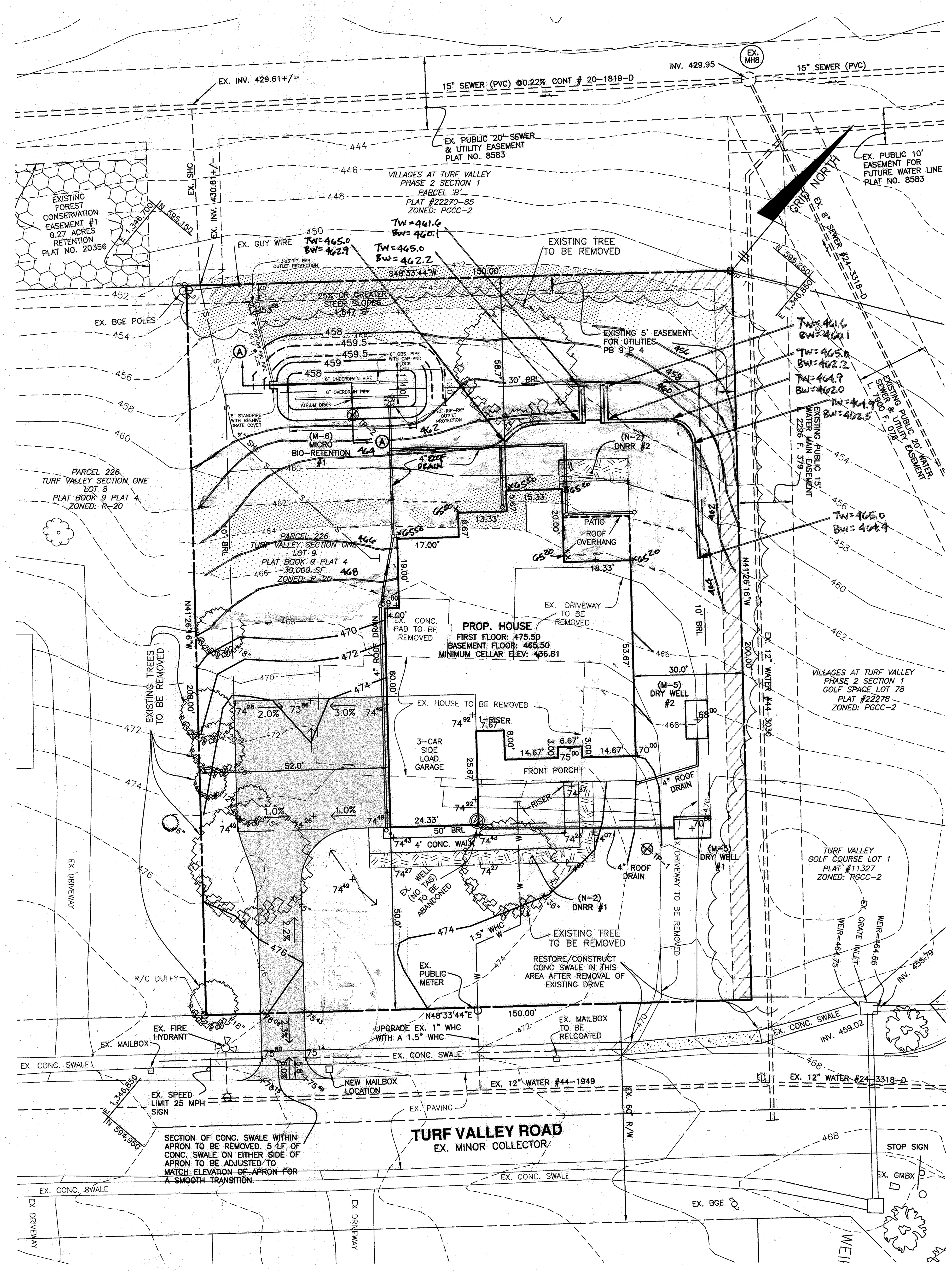
RESIDENTIAL SITE DEVELOPMENT PLAN
TURF VALLEY
SECTION ONE LOT 9

GENERAL NOTES

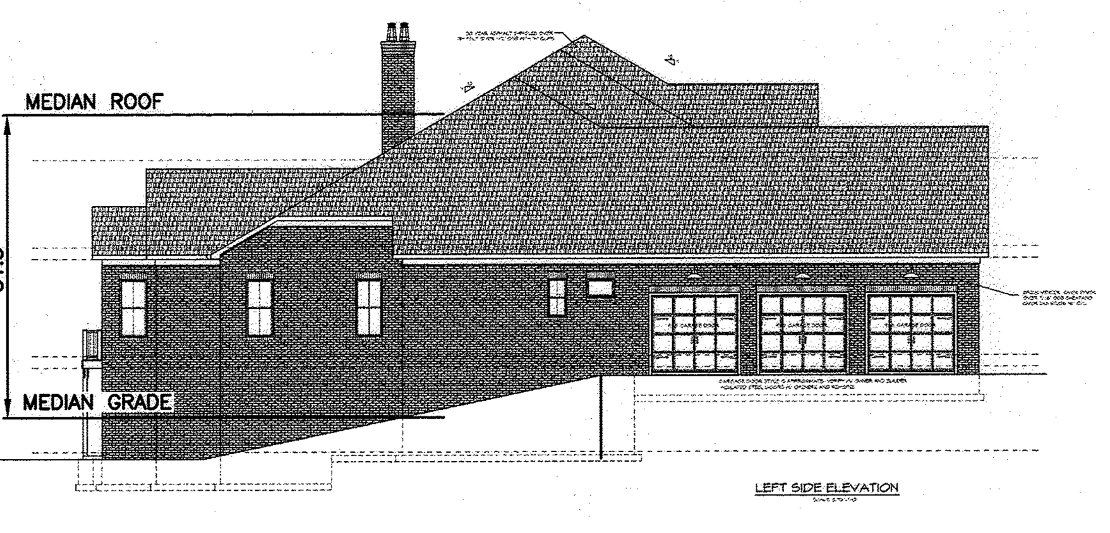
1. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS ALTERNATIVE COMPLIANCES HAVE BEEN APPROVED AND NOTED BELOW.
2. THE SUBJECT PROPERTY IS ZONED R–20 PER THE OCTOBER 6, 2013 COMPREHENSIVE ZONING PLAN.
3. THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
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 MONUMENTS NO. 16E1 AND 0012 WERE USED FOR THIS PROJECT.
5. TRACT BOUNDARY IS BASED ON PLAT BOOK 9 PAGE 4 AND CONFIRMED BY BENCHMARK ENGINEERING, INC IN APRIL, 2022.
6. THE EXISTING TOPOGRAPHY SHOWN IS BASED ON A FIELD RUN SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC. IN APRIL, 2022.
7. THE EXISTING UTILITIES SHOWN ARE BASED ON CONTRACT DRAWINGS AND FIELD SURVEY LOCATIONS.
8. THERE ARE NO WETLANDS, STREAMS, THEIR REQUIRED BUFFERS, 100 YEAR–FLOODPLAIN, OR STEEP SLOPES 25% OR GREATER THAT ARE MORE THAN 20,000 SF OF CONTIGUOUS AREA LOCATED ON THIS LOT.
9. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERIES, BURIAL GROUNDS OR HISTORIC STRUCTURES LOCATED ON THIS LOT.
10. A NOISE STUDY IS NOT REQUIRED FOR THIS LOT SINCE IT IS NOT LOCATED WITHIN 500 FEET OF THE INTERSTATE 70 RIGHTS–OF–WAY.
11. A TRAFFIC STUDY IS NOT REQUIRED FOR THIS LOT SINCE IT IS AN EXISTING LOT AND NO NEW LOTS ARE PROPOSED. AN 85th PERCENTILE SPEED STUDY WAS CONDUCTED IN MAY, 2022 BY THE TRAFFIC GROUP FOR USE IN THE SIGHT DISTANCE ANALYSIS.
12. THIS SITE IS WITHIN THE METROPOLITAN DISTRICT.
13. WATER AND SEWER IS PUBLIC. THE CONTRACT NUMBERS ARE 20–1819–D AND 44–1949. THE DRAINAGE AREA IS THE LITTLE PATUXENT.
14. THIS LOT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.1200, THE FOREST CONSERVATION ACT OF HOWARD COUNTY, BASED ON SECTION 16.1202(b)(1)(i) DEVELOPMENT ACTIVITY ON A SINGLE LOT SMALLER THAN 40,000 SF.
15. THIS LOT IS EXEMPT FROM THE REQUIREMENTS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL FOR PERIMETER LANDSCAPING SINCE THIS IS AN EXISTING LOT, THE PLAN IS NOT A RE–SUBDIVISION, AND DOES NOT INCREASE THE NUMBER OF UNITS.
16. STORMWATER MANAGEMENT FOR THIS LOT IS BEING PROVIDED VIA 2 ON–LOT (M–5) DRY WELLS, AND 1 ON–LOT (M–6) MICRO BIO–RETENTION PRACTICE, AND 2 AREAS OF (N–2) DISCONNECTION OF NON–ROOFTOP RUNOFF.
17. THE REQUIRED GEOTECHNICAL INFORMATION CONSISTS OF TWO TEST PIT LOCATIONS. SINCE INFILTRATION RATE ARE NOT REQUIRED FOR THE DEVICES CHOSEN, TEST PITS WERE DUG TO DETERMINE ROCK AND GROUNDWATER, THE LOGS OF THOSE TEST PITS CAN BE FOUND ON THIS SITE DEVELOPMENT PLAN.
18. THIS PROJECT IS EXEMPT FROM THE MODERATE INCOME HOUSING UNIT REQUIREMENT SINCE IT IS AN EXISTING SINGLE LOT.
19. 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.
20. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1–800–257–7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
21. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
    A) WIDTH – 12' (16' SERVING MORE THAN ONE RESIDENCE).
    B) SURFACE – 6" OF CRUSHER RUN BASE WITH TAR AND CHIP COATING (1.5" MIN)
    C) GEOMETRY – MAX 15% GRADE, MAX 10% GRADE CHANGE & MIN. 45' TURNING RADIUS.
    D) STRUCTURES (CULVERTS/BRIDGES) – CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD)
    E) DRAINAGE ELEMENTS – CAPABLE OF SAFELY PASSING 100 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
    F) STRUCTURE CLEARANCES – MINIMUM 12 FEET
    G) MAINTENANCE – SUFFICIENT TO ENSURE ALL WEATHER USE
22. FOR APPLICABLE PREVIOUS HOWARD COUNTY FILE REFERENCES SEE SITE ANALYSIS DATA CHART ON THIS SHEET.
23. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, WINDOW WELLS, ORIELS, VESTIBULES, BALCONIES AND CHIMNEYS MAY ENCROACH 4 FEET INTO ANY SETBACK OR REQUIRED DISTANCE BETWEEN BUILDINGS PROVIDED THE FEATURE HAS A MAXIMUM WIDTH OF 16 FEET. EXTERIOR STAIRWAYS OR RAMPS, ABOVE OR BELOW GROUND LEVEL (EXCLUDING THOSE ATTACHED TO A PORCH OR DECK) MAY ENCROACH 10 FEET INTO A FRONT SETBACK OR A SETBACK FROM A PROJECT BOUNDARY, 16 FEET INTO A REAR SETBACK, 4 FEET INTO A SIDE SETBACK OR REQUIRED DISTANCE BETWEEN BUILDINGS. OPEN OR ENCLOSED PORCHES OR DECKS AND THE STAIRWAYS OR RAMPS ATTACHED THERETO MAY ENCROACH 10 FEET INTO A FRONT OR REAR SETBACK, SETBACK FROM A PROJECT BOUNDARY OR A REQUIRED DISTANCE BETWEEN BUILDINGS.
24. ANY DAMAGE TO THE COUNTY'S RIGHT–OF–WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
25. SEWER HOUSE CONNECTION (SHC) INVERTS SHOWN ARE LOCATED AT THE PROPERTY (OR EASEMENT) LINE.
26. IN ACCORDANCE WITH COUNCIL BILL 76–2018, EFFECTIVE JAN 11, 2019 AND PER SECTION 3.105(C) OF THE COUNTY CODE, ALL NEW RESIDENTIAL CONSTRUCTION THAT HAS A GARAGE, CARPORT, OR DRIVEWAY SHALL FEATURE A DEDICATED ELECTRIC LINE OF SUFFICIENT VOLTAGE SO THAT AN ELECTRIC VEHICLE CHARGING STATION MAY BE ADDED IN THE FUTURE. THIS DEDICATED LINE SHALL BE PROVIDED FOR EACH UNIT.
27. THE EXISTING WELL LOCATED IN FRONT OF THE EXISTING HOUSE (NOT TAG) IS TO BE PROPERLY ABANDONED IN ACCORDANCE WITH THE HOWARD COUNTY BUREAU OF ENVIRONMENTAL HEALTH.
28. ANY DAMAGE TO THE EXISTING CONCRETE SWALE LOCATED IN THE PUBLIC RIGHT–OF–WAY SHALL BE REPAIRED BY CONTRACTOR.
29. FOR DRIVEWAY ENTRANCE DETAIL REFER TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R–6.06. A CULVERT IS NOT REQUIRED SINCE THE CALCULATED FLOW OVER THE DRIVEWAY IS 0.97 cfs WHICH IS LESS THAN THE AMOUNT REQUIRED FOR A CULVERT (5 cfs).
30. THIS SINGLE RESIDENTIAL LOT IS NOT SUBJECT TO SIDEWALK REQUIREMENTS SINCE IT IS A RECORDED LOT. THIS SITE DEVELOPMENT PLAN IS NOT A SUBDIVISION AND DOES NOT CREATE ANY NEW LOTS.



