

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE, UNLESS WAIVER(S) HAVE BEEN APPROVED.
- 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.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHTS PLACEMENT AND TYPE OF FIXTURE & SIGNING SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE, 1993)".
- TOPOGRAPHY SHOWN ON-SITE WAS FIELD RUN BY BENCHMARK ENGINEERING, INC. ON OR ABOUT APRIL, 2002. FIELD RUN TOPOGRAPHY WAS SUPPLEMENTED WITH INFORMATION PURCHASED FROM HOWARD COUNTY GEOGRAPHICAL INFORMATION SYSTEMS AND PROPOSED GRADING CONSTRUCTED UNDER F-00-71 (THE PADDOCKS ROAD PLANS).
- HORIZONTAL DATUM FOR THIS PLAN IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM NAD '83 AS PROJECTED FROM HOWARD COUNTY CONTROL POINTS 22A2 AND 22A4. VERTICAL CONTROL IS NAD '29 AS PROJECTED FROM HOWARD COUNTY CONTROL POINT NO.09FA.
- THIS PROPERTY IS NOT WITHIN THE METROPOLITAN DISTRICT. PRIVATE WATER AND SEWER SYSTEMS SHALL BE PROVIDED FOR THIS DEVELOPMENT. WELLS SHALL BE DRILLED PRIOR TO RECORDATION OF FINAL PLAN.
- THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWER SYSTEM. THE COUNTY HEALTH DEPARTMENT HAS THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT PLAT SHALL NOT BE REQUIRED.
- STORMWATER MANAGEMENT SHALL BE PROVIDED FOR THIS PROJECT BASED ON GUIDELINES ESTABLISHED BY THE 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUMES I & II. STORMWATER MANAGEMENT SHALL BE PROVIDED BY USE OF NON-STRUCTURAL METHODS FOR MEETING GROUND WATER RECHARGE VOLUMES. MICROPOOL EXTENDED DETENTION AND DRY SWALE SHALL BE CONSTRUCTED TO MEET THE WATER QUALITY VOLUME REQUIREMENT. ALL FACILITIES TO BE CLASS 'A' STRUCTURES. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- EXISTING UTILITIES ARE SHOWN BY APPROVED CONTRACT DRAWINGS AND FIELD LOCATIONS. EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 100' OF THE PROPERTY HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION.
- IN A LETTER DATED JUNE 12, 2001, FROM ECO-SCIENCE PROFESSIONALS, INC., A FIELD REVIEW OF THE SITE WAS DONE ON JUNE 11, 2001 REVEALING NO REGULATED RESOURCES PRESENT, WITH REGARDS TO WETLANDS, STREAMS, BUFFERS OR FOREST.
- THERE ARE NO CONTIGUOUS AREAS OF STEEP SLOPES (25% OR GREATER) OF 20,000 S.F. OR GREATER ON THIS SITE. GRADING OF STEEP SLOPE AREAS LESS THAN 20,000 S.F. IS PERMITTED UNDER SECTION 16.116(b)(1) OF THE SUBDIVISION REGULATIONS.
- THE TRAFFIC STUDY WAS PREPARED BY TRAFFIC CONCEPTS, INC. IN JULY, 2001 AND APPROVED WITH THE SKETCH PLAN, S-02-01.
- ALL LANDSCAPING REQUIREMENTS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124(b)(3)(i) OF THE SUBDIVISION REGULATIONS. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$32,100.00 FOR 74 SHADE TREES AND 66 EVERGREEN TREES.
- THERE ARE NO EXISTING STRUCTURES LOCATED ON THIS PROPERTY.
- TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ON-SITE.
- FOREST STAND DELINEATION WAS PROVIDED BY ECO-SCIENCE PROFESSIONALS, INC. DATED JUNE, 2001 AND APPROVED WITH THE SKETCH PLAN, S-02-01.
- NOISE MITIGATION IS NOT REQUIRED FOR THIS PROJECT.
- A SIGHT DISTANCE ANALYSIS FOR THE SNOW CHIEF ROAD/GREYFOX RUN INTERSECTION WAS PROVIDED AND APPROVED WITH THE SKETCH PLAN, S-02-01.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM LOT DRIVEWAY.
- 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' (14' SERVING MORE THAN ONE RESIDENCE).
B) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
C) GEOMETRY - MAX. 10% GRADE CHANGE & MIN. 48' TURNING RADIUS.
D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOAD)
E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 10 YEAR FLOODPLAIN WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY.
F) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- MINIMUM BUILDABLE LOT SIZE SHALL BE 40,000 SQUARE FEET. MAXIMUM BUILDABLE LOT SIZE SHALL BE 50,000 SQUARE FEET. OPEN SPACE LOT B SHALL BE DEDICATED TO THE HOMEOWNER'S ASSOCIATION, FULFILLING THE OPEN SPACE REQUIREMENT.
- LOT 7 EXCEEDS 50,000 SQUARE FEET. THE HOWARD COUNTY HEALTH DEPARTMENT HAS RECOMMENDED THE APPLICATION OF SECTION 105.E.1.6 OF THE ZONING REGULATIONS TO ALLOW FOR A LOT SIZE GREATER THAN THE 50,000 SQUARE FOOT MAXIMUM BUT TO MAINTAIN A SIZE OF 50,000 SQUARE FEET OR LESS.
- THIS PLAN IS SUBJECT TO COMPLIANCE WITH THE FOURTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATION AS A CONSEQUENCE OF THE SKETCH PLANS SUBMISSION PRIOR TO NOVEMBER 15, 2001. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED ZONING REGULATIONS APPROVED PER COUNCIL BILL 50-2001.
- SUBJECT PROPERTY IS ZONED RR-DEO PER 2-02-04 COMPREHENSIVE ZONING PLAN.
- THIS PLAN IS SUBJECT TO THE FOLLOWING DEPARTMENT OF PLANNING & ZONING FILE NUMBERS: S-02-01, P-02-29
- UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
- BRL INDICATES BUILDING RESTRICTION LINE.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION ACTIVITY AND SHALL ADJUST ALL UTILITIES AND RIM ELEVATIONS AS NEEDED TO MATCH THIS PLAN.
- SEDIMENT CONTROL SHALL BE PROVIDED FOR THIS PROJECT. SEPTIC EASEMENT AREAS SHALL BE PROTECTED FROM ROAD CONSTRUCTION GRADING OPERATIONS.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT. OFF-SITE RETENTION HAS BEEN PROVIDED ON THE EARLE PROPERTIES, F-04-114 TAX MAP 14, PARCELS 101, 178 AND 187 TO SATISFY THE AFFORESTATION REQUIREMENTS FOR THIS SUBDIVISION. SURETY REQUIRED FOR THE OFF-SITE RETENTION IN THE AMOUNT OF \$60,804.00 SHALL BE REQUIRED FOR THE FINAL PLAN SUBMISSION OF THIS PROJECT. THE OBLIGATION OF 3.5 ACRES OF AFFORESTATION IS MET BY 7.0 ACRES OF RETENTION.

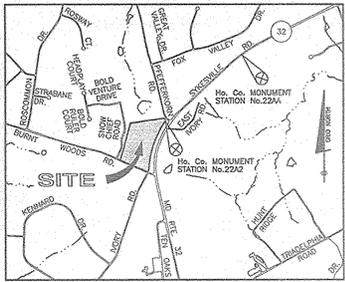
RIGHT-OF-WAY ELEVATION CHART NAD 83

R/W PT. NO.	DESCRIPTION	ELEVATION
50	REBAR / CAP	610.94'
51	REBAR / CAP	626.10'
52	REBAR / CAP	624.27'
53	REBAR / CAP	627.07'
54	REBAR / CAP	621.86'
55	REBAR / CAP	617.44'
56	REBAR / CAP	613.66'
57	REBAR / CAP	613.71'
58	REBAR / CAP	616.59'
59	REBAR / CAP	617.95'
60	REBAR / CAP	608.32'
61	CONC. MONUMENT	637.11'
62	REBAR / CAP	634.91'
63	REBAR / CAP	632.25'
64	REBAR / CAP	624.05'
65	REBAR / CAP	623.77'
66	REBAR / CAP	621.02'
67	REBAR / CAP	619.67'
68	REBAR / CAP	612.11'
69	REBAR / CAP	612.81'
70	REBAR / CAP	613.72'
71	REBAR / CAP	619.32'
72	CONC. MONUMENT	621.73'
73	REBAR / CAP	623.82'
74	REBAR / CAP	624.81'
75	REBAR / CAP	621.63'
76	REBAR / CAP	623.45'
77	REBAR / CAP	627.77'

FOXTAIL RUN ROAD CONSTRUCTION PLANS 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

BENCHMARKS NAD'83 HORIZONTAL
HO. CO. #22A2
STAMPED BRASS DISK SET ON TOP OF
CONCRETE BASE
N 585988.550' E 1316283.881'

NAD'29 VERTICAL
HO. CO. #08FA
STAMPED BRASS DISK SET ON TOP OF
CONCRETE BASE
ELEV. 617.44'



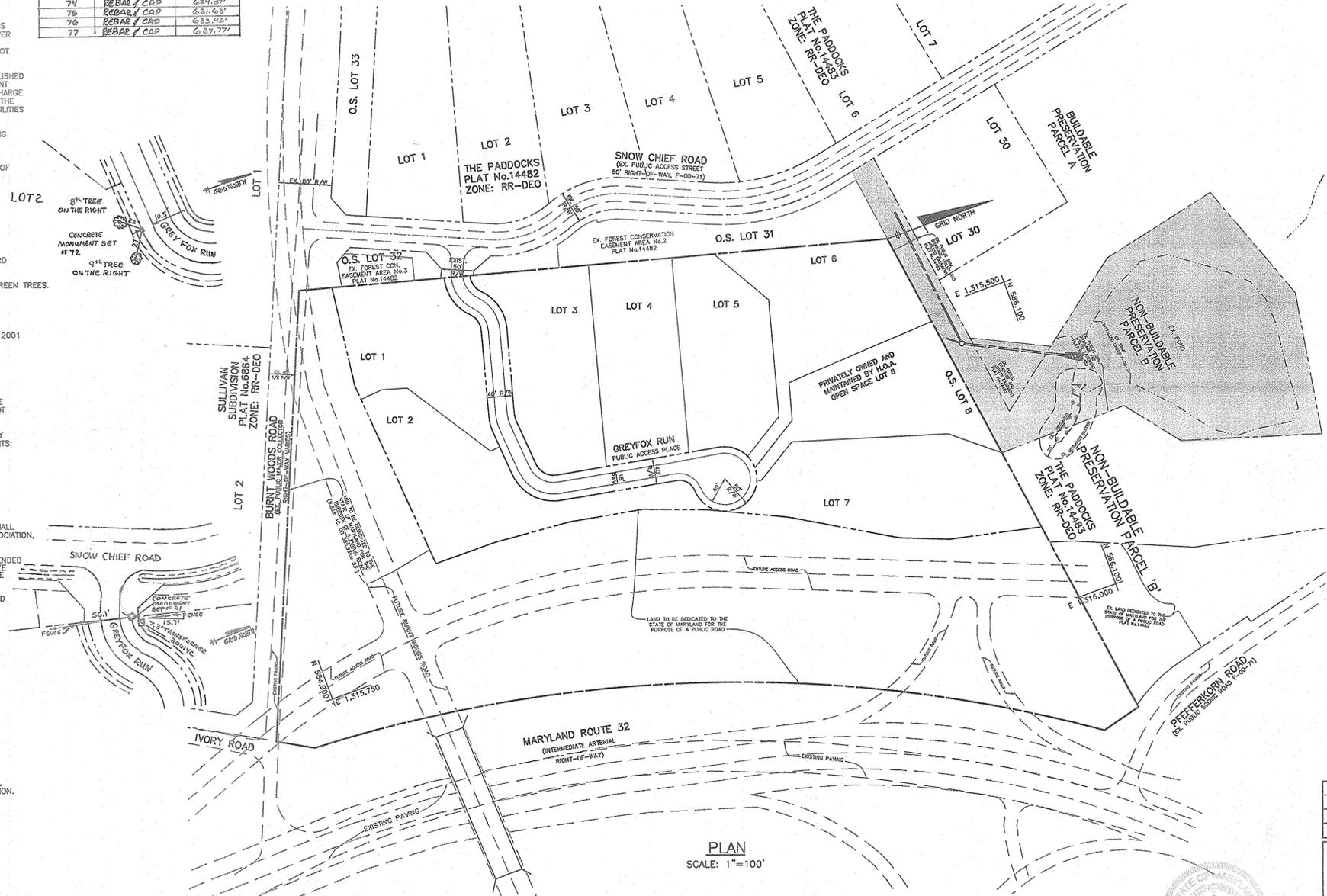
VICINITY MAP
SCALE: 1" = 2000'

SWM Summary of General Storage Requirements

Step	Requirement	Volume Required (ac-ft)	Notes
1.	Water Quality Volume (WQv)	0.21	Provided in Micropool (ED Pond)
2.	Recharge Volume (Rev)	0.054 (or 0.58 acres)	This volume fully addressed by the use of open channels.
3.	Channel Protection Volume (Cpv)	0.33	Cpv is required for this drainage area due to the fact that the post development peak discharge is greater than 2.0 cfs. Cpv is fully provided in a Micropool Extended Detention Facility.
4.	Overbank Flood Protection Volume (Op)	N/A	Not required
5.	Extreme Flood Volume (Qf)	N/A	Not required

LEGEND

- SOILS CLASSIFICATION: *AbC1*
- SOILS DELINEATION:
- EXISTING CONTOURS:
- PROPOSED CONTOURS:
- DRAINAGE FLOW ARROW:
- LIMIT OF WETLANDS:
- EXISTING WOODS LINE:
- PROPOSED WOODS LINE:
- EXISTING STRUCTURE:
- PROPOSED BUILDING:
- EXISTING SEPTIC FIELD:
- PROPOSED SEPTIC FIELD:
- PROPOSED WELL:
- 1500 S.F. WELL ZONE:
- RIP-RAP PROTECTION:
- SOIL BORING:
- LIMIT OF DISTURBANCE:
- STABILIZED CONSTRUCTION ENTRANCE:
- SILT FENCE:
- SUPER SILT FENCE:
- SOIL STABILIZATION MATTING:
- EARTH DIKE:
- REMOVABLE PUMP STATION:
- DRAINAGE AREA:



