SITE DEVELOPMENT PLANS
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT
HOWARD COUNTY, MARYLAND

GENERAL NOTES

1. SUBJECT PROPERTY IS ZONED "PGCC" PER THE 2/02/04 COMPREHENSIVE ZONING PLAN AND THE "COMP. LITE" ZONING AMENDMENTS EFFECTIVE 7/28/06.
2. AREA OF PLAN SUBMISSION: 37.50 AC.±
   LIMIT OF DISTURBED AREA: 11.11 AC.±
   EXISTING USE: GOLF COURSE
   PROPOSED USE: STORMWATER MANAGEMENT FACILITIES
3. PREVIOUS HOWARD COUNTY FILE NUMBERS: S-08-001, S-11-003; S-86-13; CONTR.#44-4480-D, CONTR.#24-3447-D; PB-181; PB-294; PB-300; PB-351; PB-368; WP-09-211; WP-10-065; WP-10-112; WP-10-159; WP-11-168, WP-12-129, WP-13-128; F-10-026
4. THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
5. SOILS TAKEN FROM WEB SOILS SURVEY, NATIONAL COOPERATIVE SOIL SURVEY WEBSITE ON MAY 26, 2011
6. BOUNDARY SURVEY PREPARED BY MILDENBERG, BOENDER & ASSOCIATES ON OR ABOUT MARCH, 2006.
7. THE LOT LINES SHOWN HEREON ARE BASED ON TURF VALLEY CLUBHOUSE PHASES I (S-08-001) AND II (S-11-003). EXISTING TOPOGRAPHY IS BASED AN AERIAL SURVEY WITH 2' CONTOURS PREPARED BY WINGS AERIAL MAPPING CO., INC. ON OR ABOUT JANUARY, 2006 AND SUPPLEMENTED WITH FIELD RUN TOPO AS NECESSARY IN THE AREA OF THE SOCCER FIELD, PERFORMED BY BENCHMARK ENGINEERING INC. ON OR ABOUT OCTOBER, 2011 UNDER WP-10-065.
8. ✓ THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED ON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENTS NUMBERS 161B AND 17AB WERE USED FOR THIS PROJECT.
9. THERE ARE NO WETLANDS, STREAMS, FLOODPLAINS, HISTORIC STRUCTURES OR CEMETERIES WITHIN THE PROJECT BOUNDARY.
10. WETLAND LIMITS SHOWN ARE BASED ON A STUDY CONDUCTED BY EXPLORATION RESEARCH, INC. AND VERIFIED BY ECO-SCIENCE PROFESSIONALS, INC. ON OCTOBER 24, 2007. LIMITS SHOWN ARE IN ACCORDANCE WITH THOSE SHOWN ON THE FOURTH AMENDMENT TO THE TURF VALLEY COMPREHENSIVE SKETCH PLAN (S-86-13, PB 368), APPROVED JULY, 28, 2006.
11. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY BERNARD JOHNSON INCORPORATED, DATED MAY 1986, AND WAS APPROVED BY HOWARD COUNTY UNDER THE LITTLE PATUXENT RIVER WATERSHED MODEL UPDATE ULTIMATE WATERSHED DEVELOPMENT CAPITAL PROJECT D-1065. LIMITS SHOWN ARE IN ACCORDANCE WITH THOSE SHOWN ON THE FOURTH AMENDMENT TO THE TURF VALLEY COMPREHENSIVE SKETCH PLAN (S-86-13, PB 368), APPROVED JULY, 28, 2006. ELEVATIONS HAVE BEEN ADJUSTED FROM NGVD 29 TO NAVD 88, AS SHOWN ON SHEETS 3 AND 4.
12. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS, OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.
13. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC GROUP, DATED JANUARY 07, 2005 AND WAS APPROVED UNDER THE 4TH AMENDED COMPREHENSIVE SKETCH PLAN ON APRIL 27, 2006.
14. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
15. PUBLIC WATER AND PUBLIC SEWER WILL BE USED WITHIN FUTURE DEVELOPMENT OF THIS SITE. PUBLIC WATER WILL BE EXTENDED FROM CONTRACT #44-4480. PUBLIC SEWER WILL BE EXTENDED FROM CONTRACT #24-3447.
16. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

STATE HIGHWAY ADMINISTRATION	410.531.5533
BGE(CONTRACTOR SERVICES)	410.850.4620
BGE(UNDERGROUND DAMAGE CONTROL)	410.787.9068
MISS UTILITY	1.800.257.7777
COLONIAL PIPELINE COMPANY	410.795.1390
HOWARD COUNTY, DEPT. OF PUBLIC WORKS, BUREAU OF UTILITIES	410.313.4900
HOWARD COUNTY HEALTH DEPARTMENT	410.313.2640
AT&T	1.800.252.1133
VERIZON	1.800.743.0033/410.224.9210

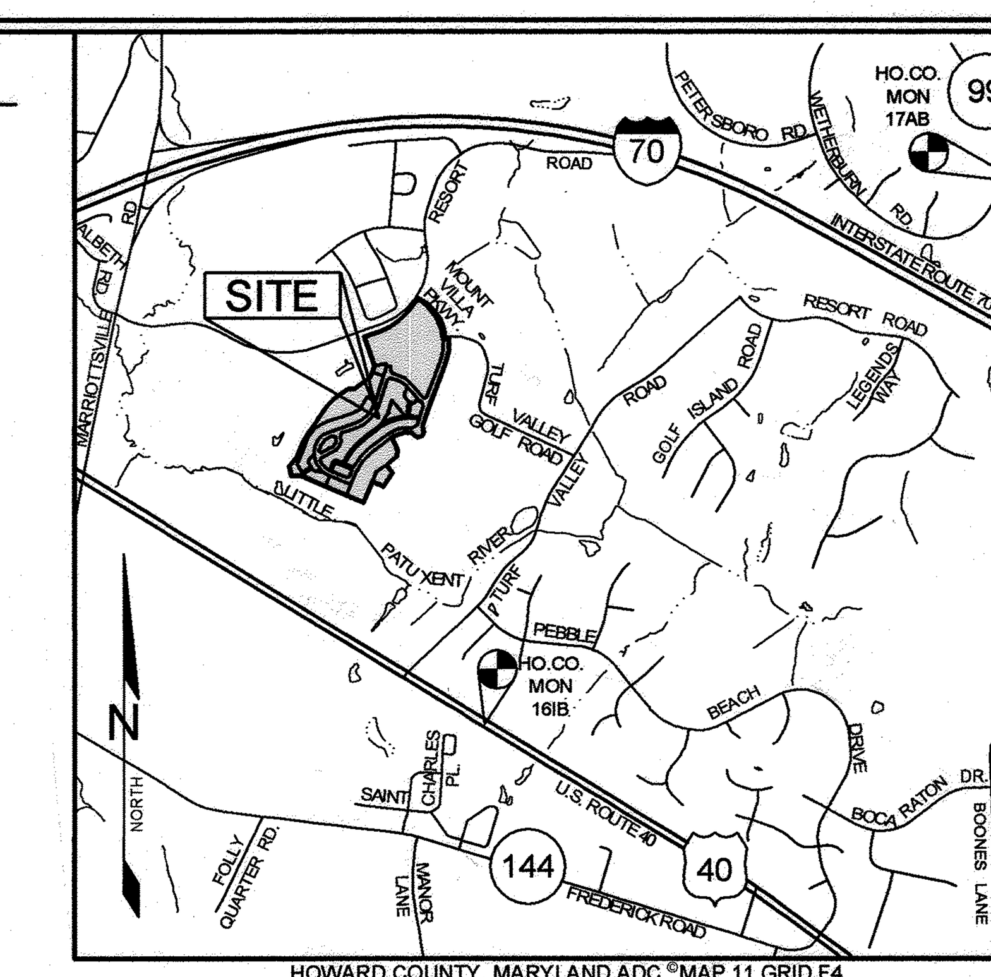
17. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
18. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
19. ANY DAMAGE TO PUBLIC RIGHT-OF WAYS, PAVING OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
20. THE CONTRACTOR SHALL LOCATE THE SPRINKLER SYSTEM BEING USED FOR THE EXISTING SOCCER FIELD, SHOWN ON SHEET 2, PRIOR TO START OF CONSTRUCTION AND NOTIFY ENGINEER OF ANY CONFLICTS.
21. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
22. ALL TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
23. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
24. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY IN ADDITION TO MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
25. EXISTING UTILITIES ARE LOCATED BY THE USE OF ANY OR ALL OF THE FOLLOWING: ROAD CONSTRUCTION PLANS, FIELD SURVEYS, PUBLIC WATER AND SEWER PLANS AND OTHER AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF THE EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
26. ALL HDPE PIPE SPECIFICATION AND INSTALLATION SHALL MEET AASHTO M-252 TYPE S, M-294 TYPE S AND ASTM D2321, RESPECTIVELY.
27. SOIL COMPACTION SPECIFICATIONS, REQUIREMENTS, METHODS AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL ENGINEER. DRIVEWAY PAVING TO BE HOWARD COUNTY STANDARD P-1 PAVING SECTION. GEOTECHNICAL ENGINEER TO CONFIRM ACCEPTABILITY OF PROPOSED PAVING SECTION, BASED ON SOIL TEST, PRIOR TO CONSTRUCTION.
28. ESTIMATES OF EARTHWORK QUANTITIES ARE PROVIDED SOLELY FOR THE PURPOSE OF CALCULATING FEES.
29. ALL DITCHES AND SWALES WILL HAVE EROSION CONTROL MATTING.
30. STORM WATER MANAGEMENT IS PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II. WQv AND REv OBLIGATIONS ARE BEING MET BY THE USE OF BIORETENTION FACILITIES (F-6). WQv AND CPv OBLIGATIONS ARE BEING MET BY THE USE OF A WET EXTENDED DETENTION POND (P-3). ALL FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED* THE STORMWATER MANAGEMENT SYSTEM SHOWN ON THESE PLANS IS BASED ON ULTIMATE DEVELOPED CONDITIONS OF TURF VALLEY CLUBHOUSE SECTIONS I & II. (S-08-011, S-11-003, SP-16-010) NOW KNOWN AS CAPERTON VILLAGE AT TURF VALLEY.
31. A LANDSCAPE PLAN IN ACCORDANCE WITH SECTION 16. 124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL WILL BE PROVIDED BY SUBDIVISION OR SITE DEVELOPMENT PLANS SUBSEQUENT TO S-08-001 AND S-11-003.
32. STORMWATER MANAGEMENT AREA LANDSCAPING AS REQUIRED BY SCHEDULE D SHALL BE PROVIDED AS PART OF THE INITIAL SITE DEVELOPMENT PLAN SUBMITTED FOR THE TURF VALLEY CLUBHOUSE SUBDIVISION.
33. THIS PROJECT IS EXEMPT FROM THE HOWARD COUNTY FOREST CONSERVATION REQUIREMENTS UNDER SECTION 16.1202(b)(1)(iv) OF THE HOWARD COUNTY CODE SINCE IT IS A PLANNED UNIT DEVELOPMENT WHICH HAD PRELIMINARY PLAN APPROVAL AND 50% OR MORE OF THE LAND WAS RECORDED AND SUBSTANTIALLY DEVELOPED BEFORE DECEMBER 31, 1992.
34. THIS PROJECT HAS BEEN DESIGNED IN COMPLIANCE WITH THE THIRD AMENDMENT TO THE TURF VALLEY MULTI-USE SUBDISTRICT FINAL DEVELOPMENT PLAN.
35. PRIOR TO GRADING PERMIT APPLICATION, THE PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 16.129 OF THE HOWARD COUNTY CODE.
36. TEMPORARY STOCKPILE SHALL BE COMPACTED TO ROAD STANDARDS WHERE GRADE IS TO BE PERMANENTLY RAISED.
37. THE P-3 POND (SWMF#1) SHOWN ON THIS SDP HAS BEEN CONVERTED TO A JOINTLY MAINTAINED FACILITY DUE TO THE PUBLIC ROAD RUNOFF IT WILL RECEIVE FROM THE CAPERTON VILLAGE AT TURF VALLEY SUBDIVISION (F-17-101, F-17-102). THE P-3 POND AS-BUILT IS REFLECTED ON THIS SDP. THE PUBLIC EASEMENT FOR THE P-3 POND MAINTENANCE WAS RECORDED ON 10-26-2018 AS PLAT# 24791-24794. THE POND SHALL RESIDE ON OPEN SPACE LOT 92 WHICH IS OWNED BY THE HOMEOWNERS ASSOCIATION.

* SUBJECT TO NOTE 37, BELOW.

XX - THIS AS-BUILT WAS PERFORMED USING TRANSIT + TAPE SURVEY METHODS.

