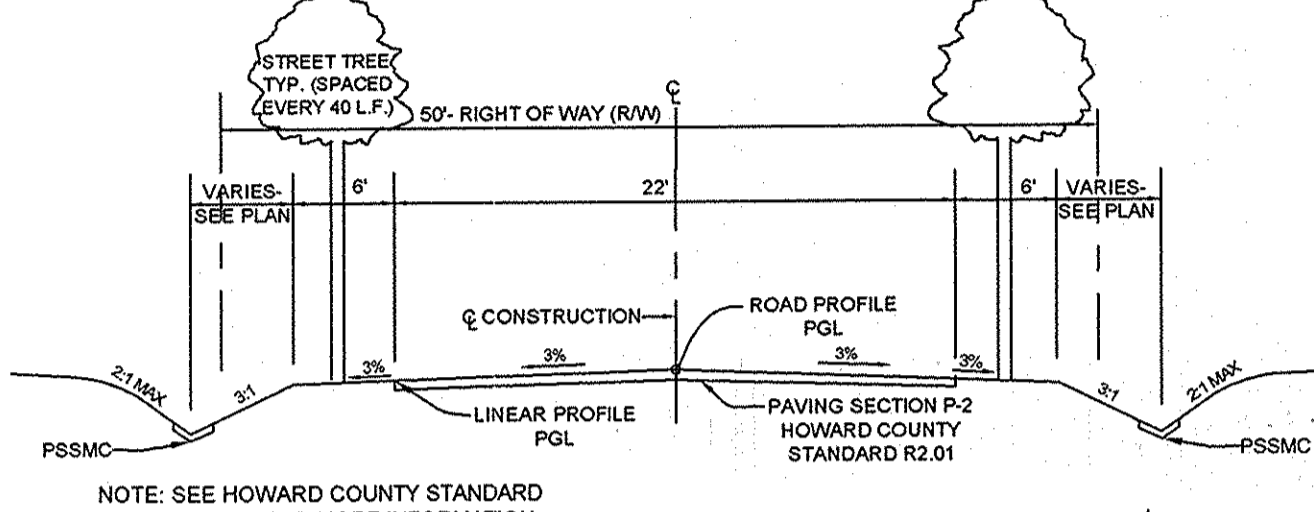
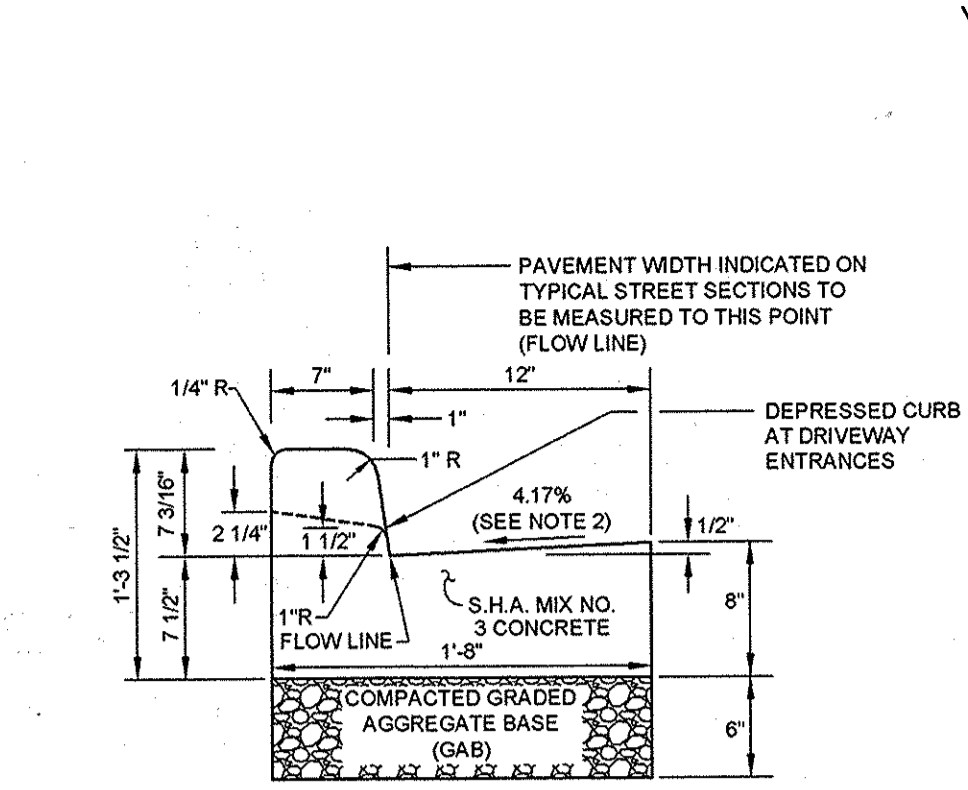


**TYPICAL ROADWAY SECTION CLASSIFICATION: ACCESS PLACE**  
BLEVINS DRIVE DESIGN SPEED: 25 MPH FROM STA. 2+50 - END NOT TO SCALE

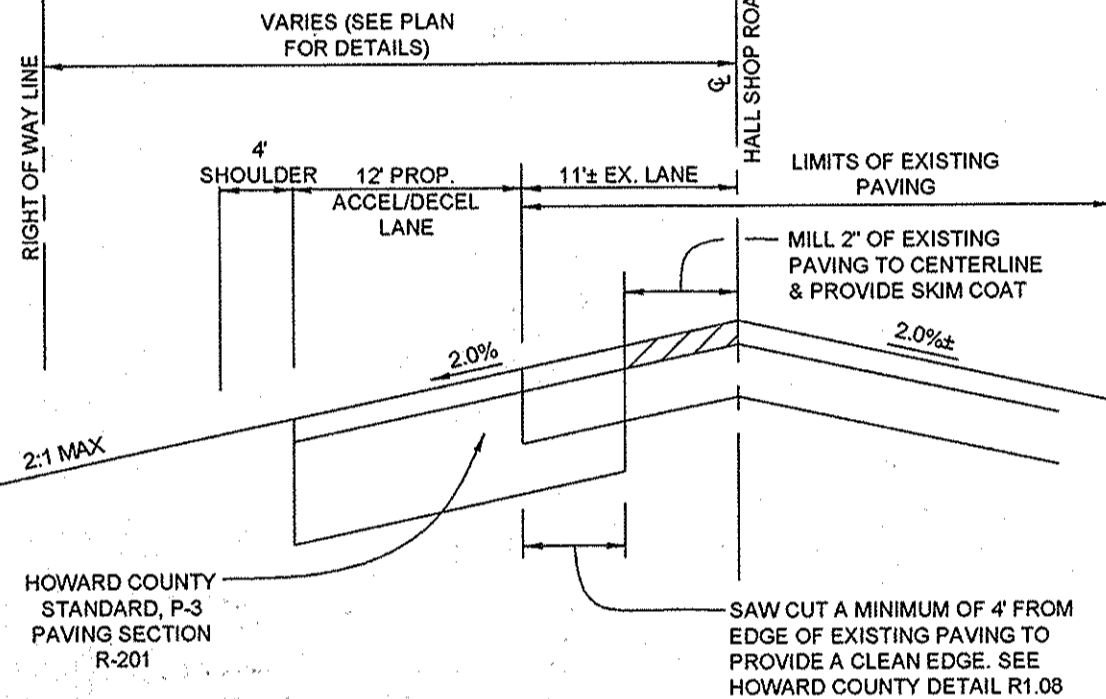


**TYPICAL ROADWAY SECTION CLASSIFICATION: ACCESS PLACE**  
BLEVINS DRIVE DESIGN SPEED: 25 MPH FROM STA. 0+00 - 2+50 NOT TO SCALE

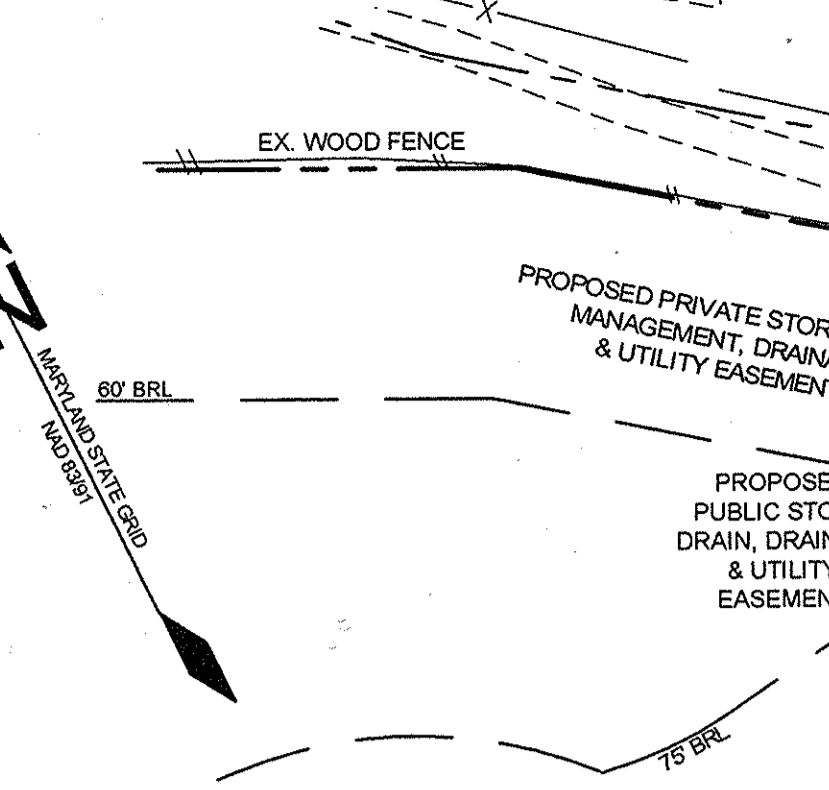


**STANDARD COMBINATION CURB AND GUTTER**  
HOWARD COUNTY STANDARD R-3.01 NOT TO SCALE

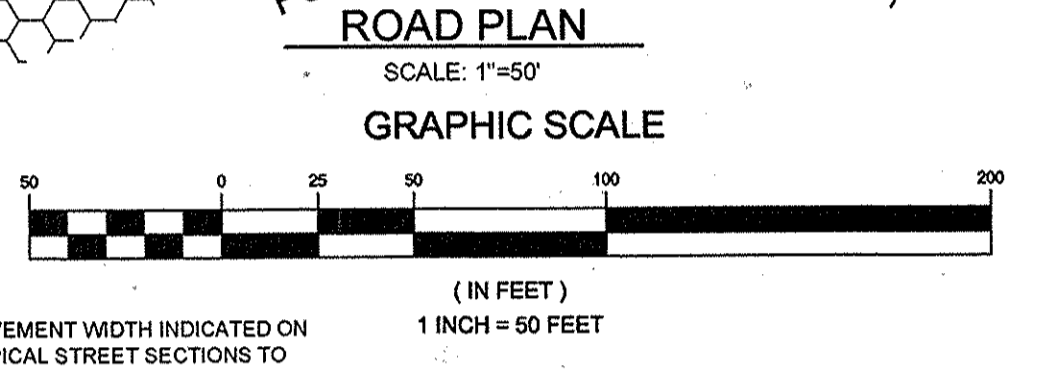
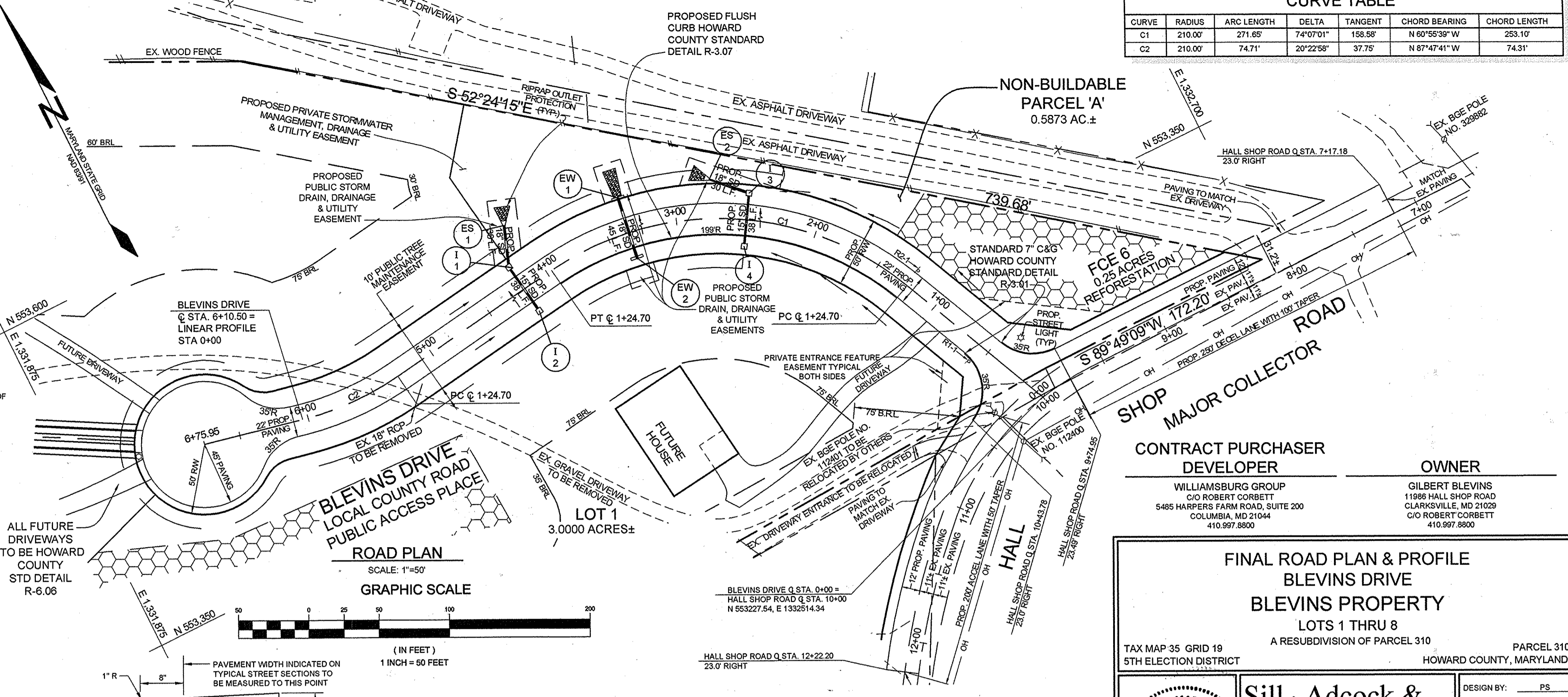
- NOTE:
- A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
  - GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OF THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB & GUTTER.
  - A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
  - POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.



**WIDENING DETAIL (TYP.) HALL SHOP ROAD**  
NOT TO SCALE



**STANDARD FLUSH CURB**  
HOWARD COUNTY STANDARD R-3.07 NOT TO SCALE



| CURVE TABLE |         |            |           |         |               |              |
|-------------|---------|------------|-----------|---------|---------------|--------------|
| CURVE       | RADIUS  | ARC LENGTH | DELTA     | TANGENT | CHORD BEARING | CHORD LENGTH |
| C1          | 210.00' | 271.65'    | 74°07'01" | 158.68' | N 60°55'33"W  | 253.10'      |
| C2          | 210.00' | 74.71'     | 20°22'58" | 37.75'  | N 87°47'41"W  | 74.31'       |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Kathleen D. ...* 8.13.14  
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Halper ...* 7.14.14  
CHIEF, BUREAU OF HIGHWAYS

**FINAL ROAD PLAN & PROFILE**  
**BLEVINS DRIVE**  
**BLEVINS PROPERTY**  
LOTS 1 THRU 8  
A RESUBDIVISION OF PARCEL 310  
HOWARD COUNTY, MARYLAND

TAX MAP 35 GRID 19  
5TH ELECTION DISTRICT

CONTRACT PURCHASER  
**DEVELOPER**  
WILLIAMSBURG GROUP  
C/O ROBERT CORBETT  
5485 HARPERS FARM ROAD, SUITE 200  
COLUMBIA, MD 21044  
410.997.8600

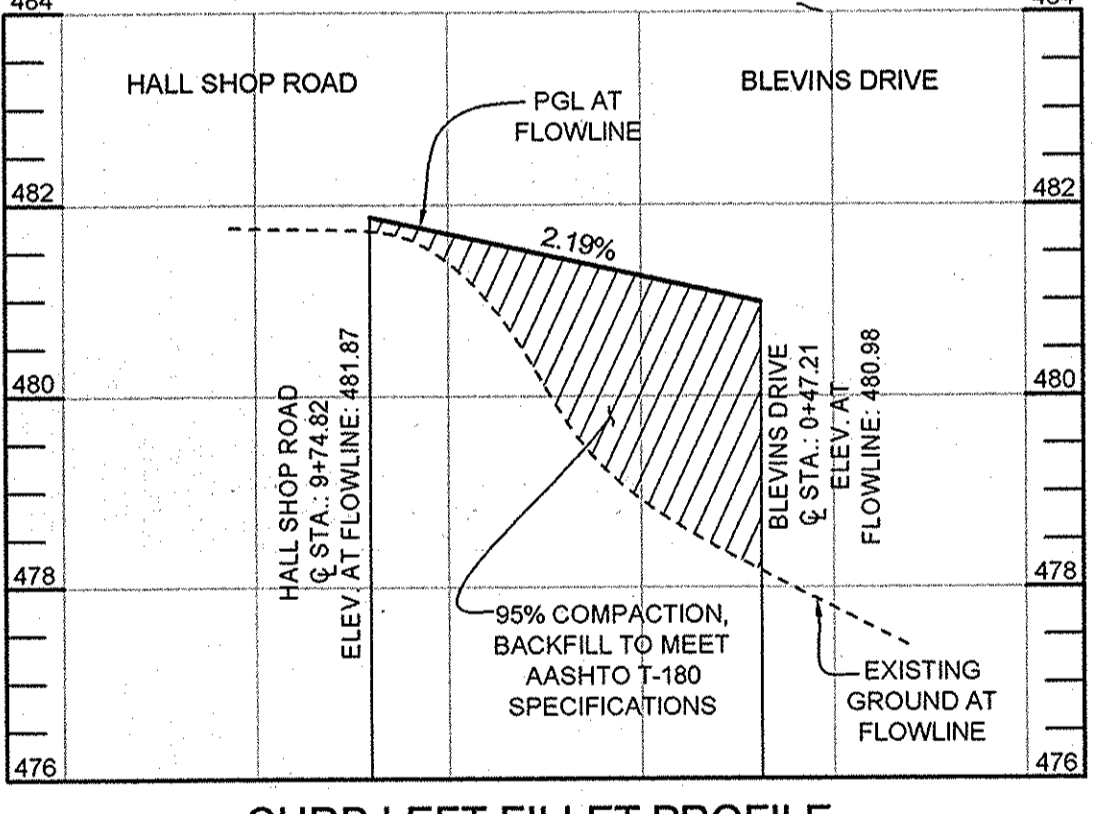
**OWNER**  
GILBERT BLEVINS  
11898 HALL SHOP ROAD  
CLARKSVILLE, MD 21029  
C/O ROBERT CORBETT  
410.997.8900

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

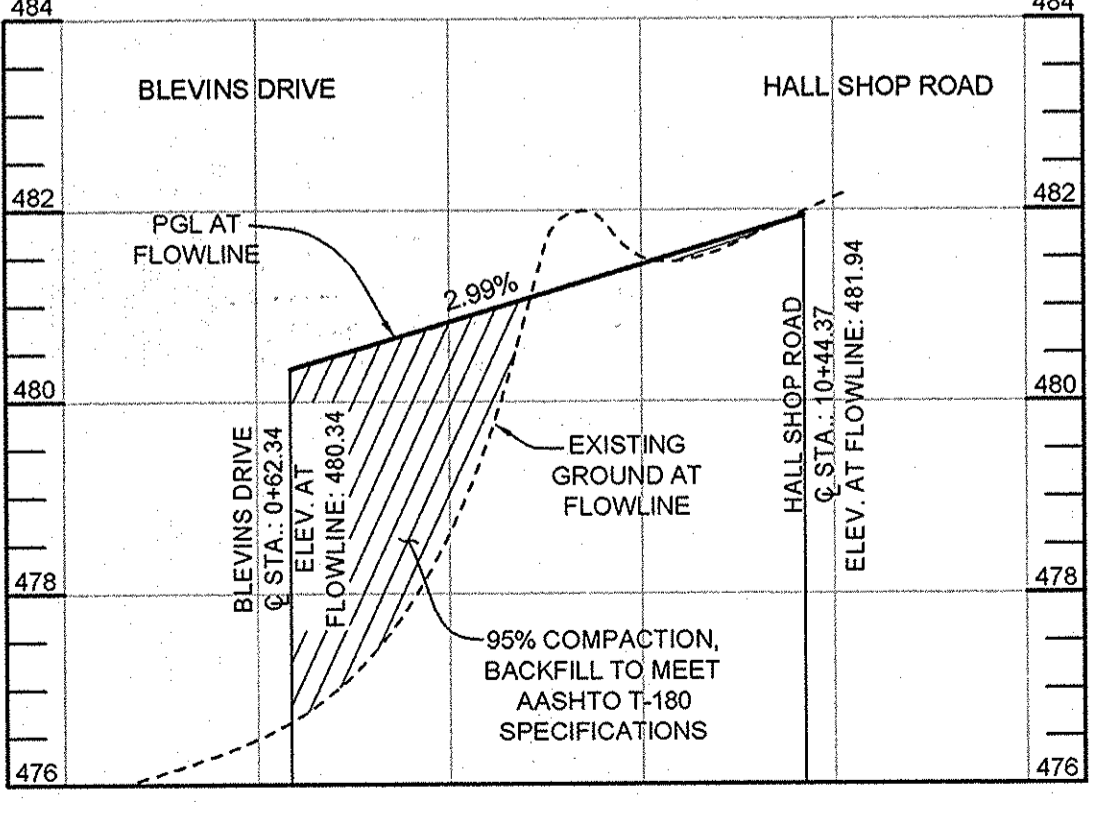
DESIGN BY: PS  
DRAWN BY: BK  
CHECKED BY: PS  
SCALE: AS SHOWN  
DATE: JUNE 19, 2014  
PROJECT #: 11-054  
SHEET #: 2 OF 12

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2015

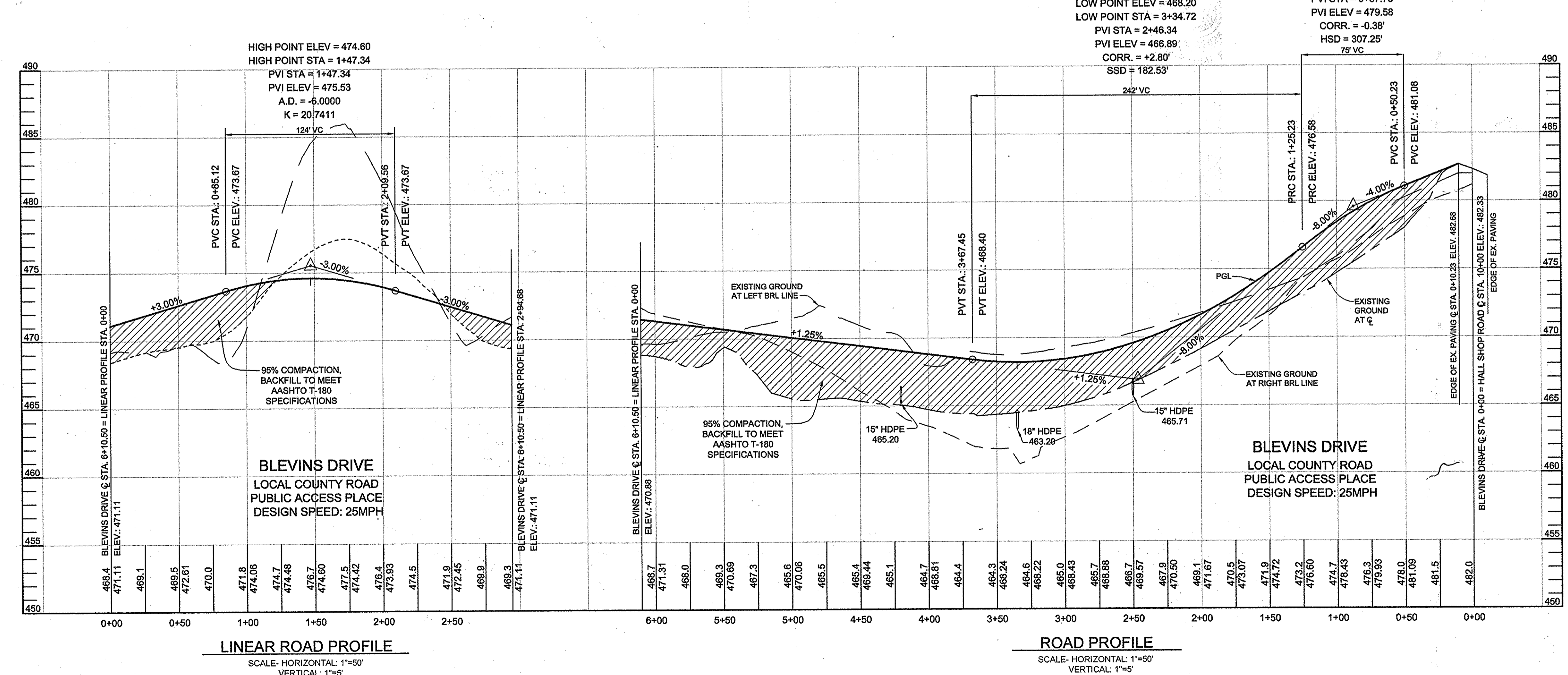
| PAVING SECTIONS |   |   |        |        |        |         |
|-----------------|---|---|--------|--------|--------|---------|
| SEC. NO.        | ROAD AND STREET CLASSIFICATION  | CALIFORNIA BEARING RATIO (CBR)                                      | 3 TO 4 | 5 TO 6 | 7 TO 8 | 9 TO 10 |
| P-2             | PARKING DRIVE AISLER: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY | HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)        | 1.5    | 1.5    | 1.5    | 1.5     |
|                 |   | HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL) | 1.0    | 1.0    | 1.0    | 1.0     |
|                 |   | HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)                | 2.0    | 2.0    | 2.0    | 2.0     |
| P-3             | PARKING DRIVE AISLER: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY | HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)        | 1.5    | 1.5    | 1.5    | 1.5     |
|                 |   | HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL) | 1.0    | 1.0    | 1.0    | 1.0     |
|                 |   | HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)                | 3.0    | 3.0    | 3.0    | 3.0     |
| P-4             | ACCESS PLACE, ACCESS STREET, CUL-DE-SACS, RESIDENTIAL   | HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)        | 2.0    | 2.0    | 2.0    | 2.0     |
|                 |   | HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL) | 1.0    | 1.0    | 1.0    | 1.0     |
|                 |   | HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)                | 2.0    | 2.0    | 2.0    | 2.0     |
| P-5             | ACCESS PLACE, ACCESS STREET, CUL-DE-SACS, RESIDENTIAL   | HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)        | 2.0    | 2.0    | 2.0    | 2.0     |
|                 |   | HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL) | 1.0    | 1.0    | 1.0    | 1.0     |
|                 |   | HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 1 (ESAL)                | 3.0    | 3.0    | 3.0    | 3.0     |