PLAN
SCALE: 1"=100'

SITE ANALYSIS DATA CHART

GENERAL SITE DATA		LOT TABULATION	
1.) PRESENT ZONING:	RR-DEO	1.) ALLOWABLE RESIDENTIAL LOTS AT 1 UNIT/4.25 ACRES	17.73 AC/4.25 AC = 4.2 UNITS = 4
2.) APPLICABLE OPZ FILE REFERENCES:	P-02-29, S-02-01	2.) ALLOWABLE RESIDENTIAL LOTS USING THE DEO/CEO DENSITY EXCHANGE OPTION AT 1 UNIT/2 ACRES	17.73 AC / 8.9 UNITS = 8
3.) DEED REFERENCE:	LIBER 7098 / FOLIO 0157	3.) NUMBER OF DEO/CEO UNITS REQUIRED	= 3
4.) PROPOSED USE OF SITE:	7 SFD HOMES AND 1 O.S. LOT	4.) TOTAL NUMBER OF RESIDENTIAL UNITS PROPOSED	= 7
5.) PROPOSED WATER AND SEWER SYSTEMS:	PRIVATE	5.) NUMBER OF OPEN SPACE LOTS PROPOSED	= 1 (SWMF)
AREA TABULATION		OPEN SPACE DATA	
1.) GROSS TRACT AREA	17.73 AC.±	1.) MINIMUM RESIDENTIAL LOT SIZE SELECTED	40,000 S.F.
2.) AREA WITHIN 100-YEAR FLOODPLAIN	0.00 AC.	2.) OPEN SPACE REQUIRED	0.89 AC.±
3.) TOTAL AREA OF 25% OR GREATER STEEP SLOPES	0.00 AC.	3.) TOTAL AREA OF PROPOSED OPEN SPACE LOTS	0.93 AC.±
4.) NET TRACT AREA	17.73 AC.±	AREA OF PROPOSED NON-CREDITED O.S. LOTS	0.03 AC.±
5.) AREA OF THIS PLAN SUBMISSION	17.73 AC.±	AREA OF CREDITED OPEN SPACE PROVIDED	0.90 AC.±
6.) AREA OF PROPOSED BUILDABLE LOTS	7.19 AC.±	AREA OF RECREATIONAL OPEN SPACE REQUIRED	0.00 AC.±
9.) AREA OF PROPOSED OPEN SPACE LOTS	0.93 AC.±	AREA OF RECREATIONAL OPEN SPACE PROVIDED	0.00 AC.±
AREA OF PROPOSED NON-CREDITED O.S. LOTS (P/O OPEN SPACE LOT 8 LESS THAN 35' IN WIDTH)	0.03 AC.±		
AREA OF CREDITED OPEN SPACE (TO BE DEDICATED TO THE H.O.A.)	0.90 AC.±		
10.) AREA OF PROPOSED PUBLIC COUNTY ROAD R/W DEDICATION	0.75 AC.±		
11.) AREA OF PROPOSED PUBLIC STATE ROAD R/W DEDICATION	8.86 AC.±		

SHEET INDEX

NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD CONSTRUCTION AND STORM DRAIN PLAN
3	ROAD AND STORM DRAIN PROFILES, NOTES & DETAILS
4	GRADING, SEDIMENT & EROSION CONTROL PLAN
5	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
6	STORMWATER MANAGEMENT PROFILES, NOTES & DETAILS
7	STORMWATER MANAGEMENT PROFILES, NOTES AND DETAILS
8	NON-STRUCTURAL SWM PLAN & NOTES
9	STORM DRAIN DRAINAGE AREA MAP
10	LANDSCAPE PLAN, NOTES AND DETAILS
11	FOREST CONSERVATION AT EARLE PROPERTIES PLAN, NOTES AND DETAILS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William J. Gandy 7-1-04
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John A. Gandy 7/9/04
CHIEF, DIVISION OF LAND DEVELOPMENT

William J. Gandy 7/16/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Donald Mason
AS-BUILT 11/8/06

1 11-7-06 REVISED PER AS-BUILT CONDITIONS		REVISION	
BENCHMARK ENGINEERING, INC.			
8480 BALTIMORE NATIONAL PIKE & SUITE 418 ELLICOTT CITY, MARYLAND 21043 phone: 410-465-6105 & fax: 410-465-6644 email: Benchmark@cois.com			
OWNER/DEVELOPER: FOXTAIL RUN, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041 PHONE: 410-465-4244		PROJECT: FOXTAIL RUN LOTS 1 THRU 7 AND OPEN SPACE LOT 8	
LOCATION: TAX MAP 22 - GRID 8 PARCEL 2 3rd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND		TITLE: TITLE SHEET	
DATE: JUNE, 2004	PROJECT NO. 1458	SCALE: AS SHOWN	DRAWING 1 OF 11
Design: JMC	Draft: MCR	Check: DAM	

Donald Mason
6/22/04

CENTERLINE CONTROL DATA - GREYFOX RUN

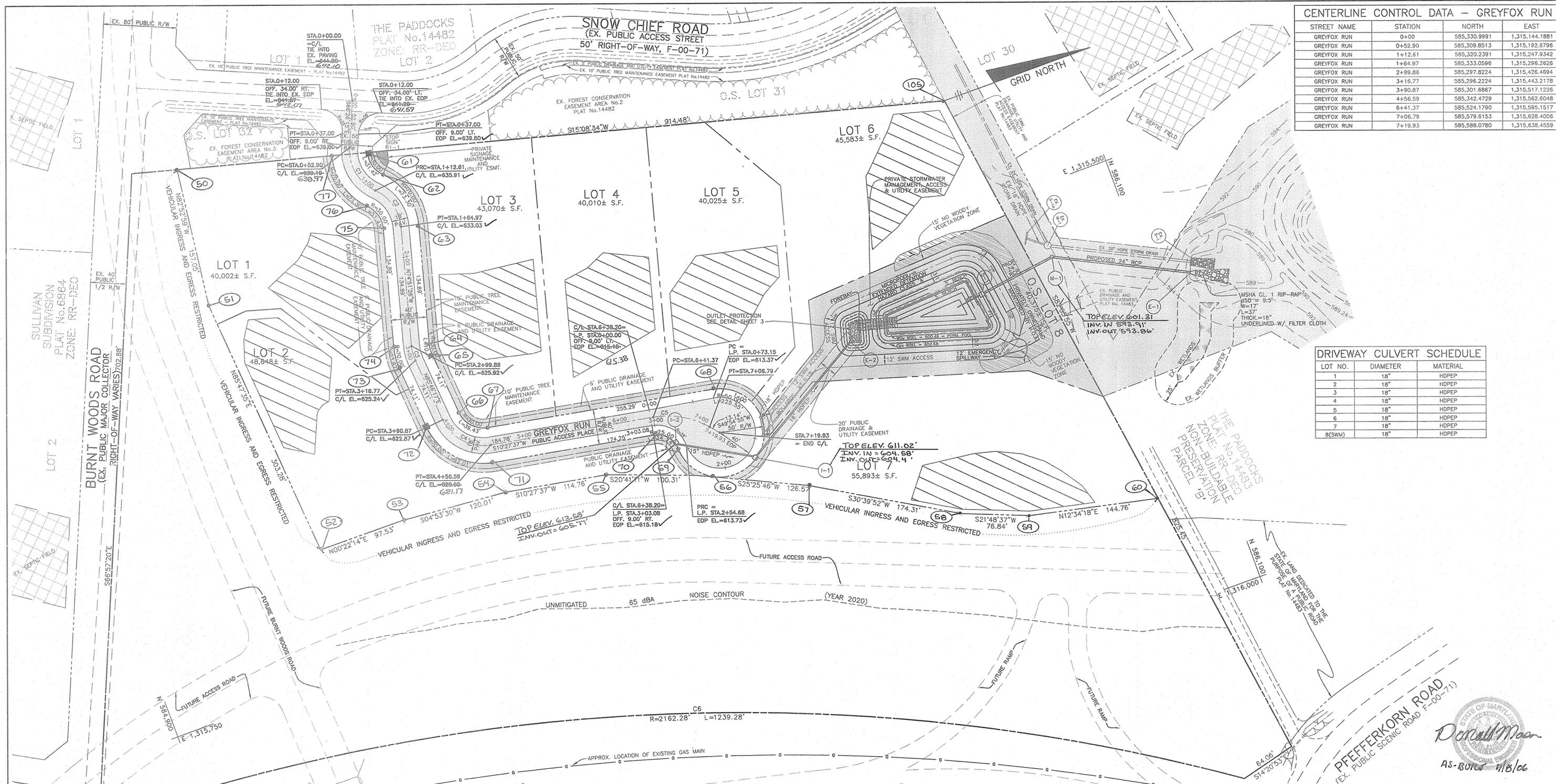
STREET NAME	STATION	NORTH	EAST
GREYFOX RUN	0+00	585,330.9991	1,315,144.1881
GREYFOX RUN	0+52.90	585,309.8513	1,315,192.6796
GREYFOX RUN	1+12.61	585,320.2391	1,315,247.9342
GREYFOX RUN	1+64.97	585,333.0596	1,315,296.2626
GREYFOX RUN	2+99.86	585,297.8224	1,315,426.4694
GREYFOX RUN	3+16.77	585,296.2224	1,315,443.2178
GREYFOX RUN	3+90.87	585,301.6867	1,315,517.1226
GREYFOX RUN	4+56.59	585,342.4729	1,315,562.6048
GREYFOX RUN	6+41.37	585,524.1790	1,315,595.1517
GREYFOX RUN	7+06.79	585,579.6153	1,315,628.4006
GREYFOX RUN	7+19.93	585,588.0780	1,315,638.4559

DRIVEWAY CULVERT SCHEDULE

LOT NO.	DIAMETER	MATERIAL
1	18"	HDPEP
2	18"	HDPEP
3	18"	HDPEP
4	18"	HDPEP
5	18"	HDPEP
6	18"	HDPEP
7	18"	HDPEP
8(SWM)	18"	HDPEP

CENTERLINE CURVE DATA - GREYFOX RUN

CURVE	STATION	RADIUS	LENGTH	TANGENT	DELTA	CHORD
C1	0+52.90 TO 1+12.61	50.00'	59.71'	33.99'	68°25'11"	N79°21'10"E 56.22'
C2	1+12.61 TO 1+64.97	50.00'	52.36'	28.87'	60°00'00"	N75°08'34"E 50.00'
C3	2+99.86 TO 3+16.77	50.00'	16.90'	8.53'	19°22'17"	S84°32'34"E 16.82'
C4	3+90.87 TO 4+56.59	50.00'	65.72'	38.58'	75°18'40"	N48°06'57"E 61.09'
C5	6+41.37 TO 7+06.79	95.00'	65.42'	34.07'	39°27'18"	S30°11'16"W 64.13'



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7-1-04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7/8/04

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 • fax: 410-465-6644
 email: Benchmark@cois.com

Donall Moore
 AS-BUILT 7/15/06

OWNER/DEVELOPER: FOXTAIL RUN, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 PHONE: 410-465-4244

PROJECT: FOXTAIL RUN
 LOTS 1 THRU 7 AND OPEN SPACE LOT 8

LOCATION: TAX MAP 22 - GRID 8
 PARCEL 2
 3rd ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: ROAD CONSTRUCTION
 AND STORM DRAIN PLAN