LEGEND

EXISTING TREELINE	
EXISTING FLOODPLAIN	
EXISTING STREAMBANK BUFFER	—— SB ——
APPROX. CL STREAM	
EXISTING FENCE	
EXISTING CART PATH	

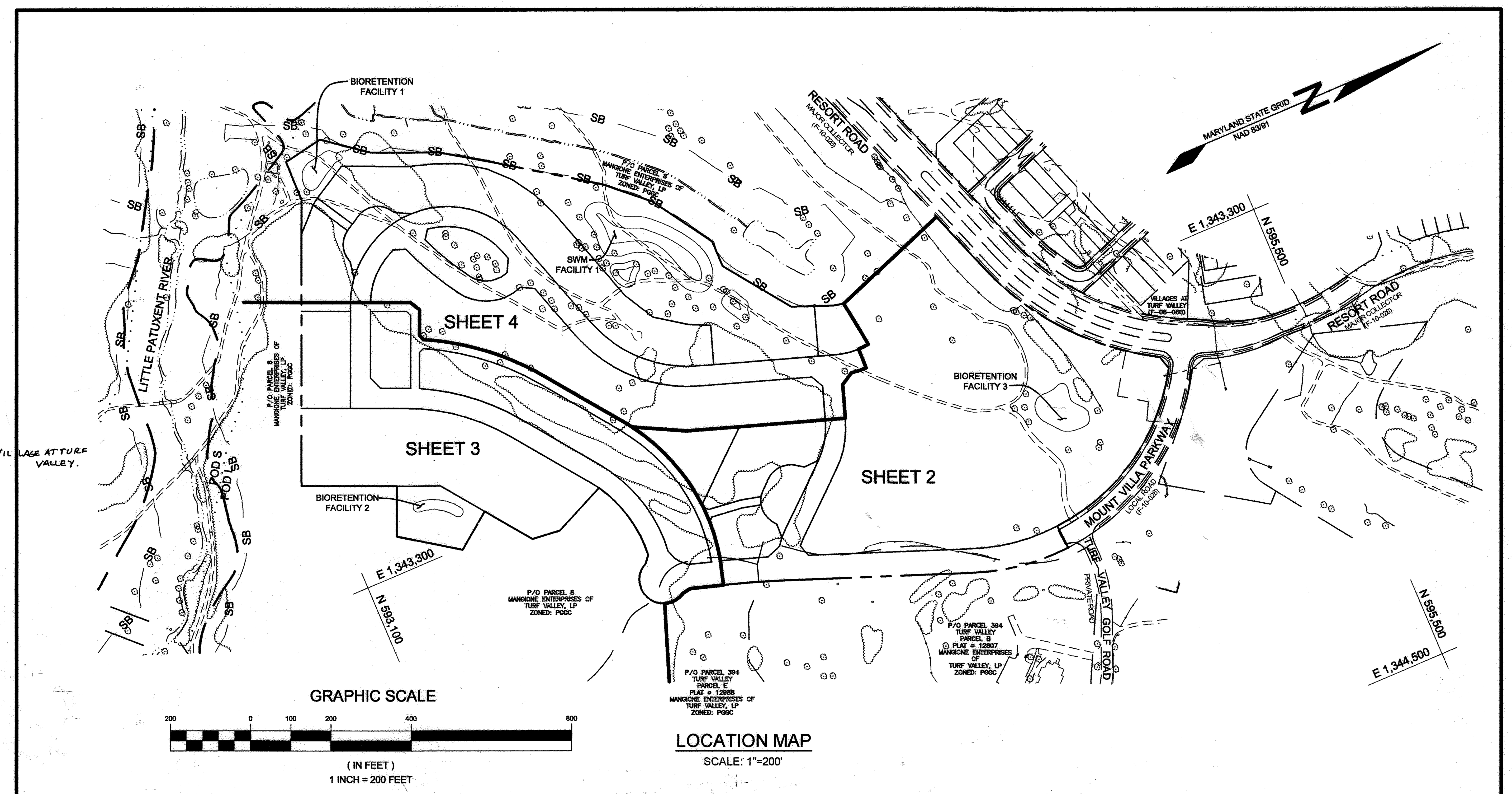


HOWARD COUNTY, MARYLAND ADC ©MAP 11 GRID F4

VICINITY MAP

SCALE:1=2000'

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
16IB	590,475.2538	1,344,753.9350	469.892	11.5' SOUTHWEST OF WBL RT. 40, 20.8' WEST OF PK NAIL IN SHOULDER, 66.4' SOUTH OF LAST POST IN GUARDRAIL
17AB	598,435.249	1,348,615.2482	508.469	SE OF INTERSECTION OF RTE. 99 AND WETHERBURN ROAD, 14.8' WEST OF FENCE POST, 35' NE OF MANHOLE



LOCATION MAP

SCALE: 1"=200'

SITE ANALYSIS DATA CHART			
TOTAL PROJECT AREA - AC±	AREA OF SUBMISSION 37.50 AC.±	DISTURBED AREA 11.11 AC.	PRESENT ZONING PGCC
PROPOSED USE SWM FACILITIES	FLOOR SPACE PER USE N/A	TOTAL UNITS ALLOWED N/A	TOTAL UNITS PROPOSED N/A
MAX. # EMPLY/TENANTS N/A	PARKING SPACES REQ. N/A	PARKING SPACES PROV. N/A	HC SPACES PROVIDED N/A
OPEN SPACE REQUIRED N/A	OPEN SPACE PROVIDED N/A	REC. O.S. REQUIRED N/A	REC. O.S. PROVIDED N/A
BUILDING COVERAGE N/A	FLOOR AREA RATIO N/A	DPZ FILE REFERENCES SEE GENERAL NOTE #3	

PERMIT INFORMATION CHART					
SUBDIVISION / PROJECT NAME TURF VALLEY REGIONAL STORMWATER MANAGEMENT FACILITIES			SECTION / AREA -		PARCEL # P/O PARCELS 8 & 394
PLAT OR L/F	GRID #	ZONING	TAX MAP #	ELECT. DIS.	CENSUS TRACT
L. 920, F. 250	16 & 17	PGCC	16	THIRD	6030.00

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GRADING, SEDIMENT AND EROSION CONTROL PLAN
3	GRADING, SEDIMENT AND EROSION CONTROL PLAN
4	GRADING, SEDIMENT AND EROSION CONTROL PLAN
5	SEDIMENT & EROSION CONTROL NOTES & DETAILS
6	BIORETENTION PLAN & DETAILS
7	EXTENDED DETENTION FACILITY PLAN & DETAILS
8	POND DETAILS
9	DETAILS & STORMDRAIN PROFILES
10	BORING LOGS
11	BIORETENTION PLANTING PLAN & MD 378 POND NOTES
12	STORMWATER MANAGEMENT DETAILS

SITE ANALYSIS DATA SHEET	
ENVIRONMENTAL AREA	SIZE OR USE
TOTAL PROJECT AREA	37.50 ACRES±
LIMIT OF DISTURBANCE	11.11 ACRES±
GREEN OPEN AREA (LAWN)	37.50 ACRES±
IMPERVIOUS AREA (EXISTING)	0.70 ACRES±
PROPOSED SITE USES	SWM FACILITIES
WETLANDS	0.00 ACRES±
WETLAND BUFFERS	0.00 ACRES±
FLOODPLAINS	0.00 ACRES±
FLOODPLAIN BUFFERS	0.00 ACRES±
EXISTING FOREST	12.00 ACRES±
SLOPES GREATER THAN 15%	1.70 ACRES±
HIGHLY ERODIBLE SOILS	7.80 ACRES±

NOTE:
1) HIGHLY ERODIBLE SOILS ARE ASSUMED TO BE A "K" VALUE OF 0.37 OR HIGHER.

SOILS LEGEND			
SYMBOL	NAME / DESCRIPTION	GROUP	'K' FACTOR
Co	CODORUS AND HATBORO SILT LOAMS, 0 TO 3 PERCENT SLOPES	C	0.37
GaD	GAILA LOAM, 15 TO 25 PERCENT SLOPES	B	0.24
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	0.20
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	0.20
GmA	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	0.37
GmB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	C	0.37
GmC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	C	0.37

Note:
1) SOILS BASED ON WEB SOILS SURVEY, NATIONAL COOPERATIVE SOILS SURVEY
2) HIGHLY ERODIBLE SOILS ARE ASSUMED TO BE A 'K' VALUE OF 0.37 OR HIGHER.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY , BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

[illegible] 6/1/22
MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

STATE OF MARYLAND CHRISTOPHER ALAN MALAGARI PROFESSIONAL ENGINEER
[illegible] Revision #2 only 2/9/17

STATE OF MARYLAND MICHAEL DAVID ADCOCK No. 21257 PROFESSIONAL LAND SURVEYOR
[illegible] REV. No. 1 8/1/16

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

COVER SHEET
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17 — PART OF PARCELS 8 & 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 5/2/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[illegible] 5/02/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[illegible] 5/4/13
DIRECTOR — DATE

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

[illegible] 4/30/13
HOWARD SCD — DATE

ENGINEERS CERTIFICATE

"I 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."

[illegible] 4/30/13
SIGNATURE OF ENGINEER — DATE
PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE

"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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

[illegible] 4/30/13
SIGNATURE OF DEVELOPER — DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE 4/15/13
[illegible]

NO.	DESCRIPTION	DATE
2	REVISE DISTURBED AREA TO 11.11 AC (BEZ)	2-9-2017
1	TO ADD ADDITIONAL STOCKPILE AREA	08/01/16

REVISIONS

STATE OF MARYLAND PAUL M. SILL No. 32025 PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY:	DB
DRAWN BY:	BK
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	APRIL 30, 2013
PROJECT #:	06-025
SHEET #:	1 of 12

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. 32025, EXPIRATION DATE: JUNE 20, 2013

STORMWATER MANAGEMENT SUMMARY TABLE

D.A.	WATER QUALITY		RECHARGE		CHANNEL PROTECTION	
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
A	2,526cf(1)	5,084cf(1)	558cf(1)	6,988cf(1)	0.0833acft(2)	0.00acft(2)
B	44,562cf(1)	45,064cf(1)	13,151cf(1)	0.0cf(1) *	1.4200acft(2)	1.73acft(2)
C	2,701cf(1)	2,702cf(1)	619cf(1)	3,848cf(1)	0.1276acft(2)	0.0acft(2)
D	3,049cf(1)	3,064cf(1)	797cf(1)	2,760cf(1)	0.0871acft(2)	0.0acft(2)

NOTES:

1. WATER QUALITY (WQv) AND RECHARGE (REv) HAVE BEEN CALCULATED FOR THE AREAS SUBJECT TO GRADING AND LAND COVER CHANGE. TREATMENT FOR WQv AND REv WILL BE PROVIDED AS FOLLOWS:
   - DRAINAGE AREA 'A': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 3].
   - DRAINAGE AREA 'B': AN EXTENDED DETENTION WET POND FOR (WQv). FOR (REv) SEE BELOW *
   - DRAINAGE AREA 'C': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 1]
   - DRAINAGE AREA 'D': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 2].
2. CHANNEL PROTECTION HAS BEEN CALCULATED FOR THE AREAS SUBJECT TO GRADING AND LAND COVER CHANGE. TREATMENT FOR CPv WILL BE PROVIDED FOR AS FOLLOWS:
   - DRAINAGE AREA 'A': AN EXTENDED DETENTION WET POND IN AREA-B.
   - DRAINAGE AREA 'B': AN EXTENDED DETENTION WET POND
   - DRAINAGE AREA 'C': AN EXTENDED DETENTION WET POND IN AREA-B
   - DRAINAGE AREA 'D': AN EXTENDED DETENTION WET POND IN AREA-B
3. OVERBANK FLOOD PROTECTION VOLUME, Qp, IS NOT REQUIRED FOR THIS SITE.
4. EXTREME FLOOD VOLUME, Qf, IS NOT REQUIRED FOR THIS SITE.

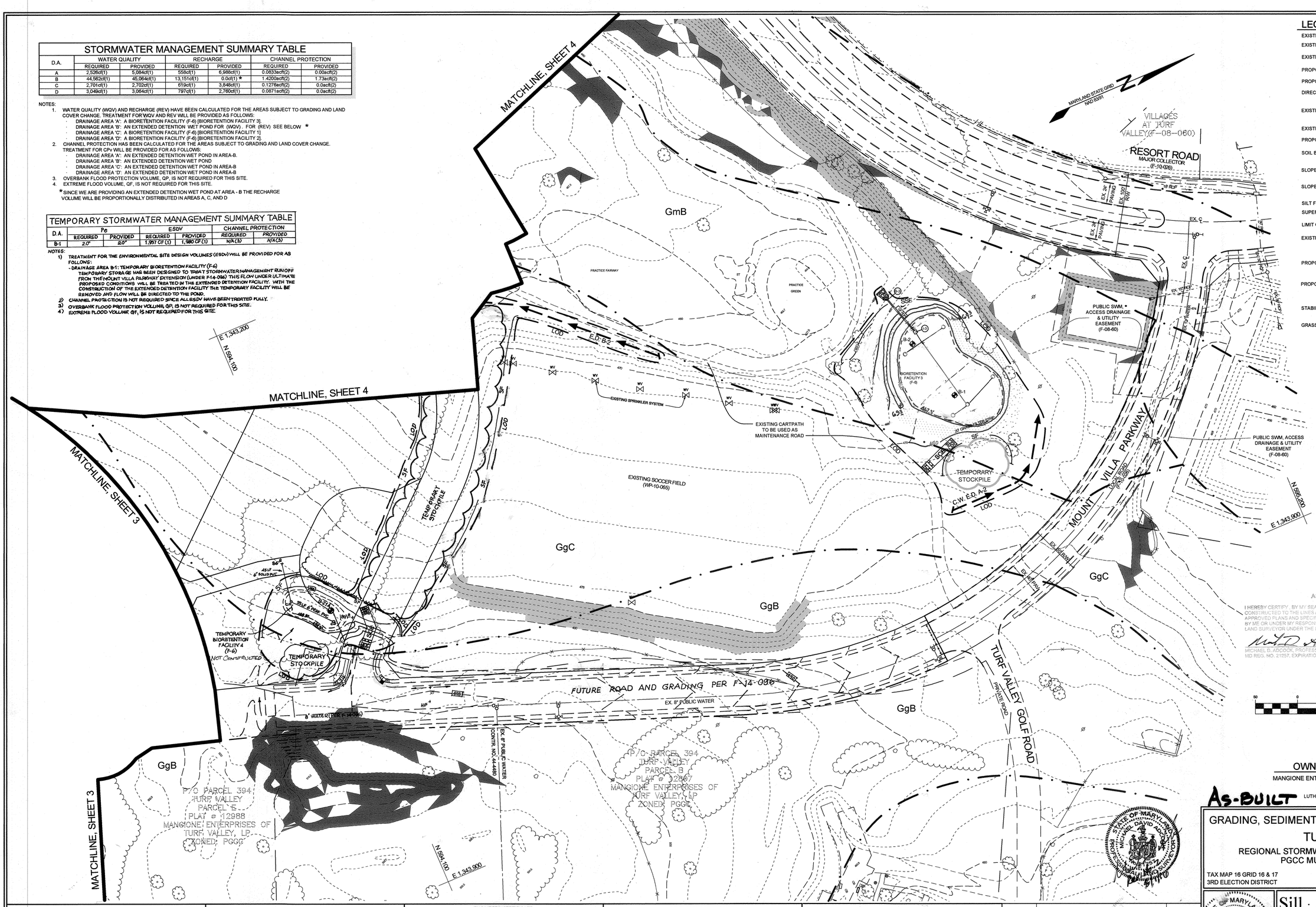
* SINCE WE ARE PROVIDING AN EXTENDED DETENTION WET POND AT AREA - B THE RECHARGE VOLUME WILL BE PROPORTIONALLY DISTRIBUTED IN AREAS A, C, AND D

