

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN

SOILS LEGEND			
SOIL	NAME	CLASS	K ¹ VALUE
Gb-C	Gladstone loam, 0 to 15 percent slopes	B	0.32
Gb	Gladstone-Urban land complex, 0 to 8 percent slopes	B	0.32

SOILS MAP 17, CLARKSVILLE NE QUADRANGLE

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESD ¹ REQUIRED CU.FT.	ESD ² PROVIDED CU.FT.	REMARKS
ROOF (1,230 Sq.Ft.)	160	204	2 DRYWELLS (M-5)
DRIVEWAY & ROOF (4,181 Sq.Ft.)	475	528	1 MICRO-BIORETENTION FACILITY (M-6)
TOTAL SITE	635	732	

SWM NARRATIVE
INTRODUCTION:
 THIS REPORT WILL DEMONSTRATE HOW THE CRITERIA SET FORTH IN THE MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II (EFFECTIVE OCTOBER 2000, REVISED MAY 2009) WILL BE SATISFIED ON THIS PROJECT. THE GOAL OF CREATING HYDROLOGY SIMILAR TO THAT OF "WOODS IN GOOD CONDITION" WILL BE ACCOMPLISHED THROUGH THE USE OF THE PRACTICES CONTAINED WITHIN CHAPTER 5 OF SMD MANUAL.

GENERAL SITE CONDITIONS:
 5972 TROTTER ROAD IS A ONE ACRE LOT CONSISTING OF ONE SINGLE FAMILY HOME. THE PROPERTY IS ZONED R-20 AND LOCATED ON TAX MAP 35 IN THE CLARKSVILLE AREA OF HOWARD COUNTY. THE SITE SLOPES FROM SOUTH TO NORTH AND DRAINS TO BROAD SWALE IN THE REAR OF THE ADJOINING LOT. PUBLIC WATER AND SEWER WILL BE UTILIZED FOR THIS PROJECT. THE SOILS ON SITE ARE CLASSIFIED BY SOILS, GbC GLADSTONE LOAM AND Gb GLADSTONE-URBAN LAND COMPLEX. THE SITE IS RECTANGULAR IN SHAPE AND CONTAINS BOTH SMALL AND MATURE TREES INCLUDING 5 SPECIMEN TREES. THIS SITE IS IN THE MIDDLE PATENT RIVER WATERSHED (02131106). THE RUNOFF FROM A PORTION OF THE ROOF OF THE PROPOSED HOUSE WILL BE TREATED BY 2 DRYWELLS (M-5) AND RUNOFF THE REMAINING ROOFTOP AND DRIVEWAY WILL BE TREATED BY A MICRO-BIORETENTION (M-6) FACILITY.

I. NATURAL RESOURCE PROTECTION:
 EXCLUDING 5 SPECIMEN TREES, THERE ARE NO ENVIRONMENTALLY SENSITIVE AREAS EXIST ON-SITE. DUE TO THE LARGE CRITICAL ROOT ZONES LOCATED ON-SITE, 3 SPECIMEN TREES WILL BE REMOVED TO ALLOW CONSTRUCTION OF THE PROPOSED BUILDING. PLEASE NOTE AN ALTERNATIVE COMPLIANCE WILL BE SUBMITTED AT THE FINAL PLAN STAGE OF THIS PROJECT FOR THE REMOVAL OF SPECIMEN TREES.

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. THE EXISTING DISCHARGE POINT FOR THIS PROJECT IS LOCATED AT THE BEGINNING OF A BROAD SWALE TO THE NORTH OF THE PROPERTY, WHICH BECOMES NARROWER WHEN ENTERING THE YALI LI PROPERTY. ALTHOUGH THE PROPOSED SWM DESIGN CREATES A CONCENTRATED POINT OF DISCHARGE AT THE LOW FLOW UNDERDRAIN, BOTH THIS UNDERDRAIN AND LARGER STORM EVENTS WILL ENTER THE NORTHERN PORTION OF THE SWALE SIMILAR TO EXISTING CONDITIONS, WHERE THE NARROWER SWALE PREVIOUSLY RESIDED.