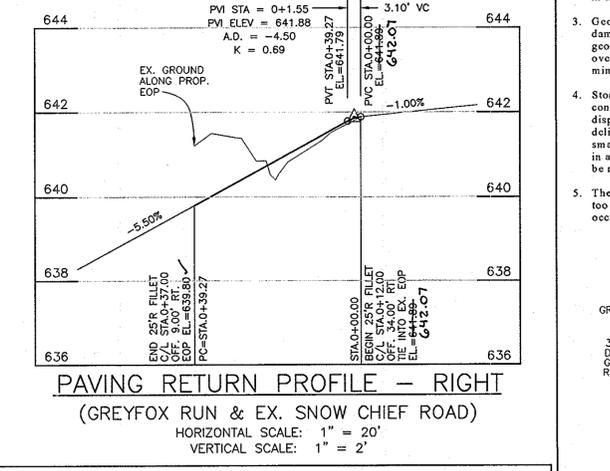
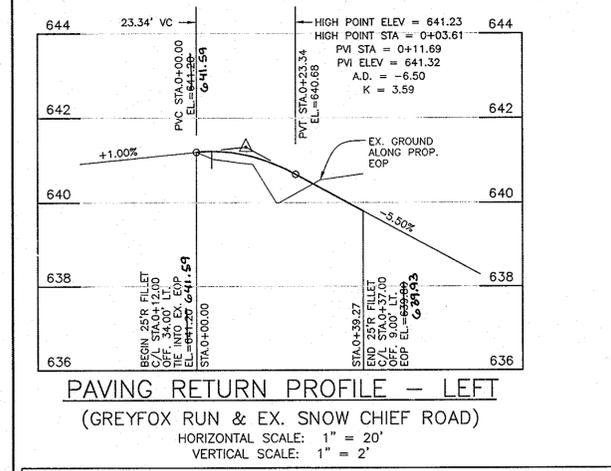
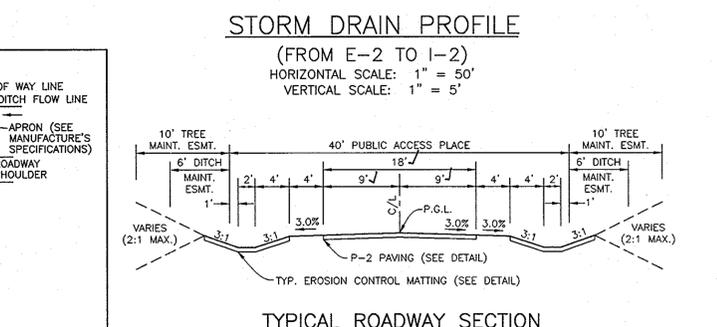
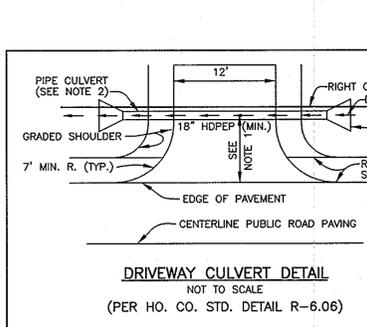
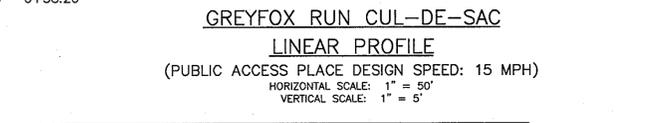
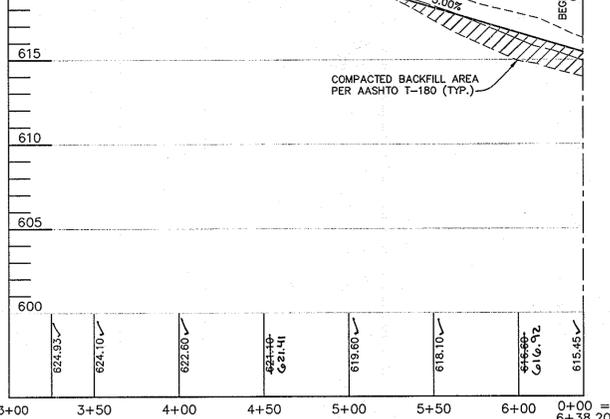
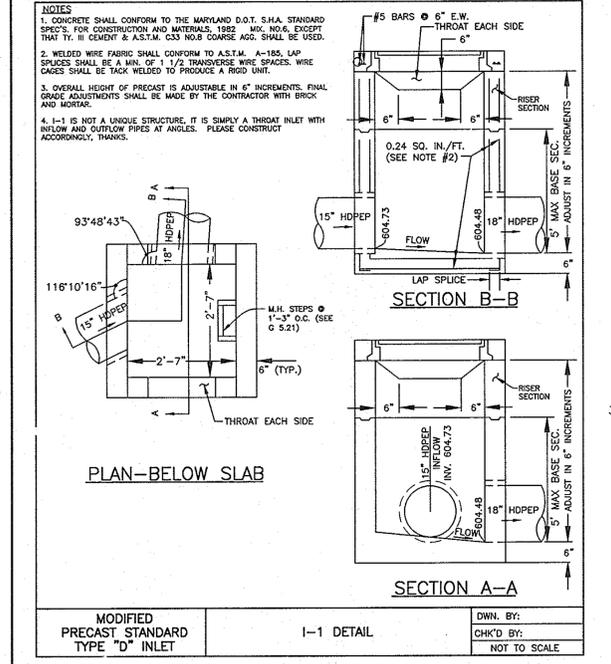
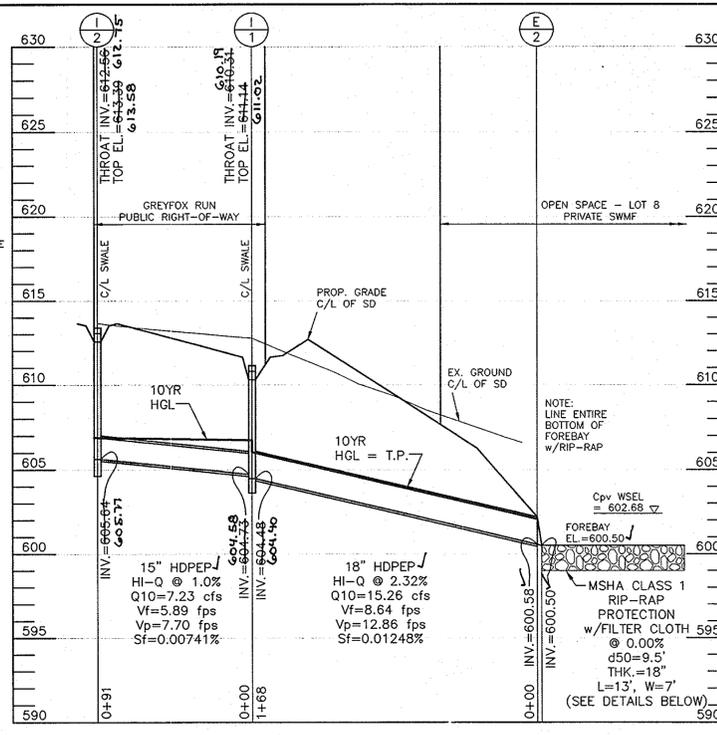
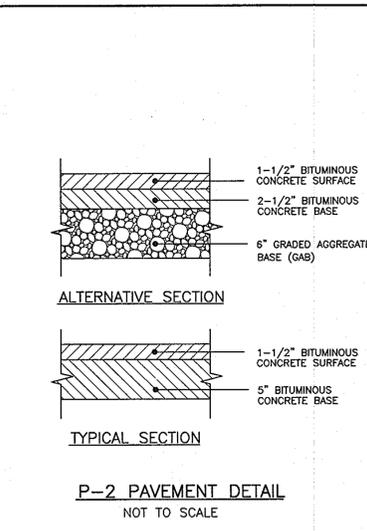
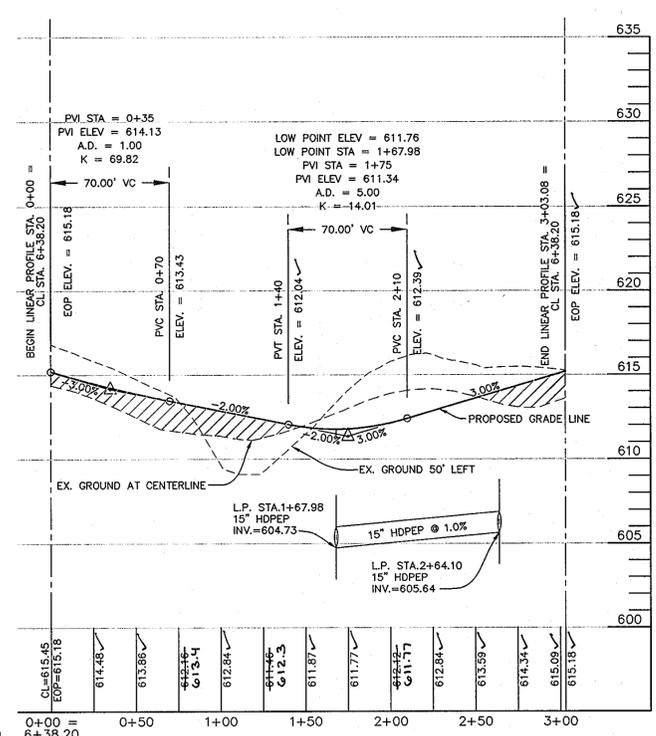
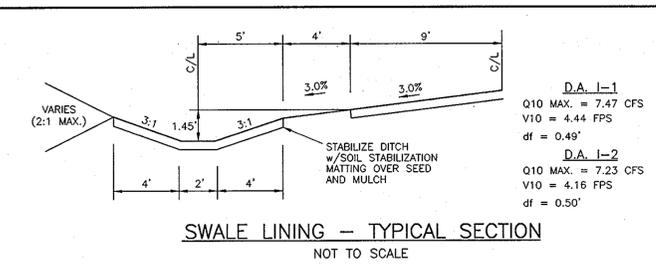
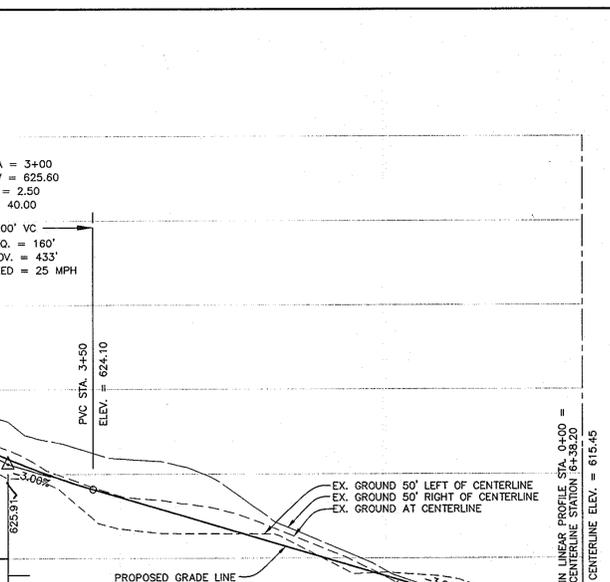
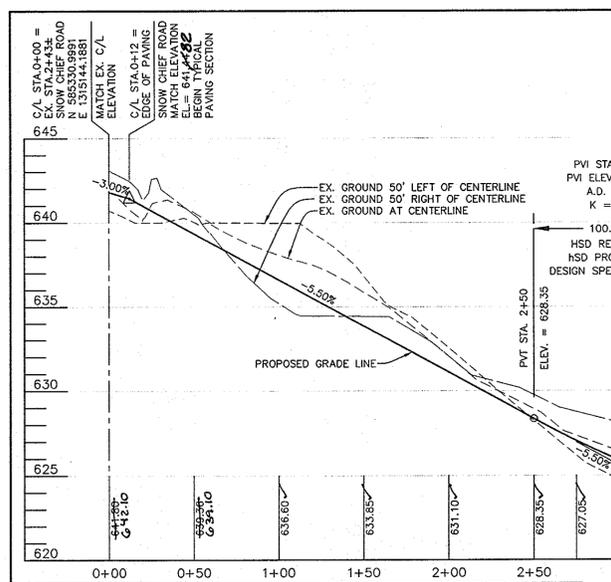
DATE: JUNE, 2004 PROJECT NO. 1458

SCALE: 1" = 50' DRAWING 2 OF 11

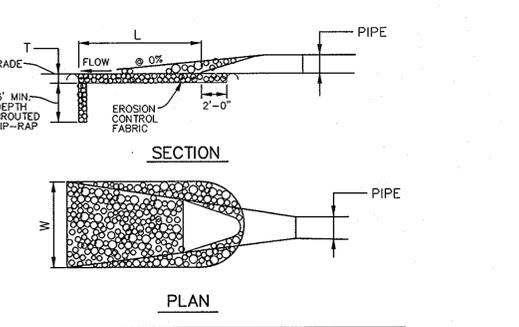
Design: JMC Draft: MCR Check: DAM

NO.	DATE	REVISION
1	11-7-06	REVISED PER AS-BUILT CONDITIONS





- Construction Specifications**
- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
 - The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
 - Geotextile Class C²⁸ or better shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile fabric over the damaged part or by completely replacing the geotextile fabric. All overlaps, whether for repairs or for joining two pieces of geotextile fabric, shall be a minimum of one foot.
 - Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile fabric. Hand placement must be required to the extent necessary to prevent damage to the permanent works.
 - The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.



STRUCTURE	D-50	LENGTH	WIDTH	THICKNESS	SHA CLASS
E-1	9.5'	37'	17'	18"	1
E-2	9.5'	13'	7'	18"	1

- NOTES:**
- DRIVEWAY MUST BE PAVED FROM EDGE OF PUBLIC ROAD TO RIGHT OF WAY LINE USING STANDARD PAVING SECTION P-1 AS SHOWN ON STD. NO. R-2.01 OR ALTERNATIVE SECTION EQUAL TO OR BETTER THAN P-1, AS APPROVED BY D.P.W.
 - DRAINAGE CULVERT SHALL BE SIZED FOR A 10 YEAR FREQUENCY STORM.
 - ALL DRIVEWAY CULVERT PIPES TO BE 15" HDPEP OR GREATER TO PREVENT BLOCKING. HOPE APRONS ARE TO BE INSTALLED AT EACH END OF THE DRIVEWAY CULVERT AND SIZED PER MANUFACTURER'S SPECIFICATIONS. IF A LARGER PIPE IS REQUIRED, DITCH INVERT CAN BE LOWERED TO PROVIDE MIN. DITCH GRADIENT OF 0.5% AND CLEARANCE SHOWN.
 - SWALE FLOW MAY BE PROVIDED OVER DRIVEWAY IF LOCATED AT OR NEAR THE CREST OF A VERTICAL CURVE ON THE PUBLIC ROAD WHERE QUANTITY OF FLOW IS SMALL, AS APPROVED BY D.P.W.
 - TIE IN GRADE OF PRIVATE DRIVEWAY SHALL NOT EXCEED 14%.
 - SEE HOWARD COUNTY STANDARD DETAIL R-6.06 FOR ADDITIONAL INFORMATION.
 - ALL LOTS WILL REQUIRE A 18" HDPEP WITH END TREATMENT TO CROSS THE ROADSIDE SWALE. COMPUTATIONS JUSTIFYING THIS SIZING OF THE DRIVEWAY AND SWM ACCESS CULVERTS WERE REVIEWED AND APPROVED WITHIN THE FINAL STORM DRAIN REPORT ASSOCIATED WITH THESE ROAD CONSTRUCTION PLANS

RUN	SIZE	LENGTH	TYPE & CLASS
I-2 TO I-1	15"	91'	HDPEP HI-Q
I-1 TO E-2	18"	168'	HDPEP HI-Q
S-1 TO M-1	24"	86'	ASTM C-361 (B-25)
M-1 TO E-1	24"	156'	ASTM C-361 (B-25)

NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	HO. CO. STD.	REMARKS
I-2	TYPE "D"	L/P STA. 2+64 OFFSET 9.0 LT.	612.56 75	-	605.64 77	613.36 58	SD-4.39	OPEN ON 2 SIDES
I-1	TYPE "D"	L/P STA. 1+68 OFFSET 9.0' LT.	610.31 19	604.28 58	604.48 40	611.14 02	MODIFIED SD-4.39 (SEE THIS SHT.)	OPEN ON 4 SIDES (SUMP)
E-2	18" DIA. HDPEP END	N 585761.08 E 1315592.51	-	600.58 ✓	600.50 ✓	-	-	SEE MFG. SPECS.
S-1	-	N 585917.7502 E 1315593.4771	WEIR 602.68	596.07 28	596.76 16	605.67 98	-	OUTFALL FROM MICRO-POOL
M-1	4'-0" INTERIOR DIA.	N 586006.0585 E 1315581.2230	-	-	593.96 86	601.72 31	-	OFFSITE
E-1	24" DIA. HDPEP END	N 586145.2885 E 1315651.0937	-	589.18 09	589.00 ✓	-	-	SEE MFG. SPECS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7-10-06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7/9/06

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-6105 • fax: 410-465-6644
 email: Benchmark@cois.com

OWNER/DEVELOPER: FOXTAIL RUN, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 PHONE: 410-465-4244

PROJECT: FOXTAIL RUN
 LOTS 1 THRU 7 AND OPEN SPACE LOT 8

LOCATION: TAX MAP 22 - GRID 8
 PARCEL 2
 3rd ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: ROAD AND STORM DRAIN
 PROFILES, NOTES & DETAILS

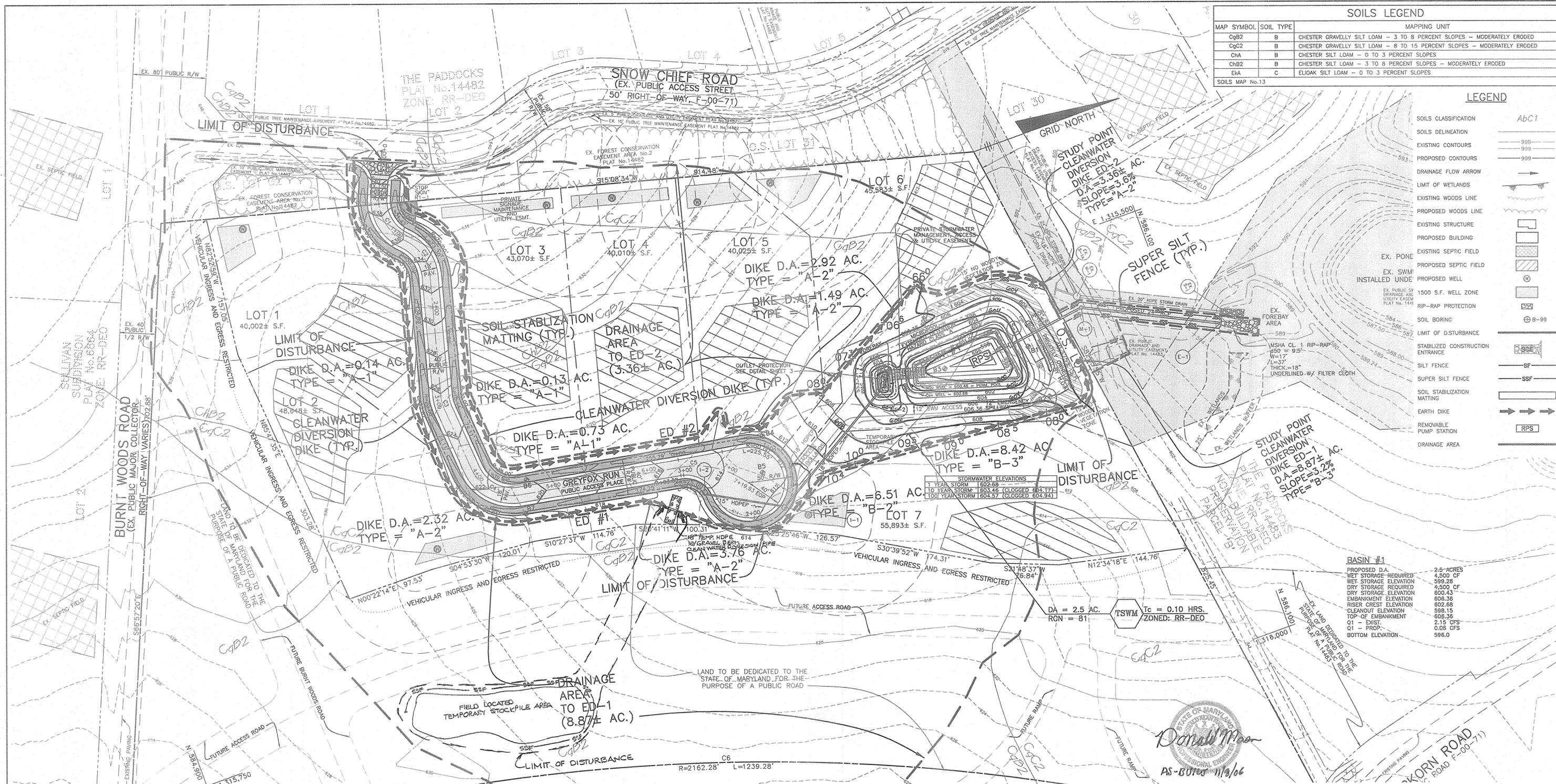
DATE: JUNE, 2004 PROJECT NO. 1458
 SCALE: AS SHOWN DRAWING 3 OF 11

Design: JMC Draft: MCR Check: DAM



SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	MAPPING UNIT
CgB2	B	CHESTER GRAVELLY SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
CgC2	B	CHESTER GRAVELLY SILT LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
ChA	B	CHESTER SILT LOAM - 0 TO 3 PERCENT SLOPES
ChB2	B	CHESTER SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
EKA	C	ELIOAK SILT LOAM - 0 TO 3 PERCENT SLOPES

LEGEND	
SOILS CLASSIFICATION	ABC1
SOILS DELINEATION	---
EXISTING CONTOURS	999
PROPOSED CONTOURS	999
DRAINAGE FLOW ARROW	→
LIMIT OF WETLANDS	---
EXISTING WOODS LINE	---
PROPOSED WOODS LINE	---
EXISTING STRUCTURE	▭
PROPOSED BUILDING	▭
EXISTING SEPTIC FIELD	▭
PROPOSED SEPTIC FIELD	▭
EX. POND	○
EX. SWM INSTALLED UNDER	○
1500 S.F. WELL ZONE	○
RIP-RAP PROTECTION	▭
SOIL BORING	⊕ B-99
LIMIT OF DISTURBANCE	---
STABILIZED CONSTRUCTION ENTRANCE	▭
SILT FENCE	▭
SUPER SILT FENCE	▭
SOIL STABILIZATION MATTING	▭
EARTH DIKE	→
REMOVABLE PUMP STATION	▭
DRAINAGE AREA	▭



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 7-1-04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7/9/04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 7/6/04

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

DEVELOPER: FOXTAIL RUN LLC
 NAME: STEVEN K. BREEDEN
 DATE: 6/28/04

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

ENGINEER: DONALD A. MASON, MD P.E. No. 21443
 DATE: 6/28/04

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DATE: 6/28/04

HOWARD SOIL CONSERVATION DISTRICT
 REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 DATE: 6/28/04

USDA-NATURAL RESOURCES CONSERVATION SERVICE
 DATE: 6/28/04

ALL SEDIMENT & EROSION CONTROL FEATURES ARE TO BE REPAIRED IMMEDIATELY IF DISRUPTED BY CONSTRUCTION ACTIVITY

SUPER SILT FENCE IS TO BE INSPECTED FREQUENTLY & CLEANED, REPAIRED AND/OR RE-INSTALLED IMMEDIATELY AS NECESSARY

SEDIMENT CONTROL LOCATION AND IMPLEMENTATION SHOWN ON THIS PLAN IS SUBJECT TO REVISIONS IN THE FIELD AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR

ALL SEDIMENT CONTROL FEATURES SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS SHOWN IN THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

PLAN
 SCALE: 1"=50'

NO.	DATE	REVISION
1	11-7-06	Revised PER AS-BUILT CONDITIONS
2	1-31-05	ADD STOCKPILE AREA AND SEDIMENT CONTROLS

BENCHMARK ENGINEERING, INC.
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 email: Benchmark@cois.com

OWNER/DEVELOPER: FOXTAIL RUN, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 PHONE: 410-465-4244

PROJECT: FOXTAIL RUN
 LOTS 1 THRU 7 AND OPEN SPACE LOT 8
 LOCATION: TAX MAP 22 - GRID B
 PARCEL 2
 3rd ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: GRADING, SEDIMENT & EROSION CONTROL PLAN

DATE: JUNE, 2004 PROJECT NO. 1458
 SCALE: 1" = 50' DRAWING 4 OF 11

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	17.73 ACRES
TOTAL AREA DISTURBED	3.11 ACRES
AREA TO BE ROOFED OR PAVED	0.40 ACRES
AREA TO BE VEGETATIVELY STABILIZED	2.71 ACRES
TOTAL CU YDS.	5541 CU YDS.
TOTAL FILL	4102 CU YDS.
OFFSITE HAUL	NON-SITE STOCKPILE
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY AN OFF-SITE FILL AREA WITH AN APPROVED SEDIMENT & EROSION CONTROL PLAN.

TEMPORARY SEEDBED PREPARATION

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT).

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTATED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 3 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDBED PREPARATION

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ON OF THE FOLLOWING SCHEDULES.

- PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ FT).

- ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTATED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 3 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose
To provide a suitable 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.

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:

- The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
- 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.
- The original soil to be vegetated contains material toxic to plant growth.
- The soil is so acidic that treatment with limestone is not feasible. II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that 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-SCS in cooperation with Maryland Agricultural Experiment Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

- Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
- Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or other species as specified.
- Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres:

I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

- On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No soil or seed shall 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 phytotoxic materials.

Note: 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.

II. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

I. When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

III. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

IV. Topsoil shall not be placed where 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. G-21-2

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

I. Composted Sludge Material for use as a soil conditioner for areas having disturbed areas over 5 acres shall be tested to prescribed amendments and for sites having disturbed areas over 5 acres shall conform to the following requirements:

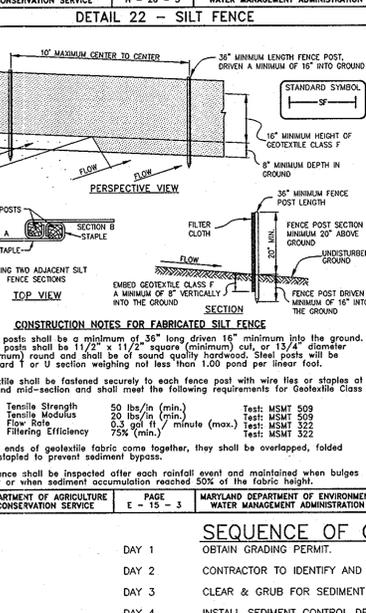
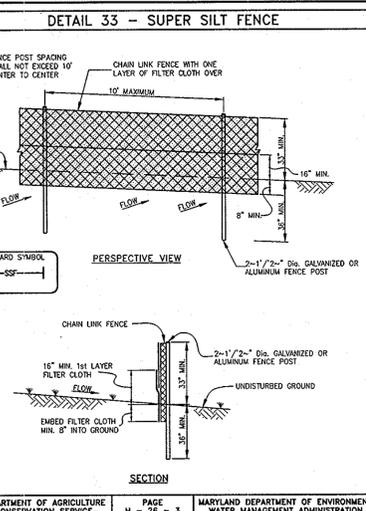
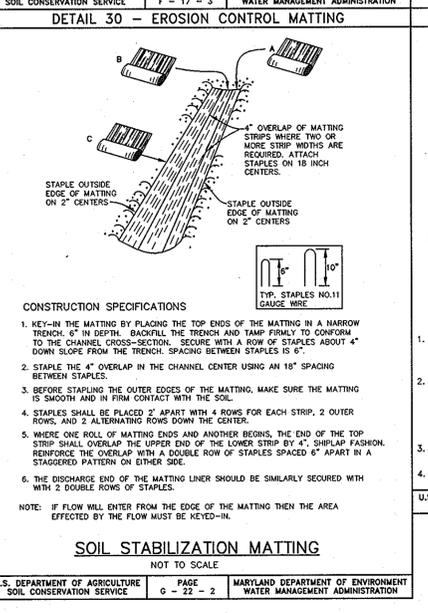
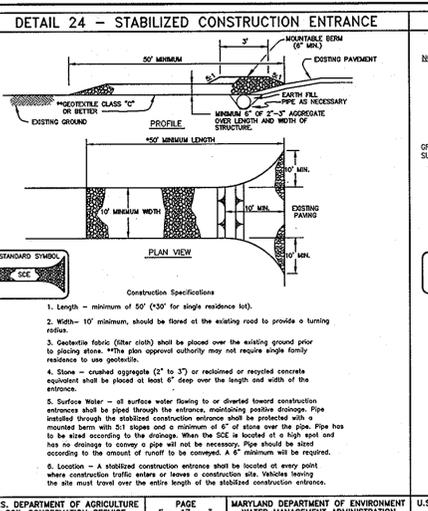
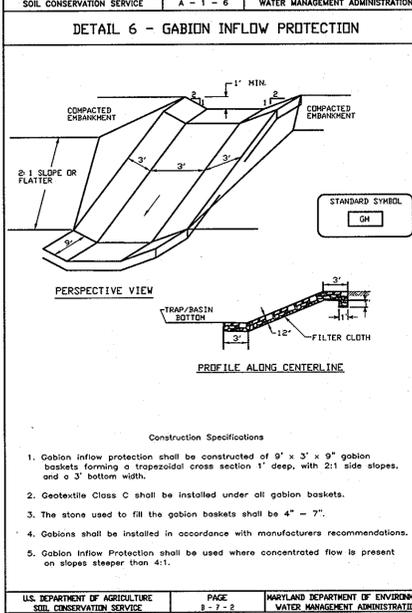
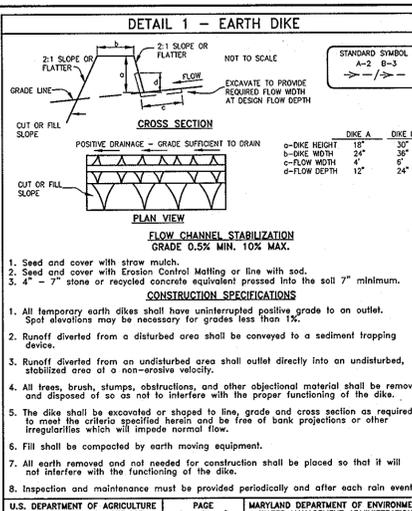
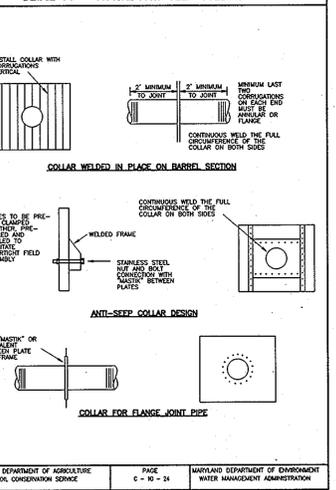
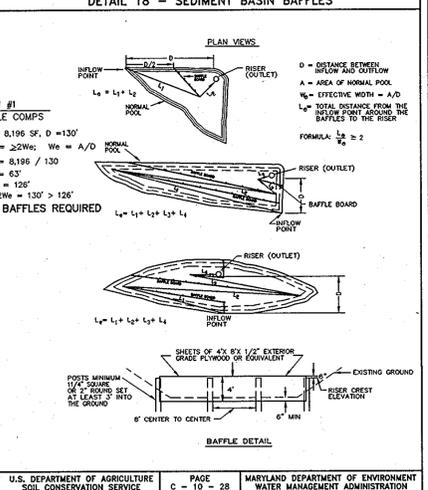
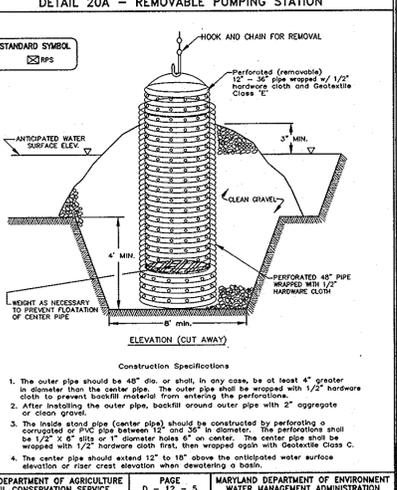
- Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

- Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

- Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

- Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.



SUPER SILT FENCE			
CONSTRUCTION SPECIFICATIONS			
1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.			
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and fruss rods, drive anchors and post caps are not required except on the ends of the fence.			
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.			
4. Filter cloth shall be embedded a minimum of 8" into the ground.			
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.			
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.			
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:			
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509	Test: MSMT 509
Flow Rate	0.3 gal/in ² /minute (max.)	Test: MSMT 322	Test: MSMT 322
Filtering Efficiency	75% (min.)		
SUPER SILT FENCE DESIGN CRITERIA			
Slope	Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

SILT FENCE			
SILT FENCE DESIGN CRITERIA			
Slope	Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
Flatter than 50:1	unlimited	unlimited	unlimited
50:1 to 10:1	10:1 to 5:1	125 feet	1,000 feet
10:1 to 5:1	5:1 to 3:1	100 feet	750 feet
5:1 to 3:1	3:1 to 2:1	60 feet	500 feet
3:1 to 2:1	2:1 and steeper	40 feet	250 feet
2:1 and steeper	2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

ALL SEDIMENT & EROSION CONTROL FEATURES ARE TO BE REPAIRED IMMEDIATELY IF DISRUPTED BY CONSTRUCTION ACTIVITY

SUPER SILT FENCE IS TO BE INSPECTED FREQUENTLY & CLEANED, REPAIRED AND/OR RE-INSTALLED IMMEDIATELY AS NECESSARY

SEDIMENT CONTROL LOCATION AND IMPLEMENTATION SHOWN ON THIS PLAN IS SUBJECT TO LIMITED REVISIONS IN THE FIELD AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR

ALL SEDIMENT CONTROL FEATURES SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS SHOWN IN THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

BY THE DEVELOPER:

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

DEVELOPER: FOXTAIL LLC
NAME: STEVEN K. BREEDEN
DATE: 6/24/04

BY THE ENGINEER:

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

ENGINEER: DONALD M. WASON, MD P.E. No. 21443
DATE: 6/28/04

HOWARD SOIL CONSERVATION DISTRICT

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
DATE: 6/28/04

USDA-NATIONAL RESOURCES CONSERVATION SERVICE
DATE: 6/28/04

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
DATE: 7/9/04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
DATE: 7/9/04

SEQUENCE OF CONSTRUCTION		
DAY 1	OBTAIN GRADING PERMIT.	
DAY 2	CONTRACTOR TO IDENTIFY AND MARK ANY AND ALL HAZARDOUS CONDITIONS ON SITE.	
DAY 3	CLEAR & GRUB FOR SEDIMENT CONTROL DEVICES	
DAY 4	INSTALL SEDIMENT CONTROL DEVICES INCLUDING THE CLEANWATER DIVERSION DIKE AND SUPER SILT FENCE.	
DAY 5-10	INSTALL TEMPORARY SEDIMENT BASIN #1 AND INFLOW PROTECTION. CONTRACTOR TO OBTAIN APPROVAL FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR BEFORE PROCEEDING.	
DAY 11-13	CLEAR AND GRUB REMAINDER OF SITE.	
DAY 14-16	UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, BEGIN MASS GRADING.	
DAY 17	STABILIZE IN ACCORDANCE WITH TEMPORARY SEEDING NOTES.	
DAY 18-25	INSTALL STORM DRAINS AND OTHER UTILITIES.	
DAY 26-28	INSTALL BASE COURSE PAVING FOR ROADWAYS.	
DAY 29-35	FINAL GRADE REMAINDER OF SITE AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES. ADD SOIL STABILIZATION MATTING TO ALL SWALES AND CONCENTRATED FLOW AREAS.	
DAY 36-37	INSTALL FINAL PAVING FOR ROADS.	
DAY 38-40	INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON THESE PLANS.	
DAY 41-50	UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONVERT TEMPORARY SEDIMENT BASIN #1 TO STORMWATER MANAGEMENT FACILITY #1, AND PLANT WITH SEED MIXES AS INDICATED IN THE SWM DETAILS.	
DAY 50-55	UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE THE SITE.	

1-31-05 REVISE DISTURBED AREA AND STABILIZED AREAS

NO. DATE REVISION

BENCHMARK ENGINEERS, LAND SURVEYORS & PLANNERS

8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLCOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
email: Benchmark@bcis.com

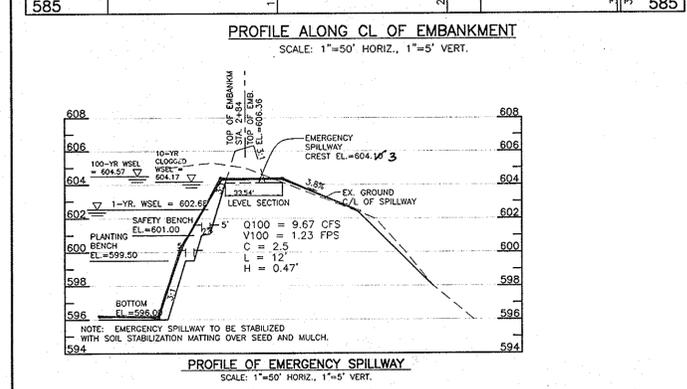
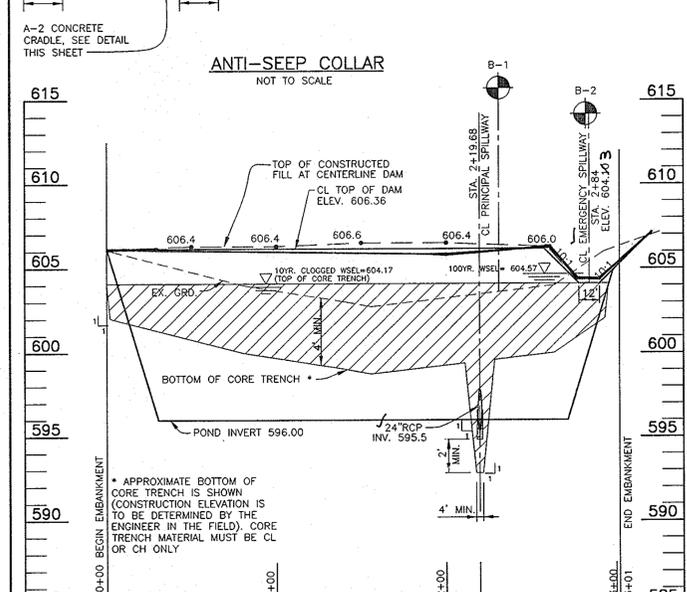
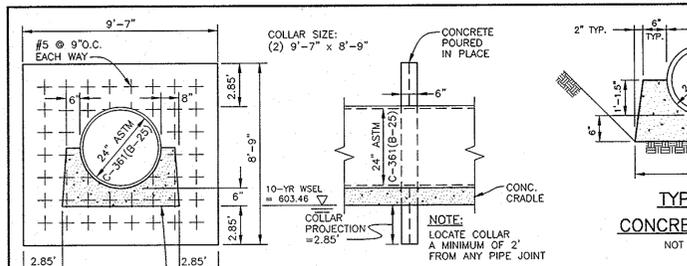
FOXTAIL RUN
LOTS 1 THRU 7 AND OPEN SPACE LOT 8

LOCATION: TAX MAP 22 - GRID 8
PARCEL 2
3RD ELECTION DISTRICT,
HOWARD COUNTY, MARYLAND

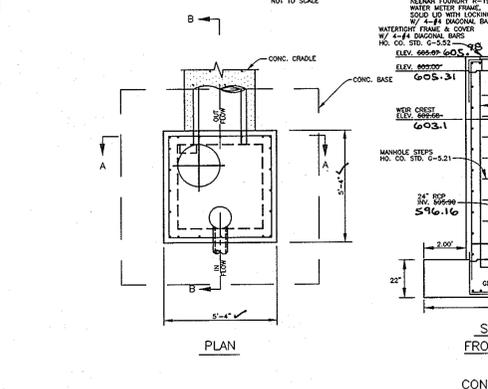
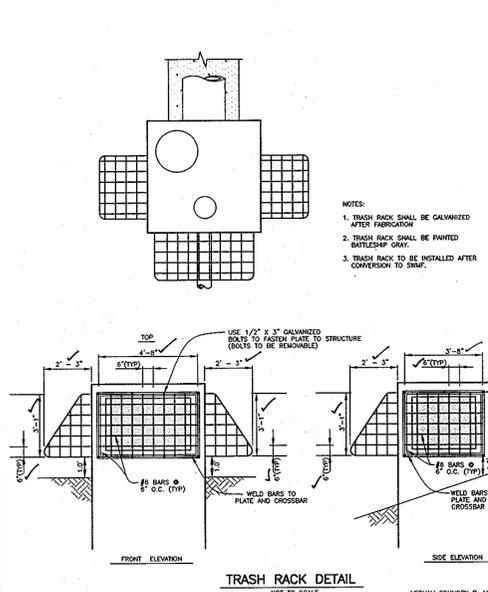
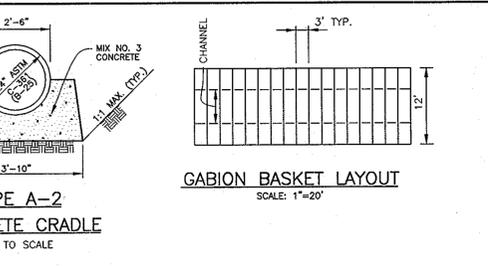
TITLE: SEDIMENT & EROSION CONTROL NOTES AND DETAILS

DATE: JUNE 2004 PROJECT NO. 1458

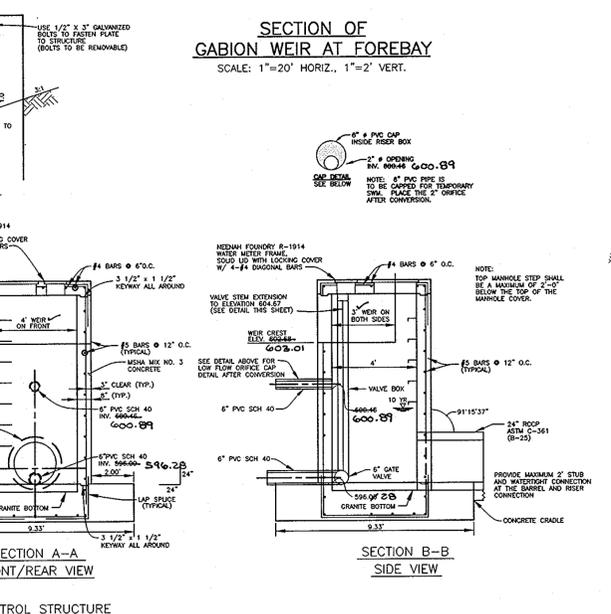
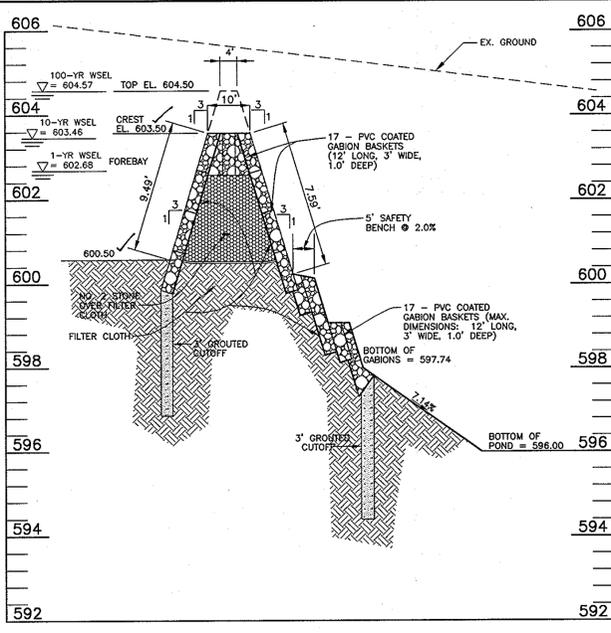
Design: JMC Draft: MCR Check: DAM SCALE: AS SHOWN DRAWING 5 OF 11