**CURB LEFT FILLET PROFILE**  
SCALE: HORIZONTAL: 1"=20'  
VERTICAL: 1"=2'



**CURB RIGHT FILLET PROFILE**  
SCALE: HORIZONTAL: 1"=20'  
VERTICAL: 1"=2'



**LINEAR ROAD PROFILE**  
SCALE: HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'

**ROAD PROFILE**  
SCALE: HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'

**PERCOLATION CERTIFICATION NOTES**

- THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT, OF AT LEAST 10,000 SF AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. 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 MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY. THE TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY AERIAL TOPOGRAPHY FLOWN IN 2004 AND HAS BEEN FIELD VERIFIED. THE TOPOGRAPHY IN THE AREA OF THE SAND MOUND TESTS ON LOT 3 HAS BEEN FIELD RUN BY SILL, ADCOCK & ASSOCIATES, LLC IN JANUARY 2012.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT.
- ANY CHANGES TO A PRIVATE SEWAGE EASEMENT SHALL REQUIRE A REVISED PERCOLATION CERTIFICATION PLAN.
- ALL EXISTING WELLS, SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS WITHIN 100 FEET OF THE PROPERTY BOUNDARIES AND ALL EXISTING AND PROPOSED WELLS THAT ARE LOCATED WITHIN 200 FEET DOWN GRADIENT OF EXISTING OR PROPOSED SEPTIC SYSTEMS AND SEWAGE DISPOSAL EASEMENTS HAVE BEEN FIELD LOCATED. LOCATED WELLS WITHOUT A WELL TAG SHOWN DID NOT HAVE ONE.
- THE HOUSE ON EXISTING LOT 2 AND ITS WELL AND SEPTIC SYSTEM ARE TO REMAIN.
- THE SEPTIC SYSTEM FOR LOT 3 IS TO BE A SAND MOUND SYSTEM. THIS SYSTEM WILL BE DESIGNED AT THE BUILDING PERMIT STAGE. PERCOLATION TEST HOLES 1060 - 1066 HAVE BEEN APPROVED FOR SAND MOUND SYSTEMS ONLY.
- THE SAND MOUND AREA(S) DELINEATED AND IDENTIFIED ON LOT 3 MUST BE PROTECTED BY A FIXED BARRIER AT ALL TIMES DURING GRADING AND CONSTRUCTION ACTIVITIES. THEREAFTER PROTECTIVE MEASURES SHOULD BE IMPLEMENTED TO PROTECT THESE AREAS FROM EROSION AND ENCROACHMENT BY WHEELED VEHICLES. SUBSEQUENT BUILDING PERMIT APPLICATIONS MAY BE DENIED SHOULD THE SAND MOUND AREAS BE EVALUATED AND FOUND TO BE UNSATISFACTORY FOR THE INTENDED USE.
- LOTS 1 AND 4 ON THIS PLAN HAVE A LIMITATION OF FIVE (5) BEDROOMS. IF MORE BEDROOMS ARE DESIRED, THE HEALTH DEPARTMENT WILL CONSIDER A TECHNICAL DESIGN SHOWING THAT THE SAND MOUND AREA WILL ACCOMMODATE A SYSTEM DESIGN ADEQUATE FOR THE AMOUNT OF WASTEWATER DISCHARGE FROM THE PROPOSED STRUCTURE.
- LOTS 1 AND 4 ON THIS PLAN HAVE A LIMITATION OF FIVE (5) BEDROOMS. IF MORE BEDROOMS ARE DESIRED, THE HEALTH DEPARTMENT WILL CONSIDER A TECHNICAL DESIGN SHOWING THAT THE SEPTIC RESERVE AREA (RE: SEWAGE EASEMENT) WILL ACCOMMODATE A SYSTEM DESIGN ADEQUATE FOR THE AMOUNT OF WASTEWATER DISCHARGE FROM THE PROPOSED STRUCTURE.
- PRIOR TO RECORD PLAT SUBMITTAL, THE SEPTIC TANK, DRY WELL AND TRENCH SERVING 11986 HALL SHOP ROAD (LOT 2 ON THIS PLAN) MUST BE REPLACED AND ABANDONED. REPLACEMENT TRENCHES ARE TO BE INSTALLED IN THE UPPER PORTION OF THE DEFINED SEPTIC RESERVE AREA.
- ALL WELLS TO BE DRILLED PRIOR TO FINAL PLAT APPROVAL. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED GOVERNMENT DELAY IF THE WELL-DRILLING HOLDS UP THE HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLAT MYLAR.
- DEFINED SEPTIC AREAS ARE APPROVED AND INTENDED FOR INSTALLATION OF DRAINFIELD TRENCHES FOR WASTEWATER TREATMENT AND DISPOSAL. LOCALLY INTENSIVE DISRUPTION OF THE SOIL AND DISTURBANCE OF VEGETATION WILL OCCUR, AND LIKELY WILL RESULT IN DAMAGE OR DESTRUCTION OF TREES AND OTHER VEGETATION WITHIN THE BOUNDARIES OF THE SEPTIC AREA, INCLUDING ROOTS OF TREES THAT EXTEND INTO THE SEPTIC AREA. IN ADDITION, NO PERMANENT STRUCTURES OR BURIED DEVICES ARE ALLOWED IN AN APPROVED SEPTIC AREA.
- THE SAND MOUND AREA(S) DELINEATED AND IDENTIFIED ON THIS PARCEL MUST BE STAKED BY A SURVEYOR AND A FIELD REVIEW CONDUCTED BY THE HOWARD COUNTY HEALTH DEPARTMENT TO VERIFY THE AREAS HAVE NOT BEEN IMPACTED PRIOR TO FINAL PLAT APPROVAL AND PRIOR TO BUILDING PERMIT APPROVAL. IN ADDITION, THESE AREAS MUST BE PROTECTED BY A FIXED BARRIER AT ALL TIMES DURING DEMOLITION, GRADING, AND CONSTRUCTION ACTIVITIES. THEREAFTER PROTECTIVE MEASURES SHOULD BE IMPLEMENTED TO PROTECT THESE AREAS FROM EROSION AND ENCROACHMENT BY WHEELED VEHICLES. SUBSEQUENT BUILDING PERMIT APPLICATIONS MAY BE DENIED SHOULD THE SAND MOUND AREAS BE EVALUATED AND FOUND TO BE UNSATISFACTORY FOR THE INTENDED USE.

**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING SPECIMEN TREE
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL BOUNDARY
- 15%-24.9% MODERATE SLOPES
- CLEARING FOR FUTURE HOUSE CONSTRUCTION ONLY
- PERCOLATION TEST HOLE, PASSED
- PERCOLATION TEST HOLE, FAILED
- PASSED SOIL PROFILE FOR EXISTING DRY WELL
- EXISTING SWM SOIL BORINGS
- EXISTING WELLS
- FOREST CONSERVATION EASEMENT
- STANDARD CONSTRUCTION ENTRANCE
- STANDARD INLET PROTECTION
- SILT FENCE
- SUPER SILT FENCE
- LIMIT OF DISTURBANCE
- PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION
- PROPOSED CLEAN WATER EARTH DIKE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Keith S. ...* 8-13-14  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*Chad ...* 8-12-14  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

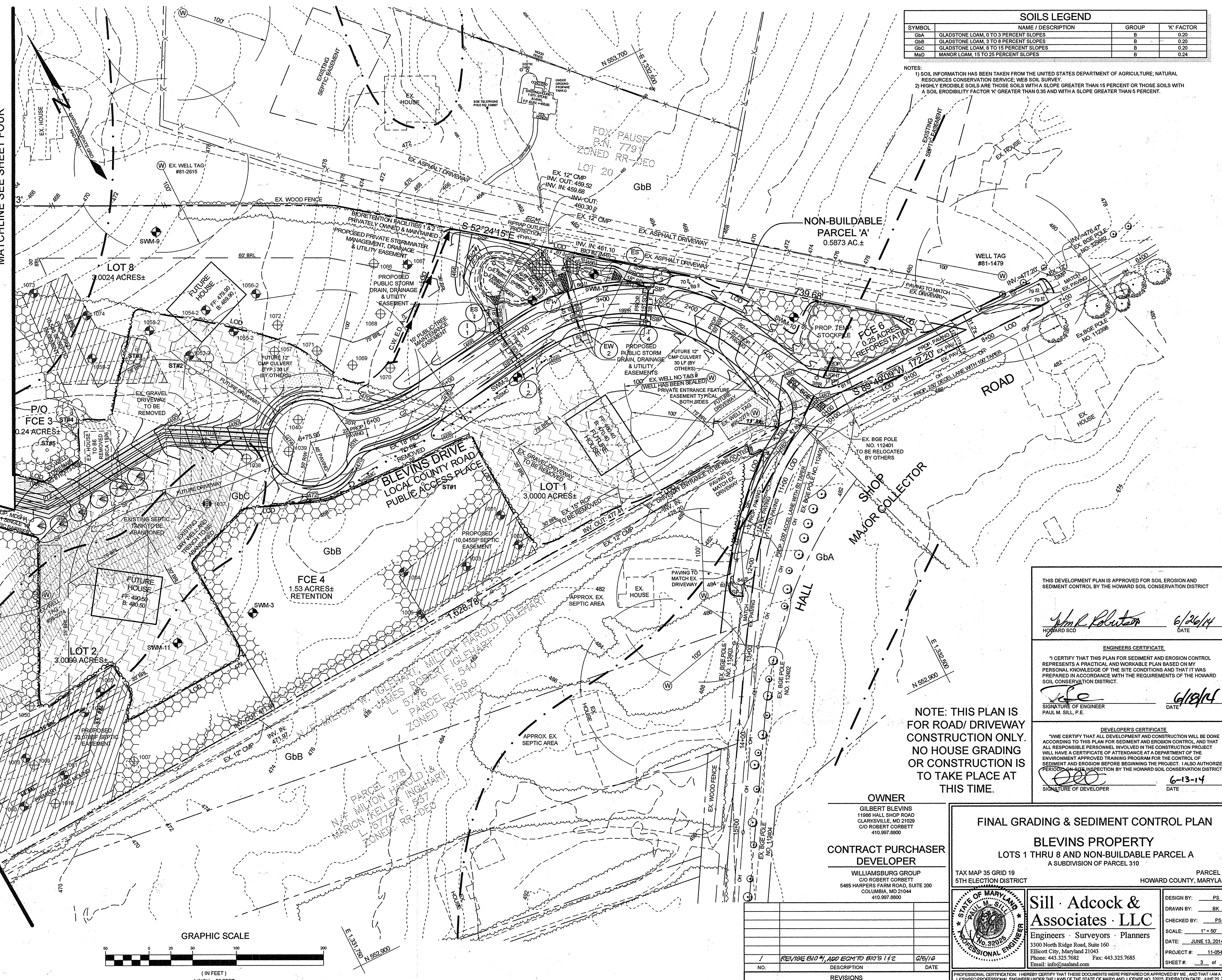
*Holger ...* 7-3-14  
 CHIEF, BUREAU OF HIGHWAYS

| SOILS LEGEND |  |       |            |
|--------------|--|-------|------------|
| SYMBOL       | NAME / DESCRIPTION                     | GROUP | 'K' FACTOR |
| GbA          | GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES  | B     | 0.20       |
| GbB          | GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES  | B     | 0.20       |
| GbC          | GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES | B     | 0.20       |
| MdD          | MANOR LOAM, 15 TO 25 PERCENT SLOPES    | B     | 0.24       |

NOTES:  
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.  
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

MATCHLINE SEE SHEET FOUR

MATCHLINE SEE SHEET FOUR



THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

*Paul M. Sill, P.E.* 6/26/14  
 HOWARD SCD DATE

**ENGINEERS CERTIFICATE**  
 I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Paul M. Sill, P.E.* 6/18/14  
 SIGNATURE OF ENGINEER DATE  
 PAUL M. SILL, P.E.

**DEVELOPER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Paul M. Sill, P.E.* 6-13-14  
 SIGNATURE OF DEVELOPER DATE

**NOTE: THIS PLAN IS FOR ROAD/ DRIVEWAY CONSTRUCTION ONLY. NO HOUSE GRADING OR CONSTRUCTION IS TO TAKE PLACE AT THIS TIME.**

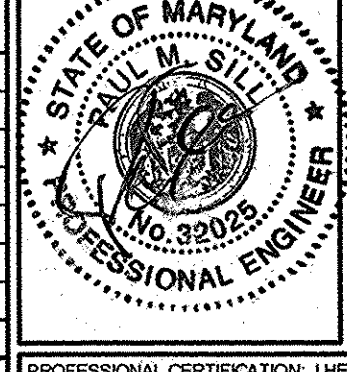
**OWNER**  
 GILBERT BLEVINS  
 11986 HALL SHOP ROAD  
 CLARKSVILLE, MD 21029  
 C/O ROBERT CORBETT  
 410.997.8800

**CONTRACT PURCHASER DEVELOPER**  
 WILLIAMSBURG GROUP  
 C/O ROBERT CORBETT  
 5485 HARPERS FARM ROAD, SUITE 200  
 COLUMBIA, MD 21044  
 410.997.8800

**FINAL GRADING & SEDIMENT CONTROL PLAN**

**BLEVINS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

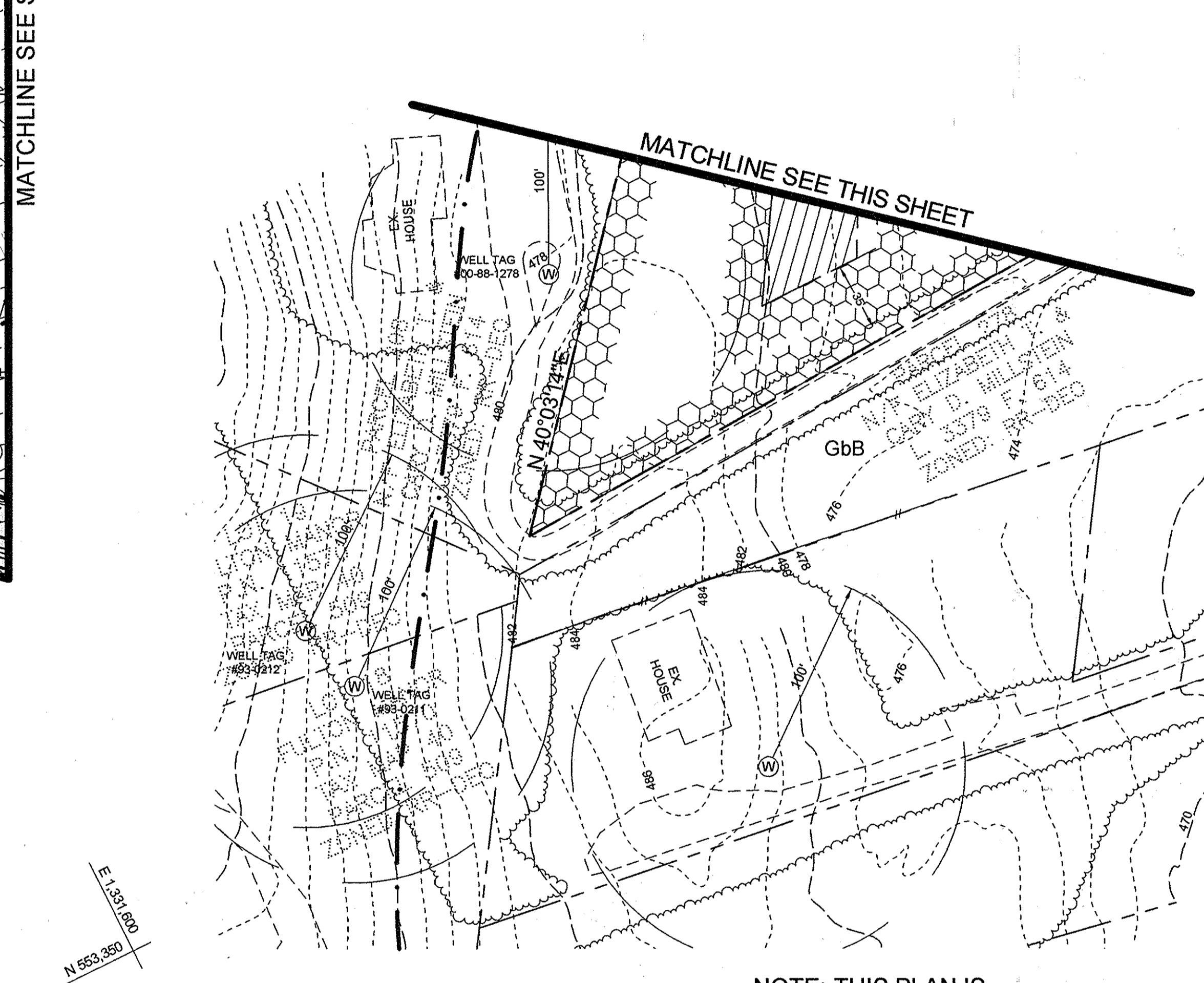
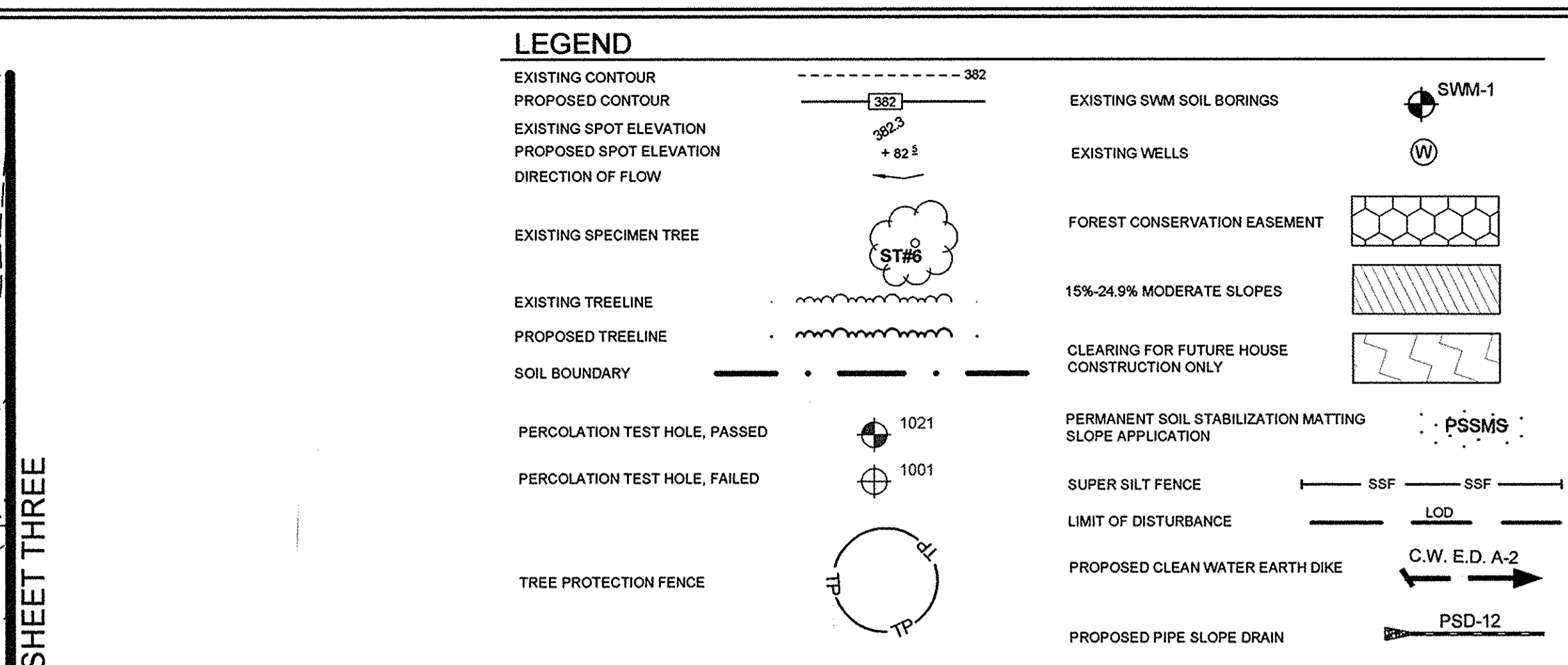
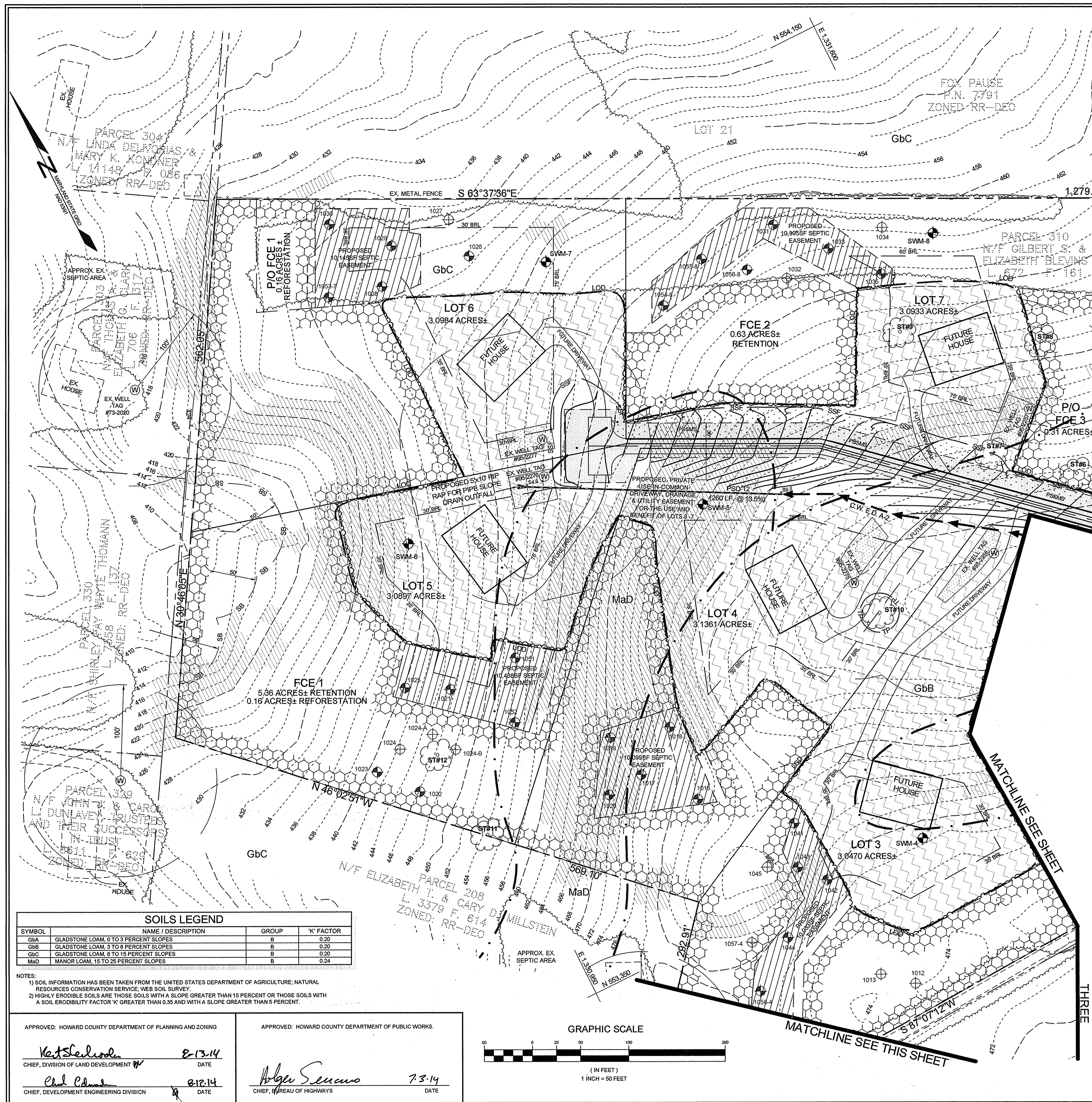
TAX MAP 35 GRID 19 5TH ELECTION DISTRICT PARCEL 310  
 HOWARD COUNTY, MARYLAND



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

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 92025, EXPIRATION DATE: JUNE 30, 2015

| NO. | DESCRIPTION                           | DATE    |
|-----|---------------------------------------|---------|
| 1   | REVISE B10 #1, ADD EGM TO B10'S 1 & 2 | 6/18/14 |



**SOILS LEGEND**

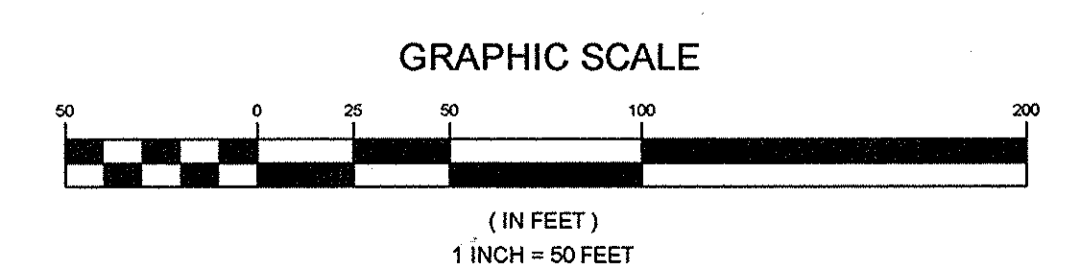
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| GbB    | GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES  | B     | 0.20       |
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| MaD    | MANOR LOAM, 15 TO 25 PERCENT SLOPES    | B     | 0.24       |

NOTES:  
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE; NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.  
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Kate Schindler* 8-13-14  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Chad Adams* 8-12-14  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Robert Seno* 7-3-14  
 CHIEF, BUREAU OF HIGHWAYS



THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

*John C. Robertson* 6/26/14  
 HOWARD SCD DATE

ENGINEER'S CERTIFICATE  
 I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Paul M. Sill* 6/18/14  
 SIGNATURE OF ENGINEER DATE  
 PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE  
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Paul M. Sill* 6-13-14  
 SIGNATURE OF DEVELOPER DATE

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
|     |             |      |
|     |             |      |
|     |             |      |

NOTE: THIS PLAN IS FOR ROAD/ DRIVEWAY CONSTRUCTION ONLY. NO HOUSE GRADING OR CONSTRUCTION IS TO TAKE PLACE AT THIS TIME.

