

| SHEET INDEX | |
|-------------|---|
| SHEET NO. | DESCRIPTION |
| 1 | TITLE SHEET |
| 2 | ENVIRONMENTAL CONCEPT PLAN |
| 3 | SEDIMENT & EROSION CONTROL, LOD, SOILS & TREE DEMO PLAN |
| 4 | STORMWATER MANAGEMENT DETAILS & NOTES |

| ADDRESS CHART | |
|---------------|----------------------|
| PARCEL NUMBER | STREET ADDRESS |
| 0593 | 4925 MONTGOMERY ROAD |

| SOILS LEGEND | | |
|--------------|--|-------|
| SOIL | NAME | CLASS |
| AgC2 | Aura gravelly loam, 8 to 15% slopes, moderately eroded | B |
| AgB2 | Aura gravelly loam, 1 to 5% slopes, moderately eroded | B |
| AgC3 | Aura gravelly loam, 10 to 30% slopes, severely eroded | B |

| LOT NUMBER | ADDRESS | DISCONNECTION OF ROOFTOP RUN-OFF N-1 (NUMBER) | DISCONNECTION OF NON-ROOFTOP RUN-OFF N-2 (Y/N) | DRY WELLS M-5 (NUMBER) | MICRO-BIO-RETENTION M-6 (NUMBER) | SWALES M-8 (NUMBER) |
|------------|------------------|---|--|------------------------|----------------------------------|---------------------|
| 1 | CLEARWATER DRIVE | N/A | N/A | 2 | 1 | 1 |
| 2* | CLEARWATER DRIVE | N/A | Y | N/A | N/A | N/A |
| 3 | CLEARWATER DRIVE | N/A | Y | 6 | N/A | N/A |
| 4 | CLEARWATER DRIVE | 4 | Y | 4 | N/A | N/A |
| 5 | CLEARWATER DRIVE | 4 | Y | 4 | N/A | N/A |

* EXISTING HOUSE TO REMAIN

SITE ANALYSIS DATA CHART

- A. TOTAL AREA OF THIS SUBMISSION = 3.765540 AC.±.
- B. LIMIT OF DISTURBED AREA =
L.O.D. ASSOCIATED WITH THE BUILDING SITE: 107,362 SqFt. or 2.46 AC±
L.O.D. ASSOCIATED WITH THE REMOVAL OF EXISTING DRIVEWAY: 6,557 SqFt. or 0.15 AC±
TOTAL L.O.D. = 113,919 of 2.61 AC±
- C. PRESENT ZONING DESIGNATION = R-20
(PER 2/04/2004 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/2006)
- D. PROPOSED USE: RESIDENTIAL
- K. BUILDING COVERAGE OF SITE: 14.15%
- L. PREVIOUS HOWARD COUNTY FILES: NONE
- M. TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.00 AC±
- N. TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC±
- O. NET TRACT AREA = 3.765540 AC.±.
- P. TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0 AC±
- Q. TOTAL AREA OF FOREST = 0 AC±
- R. TOTAL GREEN OPEN AREA = 3.09 AC±
- S. TOTAL IMPERVIOUS AREA = 0.68 AC±
- T. TOTAL AREA OF SEVERELY ERODIBLE SOILS = 0.014 AC.±

DESIGN NARRATIVE

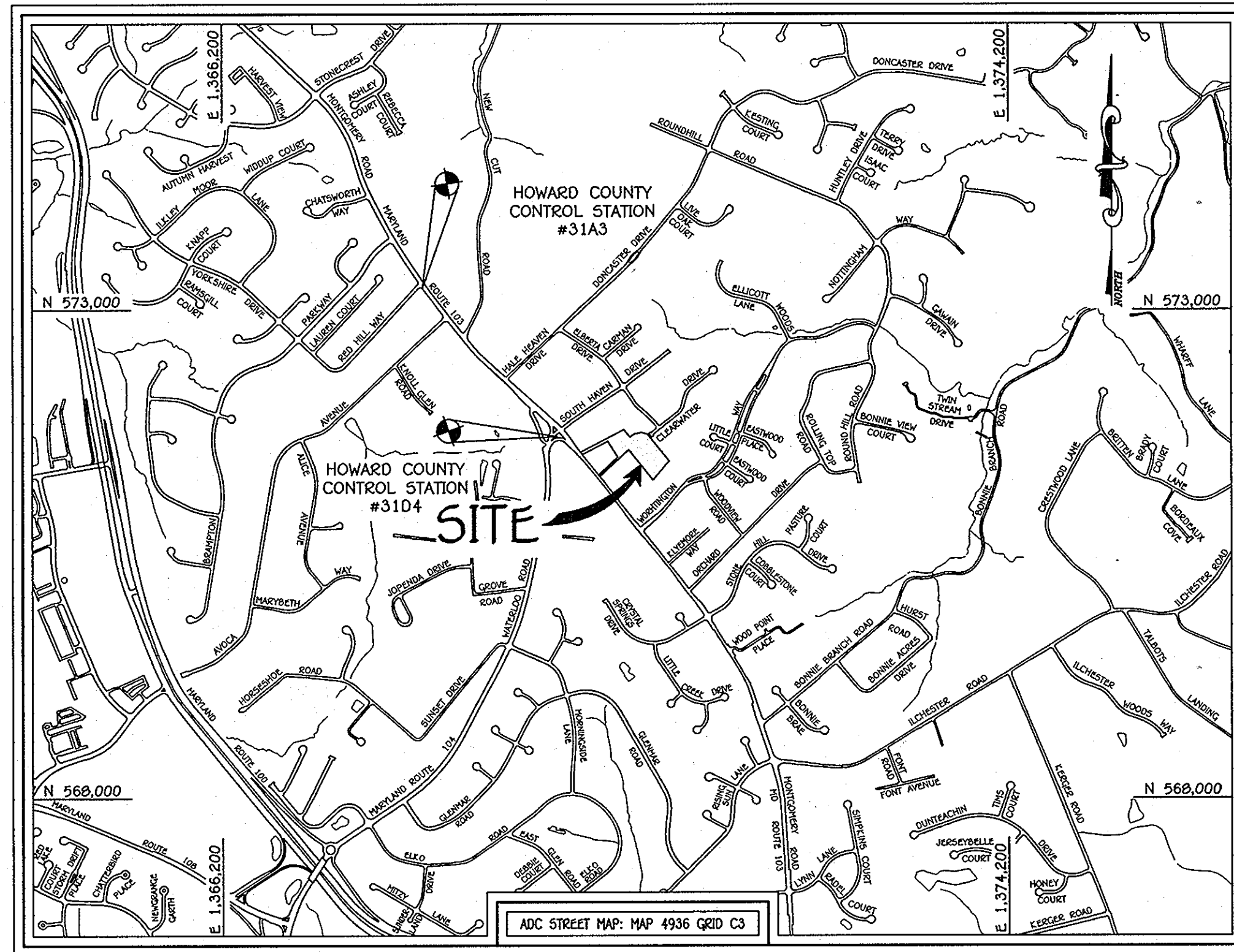
Introduction:
This report analyzes the developable area of the site and attempts to demonstrate how storm water on this site can be managed to mimic the drainage characteristics of "woods in good condition". Techniques used to create this effect have been taken from Chapter 5 of the Maryland Department of the Environment SWM regulations.

