

INDEX OF SHEETS

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5		PLAN AND PROFILE
6		RISER DETAIL SHEET
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MCDPS REVIEW IS FOR SEDIMENT CONTROL AND SAFE CONVEYANCE OF FLOW ONLY.

THE LOCATION OF THE UNDERGROUND AND SURFACE UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO START OF WORK. THE EXCAVATOR MUST NOTIFY ALL PUBLIC UTILITY COMPANIES WITH UNDERGROUND FACILITIES IN THE AREA OF PROPOSED EXCAVATION. THE EXCAVATOR IS RESPONSIBLE FOR COMPLIANCE WITH REQUIREMENTS OF CHAPTER 36A OF THE MONTGOMERY COUNTY CODE.

CONVENTIONAL SYMBOLS  
EXISTING CONSTRUCTION

100 YEAR FLOODPLAIN	
RIGHT OF WAY LINE	
PROPERTY LINE	
CONCRETE CURB AND GUTTER	
EDGE OF WOODED AREAS	
TREE (FREE STANDING)	
SIGN	
FIRE HYDRANT	
LIGHT POLE	
UTILITY POLE	
STORM DRAIN	
SANITARY	
WATER	
GAS	
ELECTRICAL HAND BOX - SIGNALS	
ELECTRIC (UNDERGROUND)	

PROPOSED CONSTRUCTION

CONSTRUCTION	
CURB & GUTTER	
TRAVERSE POINT	
LIMIT OF DISTURBANCE	
STORM DRAIN PIPE	

RELATED REQUIRED PERMITS

To be completed by the consultant and placed on the first sheet of the Sediment Control / Stormwater Management plan set for all projects.

IT IS THE RESPONSIBILITY OF PERMITTEE/OWNER OF THIS SITE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO ISSUANCE OF THE APPROVED SEDIMENT CONTROL PERMIT					
TYPE OF PERMIT	REQD	NOT REQD	PERMIT #	EXPIRATION DATE	WORK RESTRICTION DATES
MCDPS Floodplain District	X				
WATERWAYS/WETLAND(S):					
a. Corps of Engineers		X			
b. MDE		X			
c. MDE Water Quality Certification	X				
MDE Dam Safety	X				
N.P.D.E.S. NOTICE OF INTENT	X		N/A	N/A	DATE FILED
OTHERS (Please List):					

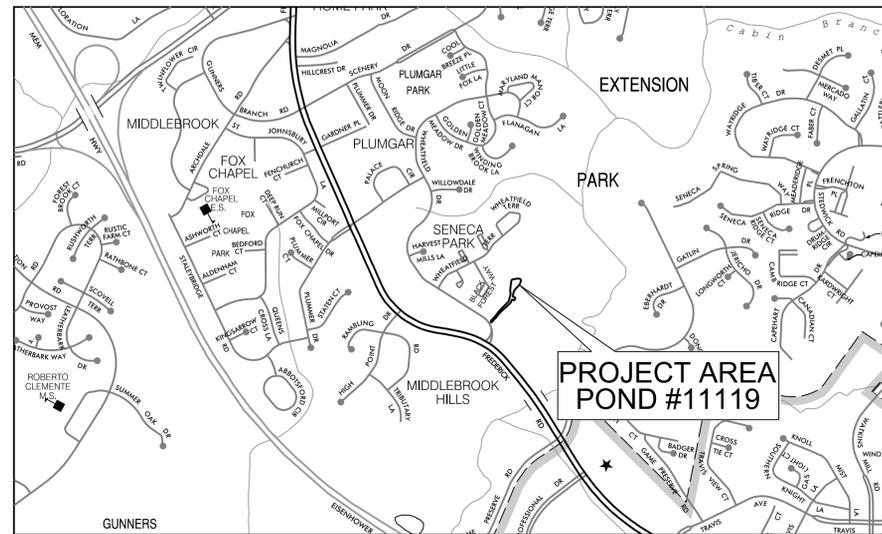
MONTGOMERY COUNTY  
DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

GAME PRESERVE

POND RETROFIT PROJECT

CONTRACT NO. 8803000101-CD

Task Order 18



VICINITY MAP  
SCALE : 1" = 1,000'

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL," MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES EXECUTIVE REGULATIONS 5-90, 7-02AM AND 36-90.

I FURTHER CERTIFY THAT THE ESTIMATED TOTAL AMOUNTS OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAVE BEEN COMPUTED TO BE 10 CUBIC YARDS OF EXCAVATION AND 190 CUBIC YARDS OF FILL AND THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE A MAXIMUM OF 23,522 SQUARE FEET OR 0.54 ACRES.

AMY L HRIBAR, P.E.  
P.E. # 32013

DATE

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, AND OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

DATE

OWNER

OWNER/CONTACT/ADDRESS:  
MR. PHILIP JONES, P.E.  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE, STE 120  
ROCKVILLE MD 20850-4166  
240-777-7738

GENERAL NOTES

- THE CONTRACTOR WILL IMMEDIATELY INFORM THE COUNTY OF ANY DISCREPANCIES FOUND BETWEEN THE PROJECT PLANS AND CONTRACT SPECIFICATIONS.
- FOR CONSTRUCTION, ALL HORIZONTAL SHALL BE BASED ON NAD 83/91, NAVD 88 DATUM.
- TYPES OF STORM DRAIN STRUCTURES REFER TO THE "DESIGN STANDARDS" OF MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORM DRAIN STRUCTURES, WHEN NECESSARY, TO MEET EXISTING CONDITIONS, AS APPROVED BY MONTGOMERY COUNTY DEPARTMENT OF PERMITTING SERVICES RIGHT OF WAY INSPECTOR.
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF THE LINES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING, IF CLEARANCES ARE LESS THAN SHOWN OR SIX (6) INCHES, WHICHEVER IS LESS, THE CONTRACTOR SHALL CONTACT THE COUNTY.
- REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR METHOD OF OPERATION MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION.
- CALL "MISS UTILITY" AT 1-800-257-7777 FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES.
- CLEARING IS TO BE LIMITED TO THE "LIMIT OF WORK" AS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL OBTAIN A ROADSIDE TREE PERMIT FOR ANY MAINTENANCE, TREATMENT, PERMIT REQUIREMENTS MAY BE OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES, PLANTING, REMOVAL, OR ROOT CUTTING ON TREES WITHIN THE PUBLIC RIGHT OF WAY, MARYLAND FOREST, PARK AND WILDLIFE SERVICE, TELEPHONE 301-854-6060.
- CONTACT THE WASHINGTON SUBURBAN SANITARY COMMISSION SYSTEM MAINTENANCE ENGINEER BEFORE EXCAVATING BENEATH OR IN THE VICINITY OF EXISTING WATER OR SEWER LINES. BACKFILL TO BE DONE UNDER SUPERVISION OF W.S.S.C. CALL 301-699-4420.
- CONTACT WASHINGTON GAS DISPATCH OFFICER AT (703)750-4831 BEFORE EXCAVATING BENEATH OR IN THE VICINITY OF EXISTING GAS MAIN AND SERVICE LATERALS.



DEPARTMENT OF PERMITTING SERVICES  
April 23, 2014

Diane R. Schwartz  
Director

Ms. Amy Hribar  
County Executive

Ms. Amy Hribar, P.E.  
McCormick Taylor, Inc.  
509 S. Exeter Street, 4<sup>th</sup> floor  
Baltimore, Maryland 21202

Re: Stormwater Management CONCEPT Request  
for Game Preserve SWM Retrofit - Asset  
111191  
SM File # 262396  
Tract Size/Zone: 58 Ac / R-90  
Total Concept Area: 58 Ac  
Watershed: Great Seneca Creek

Dear Ms. Hribar:

Based on a review by the Department of Permitting Services (DPS) Review Staff, the stormwater management concept for the above mentioned site is acceptable. The stormwater management concept consists of retrofitting an existing stormwater management structure to achieve what the Montgomery County Department of Environmental Protection (MDEP) believes will be an additional environmental benefit. This project is not associated with new development; therefore it is not subject to minimum stormwater management treatment criteria. DPS will not review it for conformance with any such standards. Safe conveyance through the facility must be demonstrated.

The following items need to be addressed during the detailed sediment control/stormwater management plan stage:

- A detailed review of the conveyance computations will occur at the time of detailed plan review.
- An engineered sediment control plan must be submitted for this project.
- The retrofit design of the pond must meet current MD-378 criteria and be designed as a Class "a" structure. MDEP and DPS have agreed not to allow construction of ponds that are considered to be moderate or high hazard facilities.
- A geotechnical evaluation and report with any specific design or construction recommendations should be submitted with the detailed SC/SWM plans.

This list may not be all-inclusive and may change based on available information at the time.

Payment of a stormwater management contribution in accordance with Section 2 of the Stormwater Management Regulation 4-90 is not required.

This letter must appear on the sediment control/stormwater management plan at its final submittal. The concept approval is based on all stormwater management structures being located outside of the Public Utility Easement, the Public Improvement Easement, and the Public Right of Way.

255 Rockville Pike, 2nd Floor • Rockville, Maryland 20850 • 240-777-6300 • 240-777-6256 TTY  
www.montgomerycountymd.gov

montgomerycountymd.gov/311 311 240-777-3556 TTY

Ms. Amy Hribar, P.E.  
April 23, 2014  
Page 2

unless specifically approved on the concept plan. Any divergence from the information provided to this office, or additional information received during the development process, or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended stormwater management requirements. If there are subsequent additions or modifications to the development, a separate concept request shall be required.

If you have any questions regarding these actions, please feel free to contact Mike Geier at 240-777-6342.

Sincerely,

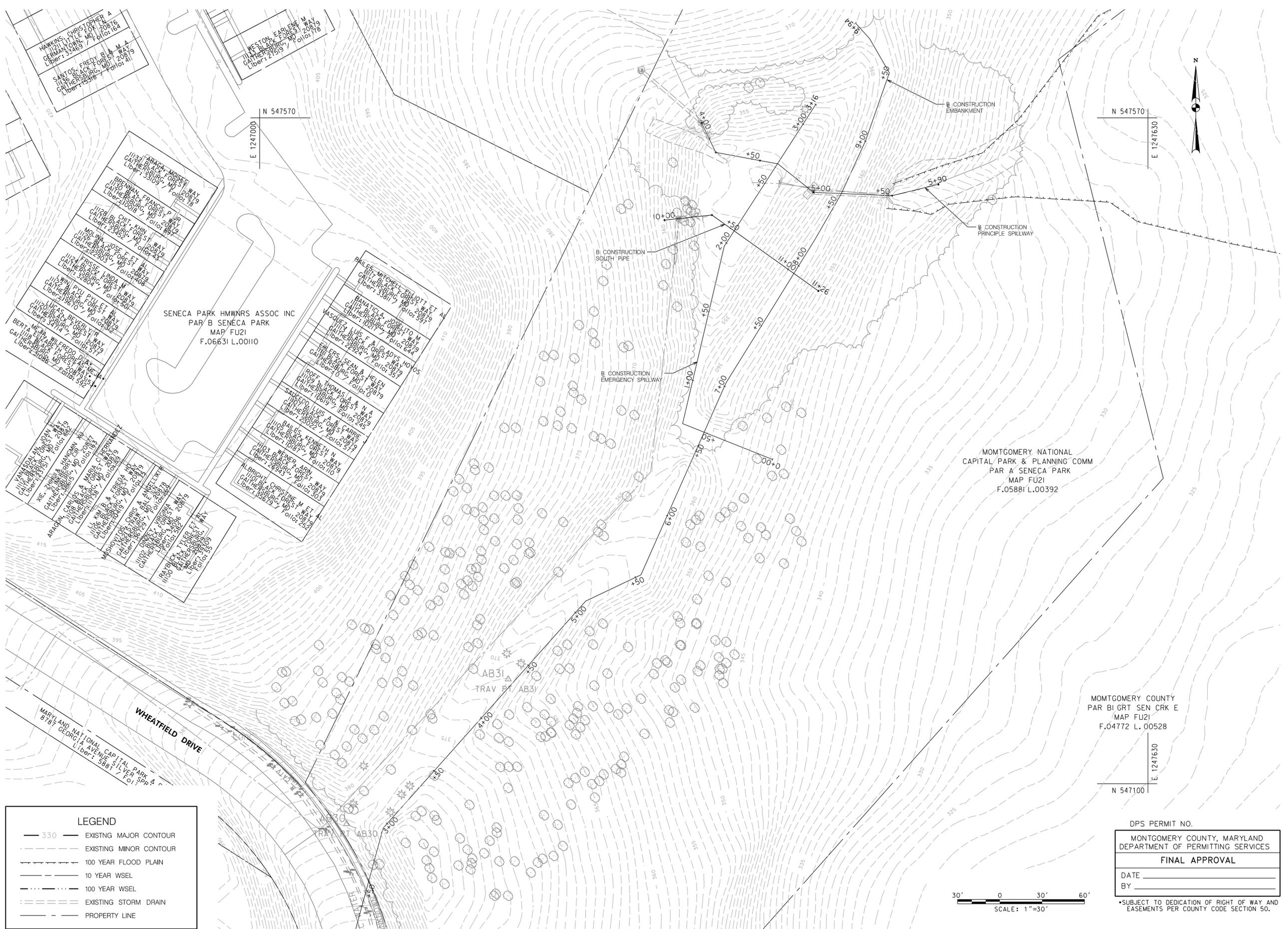
Mark C. Etheridge, Manager  
Water Resources Section  
Division of Land Development Services

MCE: 0262396 Game Preserve Retro 11119.dwg

cc: SM File # 262396

ESD Acres: n/a  
STRUCTURAL Acres: n/a  
WATERED Acres: n/a

60% SEMI-FINAL DESIGN



**LEGEND**

— 330 —	EXISTING MAJOR CONTOUR
- - - - -	EXISTING MINOR CONTOUR
- - - - -	100 YEAR FLOOD PLAIN
- - - - -	10 YEAR WSEL
- - - - -	100 YEAR WSEL
- - - - -	EXISTING STORM DRAIN
- - - - -	PROPERTY LINE