III. REDUCTION OF IMPERVIOUS AREAS THROUGH BETTER SITE DESIGN, ALTERNATIVE SURFACES AND NONSTRUCTURAL PRACTICES
 TO MINIMIZE IMPERVIOUS AREA, THIS PROJECT PROPOSES THE EXPANSION OF THE EXISTING DRIVEWAY TO BE UTILIZED AS A USE-IN-COMMON DRIVEWAY FOR ACCESS TO THE PROPOSED HOUSE. ALL NEW IMPERVIOUS AREA WILL RECEIVE FULL ESDV.

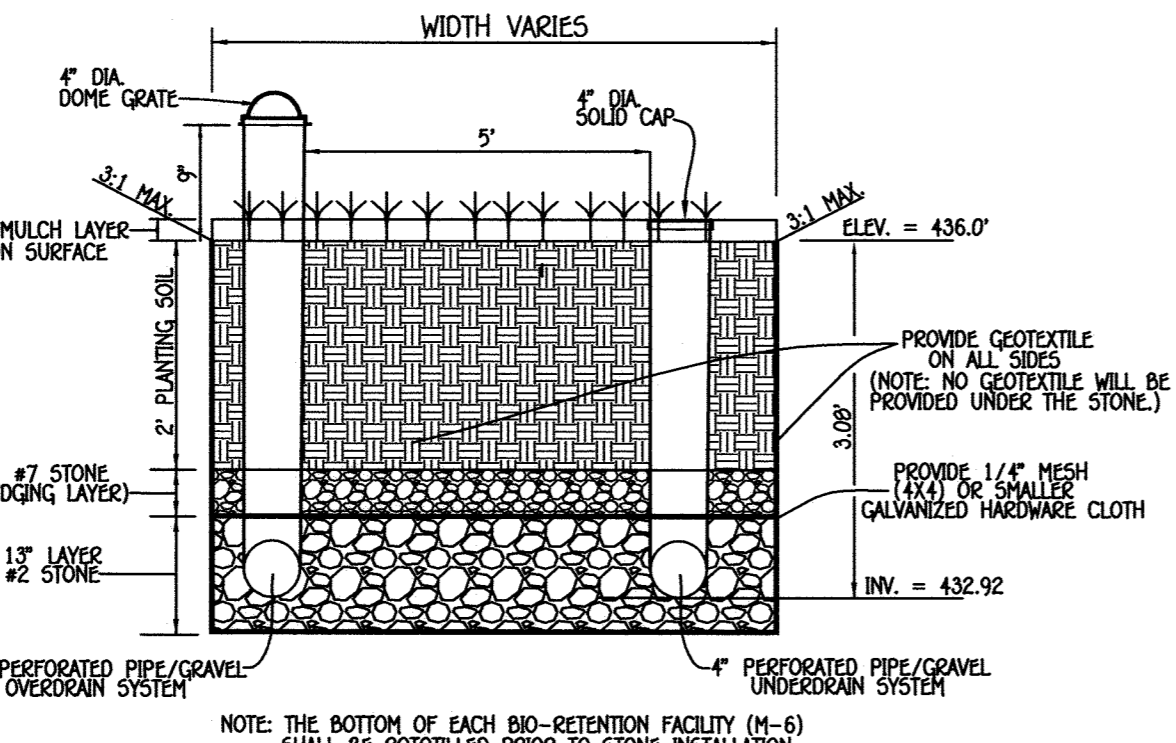
IV. INTEGRATION OF EROSION AND SEDIMENT CONTROLS INTO STORMWATER STRATEGY:
 DUE TO THE MINOR NATURE OF THIS PROJECT NO LARGE SCALE SEDIMENT CONTROL PRACTICES HAVE BEEN PROPOSED. HOWEVER, IT IS ANTICIPATED TO UTILIZE THE INTERIM CONDITION BIO-RETENTION DESIGN THAT WILL PROVIDE MINOR SEDIMENT TRAPPING.