General Site Conditions:
This property is located on Tax Map 0031, Grid 0008, Parcel No. 0593 of the Howard County, Maryland Tax Map Database System. The property consists of 3.77 acres located in the Ellicott City section of Howard County. A field inspection was conducted by Eco-Science Professionals (ESP) in November of 2010 and according to their findings, there is a single family residence and associated outbuildings that will remain on the site. Vegetation on the site consists of lawn, scattered trees and hedgerows. The property is gently sloping throughout and is surrounded by newer medium density residential lots. There is no forest on the site though many specimen trees in various conditions from fair to good. Finally, the reports states that there are wetlands, streams or buffer on the site.

- I. **Natural Resource Protection:**
As stated in the ESP report there are no natural resources located on the site; therefore, special protections are not required.
- II. **Maintenance of Natural Flow Patterns:**
It is the intent of the proposed design to discharge runoff similar to the characteristics and direction of this site prior to any of the proposed improvements. There is off-site drainage from the east that will be captured by an inlet located between Lots 4 and 5 that will discharge into a proposed drainage system that will ultimately drain into an existing drainage system located in the Brookfield subdivision located on the northeast boundary of the site.
- III. **Reduction of Impervious Areas through better site design, alternative surfaces and Nonstructural Practices:**
The site has been designed to reduce impervious areas while attempting to build homes in keeping with the surrounding neighborhood. It is planning to use Non structural practices, i.e. Rooftop Disconnections and Non-Rooftop Disconnections wherever possible along with a Bio-Swale. Alternative surfaces are not being considered for this project.
- IV. **Integration of Erosion and Sediment Controls into Stormwater Strategy:**
Sediment and Erosion Control devices will not be used in conjunction with the Stormwater strategy for this project.
- IV. **Implementation of ESO Planning Techniques and practices to the Maximum Extent Practicable (MEP):**
ESO to the MEP will be used for this project.
- VI. **Request for a Waiver to Forest Conservation:**
A waiver for the removal of several Specimen trees and a waiver to pipestem lots not being created on both sides of a frontage in the same subdivision, sections 16.1205(a) & 16.1201(b)(6)(V)(c) Howard County Code will be requested for this project.

ENVIRONMENTAL CONCEPT PLAN DONAHUE PROPERTY 4925 MONTGOMERY ROAD

TAX MAP No. 0031 GRID No. 0008 PARCEL NO. 0593
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND



VICINITY MAP
SCALE: 1" = 1200'

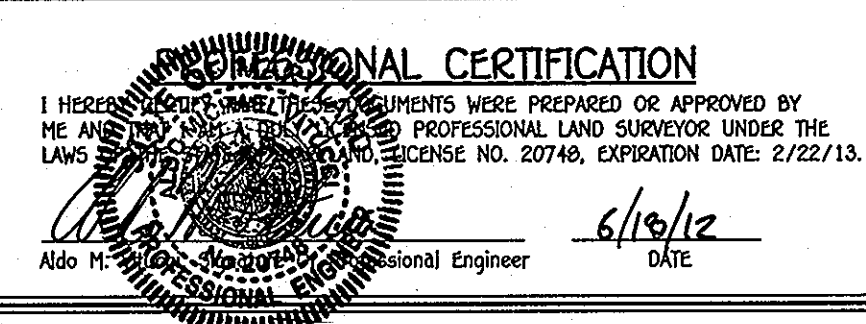
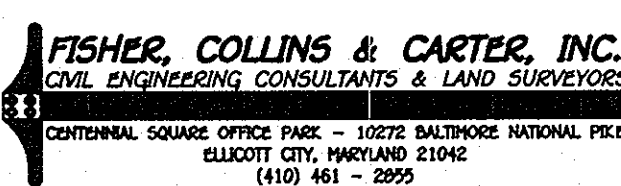
GENERAL NOTES

1. 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.
2. THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
3. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY WITH 2' CONTOUR INTERVALS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED FEBRUARY 17, 2012.
4. 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. 3104 AND 31A3 WERE USED FOR THIS PROJECT.
5. STORMWATER MANAGEMENT REQUIREMENTS FOR LOTS 1 THRU 5 WILL BE MET USING ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT POSSIBLE IN ACCORDANCE WITH THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, EFFECTIVE IN MAY OF 2010. THE PROPOSED PRACTICES WILL BE LOCATED ON THE INDIVIDUAL LOTS AS FOLLOWS:

 LOT 1: MICRO-BIORETENTION (M-6) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND A BIO-SWALE (M-8) FOR THE PROPOSED DRIVEWAY.
 LOT 2: NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY. THE EXISTING HOUSE WILL REMAIN FOR WHICH SWM IS NOT REQUIRED.
 LOT 3: DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY.
 LOT 4: ROOFTOP DISCONNECTION (N-1) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND NON-ROOFTOP DISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY.
 LOT 5: ROOFTOP DISCONNECTION (N-1) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE AND NON-ROOFTOPDISCONNECTION (N-2) FOR THE PROPOSED DRIVEWAY.
 THESE PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH INDIVIDUAL DECLARATIONS OF COVENANTS.
6. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
7. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
8. THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 2-04-04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06).
9. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
10. LANDSCAPING WILL BE PROVIDED AT THE SITE DEVELOPMENT STAGE OF THIS PROJECT.
11. FOREST CONSERVATION OBLIGATIONS WILL BE MET BY A FEE-IN-LIEU PAYMENT AT THE SDP STAGE OF THIS PROJECT.
12. SOIL BORINGS WILL PROVIDED AT THE SDP STAGE OF THIS PROJECT.
13. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION AND/OR SITE DEVELOPMENT PLAN.
14. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SITE PLAN STAGES. THEREFORE, THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED COMMENTS (INCLUDING THOSE THAT MAY ALTER OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES.
15. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN STAGES AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.