TEMPORARY STORMWATER MANAGEMENT SUMMARY TABLE

D.A.	Pe		ESDV		CHANNEL PROTECTION	
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
B-1	2.0"	2.0"	1,957 CF (1)	1,980 CF (1)	N/A (3)	N/A (3)

NOTES:

1) TREATMENT FOR THE ENVIRONMENTAL SITE DESIGN VOLUMES (ESDV) WILL BE PROVIDED FOR AS FOLLOWS:
   - DRAINAGE AREA B-1: TEMPORARY BIORETENTION FACILITY (F-6)
   TEMPORARY STORAGE HAS BEEN DESIGNED TO TREAT STORMWATER MANAGEMENT RUNOFF FROM THE NOUNT VILLA PARKWAY EXTENSION (UNDER F-14-096) THIS FLOW UNDER ULTIMATE PROPOSED CONDITIONS WILL BE TREATED IN THE EXTENDED DETENTION FACILITY. WITH THE CONSTRUCTION OF THE EXTENDED DETENTION FACILITY THE TEMPORARY FACILITY WILL BE REMOVED AND FLOW WILL BE DIRECTED TO THE POND.
2) CHANNEL PROTECTION IS NOT REQUIRED SINCE ALL ESDV HAVE BEEN TREATED FULLY.
3) OVERBANK FLOOD PROTECTION VOLUME, Qp, IS NOT REQUIRED FOR THIS SITE.
4) EXTREME FLOOD VOLUME, Qf, IS NOT REQUIRED FOR THIS SITE.



LEGEND

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING WATER VALVE
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING TREES
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL BOUNDARY
- SLOPES 15.00% TO 24.99%
- SLOPES GREATER THAN 25.00%
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- LIMIT OF DISTURBANCE (LOD)
- EXISTING SOIL BORING (B-1)
- PROPOSED EARTH DIKE (E.D. B-2)
- PROPOSED CLEAN WATER EARTH DIKE (C.W. E.D. A-2)
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- GRASS FILTER STRIP

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE 6/1/22
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

GRAPHIC SCALE

50 0 25 50 100 200
(IN FEET)
1 INCH = 50 FEET

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

GRADING, SEDIMENT AND EROSION CONTROL PLAN
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17 — PART OF PARCELS 8 & 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13
DIRECTOR — DATE 5/2/13

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

HOWARD SCD — DATE 4/30/13

ENGINEERS CERTIFICATE

"I 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."

SIGNATURE OF ENGINEER — DATE 4/30/13
PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE

"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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 4/30/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013

NO.	DESCRIPTION	DATE
2	TO ADD ADDITIONAL STOCKPILE AREA	08/04/14
1	ADD TEMPORARY BIORETENTION FACILITY 4 FOR MOUNT VILLA ROAD CONSTRUCTION	03/13/14

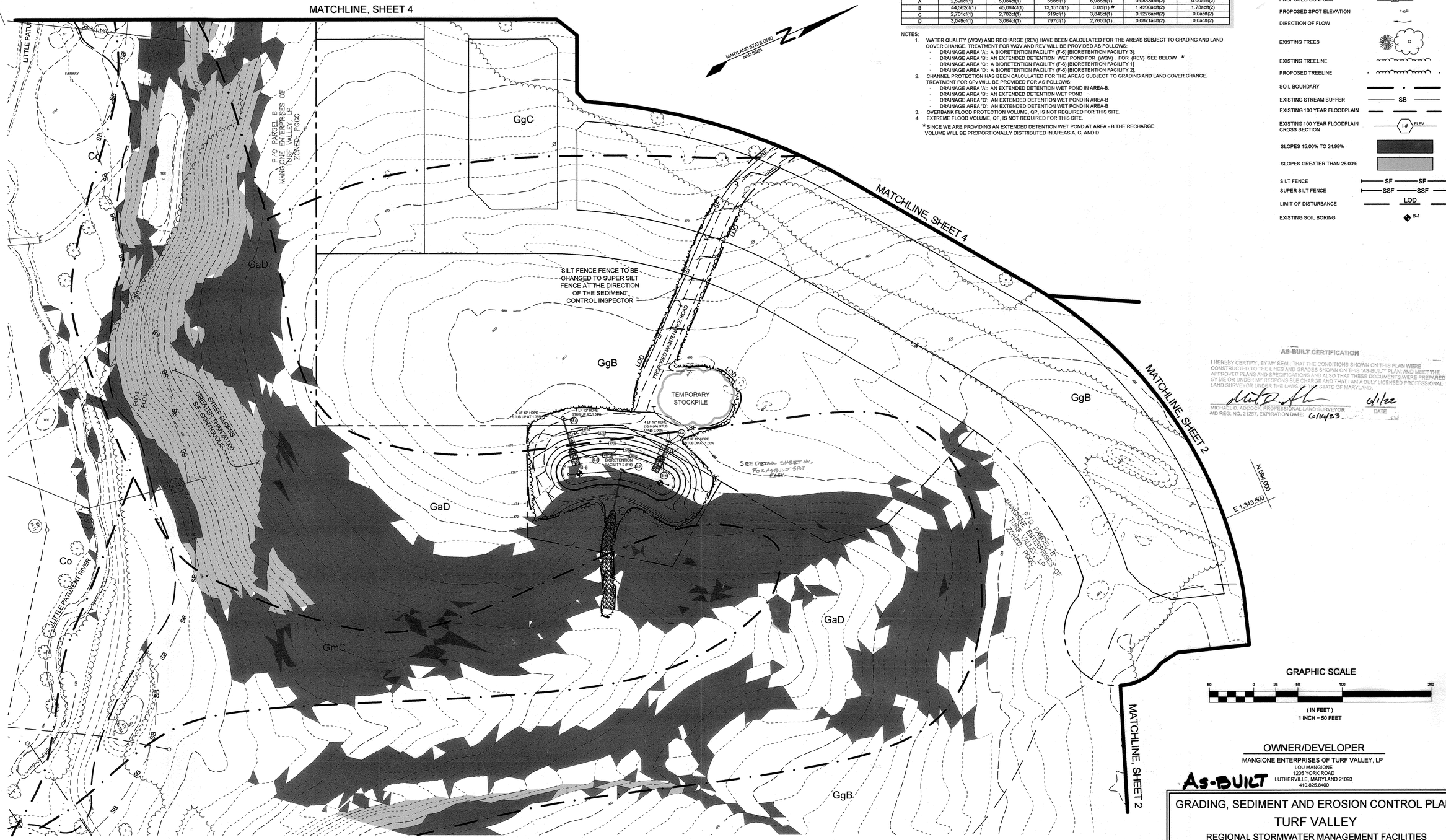
REVISIONS

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. 32025, EXPIRATION DATE: JUNE 20, 2013

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY:	DB
DRAWN BY:	BK
CHECKED BY:	PS
SCALE:	1"= 50'
DATE:	APRIL 30, 2013
PROJECT #:	06-025
SHEET #:	2 of 12

SDP-13-038



STORMWATER MANAGEMENT SUMMARY TABLE

D.A.	WATER QUALITY		RECHARGE		CHANNEL PROTECTION	
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
A	2,528cf(1)	5,084cf(1)	558cf(1)	6,988cf(1)	0.0833acft(2)	0.00acft(2)
B	44,562cf(1)	45,064cf(1)	13,151cf(1)	0.0cf(1) *	1.4200acft(2)	1.73acft(2)
C	2,701cf(1)	2,702cf(1)	619cf(1)	3,848cf(1)	0.1276acft(2)	0.0acft(2)
D	3,049cf(1)	3,064cf(1)	797cf(1)	2,760cf(1)	0.0871acft(2)	0.0acft(2)

NOTES:

1. WATER QUALITY (WQv) AND RECHARGE (REV) HAVE BEEN CALCULATED FOR THE AREAS SUBJECT TO GRADING AND LAND COVER CHANGE. TREATMENT FOR WQV AND REV WILL BE PROVIDED AS FOLLOWS:
   - DRAINAGE AREA 'A': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 3].
   - DRAINAGE AREA 'B': AN EXTENDED DETENTION WET POND FOR (WQV). FOR (REV) SEE BELOW *
   - DRAINAGE AREA 'C': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 1]
   - DRAINAGE AREA 'D': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 2].
2. CHANNEL PROTECTION HAS BEEN CALCULATED FOR THE AREAS SUBJECT TO GRADING AND LAND COVER CHANGE. TREATMENT FOR CPv WILL BE PROVIDED FOR AS FOLLOWS:
   - DRAINAGE AREA 'A': AN EXTENDED DETENTION WET POND IN AREA-B.
   - DRAINAGE AREA 'B': AN EXTENDED DETENTION WET POND
   - DRAINAGE AREA 'C': AN EXTENDED DETENTION WET POND IN AREA-B
   - DRAINAGE AREA 'D': AN EXTENDED DETENTION WET POND IN AREA-B
3. OVERBANK FLOOD PROTECTION VOLUME, QP, IS NOT REQUIRED FOR THIS SITE.
4. EXTREME FLOOD VOLUME, QF, IS NOT REQUIRED FOR THIS SITE.

* SINCE WE ARE PROVIDING AN EXTENDED DETENTION WET POND AT AREA - B THE RECHARGE VOLUME WILL BE PROPORTIONALLY DISTRIBUTED IN AREAS A, C, AND D

LEGEND

EXISTING CONTOUR
EXISTING SPOT ELEVATION
PROPOSED CONTOUR
PROPOSED SPOT ELEVATION
DIRECTION OF FLOW
EXISTING TREES
EXISTING TREELINE
PROPOSED TREELINE
SOIL BOUNDARY
EXISTING STREAM BUFFER (SB)
EXISTING 100 YEAR FLOODPLAIN
EXISTING 100 YEAR FLOODPLAIN CROSS SECTION (F-# / ELEV.)
SLOPES 15.00% TO 24.99%
SLOPES GREATER THAN 25.00%
SILT FENCE (SF)
SUPER SILT FENCE (SSF)
LIMIT OF DISTURBANCE (LOD)
EXISTING SOIL BORING (B-1)

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23
6/1/22
DATE

GRAPHIC SCALE

50 0 25 50 100 200
(IN FEET)
1 INCH = 50 FEET

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

GRADING, SEDIMENT AND EROSION CONTROL PLAN
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17
3RD ELECTION DISTRICT

PART OF PARCELS 8 & 394
HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13
DIRECTOR — DATE 5/2/13

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

HOWARD SCD — DATE 4/30/13

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SIGNATURE OF DEVELOPER — DATE 4/30/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013

NO.	DESCRIPTION	DATE
	REVISIONS	

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. 32025, EXPIRATION DATE: JUNE 20, 2013

STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: DB
DRAWN BY: BK
CHECKED BY: PS
SCALE: 1"= 50'
DATE: APRIL 30, 2013
PROJECT #: 06-025
SHEET #: 3 of 12

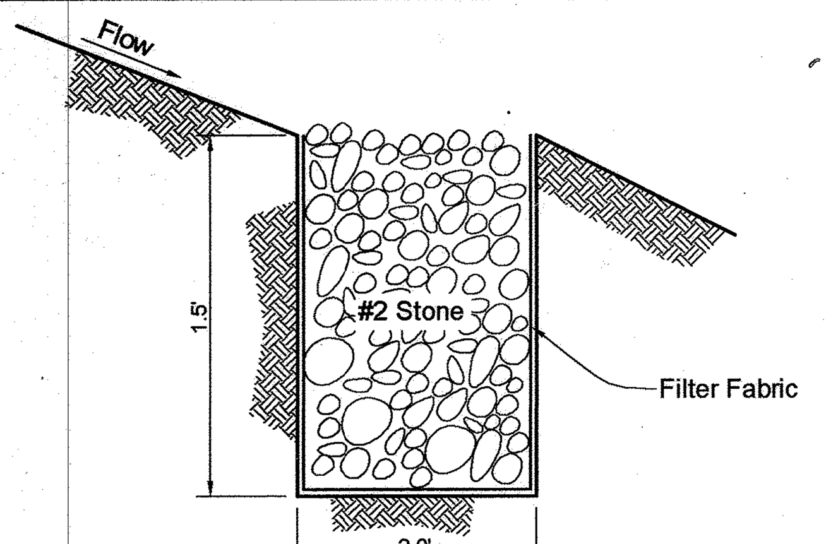
SDP-13-038

LEGEND

EXISTING CONTOUR	382	EXISTING 100 YEAR FLOODPLAIN	
EXISTING SPOT ELEVATION	382.3	EXISTING 100 YEAR FLOODPLAIN CROSS SECTION	I-# ELEV.
PROPOSED CONTOUR	466	EXISTING STREAM BUFFER	SB
PROPOSED SPOT ELEVATION	+ 82.53	SOIL BOUNDARY	
DIRECTION OF FLOW		SLOPES 15.00% TO 24.99%	■
EXISTING TREES		SLOPES GREATER THAN 25.00%	▨
EXISTING TREELINE		SILT FENCE	SF SF
PROPOSED TREELINE		SUPER SILT FENCE	SSF SSF
		LIMIT OF DISTURBANCE	LOD
		EXISTING SOIL BORING	B-1
		PROPOSED EARTH DIKE	E.D. B-2
		PROPOSED CLEAN WATER EARTH DIKE	C.W. E.D. A-2
		PROPOSED RIP-RAP INFLOW PROTECTION	RRP
		GRASS FILTER STRIP	
		LEVEL SPREADER	

