT PROPERTY ZONED RC-DEO PER 02-02-04 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S: WP-06-022 (WAIVER WAS DENIED).
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- ALL LIGHTING IS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES, AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- THERE ARE TWO EXISTING PERMANENT STRUCTURES AND THREE SHEDS ON-SITE. ALL EXISTING SHEDS (CIRCA 1957) MUST BE REMOVED PRIOR TO THE APPROVAL OF ANY SUBSEQUENT FINAL PLAN. THE HOUSE (BUILT IN 1957) AND GARAGE (CIRCA 1957) WILL REMAIN.
- NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES AND PAVING ARE NOT PERMITTED IN WETLANDS, STREAMS, WETLAND BUFFERS, STREAM BUFFERS, FLOODPLAIN, OR STEEP SLOPES.
- BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- FOREST CONSERVATION OBLIGATIONS FOR THE SOBUS PROPERTY HAVE BEEN ADDRESSED UNDER F-06-148.
- PRESERVATION PARCEL A HAS NO FURTHER SUBDIVISION POTENTIAL. A PRESERVATION PARCEL EASEMENT FOR THE REQUIRED PRESERVATION AREA FOR THE CLUSTER LOTS SHALL BE RECORDED AT THE SAME TIME THAT THE FINAL PLANS ARE RECORDED FOR THE CLUSTER LOTS IN THIS SUBDIVISION.
- A FOREST STAND DELINEATION REPORT HAS BEEN PROVIDED WITH F-06-148.
- PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT FOR LOT 1 AND/OR BEFORE THE RECORDATION OF ANY FINAL PLAN SUBSEQUENT AND RELATED TO SP-06-009, THE EXISTING GRAVEL DRIVEWAY ON LOT 2 MUST BE REMOVED AND THE USE-IN-COMMON CONSTRUCTED.
- CLEARING (LIMIT OF DISTURBANCE) ON THE EASTERN SIDE OF LOTS 4-6 IS THE ULTIMATE LIMIT OF DISTURBANCE. TREE CLEARING AND TREE PROTECTION IN THIS AREA WILL NOT OCCUR UNTIL SUCH TIME AS REPLACEMENT SEPTIC SYSTEMS ARE INSTALLED.
- THE EXISTING WELL ON PRESERVATION PARCEL A AND LOT 1 HAVE BEEN SHOWN. ALL WELLS FOR LOTS 3-6 ARE TO BE DRILLED PRIOR TO FINAL RECORD PLAT SIGNATURE BY THE APPROVING AUTHORITY.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 11,000.00 FOR 32 SHADE TREES, Q ORNAMENTAL TREES, 10 EVERGREEN TREES, AND Q SHRUBS.
- THE SIGHT DISTANCE ANALYSIS FOR THIS PROJECT WAS APPROVED UNDER F-06-148 ON SEPTEMBER 14, 2006.