BENCHMARK INFORMATION

- B.M.#1 - HOWARD COUNTY CONTROL STATION #3104 - HORIZONTAL - (NAD '83)
(LOCATED IN THE ISLAND AT THE INTERSECTION OF ROUTE 103; MONTGOMERY ROAD AND ROUTE 104, APPROX. 16.5' FROM THE EDGE OF CURB)
N 571,700.7034
E 1,369,606.3509
ELEVATION = 494.406 - VERTICAL - (NAVD '86)
- B.M.#2 - HOWARD COUNTY CONTROL STATION #31A3 - HORIZONTAL - (NAD '83)
(LOCATED ALONG ROUTE 103; MONTGOMERY ROAD, SOUTH EAST FROM RED HILL WAY, APPROX. 15.2' BEHIND THE EDGE OF PAVING)
N 573,217.9149
E 1,368,237.7247
ELEVATION = 486.869 - VERTICAL - (NAVD '86)



OWNER
WILLIAM M. DONAHUE
KATHLEEN M. DONAHUE
4925 MONTGOMERY ROAD
ELICOTT CITY, MD 21043-6748
410-465-0957

DEVELOPER
COLUMBIA BUILDERS GROUP, LLC
B. JAMES GREENFIELD
6420 AUTUMN SKY WAY
COLUMBIA, MD 21044
443-324-4732

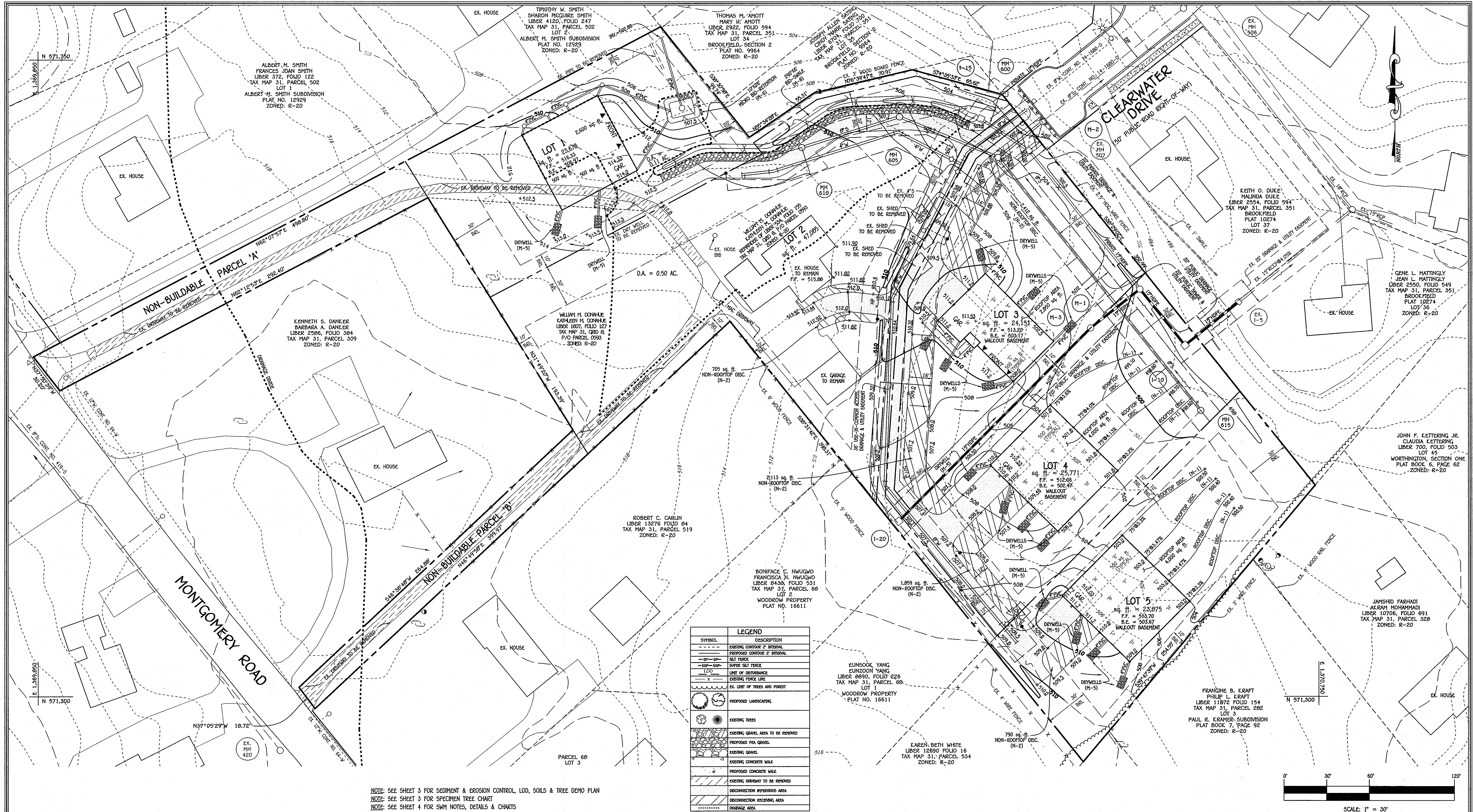
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|---|-----------|------------|-----------------|-------------|------------|
| APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING | | | | | |
| <i>K. Stalder</i> Chief, Division of Land Development | | | 6/26/12 Date | | |
| <i>W. Schuch</i> Chief, Development Engineering Division | | | 6/28/12 Date | | |
| PROJECT | SECTION | PARCEL NO. | | | |
| 4925 MONTGOMERY ROAD PARCEL 0593 | 1 | 0593 | | | |
| DEED: LIBER/ FOLIO | BLOCK NO. | ZONE | TAX/ZONE | ELEC. DIST. | CENSUS TR. |
| 534/ 155 | 0008 | R-20 | 0031 | SECOND | |
| WATER CODE | | | SEWER CODE | | |

TITLE SHEET

DONAHUE PROPERTY
4925 MONTGOMERY ROAD
LOTS 1 THRU 5

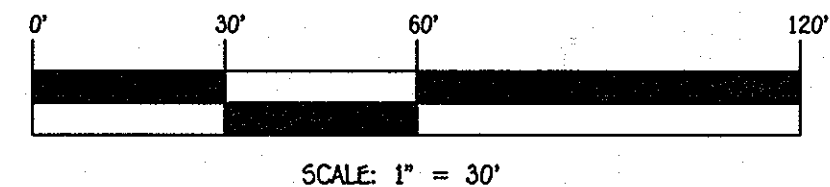
TAX MAP NO.: 0031 GRID NO.: 0008 PARCEL NO.: 0593
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: A5 SHOWN DATE: JUNE, 2012
SHEET 1 OF 4