V. IMPLEMENTATION OF ESD PLANNING TECHNIQUES AND PRACTICES TO THE MAXIMUM EXTENT PRACTICABLE (MEP)
 THIS SUBMISSION PROPOSES SEVERAL MARYLAND STORMWATER DESIGN MANUAL, CHAPTER 5 DEVICES TO MEET AND EXCEED THE REQUIRED ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT PRACTICABLE (ESD TO THE MEP).

VI. REQUEST FOR DESIGN MANUAL WAIVER:
 NO WAIVERS RELATED TO STORMWATER MANAGEMENT ARE BEING REQUESTED AT THIS TIME. HOWEVER, THIS SITE IS SUBJECT TO APPROVAL OF AN ALTERNATIVE COMPLIANCE APPLICATION TO SECTION 16.120 (C)(2)(I) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS FOR MINIMUM FRONTAGES AND SECTION 16.1205(A)(3) OF THE SAME REGULATIONS FOR REMOVAL OF THREE SPECIMEN TREES.

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

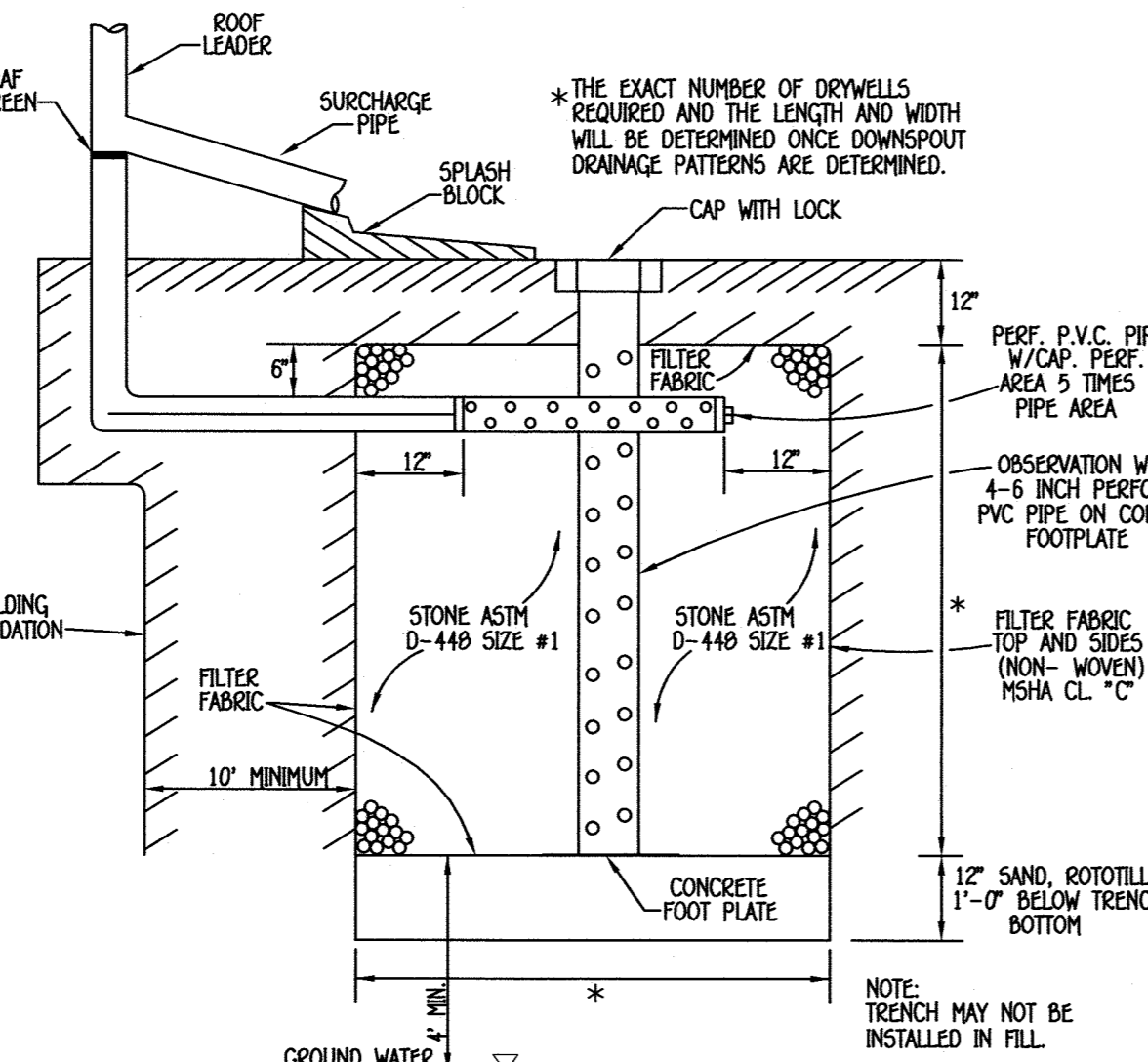
- THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
- THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
- THE OWNER SHALL MAINTAIN A LOG BOOK 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 ENSURE 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.