MONTGOMERY COUNTY  
 PAR B1 GRT SEN CRK E  
 MAP FU21  
 F.04772 L. 00528

DPS PERMIT NO.  
 MONTGOMERY COUNTY, MARYLAND  
 DEPARTMENT OF PERMITTING SERVICES

**FINAL APPROVAL**

DATE \_\_\_\_\_  
 BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

DESIGN ALH, MLD	MER	JAN 15	1"=30'
DRAFT	APPROVED	DATE	SCALE

FILE: C:\B2\B218 - Chain Branch SWM Retrofits\Design\Plan\Sheet111946CP001\_Cchain Branch pond 11116.dgn  
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CLASS IRIPRAP DITCH	
5 SY	EMBANKMENT - STA 8+45, 100 LT (AT ES-1)
5 SY	EMBANKMENT - STA 7+91, 79 LT (AT ES-2)

BULKHEAD EXISTING STORMDRAIN	
1 EA	EMBANKMENT - STA 8+52, 109 LT (EX. MH-1)

12 INCH SOLID PVC PIPE	
17 LF	EMBANKMENT - STA 8+53, 36 LT TO STA 8+51, 22 LT (RS PIPE)

12 INCH PERFORATED PVC PIPE	
6 LF	EMBANKMENT - STA 8+53, 43 LT TO STA 8+53, 36 LT (RS PIPE)

GEOSYNTHETIC CLAY LINER (BENTOMAT CL GCL)	
757 SY	EMBANKMENT - STA 7+45, LT TO STA 8+91, LT (TO ELEV 351)

REMOVAL OF EXISTING PIPE	
21 LF	EMBANKMENT - STA 8+44, 42 LT TO STA 8+51, 22 LT (12 IN RCP)

REMOVAL OF EXISTING MASONRY	
1 CY	EMBANKMENT - STA 8+44, 42 LT (EX. ENDWALL)

CLASS 2 EXCAVATION	
200 CY	EMBANKMENT - STA 7+45, LT TO STA 8+91, LT (POND GRADING)

12 PVC PIPE CONNECTION	
1 EA	EMBANKMENT - STA 8+53, 43 LT

MIX 2 CONCRETE FOR MISCELLANEOUS STRUCTURES	
1 CY	EMBANKMENT - STA 8+53, 43 LT

TRASH RACK	
1 EA	EMBANKMENT - STA 8+51, 22 LT

RISER MODIFICATION (SEE NOTE 3 SHEET 6)	
1 EA	EMBANKMENT - STA 8+51, 22 LT

GALVANIZED STEEL ORIFICE PLATE	
1 EA	EMBANKMENT - STA 8+51, 22 LT

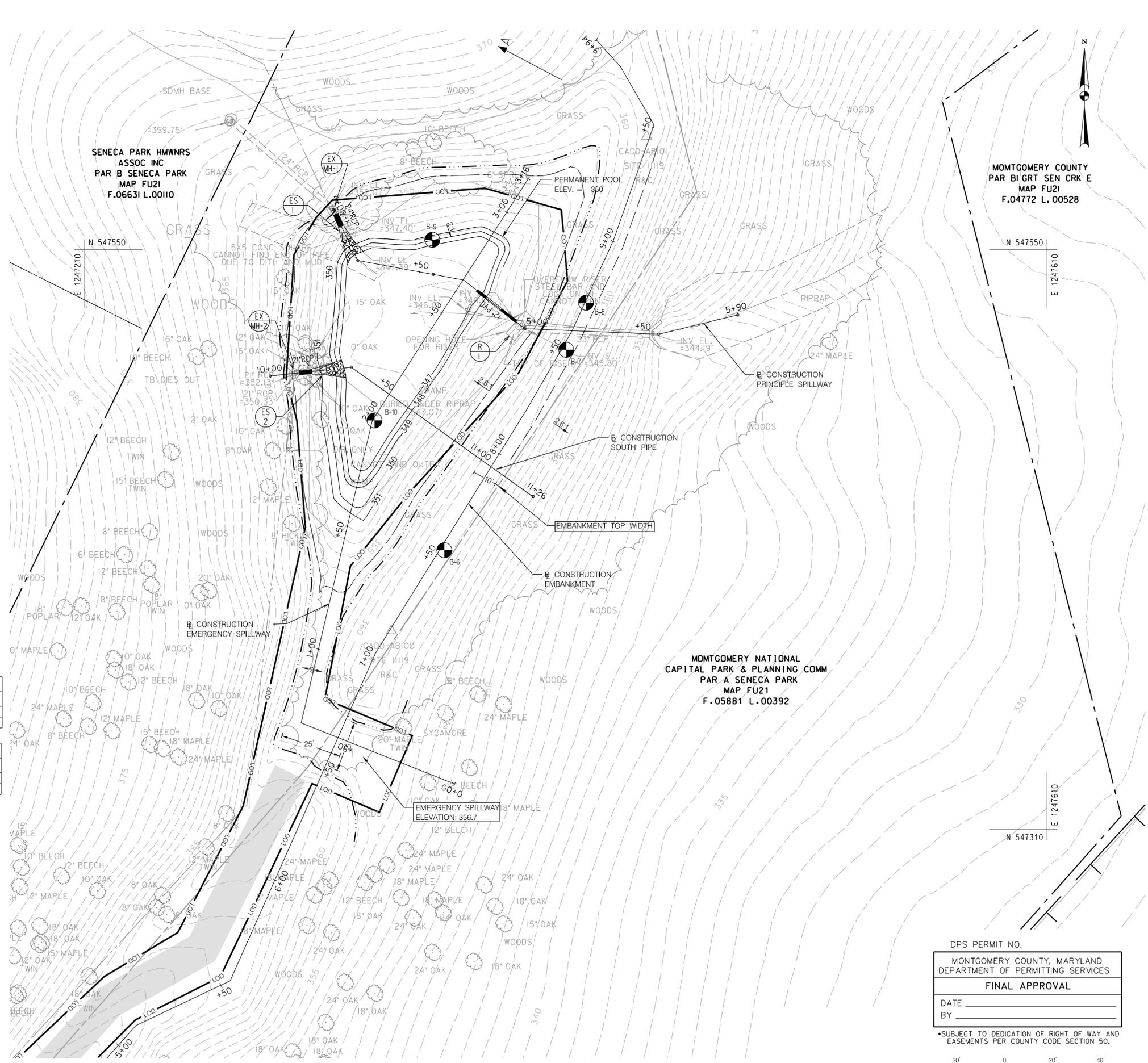
GATE VALVE	
1 EA	EMBANKMENT - STA 8+51, 22 LT

PIPE SCHEDULE						
FROM	TO	SIZE	LENGTH	INV. UP	INV. DOWN	TYPE
EX MH-1	ES-1	24 INCH	6 FT	350.13	350.00	CLASS IV, RCP
EX MH-2	ES-2	21 INCH	6 FT	350.33	350.00	CLASS IV, RCP

STRUCTURE SCHEDULE						
ID	STATION	OFFSET	BASELINE	TYPE	STD. NO.	REMARKS
ES-1	8+49	105 LT	EMBANKMENT	STD. CONC. END SECT.	MSHA 368.01	24 IN RCP
ES-2	7+88	84 LT	EMBANKMENT	STD. CONC. END SECT.	MSHA 368.01	21 IN RCP

**LEGEND**

- 330 --- EXISTING MAJOR CONTOUR
- --- EXISTING MINOR CONTOUR
- 350 --- PROPOSED MAJOR CONTOUR
- 351 --- PROPOSED MINOR CONTOUR
- 100 YEAR FLOOD PLAIN
- 10 YEAR WSEL
- 100 YEAR WSEL
- PROPERTY LINE
- LOD --- LIMIT OF DISTURBANCE
- --- EXISTING STORM DRAIN
- 24" RCP ---
- CLASS IRIPRAP ---
- SOIL BORING LOCATION ---



DPS PERMIT NO. \_\_\_\_\_

MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

**FINAL APPROVAL**

DATE \_\_\_\_\_

BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

20' 0 20' 40'

SCALE: 1" = 20'

**MCCORMICK TAYLOR**  
509 South Exeter Street  
4th Floor  
Baltimore, Maryland 21202  
(410) 662-7400

OVERALL SITE PLAN  
**GAME PRESERVE SWM RETROFITS**  
GAITHERSBURG 9th ELECTION DISTRICT  
SUBDIVISION STEDWICK, LIBER 2413 FOLIO 310 (PARCEL P580), LIBER 4090 FOLIO 145 (PARCEL 202)  
MONTGOMERY COUNTY, MARYLAND

CLIENT: MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE, RM. 120  
ROCKVILLE, MD 20850-4166  
MR. PHILIP JONES, P.E.  
(240) 777-7738

DESIGN ALH, MLD  
DRAFT MER  
APPROVED  
DATE JAN 15  
SCALE 1"=20'

SHEET **3** OF **15**

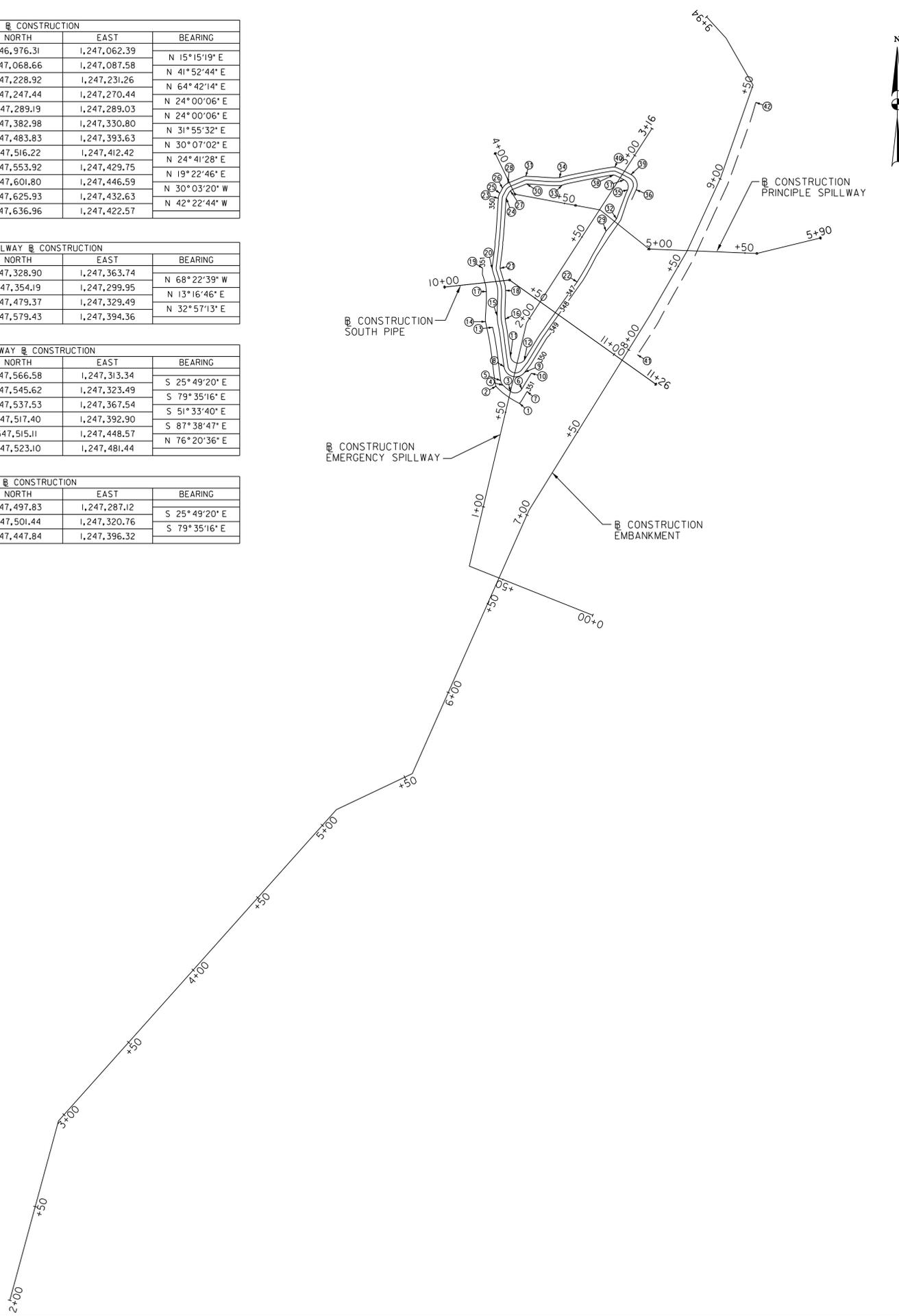
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EMBANKMENT CONSTRUCTION				
DESCRIPTION	STATION	NORTH	EAST	BEARING
POB	2+00.00	546,976.31	1,247,062.39	
PI	2+95.72	547,068.66	1,247,087.58	N 15°15'19" E
PI	5+10.97	547,228.92	1,247,231.26	N 41°52'44" E
PI	5+54.30	547,247.44	1,247,270.44	N 64°42'14" E
PI	6+00.00	547,289.19	1,247,289.03	N 24°00'06" E
PI	7+02.67	547,382.98	1,247,330.80	N 24°00'06" E
PI	8+21.49	547,483.83	1,247,393.63	N 31°55'32" E
PI	8+58.94	547,516.22	1,247,412.42	N 30°07'02" E
PI	9+00.43	547,553.92	1,247,429.75	N 24°41'28" E
PI	9+51.9	547,601.80	1,247,446.59	N 19°22'46" E
PI	9+79.07	547,625.93	1,247,432.63	N 30°03'20" W
POE	9+94.00	547,636.96	1,247,422.57	N 42°22'44" W