ECP-12-052



NOTE: SEE SHEET 3 FOR SEDIMENT & EROSION CONTROL, LOO, SOILS & TREE DEMO PLAN
 NOTE: SEE SHEET 3 FOR SPECIMEN TREE CHART
 NOTE: SEE SHEET 4 FOR SWM NOTES, DETAILS & CHARTS

| LEGEND | |
|----------|------------------------------------|
| (Symbol) | DESCRIPTION |
| --- | EXISTING CONTOUR 2' INTERVAL |
| --- | PROPOSED CONTOUR 2' INTERVAL |
| --- | SILT FENCE |
| --- | SUPER SILT FENCE |
| --- | LIMIT OF DISTURBANCE |
| --- | EXISTING FENCE LINE |
| --- | EX. LINE OF TREES AND FOREST |
| (Symbol) | PROPOSED LANDSCAPING |
| (Symbol) | EXISTING TREES |
| (Symbol) | EXISTING GRAVEL AREA TO BE REMOVED |
| (Symbol) | PROPOSED PEA GRAVEL |
| (Symbol) | EXISTING GRAVEL |
| (Symbol) | EXISTING CONCRETE WALK |
| (Symbol) | PROPOSED CONCRETE WALK |
| (Symbol) | EXISTING DRIVEWAY TO BE REMOVED |
| (Symbol) | DISCONNECTION IMPERVIOUS AREA |
| (Symbol) | DISCONNECTION RECEIVING AREA |
| (Symbol) | DEBRIS AREA |



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2999

| NO. | REVISION | DATE |
|-----|----------|------|
| | | |
| | | |
| | | |

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THE PLANS AND SPECIFICATIONS WERE PREPARED OR APPROVED BY ME AND THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 20748, EXPIRATION DATE: 2/22/13.
 [Signature] 6/26/12
 Date

OWNER
 WILLIAM M. DONAHUE
 KATHLEEN M. DONAHUE
 4925 MONTGOMERY ROAD
 ELLICOTT CITY, MD 21043-6748
 410-465-0997

DEVELOPER
 COLUMBIA BUILDERS GROUP, LLC
 B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MD 21044
 443-324-4732

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 6/26/12
 Chief, Division of Land Development Date

[Signature] 6/28/12
 Chief, Development Engineering Division Date

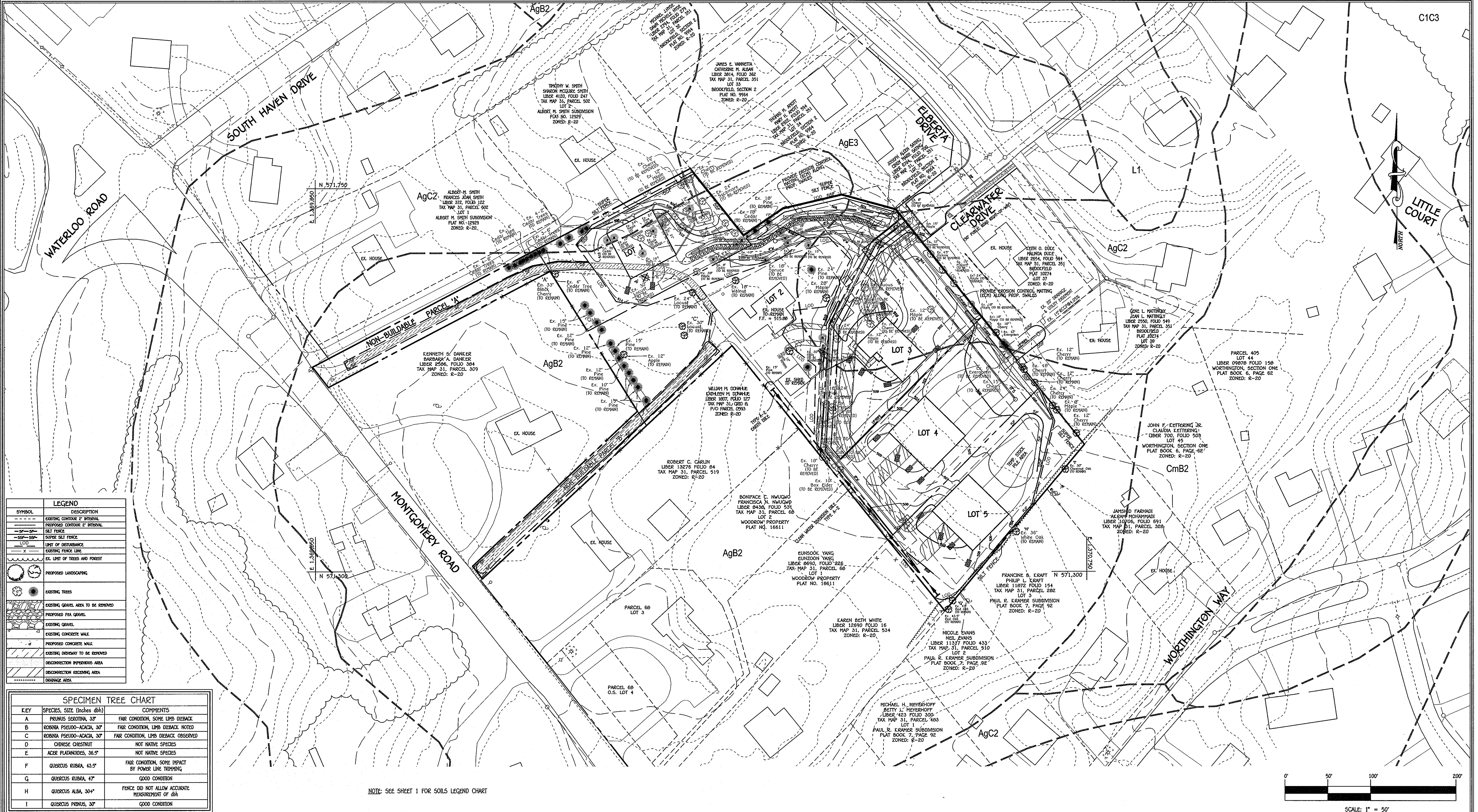
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|--------------------------------|------------|-------------|
| PROJECT | SECTION | PARCEL NO. |
| 4925 MONTGOMERY ROAD | 1 | 0593 |
| DEED: LIBER/ BLOCK NO. / FOLIO | TAX / ZONE | ELEC. DIST. |
| 534 / 0008 / 155 | 0031 | SECOND |
| WATER CODE | SEWER CODE | CENSUS TR. |
| | | |