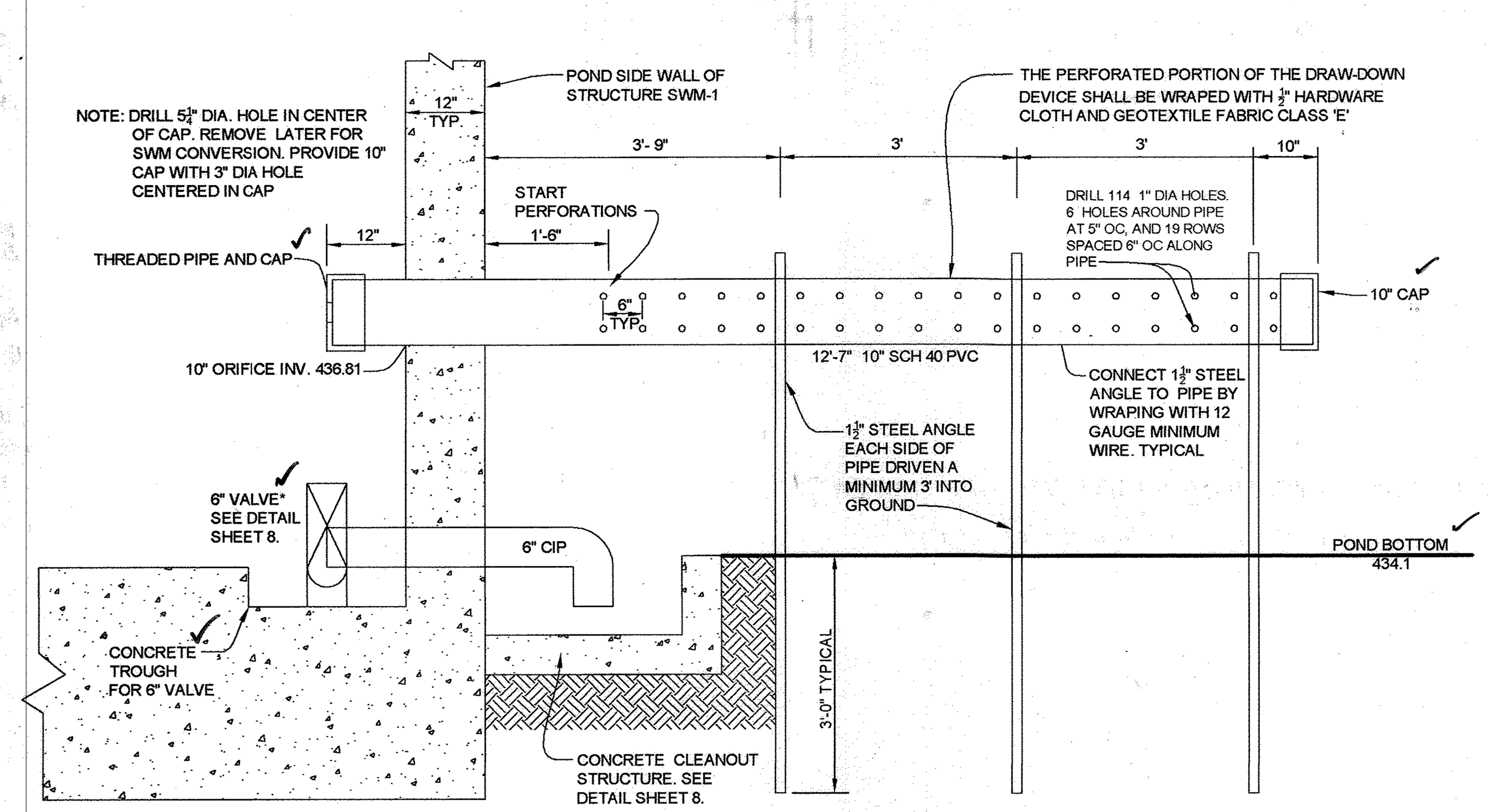
SEDIMENT BASIN

EXISTING DRAINAGE AREA: 20.5 AC±
PROPOSED DRAINAGE AREA: 20.5 AC±
WET STORAGE REQUIRED: 36,900 CF
WET STORAGE PROVIDED: 45,064 CF
DRY STORAGE REQUIRED: 36,900 CF
DRY STORAGE PROVIDED: 75,084 CF
WEIR LENGTH: 36.0' PRINCIPAL SPILLWAY
STORAGE DEPTH BELOW OUTLET: 6.07'
CLEANOUT ELEVATION: 435.15
TRAP BOTTOM: 434.10
TRAP DIMENSIONS: 315'X40'
WET STORAGE ELEVATION: 437.1
CREST ELEVATION: 440.17



TYPICAL LEVEL SPREADER

NOT TO SCALE



10" PERFORATED DEWATERING PIPE

NOT TO SCALE

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[illegible] 6/1/22
MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23 DATE

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STATE OF MARYLAND CHRISTOPHER ALAN MALAGARI No. 22300 PROFESSIONAL ENGINEER [illegible] 2/9/17 Revision # 2 only

STATE OF MARYLAND MICHAEL DAVID ADCOCK No. 21257 PROFESSIONAL LAND SURVEYOR [illegible] 8/1/16

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 INCH = 50 FEET

OWNER/DEVELOPER

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LOU MANGIONE
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AS-BUILT

GRADING, SEDIMENT AND EROSION CONTROL PLAN
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17 — PART OF PARCELS 8 & 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 5/2/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[illegible] 5/02/13
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[illegible] 5/2/13
DIRECTOR DATE

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

John R Robertson 4/30/13
HOWARD SCD DATE

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SIGNATURE OF ENGINEER DATE
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[illegible] 4/30/13
SIGNATURE OF DEVELOPER DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY

DATE 04/15/2013 [illegible]

NO.	DESCRIPTION	DATE
2	SHIP1 BIO#1 PER AS-BUILT COND. SHOW LARGE FILL AREA BELOW E.D. TO BASIN #1. REVISE SED. CONT. ACCORDINGLY	2/9/2017 BEI
1	TO ADD ADDITIONAL STOCKPILE AREA	08/01/16

REVISIONS

STATE OF MARYLAND PAUL M. SILL No. 32025 PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
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DESIGN BY: DB
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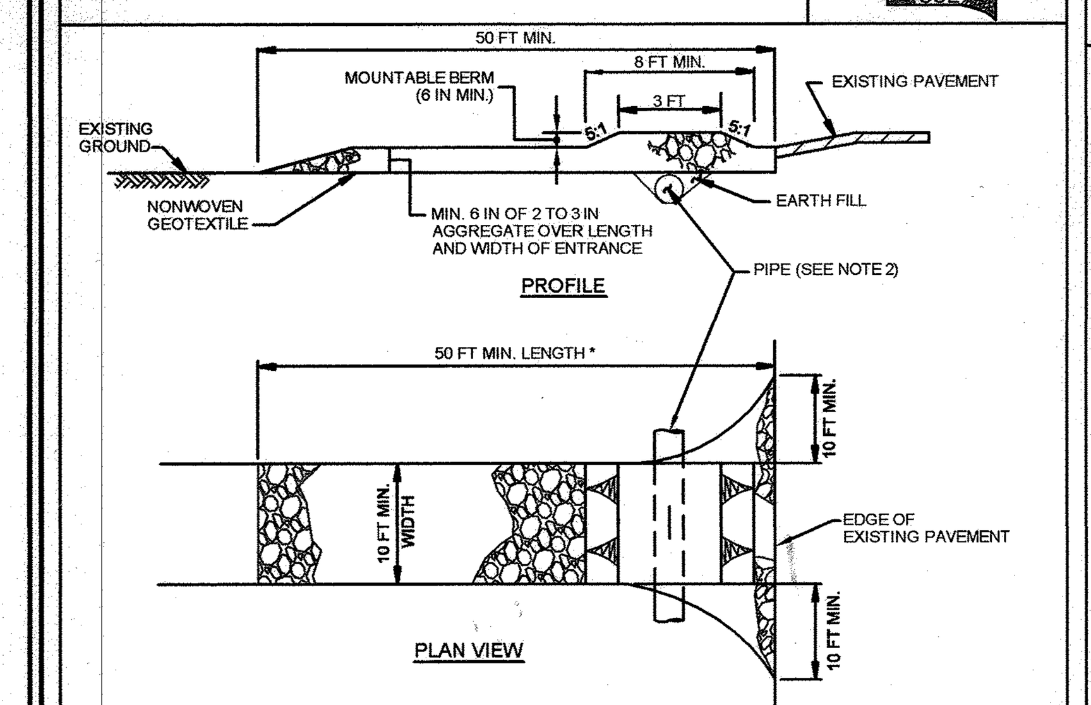
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



CONSTRUCTION SPECIFICATIONS

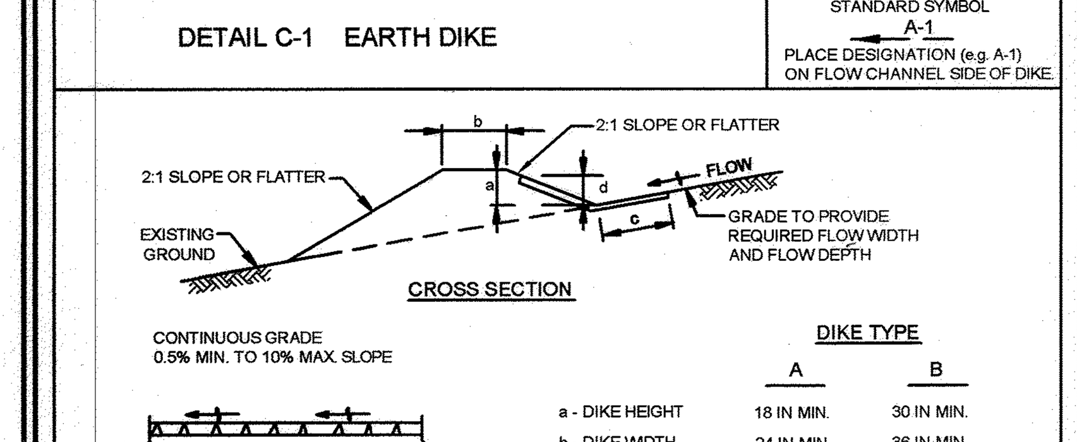
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1 — PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.



DIKE TYPE	A	B
a - DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b - DIKE WIDTH	24 IN MIN.	36 IN MIN.
c - FLOW WIDTH	4 FT MIN.	6 FT MIN.
d - FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A-1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.
   NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSE AND PERMITS AT (410) 313-1880 AT LEAST 24 HOURS BEFORE STARTING ANY WORK.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE. CLEAR AND GRUBB AS NECESSARY FOR THE INSTALLATION OF PERIMITER CONTROLS. (3 DAYS)
5. CONSTRUCT EARTH DIKES AND SILT FENCE WHERE SHOWN ON THE PLANS AND STABILIZE. DO NOT INSTALL CLEAN WATER DIKES AT BIO-RETENTION FACILITIES ~~1 AND~~ 3 AT THIS TIME. (4 DAYS)
6. EXCAVATE AND GRADE SEDIMENT BASIN AND FOREBAYS. INSTALL CORE, EMBANKMENT FILL, CONCRETE OUTFALL PIPE, PIPE CRADLE, ANTI-SEEP COLLAR. CONSTRUCT SWM OUTFALL STRUCTURE S-1, RIP RAP OUTFALL PROTECTION AND EROSION CONTROL MATTING. CONSTRUCT SWM STRUCTURE SWM-1, INCLUDING 6" POND DRAIN AND VALVE, CONCRETE CLEANOUT STRUCTURE, AND TEMPORARY 10" SEDIMENT CONTROL DEWATERING DEVICE. (10 WEEKS)
7. CONSTRUCT FOREBAY GABION INFLOW STRUCTURES.(2 WEEKS)
8. EXISTING SOIL APPROVED BY THE GEOTECTNICAL ENGINEER FOR USE AS BIORETENTION PLANTING SOIL TO BE STOCKPILED SEPARATELY FROM OTHER MATERIAL. IF THIS SOIL IS STOCKPILED FOR MORE THAN TWO WEEKS, SOIL TO BE TURNED OVER. (2 DAYS)
9. INSTALL CLEAN WATER DIVERSION DIKES AS SHOWN LOCATED AT BIORETENTION FACILITIES ~~1 AND~~ 3. (3 DAYS)
10. GRADE AND CONSTRUCT BIO-RETENTION FACILITIES 1, 2, AND 3 INCLUDING ALL PIPE SYSTEMS, INLET STRUCTURES, GRAVEL AND RIP RAP AS SHOWN ON THE PLANS. CONSTRUCT LEVEL SPREADERS AND FILTER STRIPS AND STABILIZE. (3 WEEKS)
11. INSTALL ALL PLANT MATERIALS FOR BIORETENTION PLANTINGS. (3 WEEKS).
13. SEDIMENT BASIN NO. 1 TO REMAIN THROUGHOUT THE DEVELOPMENT OF THE TURF VALLEY CLUBHOUSE, PHASE I (S-08-001) AND PHASE II (S-11-003).
14. UPON COMPLETION OF THE TURF VALLEY CLUBHOUSE, PHASE I (S-08-001) AND PHASE II (S-11-003). CONVERT BASIN TO THE STORMWATER MANAGEMENT FACILITY #1.
15. UPON STABILIZATION OF ALL DISTURBED AREAS, INCLUDING MULCHING, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES, EXCEPT EARTH DIKES AND RIP RAP PROTECTION FOR INFLOW CONTROL, INTO THE SEDIMENT BASIN AND STABILIZE ANY REMAINING DISTURBED AREAS. (1 WEEK)

3. INSTALL SEDIMENT CONTROLS NECESSARY FOR CONSTRUCTION OF TEMPORARY BIORETENTION FACILITY 4. (1 DAY)
4. CONSTRUCT TEMPORARY BIORETENTION FACILITY 4. (2 WEEKS)

12. PROCEED TO GRADE THE FILL DIRT BELOW THE EARTH DIKE THAT DISCHARGES TO SEDIMENT BASIN #1. ENSURE SUPER SILT FENCE IS PLACED ALONG UPHILL SIDE OF LEVEL SPREADER OF BIO #1. MAINTAIN EARTH DIKE AT ALL TIMES.