EMERGENCY SPILLWAY CONSTRUCTION				
DESCRIPTION	STATION	NORTH	EAST	BEARING
POB	0+00.00	547,328.90	1,247,363.74	
PI	0+68.62	547,354.19	1,247,299.95	N 68°22'39" W
PI	1+97.24	547,479.37	1,247,329.49	N 13°16'46" E
POE	3+16.49	547,579.43	1,247,394.36	N 32°57'13" E

PRINCIPLE SPILLWAY CONSTRUCTION				
DESCRIPTION	STATION	NORTH	EAST	BEARING
POB	4+00.00	547,566.58	1,247,313.34	
PI	4+23.28	547,545.62	1,247,323.49	S 25°49'20" E
PI	4+68.07	547,537.53	1,247,367.54	S 79°35'16" E
PI	5+00.46	547,517.40	1,247,392.90	S 51°33'40" E
PI	5+56.17	547,515.11	1,247,448.57	S 87°38'47" E
POE	5+90.00	547,523.10	1,247,481.44	N 76°20'36" E

SOUTH PIPE CONSTRUCTION				
DESCRIPTION	STATION	NORTH	EAST	BEARING
POB	10+00.00	547,497.83	1,247,287.12	
PI	10+33.83	547,501.44	1,247,320.76	S 25°49'20" E
POE	11+26.48	547,447.84	1,247,396.32	S 79°35'16" E



TRAVERSE POINTS			
POINT	NORTHING	EASTING	ELEVATION
AB1	548736.6968	1246254.0955	402.13
AB2	548420.8941	1246391.4956	384.65
AB100	548858.1428	1247453.3446	348.68
AB101	549084.5125	1247318.3103	378.11
AB20	548347.2730	1246599.5055	370.48
AB21	548500.1138	1246891.2276	362.84
AB22	548721.3254	1247059.5744	345.49
AB23	548858.1004	1247319.6878	341.86

POND GEOMETRY						
POINT	BASELINE	STATION	OFFSET	NORTHING	EASTING	ELEVATION
1	EMBANKMENT	7+46.76	33.28 LT	547438.0029	1247325.8672	351.00
2	EMBANKMENT	7+47.82	48.22 LT	547446.8025	1247313.7418	351.00
3	EMBANKMENT	7+49.50	40.56 LT	547444.1715	1247321.1347	350.00
4	EMBANKMENT	7+50.16	45.40 LT	547447.2969	1247317.3795	350.00
5	EMBANKMENT	7+51.55	47.75 LT	547449.7188	1247316.1099	350.00
6	EMBANKMENT	7+53.53	36.16 LT	547445.2710	1247327.0038	350.00
7	EMBANKMENT	7+54.04	33.17 LT	547444.1206	1247329.8118	351.00
8	EMBANKMENT	7+58.55	50.04 LT	547456.8749	1247317.8737	349.00
9	EMBANKMENT	7+61.76	39.45 LT	547453.9902	1247328.5593	349.00
10	EMBANKMENT	7+63.10	36.29 LT	547453.4628	1247331.9486	350.00
11	EMBANKMENT	7+64.78	50.00 LT	547462.1382	1247321.2053	347.00
12	EMBANKMENT	7+66.92	42.93 LT	547460.2150	1247328.3292	347.00
13	EMBANKMENT	7+72.63	65.71 LT	547477.1085	1247312.0198	350.00
14	EMBANKMENT	7+73.16	70.40 LT	547480.0354	1247308.3237	351.00
15	EMBANKMENT	7+78.94	66.92 LT	547483.1002	1247314.3318	349.00
16	EMBANKMENT	7+79.58	62.47 LT	547481.2890	1247318.4431	347.00
17	EMBANKMENT	7+86.51	78.21 LT	547495.5009	1247308.7540	351.00
18	EMBANKMENT	7+92.24	70.12 LT	547496.0882	1247318.6447	347.00
19	EMBANKMENT	7+95.74	86.27 LT	547507.5913	1247306.7902	351.00
20	EMBANKMENT	7+98.01	81.77 LT	547507.1443	1247311.8118	349.00
21	EMBANKMENT	8+00.45	78.54 LT	547507.5006	1247315.8415	347.00
22	EMBANKMENT	8+15.53	41.04 LT	547500.4661	1247355.6463	347.00
23	EMBANKMENT	8+33.63	98.05 LT	547543.5244	1247314.9057	349.00
24	EMBANKMENT	8+35.71	94.52 LT	547543.5495	1247319.0039	347.00
25	EMBANKMENT	8+36.27	98.68 LT	547546.1287	1247315.6892	349.00
26	EMBANKMENT	8+39.17	98.75 LT	547548.6693	1247317.0797	349.00
27	EMBANKMENT	8+40.11	94.54 LT	547547.3716	1247321.1987	347.00
28	EMBANKMENT	8+42.83	97.69 LT	547551.3047	1247319.8390	349.00
29	EMBANKMENT	8+46.92	41.41 LT	547526.6010	1247370.5687	347.00
30	EMBANKMENT	8+47.40	89.01 LT	547550.9054	1247329.6360	347.00
31	EMBANKMENT	8+50.53	91.44 LT	547554.8321	1247329.1055	349.00
32	EMBANKMENT	8+55.13	39.90 LT	547532.9453	1247375.9976	347.00
33	EMBANKMENT	8+62.92	72.83 LT	547550.2554	1247347.9116	347.00
34	EMBANKMENT	8+65.85	75.69 LT	547554.1171	1247346.5368	349.00
35	EMBANKMENT	8+74.84	41.09 LT	547547.8275	1247381.7264	347.00
36	EMBANKMENT	8+76.75	37.10 LT	547547.8986	1247386.1546	349.00
37	EMBANKMENT	8+78.82	44.90 LT	547553.0375	1247379.9278	347.00
38	EMBANKMENT	8+78.85	50.85 LT	547555.5576	1247374.5343	347.00
39	EMBANKMENT	8+82.72	42.81 LT	547555.7135	1247383.4567	349.00
40	EMBANKMENT	8+82.76	51.96 LT	547559.5671	1247375.1638	349.00
41	EMBANKMENT	8+00.19	5.22 RT	547462.9830	1247386.7959	361.00
42	EMBANKMENT	9+43.23	4.32 RT	547592.8619	1247448.0278	361.00



DPS PERMIT NO. \_\_\_\_\_

MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

**FINAL APPROVAL**

DATE \_\_\_\_\_

BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

**MCCORMICK TAYLOR**  
 509 South Exeter Street  
 4th Floor  
 Baltimore, Maryland 21202  
 (410) 662-7400

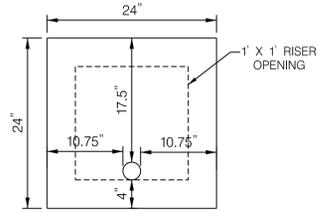
GEOMETRIC LAYOUT SHEETS  
**GAME PRESERVE SWM RETROFITS**  
 GAITHERSBURG 8th ELECTION DISTRICT  
 SUBDIVISION STEDWICK, LIBER 2413 FOLIO 310 (PARCEL P580), LIBER 4090 FOLIO 145 (PARCEL 202)  
 MONTGOMERY COUNTY, MARYLAND

CLIENT: MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION  
 255 ROCKVILLE PIKE, RM. 120  
 ROCKVILLE, MD 20850-4166  
 MR. PHILIP JONES, P.E.  
 (240) 777-7738

DESIGN ALH, MLD  
 DRAFT MER  
 APPROVED  
 DATE JAN 15  
 SCALE 1" = 30'  
 SHEET 4 OF 15

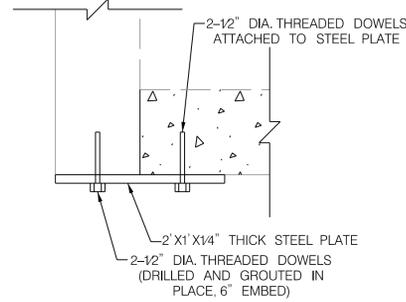
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 PLOTTED: Friday, January 16, 2015, 4:19:25 PM





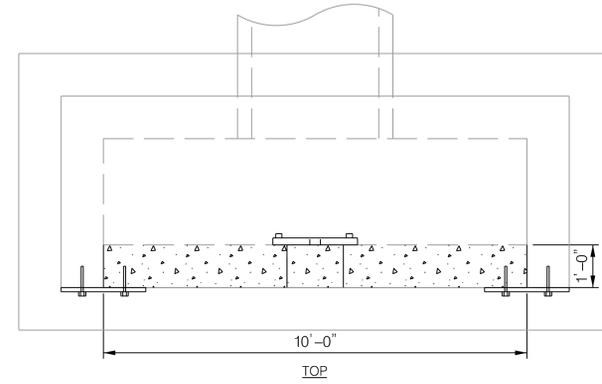
- ORIFICE PLATE NOTES:**
- 24" X 24" X 1/2" GALVANIZED STEEL ORIFICE PLATE.
  - 2.5" DIA. ORIFICE PLATE TO BE BOLTED TO THE INSIDE DOWN STREAM FACE OF CONCRETE RISER USING 12" STAINLESS STEEL CONCRETE ANCHORS.

**ORIFICE PLATE**  
NOT TO SCALE

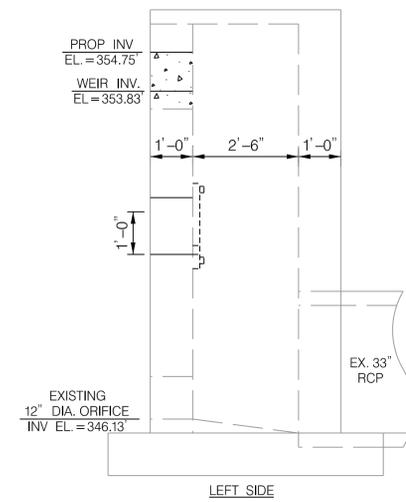


**SIDE WALL CONNECTION DETAIL**  
NOT TO SCALE

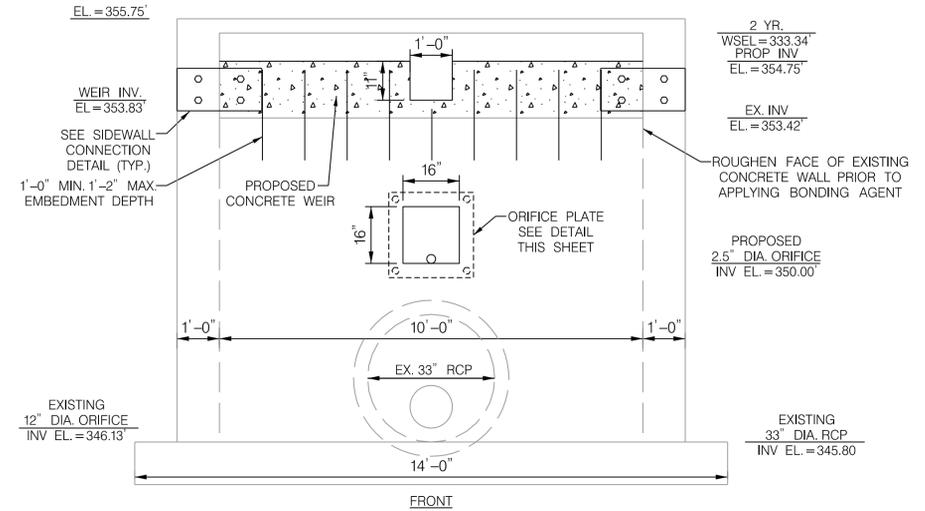
- RISER CONSTRUCTION NOTES:**
- AFTER DRILLING THE PROPOSED 1" X 1" ORIFICE, THE CONTRACTOR SHALL COAT ANY EXPOSED REINFORCEMENT WITH ZINC RICH PRIMER (FX-406 BY SIMPSON STRONG-TIE OR APPROVED EQUAL).
  - BONDING AGENT (FX-752 BY SIMSON STRONG-TIE OR APPROVED EQUAL) SHALL BE USED PRIOR TO PLACING NEW CONCRETE AGAINST EXISTING CONCRETE SURFACES.
  - CONCRETE RISER WEIR SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH RISER MODIFICATION. PAYMENT WILL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO SATISFACTORILY CONSTRUCT THE PROPOSED CONCRETE WEIR, INSTALL REBAR, AND CONNECTION PLATES.