PLAN

DONAHUE PROPERTY
 4925 MONTGOMERY ROAD
 LOTS 1 THRU 5
 TAX MAP NO.: 0031 GRID NO.: 000B PARCEL NO.: 0593
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2012
 SHEET 2 OF 4

ECP-12-052

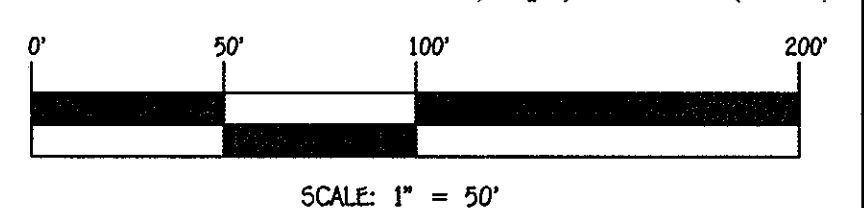
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| SYMBOL | DESCRIPTION |
|--------|------------------------------------|
| --- | EXISTING CONTOUR 2' INTERVAL |
| --- | PROPOSED CONTOUR 2' INTERVAL |
| --- | SILT FENCE |
| --- | SUPER SILT FENCE |
| --- | LIMIT OF DISTURBANCE |
| --- | EXISTING FORCE LINE |
| --- | EX. LIMIT OF TREES AND FOREST |
| --- | PROPOSED LANDSCAPING |
| --- | EXISTING TREES |
| --- | EXISTING GRAVEL AREA TO BE REMOVED |
| --- | PROPOSED PFA GRAVEL |
| --- | EXISTING GRAVEL |
| --- | EXISTING CONCRETE WALK |
| --- | PROPOSED CONCRETE WALK |
| --- | EXISTING DRIVEWAY TO BE REMOVED |
| --- | DISCONNECTION IMPERVIOUS AREA |
| --- | DISCONNECTION PERVIOUS AREA |
| --- | DRAINAGE AREA |

| KEY | SPECIES, SIZE (Inches dbh) | COMMENTS |
|-----|----------------------------|--|
| A | PRUNUS SEROTINA, 33" | FAIR CONDITION, SOME LIMB DIEBACK |
| B | ROBINIA PSEUDO-ACACIA, 30" | FAIR CONDITION, LIMB DIEBACK NOTED |
| C | ROBINIA PSEUDO-ACACIA, 30" | FAIR CONDITION, LIMB DIEBACK OBSERVED |
| D | CHINESE CHESTNUT | NOT NATIVE SPECIES |
| E | ACER PLATANOIDES, 36.9" | NOT NATIVE SPECIES |
| F | QUERCUS RUBRA, 43.5" | FAIR CONDITION, SOME IMPACT BY POWER LINE TRIMMING |
| G | QUERCUS RUBRA, 47" | GOOD CONDITION |
| H | QUERCUS ALBA, 30.4" | FENCE DID NOT ALLOW ACCURATE MEASUREMENT OF dbh |
| I | QUERCUS PRINUS, 30" | GOOD CONDITION |

NOTE: SEE SHEET 1 FOR SOILS LEGEND CHART



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 441-2955

| NO. | REVISION | DATE |
|-----|----------|------|
| | | |
| | | |
| | | |

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF MARYLAND, LICENSE NO. 20746, EXPIRATION DATE: 2/22/13.
 Aldo H. Vignone, Professional Engineer
 DATE: 6/28/12

OWNER
 WILLIAM M. DONAHUE
 KATHLEEN M. DONAHUE
 4925 MONTGOMERY ROAD
 ELLICOTT CITY, MD 21043-6748
 410-465-0977

DEVELOPER
 COLUMBIA BUILDERS GROUP, LLC
 B. JAMES GREENFIELD
 6420 AUTUMN SKY WAY
 COLUMBIA, MD 21044
 443-324-4732

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Walter Beland 6/28/12
 Chief, Division of Land Development JEM Date

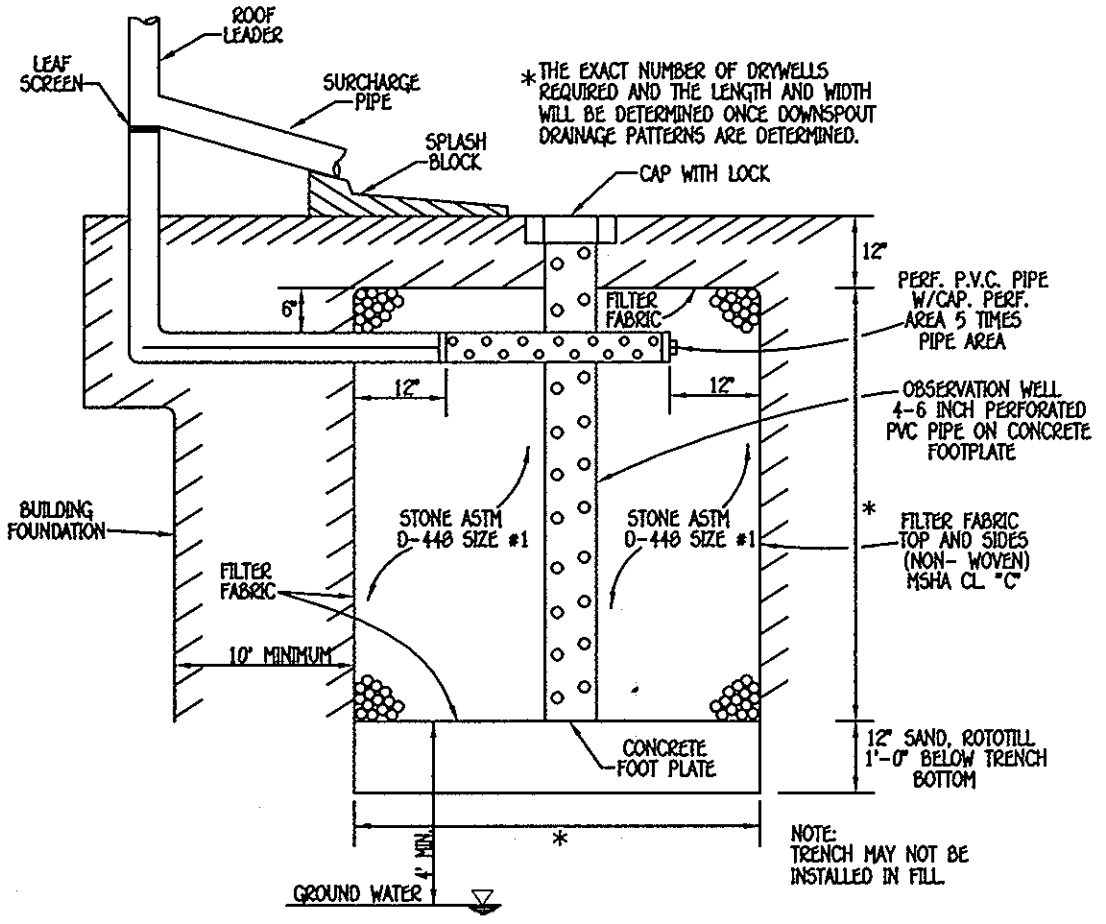
Paul Edmund 6/28/12
 Chief, Development Engineering Division J Date