BENCHMARKS
NAD'83 HORIZONTAL

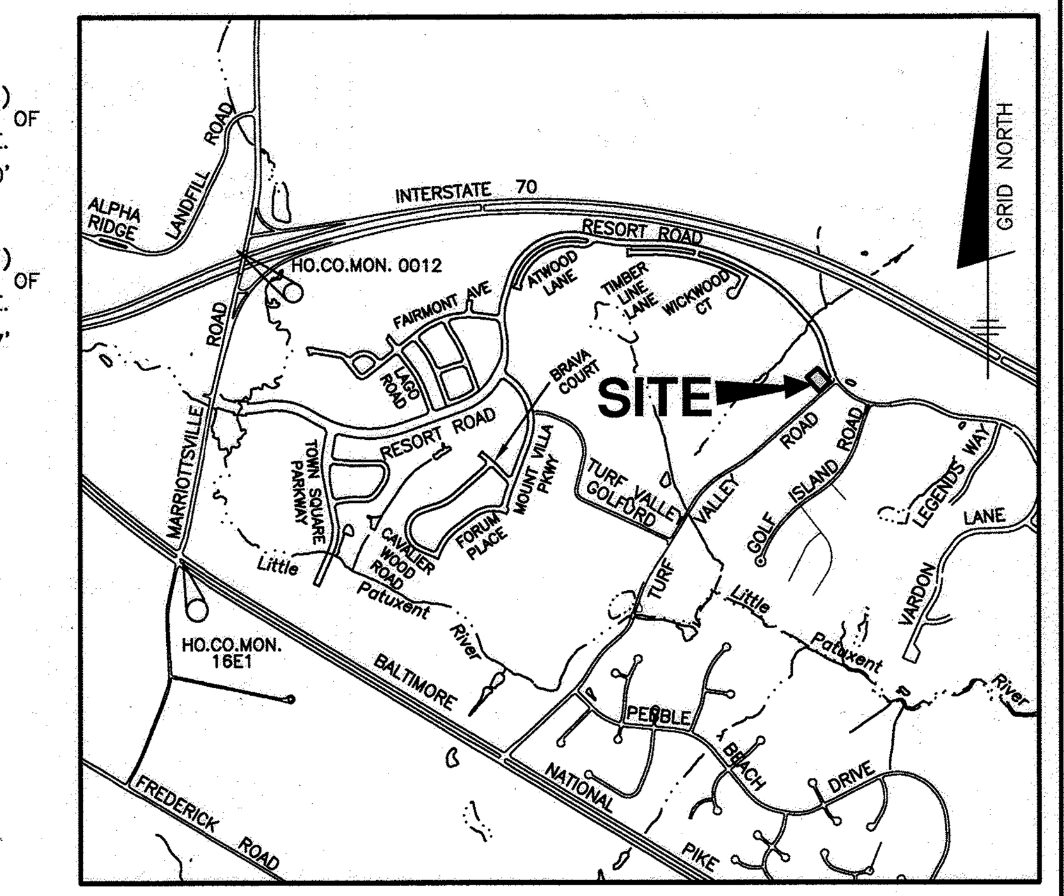
HO. CO. #16E1 (AKA: 3438001)
STAMPED BRASS DISK SET ON TOP OF A 3ft DEEP COLUMN OF CONCRETE.
N 593250.960' E 1340192.70'
ELEVATION: 463.981'

HO. CO. #0012 (AKA: 3439001)
STAMPED BRASS DISK SET ON TOP OF A 3ft DEEP COLUMN OF CONCRETE.
N 596502.760' E 1340864.37'
ELEVATION: 486.298'



ELEVATION VIEW

0 10 20 40
1 inch = 20 ft.



VICINITY MAP
SCALE: 1" = 2000'

ADC MAP: 19
GRID: D4

SHEET INDEX	
SHEET	TITLE
1	SITE DEVELOPMENT AND GRADING PLAN
2	STORMWATER MANAGEMENT PLAN
3	SEDIMENT & EROSION CONTROL PLAN AND DETAILS
4	SEDIMENT & EROSION CONTROL NOTES
5	SIGHT DISTANCE ANALYSIS

ADDRESS CHART	
LOT	STREET ADDRESS
9	2602 TURF VALLEY ROAD

SITE ANALYSIS DATA CHART

A.) TOTAL PROJECT AREA ____ 0.69 ACRES
B.) AREA OF PLAN SUBMISSION ____ 0.69 ACRES
C.) LIMIT OF DISTURBED AREA ____ 0.67 ACRES
D.) PRESENT ZONING: ____ R–20
E.) PROPOSED USE OF SITE: ____ RESIDENTIAL – SINGLE FAMILY DETACHED
F.) FLOOR SPACE ON EACH LEVEL OF BLDG PER USE ____ N/A
G.) TOTAL NUMBER OF UNITS ALLOWED AS SHOWN ON FINAL PLAT(S) ____ 1
H.) TOTAL NUMBER OF UNITS PROPOSED ____ 1
I.) MAXIMUM NUMBER OF EMPLOYEES, TENANTS ON SITE PER USE ____ N/A
J.) NUMBER OF PARKING SPACES REQUIRED BY HO. CO. ZONING REGS AND/OR FDP CRITERIA ____ 1 SFD x 2.5 = 2.5 SPACES
K.) NUMBER OF PARKING SPACES PROVIDED ONSITE (INCLUDES HANDICAPPED SPACES) ____ 3 (3–CAR GARAGE)
L.) OPEN SPACE ON–SITE ____ N/A
M.) AREA OF RECREATIONAL OPEN SPACE REQUIRED ____ N/A
AREA OF RECREATIONAL OPEN SPACE PROVIDED ____ N/A
N.) BUILDING COVERAGE OF SITE ____ N/A
PERCENTAGE OF GROSS AREA ____ N/A
(MAXIMUM ALLOWED 60%)
O.) APPLICABLE DPZ FILE REFERENCES: ____ ECP–22–070, PB. 9 P.4