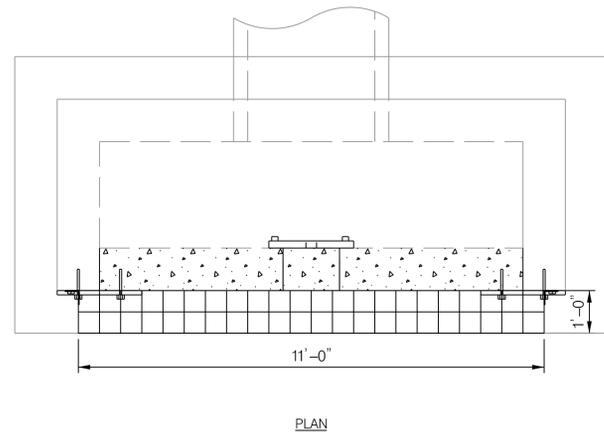
TOP



LEFT SIDE

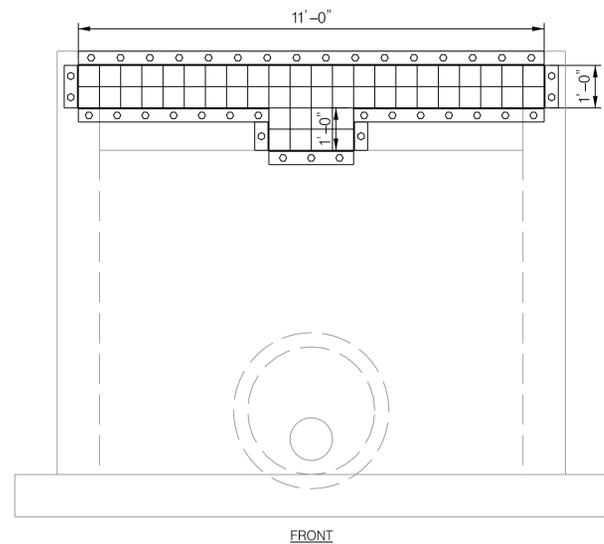


**RISER ELEVATION**  
SCALE: 1" = 2'



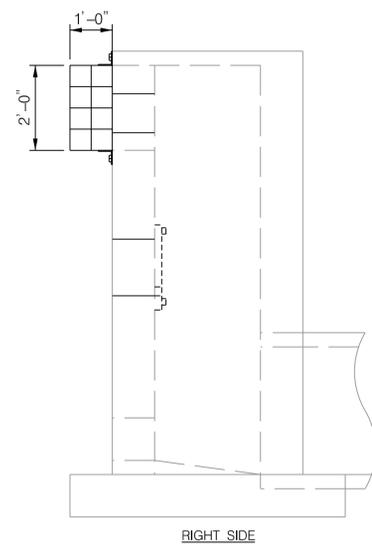
PLAN

- TRASH RACK CONSTRUCTION NOTES:**
- FRAME SHALL BE CONSTRUCTED OF 4" X 4" X 1/4" STEEL ANGLE WITH THE CORNERS MITRED AND BUTT WELDED.
  - THE FRAME SHALL BE PAINTED WITH TWO COATS OF COLD GALVANIZED COMPOUND IN "BATTLESHIP GREY".
  - BARS SHALL BE #6 REBAR AT 6" CC EACH WAY, HOT-DIPPED GALVANIZED AND FILLET WELDED TO THE ANGLE FRAME.
  - ALL STEEL SHALL BE ASTM A-36.
  - TRASH RACK SHALL BE BOLTED ONTO THE OUTSIDE FACE OF THE RISER USING 3/8" DIA. STAINLESS STEEL EXPANSION BOLTS @ 11" CC MIN. 4" FROM EDGE OF CONCRETE RISER. DRILL ANGLE FRAME TO ALLOW PASSAGE OF BOLTS.
  - ENSURE A 1' CLEARANCE BETWEEN TRASH RACK AND DAM EMBANKMENT SLOPE.

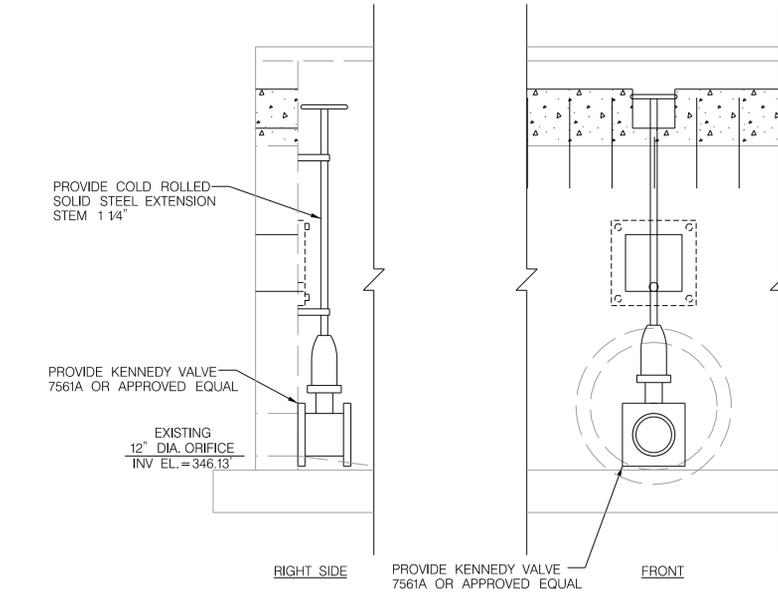


FRONT

**TRASH RACK DETAIL**  
SCALE: 1" = 2'



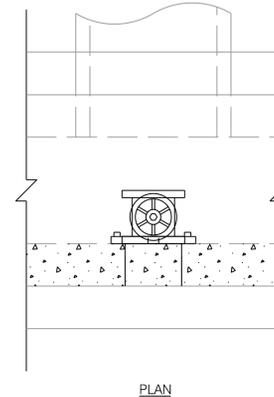
RIGHT SIDE



RIGHT SIDE

FRONT

**GATE VALVE DETAIL**  
NOT TO SCALE



PLAN

DPS PERMIT NO. \_\_\_\_\_

MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

**FINAL APPROVAL**

DATE \_\_\_\_\_  
BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM, MSHA, AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

**A. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEER**

THE CONSTRUCTION OF THE POND AND EMBANKMENT SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE ENGINEER MUST SUBMIT WRITTEN CERTIFICATION THAT THE POND AND EMBANKMENT HAVE BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS TO THE DEPARTMENT OF PERMITTING SERVICES (DPS) ALONG WITH A RECORD DRAWING, SOIL COMPACTION TESTS, CONCRETE TESTS, AND OTHER REQUIRED CONSTRUCTION DOCUMENTATION. THIS SHOULD BE DONE IMMEDIATELY FOLLOWING THE COMPLETION OF THE PROJECT, UNLESS OTHERWISE DESIGNATED ON THE PLANS. THE ENGINEER SHALL HAVE THE RESPONSIBILITY AND AUTHORITY TO MAKE MINOR CHANGES IN THE PLANS IN ORDER TO COMPENSATE FOR UNUSUAL SOIL CONDITIONS ENCOUNTERED DURING CONSTRUCTION AS LONG AS CHANGES DO NOT ADVERSELY AFFECT THE INTEGRITY OF THE DAM. MAJOR CHANGES TO THE DESIGN, WHICH MAY RESULT FROM SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION, MUST BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER, DPS, AND THE MONTGOMERY SOIL CONSERVATION DISTRICT PRIOR TO INITIATION OF CONSTRUCTION.

**B. SITE PREPARATION**

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED 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, FENCES, 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 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

**C. EARTH FILL**

MATERIAL – THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 4 INCHES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% 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 ABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT. 2

PLACEMENT – AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 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 PORTION OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY 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 CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIERED 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 FORMED INTO A BALL, IT WILL NOT CRUMBLE; YET, NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

THE DENSITY OF EACH LIFT 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 IS TO BE CERTIFIED 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 MINIMUM 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 ONE TO ONE OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE 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 MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP 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 ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHALL OF THE EMBANKMENT.

**D. 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 MUST 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 INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSF, 28 DAY UNCONFINED 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 SIX INCHES (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP 3 OF THE FILL SHALL BE 7 INCHES TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, 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 BACK FILLING 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 INCHES OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

**E. PIPE CONDUITS**

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS \* (POLYMER COATED STEEL PIPE) \* STEEL PIPES WITH POLYMERIC COATINGS 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 SPECIFICATION M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

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 FLANGES. 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 REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS \* (ALUMINUM PIPE) \* THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED 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, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL 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 DRAIN PIPE OR BARREL CONNECTIONS 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 AS TO BE COMPLETELY WATERTIGHT. DIPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE 4 THE BAND WIDTH. PIPE ENDS MUST BE MATCHED AND NUMBERED BY THE MANUFACTURER. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER; FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 38 INCH CLOSED CELL NEOPRENE GASKET, PREPUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH WIDE BY 38 INCH THICK, CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF \*1-INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24-INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END, PER CURRENT DPS BAND DETAIL. A 24-INCH WIDE BY 38-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 38-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 BEAD.

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 AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS – RCP SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL MEET ASTM DESIGNATION C-361. PIPES MUST BE LABELED IN FULL ACCORDANCE WITH ASTM C-361, INCLUDING THE ASTM C-361 DESIGNATION ON THE INSIDE OF EACH SECTION OF PIPE, AND ALL PIPES MUST BE CLEARLY MARKED BY THE MANUFACTURER PRIOR TO DELIVERY TO THE JOB SITE. PIPES WITH MULTIPLE DESIGNATIONS WILL BE REJECTED.

2. BEDDING – REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6-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. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE – BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED 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 FOUR FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS 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 REQUIREMENT OF AASHTO M252 TYPE S, AND 12 THROUGH 24 INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

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 AS SHOWN ON THE DRAWINGS.

**F. DRAINAGE DIAPHRAGMS**

WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

**G. CONCRETE**

CONCRETE DESIGN SHALL MEET THE REQUIREMENTS OF ACI 350, ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES, WITH FREEZING AND THAWING EXPOSURES. CONCRETE SHALL BE A TYPE II OR IIA CEMENT, WITH A 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI FOR CAST IN PLACE AND 5000 PSI FOR PRE-CAST STRUCTURES. CONCRETE SHALL ALSO MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 420, MIX NO. 6.

**H. ROCK RIP-RAP**

ROCK RIP-RAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIP-RAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

**I. 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 PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE 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 CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED, AND GRADED TO THE EXTENT REQUIRED TO 6 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 TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

**J. 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 MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

**K. 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 TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

DPS PERMIT NO.

MONTGOMERY COUNTY, MARYLAND DEPARTMENT OF PERMITTING SERVICES	
<b>FINAL APPROVAL</b>	
DATE _____	BY _____

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

STORMWATER MANAGEMENT SPECIFICATIONS

**GAME PRESERVE SWM RETROFITS**

GAITHERSBURG 9th ELECTION DISTRICT

SUBDIVISION STEDWICK, LIBER 2413 FOLIO 310 (PARCEL P580), LIBER 4090 FOLIO 145 (PARCEL 202)

MONTGOMERY COUNTY, MARYLAND


**McCormick & Taylor**  
 509 South Exeter Street  
 4th Floor  
 Baltimore, Maryland 21202  
 (410) 662-7400

CLIENT: MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION

255 ROCKVILLE PIKE, RM. 120

ROCKVILLE, MD 20850-4166

MR. PHILIP JONES, P.E.

(240) 777-7738

DESIGN ALH, MLD

DRAFT MER

APPROVED

DATE JAN 15

SCALE

SHEET 7 OF

15

**CONSTRUCTION INSPECTION  
CHECK-OFF LIST FOR STORMWATER MANAGEMENT PONDS**

STAGE	DESIGN ENGINEER (DE)	GEOTECHNICAL ENGINEER (GEO)	COUNTY INSPECTOR	MNCPPC & OTHER
	INITIALS/DATE	INITIALS/DATE	INITIALS/DATE	INITIALS/DATE
<b>* MANDATORY NOTIFICATION:</b> Inspection and approval by the parties indicated is required at these points prior to proceeding with construction. The permittee is required to give the required inspection parties twenty-four (24) hours notice (DPS telephone 240/777-4310). The DPS inspector may waive an inspection, provided the design engineer and/or geotechnical engineer makes the required inspection per a prior scheduled arrangement which has been confirmed with the DPS inspector. Work completed without the necessary party's approval may result in the permittee having to remove and reconstruct the unapproved work. The permittee must maintain a "record set" of approved SC/SM plans on-site.				
1. Pre-construction meeting & field review of tree save flagging/tree protection	*	*	*	*
2. Sediment control installation	*	*	*	*
3. Dewatering (GEO) and stream diversion (DE)	*	*	*	*
4. Clearing, grubbing, subgrade preparation	*	*	*	*
5. Core trench excavation and dewatering, if required (GEO)	*	*	*	*
6. Core trench dimensions, location (DE) or (GEO), backfill and compaction tests (GEO)	*	*	*	*
7. Construction of principal spillway and riser:				
7a. - Barrel class, (ASTM C361) (DE)	*	*	*	*
- Pipe certification from supplier (DE)				
- Pipe assembled in place on acceptable subgrade (GEO)				
- Watertight joints (DE)				
- Articulated joint 4 feet from riser (DE)				
- Lifts, compaction, soil material (GEO)				
- Location, dimensions (DE)				
7b. - Concrete cradle dimensions (DE)	*	*	*	*
- Concrete strength tests (GEO)				
7c. - Anti-seep collars (location, collar dimensions and re-bar size) (DE)	*	*	*	*
- Concrete strength tests (GEO)				
7d. - Filter diaphragm gradation and dimensions (if applicable) (GEO)	*	*	*	*
7e. - Riser footing subgrade (GEO), dimensions, re-bar (DE)	*	*	*	*
- Concrete strength tests (GEO)				

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7f. Precast Riser:	*	*	*	*
- Shop drawings approved by DE, accepted by County				
- Visual inspection of riser (no cracks, spalling, exposed steel, incorrect dimensions, honeycombing) (DE)				
- Certification from supplier (DE)				
- Watertight joints (DE)				
- Wall and opening dimensions per plan (DE)				
7g. Cast-in-Place Riser:	*	*	*	*
- Wall and opening dimensions per plan (DE)				
- Re-bar size, number, spacing acceptable (DE)				
- Concrete testing and certification (GEO)				
- Watertight joints (DE)				
- Extreme weather provisions (DE)				
7h. Valve/office plate installation (DE). Note: may be delayed for SC purposes.	*	*	*	*
8. Backfilling of principal spillway (GEO)	*	*	*	*
9. Underdrain (if applicable) location (DE), pipe size (DE), filter cloth (DE), gravel (DE), field adjustments (GEO)	*	*	*	*
10. Channelization work and pond outfall protection (DE) or (GEO)	*	*	*	*
11. Diversion of stream through principal spillway (DE)	*	*	*	*
12. Construction of embankment:				
- Lifts, compaction, soil material (GEO)	*	*	*	*
- Location, dimension (DE)				
13. Construction of emergency spillway in cut (DE)	*	*	*	*
14. Field verification of constructed contours (DE)	*	*	*	*
15. Permanent vegetative stabilization, delivery tickets from supplier	*	*	*	*
16. Submit record drawing and documentation (DE) and (GEO)	*	*	*	*
17. Other items. (Set valve(s) to design opening values, if required) (DE)	*	*	*	*
18. Final inspection (DE) and (GEO)	*	*	*	*

NOTES:  
1. Permittee to supply Design Engineer with delivery tickets for all materials used in Pond construction, for submission with the as-built package. DPS Inspection Telephone: (240) 777-4310  
2. See construction specifications this plan for detailed requirements.  
3. A copy of this completed checklist must be submitted as part of the stormwater management as-built package. MNCPPC Inspection Telephone: (301) 495-4571

SWMPOND.table.01/03 - Page 2 of 2

DPS PERMIT NO.

MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

FINAL APPROVAL

DATE \_\_\_\_\_  
BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

STORMWATER MANAGEMENT CONSTRUCTION CHECKLISTS

GAME PRESERVE SWM RETROFITS

GAITHERSBURG 9th ELECTION DISTRICT

SUBDIVISION STEDWICK, LIBER 24:13 FOLIO 310 (PARCEL P580), LIBER 4090 FOLIO 145 (PARCEL 202)  
MONTGOMERY COUNTY, MARYLAND

CLIENT: MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE, RM. 120  
ROCKVILLE, MD 20850-4166  
MR. PHILIP JONES, P.E.  
(240) 777-7738

DESIGN ALH, MLD  
DRAFT MER  
APPROVED  
DATE JAN 15  
SCALE

SHEET  
7  
OF  
15

**MCCORMICK  
TAYLOR**  
509 South Exeter Street  
4th Floor  
Baltimore, Maryland 21202  
(410) 662-7400

**MONTGOMERY COUNTY GOVERNMENT  
STANDARD EROSION AND SEDIMENT CONTROL NOTES (REV. MAY 2013)**

1. The permittee shall notify the Department of Permitting Services (DPS) forty-eight (48) hours before commencing any land disturbing activity and, unless waived by the Department, shall be required to hold a pre-construction meeting between them or their representative, their engineer and an authorized representative of the Department.

2. The permittee must obtain inspection and approval by DPS at the following points:  
 A. At the required pre-construction meeting.  
 B. Following installation of sediment control measures and prior to any other land disturbing activity.  
 C. During the installation of a sediment basin or stormwater management structure at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction is mandatory.  
 D. Prior to removal or modification of any sediment control structure(s).  
 E. Prior to final acceptance.

3. The permittee shall construct all erosion and sediment control measures per the approved plan and construction sequence, shall have them inspected and approved by the Department prior to beginning any other land disturbances, shall ensure that all runoff from disturbed areas is directed to the sediment control devices, and shall not remove any erosion or sediment control measure without prior permission from the Department.

4. The permittee shall protect all points of construction ingress and egress to prevent the deposition of materials onto traversed public thoroughfare(s). All materials deposited onto public thoroughfare(s) shall be removed immediately.

5. The permittee shall inspect periodically and maintain continuously in effective operating condition, all erosion and sediment control measures until such time as they are removed with prior permission from the Department. The permittee is responsible for immediately repairing or replacing any sediment control measures which have been damaged or removed by the permittee or any other person.

6. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization must be completed within:  
 a) Three (3) calendar days as to the surface of all perimeter dikes, swales, ditches, perimeter slopes and all slopes steeper than 3 horizontal to 1 vertical (3:1); and  
 b) Seven (7) calendar days as to all other disturbed or graded areas on the project site not under active grading. All areas disturbed outside of the perimeter sediment control system must be minimized and stabilized immediately. Maintenance must be performed as necessary to ensure continued stabilization.

7. The permittee shall apply sod, seed, and anchored straw mulch, or other approved stabilization measures to all disturbed areas within seven (7) calendar days after stripping and grading activities have ceased on that area. Maintenance shall be performed as necessary to ensure continued stabilization. Active construction areas such as borrow or stockpile areas, roadway improvements, and areas within fifty (50) feet of a building under construction may be exempt from this requirement, provided that erosion and sediment control measures are installed and maintained to protect those areas.

8. Prior to removal of sediment control measures, the permittee shall stabilize all contributory disturbed areas with required soil amendments and topsoil, using sod or an approved permanent seed mixture and an approved anchored mulch. Wood fiber mulch may only be used in seeding season when the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized within seven (7) calendar days of establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, an approved temporary seed and straw anchored mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be completed prior to the following April 15.

9. The site permit, work, materials, approved SOSM plans, and test reports shall be available at the site for inspection by duly authorized officials of Montgomery County.

10. Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing mechanical devices to lower the water down slope without causing erosion. Dikes shall be installed and maintained at the top of cut or fill slopes until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Mechanical devices must be provided at points of concentrated flow where erosion is likely to occur.

11. Permanent swales or other points of concentrated water flow shall be stabilized within 3 calendar days of establishment with sod or seed with an approved erosion control matting or by other approved stabilization measures.

12. Sediment control devices shall be removed, with permission of the Department, within thirty (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.

13. No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas or on residential lots. A slope gradient of up to 2:1 will be permitted in non-maintenance areas provided that those areas are indicated on the erosion and sediment control plan with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.

14. The permittee shall install a splashblock at the bottom of each downspout unless the downspout is connected by a drain line to an acceptable outlet.

15. For finished grading, the permittee shall provide adequate gradients so as to prevent water from standing on the surface of lawns more than twenty-four (24) hours after the end of a rainfall, except in designated drainage courses and swale flow areas, which may drain as long as forty-eight (48) hours after the end of a rainfall.

16. Sediment traps or basins are not permitted within 20 feet of a building which is existing or under construction. No building may be constructed within 20 feet of a sediment trap or basin.

17. All inlets in non-sump areas shall have asphalt berms installed at the time of base paving establishment.

18. The sediment control inspector has the option of requiring additional sediment control measures, as deemed necessary.

19. All trap elevations are relative to the outlet elevation, which must be on existing undisturbed ground.

20. Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control.

21. Sediment trap(s)/basin(s) shall be cleaned out and restored to the original dimensions when sediment has accumulated to the point of one-half (1/2) the wet storage depth of the trap/basin (1/4 the wet storage depth for ST-III) or when required by the sediment control inspector.

22. Sediment removed from traps/basins shall be placed and stabilized in approved areas, but not within a floodplain.

23. All sediment basins and traps must be surrounded with a welded wire safety fence. The fence must be at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than two inches in width and four inches in height, with a minimum of 14 gauge wire. Safety fence must be maintained in good condition at all times.

24. No excavation in the areas of existing utilities is permitted unless their location has been determined. Call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work.

25. Off-site spoil or borrow areas must have prior approval by DPS.

26. Sediment trap/basin dewatering for cleanout or repair may only be done with the DPS inspector's permission. The inspector must approve the dewatering method for each application. The following methods may be considered:

A. Pump discharge may be directed to another on-site sediment trap or basin, provided it is of sufficient volume and the pump intake is floated to prevent agitation or suction of deposited sediments; or

B. The pump intake may utilize a Removable Pumping Station and must discharge into an undisturbed area through a non-erosive outlet; or

C. The pump intake may be floated and discharge into a Dirt Bag (12 oz. non-woven fabric), or approved equivalent, located in an undisturbed buffer area.

Remember: Dewatering operation and method must have prior approval by the DPS inspector.

27. The permittee must notify the Department of all utility construction activities within the permitted limits of disturbance prior to the commencement of those activities.

28. Topsoil must be applied to all pervious areas within the limits of disturbance prior to permanent stabilization in accordance with MDE "Standards and Specifications for Soil Preparation, Topsoiling, and Soil Amendments".

**TEMPORARY SEEDING SPECIFICATIONS**

1. TEMPORARY SEEDING: SHALL BE DONE BETWEEN MARCH 1 – MAY 15 AND AUGUST 15 – OCTOBER 15. ALL OTHER DISTURBED AREAS REQUIRING STABILIZATION NOT WITHIN THE SEEDING DATES SHALL BE MULCHED.

2. ALL TEMPORARY SEEDED AREAS SHALL BE MULCHED IMMEDIATELY AFTER SEEDING. MULCH MATERIALS SHOULD BE UNWEATHERED, UNCHOPPED, SMALL GRAIN STRAW SPREAD AT A RATE OF 2 TONS PER ACRE. THE MULCH SHALL BE ANCHORED IMMEDIATELY AFTER PLACEMENT WITH ASPHALT, PEG AND TWINE, PLASTIC NETTINGS OR BY A MULCH ANCHORING TOOL.

3. LIME AND FERTILIZER SHALL BE REQUIRED FOR TEMPORARY SEEDING IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:  
 1. PULVERIZED DOLOMITIC LIMESTONE IS TO BE APPLIED AT THE RATE OF 100 LBS. PER 1,000 SQ. FT.  
 2. FERTILIZER SHALL BE 10-10-10 OR EQUIVALENT AND APPLIED AT THE RATE OF 15 LBS. PER 1,000 SQ. FT.

**PERMANENT SEEDING AND SODDING SPECIFICATIONS**

1. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED.

2. SOIL PREPARATION: WEEDS AND UNDESIRABLE GRASSES GROWING ON EXISTING GRADE THAT IS TO BE SEEDED AND/OR SODDED MUST BE CUT AND REMOVED BEFORE SOIL PREPARATION BEGINS. BEFORE SEEDING OR SODDING ALL SOILS SHALL BE LOOSENEED BY MEANS OF FILLING AND/OR DISCING. ALL TRASH, DEBRIS, ROOTS, BRUSH, WIRE, ROCKS, STONE AND OTHER FOREIGN DEBRIS OVER ONE INCH IN DIAMETER SHALL BE REMOVED PRIOR TO SEEDING AND/OR SODDING, TO A DEPTH OF FOUR (4) INCHES.

3. TOPSOIL: THE MINIMUM ORGANIC CONTENT IN THE MSHA SPECIFICATION REFERENCED SHALL BE INCREASED TO 10%. ORGANIC MATTER SHALL BE ADDED USING COMPOST MATERIAL MEETING THE STANDARD REQUIREMENTS IN THE SPECS.

4. SEEDED PREPARATION: THE TOP LAYER OF SOIL SHALL BE LOOSENEED BY DISCLING OR RAKING (SHALL BE DONE ON CONTOUR) AT A DEPTH OF AT LEAST 3", BEFORE SEEDING OCCURS. APPLY 100LBS PER 1,000 SQ.FT. OF LIME AND 15 LB. PER 1,000 SQ.FT. OF 10-10-10 FERTILIZER OR EQUIVALENT. THOROUGHLY MIX INTO SOIL TO A MINIMUM OF 3".

5. SEEDING: USE 40% KENTUCKY BLUEGRASS, 10% ANNUAL RYE AND 25% RED FESCUE AT THE RATE OF 250 LB. PER ACRE.

6. MULCHING: USE CLEAN, UNWEATHERED, UNCHOPPING SMALL GRAIN STRAW AT THE RATE OF 1.5 TO 2 TONS PER ACRE ANCHORED DOWN WITH CUTBACK ASPHALT AT THE RATE OF 5-8 GALLONS PER 1000 SQ. FT.

7. DISCING AND HARROWING SHALL BE DONE ON CONTOUR.

8. SOD SHALL BE STATE APPROVED SOD INSPECTED AND APPROVED BY MD. DEPT. OF AGRICULTURE. ALL SOD SHALL BE LAID ON SITE NO MORE THAN 36 HOURS AFTER HARVEST, AND SHALL BE A MIXTURE OF 60% (MIN.) TALL FESCUE AND 40% (MIN.) KENTUCKY BLUEGRASS.

9. SOD PEGS OR STAKES BE UNTREATED WOOD PEGS DRIVEN THROUGH, AND FLUSH WITH SOD. ALL SLOPES WITH A GRADE 3 TO 1 OR STEEPER SHALL BE PEGGED AT A MINIMUM OF 4 PEGS PER SQUARE YARD OF SOD.

10. SODDING, SEEDING AND MULCHING MAY BE DONE IMMEDIATELY AFTER FINAL GRADING, PROVIDED THAT THE BED HAS REMAINED IN GOOD, FRIABLE CONDITION AND HAS NOT BECOME MUDDY OR HARD. IF IT HAS BECOME HARD, IT SHALL BE FILLED TO FRIABLE CONDITION AGAIN.

11. SEED SHALL BE WORKED INTO THE TOP 3" OF SOIL BY MEANS OF RAKING, WIRE DRAG OR OTHER APPROVED EQUIPMENT. DURING PERIODS OF HIGH TEMPERATURE AND/OR DROUGHT, THE SOIL SHALL BE WATERED IMMEDIATELY PRIOR TO LAYING THE SOD. ALL SOD SHALL BE LAID AT RIGHT ANGLES TO SLOPES. NO SOD SHALL BE APPLIED TO FROZEN GROUND AND NO FROZEN SOD IS TO BE LAID. WATERING SHALL COMMENCE IMMEDIATELY DURING OR AFTER THE LAYING OPERATION, AND SHALL BE SUFFICIENT TO THOROUGHLY WET THE SOD ROOTS AND THE SOIL BELOW.

12. PERMANENT SEEDING: SHALL BE DONE MARCH 1 – MAY 15 AND AUGUST 15 – OCTOBER 15. IRRIGATION FOR PERMANENT SEEDING SHALL BE DONE BETWEEN MAY 15 AND AUGUST 14.

13. SEDIMENT CONTROL DEVICES (DITCHES, DIKES, TRAPS, ETC.) ARE TO REMAIN IN PLACE UNTIL CONTRIBUTING WATERSHED HAS BEEN STABILIZED. MAINTENANCE TO SEDIMENT CONTROL DEVICES DURING THE UNDER GOING GRADING, CONSTRUCTION AND DEVELOPMENT SHOULD BE DONE AS NECESSARY. REMOVAL OF THESE DEVICES SHALL BE WITH THE APPROVAL OF THE MONTGOMERY COUNTY SEDIMENT CONTROL INSPECTOR.