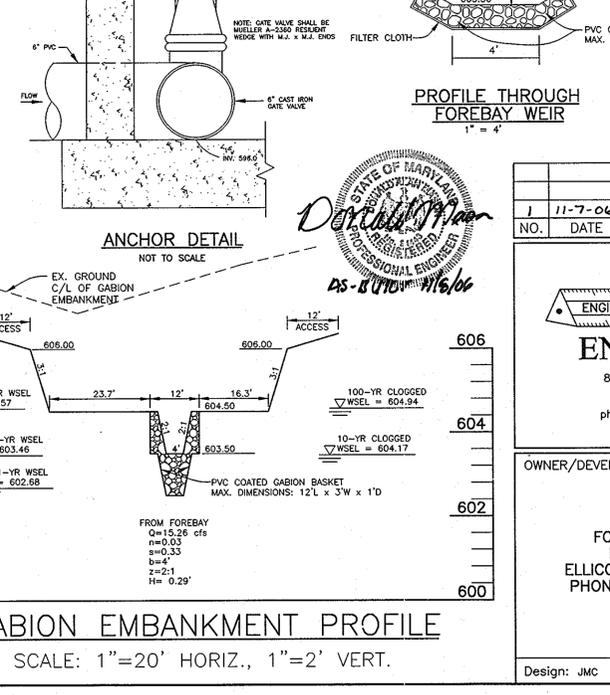
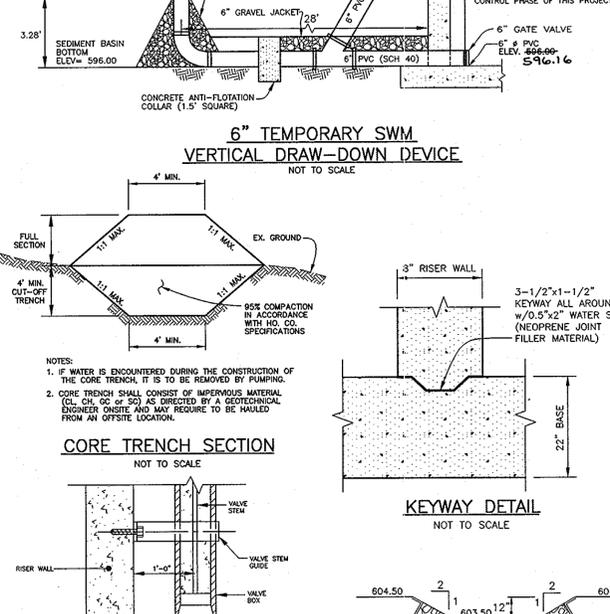
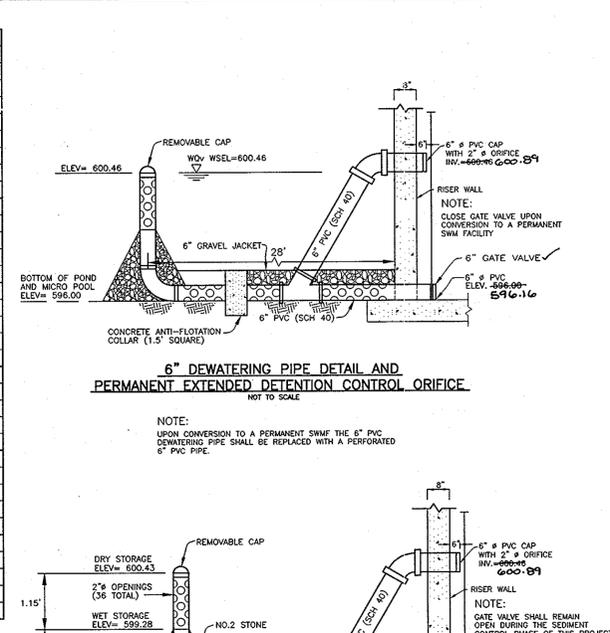
HILLIS-CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION									
Project Name		Location		Boring Number		Job #		Date	
Foxtail Run SWM		Howard County, Maryland		B-1		02266A		05-29-02	
ELEV.	SOIL DESCRIPTION	STRATA	DEPTH	SCALE	CON.	SAMPLE	NO.	REC.	BORING & SAMPLING NOTES
608	Surface		0.0	1:1	D	3-4	1	10'	Topsoil
604	Brown moist medium silty fine sand, trace gravel, trace roots (SM)		2.0	1:1	D	5-5	2	10'	No groundwater encountered while drilling
600	tan to reddish brown moist loam to medium dense silty fine sand (SM)		5.0	1:1	D	6-6	3	10'	Caved in at 5.5' at Completion
596			7.5-10	1:1	D	7-8	4	10'	Caved in at 5.5' after 24 hours
594	Bottom of Hole at 10.0'		10.0	1:1	D				



HILLIS-CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION									
Project Name		Location		Boring Number		Job #		Date	
Foxtail Run SWM		Howard County, Maryland		B-2		02266A		05-29-02	
ELEV.	SOIL DESCRIPTION	STRATA	DEPTH	SCALE	CON.	SAMPLE	NO.	REC.	BORING & SAMPLING NOTES
606	Surface		0.0	1:1	D	3-6-7	1	10'	Topsoil
602	Brown moist medium silty fine sand, trace gravel, trace roots (SM)		2.0	1:1	D	6-8-10	2	9'	No groundwater encountered while drilling
600	tan to reddish brown moist medium dense silty fine sand (SM)		5.0	1:1	D	6-7-8	3	10'	Caved in at 5.5' at Completion
596			7.5-10	1:1	D	4-7-9	4	10'	Caved in at 5.5' after 24 hours
592	Bottom of Hole at 10.0'		10.0	1:1	D				



HILLIS-CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION									
Project Name		Location		Boring Number		Job #		Date	
Foxtail Run SWM		Howard County, Maryland		B-3		02266A		05-29-02	
ELEV.	SOIL DESCRIPTION	STRATA	DEPTH	SCALE	CON.	SAMPLE	NO.	REC.	BORING & SAMPLING NOTES
606	Surface		0.0	1:1	D	2-2-4	1	8'	Topsoil
602	Brown moist medium silty fine sand, trace gravel, trace roots (SM)		2.0	1:1	D	7-6-9	2	12'	No groundwater encountered while drilling
600	tan to reddish brown moist medium dense silty fine sand (SM)		5.0	1:1	D	5-6-7	3	14'	Caved in at 5.5' at Completion
596			10-14-15	1:1	D	10-14-15	4	10'	Caved in at 5.5' after 24 hours
592	Bottom of Hole at 10.0'		10.0	1:1	D				



OPERATION, MAINTENANCE AND INSPECTION NOTE

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR POND OWNERS (40-578). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald Maan PE NO. 21443 DATE: 11/2/06

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE CONDUCTED DURING CONSTRUCTION AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Steve K. Breeden DEVELOPER: FOXTAIL RUN, LLC DATE: 11/2/06

NAME: STEVEN K. BREEDEN

BY THE ENGINEER:

I/WE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

Donald Maan ENGINEER - BENCHMARK ENGINEERING, INC. DATE: 11/2/06

NAME: DONALD A. MASON, P.E. # 21443

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.

Jim Meyer NATURAL RESOURCES CONSERVATION SERVICE DATE: 6/28/06

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

John A. Smith HOWARD SOIL CONSERVATION DISTRICT DATE: 6/28/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

William F. Mahler CHIEF, BUREAU OF HIGHWAYS DATE: 7-1-04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

John A. Smith CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 7/9/01

Donald Maan CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 7/2/04

BENCHMARK ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE SUITE 418
ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644
email: benchmrk@cois.com

OWNER/DEVELOPER: FOXTAIL RUN, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041
PHONE: 410-465-4244

PROJECT: FOXTAIL RUN
LOTS 1 THRU 7 AND OPEN SPACE LOT 8

LOCATION: TAX MAP 22 - GRID 8
PARCEL 2
3rd ELECTION DISTRICT,
HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT
PROFILES, NOTES AND DETAILS

DATE: JUNE, 2004 PROJECT NO. 1458

Design: JMC Draft: MCR Check: DAM SCALE: AS SHOWN DRAWING 6 OF 11

CONSTRUCTION SPECIFICATIONS
 These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation
 Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stumped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and embankments shall be staked to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.
 Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fence, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 24-inch radius around the inlet structure shall be cleared.
 All cleared and grubbed material shall be disposed outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill
 Material - The fill material shall be taken from approved designated borrow areas. If soil is free of roots, stumps, rubbish, stones greater than 6" diameter or other objectionable material, fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification (SC, SW, CL, or CU) and must have at least 20% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.
 Materials used in the outer shell of the embankment must have the capability to support vegetation to the extent required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 6 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal roadway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be such that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by 6 minimum of 4 complete passes of a sheepsfoot roller or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if turned into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ± 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and to be checked by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut-Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the maximum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to ensure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to ensure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

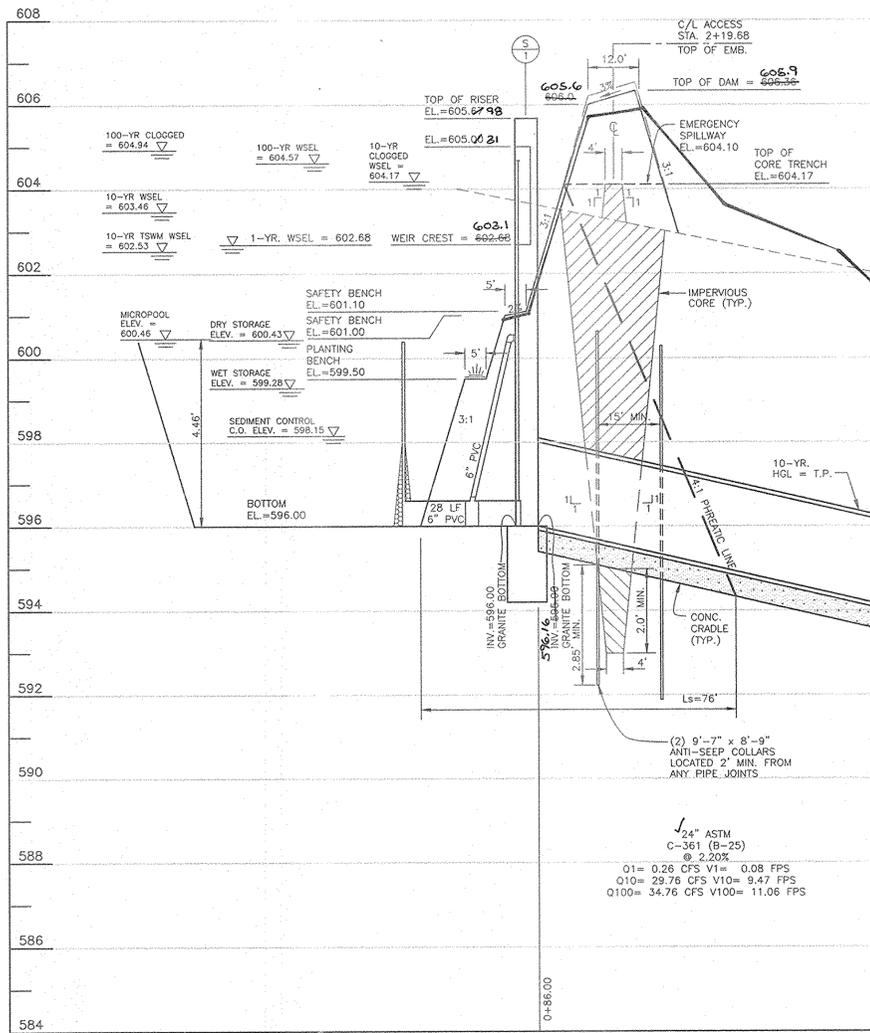
Structure Backfill
 Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure Backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day and a minimum compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be placed over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to ensure flowability of the material. Adequate pressures shall be taken (sand boxes, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structure backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment material.