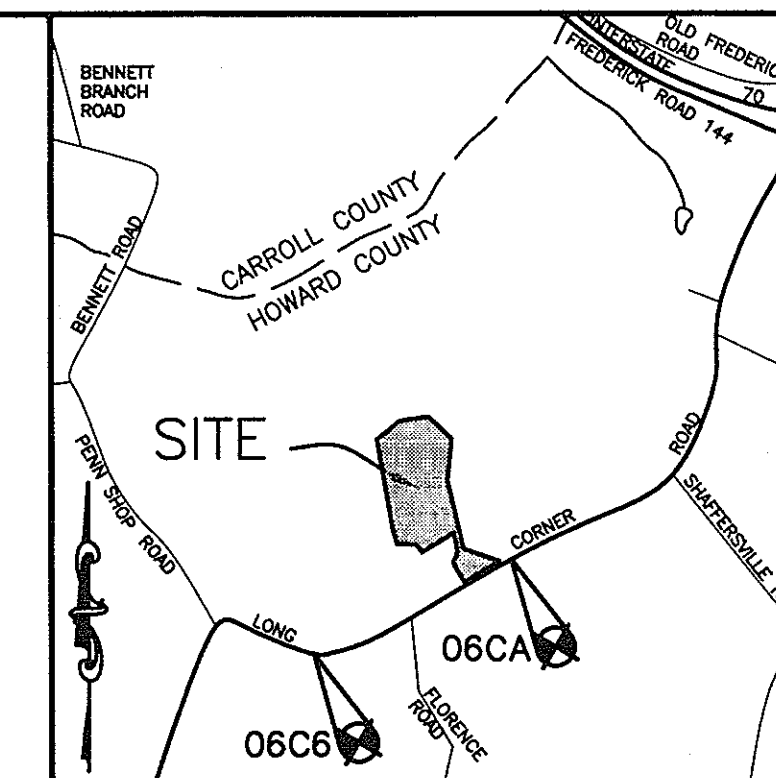
PRELIMINARY EQUIVALENT SKETCH PLAN

SOBUS PROPERTY

LOTS 3-6 AND BUILDABLE PRESERVATION PARCEL A

4TH ELECTION DISTRICT

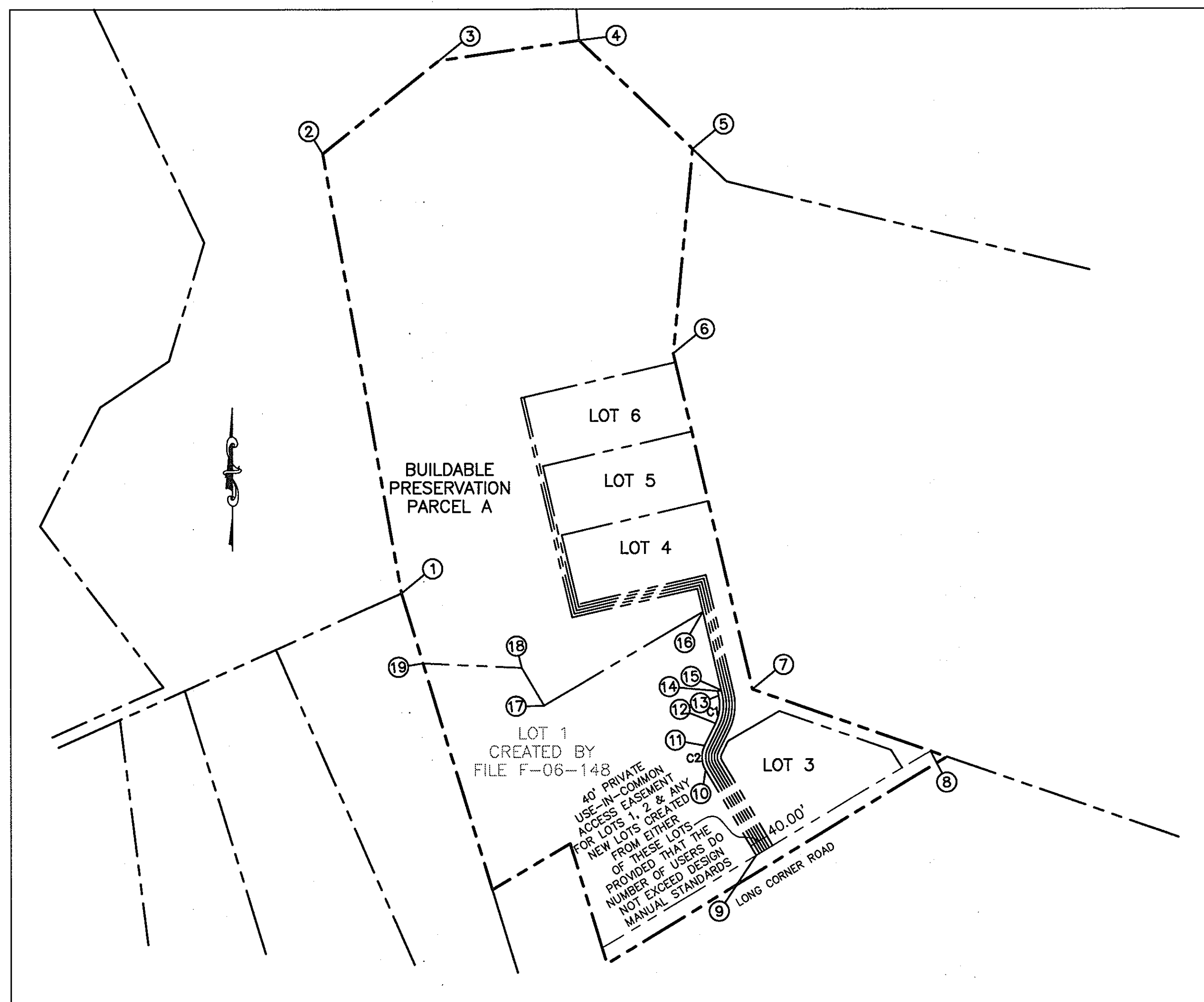
HOWARD COUNTY, MARYLAND



VICINITY MAP
SCALE: 1"=2000'
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PERMITTED USE NO. 20894285

AREA TABULATION CHART

EXISTING ZONING:	RC-DEO
GROSS AREA OF SITE:	21.87 ACRES (952,773 SF)
AREA IN 100 YEAR FLOODPLAIN:	0.35 ACRES
AREA OF STEEP SLOPES:	0.34 ACRES (15,032 SF)
NET TRACT AREA:	21.87 ACRES
AREA OF RIGHT-OF-WAY DEDICATION:	0 ACRES (ROW DEDICATED UNDER F-06-148)
AREA OF PROPOSED BUILDABLE LOTS:	5.75 ACRES
AREA OF BUILDABLE PRESERVATION PARCELS:	16.12 ACRES
AREA OF REQUIRED OPEN SPACE:	0 ACRES
LIMIT OF DISTURBED AREA:	4.69 ACRES
NUMBER OF BUILDABLE LOTS:	4 LOTS
NUMBER OF BUILDABLE PRESERVATION PARCELS:	1 (HOUSE ALREADY EXISTS AND WILL REMAIN)
NUMBER OF NON-BUILDABLE PRESERVATION PARCELS:	0
NUMBER OF OPEN SPACE LOTS:	0
PROPOSED WATER AND SEWER:	PRIVATE WELL AND SEPTIC
EXISTING USES:	EXISTING HOME, CORNFIELD, AND WOODS
PROPOSED USES:	4 LOTS
LOTS 3-6 AND PRESERVATION PARCEL A WILL BE CLUSTER DEVELOPMENT.	
CLUSTER DEVELOPMENT BASE DENSITY:	21.87 ACRES / 4.25 UNITS PER ACRE = 5 UNITS ALLOWED



PLAN
SCALE: 1" = 200'

WATER AND SEWER GENERAL NOTES:

- THIS AREA DESIGNATES A PRIVATE SEWAGE DISPOSAL EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
- PERC HOLES SHOWN HEREON HAVE BEEN FIELD LOCATED BY O'CONNELL & LAWRENCE IN JUNE 2005.
- DENOTES PASSING PERC TEST.
- DENOTES FAILED PERC TEST.
- WELLS AND SEPTIC SYSTEMS WITHIN 100 FEET OF THE PROPERTY BOUNDARY HAVE BEEN SHOWN TO THE BEST OF OUR KNOWLEDGE AND INFORMATION FROM AVAILABLE COUNTY RECORDS.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARLAND DEPARTMENT OF THE ENVIRONMENT AND HOWARD COUNTY.
- DENOTES WELL (NOT TO SCALE)
- STEEP SLOPES (25% OR GREATER) ARE LOCATED ON SITE AS SHOWN.
- ALL WELLS TO BE DRILLED PRIOR TO FINAL PLAT RECORDATION.

PRESERVATION PARCEL A - JUSTIFICATION
ONE PRESERVATION PARCEL HAS BEEN CREATED IN THIS CLUSTER SUBDIVISION. PRESERVATION PARCEL A IS CREATED TO PROVIDE A BUILDABLE HOUSE SITE AND TO PRESERVE THE ON-SITE ENVIRONMENTAL & FOREST RESOURCES. FOREST CONSERVATION EASEMENTS WILL BE RECORDED ON PRESERVATION PARCEL A. EASEMENT A IS PRIVATELY OWNED WITH HOWARD COUNTY & HOA AS EASEMENT HOLDERS.

MINIMUM LOT SIZE CHART			
LOT NO.	MIN. LOT SIZE	PIPESTEM AREA	GROSS AREA
4	47,418	31,299	78,717
5	48,262	6,247	54,509
6	49,120	7,158	56,278
A	691,032	11,132	702,164

ALL AREAS SHOWN ABOVE ARE IN SQUARE FEET

CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	87.00'	59.58'	31.01'	58.43'	S 06°29'00" W	39°14'23"
C2	54.00'	53.47'	29.16'	51.31'	S 02°15'45"	E 56°43'53"

BENCH MARK
HOWARD COUNTY CONTROL STATION 06C6
N 609,143.487
E 1,270,776.502
ELEV. 855.46

HOWARD COUNTY CONTROL STATION 06CA
N 610,135.318
E 1,272,833.911
ELEV. 815.20

COORDINATE LIST

1	N 610,447.84	E 1,271,598.12	11	N 610,126.08	E 1,272,234.43
2	N 611,372.00	E 1,271,434.54	12	N 610,173.31	E 1,272,257.57
3	N 611,568.30	E 1,271,678.96	13	N 610,231.36	E 1,272,264.17
4	N 611,610.87	E 1,271,972.89	14	N 610,241.03	E 1,272,261.91
5	N 611,382.64	E 1,272,211.24	15	N 610,242.75	E 1,272,269.73
6	N 610,952.30	E 1,272,170.19	16	N 610,408.26	E 1,272,231.10
7	N 610,245.30	E 1,272,335.19	17	N 610,210.64	E 1,271,897.57
8	N 610,114.73	E 1,272,708.85	18	N 610,290.39	E 1,271,850.32
9	N 609,895.41	E 1,272,342.68	19	N 610,299.61	E 1,271,643.32
10	N 610,074.81	E 1,272,236.46			

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS
R. Wideman for Peter Bieleman MD 5/23/2007
COUNTY HEALTH OFFICER *cal* 7808 DATE
HOWARD COUNTY HEALTH DEPARTMENT

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
David A. Coyle 5/29/07
PLANNING DIRECTOR DATE