LEGEND OF SYMBOLS

EXISTING CONTOURS
EXISTING TREE
EXISTING TREELINE
EXISTING SLOPES 25% OR GREATER
EXISTING SLOPES 15–24.9%
NRCS SOILS DELINEATION LINE
MaC NRCS SOILS TYPE
LIMIT OF SUBMISSION
—S— PROPOSED SHC
—W— PROPOSED WHC
PROPOSED ROOF DRAIN
DISCONNECTION OF NON–ROOFTOP RUNOFF FILTER AREA
DRY WELL
TP–XX TEST PIT LOCATION
EXISTING EASEMENT

STANDARD STORMWATER MANAGEMENT PRACTICE CHART				
LOT NUMBER	ADDRESS	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	DRY WELLS M-5 (NUMBER)	MICRO-BIORETENTION M-6 (NUMBER)
1	2602 Turf Valley Road	Y	2	1

STORMWATER MANAGEMENT SUMMARY CHART - INDIVIDUAL PRACTICES																
Practice		DA (sf)	Imp Area (sf)	% Imp	Rv	Pe Required	Total ESDv Required	75% ESDv ponding Required	75% ESDv ponding Provided	25% ESDv (cf) below Required	25% ESDv (cf) below Provided	Total ESDv Provided	Pe Provided	REv (cf) Required	REv (cf) Provided	Ownership
(M-6) Micro Bio-Retention	#1	10,126	5,136	51%	0.51	1.6	684	513	516	171	171	687	1.6		171	Private
(M-5) Dry Well	#1	947	947	100%	0.95	1.6	120					120	1.6		120	Private
(M-5) Dry Well	#2	1,000	1,000	100%	0.95	1.6	127					126	1.6	177	126	Private
(N-2) DNRR	#1	608	304			1.0	25					25	1.0		0	Private
(N-2) DNRR	#2	300	150			1.0	13					13	1.0		0	Private
Totals →							968 cf					971 cf		177 cf	417 cf	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson 10/28/2022
7063F754EE41499...
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: [illegible] 10/28/2022
1EB76478A22B49A...
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: [illegible] 10/28/2022
5B4D5DD9470C4D4...
DIRECTOR — DATE

PERMIT INFORMATION CHART					
SUBDIVISION NAME: TURF VALLEY			SECTION/AREA: SECTION ONE	LOT/PARCEL #: LOT 9	
PLAT No.	GRID No.	ZONE	TAX MAP NO	ELECTION DISTRICT	CENSUS TRACT
PB 9 P4	12	R–20	16	3	603004

NO.	DATE	REVISION
1	5.8.2024	REVISE REAR YARD GRADES PER AS-BUILT CONDITIONS.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410–465–6105 (F) 410–465–6644
WWW.BEI–CIVILENGINEERING.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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND CHRISTOPHER A. MALAGARI 22390 PROFESSIONAL ENGINEER

[illegible] 10.24.22

OWNER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410–825–8400

BUILDER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410–825–8400

TURF VALLEY
SECTION ONE
LOT 9
(previously recorded as PB 9 P 4)
#2602 Turf Valley Road

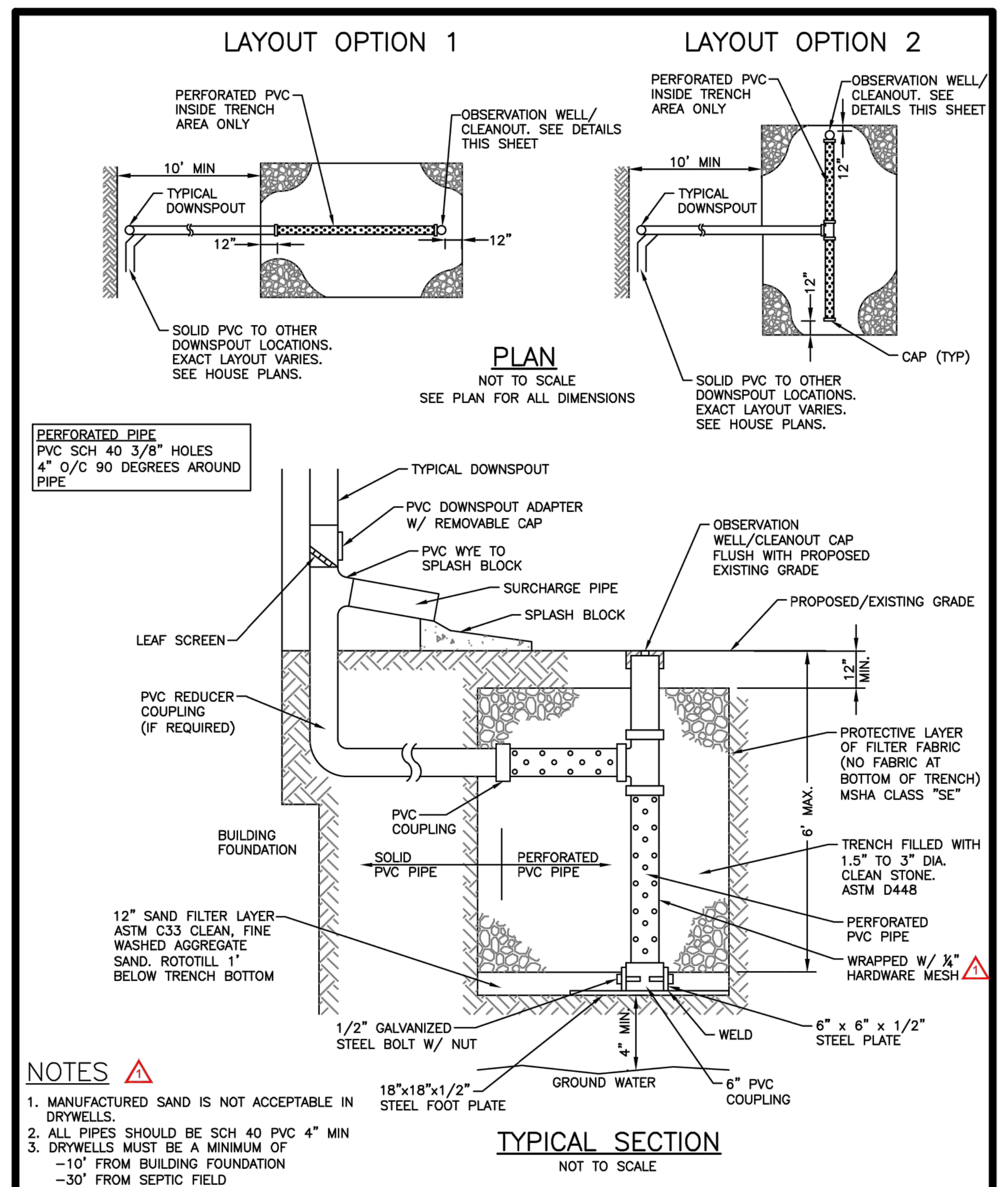
TAX MAP: 16 – GRID: 12 – PARCEL: 226
ZONED: R–20
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SITE DEVELOPMENT PLAN

DATE: OCTOBER 24, 2022 | BEI PROJECT NO. 3111
DESIGN: DBT | DRAFT: DBT | SCALE: AS SHOWN | SHEET 1 OF 5

SDP-22-057

J:\3111\dwg\8000.dwg, 10/24/2022 7:41:03 AM



NOTES ⚠

1. MANUFACTURED SAND IS NOT ACCEPTABLE IN DRYWELLS.
2. ALL PIPES SHOULD BE SCH 40 PVC 4" MIN
3. DRYWELLS MUST BE A MINIMUM OF
   - –10' FROM BUILDING FOUNDATION
   - –30' FROM SEPTIC FIELD
   - –100' FROM WELL LOCATION
   AND SHOULD BE LOCATED TO MINIMIZE ANY BASEMENT SEEPAGE.
4. TRENCH MAY NOT BE INSTALLED IN FILL.

Revised ⚠ 5/30/2017 Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works Approved: [illegible] Chief, Bureau of Engineering	ROOF DRAIN DRYWELL Private	Detail D-9.01

