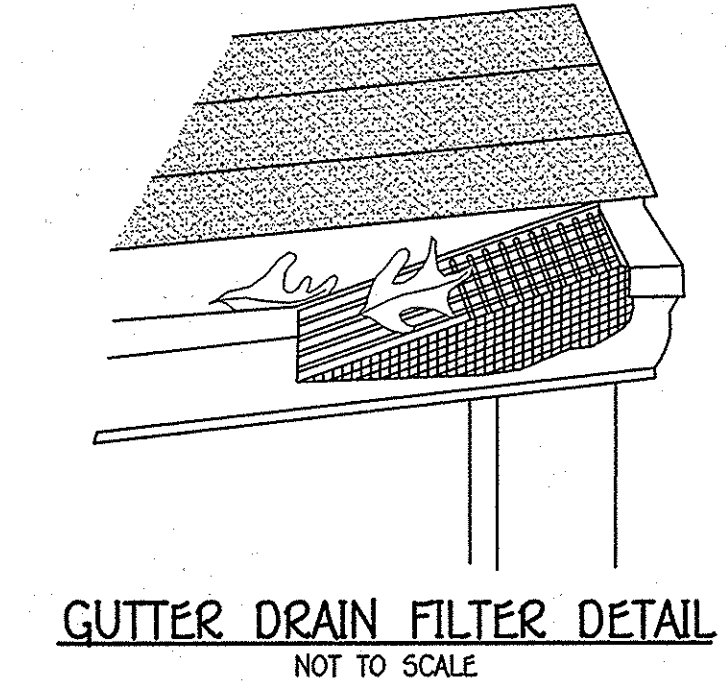
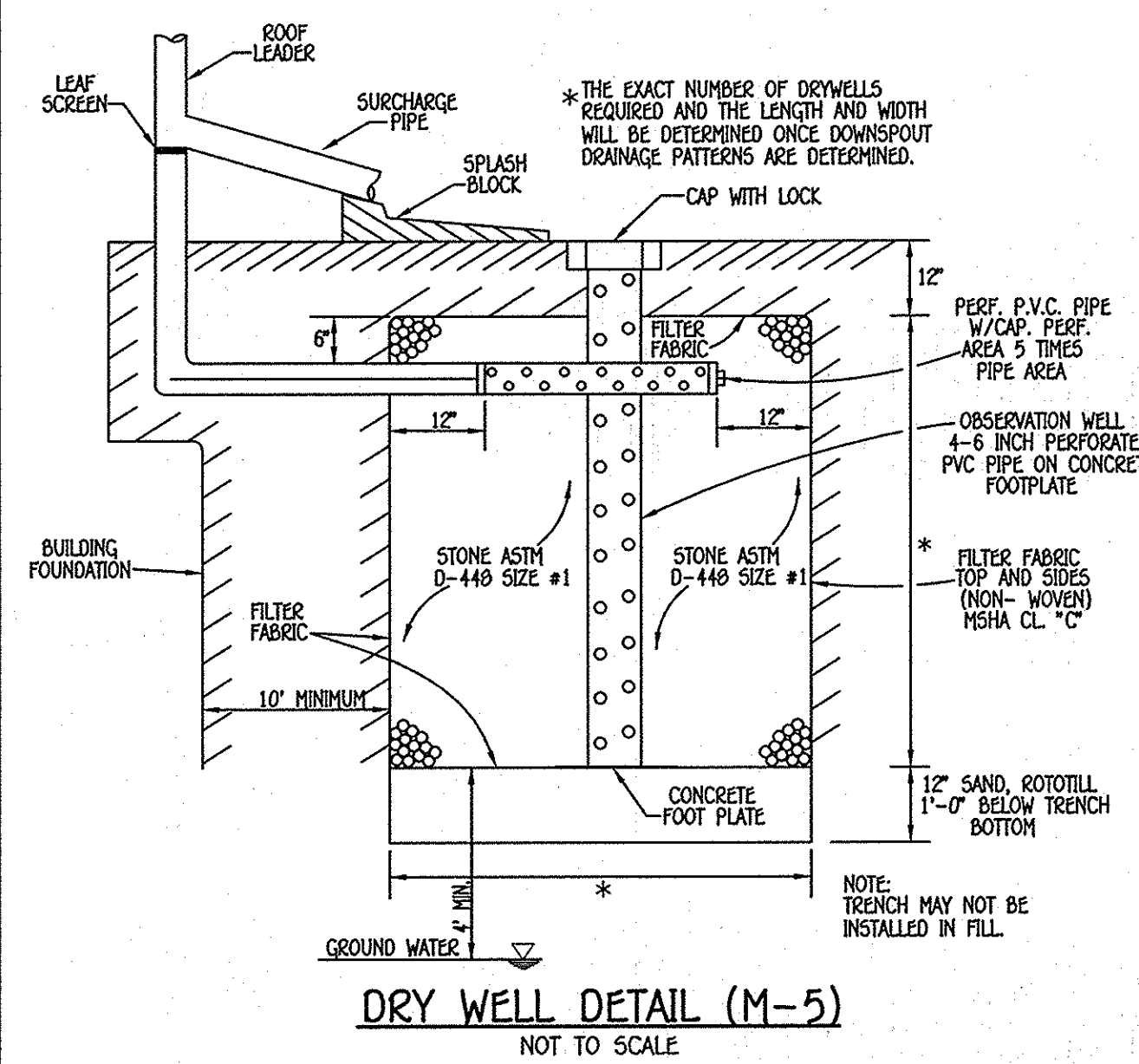