DATE	NO.	REVISION

OWNER
NORTHERN LLLP.
P.O. BOX 228
CLARKSVILLE, MD 21029
410-531-5539

DEVELOPER
HIGHLAND DEVELOPMENT CORPORATION
ATTN: RICHARD DEMMITT
P.O. BOX 228
CLARKSVILLE, MD 21029
410-531-5539

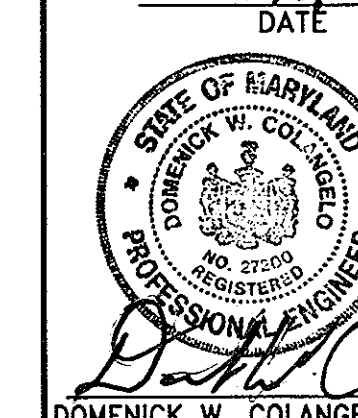
PROJECT
SOBUS PROPERTY

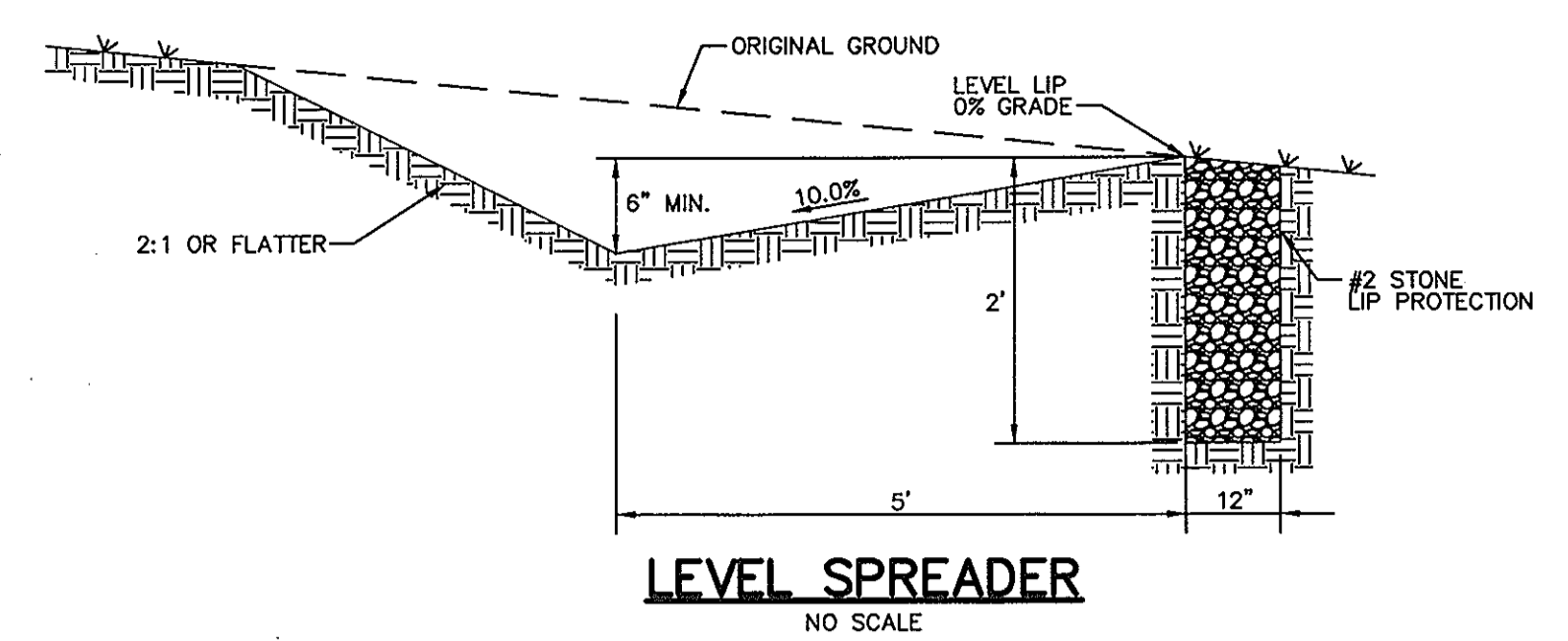
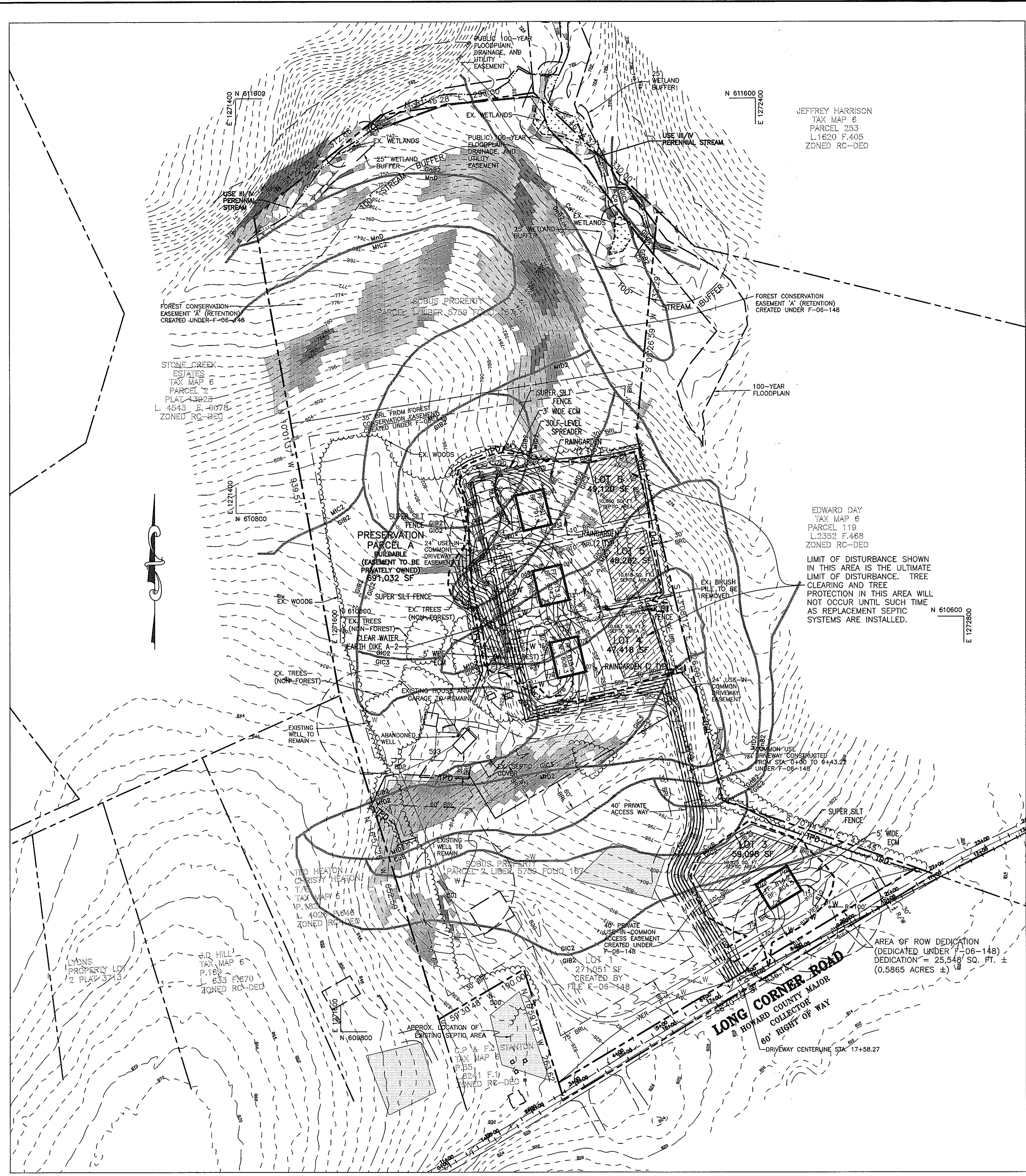
AREA TAX MAP 6, GRID 5, PARCEL 34, ZONING RC-DEO
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
TITLE SHEET

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

5/3/07
DATE
DESIGNED BY : ACR
DRAWN BY: ALC
PROJECT NO : 13953-1-0
DATE : MARCH 20, 2007
SCALE : AS SHOWN
DRAWING NO. 1 OF 6