OWNER: GILBERT BLEVINS, 11986 HALL SHOP ROAD, CLARKSVILLE, MD 21029, C/O ROBERT CORBETT, 410.997.8600

CONTRACT PURCHASER DEVELOPER: WILLIAMSBURG GROUP, C/O ROBERT CORBETT, 5485 HARPERS FARM ROAD, SUITE 200, COLUMBIA, MD 21044, 410.997.8800

FINAL GRADING & SEDIMENT CONTROL PLAN

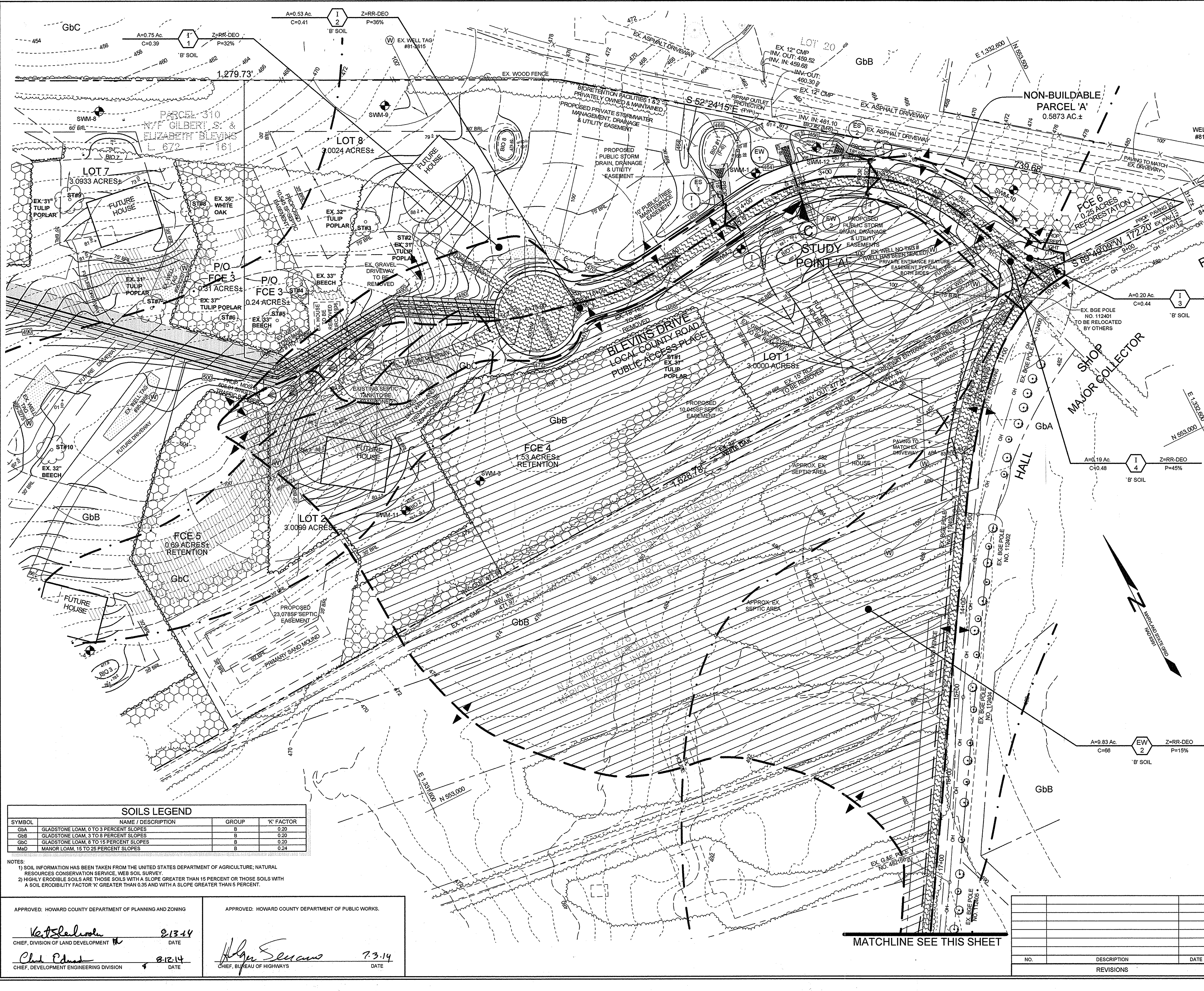
**BLEVINS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

TAX MAP 35 GRID 19, 5TH ELECTION DISTRICT, PARCEL 310 HOWARD COUNTY, MARYLAND.

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

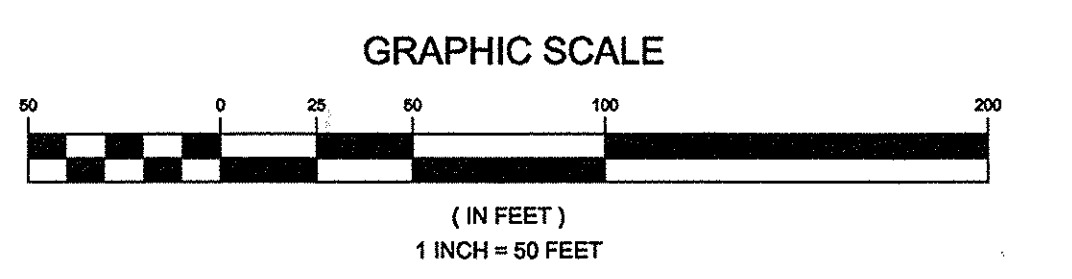
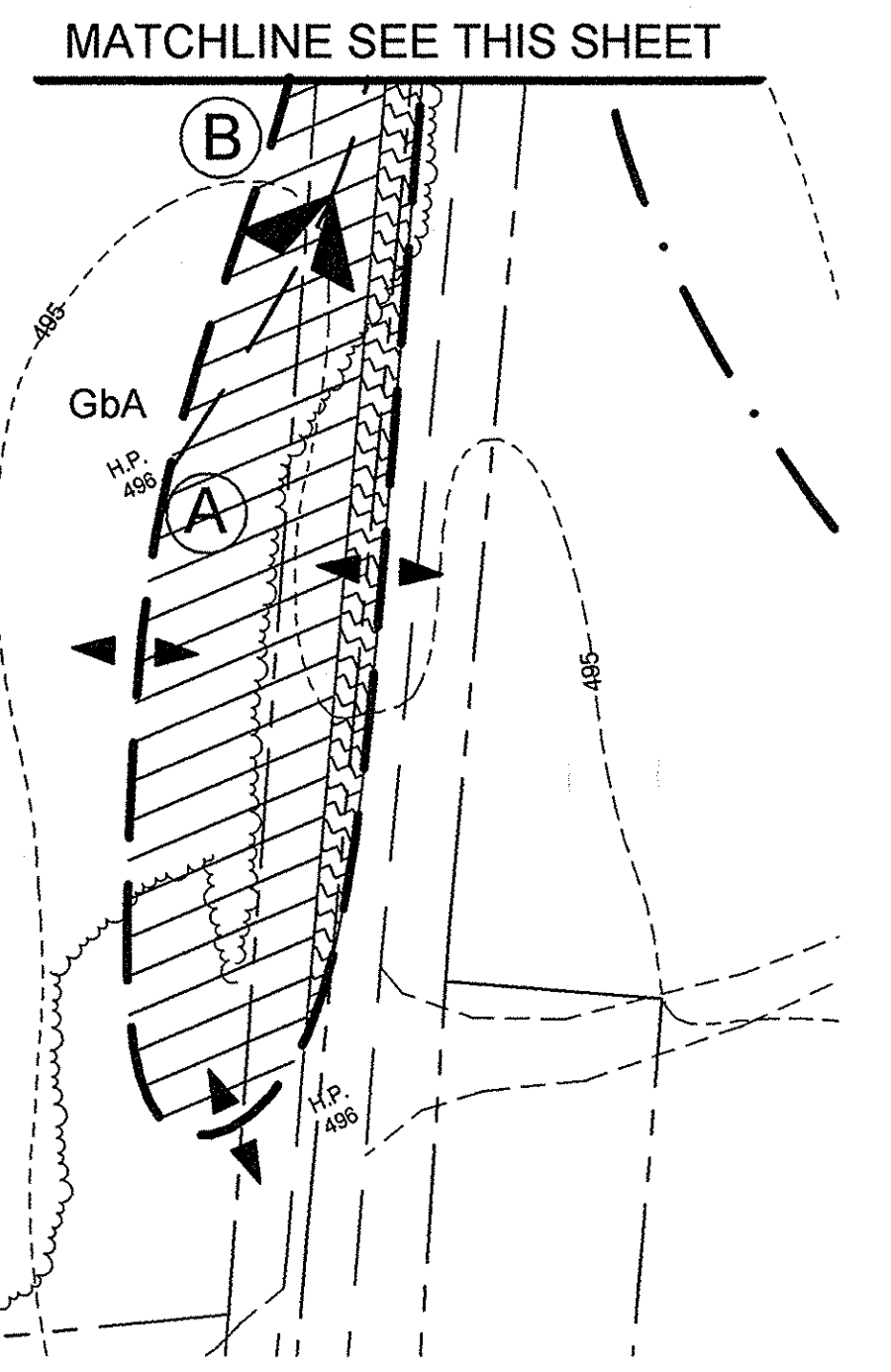
DESIGN BY: PS  
 DRAWN BY: BK  
 CHECKED BY: PS  
 SCALE: 1" = 50'  
 DATE: JUNE 13, 2014  
 PROJECT #: 11-054  
 SHEET #: 4 OF 12





**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING SPECIMEN TREE
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL BOUNDARY
- 15%-24% MODERATE SLOPES
- EXISTING WELLS
- PROPOSED BIORETENTION FACILITY
- 'B' SOIL GROUP
- 2 ACRE RESIDENTIAL LOTS
- OPEN SPACE/ GRASS
- PAVEMENT (100% IMPERVIOUS)



**SOILS LEGEND**

| SYMBOL | NAME / DESCRIPTION                     | GROUP | 'K' FACTOR |
|--------|--|-------|------------|
| GbA    | GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES  | B     | 0.20       |
| GbB    | GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES  | B     | 0.20       |
| GbC    | GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES | B     | 0.20       |
| MdD    | MANOR LOAM, 15 TO 26 PERCENT SLOPES    | B     | 0.24       |

NOTES:  
 1) SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY  
 2) HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR 'K' GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*W. J. ...* 8.13.14  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chad ...* 8.12.14  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*...* 7.3.14  
 CHIEF, BUREAU OF HIGHWAYS DATE

**OWNER**  
 GILBERT BLEVINS  
 11986 HALL SHOP ROAD  
 CLARKSVILLE, MD 21029  
 C/O ROBERT CORBETT  
 410.997.8800

**CONTRACT PURCHASER DEVELOPER**  
 WILLIAMSBURG GROUP  
 C/O ROBERT CORBETT  
 5485 HARPERS FARM ROAD, SUITE 200  
 COLUMBIA, MD 21044  
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**FINAL STORM DRAIN DRAINAGE AREA MAP**  
**BLEVINS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

TAX MAP 35 GRID 19 6TH ELECTION DISTRICT PARCEL 310 HOWARD COUNTY, MARYLAND

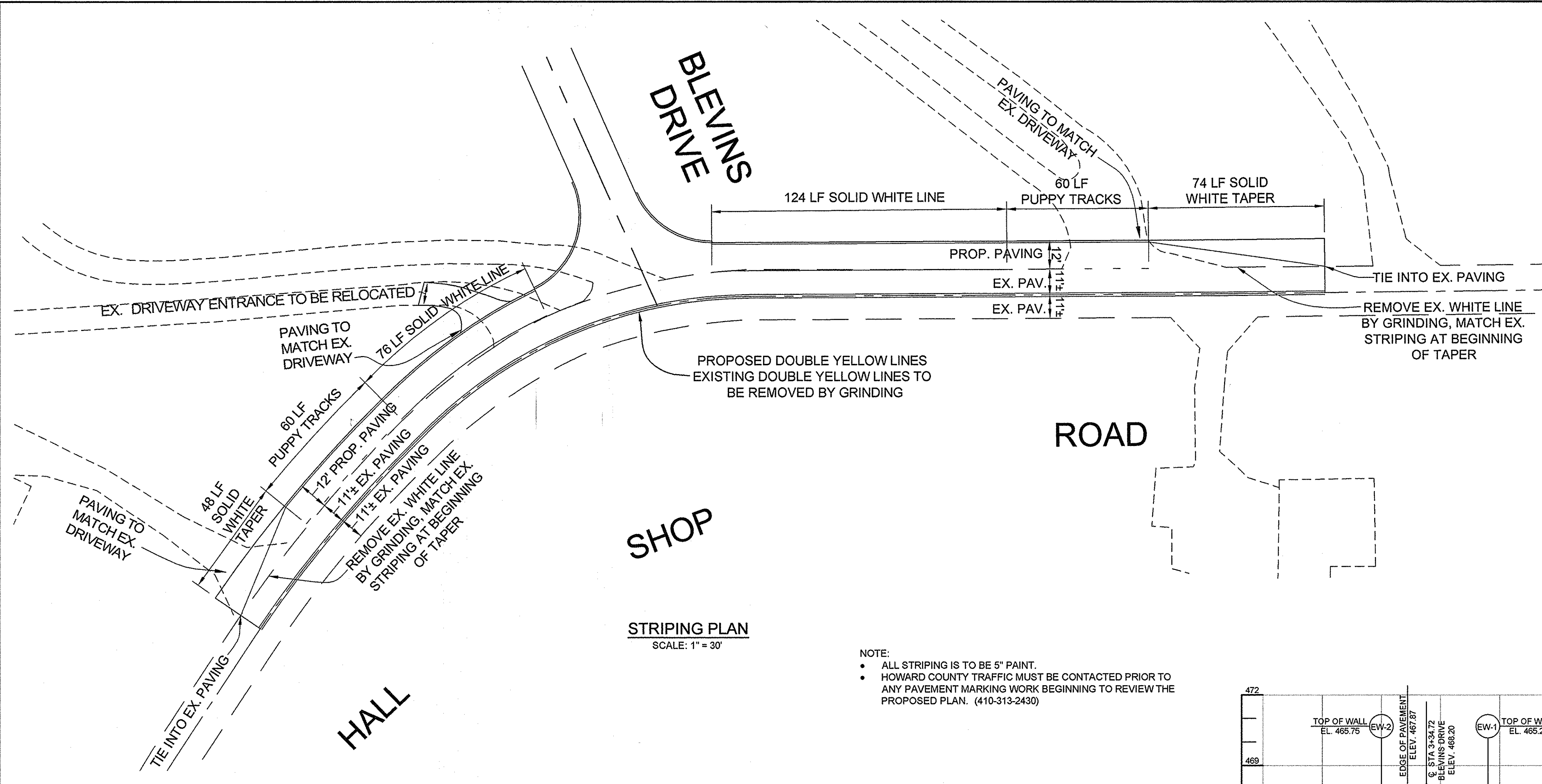
**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
 Ellicott City, Maryland 21043  
 Phone: 443.325.7682 Fax: 443.325.7685  
 Email: info@salland.com

DESIGN BY: PS  
 DRAWN BY: BK  
 CHECKED BY: PS  
 SCALE: 1" = 50'  
 DATE: JUNE 13, 2014  
 PROJECT #: 11-054  
 SHEET #: 6 of 12