STANDARD STABILIZATION NOTE

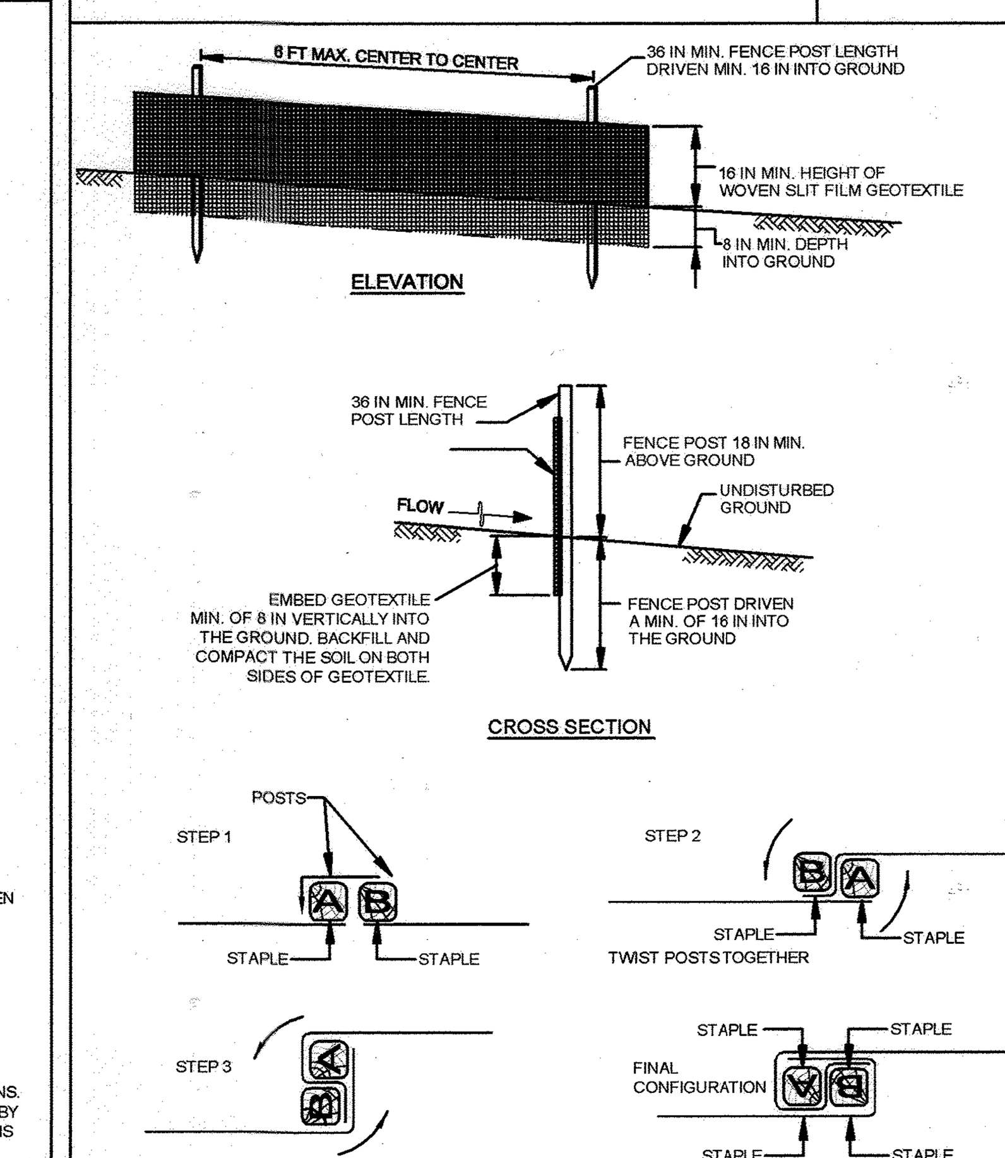
FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

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.

DURING GRADING AND AFTER EACH RAINFALL, CONTRACTOR WILL INSPECT AND PROVIDE NECESSARY MAINTENANCE TO THE SEDIMENT CONTROL MEASURES ON THIS PLAN.

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



CONSTRUCTION SPECIFICATIONS

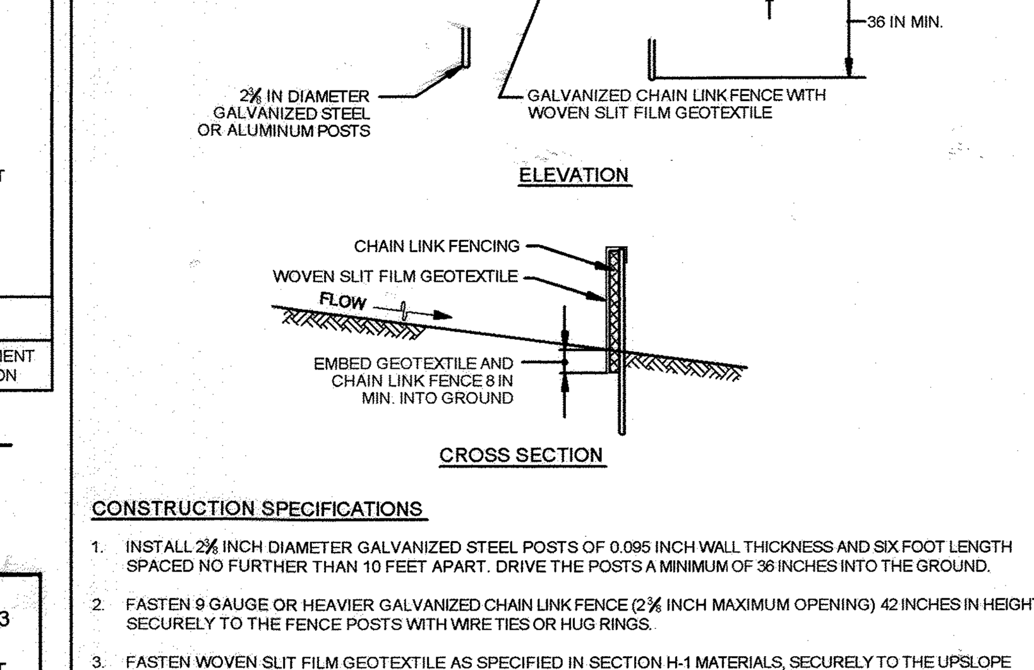
1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



CONSTRUCTION SPECIFICATIONS

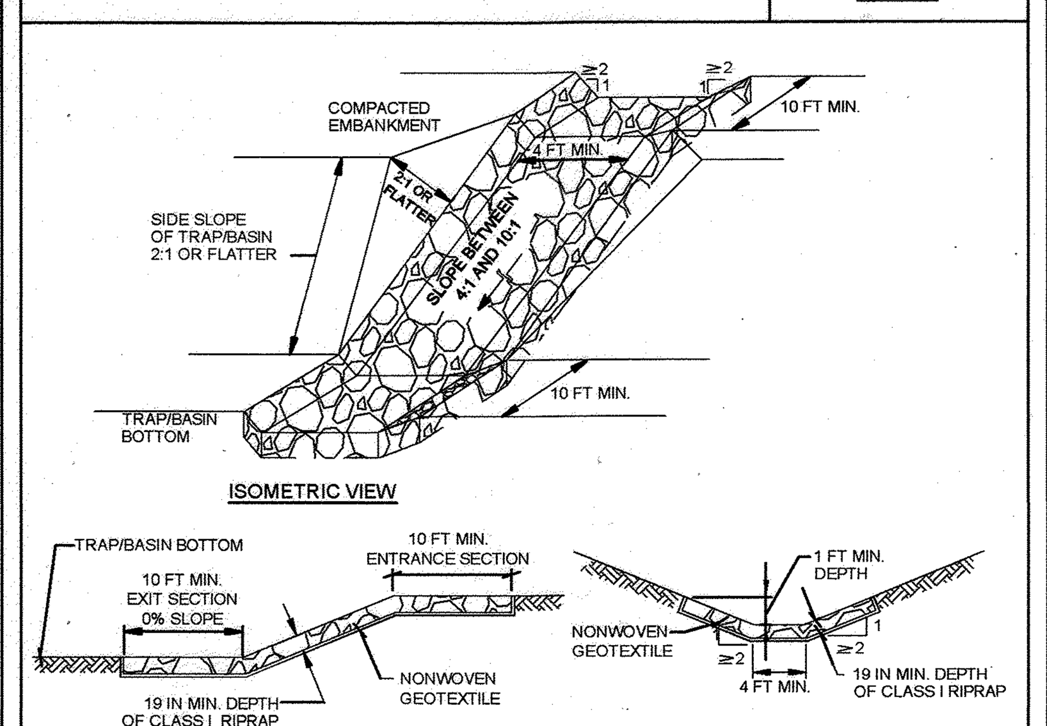
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL: RRP



CONSTRUCTION SPECIFICATIONS

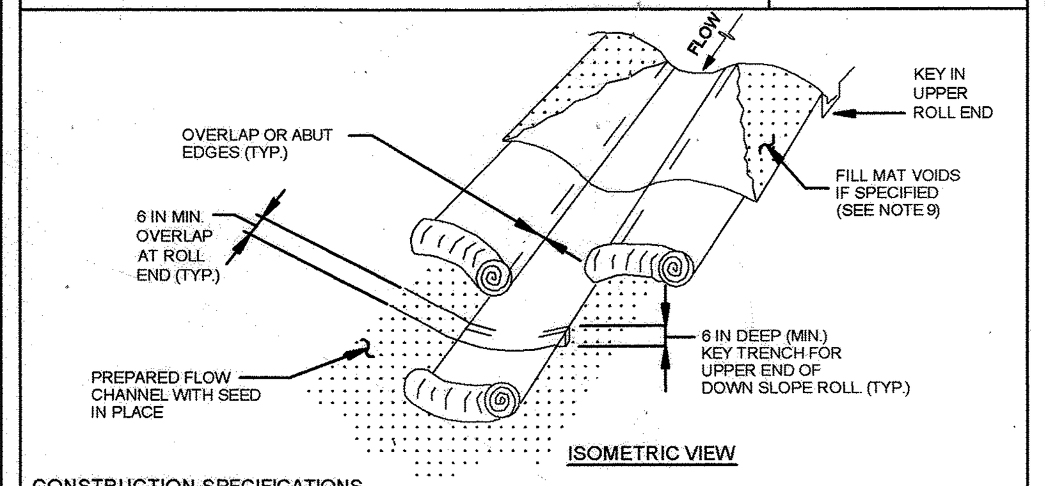
1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL RIPRAP.
2. CONSTRUCT INFLOW CHANNEL WITH CLASS I RIPRAP OR EQUIVALENT RECYCLED CONCRETE LINING TO A MINIMUM DEPTH OF 19 INCHES (2 x D_{50}) AND A 1 FOOT DEEP FLOW CHANNEL. INFLOW RIPRAP PROTECTION CHANNEL MUST HAVE A TRAPEZOIDAL CROSS SECTION WITH 2:1 OR FLATTER SIDE SLOPES AND A 4 FOOT MINIMUM BOTTOM WIDTH.
3. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PROFILE.
4. BLEND RIPRAP INTO EXISTING GROUND.
5. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. KEEP POINTS OF INFLOW AND OUTFLOW FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC - * lb/ft² (* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