LEGEND

PROPERTY LINE	
EXISTING TREELINE	
PROPOSED TREELINE	
PROPOSED LOT LINE	
EXISTING SOILS	
WETLANDS AND 25' BUFFER	
EX. STREAM AND BUFFER	
EX. 100-YEAR FLOODPLAIN	
EXISTING CONTOURS	
PROPOSED CONTOURS	
EXISTING BUILDING	
PROPOSED BUILDING	
EXISTING WELL	
PROPOSED WELL	
EXISTING SEPTIC AREA	
PROPOSED SEPTIC AREA	
LIMIT OF DISTURBANCE	
SLOPES: 15-25%	
SLOPES: > 25%	
TREE PROTECTION DEVICE (TPD) (SUPER SILT FENCE)	
SUPER SILT FENCE	
EARTH DIKE	
EROSION CONTROL MATTING	
VEHICULAR INGRESS & EGRESS RESTRICTED	
BUILDING RESTRICTION LINE	

SWM NOTES:
1. RAINGARDEN SIZES SHOWN ARE ACTUAL

NOTES:
1. THE GRADING SHOWN ON THE PLAN IS CONSISTENT WITH THE GRADING PLANS FOR F-06-148

JEFFREY HARRISON
TAX MAP 8
PARCEL 253
L.1820 F.405
ZONED RC-DEO

EDWARD DAY
TAX MAP 6
PARCEL 119
L.2352 F.488
ZONED RC-DEO

LIMIT OF DISTURBANCE SHOWN IN THIS AREA IS THE ULTIMATE LIMIT OF DISTURBANCE. TREE CLEARING AND TREE PROTECTION IN THIS AREA WILL NOT OCCUR UNTIL SUCH TIME AS REPLACEMENT SEPTIC SYSTEMS ARE INSTALLED.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS

Richard Demmitt for Peter Breckson MD 5/22/2007
COUNTY HEALTH OFFICER DATE
HOWARD COUNTY HEALTH DEPARTMENT

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Mark Lingle 5/29/07
PLANNING DIRECTOR DATE

DATE	NO.	REVISION

OWNER
NORTHERN LLLP.
P.O. BOX 228
CLARKSVILLE, MD 21029
410-531-5539

DEVELOPER
HIGHLAND DEVELOPMENT CORPORATION
ATTN: RICHARD DEMMITT
P.O. BOX 228
CLARKSVILLE, MD 21029
410-531-5539

PROJECT
SOBUS PROPERTY

AREA TAX MAP 6, GRID 5, PARCEL 34, ZONING RC-DEO
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

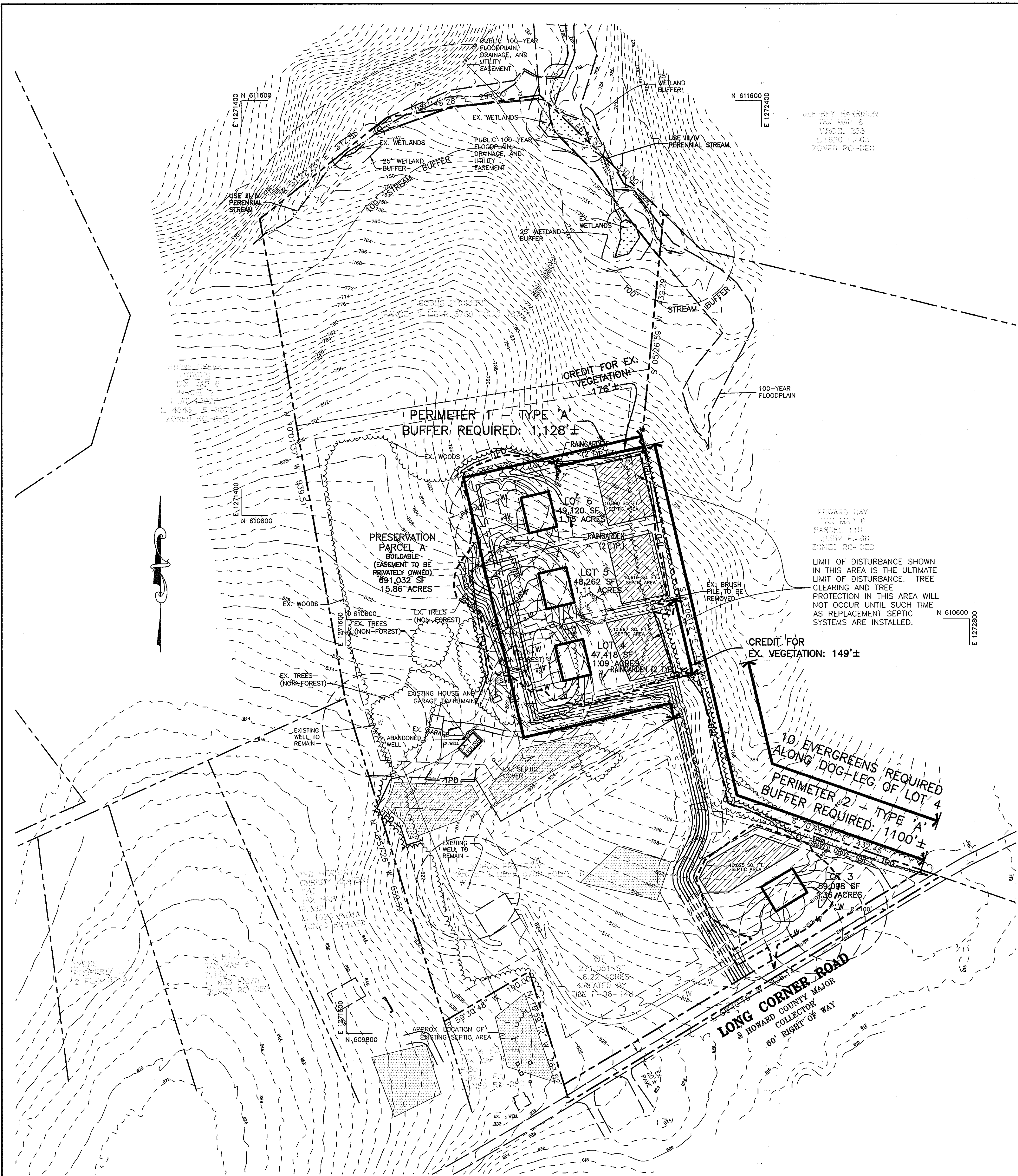
TITLE
**PRELIMINARY GRADING
AND SEDIMENT CONTROL PLAN**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

5/3/07
DATE

DESIGNED BY : ACR
DRAWN BY: ALC
PROJECT NO : 13953-1-0
DATE : MARCH 20, 2007
SCALE : 1" = 100'
DRAWING NO. 3 OF 6

Domenick W. Colangelo
DOMENICK W. COLANGELO #27200
SP-06-009



PERIMETER	ADJACENT TO PERIMETER PROPERTIES	
	1	2
LANDSCAPE TYPE	A	A
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	1128'±	1100'±
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 176'	YES 144'
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO	NO
LINEAR FEET REMAINING	952'±	951'±
NUMBER OF PLANTS REQUIRED		
SHADE TREES	16	16
EVERGREEN TREES	0	10*
SHRUBS	0	0

NOTES:
* 10 EVERGREEN TREES ARE SHOWN AS BEING REQUIRED BASED ON RECOMMENDATION OF DEPARTMENT OF PLANNING AND ZONING STAFF.