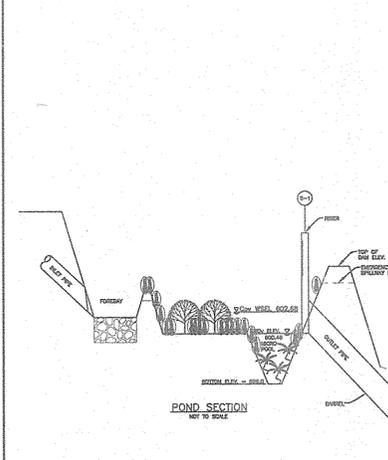
Backfill
 All pipes shall be circular in cross section.
Corrugated Metal Pipe - all of the following criteria shall apply for corrugated metal pipe:
 1. Material - (Polymer Coated Steel Pipe) Steel pipes with polymer coated steel shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or forgings.
 Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or forgings. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-186 or M-211 with watertight coupling bands or forgings. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be primed with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, and sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.
 3. Connections - All connections with pipes must be completely watertight. The crown pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner so as to be completely watertight. Coupling bands are not considered to be watertight.
 All connection shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled on adequate number of corrugations to accommodate the bandwidth. The following pipe connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket prepared to the flange ball circle; spaced between adjacent flanges a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; or a 12-inch wide huffer type band with a gasket having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long circular corrugated band using a minimum of 4 (four) rods and lugs. 2 on each connecting pipe and 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.
 Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene seal.
 4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
 5. Backfilling shall conform to "Structure Backfill".
 6. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.
Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:
 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
 2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. The bedding/cradle shall consist of high strength concrete placed under the pipe and up the sides of the pipe to all 50% of its outside diameter with a minimum thickness of 4 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this Standard. Groove bedding is not permitted.
 3. Laying pipe - Bell and spigot pipe shall be placed with the bell and upstream, joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are made for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
 4. Backfilling shall conform to "Structure Backfill".
 5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.
Plastic Pipe - The following criteria shall apply for plastic pipe:
 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type 3, and 12" through 24" inch shall meet the requirements of AASHTO M24 Type 5.
 2. Joints and connections to anti-seep collars shall be completely watertight.
 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
 4. Backfilling shall conform to "Structure Backfill".
 5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.
Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.
Concrete
 Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 414, Mix No. 3.
Rock Riprap
 Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 311.
Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 921.09, Class C.
Care of Water during Construction
 All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumps and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for construction purposes. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the piling and compacting of material in required excavations, the water level of the location being retified shall be maintained below the bottom of the excavation at such locations which may require draining the water pumps from which the water shall be pumped.
Stabilization
 All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-242) or as shown on the accompanying drawings.
Erosion and Sediment Control
 Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

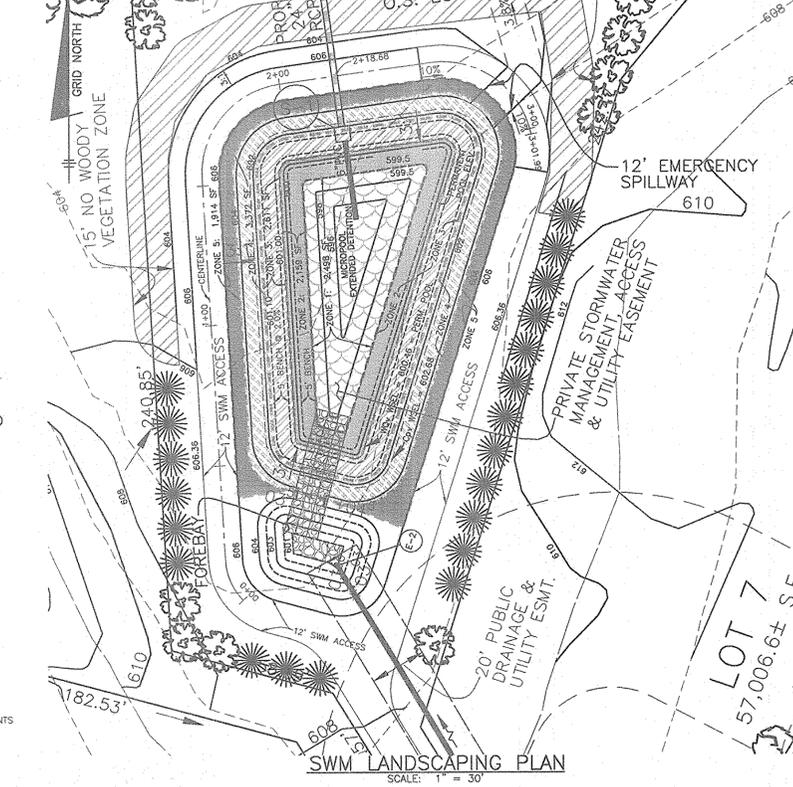


SECTION THRU PRINCIPAL SPILLWAY
 SCALE: 1"=20' HORIZ., 1"=2' VERT.



OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY

- ROUTINE MAINTENANCE**
- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER IF THE POND IS FUNCTIONING PROPERLY.
 - TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
 - DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 - VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- NON-ROUTINE MAINTENANCE**
- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
 - SEDIMENT SHOULD BE REMOVED FROM THE POND NO LATER THAN WHEN THE CAPACITY OF THE POND IS HALF FULL OF SEDIMENT, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.



PLANTING SCHEDULE MICROPOOL E.D.

ZONE	AREA	PLANT MIX
1	2,498 SF	50% WATER LILY 50% SAGO POND PLANT
2	2,159 SF	50% BROAD WATER WEED 25% DUCK POTATO 25% ARROW ARUM
3	2,611 SF	50% RICE CUTGRASS 50% SWITCHGRASS
4	3,372 SF	50% LOVEGRASS 25% VIOLETS 25% CONEFLOWER
5	1,914 SF	100% FESCUES
6	0 SF	N/A

- NOTES:**
- LOOSEN SOIL IN PLANTING ZONES TO A DEPTH OF THREE TO FIVE INCHES BEFORE PLANTING.
 - PLANTING HOLES TO HAVE A DIAMETER 6" GREATER THAN THE ROOT BALL BEING PLANTED IN THEM.
 - NO WOODY VEGETATION IS PERMITTED WITH 15' OF THE TOE OF THE SLOPE OR 25' OF THE SPILLWAY.

NOTE:
 SUFFICIENT STORAGE IS AVAILABLE IN STORMWATER MANAGEMENT FACILITY SEDIMENT BASIN/TEMPORARY SWM USE. NOTE THAT THE ENTIRE CONTRIBUTING DRAINAGE AREA WILL NOT BE DISTURBED.

SWM WSEL TABLE

STORM	SWIF #1
*1 YR	602.68
10 YR	603.46
100 YR	604.57

* EXTENDED DETENTION DESIGN STORM

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
William F. Anderson 2-1-04
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
John Cottan 7/9/04
 CHIEF, DIVISION OF LAND DEVELOPMENT
Chris Dammann 7/6/04
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

OPERATION, MAINTENANCE AND INSPECTION NOTE
 INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS STANDARDS AND SPECIFICATIONS FOR PONDS (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.
Donald A. Mason PE NO. 21443
 DONALD A. MASON DATE 1/18/06

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL.
Jill Meyer 6/25/04
 NATURAL RESOURCES CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS FOR THE HOWARD COUNTY CONSERVATION DISTRICT.
John G. Mason 6/25/04
 HOWARD COUNTY CONSERVATION DISTRICT

BY THE DEVELOPER:
 I/VE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD COUNTY CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD COUNTY CONSERVATION DISTRICT.

DEVELOPER: *Stacy Menden* 6/22/04
 DEVELOPER: FOXTAIL RUN, LLC
 NAME: STEVEN K. BREEDEN
 BY THE ENGINEER:
 I/VE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT. I HAVE NOTICED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD COUNTY CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
Donald A. Mason 6/26/04
 ENGINEER - BENCHMARK ENGINEERING, INC.
 DONALD A. MASON, P.E. # 21443

GEOTECHNICAL ENGINEER RECOMMENDATIONS:
 EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION

THE AREAS OF THE PROPOSED SWM FACILITY SHOULD BE STRIPPED OF TOP SOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREAS IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROFFERLOADED BY A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE FIRM SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUTOFF TRENCH. IN ADDITION TO THE STANDARD SOIL CONSERVATION SPECIFICATION, 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUTOFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRAINED SOIL INCLUDING SILT(M) WITH A PLASTICITY INDEX OF 10 OR MORE, CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.

NO.	DATE	REVISION
1	11-7-06	REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
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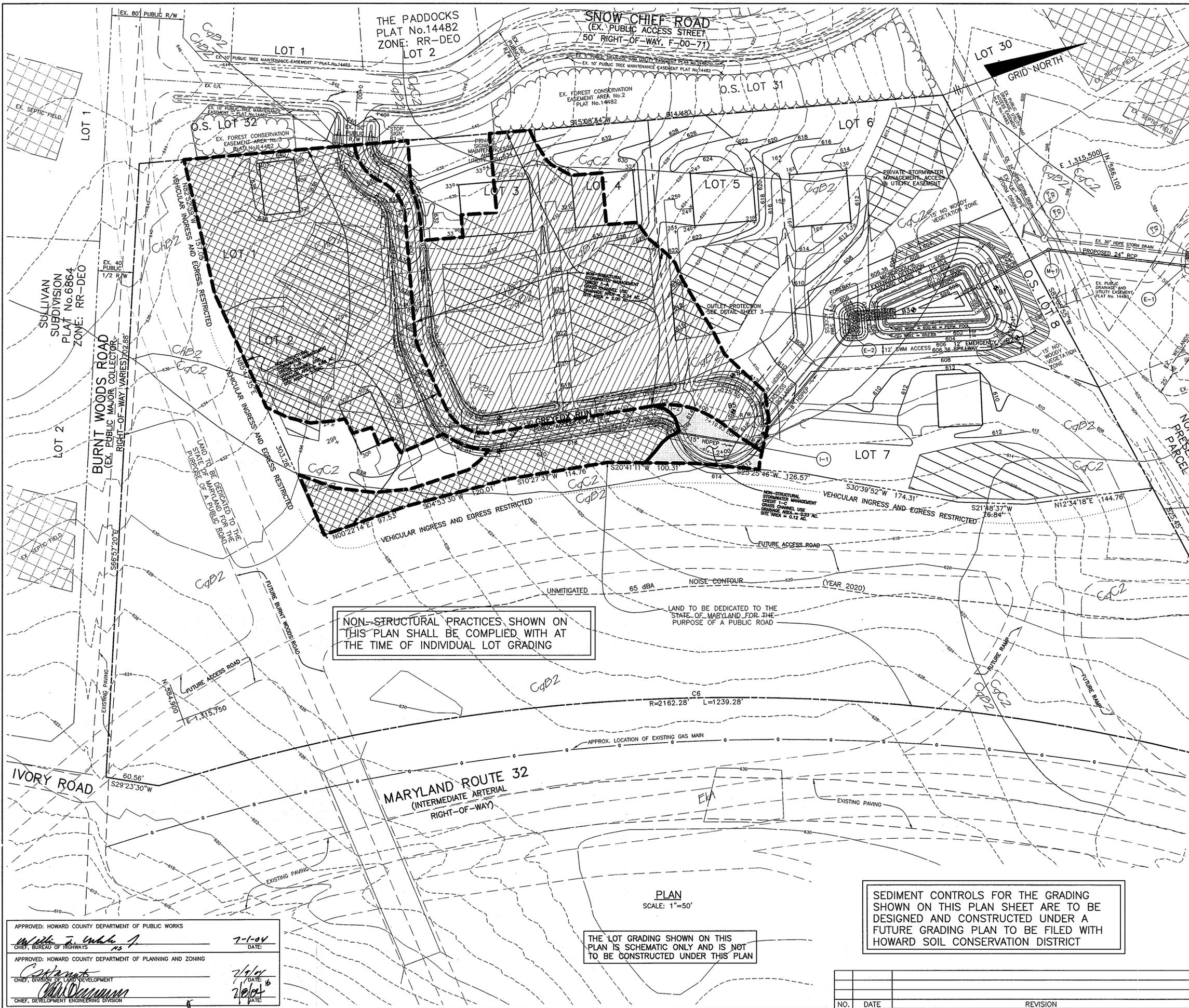
OWNER/DEVELOPER: **FOXTAIL RUN, LLC**
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 PHONE: 410-465-4244

PROJECT: **FOXTAIL RUN**
 LOTS 1 THRU 7 AND OPEN SPACE LOT 8

LOCATION: TAX MAP 22 - GRID B
 PARCEL 2
 3rd ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: **STORMWATER MANAGEMENT PROFILES, NOTES & DETAILS**

DATE: JUNE, 2004 PROJECT NO. 1458
 SCALE: AS SHOWN DRAWING 7 OF 11



SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	MAPPING UNIT
CgB2	B	CHESTER GRAVELLY SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
CgC2	B	CHESTER GRAVELLY SILT LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
CHA	B	CHESTER SILT LOAM - 0 TO 3 PERCENT SLOPES
ChE2	B	CHESTER SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
EKA	C	ELIOAK SILT LOAM - 0 TO 3 PERCENT SLOPES

LEGEND	
SOILS CLASSIFICATION	AbC1
SOILS DELINEATION	---
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
LIMIT OF WETLANDS	---
EXISTING WOODS LINE	---
PROPOSED WOODS LINE	---
EXISTING STRUCTURE	□
PROPOSED STRUCTURE	□
EXISTING WELL	⊙
PROPOSED WELL	⊙
SPECIMEN TREE	⊙

NON-STRUCTURAL SWM SCHEDULE		
CREDIT DESIGNATION	OPEN CHANNEL USE (ON-SITE AC.)	SYMBOL
1-A	2.00	[Symbol]
1-B	2.00	[Symbol]
1-C	0.12	[Symbol]
TOTALS	4.12	

NON-STRUCTURAL PRACTICES SHOWN ON THIS PLAN SHALL BE COMPLIED WITH AT THE TIME OF INDIVIDUAL LOT GRADING

LAND TO BE DEDICATED TO THE STATE OF MARYLAND FOR THE PURPOSE OF A PUBLIC ROAD

SWM Summary of General Storage Requirements

Step	Requirement	Volume Required (ac-ft)	Notes
1.	Water Quality Volume (WQv)	0.21	Provided in Micropool (ED Pond)
2.	Recharge Volume (Rev)	0.054 (or 0.58 acres)	This volume fully addressed by the use of open channels.
3.	Channel Protection Volume (Cpv)	0.33	Cpv is required for this drainage area due to the fact that the post development peak discharge is greater than 2.0 cfs. Cpv is fully provided in a Micropool Extended Detention Facility.
4.	Overbank Flood Protection Volume (Qp)	N/A	Not required
5.	Extreme Flood Volume (Qf)	N/A	Not required

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 7-1-04
 CHIEF, BUREAU OF HIGHWAYS

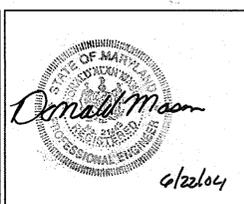
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 7/1/04
 CHIEF, DIVISION OF LAND DEVELOPMENT

THE LOT GRADING SHOWN ON THIS PLAN IS SCHEMATIC ONLY AND IS NOT TO BE CONSTRUCTED UNDER THIS PLAN

SEDIMENT CONTROLS FOR THE GRADING SHOWN ON THIS PLAN SHEET ARE TO BE DESIGNED AND CONSTRUCTED UNDER A FUTURE GRADING PLAN TO BE FILED WITH HOWARD SOIL CONSERVATION DISTRICT