MATERIALS & SPECIFICATIONS FOR DRY WELLS

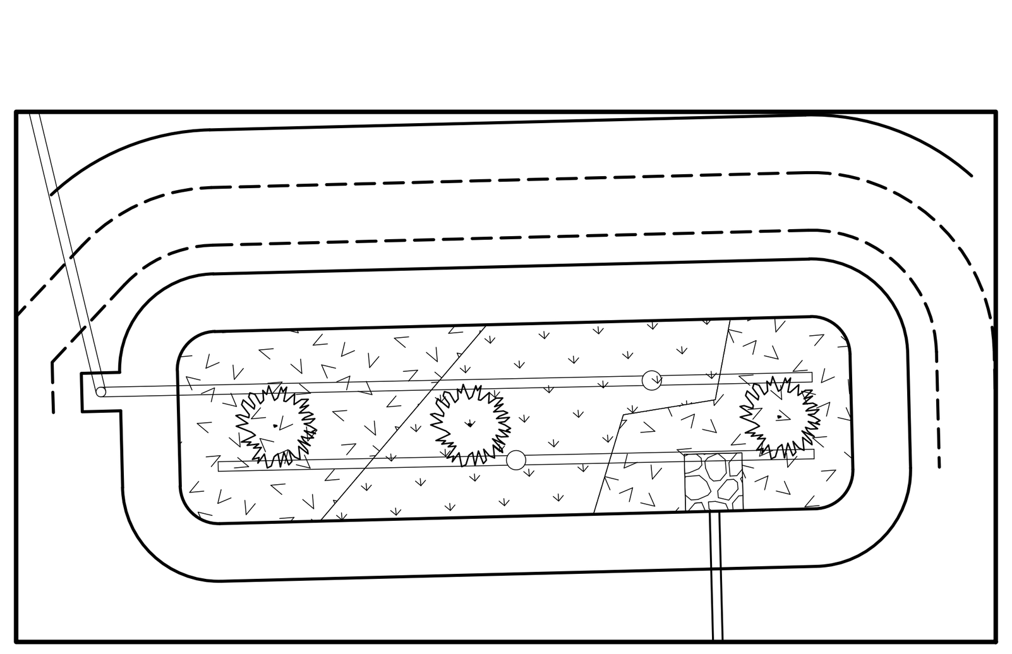
MATERIAL	SPECIFICATION	SIZE	NOTES:
GEOTEXTILE (CLASS "C")		N/A	PE TYPE 1 NONWOVEN
GRAVEL	AASHTO M 43	1 1/2" TO 2 1/2"	
UNDERDRAIN PIPING	F758, TYPE PS28 OR AASHTO M-278	4" TO 6" RIGID SCH.40 PVC, SDR35 OR HDPE	3/8" PERF. @ 6" O/C, 4 HOLES PER ROW; MINIMUM OF 2" OF GRAVEL OVER PIPES.
SAND	AASHTO M-6 OR ASTM-C-33	.02" TO .04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE (AASHTO) #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATED OR DOLOMITIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NT ROCK DUST CAN BE USED FOR SAND.

Dry Well Chart

Dry Well	Length (ft)	Width (ft)	Depth (ft)	Ground Elevation	Top of Storage Elevation	Bottom of Stone Elevation	Bottom of Sand Elevation
1	10.0	6.0	5.0	470.00	469.00	465.00	464.00
2	10.5	6.0	5.0	468.00	467.00	463.00	462.00

PLANTING LEGEND

SYMBOL	NAME
✺	SILKY DOGWOOD
▨	PURPLE CONEFLOWER
▨	COMMON RUSH



SCHEMATIC PLANTING DETAIL FOR (M-6) MICRO BIO-RETETNION

0 5 10 20
1 inch = 10 ft.

(M-6) Micro Bio-Retention Landscaping Chart

PLANT NAME	COMMON NAME	TYPE	SIZE	MB #1
		Surface Area	→	366
				QUANTITY
Cornus Amomum	Silky Dogwood	deciduous shrub	18-24" ht. #3 CAN	4
Echinacea Purpurea	Purple Coneflower	perennial	2 gal. container	23
Juncus Effusus	Common Rush	perennial	1 qt.	69

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: CHAD Edmondson 7063F754EF41499 — 10/28/2022
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: [illegible] 1EB76478A22B40A... — 10/28/2022
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Amy Gowan 5B4D5DD9470C4D4... — 10/28/2022
DIRECTOR — DATE

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

1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.
2. Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
3. A log book shall be maintained to determine the rate at which the facility drains.
4. When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.
5. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
6. 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.

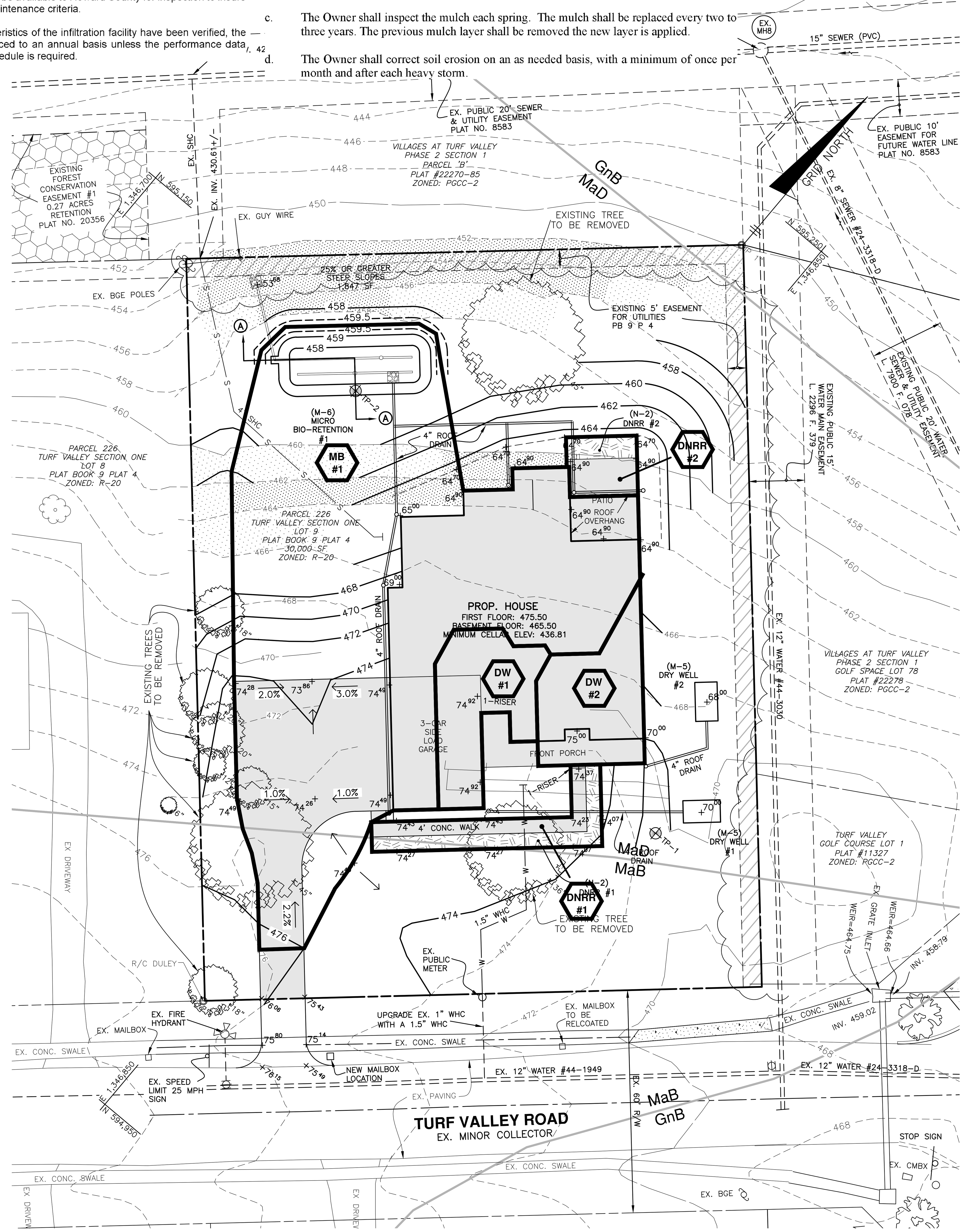
OPERATION AND MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

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 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.

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 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.



0 10 20 40
1 inch = 20 ft.

SWM LEGEND

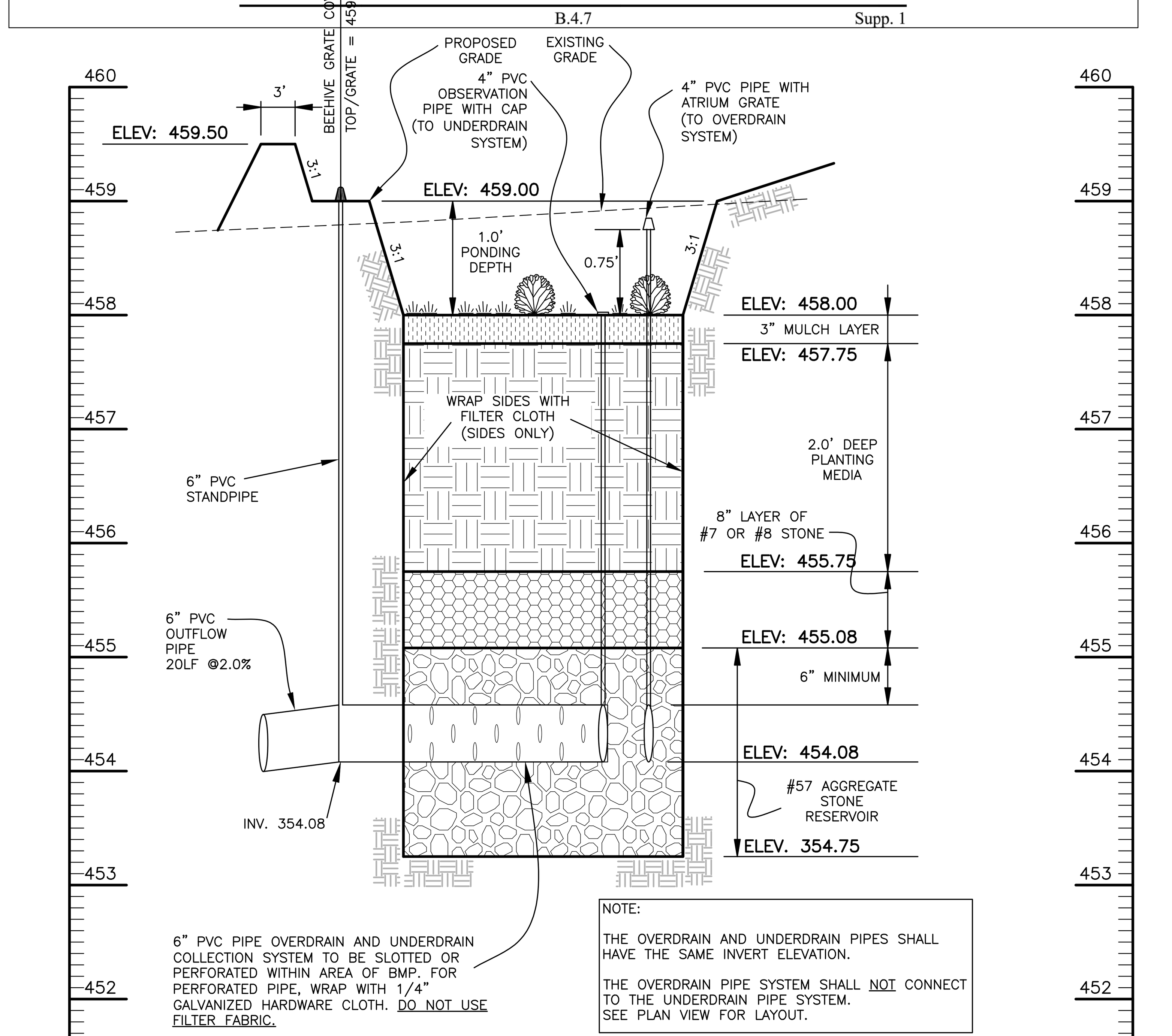
▨	DISCONNECTION OF NON-ROOFTOP RUNOFF FILTER AREA
▩	PROPOSED IMPERVIOUS AREA
━	SWM DRAINAGE AREA LINE
▭	DRY WELL