- GENERAL NOTES:**
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$11,000.00.
32 SHADE TREES @ \$300 = 9,600
0 ORNAMENTAL TREES @ \$150 = 0
10 EVERGREEN TREES @ \$150 = 1,500
0 SHRUBS @ \$30 = 0
 - THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
 - CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
 - ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERMEN.
 - ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.
 - AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.
 - NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.
 - PERIMETER LANDSCAPE OBLIGATIONS WILL BE FULFILLED BY A COMBINATION OF NEW PLANTINGS AND PRESERVATION OF EXISTING VEGETATION.
 - 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 LANDSCAPE MANUAL.
 - DEVELOPER/BUILDER IS RESPONSIBLE FOR INSTALLATION OF PERIMETER LANDSCAPING. NO INTERNAL LANDSCAPING IS REQUIRED WITH THIS DEVELOPMENT.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

PLANNING DIRECTOR: *Richard Demmitt* DATE: 5/29/07

DATE NO.	REVISION

OWNER: NORTHERN LLLP, P.O. BOX 228, CLARKSVILLE, MD 21029, 410-531-5539

DEVELOPER: HIGHLAND DEVELOPMENT CORPORATION, ATTN: RICHARD DEMMITT, P.O. BOX 228, CLARKSVILLE, MD 21029, 410-531-5539

PROJECT: SOBUS PROPERTY

AREA TAX MAP 6, GRID 5, PARCEL 34, ZONING RC-DEO, 4TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

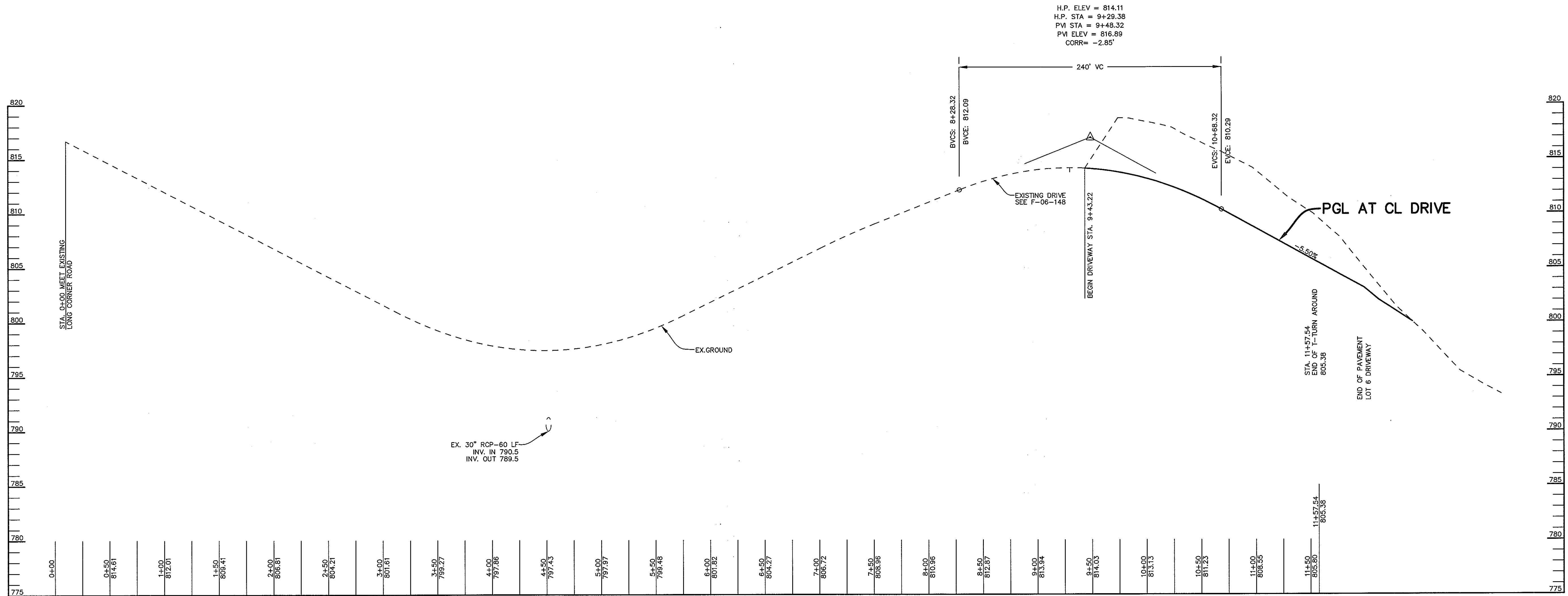
TITLE: PRELIMINARY LANDSCAPE PLAN, NOTES AND DETAILS

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
P.H.R.A. 8818 Centre Park Drive, Columbia, MD 21045, T 410.997.8900, F 410.997.9282