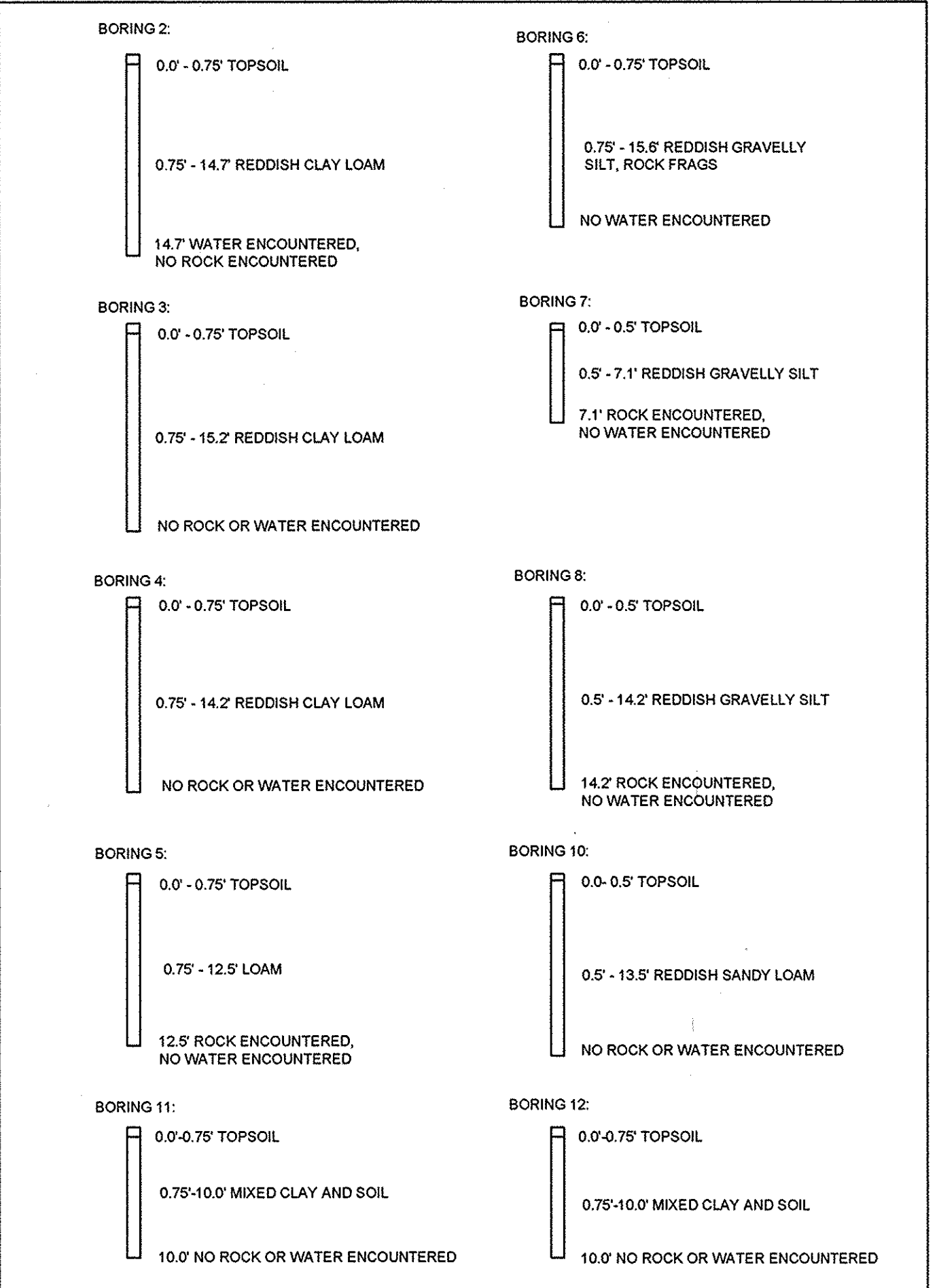
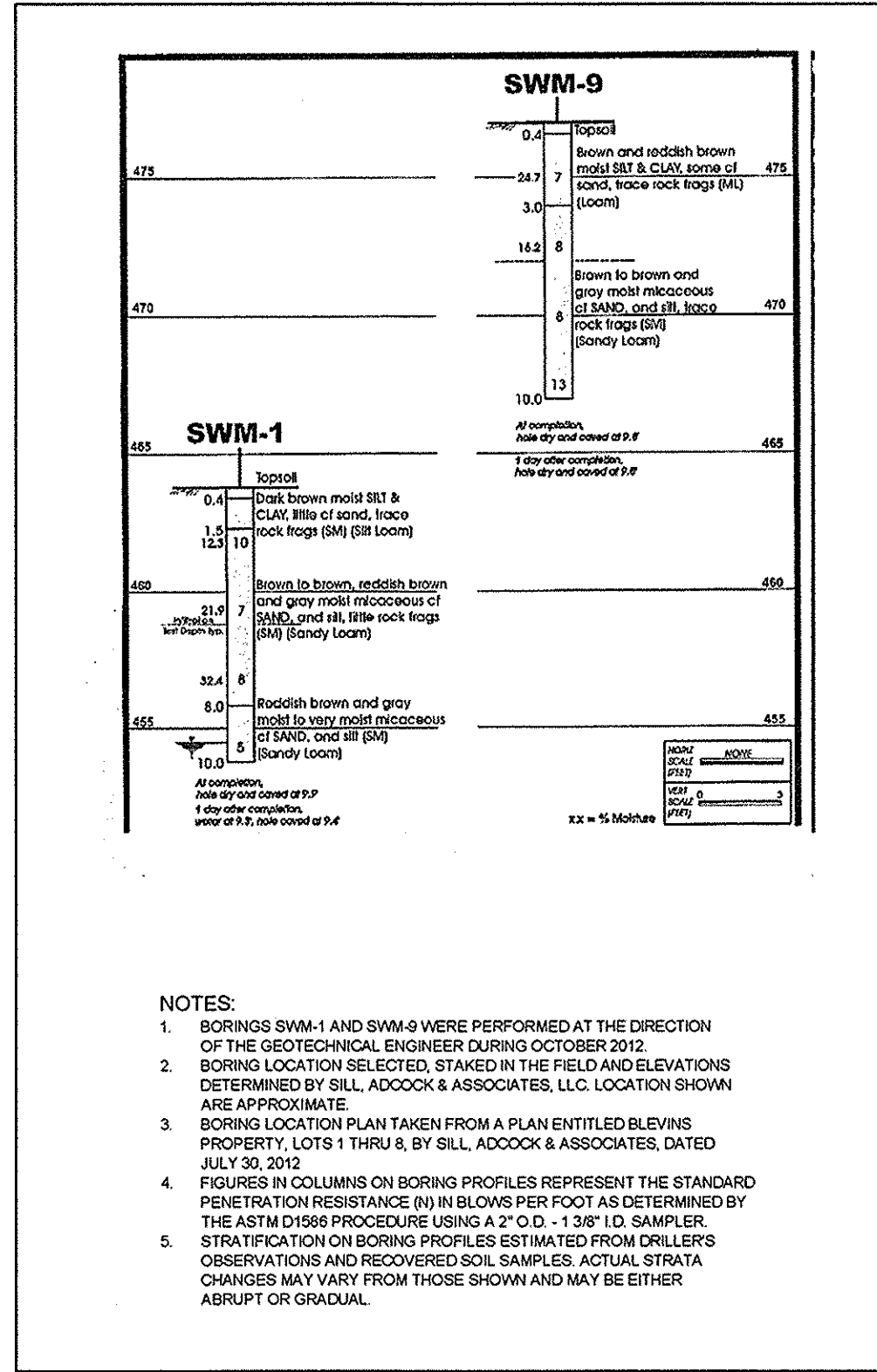
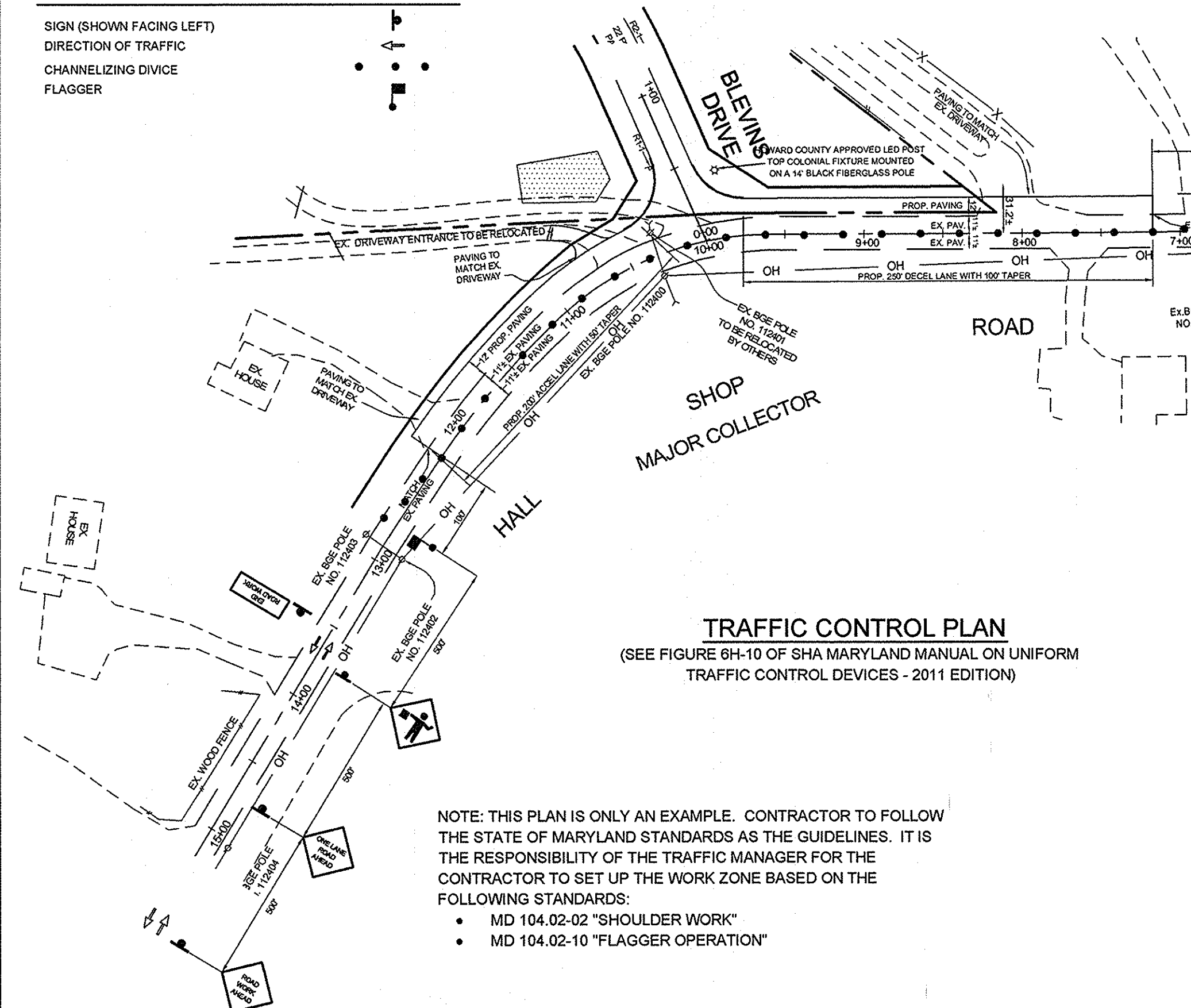
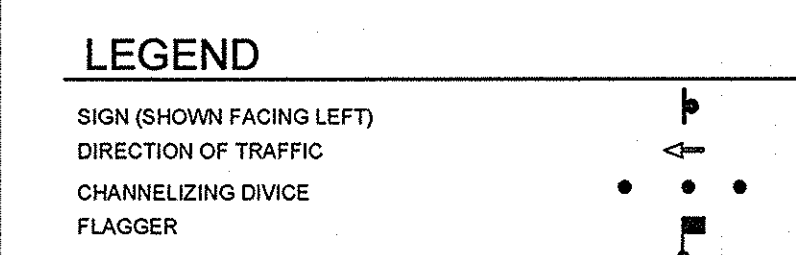
PROFESSIONAL ENGINEER  
 STATE OF MARYLAND  
 No. 32025  
 EXPIRES 12/31/2015

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2015

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
|     |             |      |
|     |             |      |
|     |             |      |



**STRIPING PLAN**  
 SCALE: 1" = 30'



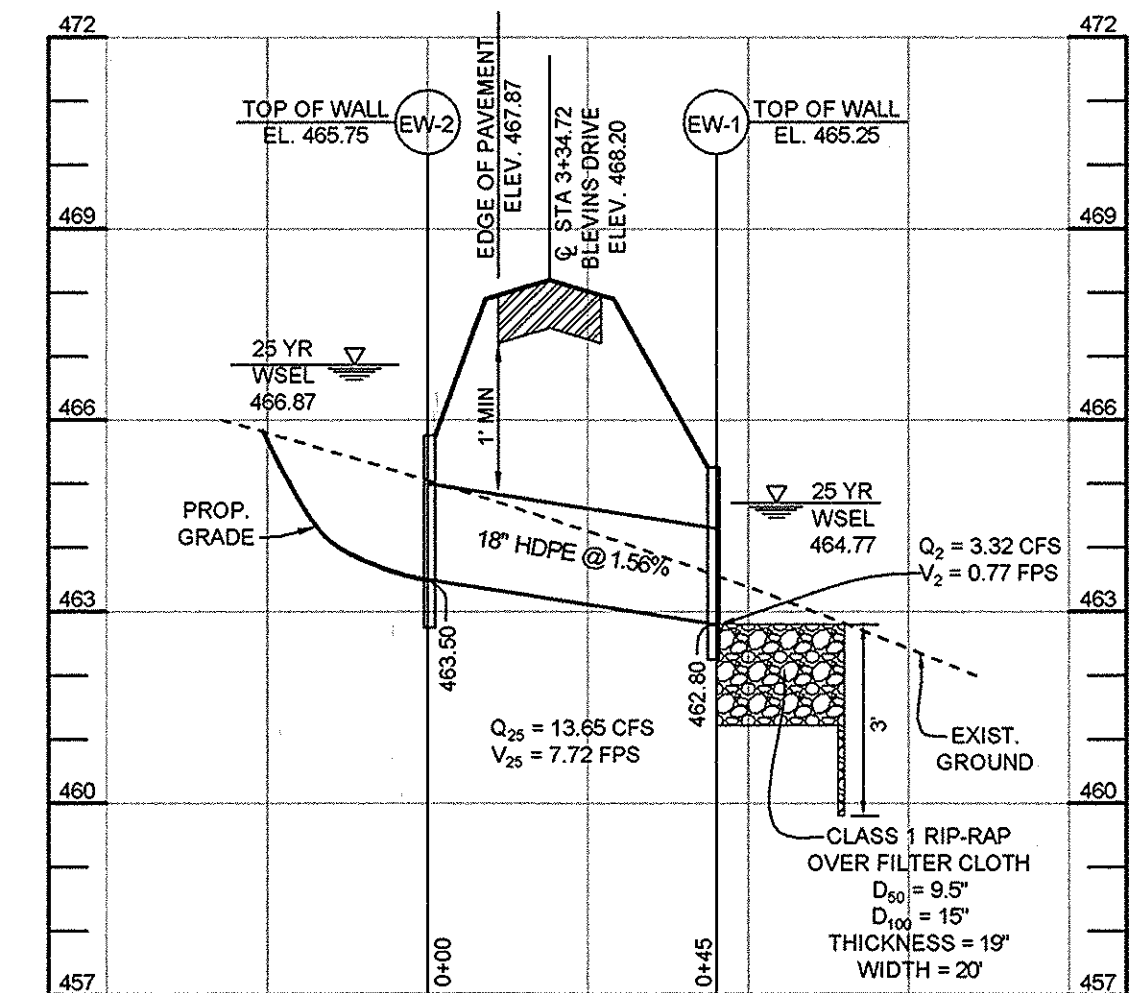
ON NOVEMBER 5, 2012, SOIL TEST BORINGS WERE PERFORMED AT SEVEN LOCATIONS (BORINGS 2 THRU 8) AS SHOWN ON THE PLANS. ON DECEMBER 13, 2012, BORING 10 WAS PERFORMED, AND ON FEBRUARY 19, 2013 BORING 11 AND 12 WERE PERFORMED. TESTS 7 THRU 8 AND 10 THRU 12 WERE PERFORMED BY SILL, ADCOCK & ASSOCIATES, LLC, UTILIZING A BACKHOE. TEST PITTS WERE DUG TO A DEPTHS RANGING FROM SEVEN FEET TO FIFTEEN FEET, DEPENDING ON THE SOIL CONDITION. THE RESULTS FOR EACH TEST FOLLOWS WITH AN ESTIMATED INFILTRATION RATE BASED ON THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) SOIL TEXTURAL CLASSIFICATION (THESE RESULTS ARE BASED ON FIELD OBSERVATIONS).

WATER OR ROCK WAS ENCOUNTERED AT BORINGS 2, 5, 7 AND 8. AFTER REVIEWING THE PROPOSED GRADING, THE BOTTOM OF THESE FACILITIES WILL BE ABOVE THE WATER OR ROCK.

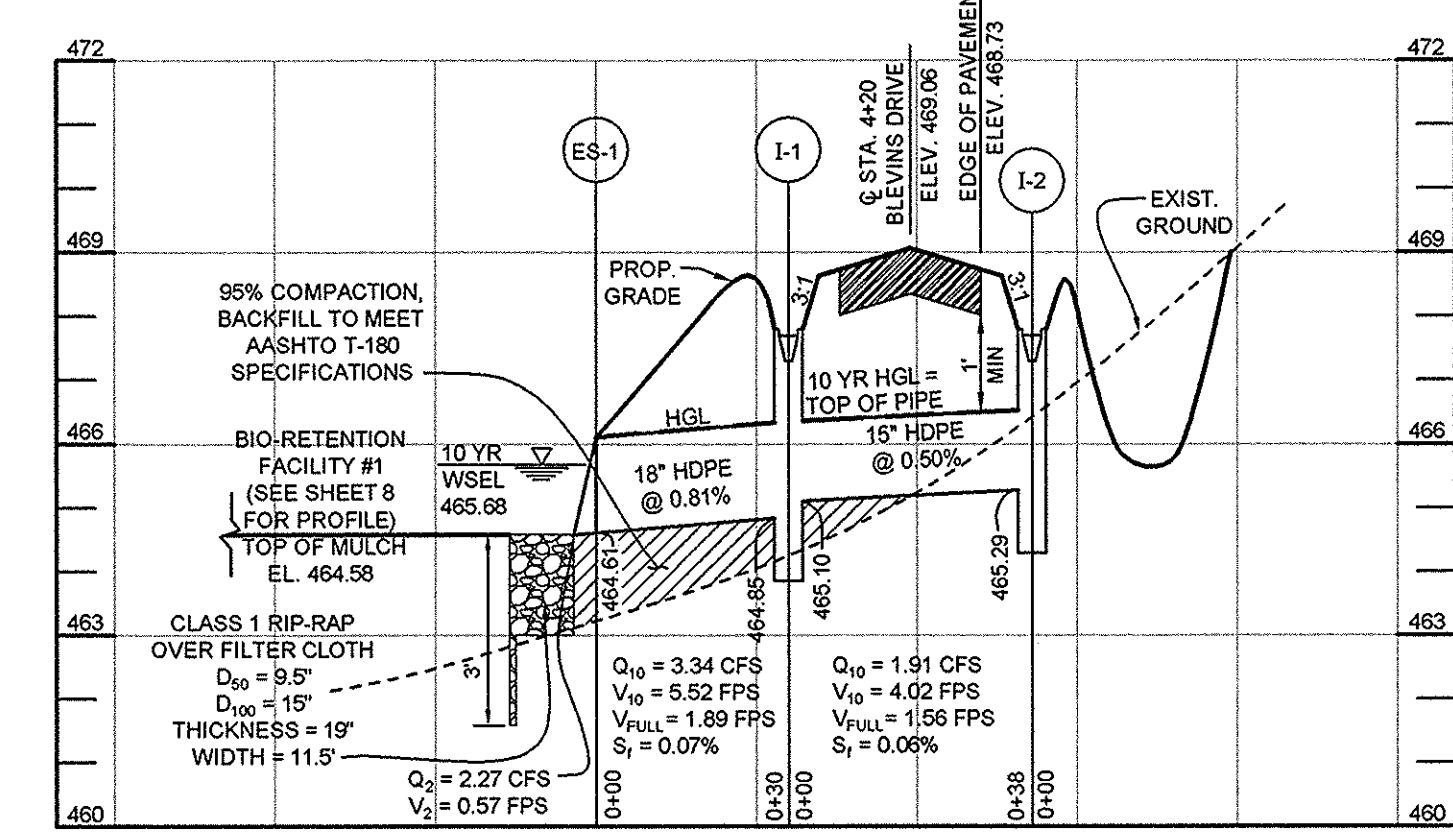
FACILITY BOTTOMS WILL BE LOCATED WITHIN VARIOUS SOIL MEDIA WITH GENERAL INFILTRATION RATES RANGING FROM 0.27 INCHES/HOUR TO 1.02 INCHES/HOUR. ALL MICRO-BIORETENTION FACILITIES PROPOSED AT THESE BORING LOCATIONS WILL UTILIZE UNDERDRAINS AND THEREFORE DO NOT NEED TO MEET THE MINIMUM INFILTRATION RATE OF 1.02 INCHES/HOUR.

OUR CONCLUSION FROM THESE SOIL TEST BORINGS IS THAT ALL AREAS SHOWN ON THE ATTACHED PLANS ARE SUITABLE FOR MICRO-BIORETENTION FACILITIES AS LONG AS UNDERDRAINS ARE PROVIDED.

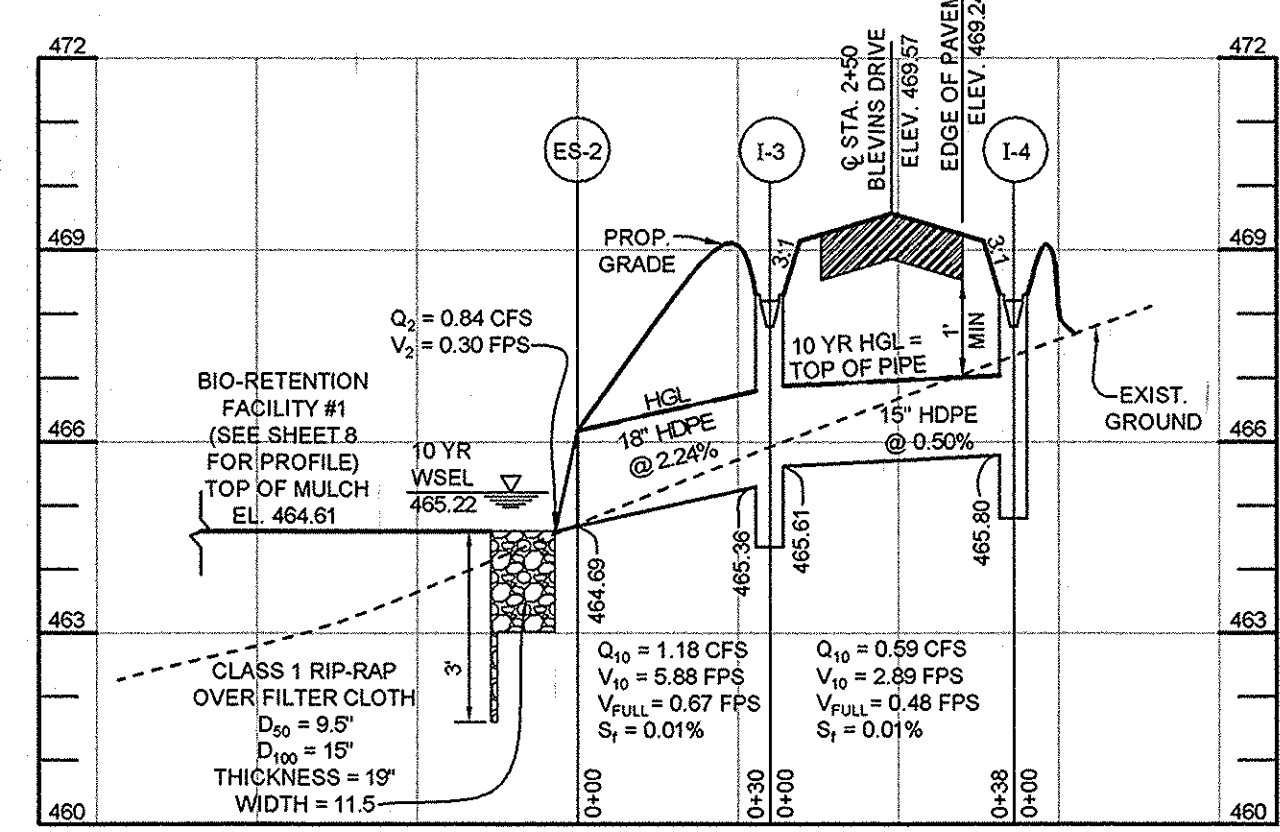
**BORING LOGS**  
 N.T.S.



**CULVERT PROFILE EW-2 TO EW-1**  
 HORIZONTAL SCALE: 1" = 30'  
 VERTICAL SCALE: 1" = 3'



**STORMDRAIN PROFILE I-2 TO ES-1**  
 HORIZONTAL SCALE: 1" = 30'  
 VERTICAL SCALE: 1" = 3'



**STORMDRAIN PROFILE I-4 TO ES-2**  
 HORIZONTAL SCALE: 1" = 30'  
 VERTICAL SCALE: 1" = 3'

**STRUCTURE SCHEDULE**

| NO.  | TYPE & OWNERSHIP            | LOCATION                        | TOP ELEV. | INV. IN | INV. OUT | REMARKS              |
|------|-----------------------------|---------------------------------|-----------|---------|----------|----------------------|
| ES-1 | 18" HDPE END SECTION PUBLIC | N 553,508.2768 E 1,332,226.8446 | -         | 464.61  | -        | HANCOR OR EQUIVALENT |
| ES-2 | 18" HDPE END SECTION PUBLIC | @ STATION 2+75.78, 27.94' R     | -         | 464.69  | -        | HANCOR OR EQUIVALENT |
| EW-1 | TYPE 'C' END WALL PUBLIC    | @ STATION 3+34.72, 26.00' R     | 465.25    | 462.80  | 462.80   | HO CO DTL D-5.21     |
| EW-2 | TYPE 'C' END WALL PUBLIC    | @ STATION 3+34.72, 19.00' L     | 465.75    | 463.50  | 463.50   | HO CO DTL D-5.21     |
| I-1  | TYPE 'K' INLET PUBLIC       | @ STATION 4+20.00, 19.00' R     | 467.29    | 465.10  | 464.85   | HO CO DTL D-4.12     |
| I-2  | TYPE 'K' INLET PUBLIC       | @ STATION 4+20.00, 19.00' L     | 467.29    | -       | 465.29   | HO CO DTL D-4.12     |
| I-3  | TYPE 'K' INLET PUBLIC       | @ STATION 2+50.00, 19.00' R     | 476.80    | 465.61  | 465.36   | HO CO DTL D-4.12     |
| I-4  | TYPE 'K' INLET PUBLIC       | @ STATION 2+50.00, 19.00' L     | 476.80    | -       | 465.80   | HO CO DTL D-4.12     |

**NOTES:**  
 1. \*\* TOP ELEVATIONS FOR 'K' INLETS ARE TO THE THROAT OF THE INLET.  
 2. COORDINATES FOR END SECTION ARE TO THE JUNCTION OF THE END SECTION WITH THE PIPING.  
 3. COORDINATES FOR TYPE 'C' END WALLS ARE TO INVERT OF PIPE AT THE FACE OF WALL.

**OWNER**  
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 WILLIAMSBURG GROUP  
 C/O ROBERT CORBETT  
 5485 HARPERS FARM ROAD, SUITE 200  
 COLUMBIA, MD 21044  
 410.957.8800

**STORM DRAIN PROFILES, CHARTS, BORING LOGS AND TRAFFIC DETAILS**  
**BLEVINGS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

TAX MAP 35 GRID 19  
 5TH ELECTION DISTRICT  
 PARCEL 310  
 HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 K. J. S. [Signature]  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 8-13-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 H. J. S. [Signature]  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 7-14-14

**PIPE SCHEDULE**

| SIZE       | TYPE | LENGTH |
|------------|------|--------|
| 15" PUBLIC | HDPE | 76 LF  |
| 18" PUBLIC | HDPE | 105 LF |

**RIP RAP OUTLET PROTECTION CHART**

| OUTLET LOCATION | LENGTH (L) | WIDTH (W) | PIPE DIAMETER (d) | DISCHARGE         | TYPE |
|-----------------|------------|-----------|-------------------|-------------------|------|
| ES-1            | 10 FT      | 11.5 FT   | 18 INCH           | 10 YR - 3.34 CFS  | III  |
| ES-2            | 10 FT      | 11.5 FT   | 18 INCH           | 10 YR - 0.88 CFS  | III  |
| EW-1            | 20 FT      | 9.5 FT    | 18 INCH           | 25 YR - 13.85 CFS | III  |

NOTE: FOR DETAIL SEE SHEET 5.