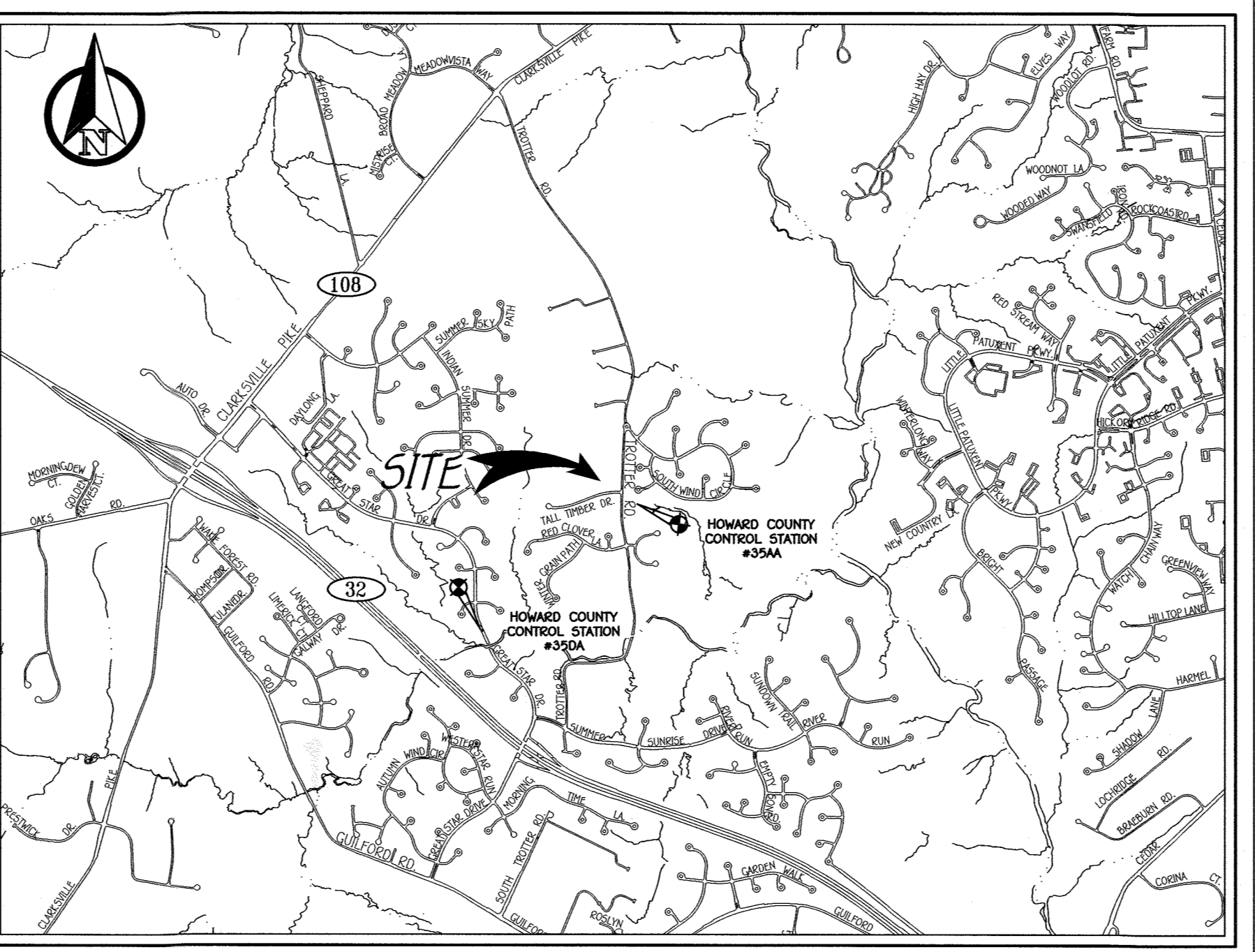
TYPICAL SECTION MICRO-BIORETENTION FACILITY (M-6)
 NO NOT SCALE

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

- 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.
- 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.



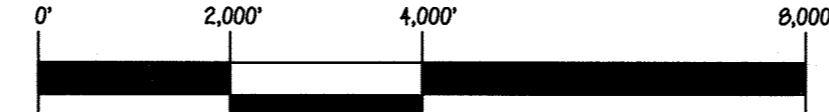
DRY WELL DETAIL (M-5)
 NOT TO SCALE



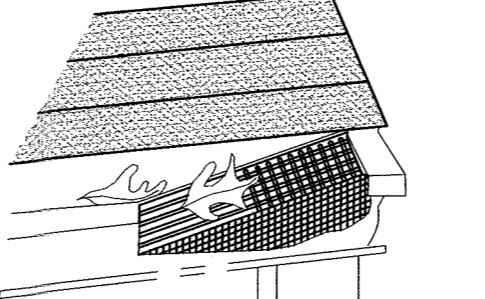
HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 35AA
 N 560,767.681 E 1,335,483.897 ELEVATION: 430.95
 HOWARD COUNTY GEODETIC SURVEY CONTROL NO. 35DA
 N 558,918.62 E 1,333,137.37 ELEVATION: 350.81
 REFER TO HOWARD CO. ADC MAP 4934-C7

VICINITY MAP

SCALE: 1" = 2,000'



SCALE: 1" = 2,000'



GUTTER DRAIN FILTER DETAIL
 NOT TO SCALE

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
x 440.5	SPOT ELEVATION
---	EXISTING STORM DRAIN
---	PROPOSED STORM DRAIN PIPE
---	EXISTING WATER LINE
---	EXISTING SEWER LINE
---	PROPOSED SEWER