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
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OWNER/DEVELOPER: FOXTAIL RUN, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 PHONE: 410-465-4244

PROJECT: FOXTAIL RUN
 LOTS 1 THRU 7 AND OPEN SPACE LOT 8

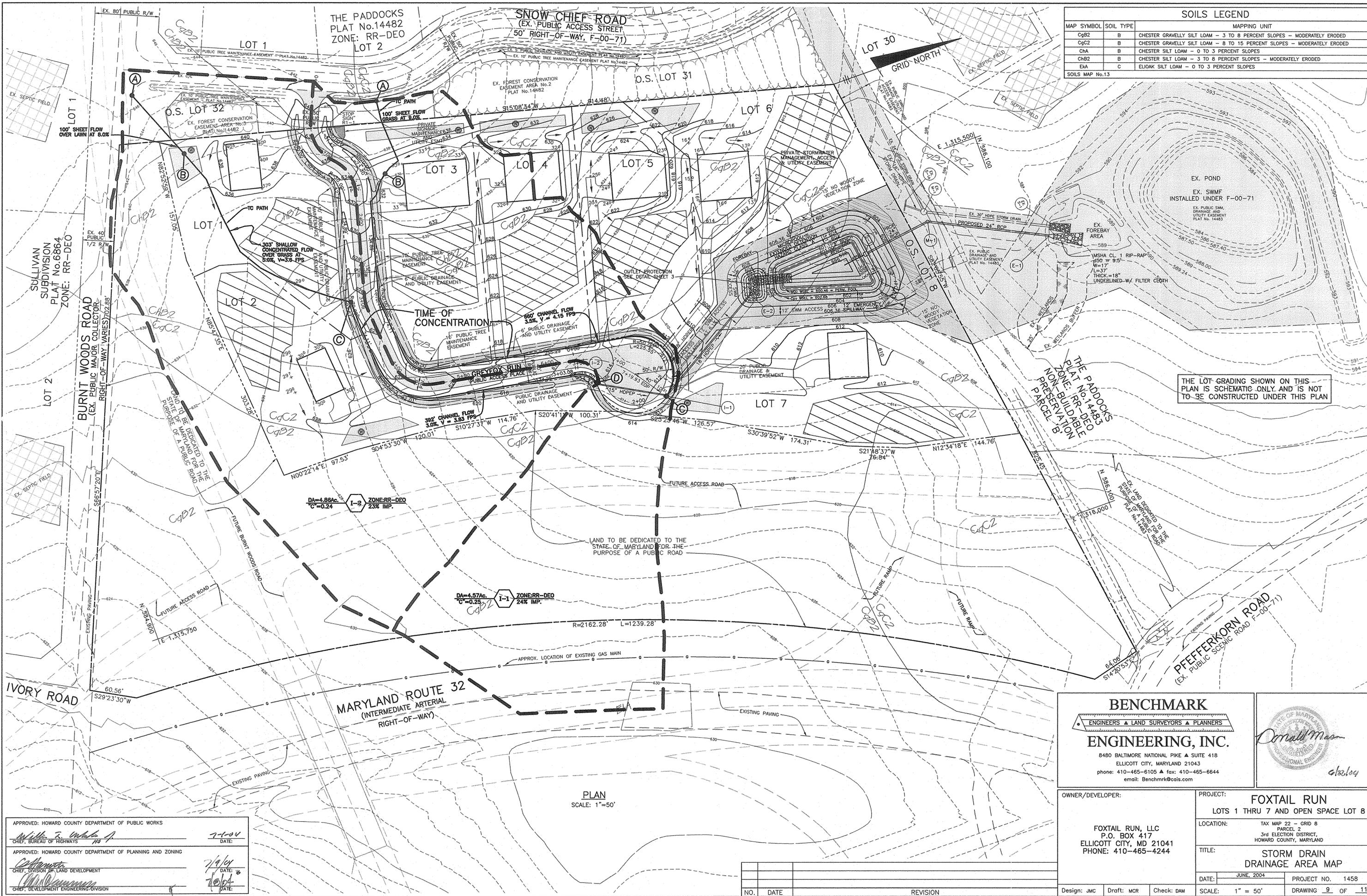
LOCATION: TAX MAP 22 - GRID 8
 PARCEL 2
 3rd ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: NON-STRUCTURAL STORMWATER MANAGEMENT PLAN AND NOTES

DATE: JUNE, 2004 PROJECT NO. 1458

Design: JMC Draft: MCR Check: DAM SCALE: 1" = 50' DRAWING 8 OF 11

SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	MAPPING UNIT
CgB2	B	CHESTER GRAVELLY SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
CgC2	B	CHESTER GRAVELLY SILT LOAM - 8 TO 15 PERCENT SLOPES - MODERATELY ERODED
ChA	B	CHESTER SILT LOAM - 0 TO 3 PERCENT SLOPES
ChB2	B	CHESTER SILT LOAM - 3 TO 8 PERCENT SLOPES - MODERATELY ERODED
EKA	C	ELIOAK SILT LOAM - 0 TO 3 PERCENT SLOPES



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] DATE: 7-1-04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE: 7/9/04

CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] DATE: 7/9/04

BENCHMARK
 ENGINEERS • LAND SURVEYORS • PLANNERS

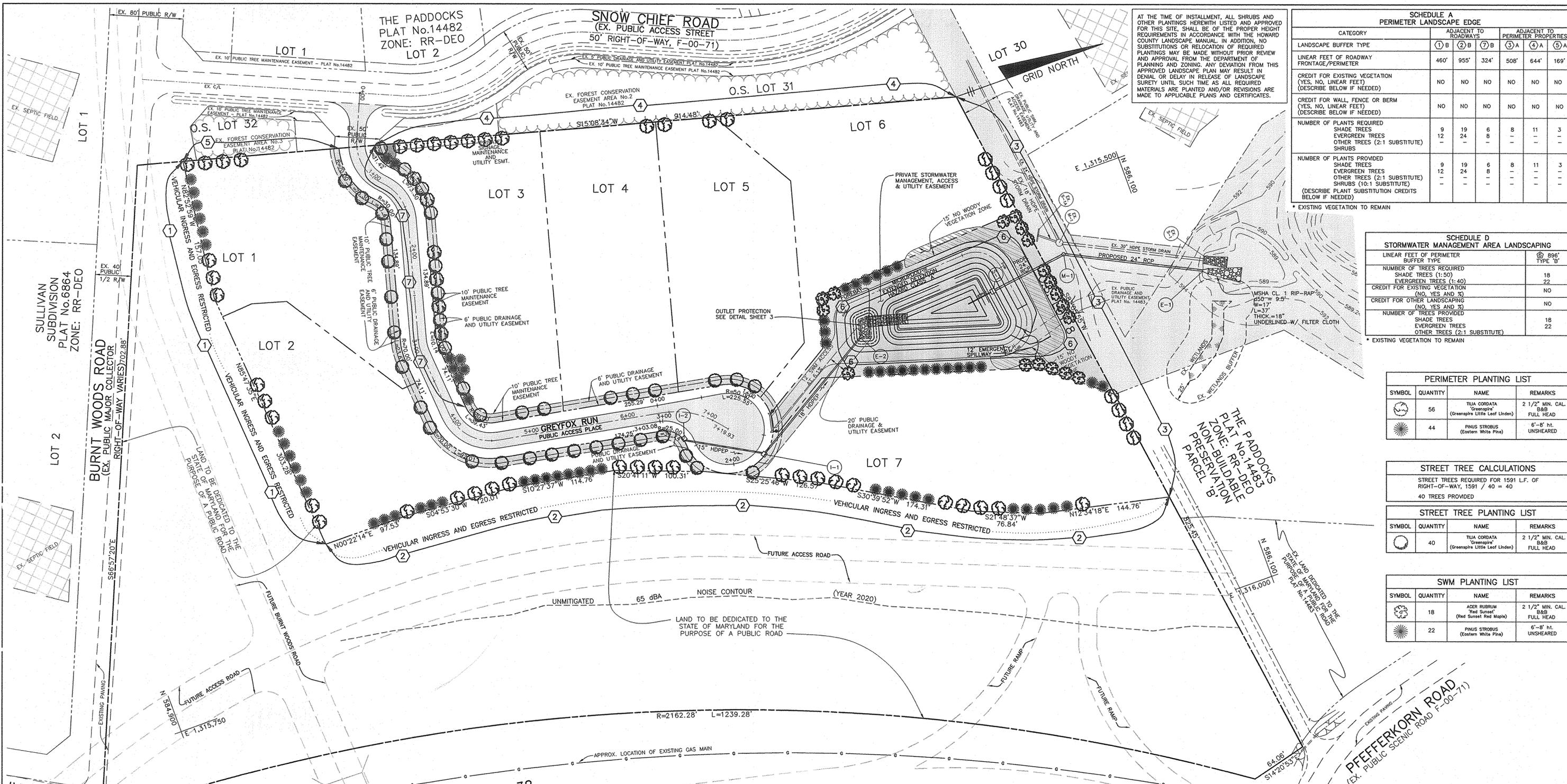
ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 • FAX: 410-465-6644
 EMAIL: Benchmark@cois.com

[Professional Engineer Seal]

OWNER/DEVELOPER:	PROJECT:
FOXTAIL RUN, LLC P.O. BOX 417 ELLICOTT CITY, MD 21041 PHONE: 410-465-4244	FOXTAIL RUN LOTS 1 THRU 7 AND OPEN SPACE LOT 8
LOCATION:	TITLE:
TAX MAP 22 - GRID 8 PARCEL 2 3rd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND	STORM DRAIN DRAINAGE AREA MAP
DATE: JUNE, 2004	PROJECT NO. 1458
SCALE: 1" = 50'	DRAWING 9 OF 11

NO.	DATE	REVISION



AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATES.

CATEGORY	SCHEDULE A PERIMETER LANDSCAPE EDGE					
	① B	② B	⑦ B	③ A	④ A	⑤ A
LANDSCAPE BUFFER TYPE	460'	955'	324'	508'	644'	169'
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	NO	NO	NO	NO	NO	NO
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	9	19	6	8	11	3
SHADE TREES	12	24	8	-	-	-
EVERGREEN TREES	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE) SHRUBS	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	9	19	6	8	11	3
SHADE TREES	12	24	8	-	-	-
EVERGREEN TREES	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE)	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	-	-	-	-	-	-

* EXISTING VEGETATION TO REMAIN

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER BUFFER TYPE	⑥ B96' TYPE 'B'
NUMBER OF TREES REQUIRED	18
SHADE TREES (1:50)	22
EVERGREEN TREES (1:40)	NO
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED	18
SHADE TREES	22
EVERGREEN TREES	-
OTHER TREES (2:1 SUBSTITUTE)	-

* EXISTING VEGETATION TO REMAIN

PERIMETER PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
	56	TILIA CORDATA 'Greenspire' (Greenspire Little Leaf Linden)	2 1/2" MIN. CAL. FULL HEAD
	44	PINUS STROBUS (Eastern White Pine)	6'-8" ht. UNSHEARED

STREET TREE CALCULATIONS	
STREET TREES REQUIRED FOR 1591 LF. OF RIGHT-OF-WAY, 1591 / 40 = 40	40 TREES PROVIDED

STREET TREE PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
	40	TILIA CORDATA 'Greenspire' (Greenspire Little Leaf Linden)	2 1/2" MIN. CAL. FULL HEAD

SWM PLANTING LIST			
SYMBOL	QUANTITY	NAME	REMARKS
	18	ACER RUBRUM 'Red Sunset' (Red Sunset Red Maple)	2 1/2" MIN. CAL. FULL HEAD
	22	PINUS STROBUS (Eastern White Pine)	6'-8" ht. UNSHEARED

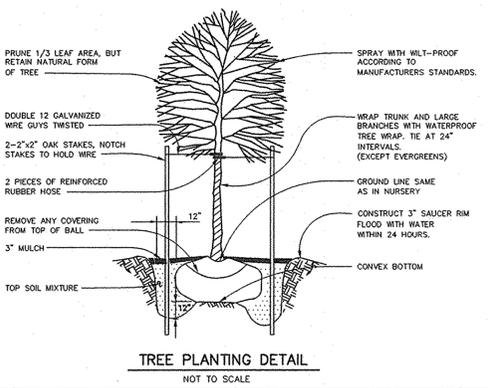
DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

DEVELOPER: FOXTAIL RUN, L.L.C.
 NAME: STEVEN K. BREEDEN, MEMBER
 DATE: 6/22/04

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 7-1-04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 DATE: 7/9/04

- LANDSCAPING NOTES:**
- TREES SHOULD BE PLANTED A MINIMUM OF 6 FEET FROM THE EDGE OF PAVING AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
 - TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
 - SEE TREE PLANTING DETAIL - THIS SHEET.
 - THE DEVELOPER SHALL BE RESPONSIBLE FOR STREET TREES, STORMWATER MANAGEMENT FACILITY PERIMETER PLANTING AND PRESERVATION OF THE PERIMETER VEGETATION AS SHOWN ON THESE PLANS.
 - THIS LANDSCAPE PLAN IS PREPARED IN CONFORMANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
 - ALL VEGETATION IS TO BE REMOVED WITHIN 15' OF THE TOE OF THE SLOPE OF THE PROPOSED EMBANKMENT.
 - ALL LANDSCAPING REQUIREMENTS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124(b)(3)(i) OF THE SUBDIVISION REGULATIONS. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$32,100.00 FOR 74 SHADE TREES AND 66 EVERGREEN TREES.



NO.	DATE	REVISION

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OWNER/DEVELOPER: FOXTAIL RUN, L.L.C.
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 PHONE: 410-465-4244

PROJECT: FOXTAIL RUN
 LOTS 1 THRU 7 AND OPEN SPACE LOT 8

LOCATION: TAX MAP 22 - GRID 8
 PARCEL 2
 3rd ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPING PLAN,
 NOTES AND DETAILS

DATE: JUNE, 2004 PROJECT NO. 1458

SCALE: 1" = 50' DRAWING 10 OF 11

Design: JMC Draft: MCR Check: DAM



6/22/04