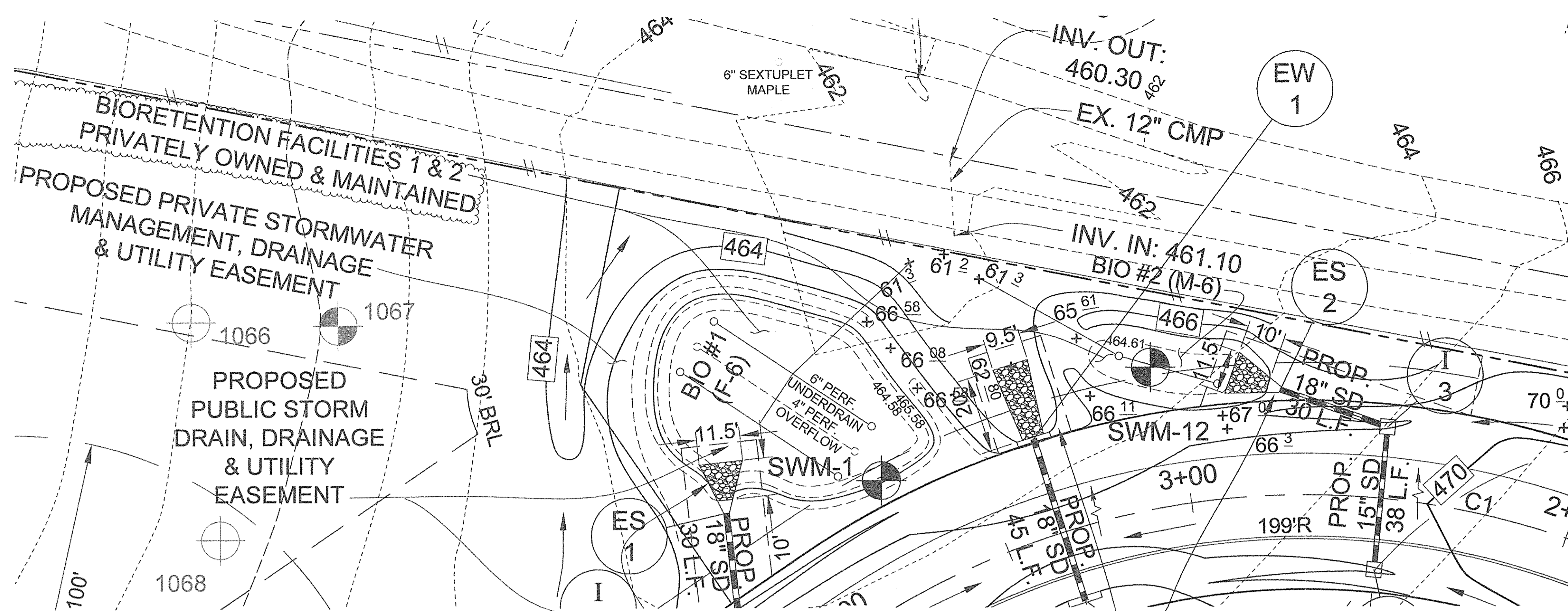
**REVISIONS**

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
|     |             |      |
|     |             |      |

**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
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 Phone: 443.325.7682 Fax: 443.325.7685  
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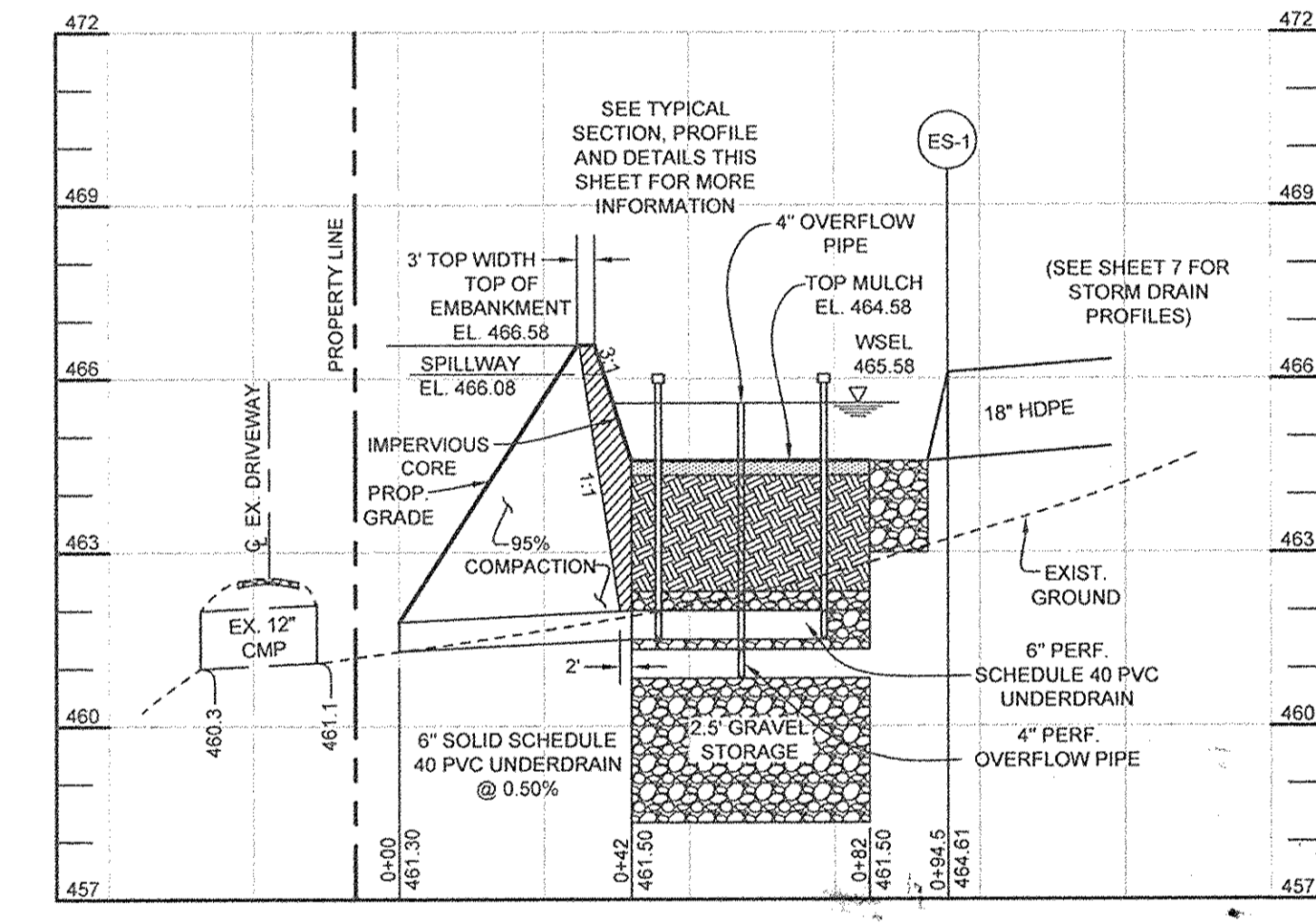
DESIGN BY: PS  
 DRAWN BY: BK  
 CHECKED BY: PS  
 SCALE: AS SHOWN  
 DATE: JUNE 13, 2014  
 PROJECT #: 11-054  
 SHEET #: 7 of 12

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2015

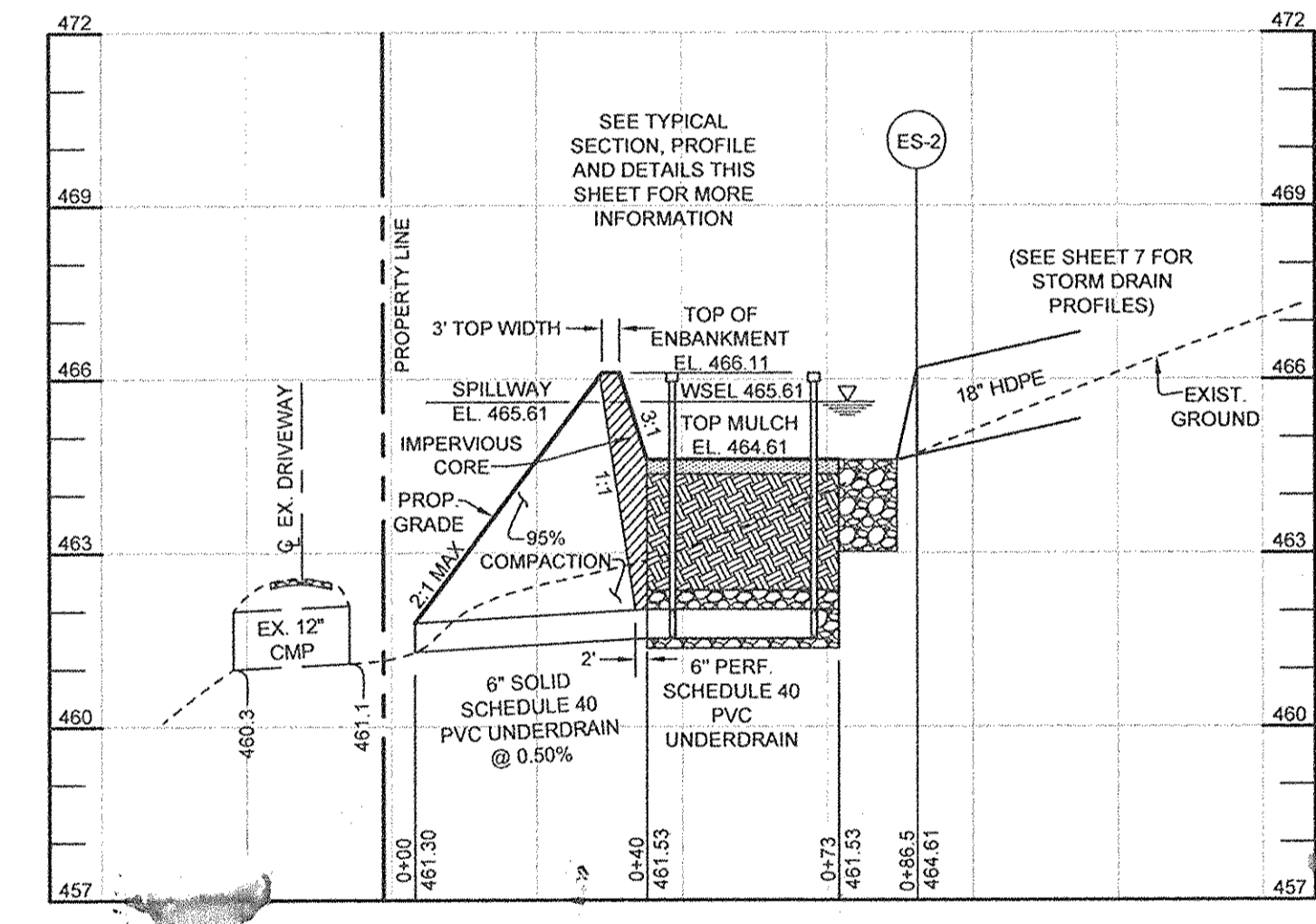


PLAN VIEW - BIORETENTION FACILITY #1  
SCALE: 1"=20'

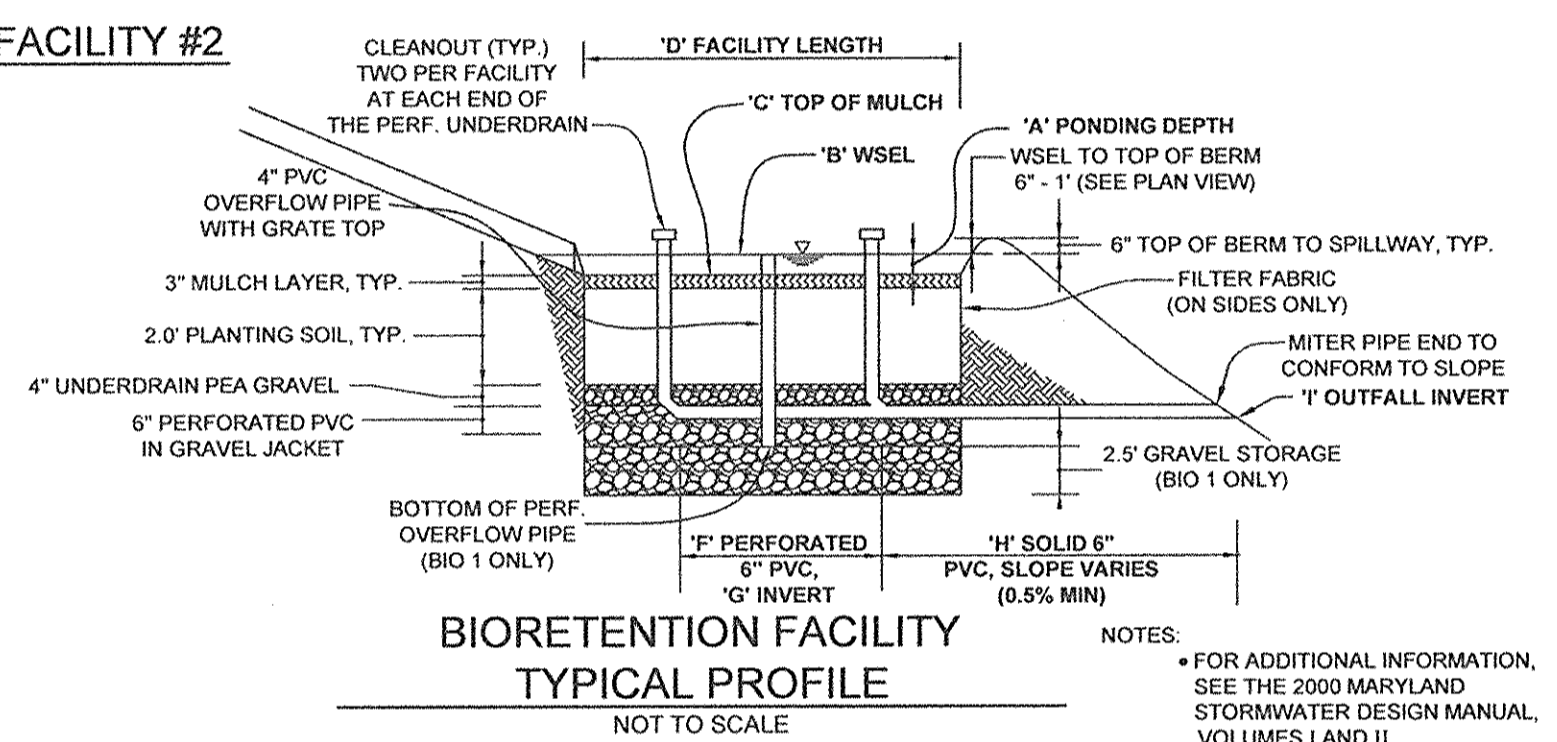
PLAN VIEW - BIORETENTION FACILITY #2  
SCALE: 1"=20'



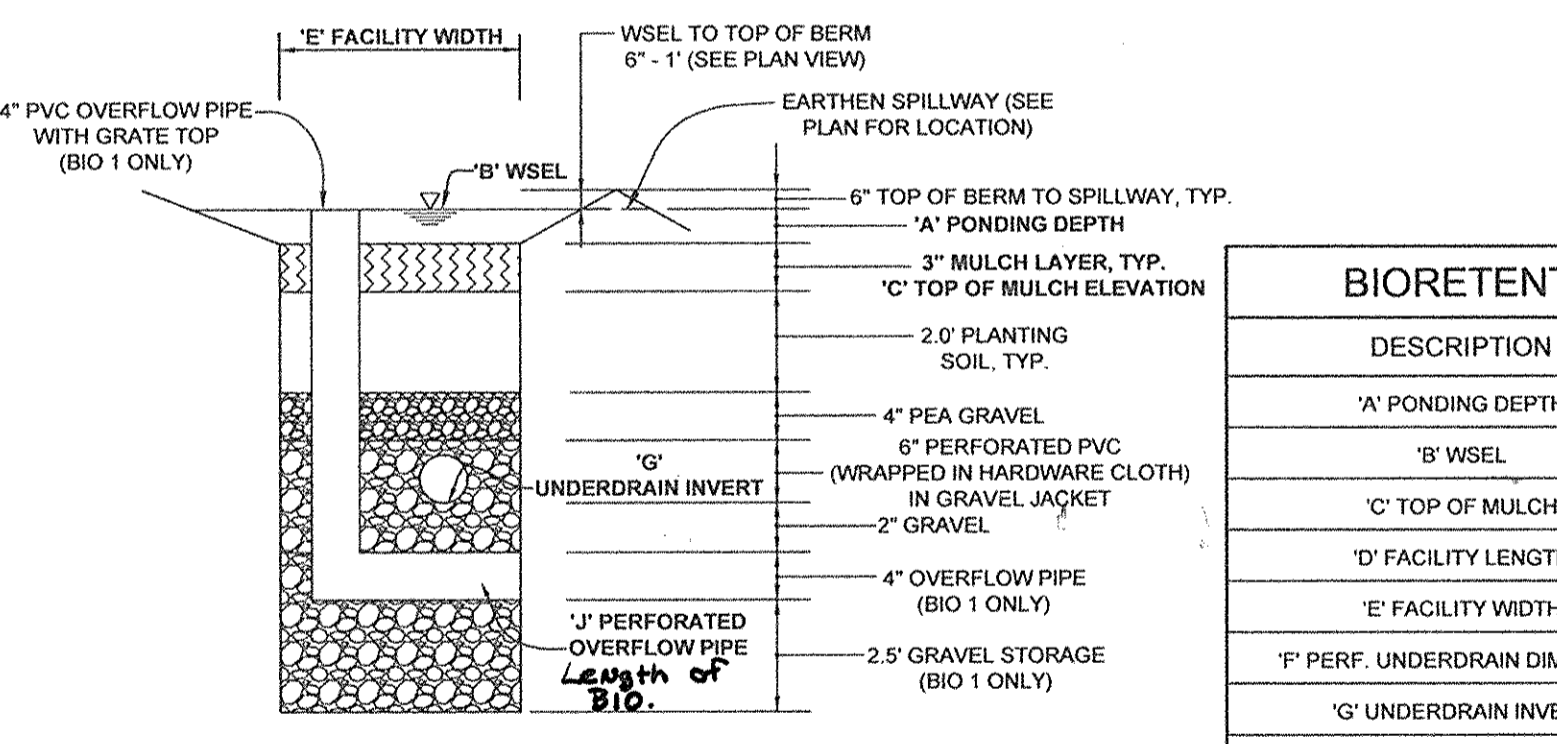
BIORETENTION FACILITY #1 (F-6) PROFILE  
HORIZONTAL SCALE: 1" = 30'  
VERTICAL SCALE: 1" = 3'



BIORETENTION FACILITY #2 (M-6) PROFILE  
HORIZONTAL SCALE: 1" = 30'  
VERTICAL SCALE: 1" = 3'



BIORETENTION FACILITY  
TYPICAL PROFILE  
NOT TO SCALE



BIORETENTION FACILITY  
TYPICAL SECTION  
NOT TO SCALE

**B.4.C SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDENS, 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 DUMPED WITHIN 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 BERMISSA 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**

- SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION)
- ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
- CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
- PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD 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 TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

**3. COMPACTION**  
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION 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 A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE 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 A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTTITILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTTITILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTTITILL 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.

**NOTES CONTINUED:**

**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 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.

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS 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. 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. BRACES 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 SHOULD 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 DEFEATS, OR AT A MINIMUM, IMPEDES 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 F 758, TYPE PS28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G. PVC OR HDPE).
- PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 1/4" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4X4) GALVANIZED HARDWARE CLOTH.
- GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PREFERRED) 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 PERFORMANCE OF THE FILTER.
- A 4" LAYER OF PEA GRAVEL (1/4" TO 1/2" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 2".

THE 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.

| MATERIALS SPECIFICATIONS FOR BIORETENTION FACILITIES |   |   |   |
|--|---|---|---|
| MATERIAL   | SPECIFICATION   | SIZE                                      | NOTES   |
| PLANTINGS  | SEE PLANT LIST THIS SHEET   | N/A                                       | PLANTINGS ARE SITE-SPECIFIC, SEE PLANT LIST THIS SHEET  |
| PLANTING SOIL (2'-4" DEEP)                           | LOAMY SAND (60% - 65%) & COMPOST (35%-40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%) | N/A                                       | USDA SOIL TYPES LOAM OR SANDY LOAM, CLAY CONTENT < 5%   |
| ORGANIC CONTENT                                      | MIN. 10% BY DRY WEIGHT (ASTM-D-2974)  |   |   |
| MULCH  | SHREDDED HARDWOOD   |   | AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS   |
| PEA GRAVEL DIAPHRAGM                                 | PEA GRAVEL: ASTM-D-448  | PEA GRAVEL: NO. 8 OR NO. 9 (1/8" TO 3/8") |   |
| CURTAIN DRAIN (IF REQUIRED)                          | ORNAMENTAL STONE, WASHED COBBLES  | STONE: 2" TO 5"                           |   |
| GEOTEXTILE   | N/A   | N/A                                       | PE TYPE 1 NONWOVEN  |
| UNDERDRAIN GRAVEL                                    | AASHTO M-43   | NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")  |   |
| UNDERDRAIN PIPING                                    | F 758, TYPE PS 28 OR AASHTO M-278   | 4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35   | SLOTTED OR PERFORATED PIPE, 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW, MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH. |

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**

a. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIORETENTION FACILITIES (M-6 & F-6)**

a. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASHERING OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.

b. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

c. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

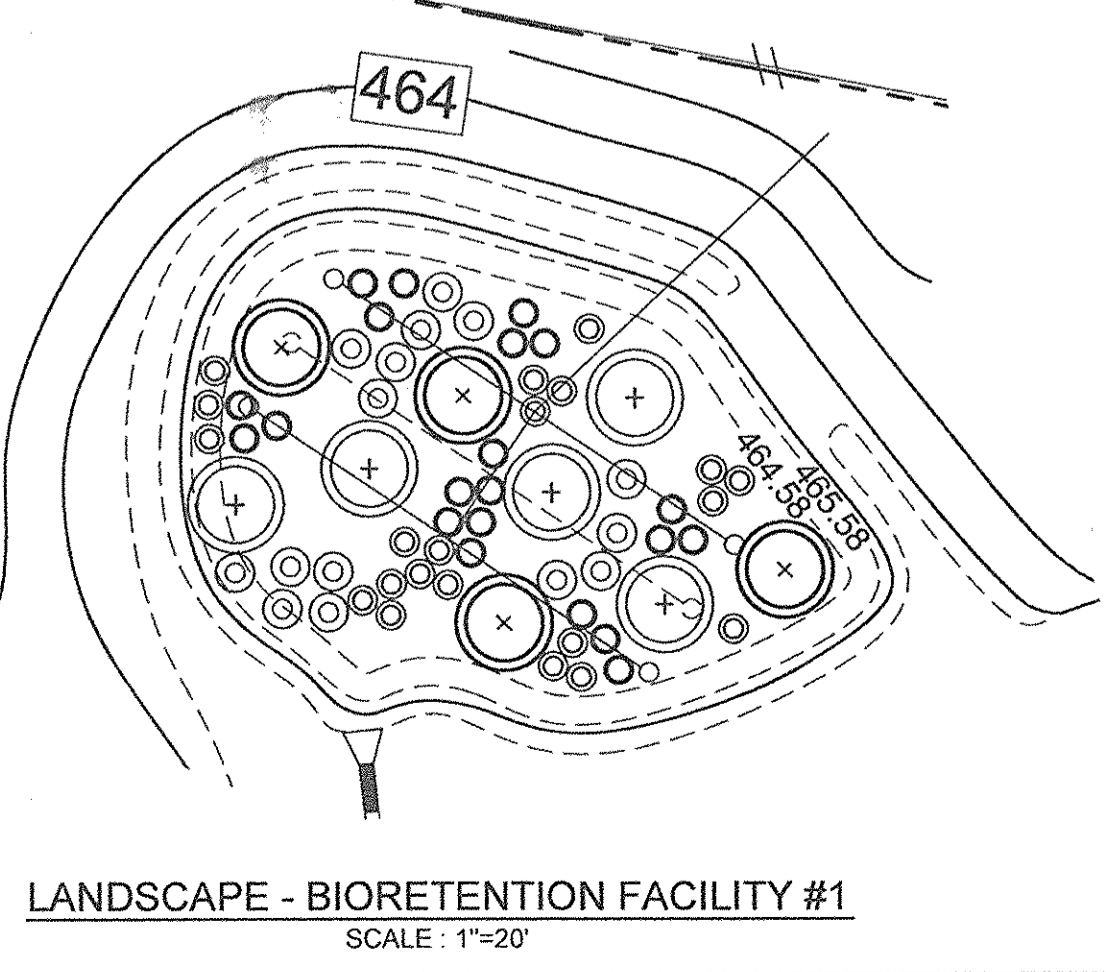
d. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

| BIORETENTION ELEVATIONS AND DIMENSIONS |         |        |
|--|---------|--------|
| DESCRIPTION                            | BIO 1   | BIO 2  |
| 'A' PONDING DEPTH                      | 1.0'    | 1.0'   |
| 'B' WSEL                               | 465.58  | 465.61 |
| 'C' TOP OF MULCH                       | 464.58  | 464.61 |
| 'D' FACILITY LENGTH                    | 69.0'   | 37.0'  |
| 'E' FACILITY WIDTH                     | 40.0'   | 11.0'  |
| 'F' PERF. UNDERDRAIN DIMENSION         | 2 @ 50' | 27.0'  |
| 'G' UNDERDRAIN INVERT                  | 461.50  | 461.53 |
| 'H' SOLID UNDERDRAIN DIMENSION         | 42.0'   | 37.0'  |
| 'I' OUTFALL INVERT                     | 461.30  | 461.30 |
| 'J' OVERFLOW PIPE                      | 461.00  | N/A    |