| | | |
|---|------------|------------|
| PROJECT | SECTION | PARCEL NO. |
| 4925 MONTGOMERY ROAD | 1 | 0593 |
| DEED: LIBER/ BLOCK NO. ZONE TAX/ZONE ELEC. DIST. CENSUS TR. | | |
| 534/ 155 000B R-20 0031 SECOND | | |
| WATER CODE | SEWER CODE | |

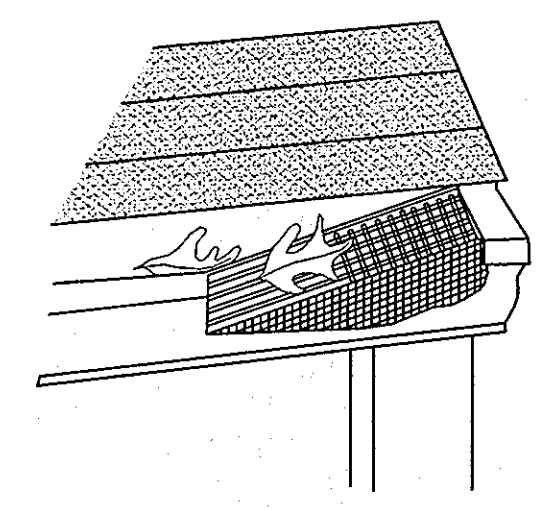
SEDIMENT & EROSION CONTROL, LIMITS OF DISTURBANCE, SOILS & TREE DEMO PLAN

DONAHUE PROPERTY
 4925 MONTGOMERY ROAD
 LOTS 1 THRU 5
 TAX MAP NO.: 0031 GRID NO.: 000B PARCEL NO.: 0593
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: JUNE, 2012
 SHEET 3 OF 4

ECP-12-052



DRY WELL DETAIL (M-5)
NOT TO SCALE



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

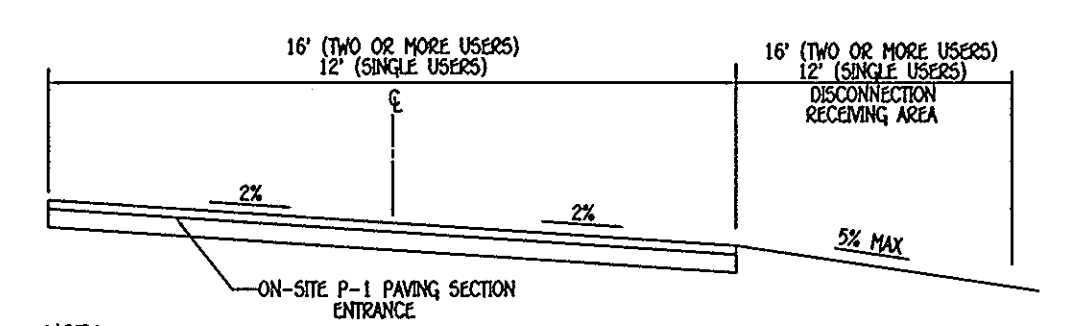
STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
- DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
- FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
- WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
- THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
- ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

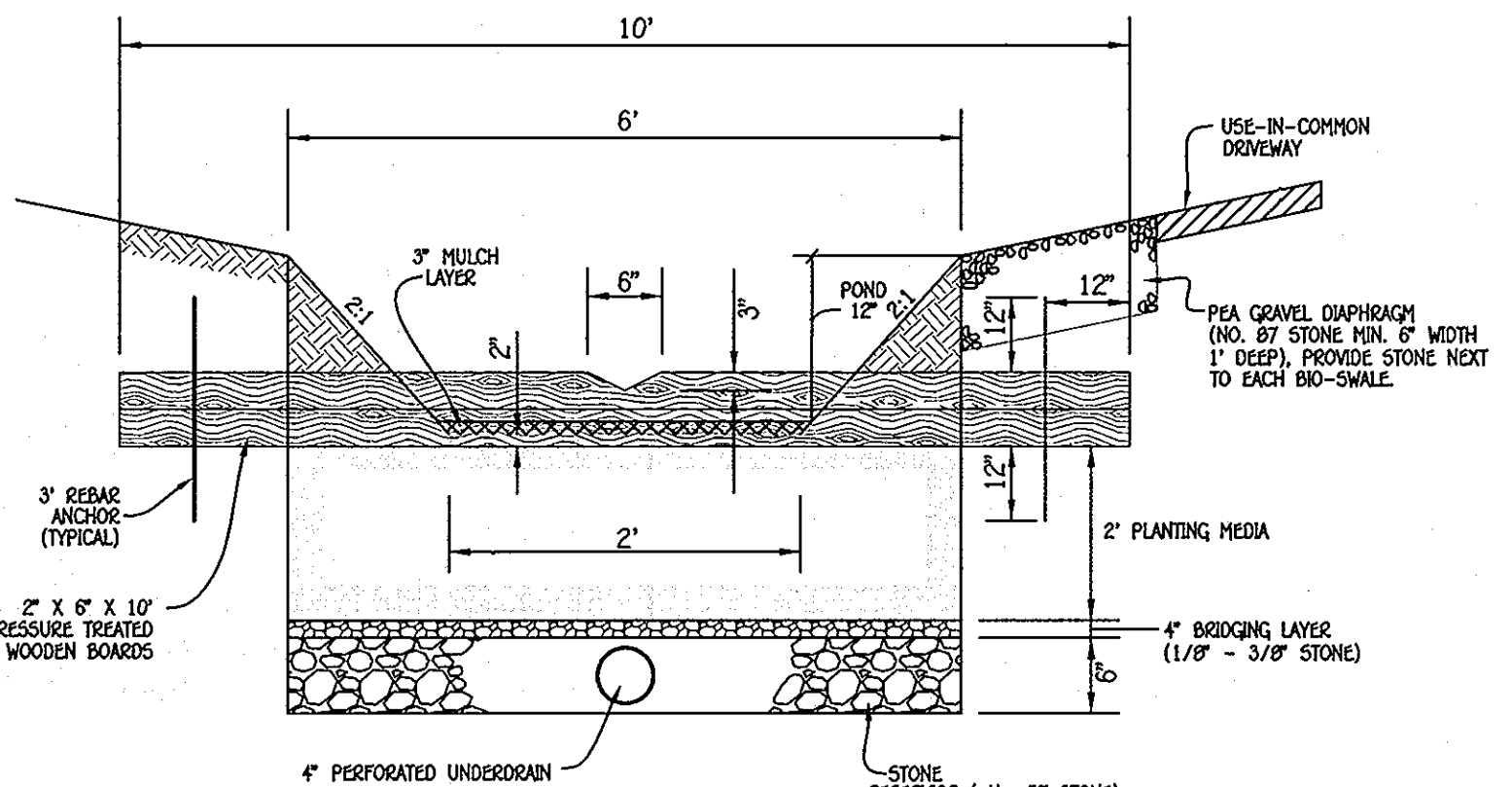
| DRY WELL CHART | | | | | |
|----------------|-----------------------------|-----------------|-----------------|-------------------|--------------|
| DRYWELL NO. | AREA OF ROOF PER DOWN SPOUT | VOLUME REQUIRED | VOLUME PROVIDED | AREA OF TREATMENT | *L D W |
| 1 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 2 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 3 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 4 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 5 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 6 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 7 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 8 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 9 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 10 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 11 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 12 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 13 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 14 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 15 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |
| 16 | 500 SQ. FT. | 45.92 C.F. | 57.6 C.F. | 100% | 8' x 6' x 4' |