**STANDARDS AND SPECIFICATIONS  
FOR TOPSOIL**

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE

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.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES.

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

TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS.

TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

1. 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 DPS. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, 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. THE SUBSOIL SHALL BE TILLED TO A MINIMUM DEPTH OF 6 INCHES BEFORE PLACEMENT OF TOPSOIL.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

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 LBS PER 1000 SQ FT) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL.

TOPSOIL SHALL BE TESTED AND AMENDED AS PER SOIL TEST RECOMMENDATIONS.

TOPSOIL APPLICATION.

1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES.  
 2. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4-8 INCH LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4 INCHES. 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.  
 3. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL 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.

SITE INFORMATION

\* (NOT FOR BIDDING PURPOSES)

TOTAL AREA OF SITE \_\_\_\_\_ 0.54 \_\_\_\_\_ ACRES  
 AREA DISTURBED \_\_\_\_\_ 0.54 \_\_\_\_\_ ACRES  
 AREA TO BE ROOFED \_\_\_\_\_ \_\_\_\_\_ ACRES  
 OR PAVED \_\_\_\_\_ 0.00 \_\_\_\_\_ ACRES  
 TOTAL CUT \_\_\_\_\_ 190 \_\_\_\_\_ CU. YDS.  
 TOTAL FILL \_\_\_\_\_ 10 \_\_\_\_\_ CU. YDS.  
 OFFSITE WASTE/BORROW \_\_\_\_\_ \_\_\_\_\_  
 AREA LOCATION (IF KNOWN) \_\_\_\_\_ ACRES

EROSION AND SEDIMENT CONTROL NOTES

**GAME PRESERVE SWM RETROFITS**

GAITHERSBURG 9th ELECTION DISTRICT

SUBDIVISION STEDWICK, LIBER 24:13 FOLIO 310 (PARCEL P580), LIBER 4090 FOLIO 145 (PARCEL 202)  
MONTGOMERY COUNTY, MARYLAND

CLIENT: MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION

255 ROCKVILLE PIKE, RM. 120  
ROCKVILLE, MD 20850-4166

MR. PHILIP JONES, P.E.  
(240) 777-7738

DESIGN ALH, MLD  
DRAFT MER  
APPROVED

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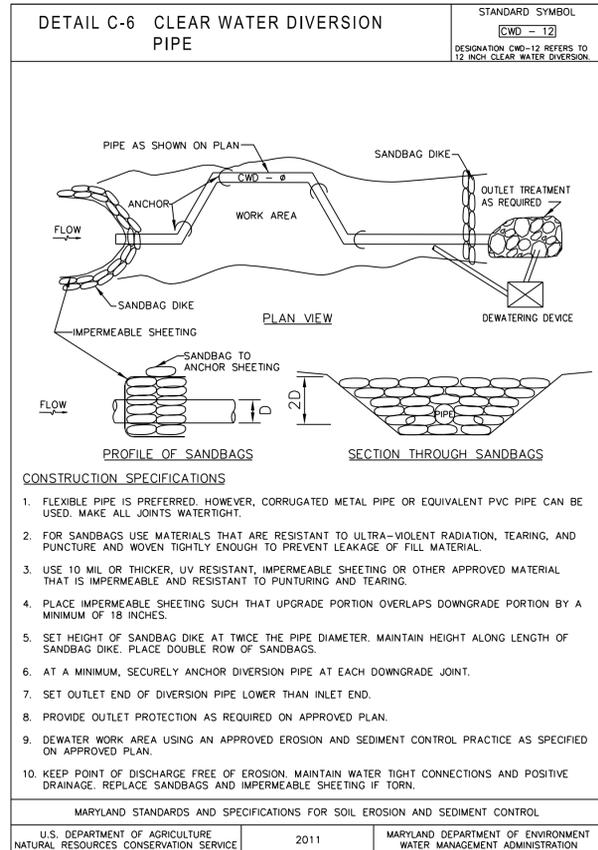
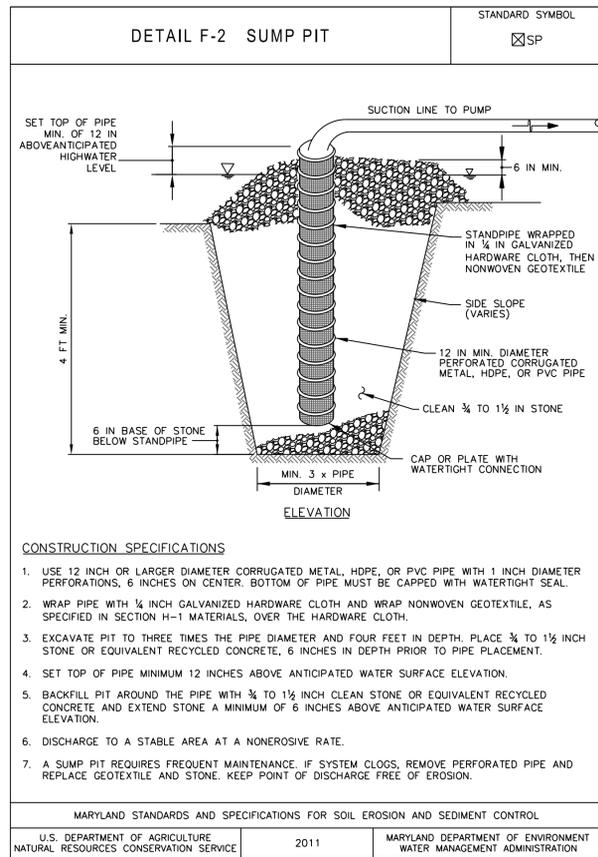
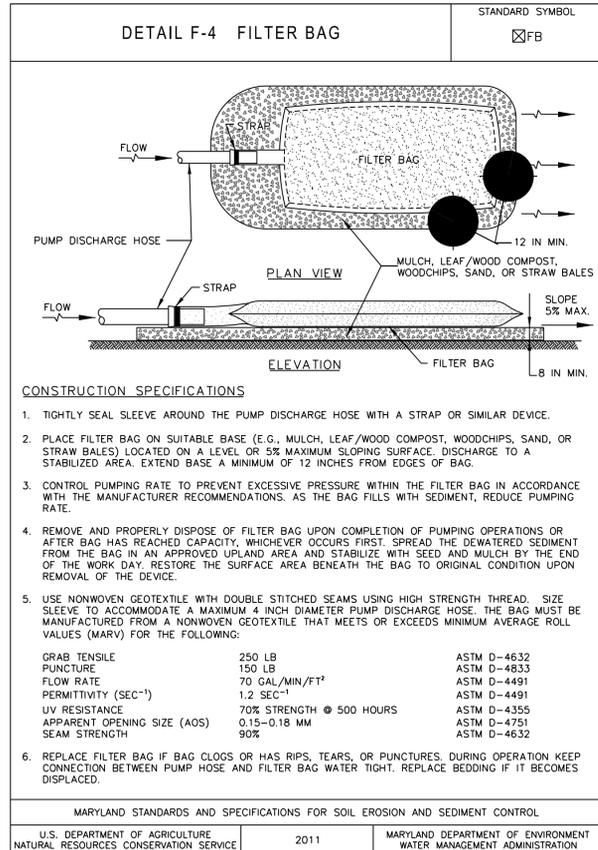
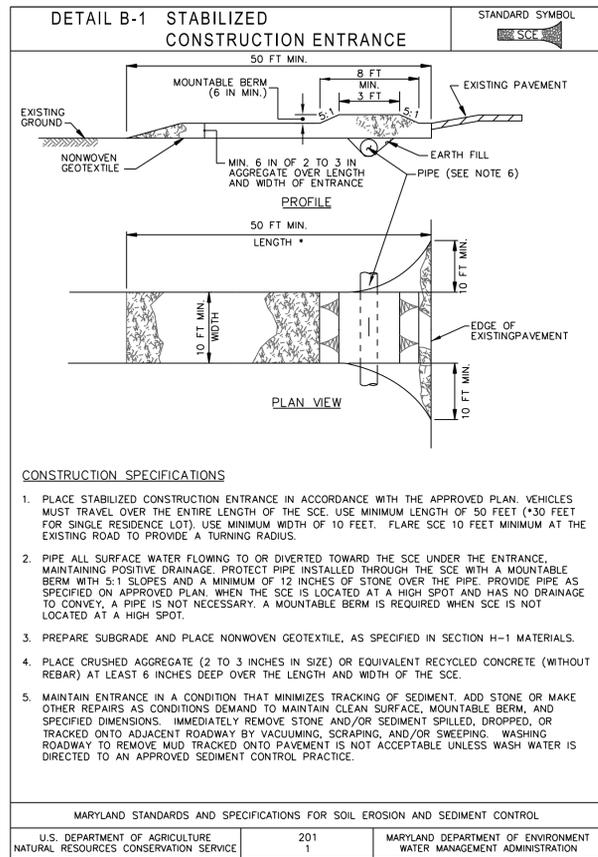
MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

**FINAL APPROVAL**

DATE \_\_\_\_\_  
BY \_\_\_\_\_

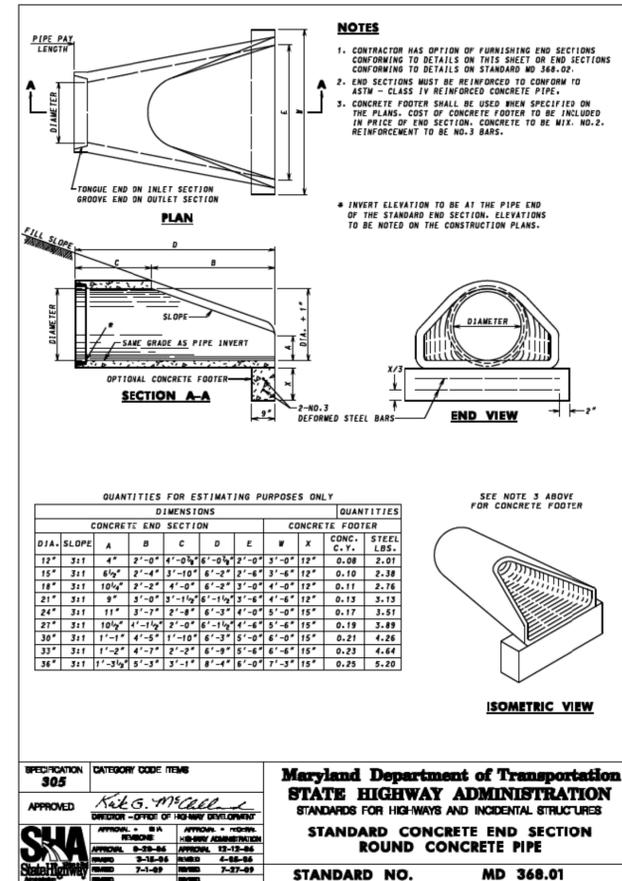
\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.





**SEQUENCE OF CONSTRUCTION**

- A MINIMUM 5-DAY CLEAR WEATHER (NO PRECIPITATION) FORECAST FROM THE NATIONAL WEATHER SERVICE AND PERMISSION FROM THE INSPECTOR SHALL BE GRANTED PRIOR TO PROCEEDING WITH ANY WORK. OBTAIN GRADING PERMIT. (1 DAY)
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900 AND MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR AT (301) 665-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY.
- ORANGE HIGH VISIBILITY FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS. THIS SHALL BE COMPLETED BY AND INSPECTED AT THE PRECONSTRUCTION MEETING. (1 DAY)
- THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO THE COUNTY PROJECT MANAGER, THE ENGINEER, AND A REPRESENTATIVE FROM HOWARD COUNTY CONSTRUCTION INSPECTION. (1 DAY)
- MOBILIZE EQUIPMENT. DURING A 5 DAY DRY FORECAST FROM THE NATIONAL WEATHER SERVICE INSTALL THE STABILIZED CONSTRUCTION ENTRANCE, SAND BAG DAMS, SILT FENCE, 24" CLEAR WATER DIVERSION PIPES, HOSE, SUMP PIT AND FILTER BAG. (1 DAY)
- EXCAVATE AND REMOVE EXISTING STORM DRAIN INFLOW PIPES TO THE POND. ENSURE EXISTING MANHOLES REMAIN IN GOOD CONDITION. BULKHEAD EXISTING PIPE OPENINGS AS REQUIRED TO ENSURE PROPER INSTALLATION OF PROPOSED PIPES AND TO ENSURE WATER TIGHT CONNECTION. INSTALL NEW PIPE SECTIONS AND ENDWALLS AT INVERTS INDICATED ON DESIGN PLANS. ENSURE WATER TIGHT CONNECTION OF PIPES AT EXISTING MANHOLES. INSTALL BULKHEADS IN EXISTING MANHOLES WHERE EXISTING PIPE OPENING REMAINS. PIPE EXCAVATION AND INSTALLATION SHALL UTILIZE SAME-DAY STABILIZATION TO MAINTAIN CLEAR WATER DIVERSION. BACKFILL AND STABILIZE. (5 DAYS)
- EXCAVATE AND REMOVE LOW-FLOW HEADWALL. INSTALL REVERSE SLOPE PIPE AND POND DRAIN AT RISER WITH WATER TIGHT CONNECTION. ADJUST CLEAR WATER DIVERSION PIPE TO ALLOW FOR RISER MODIFICATIONS. RETROFIT RISER. INSTALL NEW ORIFICE PLATE. INSTALL TRASH RACK. DEWATER FROM SUMP PIT TO FILTER BAG AS NEEDED. (7 DAYS)
- GRADE THE POND AS SHOWN ON THE PLANS. INSTALL RIPRAP AT STORM DRAIN INFLOW TO POND. STABILIZE WITH SEED AND MATTING. DEWATER FROM SUMP PIT TO THE FILTER BAG AS NEEDED. (3 DAYS)
- WHEN AREAS ARE FULLY STABILIZED, AND UPON PERMISSION FROM THE INSPECTOR, REMOVE THE REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE ANY DISTURBED AREAS. DEMOBILIZE EQUIPMENT. (1 DAY)