---	PROPOSED WATER
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED PAVING/PATH
---	PROPOSED SIDEWALKS
---	USE IN COMMON EASEMENT
---	FOREST CONSERVATION EASEMENT (REFORESTATION)
---	LIMIT OF DISTURBANCE
---	SUPER SILT FENCE
---	SILT FENCE
---	TEMPORARY TREE PROTECTION FENCE
---	EXISTING TREE LINE
---	PROPOSED TREE LINE
---	DRYWELL (M-5)-TYPICAL
---	SOIL LINES AND TYPES
---	BIO RETENTION FACILITY (F-6) OR (M-6) AS NOTED
---	PROPOSED ROOF LEADER
---	DENOTES EXISTING TREES TO BE REMOVED
---	DENOTES EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE

DRY WELL CHART						
LOT No.	DRYWELL No.	AREA OF ROOF PER DRYWELL	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L W D
LOT 2	1	625 SQ.FT.	80 CU.FT.	102 CU.FT.	100%*	8' x 8' x 4'
LOT 2	2	625 SQ.FT.	80 CU.FT.	102 CU.FT.	100%*	8' x 8' x 4'

Approved: Department Of Planning And Zoning
 Chief, Development Engineering Division
 Chief, Division Of Land Development
 11/17/21
 11/19/21
 Date