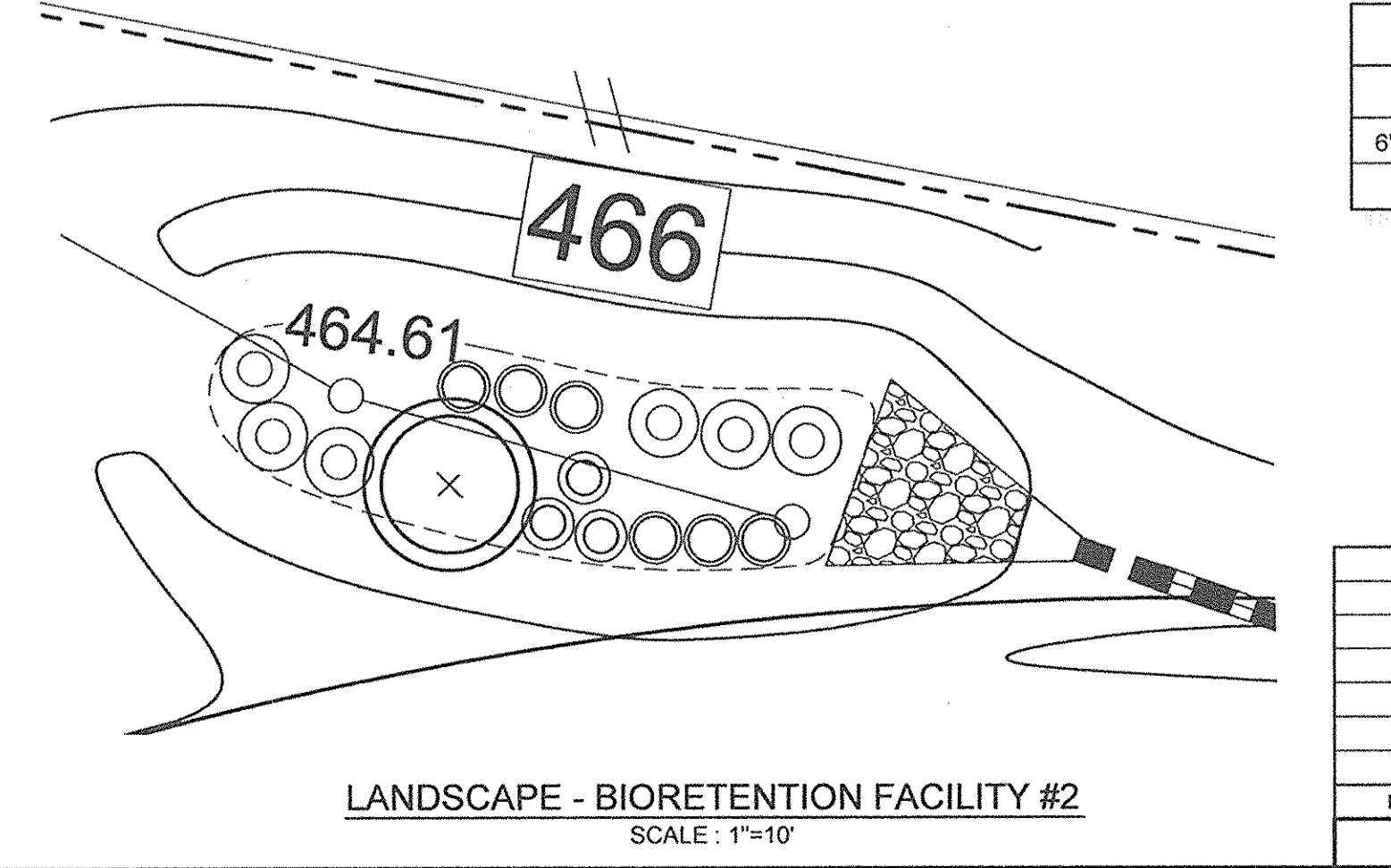
| PIPE SCHEDULE |      |        |
|---------------|------|--------|
| SIZE          | TYPE | LENGTH |
| 6" PERFORATED | PVC  | 127 LF |
| 6" SOLID      | PVC  | 79 LF  |

| BIORETENTION PLANT LIST |                           |                 |                          |               |                 |                |                |
|-------------------------|---------------------------|-----------------|--------------------------|---------------|-----------------|----------------|----------------|
| LEGEND                  | SHRUBS                    |                 |                          |               |                 |                |                |
| KEY                     | BOTANICAL NAME            | COMMON NAME     | SPACING                  | SIZE          | REMARKS         | QUANTITY BIO 1 | QUANTITY BIO 2 |
| X                       | CAM CORNUS AMOMUM         | SILKY DOGWOOD   | AS SHOWN (MIN. 10' O.C.) | 18"-24" HT.   | CONT.           | 4              | 1              |
| +                       | VDE VIBURNUM DENTATUM     | ARROWWOOD       | AS SHOWN (MIN. 10' O.C.) | 18"-24" HT.   | CONT.           | 5              | 0              |
| HERBACEOUS SPECIES      |                           |                 |                          |               |                 |                |                |
| ○                       | EFM EUPATORIUM FISTULOSUM | JOE-PYE WEED    | AS SHOWN (MIN. 4' O.C.)  | 1 QT./12" HT. | CONT. (3' O.C.) | 21             | 6              |
| ○                       | MDI MONARDA DIDYMA        | BEEBALM         | AS SHOWN (MIN. 3' O.C.)  | 1 QT.         | CONT.           | 21             | 3              |
| ○                       | RLA RUDEBECKIA LACINIATA  | TALL CONEFLOWER | AS SHOWN (MIN. 3' O.C.)  | 1 QT.         | CONT.           | 21             | 6              |

NOTE: PLANT MATERIAL MUST COVER 50% OF THE MULCH AREA AT MATURE GROWTH.  
BIO 1 - BIORETENTION AREA = 2,181 S.F. OR 0.05 AC. PROVIDED: 9 SHRUBS AND 63 HERBACEOUS SPECIES  
BIO 2 - BIORETENTION AREA = 387 S.F. OR 0.009 AC. PROVIDED: 1 SHRUB AND 15 HERBACEOUS SPECIES



LANDSCAPE - BIORETENTION FACILITY #1  
SCALE: 1"=20'



LANDSCAPE - BIORETENTION FACILITY #2  
SCALE: 1"=10'

| THE PURPOSE OF THIS REVISED FINAL ROAD CONSTRUCTION PLAN IS TO SHOW THE ENLARGEMENT OF BIORETENTION FACILITY #1. |             |      |
|--|-------------|------|
| NO.  | DESCRIPTION | DATE |
|  |             |      |
|  |             |      |
|  |             |      |
|  |             |      |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 6-29-16  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 6/27/2016  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE

**CONTRACT PURCHASER DEVELOPER**

**OWNER**  
 GILBERT BLEVINS  
 11986 HALL SHOP ROAD  
 CLARKSVILLE, MD 21029  
 C/O ROBERT CORBETT  
 410.997.8800

**DEVELOPER**  
 WILLIAMSBURG GROUP  
 C/O ROBERT CORBETT  
 5485 HARRERS FARM ROAD, SUITE 200  
 COLUMBIA, MD 21044  
 410.997.8800

**REVISED BIORETENTION PLAN, PROFILES & DETAILS**

**BLEVINS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

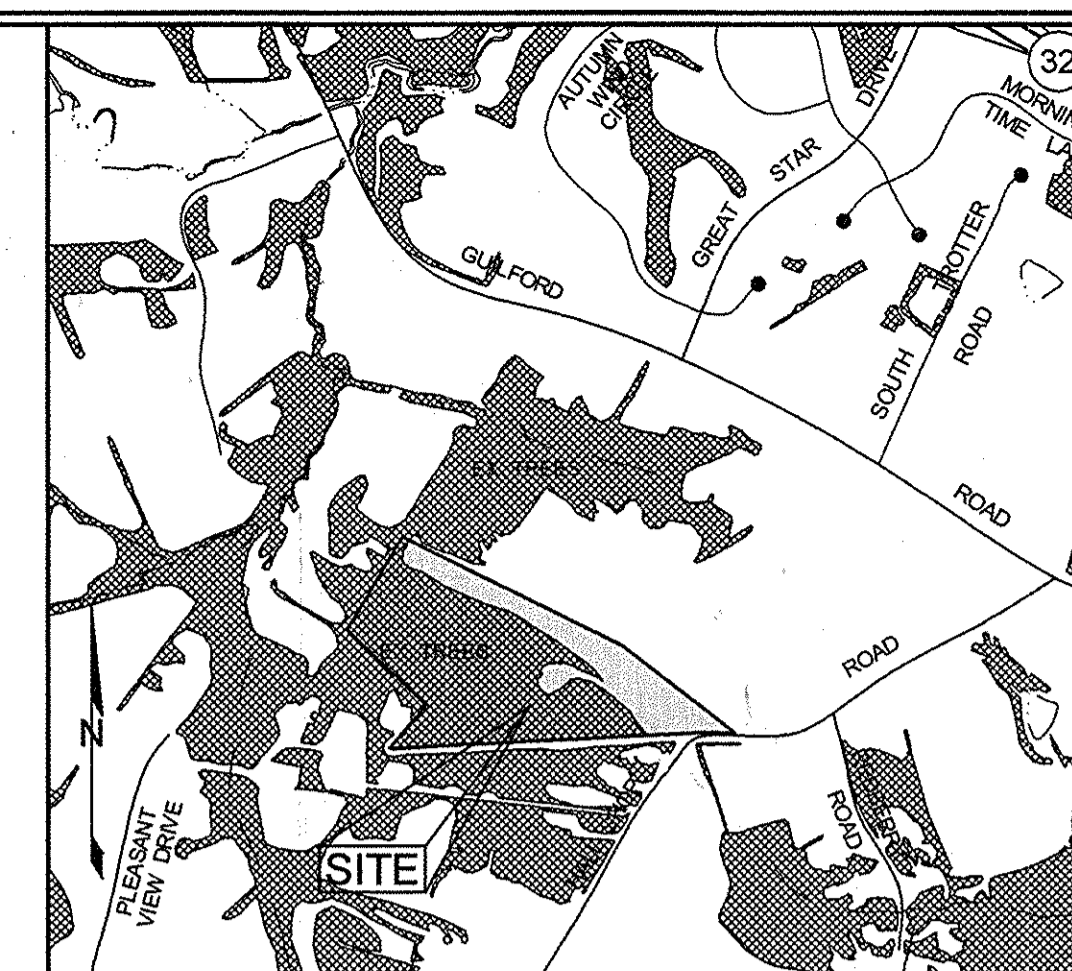
TAX MAP 35 GR19 5TH ELECTION DISTRICT PARCEL 310 HOWARD COUNTY, MARYLAND

DESIGN BY: PS  
 DRAWN BY: AEA  
 CHECKED BY: PS  
 SCALE: AS SHOWN  
 DATE: JUNE 6, 2016  
 PROJECT #: 11-054  
 SHEET #: 8 OF 12

**SILL ENGINEERING GROUP, LLC**  
 11130 Dovedale Court, Suite 200  
 Marriottsville, Maryland 21104  
 Phone: 443.325.5076  
 Fax: 410.696.2022  
 Email: info@sillengineering.com  
 Civil Engineering for Land Development

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3005, EXPIRATION DATE: JUNE 29, 2017





HOWARD COUNTY, MARYLAND ADC MAP 5052 GRID B1  
VICINITY MAP  
SCALE: 1"=100'

**LEGEND**

|   |                       |
|---|-----------------------|
| EXISTING CONTOUR                            | --- 382               |
| PROPOSED CONTOUR                            | --- 382               |
| EXISTING SPOT ELEVATION                     | + 82.53               |
| PROPOSED SPOT ELEVATION                     | + 82.53               |
| DIRECTION OF FLOW                           | →                     |
| EXISTING SPECIMEN TREE                      | ST#6                  |
| EXISTING TREELINE                           | ~~~~~                 |
| PROPOSED TREELINE                           | ~~~~~                 |
| EXISTING FOREST STAND                       | .....                 |
| PROPOSED LANDSCAPING                        | .....                 |
| STABILIZED CONSTRUCTION ENTRANCE            | --- SF --- SF ---     |
| SILT FENCE                                  | --- SF --- SF ---     |
| SUPER SILT FENCE                            | --- SSF --- SSF ---   |
| PROPOSED CLEAN WATER EARTH DIKE             | --- C.W. E.D. A-2 --- |
| LIMIT OF DISTURBANCE                        | --- LOD ---           |
| TREE PROTECTION FENCE                       | --- TP --- TP ---     |
| FOREST CONSERVATION SIGN                    | --- FCS ---           |
| SOIL BOUNDARY                               | --- BIO 2 ---         |
| PROPOSED BIORETENTION FACILITY              | --- BIO 2 ---         |
| PERCOLATION TEST HOLE, PASSED               | --- 1021 ---          |
| PERCOLATION TEST HOLE, FAILED               | --- 1001 ---          |
| PROPOSED SEPTIC EASEMENT                    | --- SEPTIC ---        |
| EXISTING WELL LOCATION                      | --- EX. WELL TAG# --- |
| 15%-24.9% MODERATE SLOPES                   | --- MODERATE ---      |
| FOREST CONSERVATION EASEMENT                | --- FCE ---           |
| CLEARING FOR FUTURE HOUSE CONSTRUCTION ONLY | --- CLEARING ---      |

**FOREST PROTECTION GENERAL NOTES**

- ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING AND SIGNAGE AS INDICATED ON THIS PLAN. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY DEMOLITION, LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
- THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES.
- ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
- ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
- INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DEWATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
- THE GENERAL CONTRACTOR SHALL PROVIDE PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
- REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
- THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
- ROOT PRUNING SHALL BE USED TO THE LIMIT OF DISTURBANCE. LIMIT OF GRADING, OR TREE PROTECTIVE FENCING WITHIN AND ADJACENT TO ALL SPECIMEN TREES AND EASEMENT AREAS TO BE PRESERVED, AS NECESSARY. ALL POSSIBLE PRECAUTIONS SHALL BE TAKEN TO NOT DAMAGE ROOTS ADJACENT TO DEMOLITION AREAS WHEN BUILDING WALLS OR FOUNDATIONS ARE BEING REMOVED, AND ESPECIALLY WITH PAVEMENT REMOVAL, WHERE ROOTS LIKELY EXIST WITHIN SUBBASE GRAVEL.

**FOREST RETENTION AREA**  
MACHINERY, DUMPING, OR STORAGE OF ANY MATERIALS IS PROHIBITED  
VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

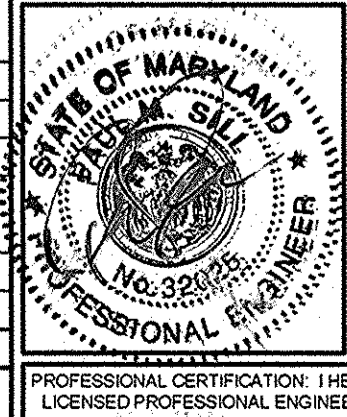
**FOREST CONSERVATION SIGN DETAIL**  
NOT TO SCALE

**OWNER**  
GILBERT BLEVINS  
11986 HALL SHOP ROAD  
CLARKSVILLE, MD 21029  
C/O ROBERT CORBETT  
410.997.8800

**DEVELOPER**  
WILLIAMSBURG GROUP  
C/O ROBERT CORBETT  
5485 HARPERS FARM ROAD, SUITE 200  
COLUMBIA, MD 21044  
410.997.8800

**FINAL FOREST CONSERVATION & LANDSCAPE PLAN**  
**BLEVINS PROPERTY**  
LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
A SUBDIVISION OF PARCEL 310

TAX MAP 35 GRID 19  
5TH ELECTION DISTRICT  
PARCEL 310  
HOWARD COUNTY, MARYLAND



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

DESIGN BY: JC / PS  
DRAWN BY: JT / BK  
CHECKED BY: PS  
SCALE: 1" = 50'  
DATE: JUNE 13, 2014  
PROJECT #: 11-054  
SHEET #: 9 of 12

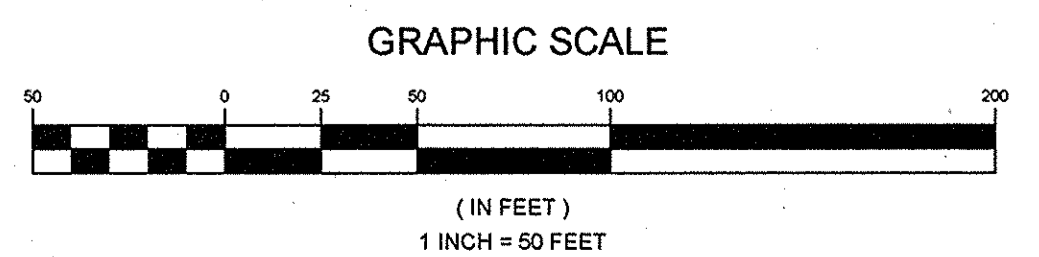
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32023, EXPIRATION DATE: JUNE 20, 2015

- NOTES**
- THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY THE ON-SITE RETENTION OF 78 ACRES OF FOREST AND 0.41 ACRES OF REFORESTATION. FINANCIAL SURETY FOR THE REQUIRED REFORESTATION WILL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$8,200 FOR THE REQUIRED PLANTINGS. SURETY FOR THE ON-SITE RETENTION IS NOT REQUIRED.
  - 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 WILL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$8,200 FOR THE REQUIRED LANDSCAPING (7 SHADE TREES AND 22 DECIDUOUS TREES).
  - AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY 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 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, WITH NECESSARY, REPAIRED OR REPLACED.

MD DNR Qualified Professional  
USACOE Wetland Delineator  
Certification # WDCP93MD0810044B2  
John P. Canoles  
Date: 6/6/14

Eco-Science  
Professionals, Inc.  
Consulting Ecologists  
P.O. Box 5004 Glen Arden, Maryland 21057 Telephone (410) 832-3400 Fax (410) 832-3408

| NO. | REVISIONS                      | DATE   |
|-----|--------------------------------|--------|
| 1   | REVISE BIO #1, MOVE EVERGREENS | 6/6/14 |

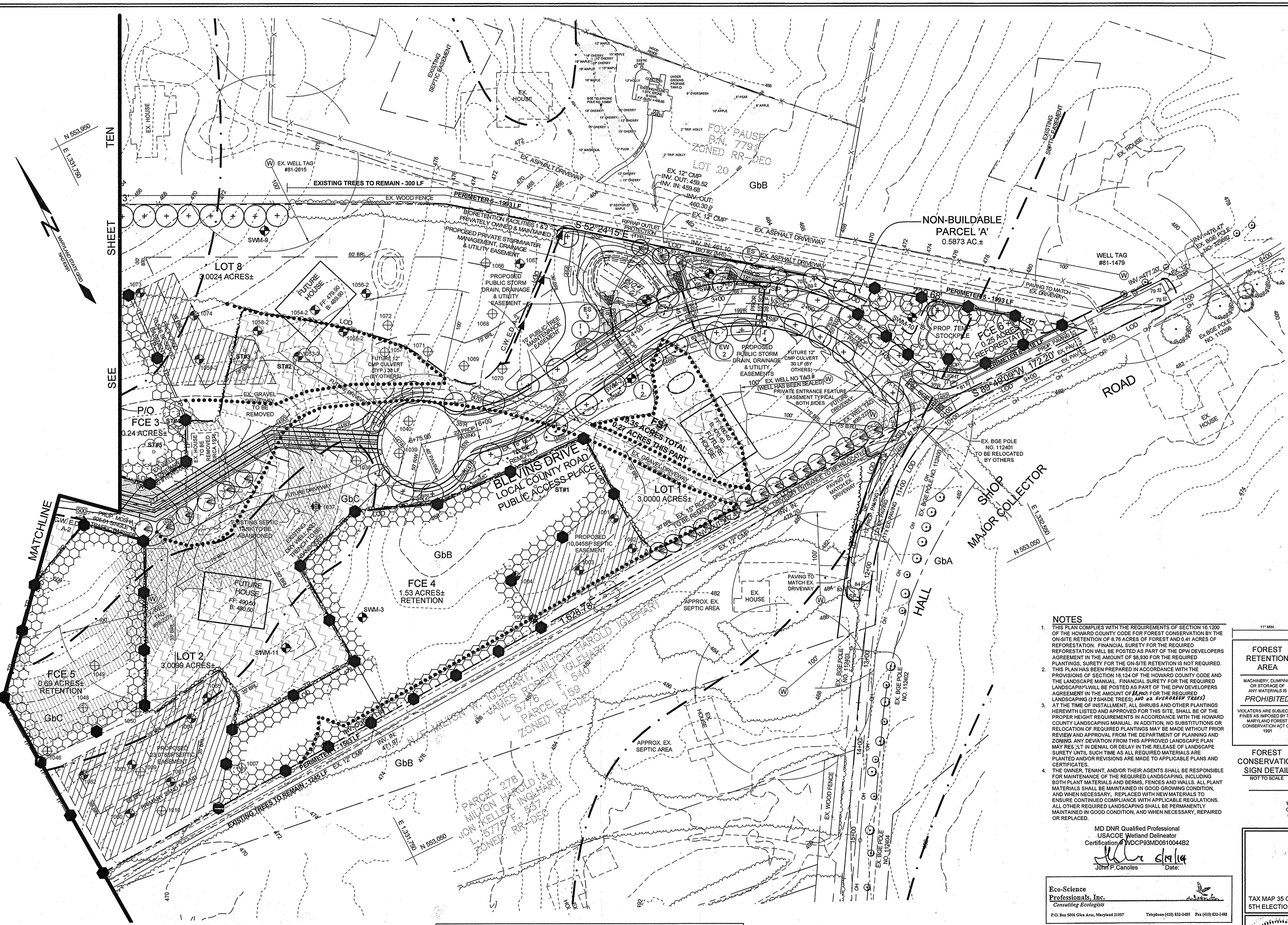


**SOILS LEGEND**

| SYMBOL | NAME / DESCRIPTION                     | GROUP | K <sub>f</sub> FACTOR |
|--------|--|-------|-----------------------|
| GbA    | GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES  | B     | 0.20                  |
| GbB    | GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES  | B     | 0.20                  |
| GbC    | GLADSTONE LOAM, 8 TO 15 PERCENT SLOPES | B     | 0.20                  |
| MdD    | MAJOR LOAM, 15 TO 25 PERCENT SLOPES    | B     | 0.24                  |

**NOTES:**

- SOIL INFORMATION HAS BEEN TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY.
- HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR "K" GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT.