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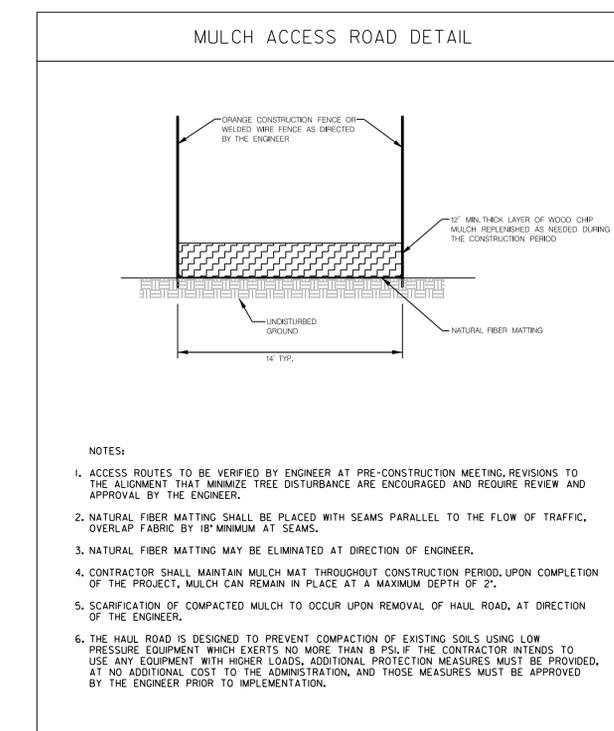
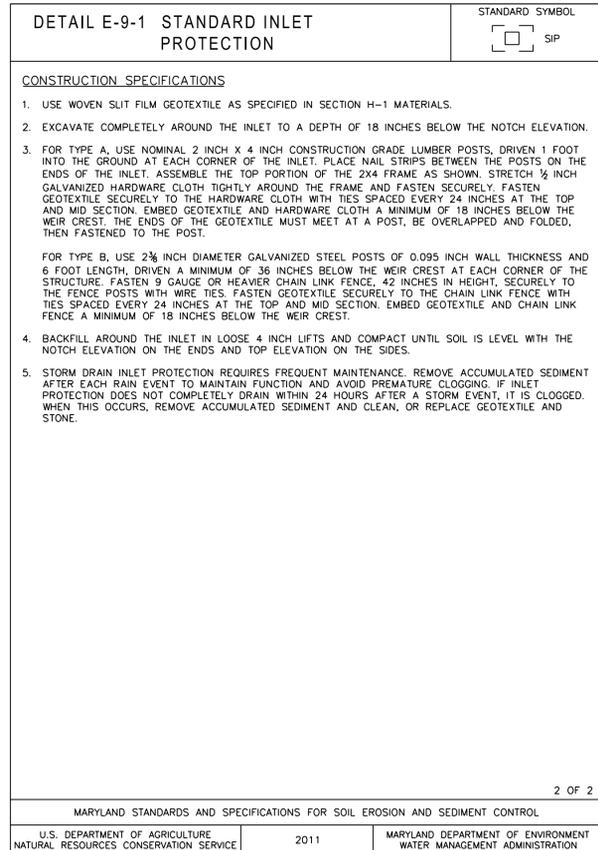
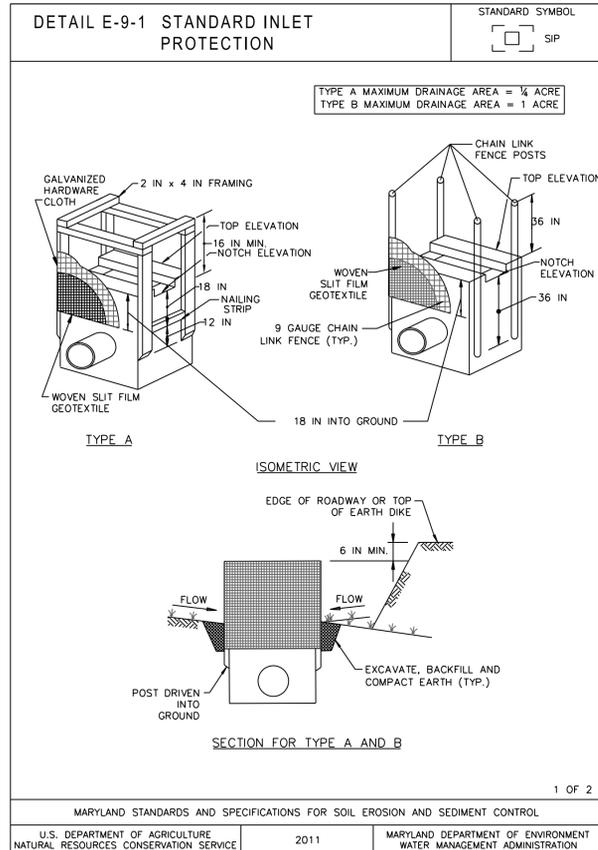
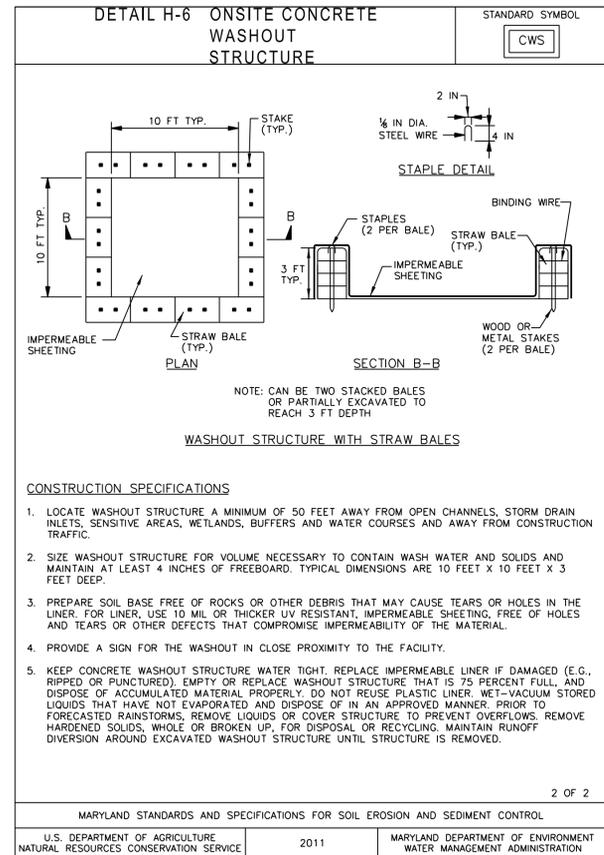
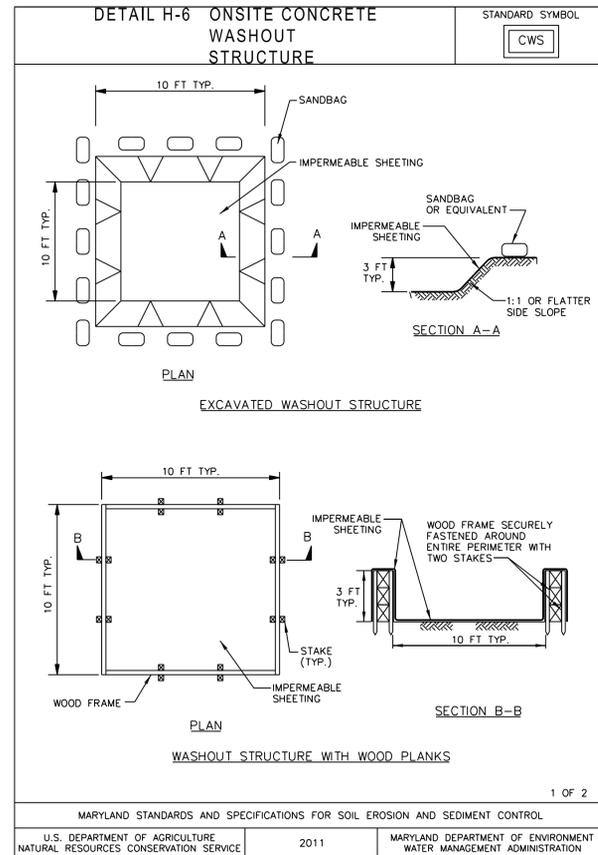
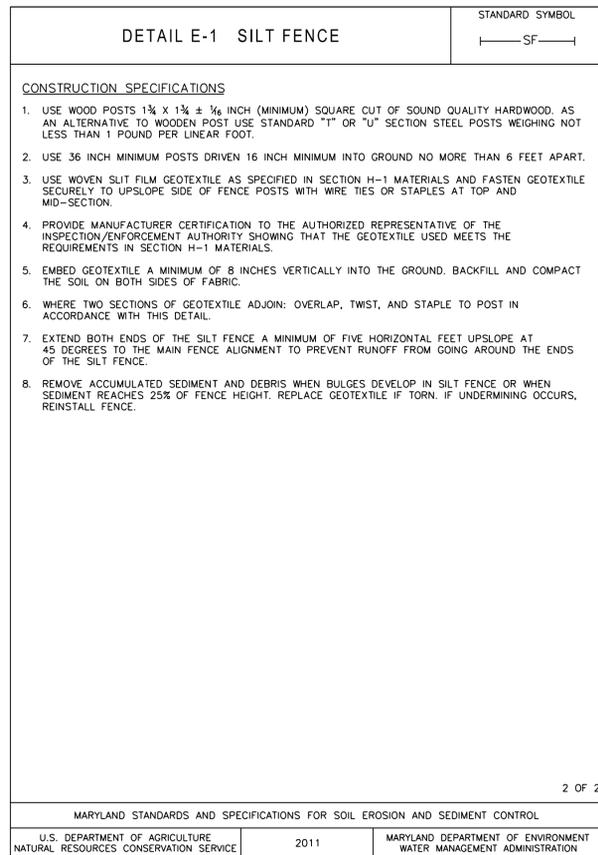
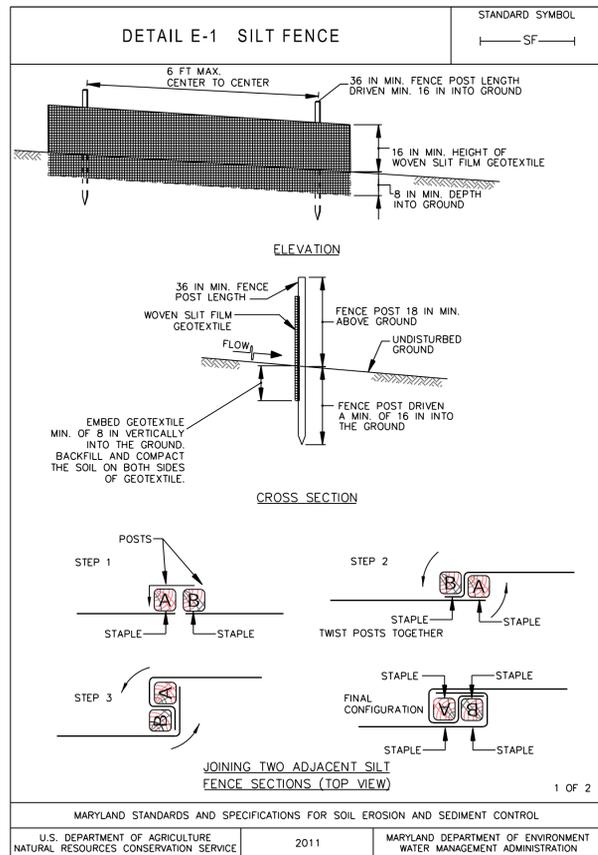
MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

FINAL APPROVAL

DATE \_\_\_\_\_  
BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

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. 31204, EXPIRATION DATE: 1 / 13 / 2015.



NOTES:

- ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT PRE-CONSTRUCTION MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
- NATURAL FIBER MATTING SHALL BE PLACED WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC. OVERLAP FABRIC BY 18" MINIMUM AT SEAMS.
- NATURAL FIBER MATTING MAY BE ELIMINATED AT DIRECTION OF ENGINEER.
- CONTRACTOR SHALL MAINTAIN MULCH MAT THROUGHOUT CONSTRUCTION PERIOD. UPON COMPLETION OF THE PROJECT, MULCH CAN REMAIN IN PLACE AT A MAXIMUM DEPTH OF 2".
- SCARIFICATION OF COMPACTED MULCH TO OCCUR UPON REMOVAL OF HAUL ROAD, AT DIRECTION OF THE ENGINEER.
- THE HAUL ROAD IS DESIGNED TO PREVENT COMPACTION OF EXISTING SOILS USING LOW PRESSURE EQUIPMENT WHICH EXERTS NO MORE THAN 8 PSI. IF THE CONTRACTOR INTENDS TO USE ANY EQUIPMENT WITH HIGHER LOADS, ADDITIONAL PROTECTION MEASURES MUST BE PROVIDED. AT NO ADDITIONAL COST TO THE ADMINISTRATION, AND THOSE MEASURES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.

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. 31204, EXPIRATION DATE: 1 / 13 / 2015.