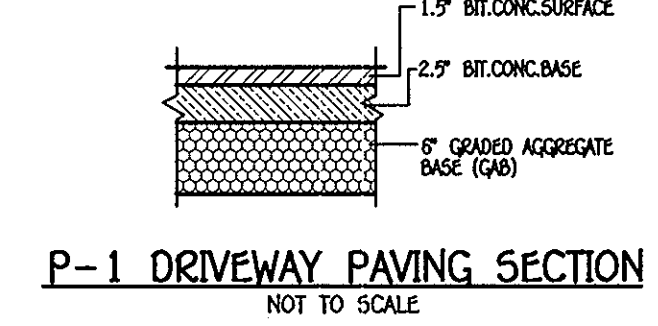
TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION
NOT TO SCALE

OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

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



BIO-SWALE (M-8) & WOODEN CHECK DAM DETAIL
SECTION "A-A"
NOT TO SCALE



P-1 DRIVEWAY PAVING SECTION
NOT TO SCALE

OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6) AND BIORETENTION SWALE (M-8)

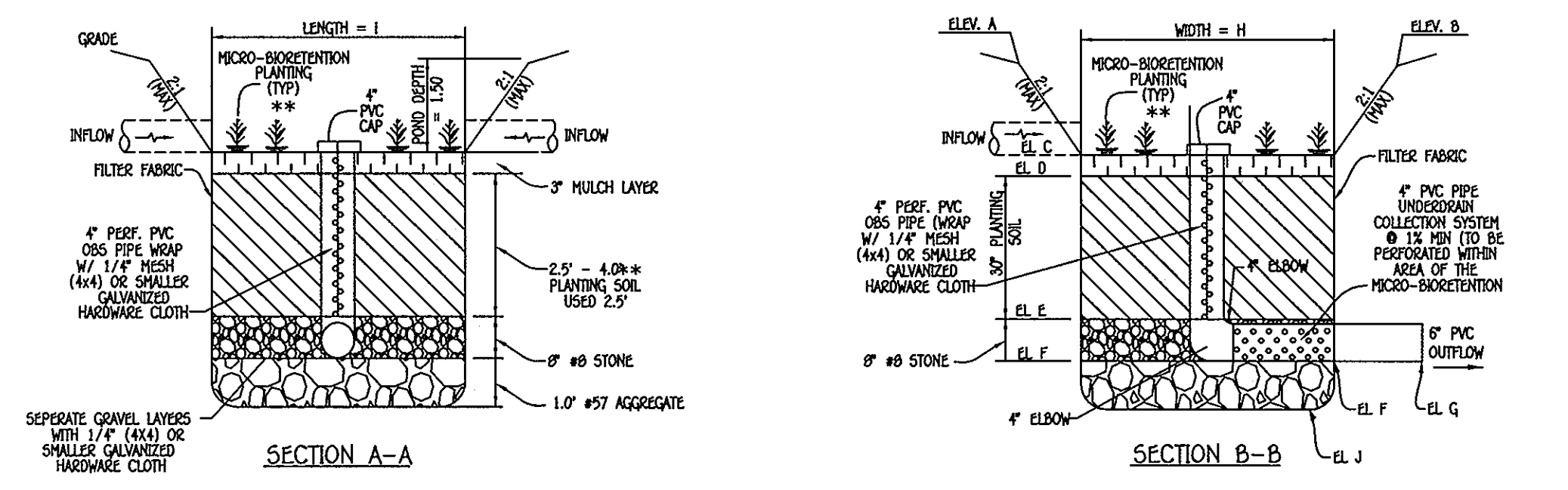
- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.6.1 AND 2.
- THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND 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.
- 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.
- THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