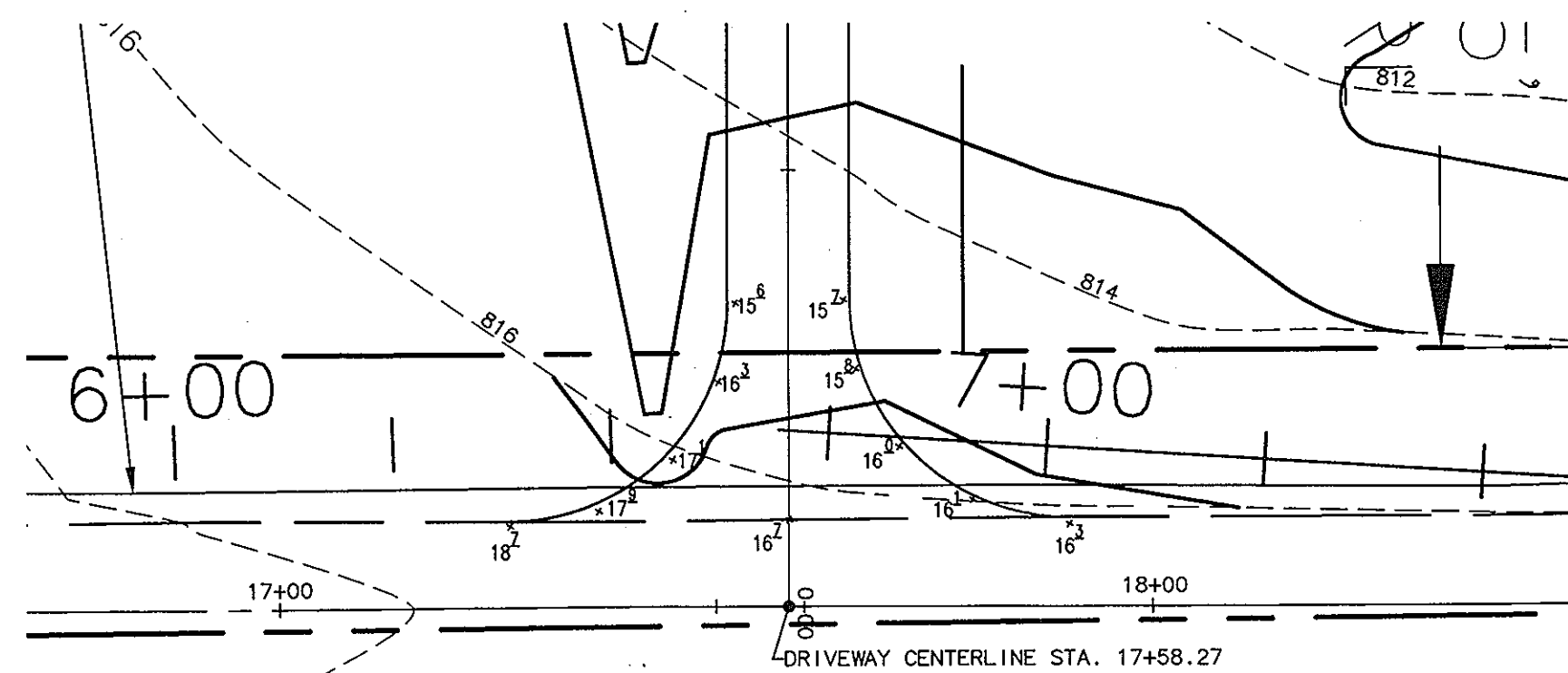
DATE: 5-4-07

DESIGNED BY: ALC
DRAWN BY: ALC
PROJECT NO.: 13953-1-0
DATE: MARCH 20, 2007
SCALE: 1" = 100'
DRAWING NO.: 4 OF 6

PETER J. STONE #3068



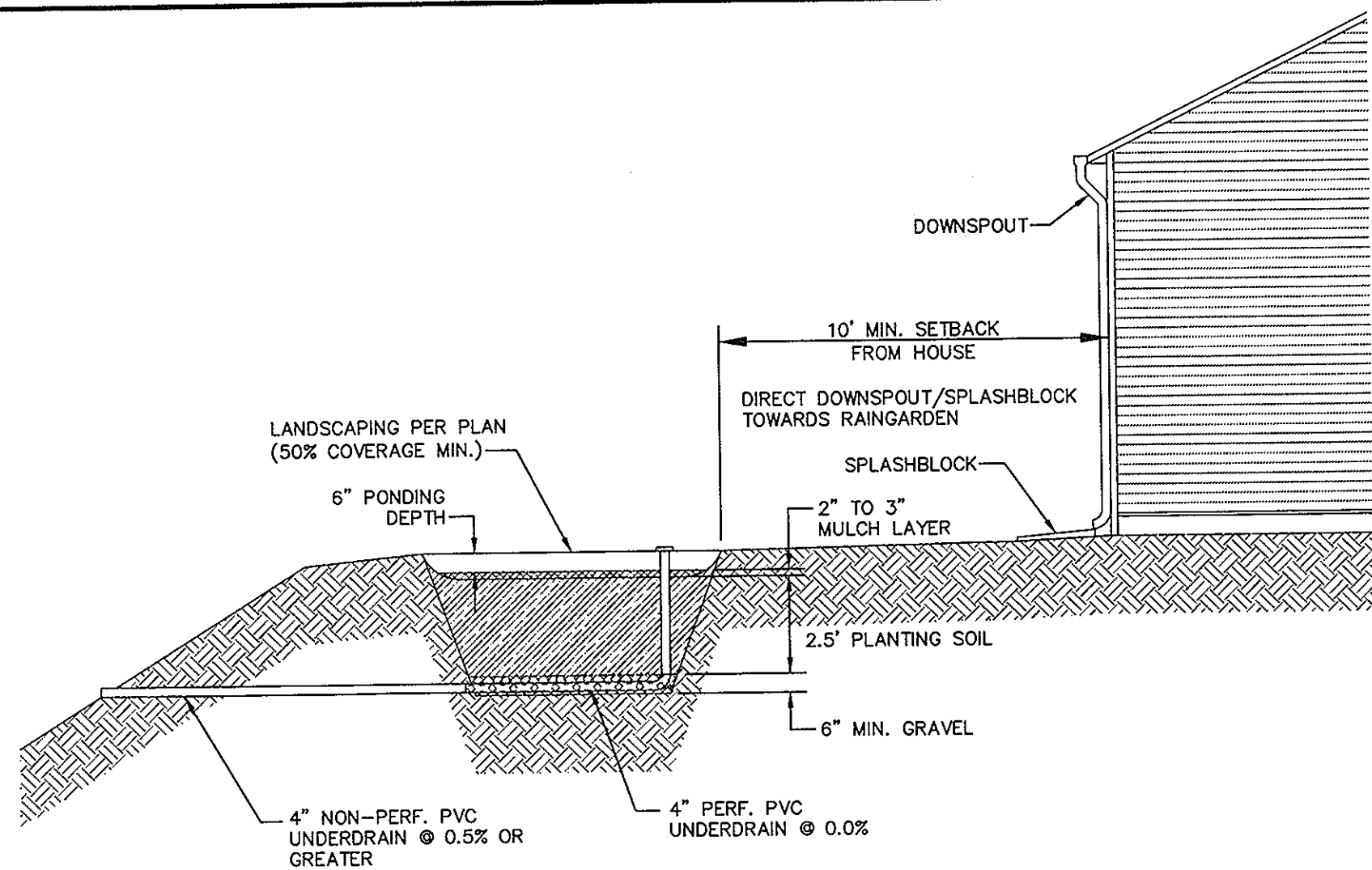
PROFILE
 SCALE:
 HOR. - 1"=50'
 VERT. - 1"=5'



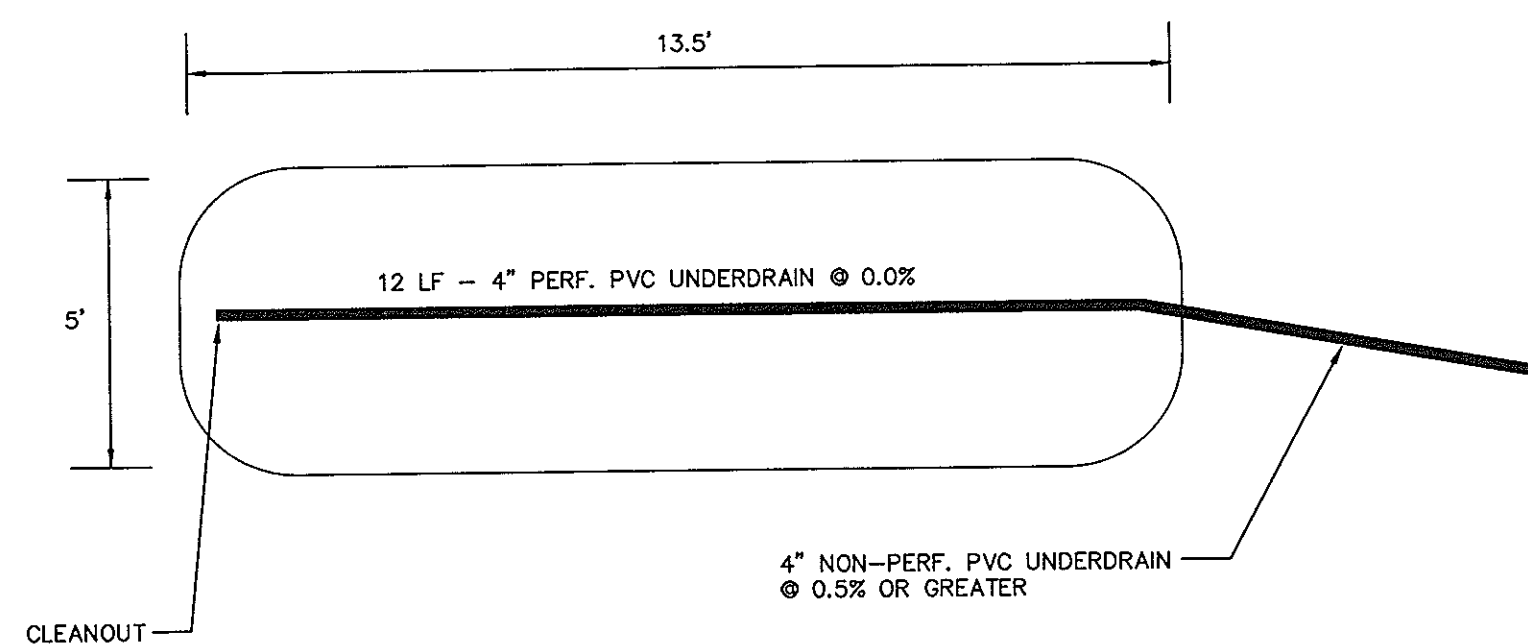
LONG CORNER ROAD
 HOWARD COUNTY MAJOR
 COLLECTOR
 60' RIGHT OF WAY
**INTERSECTION-DRIVEWAY AND
 LONG CORNER ROAD**