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Table B.4.1 Materials Specifications for Micro-Bioretention, 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)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	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 ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'_c = 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* requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (**AASHTO)** #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

B.4.7 Supp. 1



NOTE:

THE OVERDRAIN AND UNDERDRAIN PIPES SHALL HAVE THE SAME INVERT ELEVATION.

THE OVERDRAIN PIPE SYSTEM SHALL NOT CONNECT TO THE UNDERDRAIN PIPE SYSTEM. SEE PLAN VIEW FOR LAYOUT.

(M-6) MICRO BIO-RETENTION #1
CROSS SECTION A-A

OPERATION AND MAINTENANCE SCHEDULE FOR DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

1. Maintenance of areas receiving disconnected 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.

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND — CHRISTOPHER A. MALAGARI — 22390 — PROFESSIONAL ENGINEER
[illegible] 10.24.22

OWNER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TURF VALLEY
SECTION ONE
LOT 9
(previously recorded as PB 9 P 4)
#2602 Turf Valley Road

TAX MAP: 16 – GRID: 12 – PARCEL: 226
ZONED: R-20
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

STORMWATER MANAGEMENT PLAN

DATE: OCTOBER 24, 2022		BEI PROJECT NO.	3111
DESIGN: DBT	DRAFT: DBT	SCALE: AS SHOWN	SHEET 2 OF 5

SDP-22-057

FIELD TEST PIT LOG

1 OF 1

BORING NO.: TP-1 **DRILLER:** JFC Inc. **START DATE:** 6/7/2022

PROJECT NAME: 2602 Turf Valley Road **COMPLETION DATE:** 6/7/2022

PROJECT NO.: 3111 **PROJECT LOCATION:** #2602 Turf Valley Road

CLIENT: 2602 Turf Valley, LLC **DRILLING METHOD:** Backhoe

DEPTH [FT]	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE DEPTH FROM	SAMPLE DEPTH TO	BLOW COUNT	RECOVERY [IN]	POCKET PENETROMETER [TSF]	REMARKS
0	**starting elevation = 470.5**							
1	12" topsoil/roots							
2	brownish-red sandy silty soil							
3								
4								
5								
6								
7	fragemented rock encountered at 7.5 feet							
8								
9	no refusal/no water encountered during excavation							
10	**bottom of boring = 460.5**							
11								
12								
13								
14								
15								BORING COMPLETED AT A DEPTH OF ____ FEET.
16								GROUNDWATER WAS NOT ENCOUNTERED DURING OR UPON COMPLETION OF DRILLING.
17								
18								GROUNDWATER WAS ENCOUNTERED AT A DEPTH OF ____ FEET DURING DRILLING.
19								CAVE IN DEPTH________________
20								ELEVATION ______________

FIELD TEST PIT LOG

1 OF 1

BORING NO.: TP-2 **DRILLER:** JFC Inc. **START DATE:** 6/7/2022

PROJECT NAME: 2602 Turf Valley Road **COMPLETION DATE:** 6/7/2022

PROJECT NO.: 3111 **PROJECT LOCATION:** #2602 Turf Valley Road

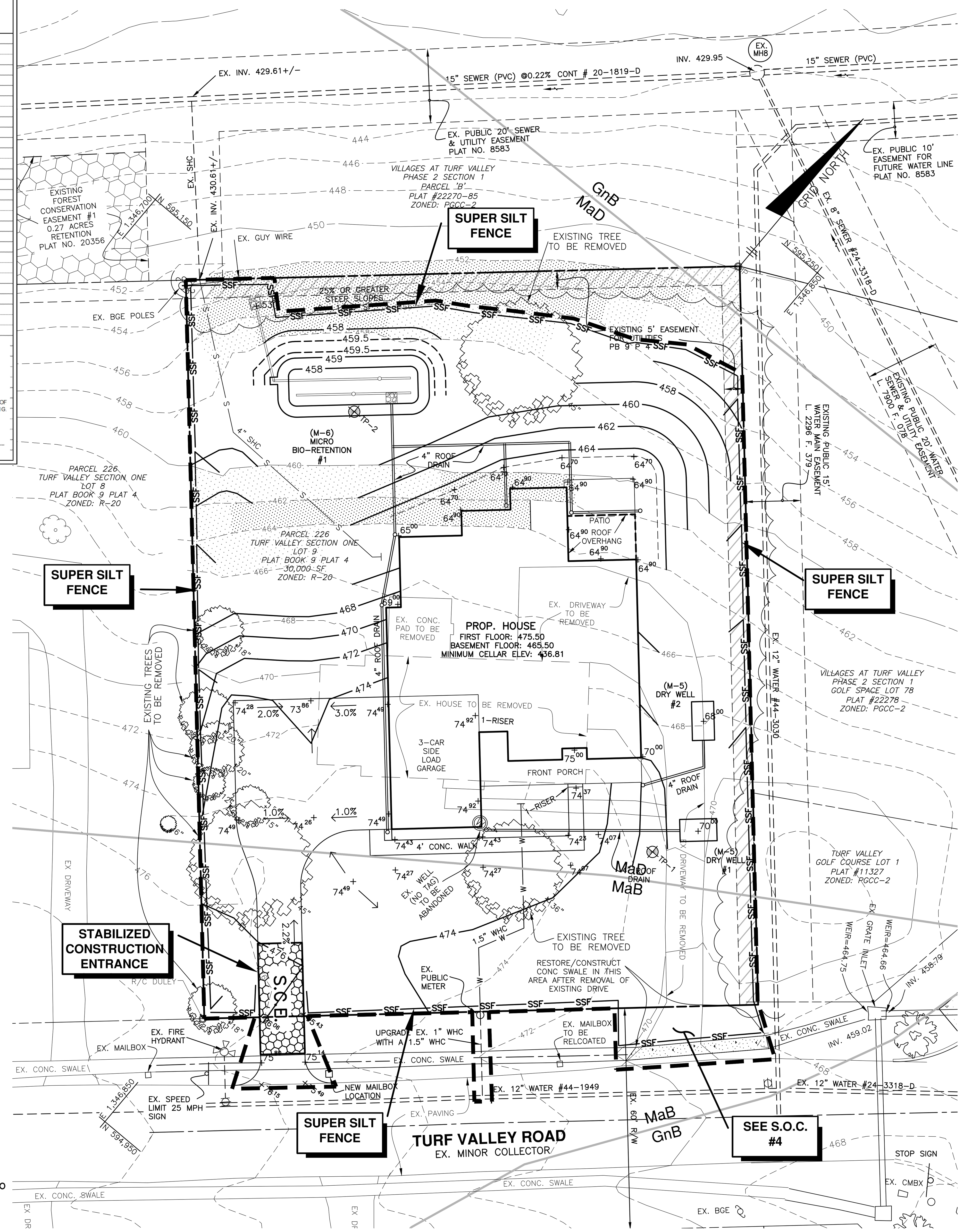
CLIENT: 2602 Turf Valley, LLC **DRILLING METHOD:** Backhoe

DEPTH [FT]	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE DEPTH FROM	SAMPLE DEPTH TO	BLOW COUNT	RECOVERY [IN]	POCKET PENETROMETER [TSF]	REMARKS
0	**starting elevation = 459.2**							
1	12" topsoil reddish-brown clayey soil							
2								
3								
4								
5								
6								
7								
8								
9	no refusal/no water encountered during excavation							
10	**bottom of boring = 449.2**							
11								
12								
13								
14								
15								BORING COMPLETED AT A DEPTH OF ____ FEET.
16								GROUNDWATER WAS NOT ENCOUNTERED DURING OR UPON COMPLETION OF DRILLING.
17								
18								GROUNDWATER WAS ENCOUNTERED AT A DEPTH OF ____ FEET DURING DRILLING.
19								CAVE IN DEPTH________________
20								ELEVATION ______________

SOILS CHART - SOIL SURVEY HOWARD COUNTY, MARYLAND

SYMBOL	HYDRIC	HYDROLOGIC GROUP	NAME	k-VALUE	ERODIBLE
MaB		B	MANOR LOAM, 3 TO 8 PERCENT SLOPES	0.28	NO
MaD		B	MANOR LOAM, 15 TO 25 PERCENT SLOPES	0.32	YES

HSCD Newsletter dated April, 2013 defines erodible soils as 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%.