GENERAL NOTES

- THE SUBJECT PROPERTY IS ZONED R-20 (PER 10/06/13 COMPREHENSIVE ZONING PLAN.) BOUNDARY IS BASED ON A FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER ON OR ABOUT APRIL, 2020.
- CONTOURS ARE BASED ON A TOPOGRAPHIC FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, ON OR ABOUT MARCH, 2020.
- COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL.
 STATIONS NO. 35AA AND NO. 35DA:
 HOWARD COUNTY MONUMENT NO. 35AA N 560,767.681 E 1,335,483.897 ELEV. 430.95
 HOWARD COUNTY MONUMENT NO. 35DA N 558,918.620 E 1,333,137.37 ELEV. 350.81
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. THIS PLAN PROPOSES THE USE OF ONE (1) M-6 MICRO-BIORETENTION FACILITY AND TWO (2) M-5 DRY WELLS.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER WILL BE UTILIZED FOR THIS PROJECT.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- 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.
- LANDSCAPING WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT.
- FOREST CONSERVATION REQUIREMENTS FOR THIS PROPOSED SUBDIVISION WILL BE PROVIDED AT THE FINAL PLAN STAGE OF THIS PROJECT IN ACCORDANCE WITH SECTION 16.120 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION ACT. IT IS ANTICIPATED THAT A FEE-IN-LIEU OF AFFORESTATION WILL BE REQUESTED.
- SOIL BORING INFORMATION WILL BE PROVIDED AT THE NEXT PLAN STAGE OF THIS PROJECT.
- APPROVAL OF THIS ECP DOES NOT CONSTITUTE APPROVAL OF SUBSEQUENT OR ASSOCIATED SUBDIVISION OR SITE DEVELOPMENT PLANS OR RED-LINE REVISIONS. 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, SITE DEVELOPMENT PLAN, OR RED-LINE REVISION PROCESSES. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THE PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- THIS SITE IS SUBJECT TO APPROVAL OF AN ALTERNATIVE COMPLIANCE APPLICATION TO SECTION 16.120 (C)(2)(I) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS FOR MINIMUM FRONTAGES AND SECTION 16.1205(A)(3) OF THE SAME REGULATIONS FOR REMOVAL OF THREE SPECIMEN TREES.
- IN ACCORDANCE WITH SECTION 16.132 (4), THE PROPERTY OWNER SHALL NOT BE REQUIRED TO CONSTRUCT OR PROVIDE FOR CONSTRUCTION OF IMPROVEMENTS TO COUNTY MAINTAINED SCENIC ROADS. THE SIGHT DISTANCE EVALUATION DOES NOT REQUIRE GRADING TO ACHIEVE SAFE STOPPING DISTANCE. IN ACCORDANCE WITH SECTION 16.134(B) NO SIDEWALKS ARE REQUIRED WHEN (1) ONE SIDE OF A STREET ADJOINS A LANDSCAPED PARKING ISLAND, PARK, GOLF COURSE OR OTHER TYPE OF USE WHICH DOES NOT REQUIRE A SIDEWALK AND WHERE CONTINUITY IS NOT ESSENTIAL, (2) SIDEWALKS WOULD BE DETRIMENTAL TO THE CHARACTER OF A SCENIC ROAD AND ARE NOT NEEDED TO SERVE SCHOOL, SHOPPING OR ACTIVE RECREATION AREAS.
- THIS PROJECT IS LOCATED ALONG A SCENIC ROAD AND IS SUBJECT TO PLANNING BOARD APPROVAL.

SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 1 AC. (43,579.71 Sq.Ft.)
 LOT 1 = 21,780 Sq.Ft.
 LOT 2 = 21,790 Sq.Ft.
- LIMIT OF DISTURBANCE = 20,935 Sq.Ft.; 0.48 Ac.±
- PRESENT ZONING DESIGNATION = R-20D
- PROPOSED USE: SINGLE FAMILY DETACHED HOUSING
- NET TRACT AREA = 1 AC.
 (TOTAL SITE AREA - FLOODPLAIN - STEEP SLOPE AREA)
 (1 AC. - (0.0 AC. + 0.0 AC.)) = 1 AC.±
- DENSITY ALLOWED:
 2 UNITS/ACRE X 1 = 2 UNITS
- BUILDING COVERAGE OF SITE: 2,000 Sq. Ft. OR 11% (PROPOSED LOT 2)
- PREVIOUS HOWARD COUNTY FILES: PB.5, F.4
- TOTAL AREA OF FLOODPLAIN LOCATED ON SITE 0.0 AC.
- TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC.± (0 AC. 25% OR GREATER)
- TOTAL AREA OF WETLANDS (INCLUDING BUFFERS) LOCATED ON SITE = 0 AC.±
- TOTAL FOREST 0 AC.±
- TOTAL GREEN OPEN AREA = 38,148 Sq. Ft. 0.88 Ac.± 88%
- TOTAL IMPERVIOUS AREA = 5,431 Sq.Ft. 12%
- AREA OF ERODIBLE SOILS = 0 AC.

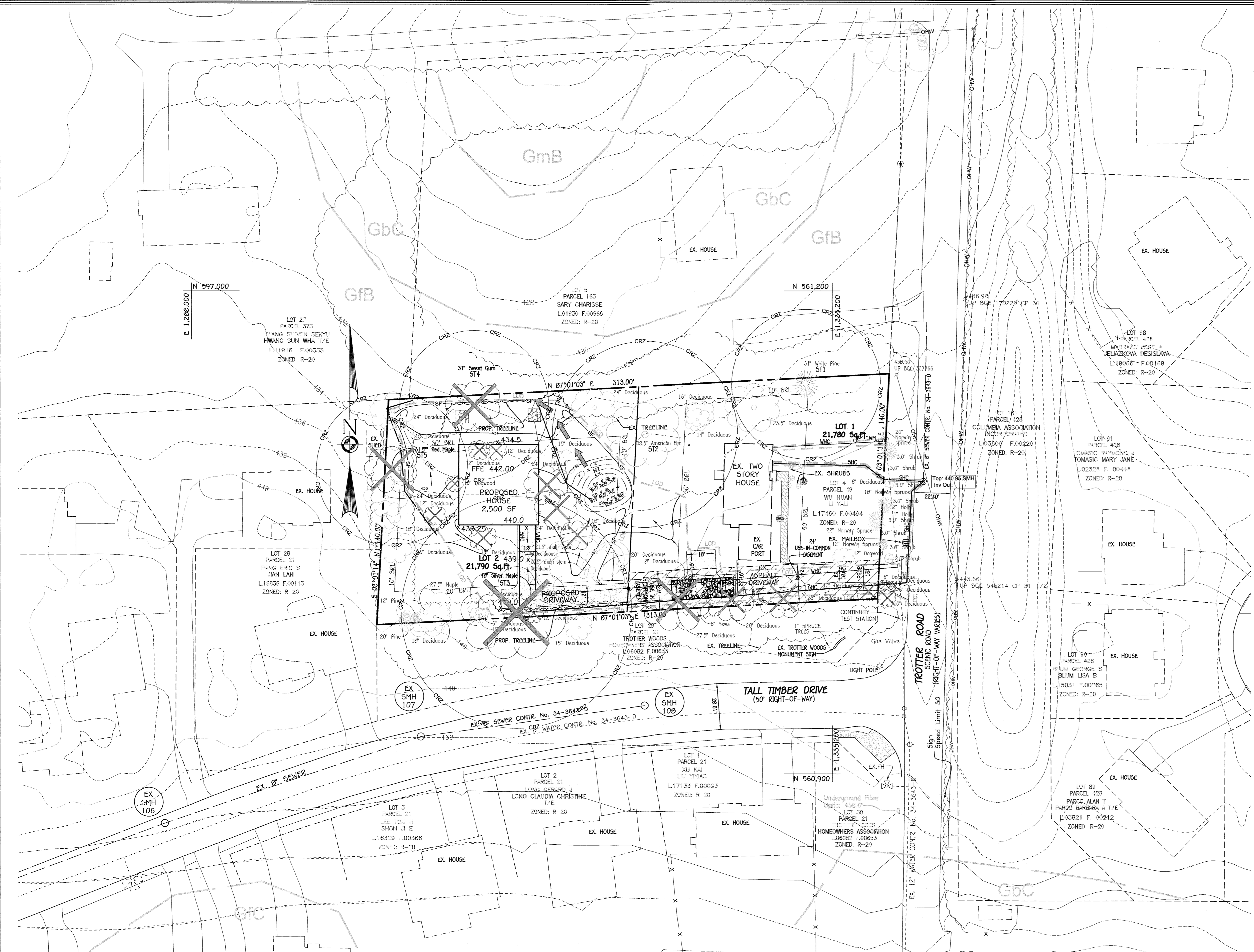
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21104
 (410) 461 - 2099



PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/23.
 Frank Manalansan II
 10/26/21
 Date

OWNER/DEVELOPER
 YALI LI
 5972 TROTTER ROAD
 CLARKSVILLE, MD 21029
 301-385-9798

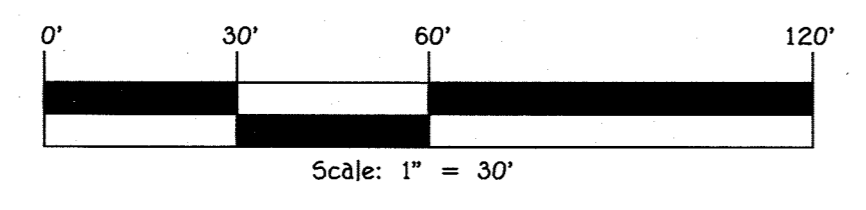
TITLE SHEET
YALI LI PROPERTY
 A RE-SUBDIVISION OF FOREST HILLS, LOT 4
 5972 TROTTER ROAD
 P.B. 5, F. 4
 TAX MAP NO.: 35 GRID NO.: 08 PARCEL NO.:19
 ZONED R-20
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN DATE: OCTOBER, 2021
 SHEET 1 OF 2



LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
448.5	SPOT ELEVATION
18" SD	EXISTING STORM DRAIN
18" PROCP	PROPOSED STORM DRAIN PIPE
EX. FH	EXISTING WATER LINE
PROS	EXISTING SEWER LINE
PROS	PROPOSED SEWER
PROW	PROPOSED WATER
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD WIRE
---	PROPOSED PAVING/PATH
---	PROPOSED SIDEWALKS
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---	DENOTES EXISTING TREES TO BE REMOVED
---	DENOTES EXISTING TREES TO REMAIN
---	CRITICAL ROOT ZONE

Specimen Tree Chart

Key (X#)	Species	Size (in.dbh)	CRZ (feet radius)	Comments	Status	CRZ DISTURBANCE
1	White pine	31	46.5	Fair condition, leaning	to be retained	0%
2	American Elm	38.5	57.75	Fair condition, some dieback	to be retained	20.5%
3	Silver maple	48	72	Fair condition, multi-stem, some dieback	to be removed	39%
4	Sweet gum	31	46.5	Fair condition, heavy vine cover	to be removed	53%
5	Red maple	31.5	47.25	Fair condition, dieback in canopy	to be removed	35%



PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 21476, EXPIRATION DATE: 7/14/23.

Frank Manalansan II
 FRANK MANALANSAN II
 10/26/21
 Date

OWNER/DEVELOPER

YALI LI
 5972 TROTTER ROAD
 CLARKSVILLE, MD 21029
 301-385-9798

ENVIRONMENTAL CONCEPT PLAN AND
 CONCEPTUAL SEDIMENT & EROSION CONTROL PLAN

YALI LI PROPERTY
 A RE-SUBDIVISION OF FOREST HILLS, LOT 4
 5972 TROTTER ROAD
 P.B. 5, F. 4
 TAX MAP NO.: 35 GRID NO.: 08 PARCEL NO.: 19
 ZONED R-20
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SCALE: A5 SHOWN DATE: OCTOBER, 2021
 SHEET 2 OF 2

ECP-21-034