SCALE: 1"=20'

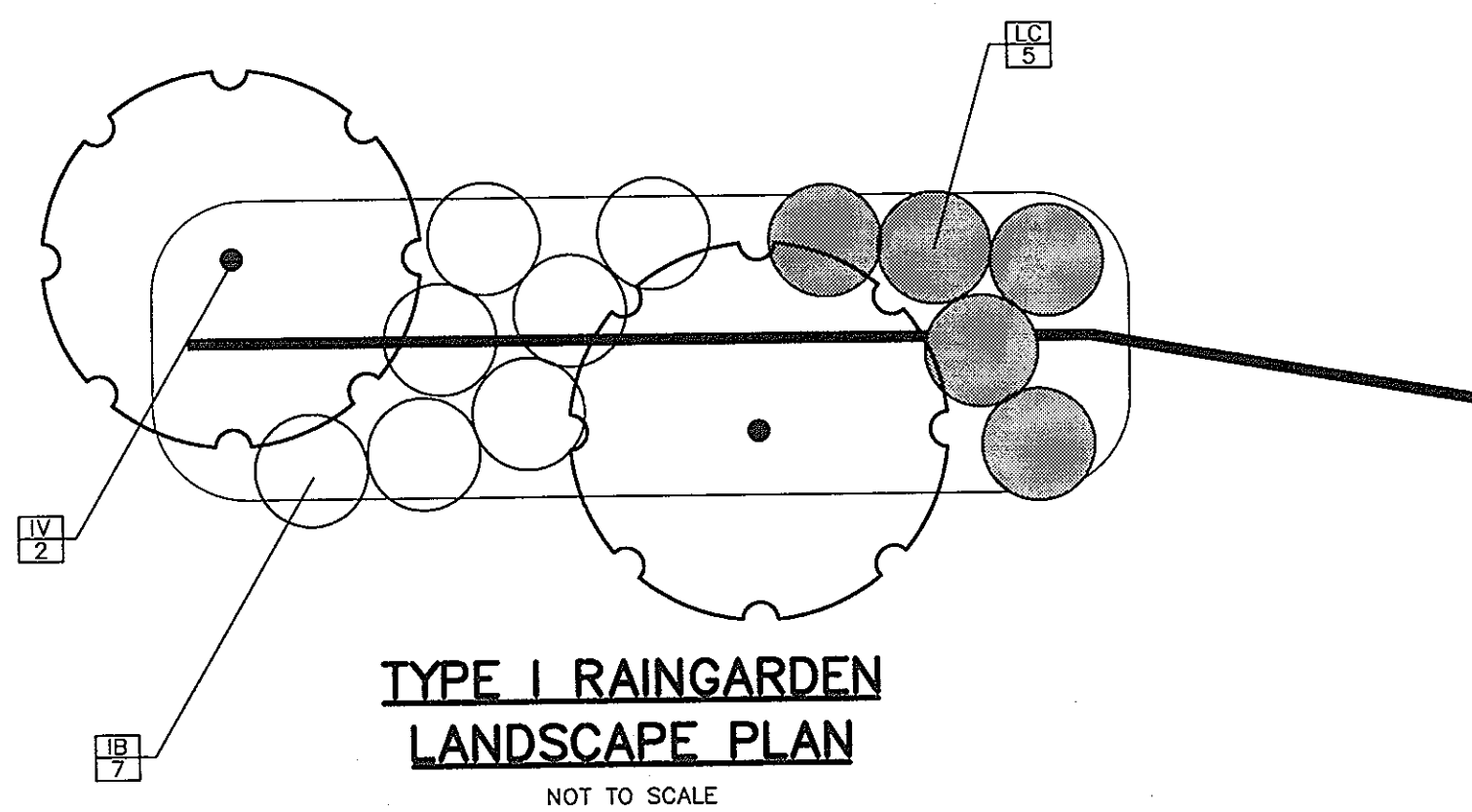
TENTATIVELY APPROVED DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY	
<i>Mark A. Wyle</i> PLANNING DIRECTOR	5/29/07 DATE
DATE	NO. REVISION
OWNER NORTHERN LLLP. P.O. BOX 228 CLARKSVILLE, MD 21029 410-531-5539	
DEVELOPER HIGHLAND DEVELOPMENT CORPORATION ATTN: RICHARD DEMMITT P.O. BOX 228 CLARKSVILLE, MD 21029 410-531-5539	
PROJECT SOBUS PROPERTY	
AREA TAX MAP 6, GRID 5, PARCEL 34, ZONING RC-DEO 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE ROAD PROFILE	
Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. PHRA 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
5/13/07 DATE	DESIGNED BY : ALC
	DRAWN BY: ALC
	PROJECT NO : 13953-1-0
	DATE : MARCH 20, 2007
	SCALE : AS SHOWN
<i>Domenico W. Colangelo</i> DOMENICK W. COLANGELO #27200	DRAWING NO. 5 OF 6



TYPE I RAINGARDEN PROFILE
NOT TO SCALE



TYPE I RAINGARDEN PLAN
NOT TO SCALE



TYPE I RAINGARDEN LANDSCAPE PLAN
NOT TO SCALE

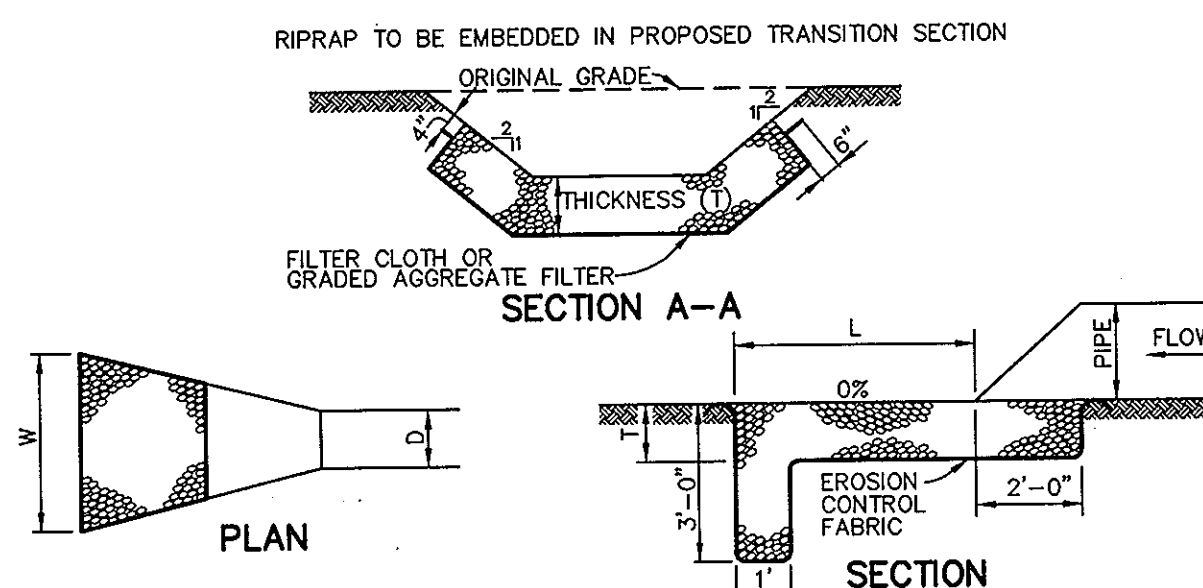
RAINGARDEN SCHEDULE

LOT	#	SIZE	TYPE	TOP EL. AT MULCH LAYER	4\"/>		
4	1	50 SF	I	806.5	803.25	793.0	179.50
4	2	50 SF	I	806.0	802.75	791.0	158.00
5	1	50 SF	I	803.5	800.25	800.0	52.00
5	2	50 SF	I	800.0	796.75	796.0	23.00
6	1	50 SF	I	792.0	789.75	787.00	37.00
6	2	50 SF	I	786.0	782.75	783.0	16.12