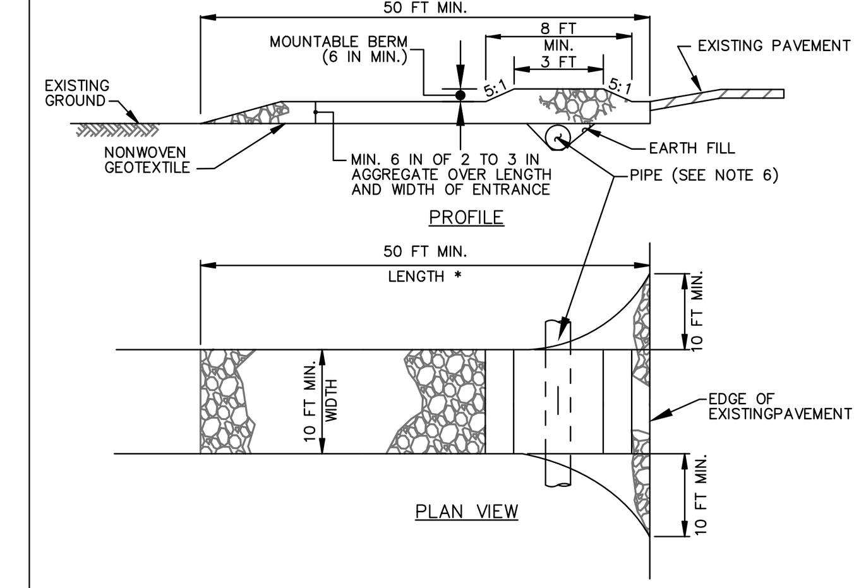


0 10 20 40

1 inch = 20 ft.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

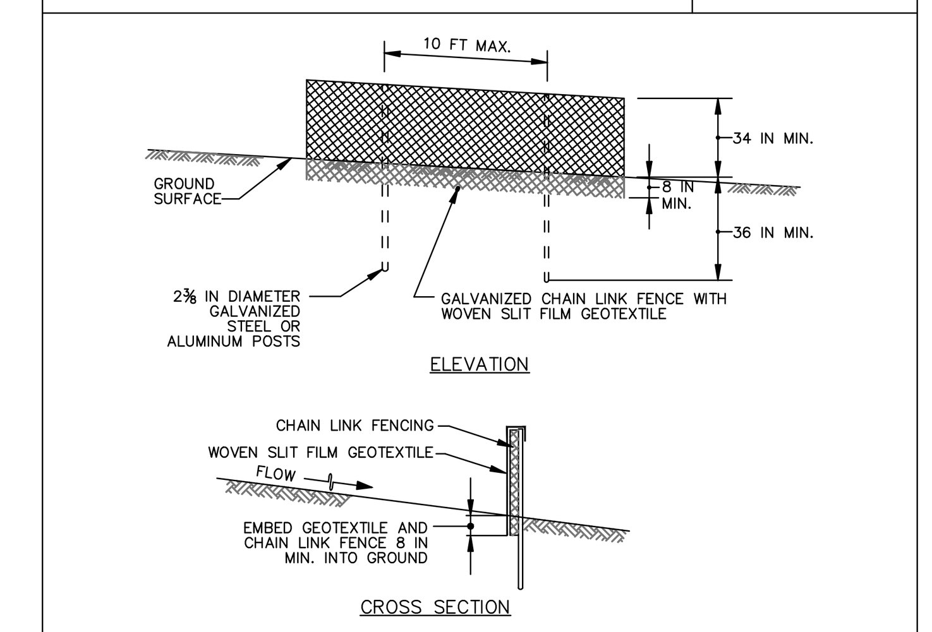
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: ——SSF——



CONSTRUCTION SPECIFICATIONS

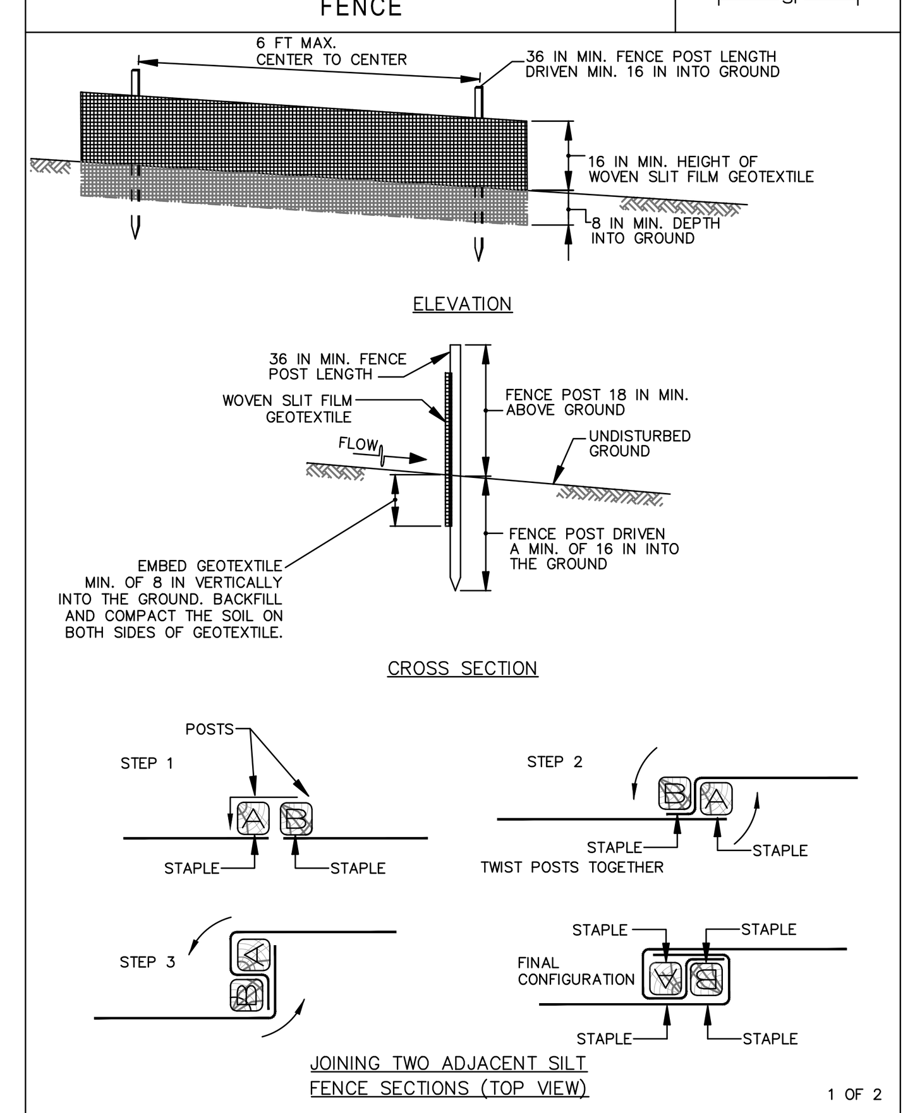
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: ——SF——



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

THIS PLAN IS FOR SEDIMENT AND EROSION CONTROL ONLY.

DESIGN CERTIFICATION

"I CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Christopher Malagari 2022-10-24

ENGINEER DATE
CHRISTOPHER A. MALAGARI
MD REGISTRATION NO. 22390
(P.E.) R.L.S., OR R.L.A. (circle one)

OWNERS/DEVELOPERS CERTIFICATION

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Louis Mangione 2022-10-24

SIGNATURE DATE
LOUIS MANGIONE, 2602 TURF VALLEY LLC

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

DocuSigned by: *Alexander Bratchie* 10/27/2022
65648D5BA9B64C1...
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: *CHAD Edmondson* 10/28/2022
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DocuSigned by: 10/28/2022
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DocuSigned by: *Amy Gowan* 10/28/2022
5B4D5DD9470C4D4...
DIRECTOR DATE

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF WORK

1. Obtain grading/building permit. Notify D.I.L.P. at 410-313-1880 at least 24 hours before starting any work. (1 day)

2. Hold on-site pre-construction meeting. (day 2)

3. Install individual lot perimeter controls (i.e. stabilized construction entrances, silt fences, super silt fences). (day 3)

4. Raze the existing house and remove existing driveway. Removal of the portion of driveway within the public right-of-way and construction of the concrete swale shall be done within a 24 hour period on a day which shall occur after a period of 48 hours of no rain to ensure there is no current flow within the swale. (day 4-5)

5. Excavate for foundation, rough grade lot, and stabilize in accordance with the temporary seedbed notes. (day 5-10)

6. Construct house, install water and sewer house connections from easement/right-of-way up to house, backfill, and construct driveway. Finalize lot grading and install on-lot dry wells and micro bio-retention and connect roof leaders to them. (day 11-110)

7. Upon approval from the Howard County Sediment Control Inspector, remove all sediment control devices and stabilize any remaining disturbed areas in accordance with the permanent seedbed notes. (day 111-120)

Note: Following initial soil disturbance or any re-disturbances, permanent or temporary stabilization shall be completed within:
A. 3 calendar days for all perimeter sediment control structures, dikes, swales and all slopes greater than 3:1.
B. 7 calendar days for all other disturbed areas.
During grading and after each rainfall, contractor will inspect and provide necessary maintenance to the sediment control measures of this plan.

SEDIMENT CONTROL LEGEND

—— SF ——	SILT FENCE
——SSF——SSF——	SUPER SILT FENCE
— — — —	LIMIT OF DISTURBANCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND CHRISTOPHER A. MALAGARI 22390 PROFESSIONAL ENGINEER
10.24.22

OWNER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TURF VALLEY
SECTION ONE
LOT 9
(previously recorded as PB 9 P 4)
#2602 Turf Valley Road

TAX MAP: 16 – GRID: 12 – PARCEL: 226
ZONED: R-20
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

DATE: OCTOBER 24, 2022	BEI PROJECT NO. 3111
SCALE: AS SHOWN	SHEET 3 OF 5

DESIGN: DBT DRAFT: DBT

SDP-22-057

B-4 STANDARDS AND SPECIFICATIONS
FOR
VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS
FOR
INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes
   1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
   2. Construction sequence example (Refer to Figure B.1):
      a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
      b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
      c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization

B. Incremental Stabilization - Fill Slopes
   1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
   2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
   3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   4. Construction sequence example (Refer to Figure B.2):
      a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
      b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
      c. Place Phase 1 fill, prepare seedbed, and stabilize.
      d. Place Phase 2 fill, prepare seedbed, and stabilize.
      e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

Figure B.