SHEET INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ENVIRONMENTAL CONCEPT PLAN

SOILS LEGEND			
SOIL	NAME	CLASS	K FACTOR
G1b	Gladstone-Urban land complex, 0 to 8 percent slopes	B	0.28
G1c	Gladstone-Urban land complex, 9 to 15 percent slopes	B	0.28

STORMWATER MANAGEMENT SUMMARY			
AREA ID.	ESDV REQUIRED CU.FT.	ESDV PROVIDED CU.FT.	REMARKS
SITE	417	476	DRY WELLS (M-5)
TOTAL	417	476	

GROSS AREA = 0.32 ACRES  
 LOD = 0.24 ACRES  
 RCN = 30  
 TARGET Pe = 1.6"



### 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.

DRY WELL CHART						
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	L	W D
GAR (LT)	343 SQ. FT.	44 C.F.	50 C.F.	100%*	5'	5' x 5'
GAR (RT)	343 SQ. FT.	44 C.F.	72 C.F.	100%*	6'	6' x 5'
FRONT (RT)	972 SQ. FT.	124 C.F.	128 C.F.	100%*	8'	8' x 5'
REAR (LT)	793 SQ. FT.	101 C.F.	128 C.F.	100%*	8'	8' x 5'
REAR (RT)	609 SQ. FT.	78 C.F.	98 C.F.	100%*	7'	7' x 5'

\* AREA OF TREATMENT EXCEEDS THAT REQUIRED.

# ENVIRONMENTAL CONCEPT PLAN TROTTER WOODS

## LOT 24

TAX MAP No. 35 GRID No. 8 PARCEL NOS. 21  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND



BENCHMARK INFORMATION	
B.M.#1	HOWARD COUNTY CONTROL STATION #29GA - HORIZONTAL - (NAD '83) (LOCATED AT NORTHWEST CORNER OF INTERSECTION OF TROTTER ROAD & MD RT 108) N 566,807.417 E 1,333,325.606 ELEVATION = 450.83 - VERTICAL - (NAVD '88)
B.M.#2	HOWARD COUNTY CONTROL STATION #29G5 - HORIZONTAL - (NAD '83) (LOCATED AT SOUTHEAST CORNER OF INTERSECTION OF MD RT 108 & MIDDLE PATUXENT COURT) N 568,341.182 E 1,333,392.425 ELEVATION = 380.10 - VERTICAL - (NAVD '88)

### 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.

LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	EXISTING 2' CONTOURS	---	PROPOSED CONTOUR
---	EXISTING 10' CONTOURS	---	SPOT ELEVATION
---	SOILS LINES AND TYPE	---	LIMITS OF DISTURBANCE
---	EXISTING TREELINE	---	PROPOSED TREELINE
---	EXISTING FENCE LINE	---	SILT FENCE
---	PROPOSED PAVING	---	EROSION CONTROL MATTING
---	DRAINAGE AREA DIVIDE	---	SUPER SILT FENCE
---		---	STABILIZES CONSTRUCTION ENTRANCE

### GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY (MISS UTILITY) AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- BOUNDARY SHOWN HEREON IS BASED ON FIELD RUN NONUMENTAL BOUNDARY SURVEY PERFORMED BY JOHN C. HELLEMA, SE, INC. DATED 1996. LOT BOUNDARY SEE PLAT #13-451. TOPOGRAPHY SHOWN HEREON IS BASED ON HOWARD COUNTY QS TOPOGRAPHY AT 5' CONTOUR INTERVAL INTERPOLATED FOR 2' CONTOUR INTERVAL.
- 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. 2904 AND 2902 WERE USED FOR THIS PROJECT.
- PREVIOUS DPZ FILE NUMBERS: F-81-119; PLAT 4917, F-83-96; PLAT 5590; 5-97-02; F-98-01; F-98-09; PLAT 13449; SDP-00-032.
- STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, REVISED 2009. NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH CHAPTER 5 ARE BEING UTILIZED.
- THIS PROPERTY IS LOCATED INSIDE THE METROPOLITAN DISTRICT. LOT IS TO BE SERVED PUBLIC WATER AND PUBLIC SEWER, CONTRACT #34-3643-D.
- ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
- THE SUBJECT PROPERTY IS ZONED R-20 (PER DATE 10/06/2013 COMPREHENSIVE ZONING PLAN).
- NO 100 YEAR FLOODPLAIN, WETLANDS, STREAMS AND/OR THEIR BUFFERS, NOR STEEP SLOPES EXIST ON-SITE.
- NO FOREST STANDS EXIST ON-SITE. SEE ENVIRONMENTAL FINDINGS LETTER PREPARED BY FISHER, COLLINS & CARTER, INC. DATED MAY 2015.
- FOREST CONSERVATION REQUIREMENTS FOR THIS LOT WERE PROVIDED UNDER F-98-099. REQUIREMENTS WERE MET WITH A FEE-IN-LIEU PAYMENT ALONG WITH RETENTION OF ON-SITE FOREST AND ON-SITE REFORESTATION. NO FURTHER OBLIGATION IS REQUIRED.
- SOIL BORINGS WILL BE REQUIRED FOR THE PROPOSED STORMWATER MANAGEMENT DEVICES.
- 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.
- NO STRUCTURES EXIST ON THIS PROPERTY.

### DESIGN 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 said manual. The achievement of this goal will remove the requirement of providing Channel Protection Volume.

**General Site Conditions:**  
 Lot 24 was part of the subdivision of Trotter Woods, which is zoned R-20. It is located on Tax Map 35, Parcel No. 21 of the Howard County, Maryland Tax Map Database System and known as 11832 Tall Timber Drive. The property was recorded as plat #13449-13452 on December 4, 1996. Lot 24 is not forested, but contains a number of existing trees ranging in size from 8" to 21" in size. There are no wetlands on-site either. The proposed house will be served by public water and sewer via connections provided under contract #34-3643-D. The majority of the runoff from the lot is from east to west toward the Bulk Parcel, but a small portion at the front of the lot flows toward Tall Timber Drive in the direction of an existing inlet just beyond the southwestern corner. The driveway will flow to the existing bioretention facility and the drywells treating the rooftop will be oversized to overcompensate for not being treated on Lot 24. Per the 2004 Web Soil Survey, soils on-site consist of "G1b" Gladstone - Urban land complex, a type A soil.

- Natural Resource Protection:**  
 No environmentally sensitive features such as wetlands, streams, their buffers, steep slopes, or floodplain exist on the lot.
- Maintenance of Natural Flow Patterns:**  
 Nature flow patterns will be maintained. Runoff from the front to the proposed house will flow toward the inlet in Tall Timber Drive, while the runoff from the rear of the house flows east to west toward the Bulk Parcel.
- Reduction of Impervious Areas through better site design, alternative surfaces and Nonstructural Practices**  
 A single driveway is proposed to provide access to the proposed house.
- Integration of Erosion and Sediment Controls into Stormwater Strategy:**  
 Silt Fence and Super Silt Fence will be utilized to provide erosion and sediment control.
- Implementation of ESD Planning Techniques and practices to the Maximum Extent Practicable (MEP)**  
 The full required ESD volume is being provided.
- Request for a Design Manual Waiver:**  
 No waivers are required.