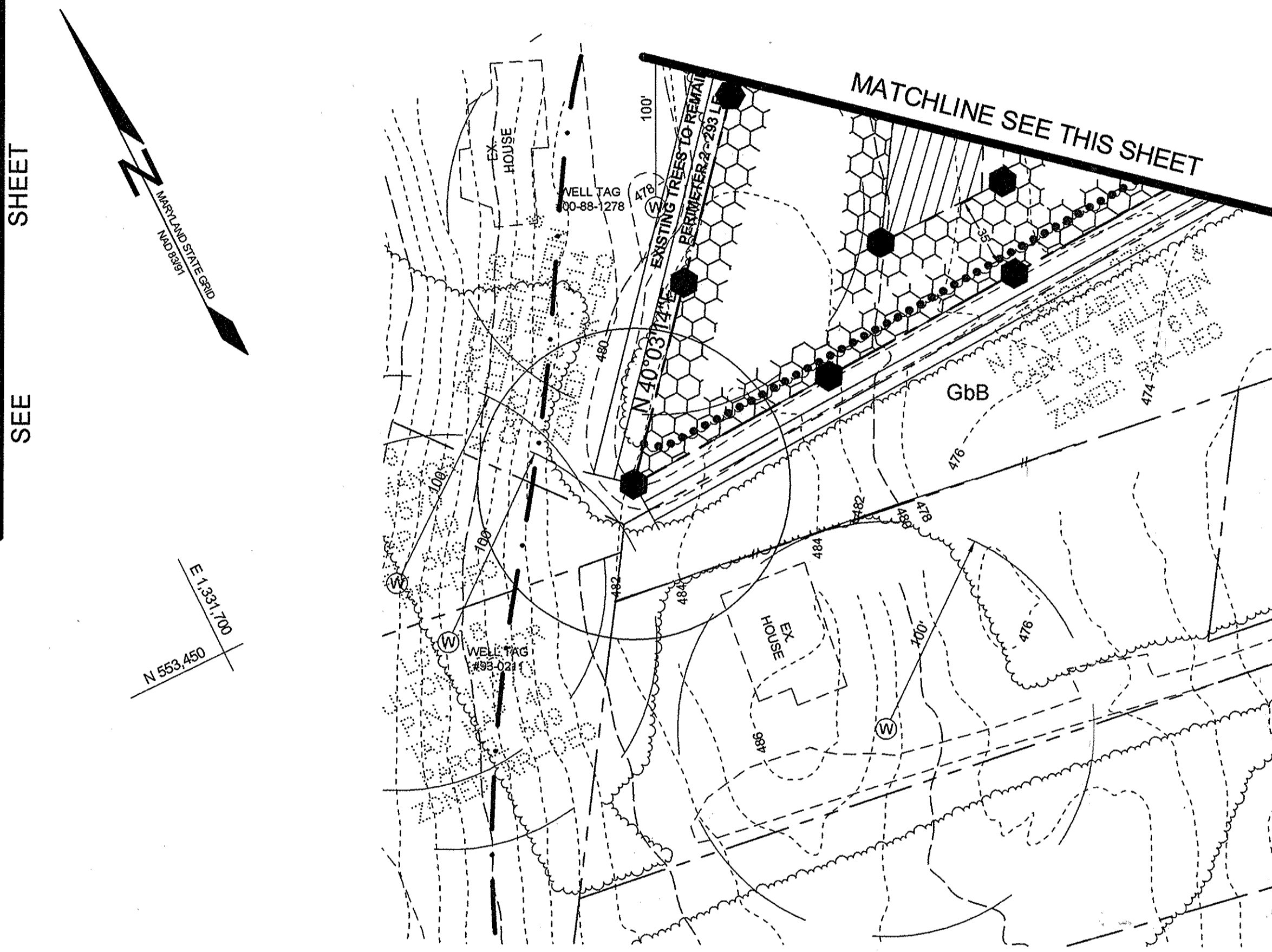
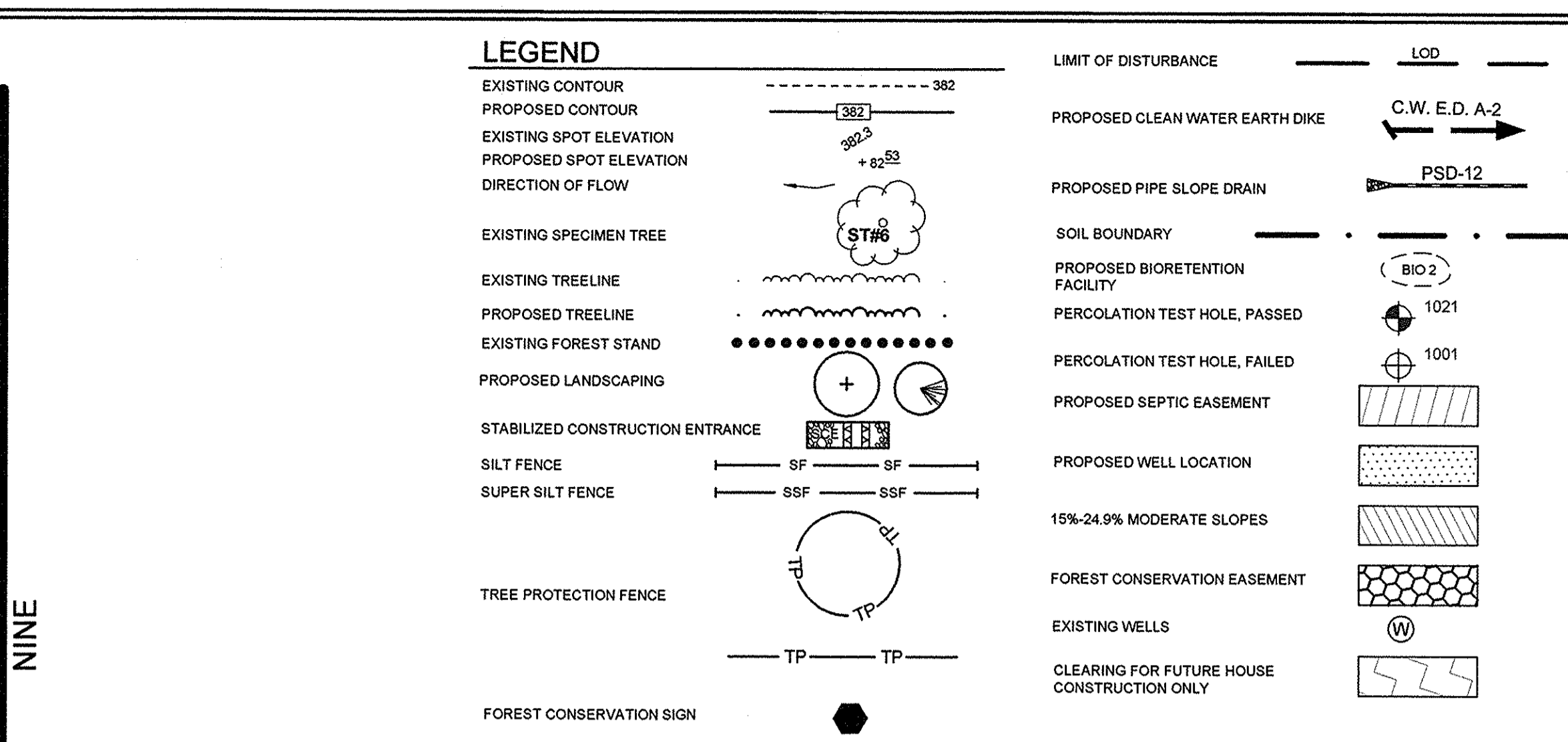
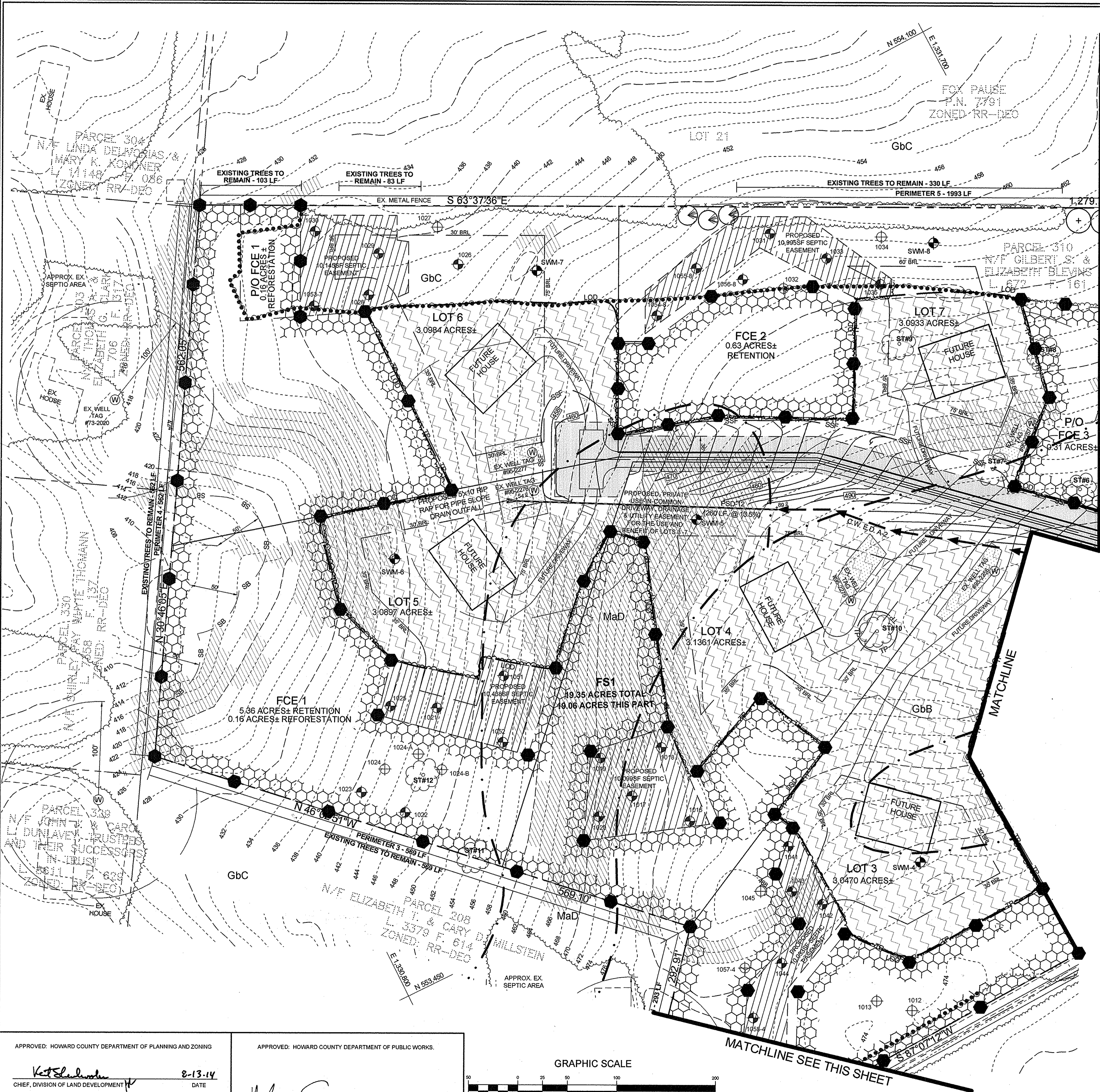


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Karl S. ...  
DATE: 6-13-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Robert ...  
DATE: 6-12-14

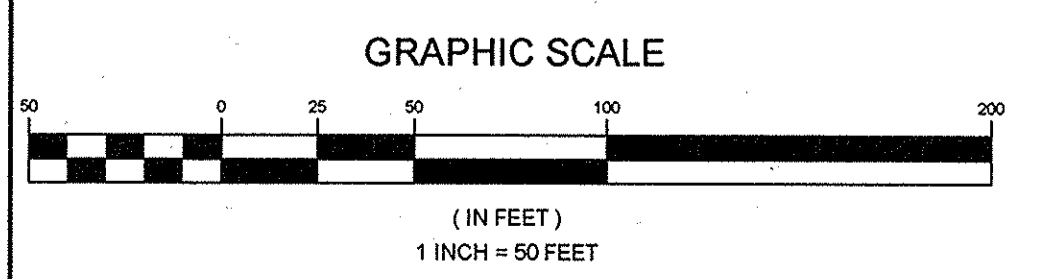
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Karl S. ...  
DATE: 6-13-14

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
Robert ...  
DATE: 7-3-14



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 8-13-14  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 [Signature] 7-3-14  
 CHIEF, BUREAU OF HIGHWAYS



MD DNR Qualified Professional  
 USA COE Wetland Delineator  
 Certification # WDCP93MD061004B2  
 [Signature] Date: [Signature]  
 John P. Canoles

Eco-Science Professionals, Inc.  
 Consulting Ecologists  
 P.O. Box 2006 Olea Area, Maryland 21057 Telephone (410) 832-2480 Fax (410) 832-2483

**OWNER**  
 GILBERT BLEVINS  
 11986 HALL SHOP ROAD  
 CLARKSVILLE, MD 21029  
 C/O ROBERT CORBETT  
 410.997.8800

**CONTRACT PURCHASER DEVELOPER**  
 WILLIAMSBURG GROUP  
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 5485 HARRIS FARM ROAD, SUITE 200  
 CO. LUMBIA, MD 21044  
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**FINAL FOREST CONSERVATION & LANDSCAPE PLAN**  
**BLEVINS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

TAX MAP 35 GRID 19  
 5TH ELECTION DISTRICT

PARCEL 310  
 HOWARD COUNTY, MARYLAND

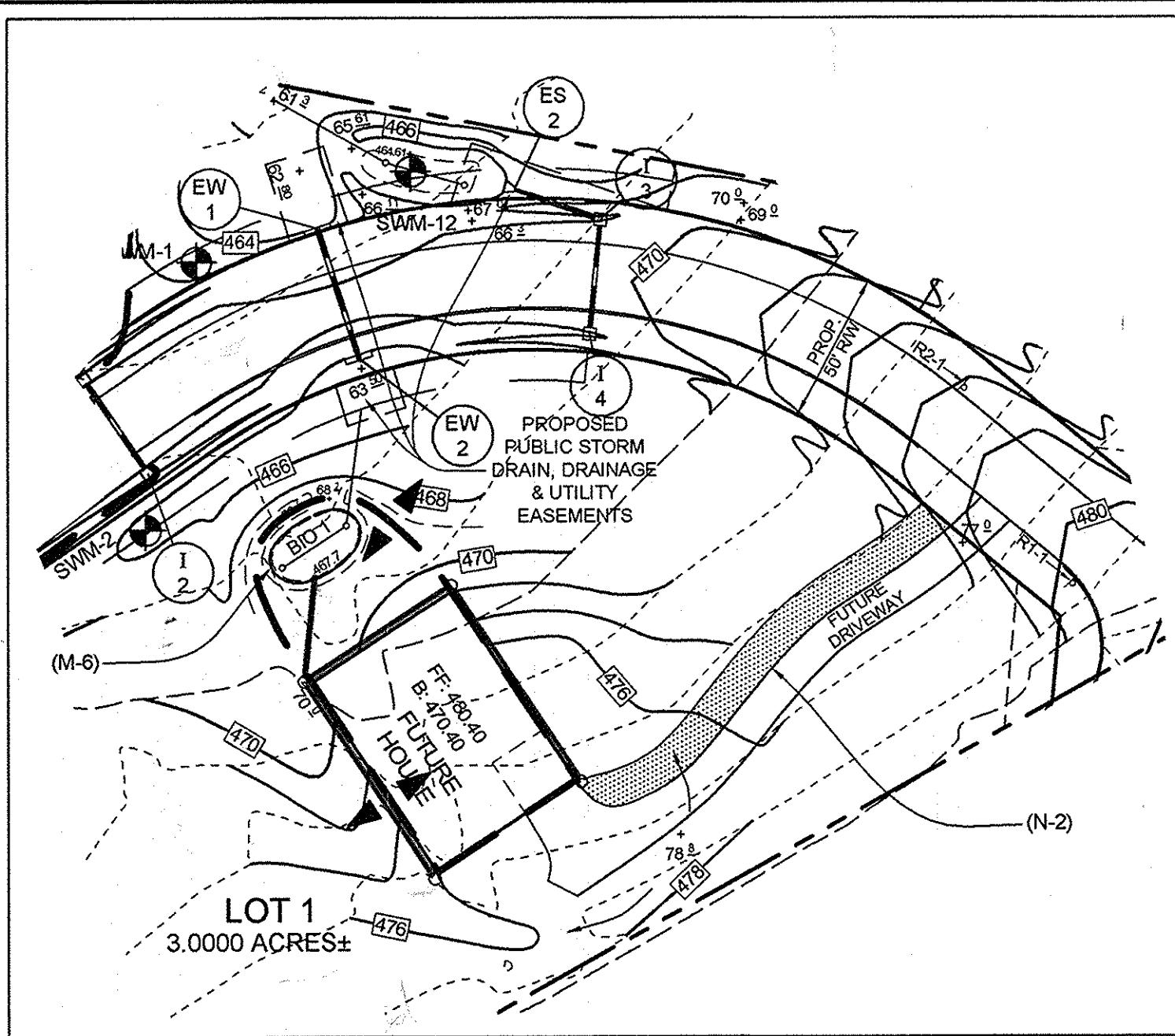
**Sill · Adcock & Associates · LLC**  
 Engineers · Surveyors · Planners  
 3300 North Ridge Road, Suite 160  
 Ellicott City, Maryland 21043  
 Phone: 443.325.7682 Fax: 443.325.7685  
 Email: info@silland.com

DESIGN BY: JC / PS  
 DRAWN BY: JT / BK  
 CHECKED BY: PS  
 SCALE: 1" = 50'  
 DATE: JUNE 13, 2014  
 PROJECT #: 11-054  
 SHEET #: 10 of 12

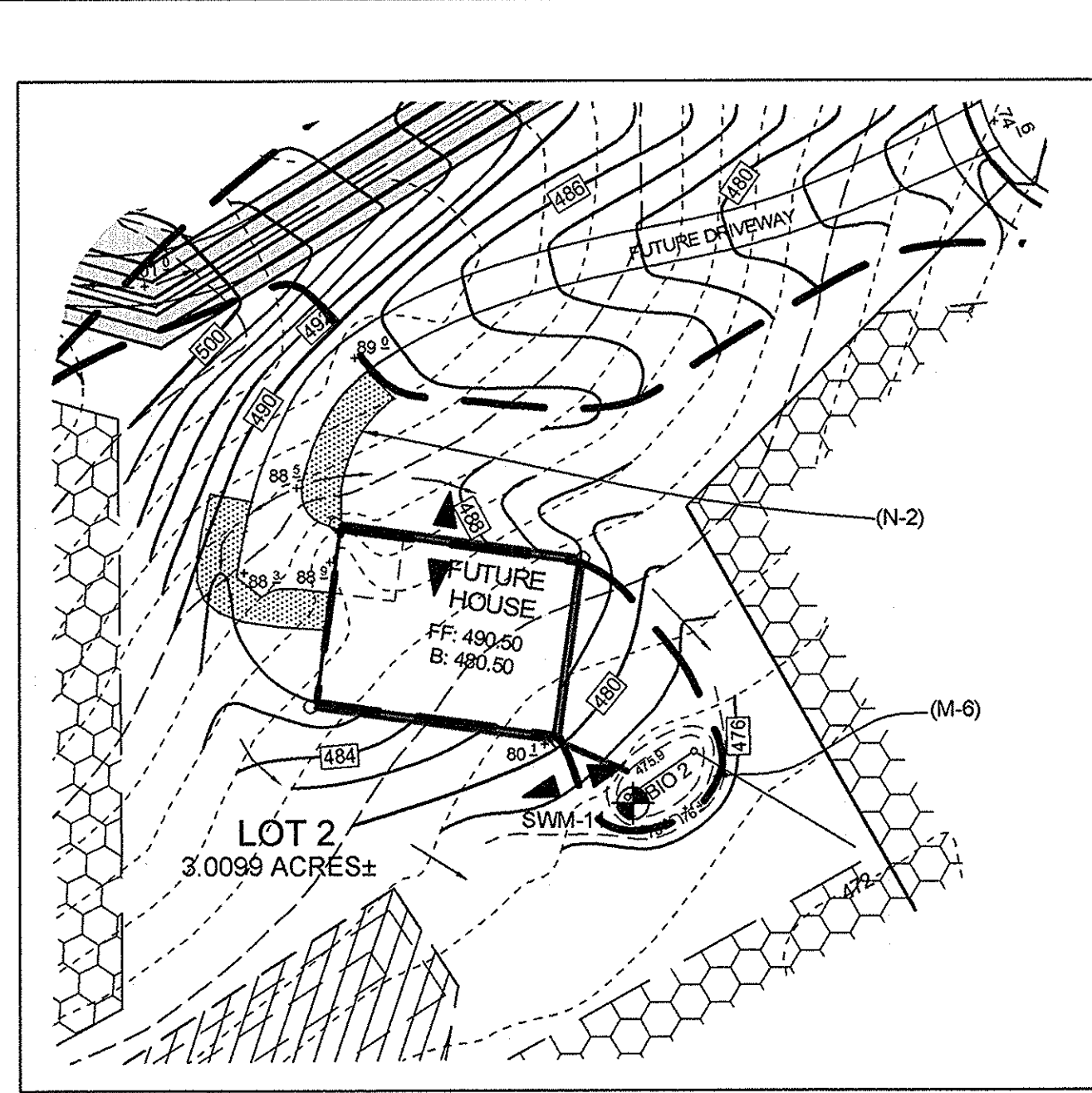
| NO. | DESCRIPTION | DATE |
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|     |             |      |
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PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2015.

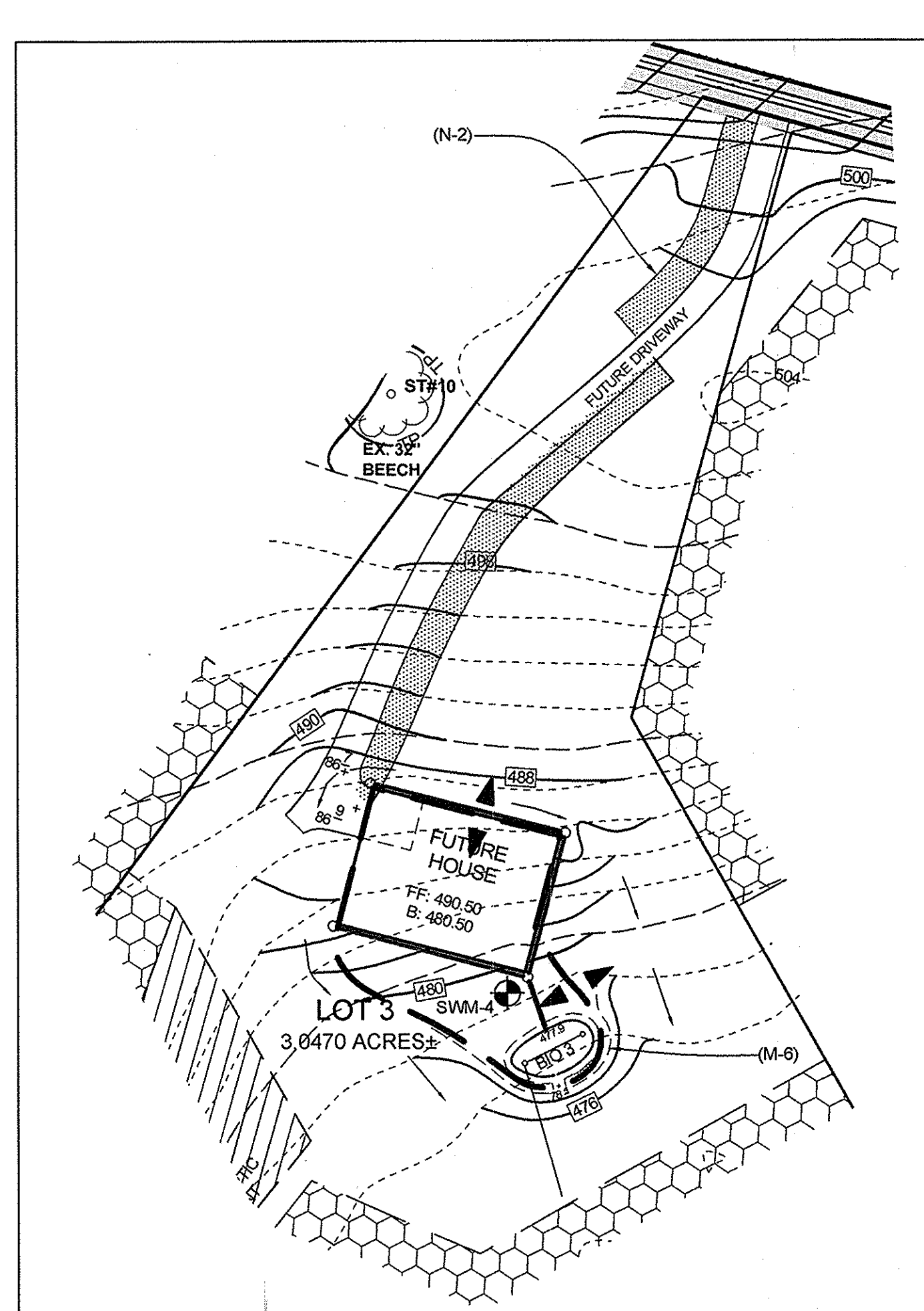




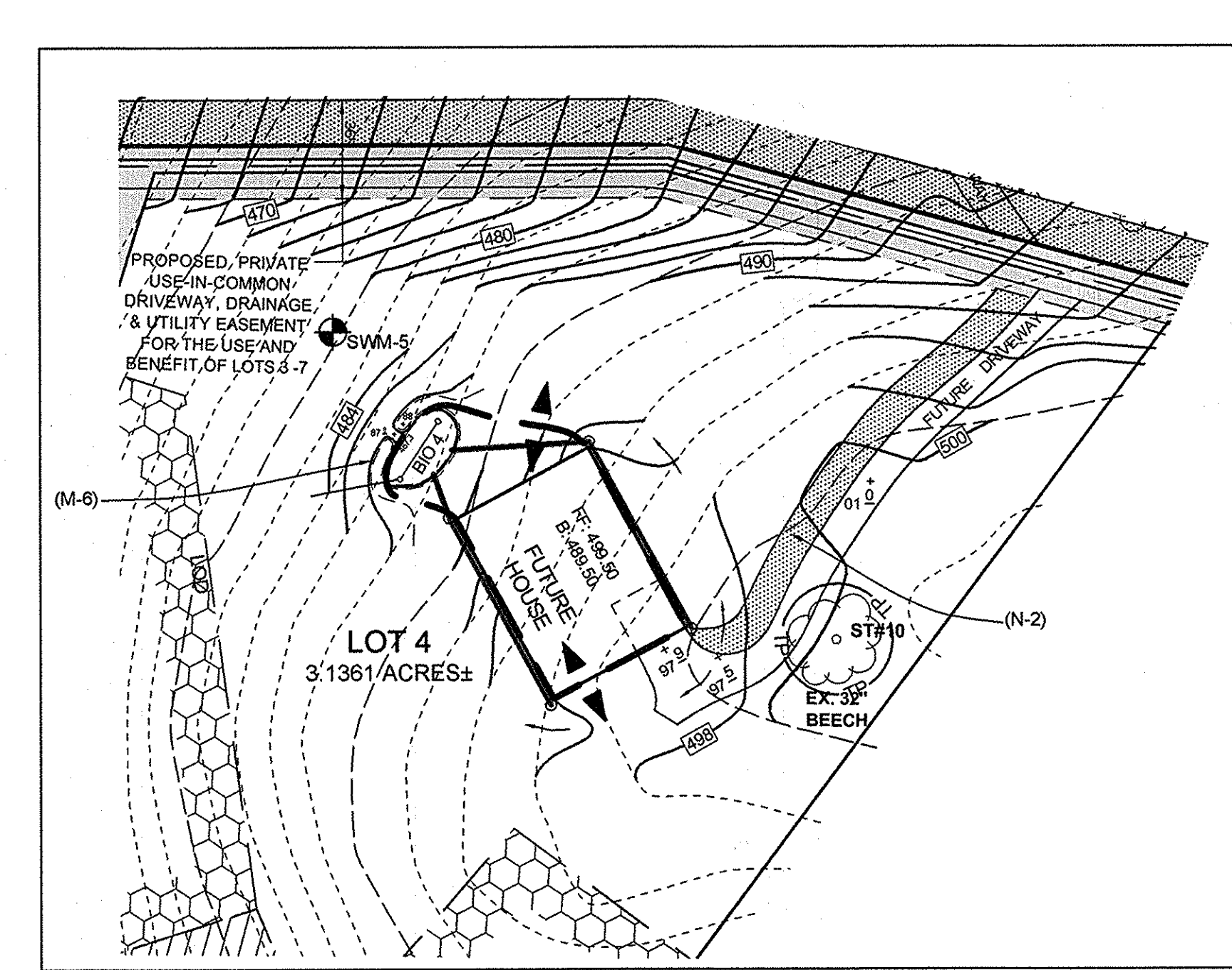
**STORMWATER MANAGEMENT PLAN LOT #1**  
SCALE: 1"=50'