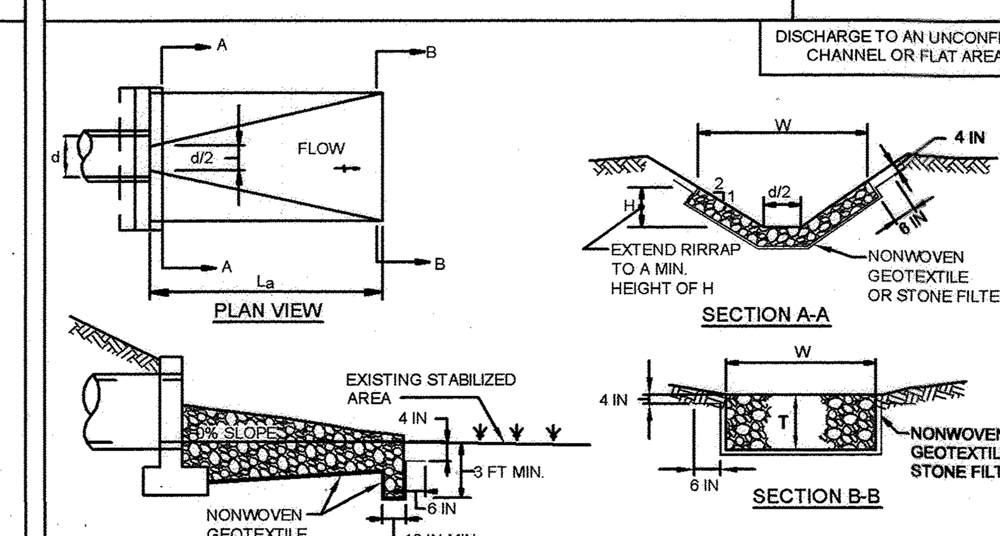
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL: ROPIII



RIPRAP	
CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	46 IN

CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (¾ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLODGED RIPRAP . MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1855).
2. ALL VEGETATION AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL ; AND REVISIONS THERETO.
3. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
4. 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.
5. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
6. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
7. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
8. 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.
9. SITE ANALYSIS :

TOTAL AREA:	37.50 ACRES
AREA DISTURBED:	11.11 ACRES
AREA TO BE ROOFED OR PAVED:	0.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED:	8.84 ACRES
TOTAL CUT:	* 12,882 CY
TOTAL FILL:	* 53,647 CY
OFFSITE WASTE/BORROW AREA LOCATION:	**

□ STORMWATER MANAGEMENT FACILITIES SURFACE AREA REMOVED FROM THIS NUMBER.
* EARTHWORK QUANTITIES ARE SOLELY FOR THE PURPOSE OF CALCULATING FEES. CONTRACTOR TO VERIFY ALL QUANTITIES PRIOR TO THE START OF CONSTRUCTION.
** TO BE DETERMINED BY CONTRACTOR, WITH PRE-APPROVAL OF THE SEDIMENT CONTROL INSPECTOR WITH AN APPROVED AND ACTIVE GRADING PERMIT.

TABLE B.5: RECOMMENDED PLANTING DATES FOR PERMANENT COVER IN MARYLAND

TYPE OF PLANT MATERIAL	PLANT HARDINESS ZONES		
	5b & 6a	6b	7a & 7b
SEEDS- COOL-SEASON GRASSES *(INCLUDES MIXES WITH FORBS AND/OR LEGUMES)*	MAR 15 TO MAY 31 AUG 1 TO SEP 30	MAR 1 TO MAY 15 AUG 1 TO OCT 15	FEB 15 TO APR 30 AUG 15 TO OCT 31 NOV 1 TO NOV 30♦
SEEDS- WARM-SEASON/ COOL-SEASON GRASS MIXES *(INCLUDES MIXES WITH FORBS AND/OR LEGUMES)*	MAR 15 TO MAY 31♦♦ JUN 1 TO JUN 15*	MAR 1 TO MAY 15♦♦ MAY 16 TO JUN 15*	FEB 15 TO APR 30♦♦ MAY 1 TO MAY 31*
SOD - COOL-SEASON	MAR 15 TO MAY 31 JUN 1 TO AUG 31* SEP 1 TO NOV 1*□	MAR 1 TO MAY 15 MAY 16 TO SEP 14* SEP 15 TO NOV 15*□	FEB 15 TO APR 30 MAY 1 TO SEP 30* OCT 1 TO DEC 1*□
UNROOTED WOODY MATERIALS; BARE-ROOT PLANTS; BULBS, RHIZOMES, CORMS AND TUBERS [2]	MARCH 15 TO MAY 31 JUN 1 TO JUN 30*	MARCH 1 TO MAY 15 MAY 16 TO JUN 30*	FEB 15 TO APR 30 MAY 1 TO JUN 30*
CONTAINERIZED STOCK; BALLED-AND-BURLAPPED STOCK	MAR 15 TO MAY 31 JUN 1 TO JUN 30* SEP 1 TO NOV 15*□	MAR 1 TO MAY 15 MAY 16 TO JUN 30* SEP 15 TO NOV 30*□	FEB 15 TO APR 30 MAY 1 TO JUN 30* OCT 1 TO DEC 15*□

NOTES:

1. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE. THESE DATES MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONES. WHEN SEEDING TOWARD THE END OF THE LISTED PLANTING DATES, OR WHEN CONDITIONS ARE EXPECTED TO BE LESS THAN OPTIMAL, SELECT AN APPROPRIATE NURSE CROP FROM TABLE B.1 TEMPORARY SEEDING FOR SITE STABILIZATION AND PLANT TOGETHER WITH THE PERMANENT SEEDING MIX.
2. WHEN PLANTED DURING THE GROWING SEASON, MOST OF THESE MATERIALS MUST BE PURCHASED AND KEPT IN A DORMANT CONDITION UNTIL PLANTING. BARE-ROOT GRASSES ARE THE EXCEPTION—THEY MAY BE SUPPLIED AS GROWING (NON-DORMANT) PLANTS.

♦ ADDITIONAL PLANTING DATES FOR THE LOWER COASTAL PLAIN, DEPENDENT ON ANNUAL RAINFALL AND TEMPERATURE TRENDS. RECOMMEND ADDING A NURSE CROP, AS NOTED ABOVE, IF PLANTING DURING THIS PERIOD.
♦♦ WARM-SEASON GRASSES NEED A SOIL TEMPERATURE OF AT LEAST 50 DEGREES F IN ORDER TO GERMINATE. IF SOIL TEMPERATURES ARE COLDER THAN 50 DEGREES, OR MOISTURE IS NOT ADEQUATE, THE SEEDS WILL REMAIN DORMANT UNTIL CONDITIONS ARE FAVORABLE. IN GENERAL, PLANTING DURING THE LATTER PORTION OF THIS PERIOD ALLOWS MORE TIME FOR WEED EMERGENCE AND WEED CONTROL PRIOR TO PLANTING. WHEN SELECTING A PLANTING DATE, CONSIDER THE NEED FOR WEED CONTROL VS. THE LIKELIHOOD OF HAVING SUFFICIENT MOISTURE FOR LATER PLANTINGS, ESPECIALLY ON DROUGHTY SITES.
* ADDITIONAL PLANTING DATES DURING WHICH SUPPLEMENTAL WATERING MAY BE NEEDED TO ENSURE PLANT ESTABLISHMENT.
□ FREQUENT FREEZING AND THAWING OF WET SOILS MAY RESULT IN FROST-HEAVING OF MATERIALS PLANTED IN LATE FALL, IF PLANTS HAVE NOT SUFFICIENTLY ROOTED IN PLACE. SOD USUALLY NEEDS 4 TO 6 WEEKS TO BECOME SUFFICIENTLY ROOTED. LARGE CONTAINERIZED AND BALLED-AND-BURLAPPED STOCK MAY BE PLANTED INTO THE WINTER MONTHS AS LONG AS THE GROUND IS NOT FROZEN AND SOIL MOISTURE IS ADEQUATE.

TABLE B.1: TEMPORARY SEEDING FOR SITE STABILIZATION

PLANT SPECIES	SEEDING RATE		SEEDING DEPTH	RECOMMENDED SEEDING DATES BY PLANT HARDINESS ZONE		
	LB/AC	LB/1000 FT²	(INCHES)	5b & 6a	6b	7a & 7b
COOL-SEASON GRASSES						
ANNUAL RYEGRASS *(LOLIUM PERENNE SSP. MULTIFLORUM)*	40	1.0	0.5	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
BARLEY *(HORDEUM VULGARE)*	96	2.2	1.0	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
OATS *(AVENA SATIVA)*	72	1.7	1.0	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
WHEAT *(TRITICUM AESTIVUM)*	120	2.8	1.0	MARCH 15 TO MAY 31; AUG 1 TO SEP 30	MARCH 1 TO MAY 15; AUG 1 TO OCT 15	FEB 15 TO APR 30; AUG 15 TO NOV 30
CEREAL RYE *(SECALE CEREALE)*	112	2.8	1.0	MARCH 15 TO MAY 31; AUG 1 TO OCT 31	MARCH 1 TO MAY 15; AUG 1 TO NOV 15	FEB 15 TO APR 30; AUG 15 TO DEC 15
WARM-SEASON GRASSES						
FOXTAIL MILLET *(SETARIA ITALICA)*	30	0.7	0.5	JUN 1 TO JUL 31	MAY 16 TO JUL 31	MAY 1 TO AUG 14
PEARL MILLET *(PENNISETUM GLAUCUM)*	20	0.5	0.5	JUN 1 TO JUL 31	MAY 16 TO JUL 31	MAY 1 TO AUG 14

FERTILIZER RATE (10-20-20): 436 LB/AC (10LB/1000SF) LIME RATE: 2 TONS/AC (90LB/1000SF)

NOTES:

1. SEEDING RATES FOR THE WARM-SEASON GRASSES ARE IN POUNDS OF PURE LIVE SEED (PLS). ACTUAL PLANTING RATES SHALL BE ADJUSTED TO REFLECT PERCENT SEED GERMINATION AND PURITY, AS TESTED. ADJUSTMENTS ARE USUALLY NOT NEEDED FOR THE COOL-SEASON GRASSES. SEEDING RATES LISTED ABOVE ARE FOR TEMPORARY SEEDINGS, WHEN PLANTED ALONE. WHEN PLANTED AS A NURSE CROP WITH PERMANENT SEED MIXES, USE 1/3 OF THE SEEDING RATE LISTED ABOVE FOR BARLEY, OATS, AND WHEAT. FOR SMALLER-SEEDED GRASSES (ANNUAL RYEGRASS, PEARL MILLET, FOXTAIL MILLET), DO NOT EXCEED MORE THAN 5% (BY WEIGHT) OF THE OVERALL PERMANENT SEEDING MIX. CEREAL RYE GENERALLY SHOULD NOT BE USED AS A NURSE CROP, UNLESS PLANTING WILL OCCUR IN VERY LATE FALL BEYOND THE SEEDING DATES FOR OTHER TEMPORARY SEEDINGS. CEREAL RYE HAS ALLELOPATHIC PROPERTIES THAT INHIBIT THE GERMINATION AND GROWTH OF OTHER PLANTS. IF IT MUST BE USED AS A NURSE CROP, SEED AT 1/3 OF THE RATE LISTED ABOVE. OATS ARE THE RECOMMENDED NURSE CROP FOR WARM-SEASON GRASSES.
2. FOR SANDY SOILS, PLANT SEEDS AT TWICE THE DEPTH LISTED ABOVE.
3. THE PLANTING DATES LISTED ARE AVERAGES FOR EACH ZONE AND MAY REQUIRE ADJUSTMENT TO REFLECT LOCAL CONDITIONS, ESPECIALLY NEAR THE BOUNDARIES OF THE ZONE.

STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS.

PURPOSE
- TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES:
- EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS. FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED.

CRITERIA
1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3), AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON.

STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

PURPOSE
- TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS.

CONDITIONS WHERE PRACTICE APPLIES
- EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA
A. SEED MIXTURES
1. GENERAL USE
   A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
   B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING.
   C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY.
   D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3 ½ POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY .
2. TURFGRASS MIXTURES
   A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
   B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
      I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE B.22 RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES; CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
      IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.
      NOTES: SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE
   C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES:
      WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 1 (HARDINESS ZONES: 5B, 6A)
      CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B)
      SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
   D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 1½ INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
   E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (½ TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).
1. GENERAL SPECIFICATIONS
   A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED. SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR.
   B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF ¾ INCH, PLUS OR MINUS ¼ INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS MUST EXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
   C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
   D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
   E. SOD MUST BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.
2. SOD INSTALLATION
   A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
   B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
   C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE.
   D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT HOURS.
3. SOD MAINTENANCE
   A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING.
   B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT.
   C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN ⅓ OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION
- THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

PURPOSE
- TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES
- WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA
A. SOIL PREPARATION
1. TEMPORARY STABILIZATION
   a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
   b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
   c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
   a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      I. SOIL PH BETWEEN 6.0 AND 7.0.
      II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
      III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
   b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
   c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
   d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
   e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING
1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
   a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
   b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
   c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
   d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
   a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS,GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.
   b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
   c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
   a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
   b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
   c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

AS-BUILT CERTIFICATION

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE: 6/1/22
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

STATE OF MARYLAND — MICHAEL DAVID ADCOCK — PROFESSIONAL LAND SURVEYOR — No. 21257 — 8/1/16

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13
DIRECTOR — DATE 5/2/13

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

HOWARD SCD — DATE 4/30/13

ENGINEERS CERTIFICATE

"I 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."