Table B.4. Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration

Material	Specification	Size	Notes
Plantings	see Appendix A: Table A.4	n/a	plantings are site-specific
Planting soil (2" to 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%
Organic Content	Min. 10% by dry weight (ASTM D 2974)	n/a	
Mulch	shredded hardwood	n/a	aged 6 months, minimum
Pea gravel diaphragm	pea gravel: ASTM-D-448	No. 8 or No. 9 (1/8" to 3/8")	
Courtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile	n/a	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	ASHTO M-45	No. 57 or No. Aggregate (3/8" to 3/4")	
Underdrain piping	F 750, Type PS 28 or ASHTO M-278	4" to 6" rigid schedule 40 PVC or 50835	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipe; not necessary underneath pipe. Perforated pipe shall be wrapped with 1/4 inch galvanized hardware cloth
Poured in place concrete (if required)	MSMA Min. No. 3; f = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved state or local standards required design drawings needed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.8/99; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressure); and analysis of potential cracking
Sand	ASHTO-M-6 or ASTM-C-33	0.075" to 0.04"	Sand substitutions such as Diabase and Gabbro (ASHTO #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

### SITE ANALYSIS DATA CHART

- TOTAL AREA OF THIS SUBMISSION = 14,003 SQ.FT. OR 0.32 AC.\*
- LIMIT OF DISTURBED AREA = 10,335 SQ.FT. OR 0.24 AC.\*
- PRESENT ZONING DESIGNATION = R-20  
(PER 10/06/2013 COMPREHENSIVE ZONING PLAN)
- PROPOSED USE: RESIDENTIAL
- PREVIOUS HOWARD COUNTY FILES: F-81-119; PLAT 4917, F-83-96; PLAT 5590; 5-97-02; F-98-01; F-98-09; PLAT 13449; SDP-00-032.
- TOTAL AREA OF FLOODPLAIN LOCATED ON-SITE = 0.00 AC
- TOTAL AREA OF SLOPES IN EXCESS OF 15% = 0.00 AC
- TOTAL AREA OF WETLANDS (INCLUDING BUFFER) = 0.00 AC
- TOTAL AREA OF STREAM (INCLUDING BUFFER) = 0.00 AC
- TOTAL AREA OF EXISTING FOREST = 0.00 AC
- TOTAL GREEN OPEN AREA = 0.23 AC\*
- TOTAL IMPERVIOUS AREA = 0.09 AC\*
- TOTAL AREA OF ERODIBLE SOILS = 0.00 AC
- TOTAL AREA OF ROAD DEDICATION = 0.00 AC

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461 - 2292

### 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. 35385, EXPIRATION DATE: 01/12/2016.

*Stephanie Lutz* 7/6/15  
 Signature of Professional Engineer DATE



### OWNERS / DEVELOPER

TYSON TALL TIMBER INC.  
 11850 TALL TIMBER DRIVE  
 CLARKSVILLE MD 21029-1213

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Kate Leland* 7-9-15  
 Chief, Division of Land Development Date

*M. J. ...* 7-31-15  
 Chief, Development Engineering Division Date

PROJECT	SECTION	PARCEL NO.
TROTTER WOODS	1	21

### TITLE SHEET

**TROTTER WOODS**  
 LOT 24  
 ZONED R-20  
 TAX MAP No. 35 GRID No. 8 PARCEL No. 21  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: JULY, 2015  
 SHEET 1 OF 2

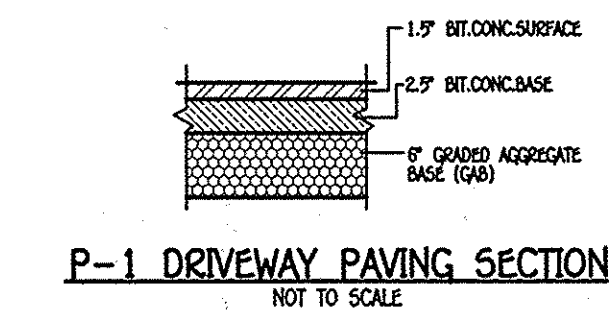
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2674/84	8	R-20	35	FIFTH	605505