.

B-4-2 STANDARDS AND SPECIFICATIONS
FOR
SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation
   1. Temporary Stabilization
      a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
   2. Permanent Stabilization
      a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
         i. Soil pH between 6.0 and 7.0.
         ii. Soluble salts less than 500 parts per million (ppm).
         iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
         iv. Soil contains 1.5 percent minimum organic matter by weight.
         v. Soil contains sufficient pore space to permit adequate root penetration.
      b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
      c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
      d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
      e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
   1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
   2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
   3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
      a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
      b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
      c. The original soil to be vegetated contains material toxic to plant growth.
      d. The soil is so acidic that treatment with limestone is not feasible.
   4. Areas having slopes steeper than 2:1 require special consideration and design.
   5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
      a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
      b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
      c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
   6. Topsoil Application
      a. Erosion and sediment control practices must be maintained when applying topsoil.
      b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
      c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)
   1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
   3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
   4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
   5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS
FOR
SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding
   1. Specifications
      a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
      b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
      c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
      d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
   2. Application
      a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
         i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
         ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
      b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
         i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
         ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
      c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
         i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
         ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
         iii. Mix seed and fertilizer on site and seed immediately and without interruption.
         iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching
   1. Mulch Materials (in order of preference)
      a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
      b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
         i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
         ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
         iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
         iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
         v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
   2. Application
      a. Apply mulch to all seeded areas immediately after seeding.
      b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
      c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   3. Anchoring
      a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
         i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
         ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
         iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
         iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS
FOR
PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures
1. General Use
   a Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guild, Section 342 - Critical Area Planting.
   c For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
   d For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
   i. Kentucky Bluegrass: Full sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
   ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky Bluegrass Cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
   iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
   iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 ½ to 3 pounds per 1000 square feet.
   Notes:Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland" Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
   c. Ideal Times of Seeding for Turf Grass Mixtures
   Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)
   Central MD:March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)
   Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 ½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is not especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: to provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
   a. Class of turfgrass must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
   c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
   d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
   a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
   b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
   c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
   d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
   a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
   b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
   c. Do not mow until the sod is firmly rooted. No more than 1/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

B-4-4 STANDARDS AND SPECIFICATIONS
FOR
TEMPORARY STABLIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

H-5 STANDARDS AND SPECIFICATIONS
FOR
DUST CONTROL

Definition

Controlling the suspension of dust particles from construction activities.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces to reduce on and off-site damage including health and traffic hazards.

Conditions Where Practice Applies

Areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

1. Mulches: See Section B-4-2 Soil Preparation, Topsoiling, and Soil Amendments, Section B-4-3 Seeding and Mulching, and Section B-4-4 Temporary Stabilization. Mulch must be anchored to prevent blowing.
2. Vegetative Cover: See Section B-4-4 Temporary Stabilization.
3. Tillage: Till to roughen surface and bring clods to the surface. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.
4. Irrigation: Sprinkle site with water until the surface is moist. Repeat as needed. The site must not be irrigated to the point that runoff occurs.
5. Barriers: Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similar material can be used to control air currents and soil blowing.
6. Chemical Treatment: Use of chemical treatment requires approval by the appropriate plan review authority.

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate 1/ lb/ac	Seeding Rate 1/ lb/1000 ft2	Seeding Depth 2/ (inches)	Recommended Seeding Dates by Plant Hardiness Zone 3/ 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (Lolium perenne ssp. Multiflorum	40	1.0	0.5		**Mar 1 to May 15; Aug 1 to Oct 31**	
Barley (Hordeum vulgare)	96	2.2	1.0		**Mar 1 to May 15; Aug 1 to Oct 31**	
Oats (Avena sativa)	72	1.7	1.0		**Mar 1 to May 15; Aug 1 to Oct 31**	
Wheat (Triticum aestivum)	120	2.8	1.0		**Mar 1 to May 15; Aug 1 to Oct 31**	
Cereal Rye (Secale cereale)	112	2.8	1.0		**Mar 1 to May 15; Aug 1 to Nov 15**	
Warm-Season Grasses						
Foxtail Millet (Serataria italica)	30	0.7	0.5		**May 16 to Jul 31**	
Pearl Millet (Pennisetum glaucum	20	0.5	0.5		**May 16 to Jul 31**	

Notes:

1/ Seeding rates for the warm season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. If it must be used as a nurse crop, seed at 1/3 of the rate listed above.

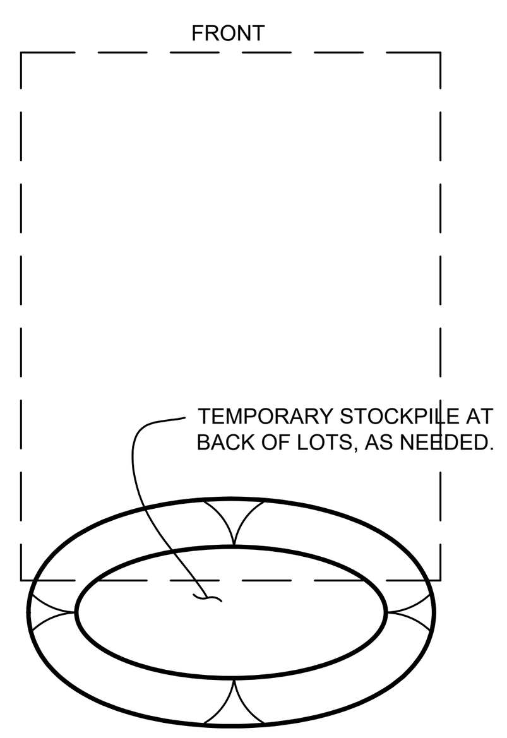
Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): Seed Misture (from Table B.3):		6b Tall Fescue/Kentucky Bluegrass			Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac.)	Seeding Dates	Seeding Depths	N	P2O5	K2O	
9	Fescue, Tall	60	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in	45 pounds per acre (1.0 lb/ 100 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac 2 lb/ 1000 sf)	2 tons/ac (90lb/ 1000 sf)
	Bluegrass, Kentucky	40	Mar 1 to May 15 Aug 1 to Oct 15	1/4 - 1/2 in				
				1/4 - 1/2 in				



B-4-8 STANDARDS AND SPECIFICATIONS
FOR
STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
2. The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

HOWARD SOIL CONSERVATION DISTRICT (HSCD)
STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-3133-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hours notice to CID must be given at the following stages:

   a. Prior to the start of earth disturbance,
   b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
   c. Prior to the start of another phase of construction or opening of another grading unit,
   d. Prior to the removal or modification of sediment control practices.

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 feet must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.

6. Site Analysis:

Total Area of Site:	0.7	Acres
Area Disturbed:	0.7	Acres
Area to be roofed or paved:	0.2	Acres
Area to be vegetatively stabilized:	0.5	Acres
Total cut:	339 *	Cu Yds
Total fill:	339 *	Cu Yds
Off-site waste/borrow area location:	SITE WITH AN ACTIVE GRADING PERMIT	

*CUT/FILL NUMBERS ARE ROUGH ESTIMATE FOR SEDIMENT CONTROL PURPOSES ONLY. CONTRACTOR TO VERIFY.

7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:

- Inspection date
- Inspection type (routine, pre-storm event, during rain event)
- Name and title of inspector
- Weather information (current conditions as well as time and an=mount of last recorded precipitation
- Brief description of project's status (e.g. percent complete) and/or current activities
- Evidence of sediment discharges
- Identification of plan deficiencies
- Identification of sediment controls that require maintenance
- Identification of missing or improperly installed sediment controls
- Compliance status regarding the sequence of construction and stabilization requirements
- Photographs
- Monitoring/sampling
- Maintenance and/or corrective action performed
- Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).

9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back filled and stabilized by the end of each work day, whichever is shorter.

10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may be allowed by the CID per the list of HSCD-approved field changes.

11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the HSCD, no more than 20 acres cumulatively may be disturbed at a given time.

12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.

13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.

14. All silt fence and super silt fence shall be placed on-the-contour, and be imbricated at 25' minimum intervals, with lower ends curled uphill by 2' in elevation.

15. Stream channels must not be disturbed during the following restricted time periods (inclusive):

- Use I and IP March 1 - June 15
- Use III and IIIP October 1 - April 30
- Use IV March 1 - May 31

16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.