SIGNATURE OF ENGINEER — DATE 4/30/13
PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE

"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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 4/30/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — PROFESSIONAL ENGINEER — 2/9/17 — Revision Only

NO.	DESCRIPTION	DATE
3	REVISED DISTURBED AREA, VEGETATIVE AREA AND FILL NUMBER IN SED. CON. NOTES	2-9-2017 BEI
2	TO ADD ADDITIONAL STOCKPILE AREA	08/01/16
1	REVISE SEQUENCE OF CONSTRUCTION	4/22/14

REVISIONS

SEDIMENT & EROSION CONTROL NOTES & DETAILS

TURF VALLEY

REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

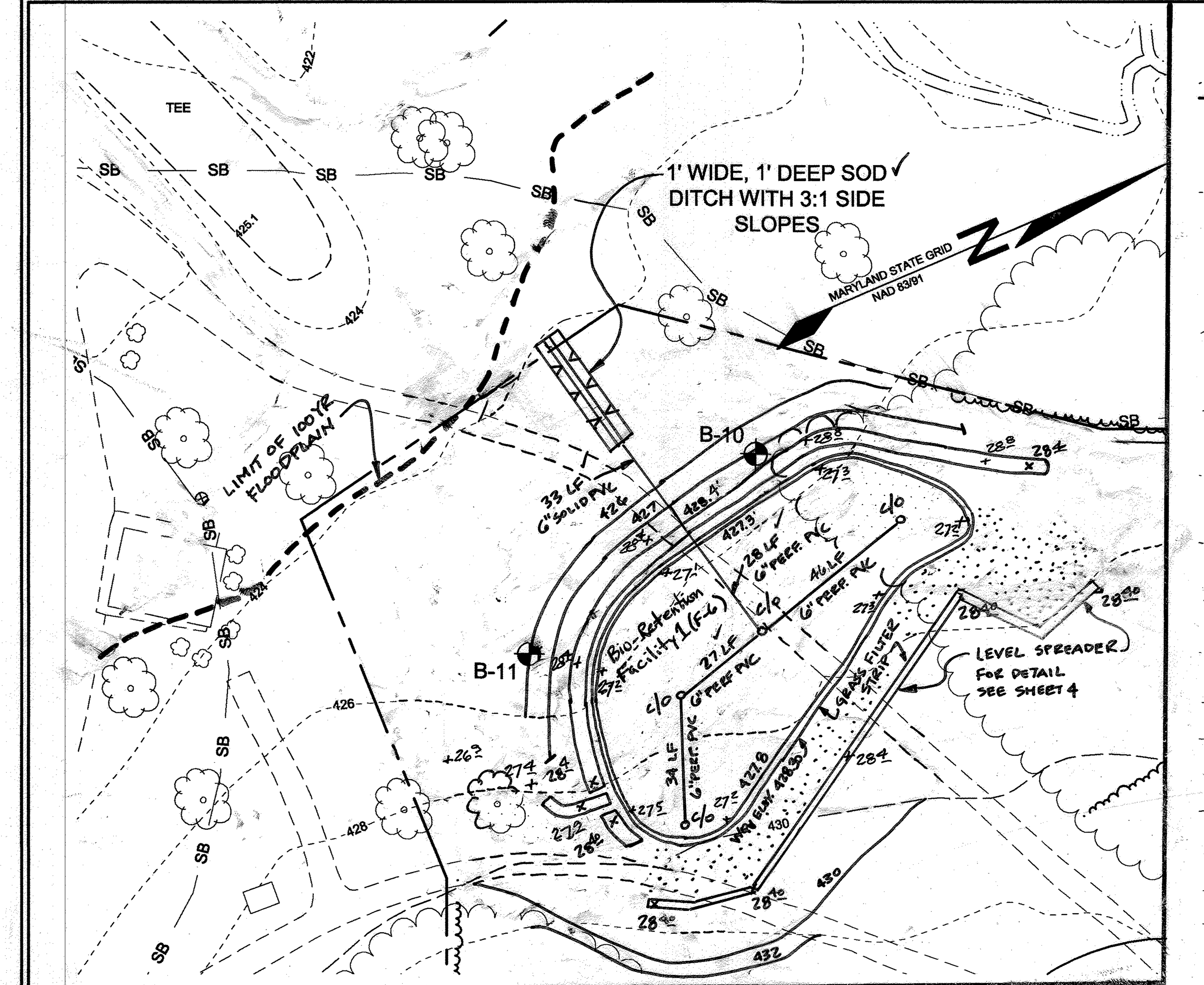
TAX MAP 16 GRID 16 & 17 — PART OF PARCELS 8 & 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

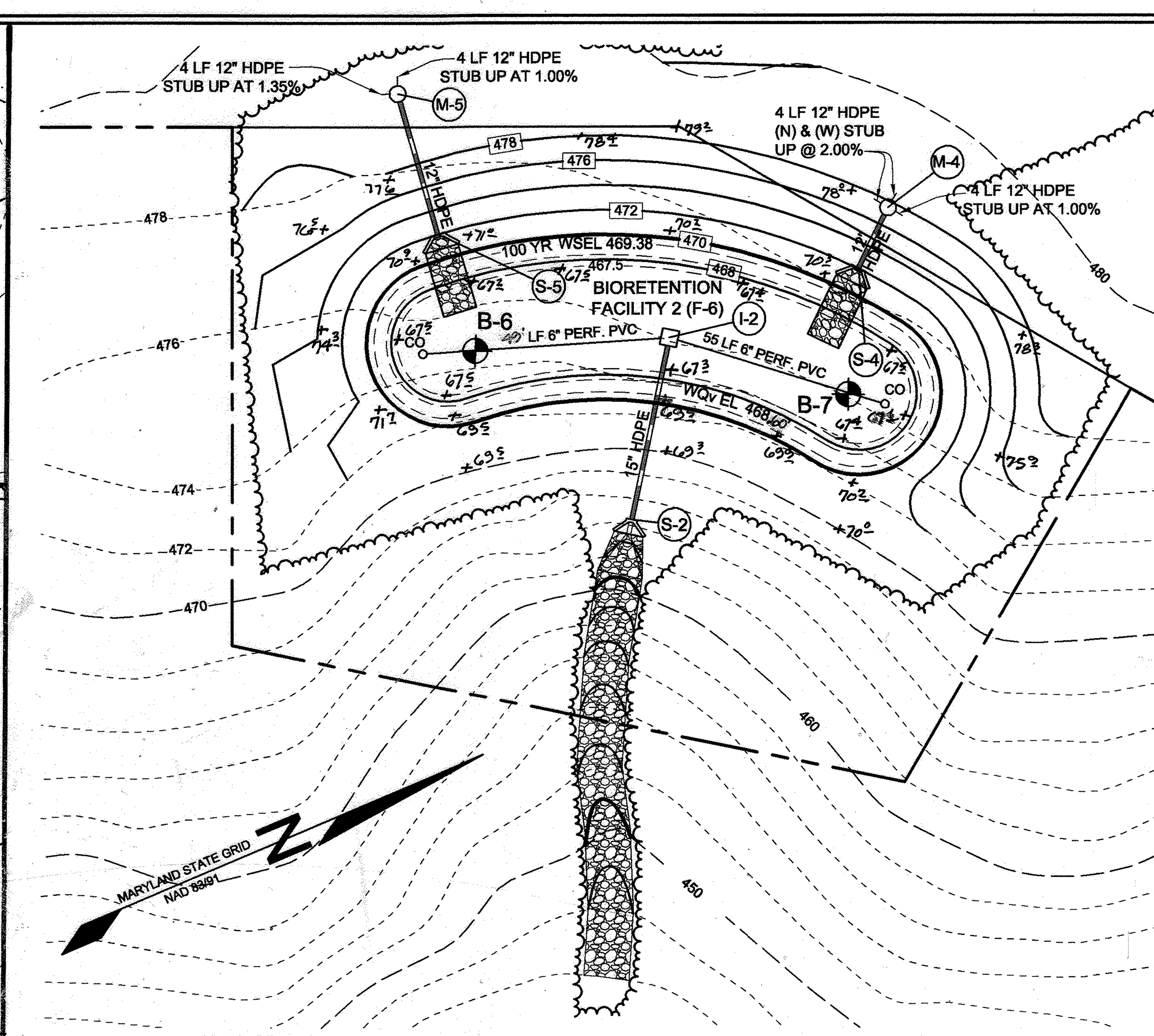
DESIGN BY:	DB
DRAWN BY:	BK
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	APRIL 30, 2013
PROJECT #:	06-025
SHEET #:	5 of 12

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. 32025, EXPIRATION DATE: JUNE 20, 2013



PLAN VIEW

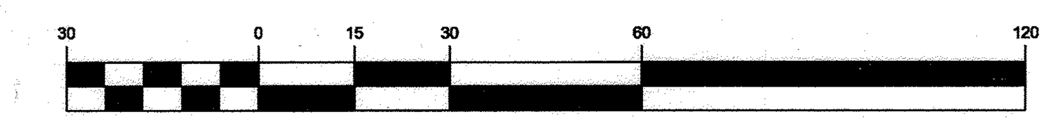
SCALE: 1"=30'



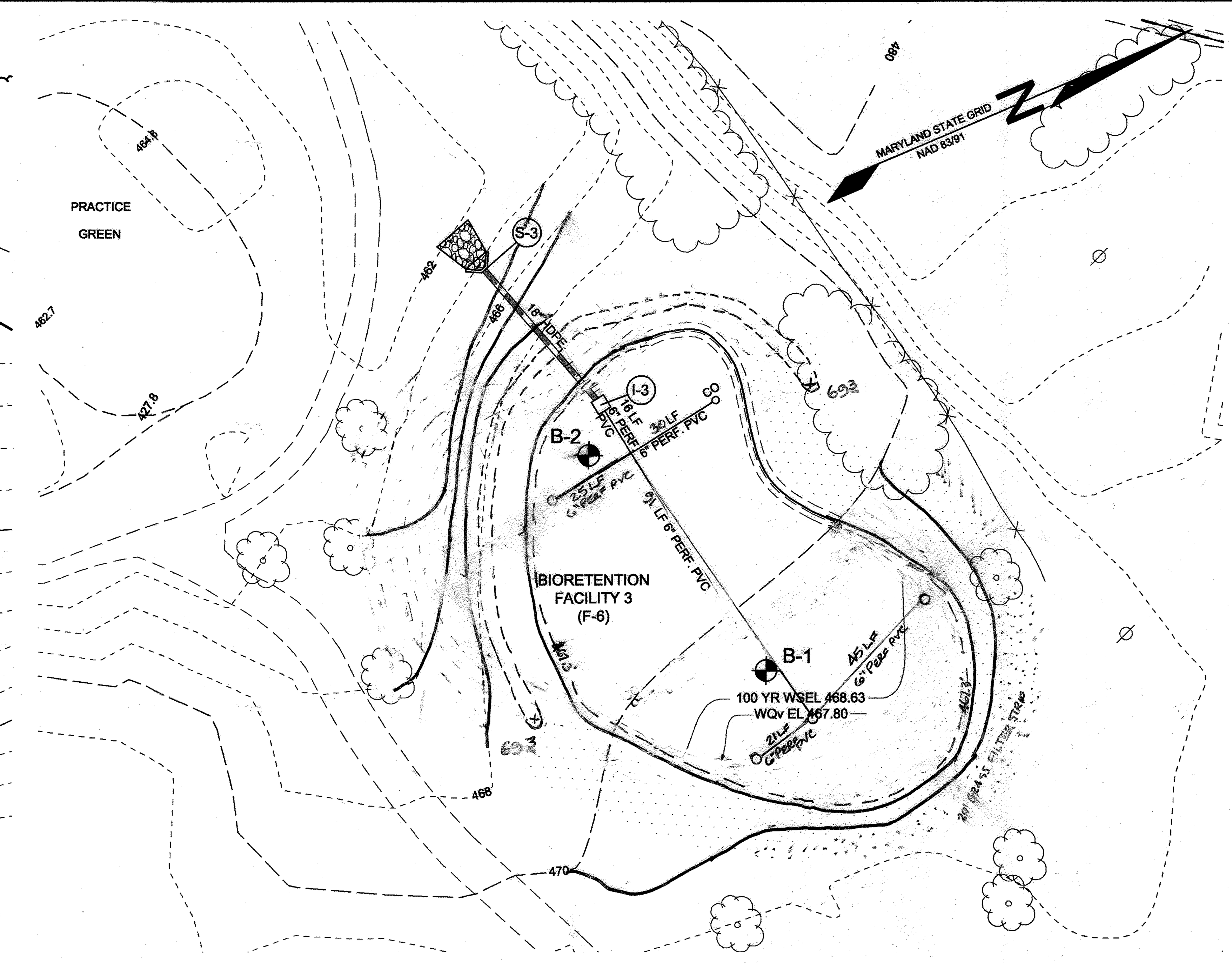
PLAN VIEW

SCALE: 1"=30'

GRAPHIC SCALE



(IN FEET)
1 INCH = 30 FEET



PLAN VIEW

SCALE: 1"=30'