ECP-15-072

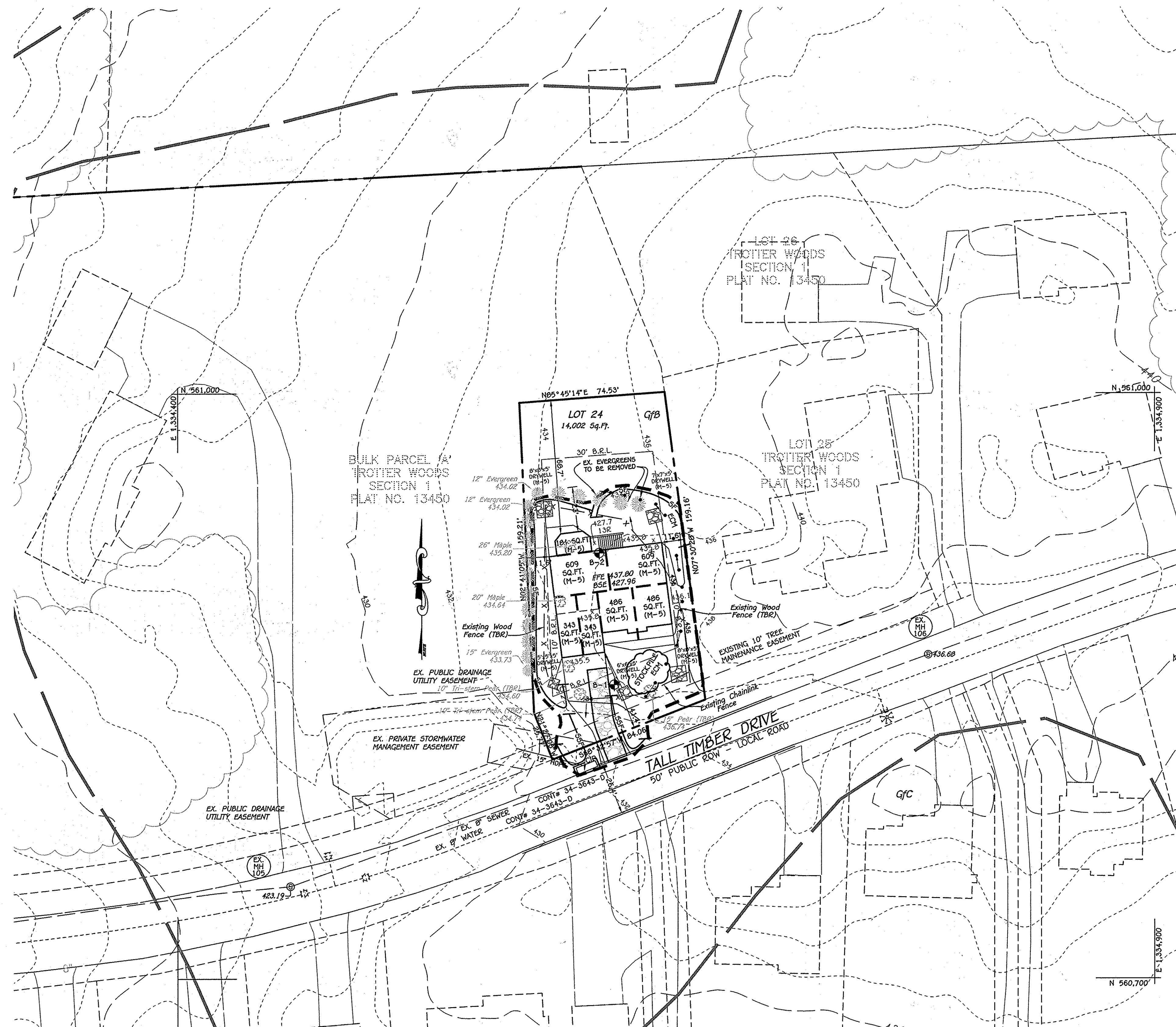
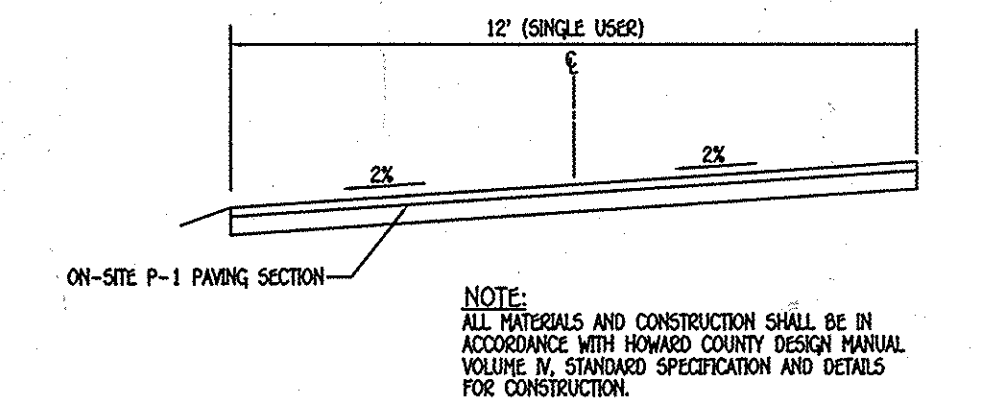


LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	EXISTING 2' CONTOURS	---	PROPOSED CONTOUR
---	EXISTING 10' CONTOURS	+	SPOT ELEVATION
GfB GfC	SOILS LINES AND TYPE	LDD	LIMITS OF DISTURBANCE
---	EXISTING TREELINE	---	PROPOSED TREELINE
---	EXISTING FENCE LINE	SF	SILT FENCE
---	PROPOSED PAVING	ECM	EROSION CONTROL MATING
---	DRAINAGE AREA DIVIDE	SSF	SUPER SILT FENCE
			STABILIZES CONSTRUCTION ENTRANCE

STORMWATER MANAGEMENT PRACTICES				
LOT NO.	DISCONNECTION OF ROOFTOP RUNOFF (N-1) Y/N, NUMBER	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	DRY WELLS (M-5) Y/N, NUMBER	MICRO-BIORETENTION (M-6) Y/N, NUMBER
24	NO	NO	YES, FIVE (5)	NO

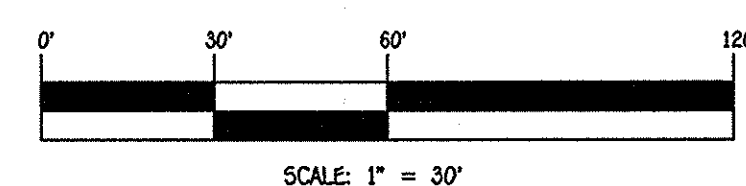


NOTE: APPROVAL OF THIS PLAN BY HOWARD SOIL CONSERVATION DISTRICT DOES NOT PROVIDE APPROVAL OF THE SHOWN SEDIMENT CONTROLS.



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2095

NO.	REVISION	DATE



**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. 38386, EXPIRATION DATE: 01/12/2016.

*Gregory J. Lutz* 7/6/15  
Signature Of Professional Engineer DATE



**OWNERS / DEVELOPER**

TYSON TALL TIMBER INC.  
11050 TALL TIMBER DRIVE  
CLARKSVILLE MD 21029-1213

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Katherine Dwork*  
Chief, Division of Land Development 8  
Date 7-9-15

*Chris Edick*  
Chief, Development Engineering Division 4  
Date 7-31-15

PROJECT: TROTTER WOODS SECTION: 1 PARCEL NO.: 21

DEED	BLOCK NO.	ZONE	TAX/ZONE	ELEC. DIST.	CENSUS TR.
8674/04	8	R-20	35	FIFTH	605505

**ENVIRONMENTAL CONCEPT PLAN**

**TROTTER WOODS**  
LOT 24  
ZONED R-20  
TAX MAP No. 35 GRID No. 8 PARCEL No. 21  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: JULY, 2015  
SHEET 2 OF 2

ECP-15-072