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SANDBAGS	
11 LF (2.5' HT)	EMBANKMENT - STA 8+49, 112 LT TO STA 8+65, 106 LT (SB-1)
10 LF (2.5' HT)	EMBANKMENT - STA 7+81, 86 LT TO STA 7+87, 92 LT (SB-2)
36 LF (2.5' HT)	EMBANKMENT - STA 8+34, 41 LT TO STA 8+52, 42 LT (SB-3)

STABILIZED CONSTRUCTION ENTRANCE	
35 TONS	EMBANKMENT - STA 2+94, 13 LT

18 INCH CLEAR WATER DIVERSION PIPE	
64 LF	EMBANKMENT - STA 8+52, 109 LT TO STA 8+45, 49 LT (CWD-1)
70 LF	EMBANKMENT - STA 7+85, 88 LT TO STA 8+41, 48 LT (CWD-2)

INLET PROTECTION	
1 EA	EMBANKMENT - STA 2+87, 35 LT (SIP)

SUMP PIT	
1 EA	EMBANKMENT - STA 8+31, 54 LT

FILTER BAG	
1 EA	EMBANKMENT - STA 8+34, 1 RT

SILT FENCE	
152 LF	EMBANKMENT - STA 3+04, 5 LT TO STA 4+59, 7 LT
45 LF	EMBANKMENT - STA 4+65, 6 LT TO STA 5+09, 7 LT
12 LF	EMBANKMENT - STA 5+09, 5 LT TO STA 5+18, 7 LT
31 LF	EMBANKMENT - STA 5+20, 5 LT TO STA 5+48, 9 LT
25 LF	EMBANKMENT - STA 5+49, 6 LT TO STA 5+78, 6 LT
56 LF	EMBANKMENT - STA 5+81, 6 LT TO STA 6+36, 5 LT
96 LF	EMBANKMENT - STA 6+47, 4 LT TO STA 6+74, 11 LT

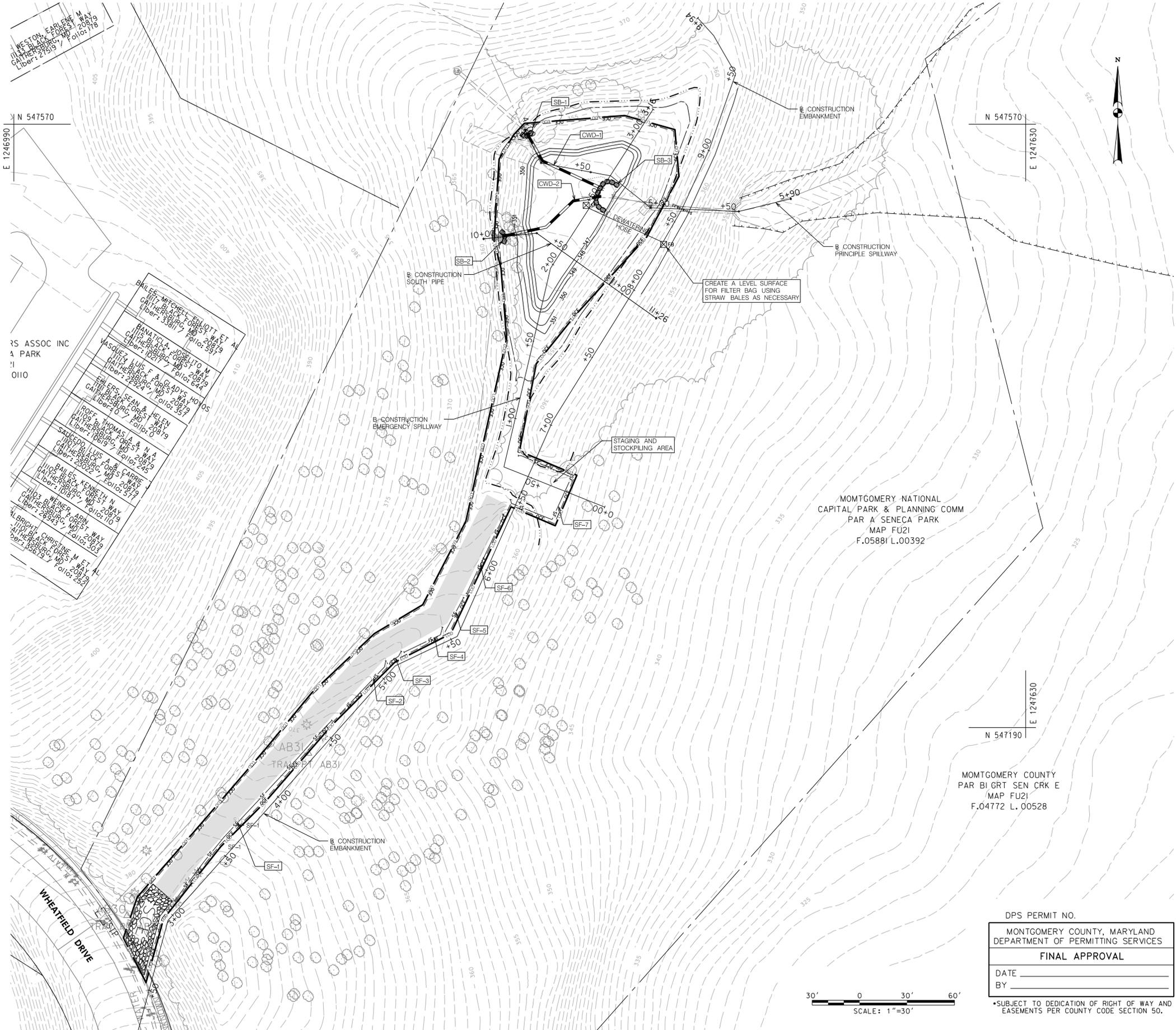
TYPE E SOIL STABILIZATION MATTING	
1322 SY	EMBANKMENT - STA 7+39, LT TO STA 8+93, LT

TEMPORARY ORANGE CONSTRUCTION FENCE	
1423 LF	EMBANKMENT - STA 2+57, 4 LT TO STA 2+78, 23 LT

MULCH ACCESS ROAD	
331 LF	EMBANKMENT - STA 3+07, 14 LT TO STA 6+43, 12 LT

PLACING FURNISHED TOPSIOL 4 INCH DEPTH	
560 SY	EMBANKMENT - STA 7+50, LT TO STA 9+00, LT

LEGEND	
— 330 —	EXISTING MAJOR CONTOUR
— — —	EXISTING MINOR CONTOUR
— 350 —	PROPOSED MAJOR CONTOUR
— — —	PROPOSED MINOR CONTOUR
— — —	100 YEAR FLOOD PLAIN
— — —	10 YEAR WSEL
— — —	100 YEAR WSEL
— — —	PROPERTY LINE
— — —	LIMIT OF DISTURBANCE
— — —	EXISTING STORM DRAIN
— — —	ORANGE CONSTRUCTION FENCE
— — —	SILT FENCE
— — —	SAND BAG DIVERSION
— — —	3" DIVERSION HOSE
— — —	18" DIVERSION PIPE
⊗ SP	SUMP PUMP
⊗ FB	FILTER BAG
□ SIP	INLET PROTECTION
▨	CLASS I RIPRAP
■	MULCH ROAD ACCESS



DPS PERMIT NO.  
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FILE: C:\S18218 - Cabin Branch SWM Retrofits\Design\Plan\Sheet11190ES-POD\_Cabin Branch.psd 1/15/2015 10:30 AM  
 PLOTTED: Tuesday, January 20, 2015 AT 10:30 AM

Project No. 11-201		LOG OF BOREHOLE B-7		Sheet 1 of 1																																																																
CLIENT: McCormick Taylor		PROJECT: Montgomery County Task # 18																																																																		
ARCHITECT/ENGINEER:		SITE: Maryland																																																																		
SURFACE ELEV.: 360.0 ft		GRAPHIC LOG																																																																		
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Project No. 11-201		LOG OF BOREHOLE B-8		Sheet 1 of 1																																																																
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Project No. 11-201		LOG OF BOREHOLE B-10		Sheet 1 of 1																																														
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SOIL BORING LOGS  
**MCCORMICK TAYLOR**  
509 South Exeter Street  
4th Floor  
Baltimore, Maryland 21202  
(410) 662-7400

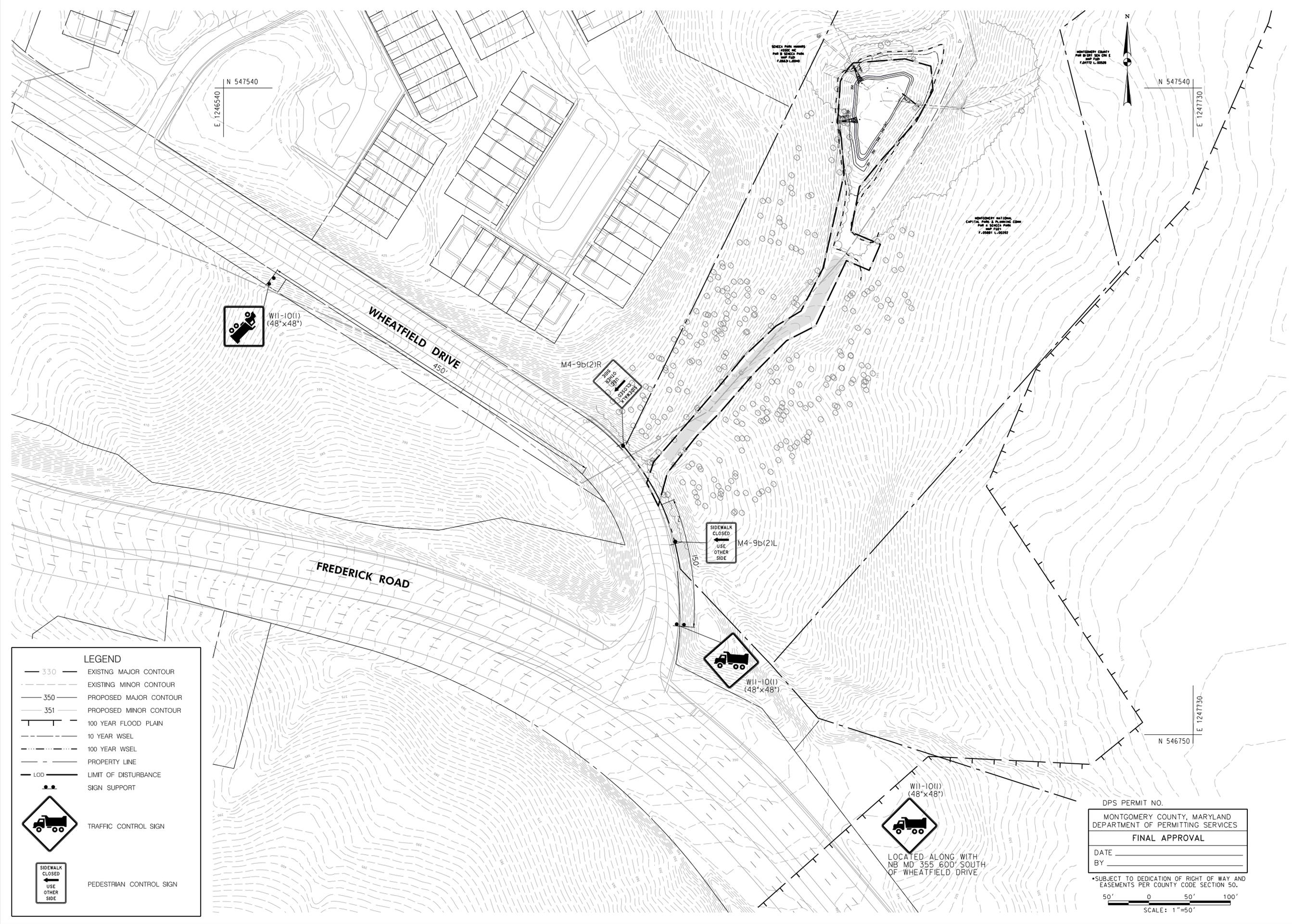
GAME PRESERVE SWM RETROFITS  
GAITHERSBURG 9th ELECTION DISTRICT  
SUBDIVISION STEDWICK, LIBER 2413 FOLIO 310 (PARCEL P580), LIBER 4090 FOLIO 145 (PARCEL 202)  
MONTGOMERY COUNTY, MARYLAND

CLIENT: MONTGOMERY COUNTY DEPT OF ENVIRONMENTAL PROTECTION  
255 ROCKVILLE PIKE, RM. 120  
ROCKVILLE, MD 20850-4166  
MR. PHILIP JONES, P.E.  
(240) 777-7738

DESIGN ALH, MLD  
DRAFT MER  
APPROVED  
DATE JAN 15  
SCALE N.T.S.  
SHEET 13 OF 15

FILE: C:\S\B\218 - Cabin Branch SWM Retrofits\Design\Engineering\Plan\Sheet1119\BBS-P001\_Cabin Branch pond 11119.dgn  
PLOTTED: Friday, January 16, 2015, 4:04:52 PM





**LEGEND**

- 330 — EXISTING MAJOR CONTOUR
- 350 — EXISTING MINOR CONTOUR
- 351 — PROPOSED MAJOR CONTOUR
- 351 — PROPOSED MINOR CONTOUR
- — 100 YEAR FLOOD PLAIN
- — 10 YEAR WSEL
- — 100 YEAR WSEL
- — PROPERTY LINE
- LOD — LIMIT OF DISTURBANCE
- — SIGN SUPPORT
- TRAFFIC CONTROL SIGN
- PEDESTRIAN CONTROL SIGN

DPS PERMIT NO. \_\_\_\_\_

MONTGOMERY COUNTY, MARYLAND  
DEPARTMENT OF PERMITTING SERVICES

**FINAL APPROVAL**

DATE \_\_\_\_\_

BY \_\_\_\_\_

\*SUBJECT TO DEDICATION OF RIGHT OF WAY AND EASEMENTS PER COUNTY CODE SECTION 50.

50' 0 50' 100'

SCALE: 1"=50'

FILE: C:\B2\18 - Cabin Branch SWM Retrofits\Design\Plan\Sheet1119.mxd; PLOT: Cabin Branch.pand 11119.dgn  
PLOTTED: Friday, January 16, 2015, 4:19:53 PM