RAINGARDEN PLANT LIST

KEY	QTY. PER GARDEN	SCIENTIFIC/COMMON NAME	SIZE	ROOT	SPACING	ZONE*
IV	2	ITEA VIRGINICA 'HENRY'S GARNET' VIRGINIA SHEETS SPIRE	2.5'-3' HT.	CONT.	PLANT AS SHOWN	***
LC	5	LOBELIA CARDINALIS CARDINAL FLOWER	1 GAL.	CONT.	18\"/>	
IB	7	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 GAL.	CONT.	18\"/>	

RAINGARDEN LIST NOTES:
 * HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.
 *** KNOWN TO TOLERATE INUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS
 **** COMMONLY USED BIoretention SPECIES ACCORDING TO TABLE A.4 IN APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.



RIPRAP OUTLET PROTECTION DETAIL
NO SCALE

CONSTRUCTION SPECIFICATIONS

1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
3. GEOTEXTILE CLASS C OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED AREA WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT.
4. STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

MATERIAL SPECIFICATIONS FOR RAINGARDENS			
MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTING SOIL	SAND: 30% TO 60% SILT: 30% TO 55% CLAY: 0% TO 25%	N/A	USDA SOIL TYPES LOAMY SAND, SANDY LOAM, OR LOAM
MULCH	SHREDDED HARDWOOD	N/A	AGED SIX MONTHS MINIMUM
GEOTEXTILE	CLASS "C" (ASTM D-4751) GRAB TENSILE STRENGTH (ASTM D-4832) PUNCTURE RESISTANCE (ASTM D-4833)	N/A	USE AS NECESSARY BENEATH UNDERDRAINS ONLY.
GRAVEL	AASHTO M-43 #57 OR #67	3/8" TO 3/4"	
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4\"/>	

RAINGARDEN SPECIFICATIONS

PLANTING SOIL SHOULD BE SANDY LOAM, LOAMY SAND, OR A LOAM/SAND MIX AND SHOULD CONTAIN A MINIMUM 35 TO 60% SAND BY VOLUME. THE CLAY CONTENT SHOULD BE LESS THAN 25%. THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. ONE SIMPLE METHOD OF FOR PRODUCING SUITABLE PLANTING SOIL IS TO MIX THREE PARTS OF COMMERCIALY AVAILABLE WASHED SAND WITH TWO PARTS TOPSOIL TO PRODUCE A HOMOGENEOUS SOIL. PLANTING SOIL SHOULD BE PLACED IN 12" TO 18" LAYERS THAT ARE LOOSELY COMPACTED (TAMPED LIGHTLY WITH A BACKHOE BUCKET) TO A DEPTH OF 2 1/2 FEET.

RAINGARDEN MULCH SHOULD BE STANDARD LANDSCAPE STYLE, SINGLE OR DOUBLE SHREDDED HARDWOOD MULCH. THE MULCH SHOULD BE WELL AGED, UNIFORM IN COLOR, AND FREE OF OTHER MATERIALS SUCH AS WEEDS OR ROOTS. GRASS CLIPPINGS ARE UNACCEPTABLE AS A MULCH MATERIAL. MULCH SHOULD BE APPLIED TO A MAXIMUM DEPTH OF THREE INCHES. RAINGARDENS SHOULD BE REMULCHED ON AN ANNUAL BASIS.

UNDERDRAINS SHALL CONSIST OF A 4" DIAMETER RIGID SCHEDULE 40 (OR SDR 35) PVC PIPE (SLOTTED HDPE IS ALSO ACCEPTABLE) THAT IS PERFORATED WITHIN THE RAINGARDEN. PERFORATIONS SHALL BE 3/8" DIAMETER MINIMUM AT 6" ON CENTER WITH MINIMUM OF 4 HOLES PER ROW. UNDERDRAINS SHALL BE PLACED ON A 3" WIDE SECTION OF FILTER CLOTH (CLASS "C" GEOTEXTILE). THE PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5% AT LEAST ONE OBSERVATION WELL/CLEANOUT MUST BE PROVIDED PER RAINGARDEN. A RODENT GUARD SHOULD BE INSTALLED AT THE DOWNSTREAM END OF UNDERDRAINS TO PREVENT MICE AND LARGER RODENTS FROM ENTRY. A TYPICAL RODENT GUARD CONSISTS OF A 3/8" HEX-HEAD BOLT THROUGH THE PIPE HORIZONTALLY. NUTS ARE PLACED ON BOTH THE INSIDE AND OUTSIDE OF THE PIPE.

RAINGARDENS SHALL NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

FOR PLANT INSTALLATION ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO THAT 1/8 OF THE BALL IS ABOVE THE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHOULD BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT (UPRIGHT) DURING THE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. 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 SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE RAINGARDEN IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH IS USED TO AMEND THE SOIL.

SEQUENCE OF CONSTRUCTION

1. SUBSEQUENT TO FINAL GRADING AND STABILIZATION OF LOT, EXCAVATE RAINGARDEN AREA TO PROPER DIMENSIONS.
2. INSTALL GRAVEL ENVELOPE, GEOTEXTILE, UNDERDRAIN, AND OBSERVATION WELL.
3. PLACE AND LOOSELY COMPACT PLANTING SOIL.
4. INSTALL PLANTS AT PROPER DEPTH AND LOCATION ACCORDING TO PLANTING PLAN.
5. MULCH THE SURFACE OF THE RAINGARDEN TO A THICKNESS OF 3".
6. WATER AS NECESSARY.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Mark P. Leagle 5/29/07
PLANNING DIRECTOR DATE

DATE	NO.	REVISION

OWNER
NORTHERN LLLP.
P.O. BOX 228
CLARKSVILLE, MD 21029
410-531-5539

DEVELOPER
HIGHLAND DEVELOPMENT CORPORATION
ATTN: RICHARD DEMMITT
P.O. BOX 228
CLARKSVILLE, MD 21029
410-531-5539

PROJECT
SOBUS PROPERTY

AREA TAX MAP 6, GRID 5, PARCEL 34, ZONING RC-DEO
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
RAINGARDEN DETAILS

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
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5/3/07
DATE

DESIGNED BY : ACR

DRAWN BY: PHRA

PROJECT NO : 13953-1-0
P900DET.DWG

DATE : MARCH 20, 2007

SCALE : AS SHOWN

DRAWING NO. 6 OF 6

DÖMENICK W. COLANGELO #27200
PROFESSIONAL ENGINEER