DESIGN CERTIFICATION

"I CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Christopher Malagari 2022-10-24

ENGINEER — DATE
CHRISTOPHER A. MALAGARI — MD REGISTRATION NO. 22390
P.E., R.L.S., OR R.L.A. (circle one)

OWNERS/DEVELOPERS CERTIFICATION

"I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Louis Mangione 2022-10-24

SIGNATURE — DATE
LOUIS MANGIONE, 2602 TURF VALLEY LLC

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

DocuSigned by: Alexander Bratchie — 10/27/2022
65648D6BA0B64C1...
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: CHAD Edmondson — 10/28/2022
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: 10/28/2022
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Amy Gowan — 10/28/2022
5B4D5DD9470C4D4...
DIRECTOR — DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND — CHRISTOPHER A. MALAGARI — 22390 — PROFESSIONAL ENGINEER

10.24.22

OWNER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

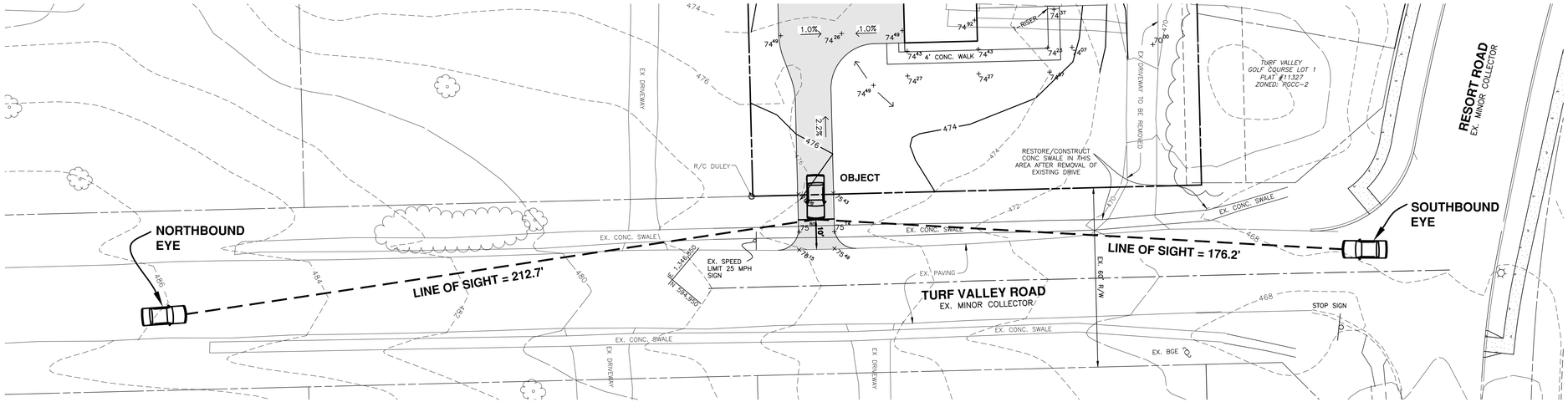
TURF VALLEY
SECTION ONE
LOT 9
(previously recorded as PB 9 P 4)
#2602 Turf Valley Road

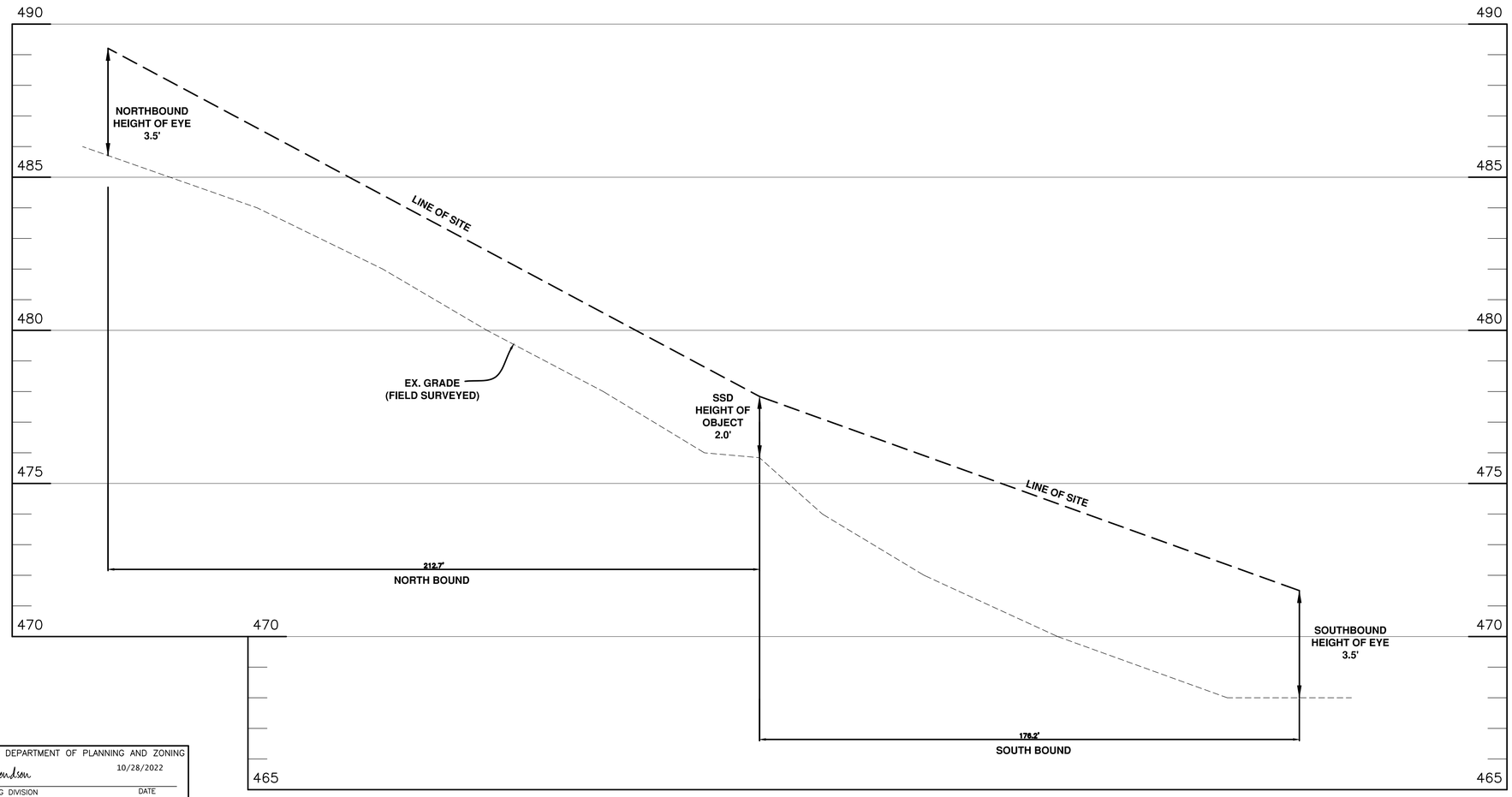
TAX MAP: 16 - GRID: 12 - PARCEL: 226
ZONED: R-20
ELECTION DISTRICT NO. 3 - HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION CONTROL NOTES

DESIGN: DBT	DRAFT: DBT	DATE: OCTOBER 24, 2022	BEI PROJECT NO. 3111
		SCALE: AS SHOWN	SHEET 4 OF 5

SDP-22-057





SIGHT DISTANCE ANALYSIS IS BEING PROVIDED FOR THE RELOCATED DRIVEWAY PER SECTION 2.5.E OF DESIGN MANUAL VOLUME III.

PER SECTION 2.1.E.3, "IN RESIDENTIAL AREAS WHERE THE MAJOR STREET IS CLASSIFIED AS MINOR COLLECTOR OR BELOW, STOPPING SIGHT DISTANCE MAY BE USED ON THE MAJOR STREET IN LIEU OF MEETING BOTH INTERSECTION SIGHT DISTANCE AND STOPPING SIGHT DISTANCE." SINCE TURF VALLEY ROAD IS CLASSIFIES AS A MINOR COLLECTOR, ONYL THE STOPPING SIGHT DISTANCE IS BEING PROVIDED.

NOTE:

SPEEDS USED IN CALCULATION ARE BASED ON THE 85th PERCENTILE SPEED STUDY CONDUCTED BY THE TRAFFIC GROUP, INC. IN MAY, 2022

Northbound

SSD = 212.7

V = 30 mph
t = 2.5 s
a = 11.2 ft/s^2
G = -0.055 percent of grade/100

STOPPING SIGHT DISTANCE

d=1.47Vt + 1.075(V^2/a)

WHERE:

d = stopping sight distance
t = brake reaction time, 2.5s
V = design speed, mph
a = deceleration rate, ft/s^2
3.4 m/s^2

Southbound

SSD = 176.2

V = 29 mph
t = 2.5 s
a = 11.2 ft/s^2
G = 0.055 percent of grade/100

NOTE:

PER SECTION 2.1.E.1;

STOPPING SIGHT DISTANCE IS MEASURED FROM AN EYE HEIGHT OF 3.5 FEET AT A POINT ON THE CENTERLINE OF THE ACCESS 10 FEET BACK FROM THE EDGE OF TRAVEL WAY OF THE INTERSECTING ROADWAY WHERE A POINT 2 FEET ABOVE THE ROADWAY SURFACE IS VISIBLE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

DocuSigned by: Chad Edmondson 10/28/2022
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DocuSigned by: 10/28/2022
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DocuSigned by: Amy Gowan 10/28/2022
DIRECTOR — DATE

NO.	DATE	REVISION

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
3300 N. RIDGE ROAD ▲ SUITE 140 ▲ ELLICOTT CITY, MARYLAND 21043
(P) 410-465-6105 (F) 410-465-6644
WWW.BEI-CIVILENGINEERING.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. 22390, Expiration Date: 6-30-2023.

STATE OF MARYLAND — CHRISTOPHER A. MILLER — 22390 — PROFESSIONAL ENGINEER

10.24.22

OWNER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

BUILDER:
2602 TURF VALLEY LLC
1205 YORK ROAD, PENTHOUSE
LUTHERVILLE, MARYLAND 21093
410-825-8400

TURF VALLEY
SECTION ONE
LOT 9
(previously recorded as PB 9 P 4)
#2602 Turf Valley Road

TAX MAP: 16 – GRID: 12 – PARCEL: 226
ZONED: R-20
ELECTION DISTRICT NO. 3 – HOWARD COUNTY, MARYLAND

SIGHT DISTANCE ANALYSIS

DESIGN: DBT	DRAFT: DBT	DATE: OCTOBER 24, 2022	BEI PROJECT NO. 3111
		SCALE: AS SHOWN	SHEET 5 OF 5

SDP-22-057