STORMWATER MANAGEMENT SUMMARY CHART

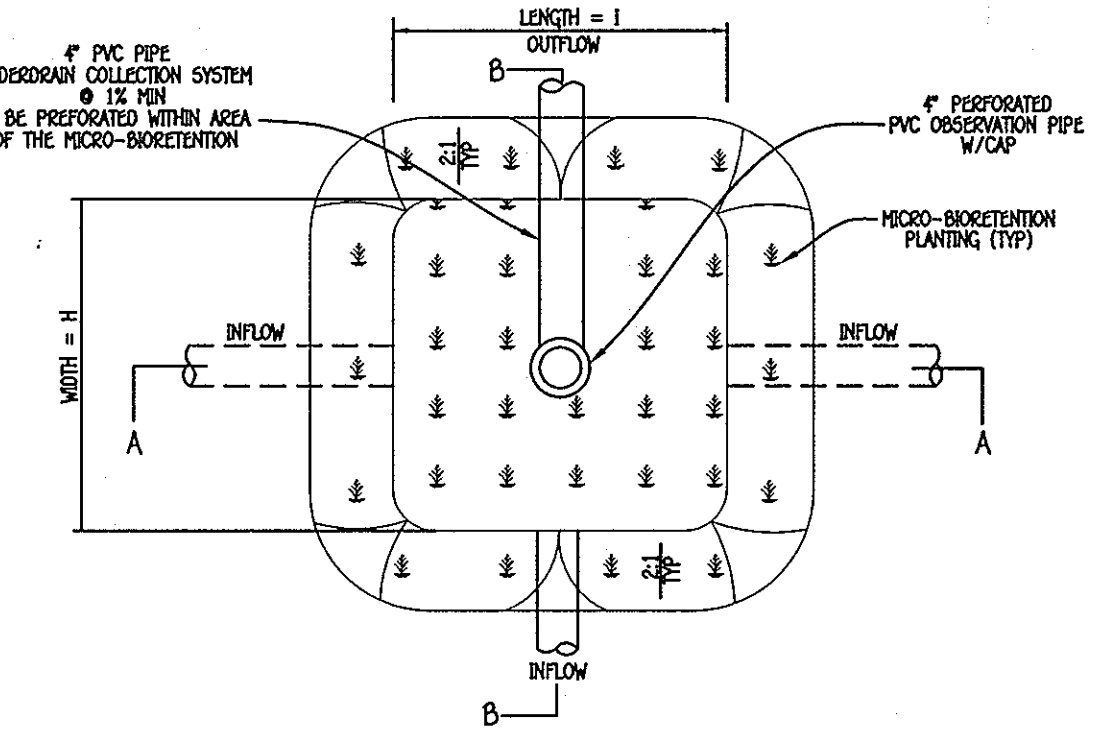
AREA = 3.32 ACRES
RCN = 55
TARGET PE = 1.2"

| SWM SUMMARY CHART | | | | REMARKS |
|-------------------|------------------|------------------|--|--|
| AREA ID | ESDy REQ. cu.ft. | ESDy Pvd. cu.ft. | | |
| LOT 1 | 1019 | 1815 | | BIO-SWALE (M-8), MICRO-BIORETENTION (M-6) & DRYWELLS (M-5) |
| LOT 2 | 48 | 48 | | NON-ROOFTOP DISCONNECTION (N-2) |
| LOT 3 | 1165 | 763 | | DRY WELLS (M-5) & NON-ROOFTOP DISCONNECTION (N-2) |
| LOT 4 | 598 | 600 | | DRY WELLS (M-5), ROOFTOP DISCONNECTION (N-1) & NON-ROOFTOP DISCONNECTION (N-2) |
| LOT 5 | 492 | 494 | | DRY WELLS (M-5), ROOFTOP DISCONNECTION (N-1) & NON-ROOFTOP DISCONNECTION (N-2) |
| TOTALS | 3326 | 3720 | | |

CALCULATE THE PE PROVIDED AS FOLLOWS:
PE PROVIDED = $ESDy \times 12 = 3720 \times 12 = 58,450$
 $Rv \times A = 0.23 \times (3.32 \text{ acres}) = 43,560$
AS SUCH, 112% (1.34×1.2) OF THE REQUIRED ESD VOLUME HAS BEEN PROVIDED.

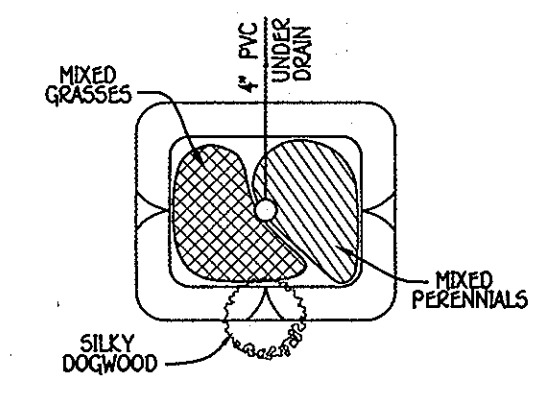


MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE



PLAN
NOT TO SCALE

| MICRO-BIORETENTION | | | | | | | | | | |
|---------------------|--------|--------|--------|--------|--------|--------|--------|-----|-----|--------|
| BIORETENTION FILTER | A | B | C | D | E | F | G | H | I | J |
| 1 | 507.50 | 507.50 | 506.50 | 506.25 | 503.75 | 503.08 | 502.88 | 10' | 26' | 501.88 |



MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

- * MIXED PERENNIALS: CUTLEAF CONIFLOWER, CAZONAL FLOWER, TRANSPARENT ASTER
 - * MIXED GRASSES: TUFTED FOXTAIL, BROOM SEDGE, SWITCH GRASS
 - * SILKY DOGWOOD
- NOTE: PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

| MICRO-BIORETENTION PLANT MATERIAL | | | |
|-----------------------------------|------------------|---------------------------------|--|
| QUANTITY | NAME | MAXIMUM SPACING (FT.) | |
| 45 | MIXED PERENNIALS | 1 FT. | |
| 45 | MIXED GRASSES | 1 FT. | |
| 1 | SILKY DOGWOOD | PLANT AWAY FROM INFLOW LOCATION | |

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461-2999

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THE PLANS AND SPECIFICATIONS WERE PREPARED OR APPROVED BY ME AND THAT I AM A QUALIFIED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 20748, EXPIRATION DATE: 2/22/13.
Date: 6/26/12
Also M. Donahue, State Professional Engineer

OWNER
WILLIAM M. DONAHUE
LATHAM HILL, DONAHUE
4925 MONTGOMERY ROAD
ELLICOTT CITY, MD 21043-6748
410-463-0897

DEVELOPER
COLUMBIA BUILDERS GROUP, LLC
B. JAMES GREENFIELD
6420 AUTUMN SKY WAY
COLUMBIA, MD 21044
443-324-4732

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Kurt Sandevole 6/26/12
Chief, Division of Land Development JEA Date

Chief, Development Engineering Division 6-28-12
Date

PROJECT: 4925 MONTGOMERY ROAD SECTION: 1 PARCEL NO.: 0593
DEED: LIBER/ BLOCK NO. ZONE TAX/ZONE ELEC. DIST. CENSUS TR.
FOLIO: 5347 0008 R-20 0031 SECOND -
155
WATER CODE: SEWER CODE:

STORMWATER MANAGEMENT DETAILS & NOTES

DONAHUE PROPERTY
4925 MONTGOMERY ROAD
LOTS 1 THRU 5

TAX MAP NO.: 0031 GRID NO.: 0008 PARCEL NO.: 0593
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: JUNE, 2012
SHEET 4 OF 4