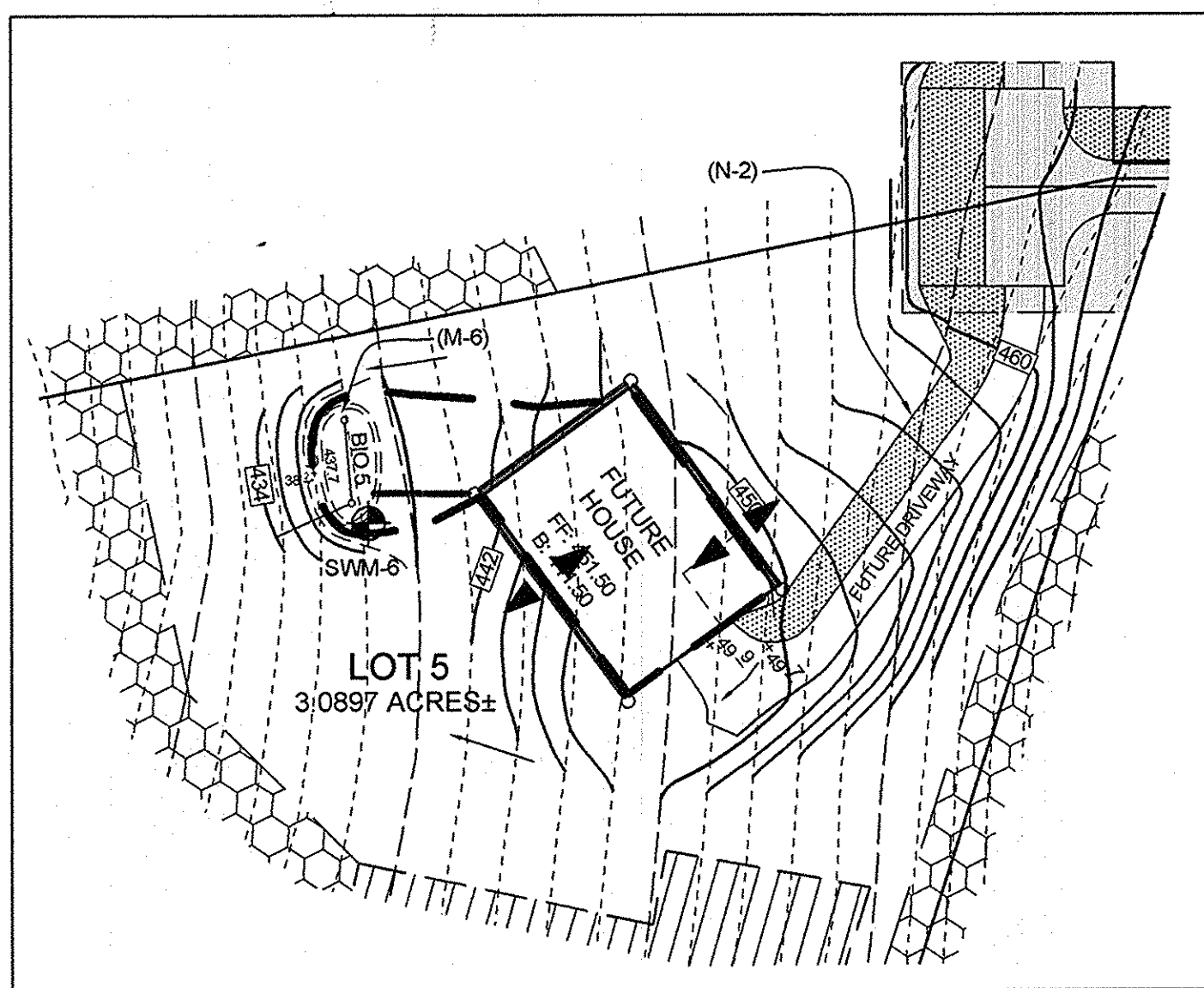
**STORMWATER MANAGEMENT PLAN LOT #2**  
SCALE: 1"=50'



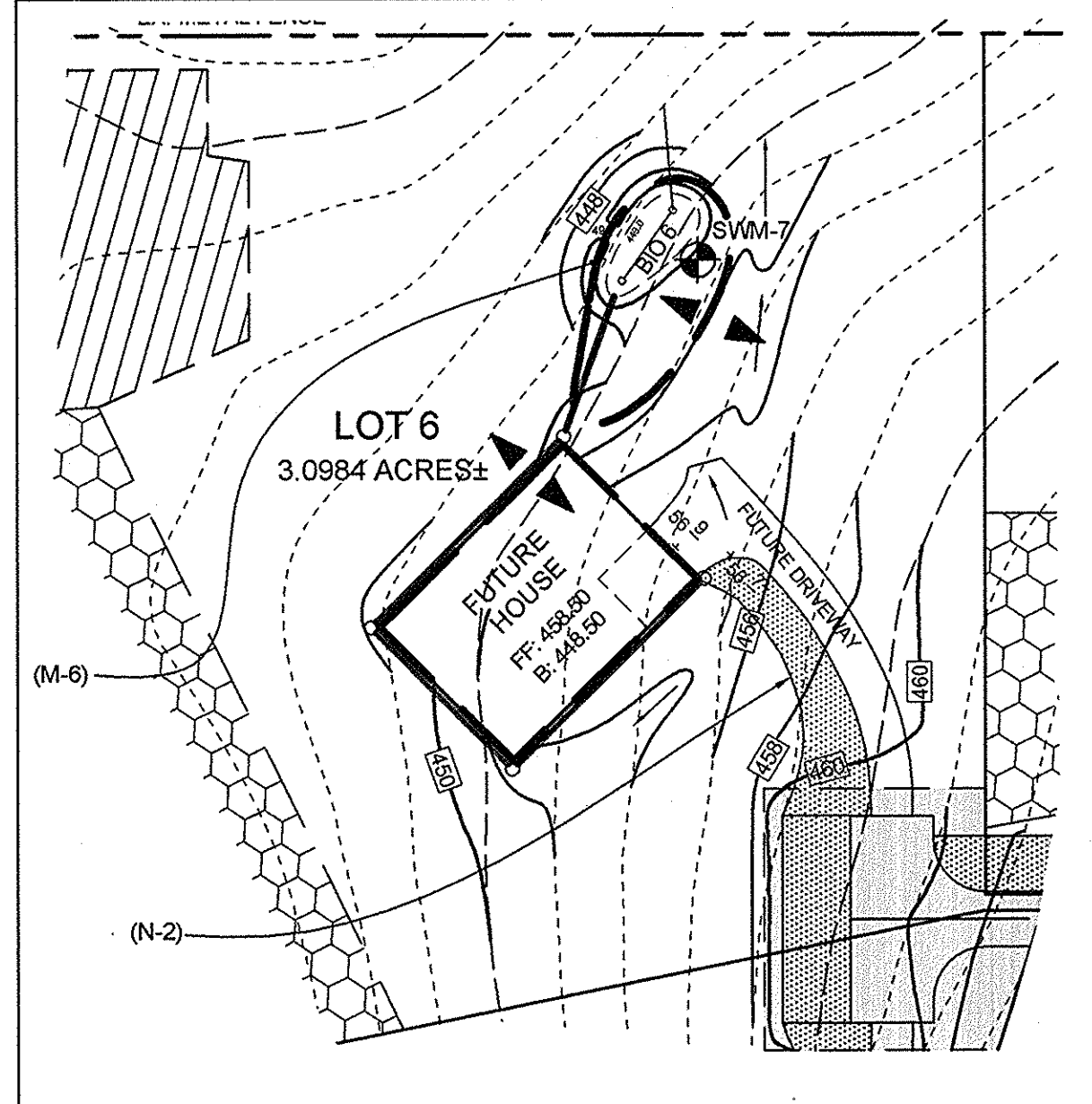
**STORMWATER MANAGEMENT PLAN LOT #3**  
SCALE: 1"=50'



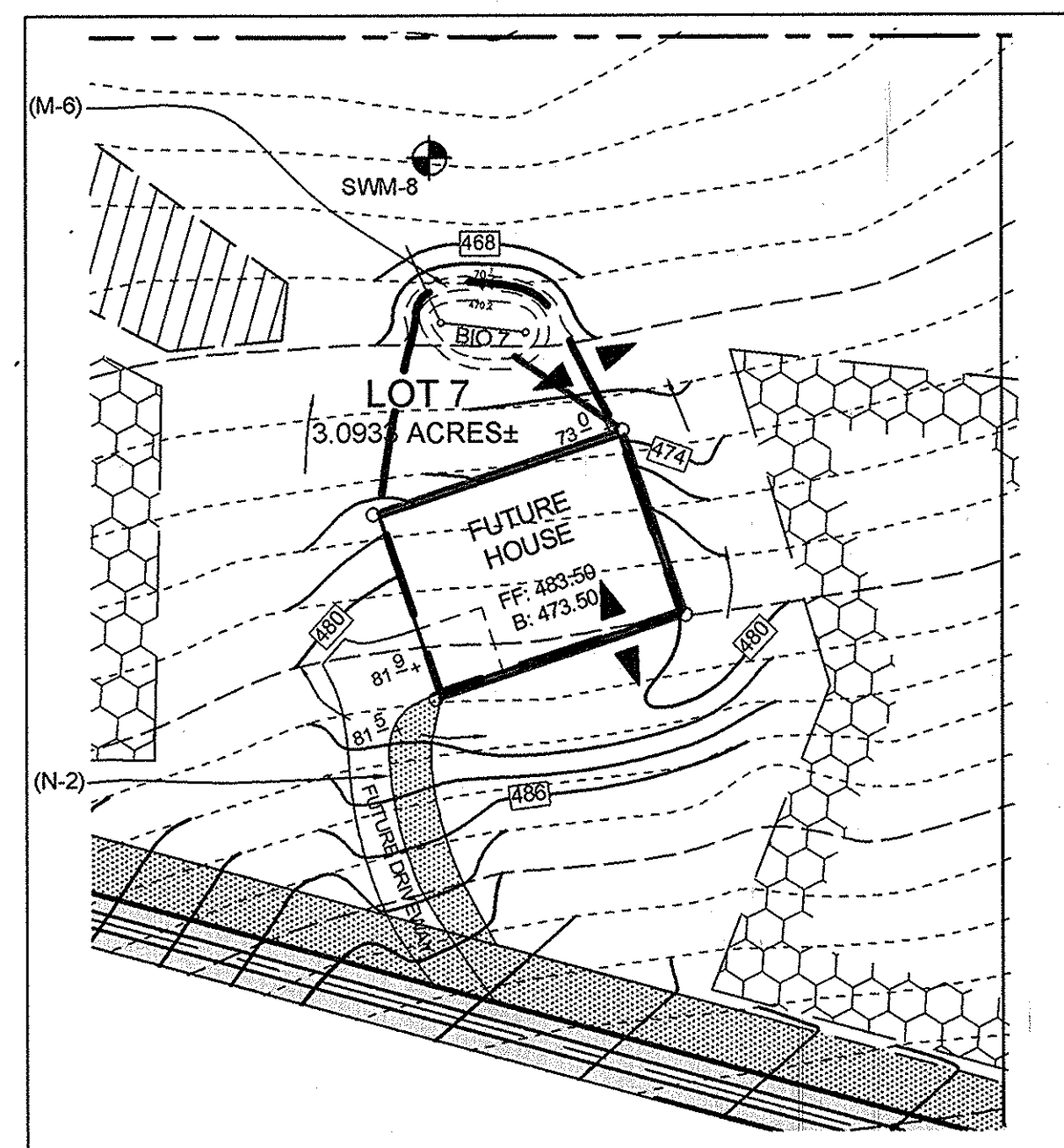
**STORMWATER MANAGEMENT PLAN LOT #4**  
SCALE: 1"=50'



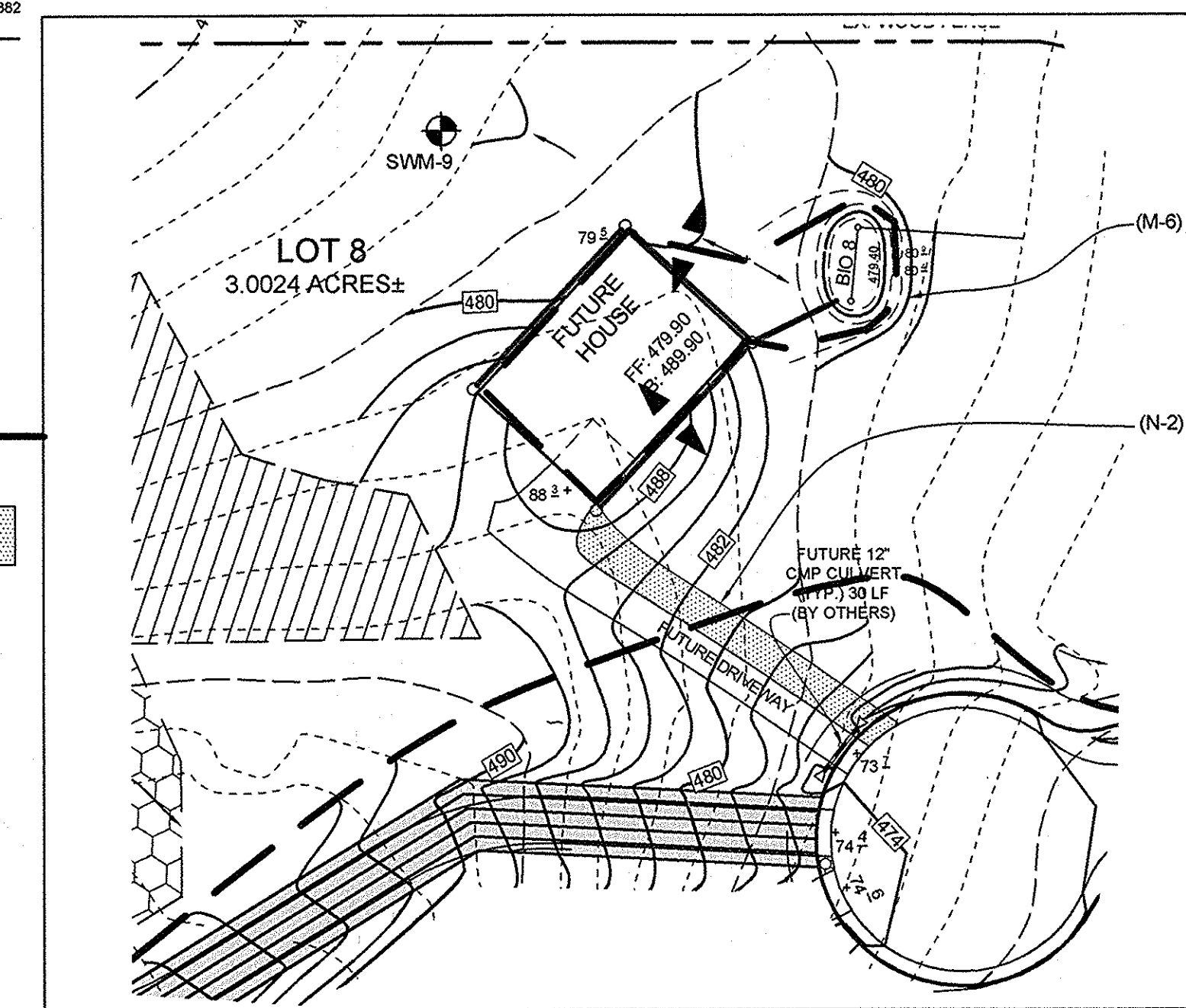
**STORMWATER MANAGEMENT PLAN LOT #5**  
SCALE: 1"=50'



**STORMWATER MANAGEMENT PLAN LOT #6**  
SCALE: 1"=50'



**STORMWATER MANAGEMENT PLAN LOT #7**  
SCALE: 1"=50'



**STORMWATER MANAGEMENT PLAN LOT #8**  
SCALE: 1"=50'

**LEGEND**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- PROPOSED SEPTIC EASEMENT
- FOREST CONSERVATION EASEMENT
- EXISTING SWM SOIL BORINGS
- PROPOSED MICRO-BIORETENTION FACILITY (M-6)
- PROPOSED DRAINAGE DIVIDE
- PROPOSED NON-ROOFTOP DISCONNECT (N-2)
- TREE PROTECTION FENCE

| STORMWATER MANAGEMENT PRACTICES |                     |                             |   |
|---------------------------------|---------------------|-----------------------------|---|
| LOT #                           | ADDRESS             | MICRO-BIORETENTION (NUMBER) | DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N) |
| 1                               | 11005 BLEVINS DRIVE | 1                           | Y   |
| 2                               | 11011 BLEVINS DRIVE | 1                           | Y   |
| 3                               | 11017 BLEVINS DRIVE | 1                           | Y   |
| 4                               | 11023 BLEVINS DRIVE | 1                           | Y   |
| 5                               | 11029 BLEVINS DRIVE | 1                           | Y   |
| 6                               | 11028 BLEVINS DRIVE | 1                           | Y   |
| 7                               | 11022 BLEVINS DRIVE | 1                           | Y   |
| 8                               | 11010 BLEVINS DRIVE | 1                           | Y   |

NOTE: FOR SWM BORING LOGS SEE SHEET 7.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)**

- a. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIORETENTION FACILITIES (M-6)**

- a. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, 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 THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
- b. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
- c. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
- d. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

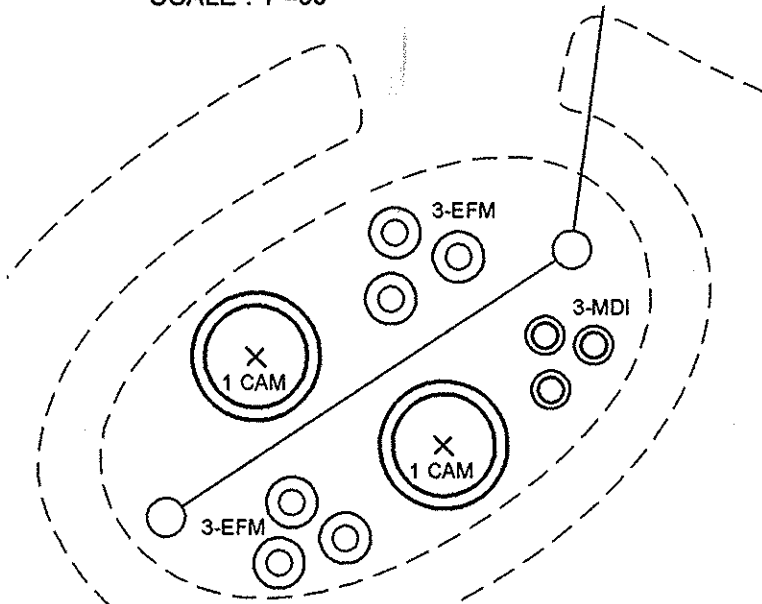
| BIORETENTION PLANT LIST |                |               |          |             |         |           |           |           |           |           |           |           |           |
|-------------------------|----------------|---------------|----------|-------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| SHRUBS                  |                |               |          |             |         |           |           |           |           |           |           |           |           |
| KEY                     | BOTANICAL NAME | COMMON NAME   | SPACING  | SIZE        | REMARKS | QTY LOT 1 | QTY LOT 2 | QTY LOT 3 | QTY LOT 4 | QTY LOT 5 | QTY LOT 6 | QTY LOT 7 | QTY LOT 8 |
| CAM                     | CORNUS AMOMUM  | SILKY DOGWOOD | AS SHOWN | 18"-24" HT. | CONT.   | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         |

| HERBACEOUS SPECIES |                      |              |          |               |                 |           |           |           |           |           |           |           |           |
|--------------------|----------------------|--------------|----------|---------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KEY                | BOTANICAL NAME       | COMMON NAME  | SPACING  | SIZE          | REMARKS         | QTY LOT 1 | QTY LOT 2 | QTY LOT 3 | QTY LOT 4 | QTY LOT 5 | QTY LOT 6 | QTY LOT 7 | QTY LOT 8 |
| EFM                | EUTROCHIUM PURPUREUM | JOE-PYE WEED | AS SHOWN | 1 QT./12" HT. | CONT. (3" O.C.) | 6         | 6         | 6         | 6         | 6         | 6         | 6         | 6         |
| MDI                | MONARDA DIDYMA       | BEEBALM      | AS SHOWN | 1 QT.         | CONT.           | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 3         |

NOTE: INTERSPERSE PLANTINGS THROUGHOUT BIORETENTION FILTER AREAS, SEE TYPICAL PLANTING DETAIL.

|  |  |  |
|--|--|--|
| LOT 1 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES | LOT 2 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES | LOT 3 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES |
| LOT 4 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES | LOT 5 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES | LOT 6 - BIORETENTION AREA = 100 S.F. OR 0.002 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES |
| LOT 7 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES | LOT 8 - BIORETENTION AREA = 450 S.F. OR 0.010 AC.<br>PROVIDED: 2 SHRUBS AND 9 HERBACEOUS SPECIES |  |



**TYPICAL PLANTING DETAIL**  
SCALE: 1"=10'

| MATERIALS SPECIFICATIONS FOR BIORETENTION FACILITIES |   |   |  |
|--|---|---|--|
| MATERIAL   | SPECIFICATION   | SIZE                                      | NOTES  |
| PLANTING SOIL (2'-4" DEEP)                           | LOAMY SAND (60% - 65%) & COMPOST (35%-40%) OR SANDY LOAM (30%), COARSE SAND (30%) & COMPOST (40%) | N/A                                       | USDA SOIL TYPES LOAMY SAND OR SANDY LOAM; CLAY CONTENT < 5%  |
| MULCH  | SHREDDED HARDWOOD   |   | AGED 6 MONTHS, MINIMUM; NO PINE OR WOOD CHIPS  |
| PEA GRAVEL DIAPHRAGM                                 | PEA GRAVEL: ASTM-D-446  | PEA GRAVEL: NO. 8 OR NO. 9 (1/8" TO 3/8") |  |
| CURTAIN DRAIN (IF REQUIRED)                          | ORNAMENTAL STONE: WASHED COBBLES  | STONE: 2" TO 6"                           |  |
| GEOTEXTILE   | N/A   | NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")  | PE TYPE 1 NONWOVEN   |
| UNDERDRAIN GRAVEL                                    | AASHTO M-43   |   |  |
| UNDERDRAIN PIPING                                    | F 758, TYPE PS 28 OR AASHTO M-278   | 4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35   | SLOTTED OR PERFORATED PIPE, 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDER PIPES. PERFORATED PIPE SHALL BE WRAPPED WITH 1/4" GALVANIZED HARDWARE CLOTH. |

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Karl Schuler* 8-13-14  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Holger Seeman* 7-3-14  
 CHIEF, BUREAU OF HIGHWAYS DATE

**OWNER**  
 GILBERT BLEVINS  
 11985 HALL SHOP ROAD  
 CLARKSVILLE, MD 21029  
 C/O ROBERT CORBETT  
 410.997.8800

**CONTRACT PURCHASER DEVELOPER**  
 WILLIAMSBURG GROUP  
 C/O ROBERT CORBETT  
 5485 HARRIS FARM ROAD, SUITE 200  
 COLUMBIA, MD 21044  
 410.997.8800

**ULTIMATE ON LOT BIORETENTION PLAN & DETAILS**  
**BLEVINS PROPERTY**  
 LOTS 1 THRU 8 AND NON-BUILDABLE PARCEL A  
 A SUBDIVISION OF PARCEL 310

TAX MAP 35 GRID 19  
 5TH ELECTION DISTRICT

PARCEL 310  
 HOWARD COUNTY, MARYLAND

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

DESIGN BY: PS  
 DRAWN BY: BK  
 CHECKED BY: PS  
 SCALE: AS SHOWN  
 DATE: JUNE 13, 2014  
 PROJECT #: 11-054  
 SHEET #: 12 OF 12

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32003, EXPIRATION DATE: JUNE 30, 2015