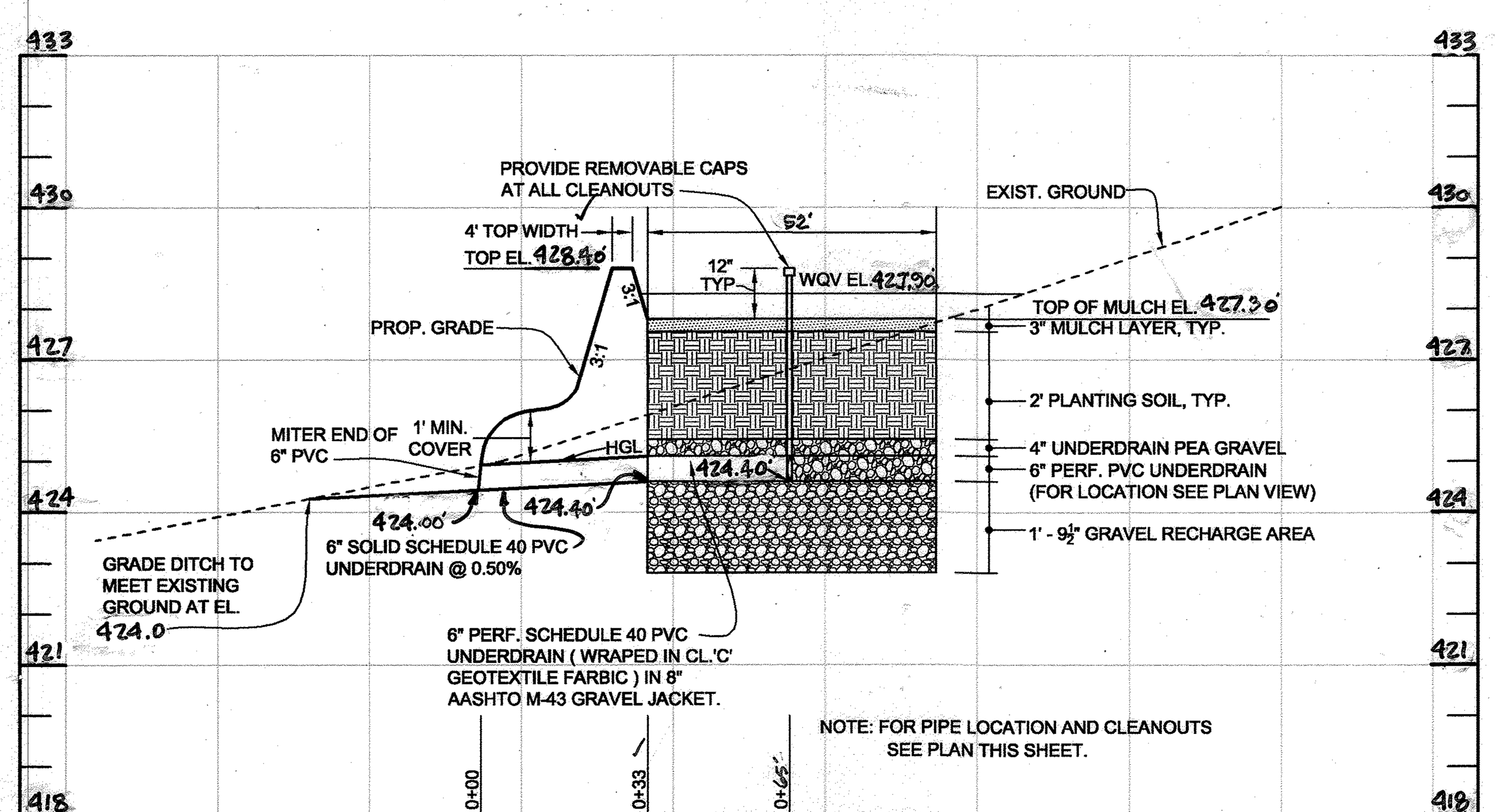
LEGEND

EXISTING CONTOUR	- - - - - 382
PROPOSED CONTOUR	—[382]—
EXISTING SPOT ELEVATION	382.3
PROPOSED SPOT ELEVATION	+ 82.53
DIRECTION OF FLOW	←
EXISTING TREELINE	
PROPOSED TREELINE	
EXISTING TREES	
SOIL BOUNDARY	
EXISTING FLOODPLAIN	— — —
EXISTING STREAM BUFFER	—— SB ——
EXISTING SOIL BORING	B-1
GRASS FILTER STRIP	▨
LEVEL SPREADER	

NOTE:
BIO FACILITY 3 DESIGN AREA = 5,084 C.F.
AS-BUILT AREA = 5,152 C.F.

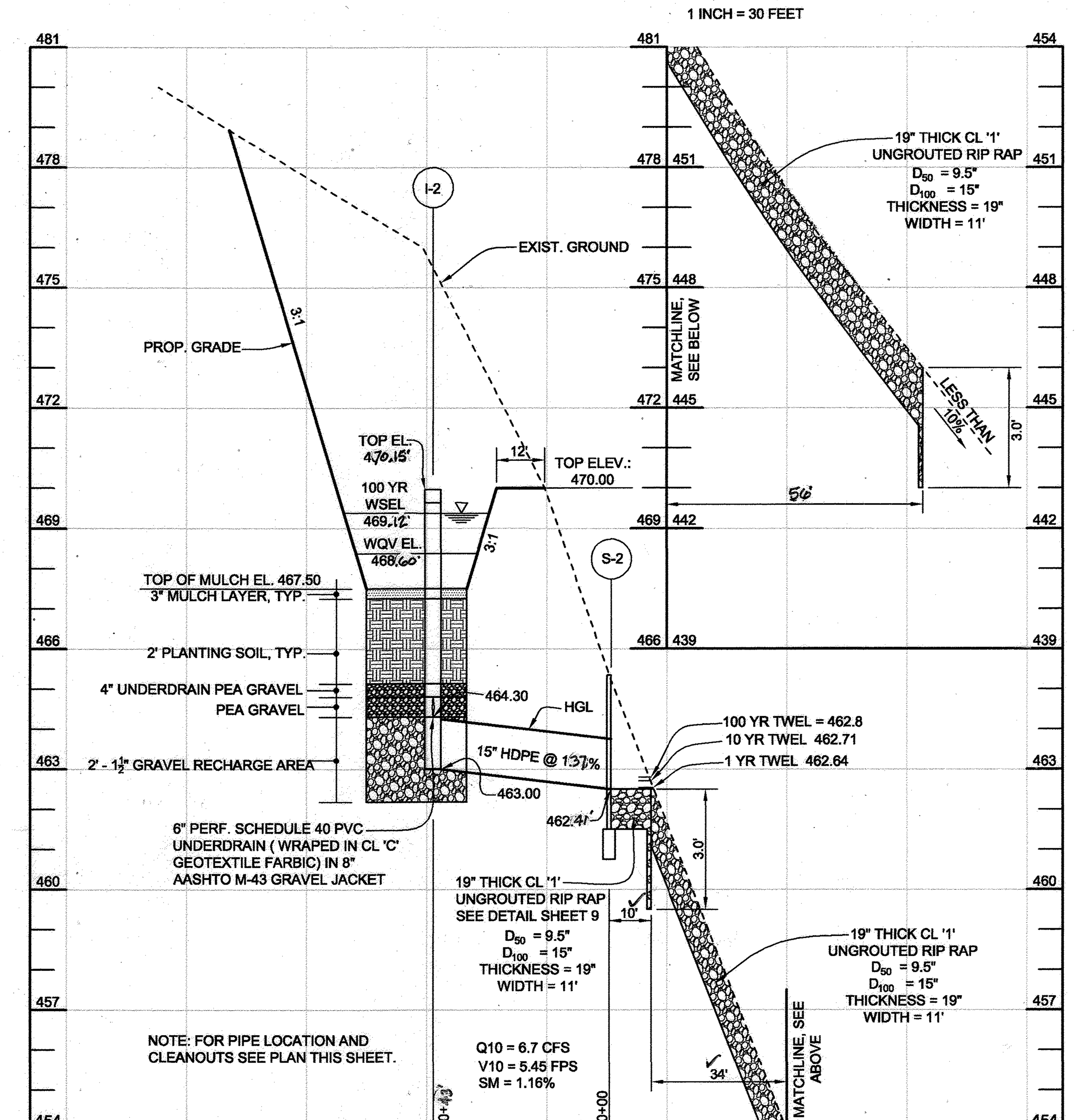
NOTE: FOR BIORETENTION PLANTING LOCATIONS SEE SHEET 11.

NOTE: FOR SWM BORING LOGS SEE SHEET 10.



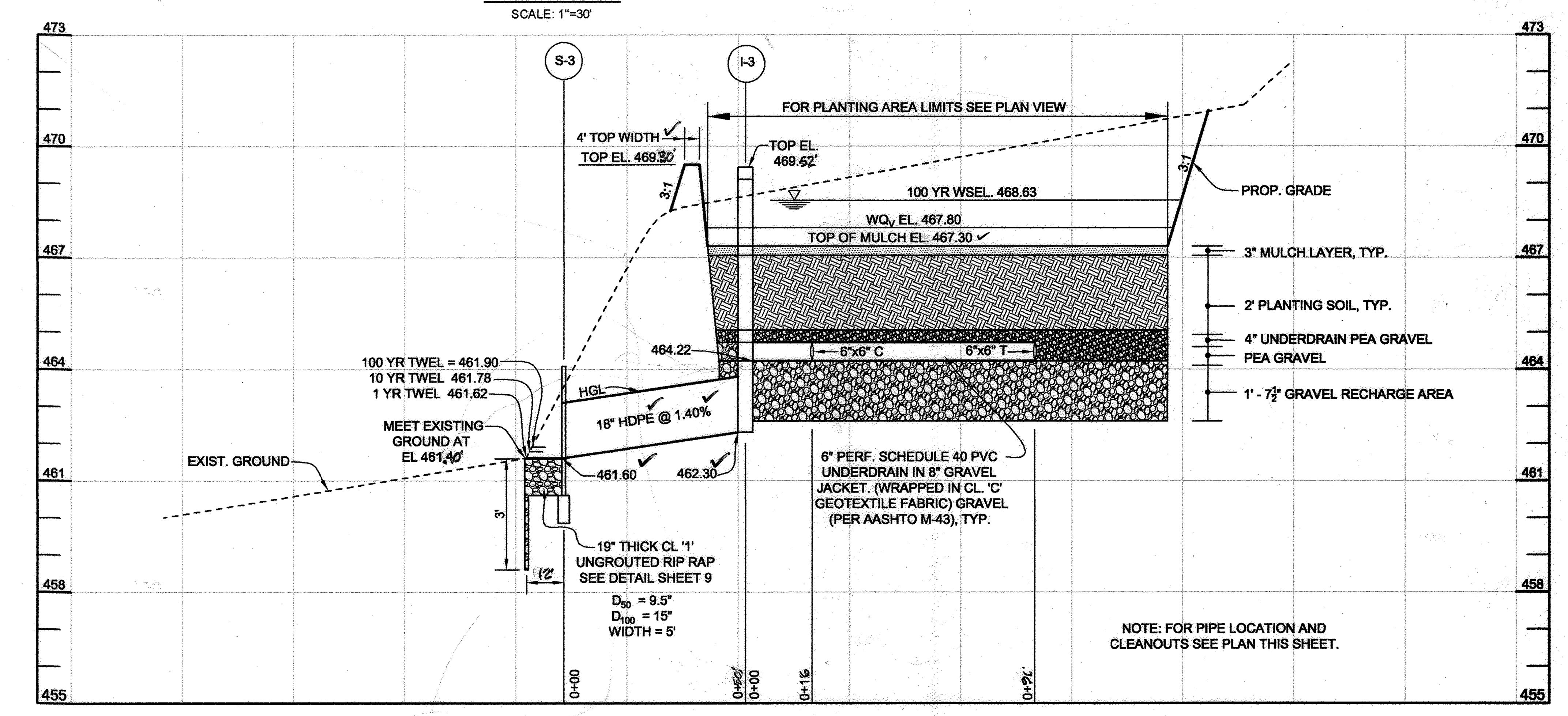
BIORETENTION FACILITY 1 PROFILE

HORIZONTAL SCALE : 1" = 30'
VERTICAL SCALE : 1" = 3'



BIORETENTION FACILITY 2 PROFILE

HORIZONTAL SCALE : 1" = 30'
VERTICAL SCALE : 1" = 3'



BIORETENTION FACILITY 3 PROFILE

HORIZONTAL SCALE : 1" = 30'
VERTICAL SCALE : 1" = 3'

MATERIALS SPECIFICATIONS FOR BIORETENTION FACILITIES

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLANT LIST THIS SHEET	N/A	PLANTINGS ARE SITE-SPECIFIC, SEE PLANT LIST THIS SHEET
PLANTING SOIL [2.0' DEEP]	SAND 35% - 60% SILT 0% - 25% GROUND COMPOST 40%-50%	N/A	EXISTING SOIL SUITABLE TO MEET PLANTING SOIL SPECIFICATIONS TO BE STOCKPILED IN DESIGNATED **AREA & SUPPLEMENTED WITH COMPOST AS NECESSARY**
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN, IF REQUIRED	PEA GRAVEL: ASTM-D-448 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL: NO. 6 STONE: 2"TO 5"	
HARDWARE CLOTH	0.035" THICK - 1/4" MESH OR SMALLER GALVANIZED WIRE HARDWARE CLOTH		FOR USE AS A WRAP AROUND PERFORATED UNDERDRAIN PIPING
UNDERDRAIN PEA GRAVEL	# 7 OR # 8 STONE	0.25" TO 0.50"	CLEAN WASHED STONE
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	CLEAN WASHED STONE
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	- 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; - SLOTTED PIPE MAY BE USED IN-LIEU OF PERFORATED PIPE (HARDWARE CLOTH WRAP NOT REQUIRED) - MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES

STRUCTURE SCHEDULE

NO.	TYPE & OWNERSHIP	LOCATION	TOP ELEV.	INV. IN	INV. OUT	REMARKS
S-1*	TYPE 'A' HEADWALL 48" R.C.P. PIPE	N 593,950.24 E 1,342,621.15 ✓	---	433.65'	433.79	HO CO DTL. D-5.11 ✓
SWM-1	MODIFIED A-10 INLET ✓	N 593,978.06 E 1,342,662.07 ✓	442.17	434.00	434.00	SPECIAL SEE PLAN
I-2	MODIFIED D-INLET ✓	N 593,342.93 E 1,343,183.77 ✓	470.15'	464.30 ✓	463.00 ✓	HO CO DTL. D-4.11 ✓
S-2	TYPE 'A' HEADWALL 15" DIA. PIPE ✓	N 593,317.21 E 1,343,220.69 ✓	---	462.41'	462.41'	HO CO DTL. D-5.11 ✓
I-3	MODIFIED D-INLET ✓	N 594,862.72 E 1,343,519.45 ✓	469.52'	464.22 ✓	462.30 ✓	HO CO DTL. D-4.11 ✓
S-3	TYPE 'A' HEADWALL 18" DIA. PIPE ✓	N 594,846.94 E 1,343,470.89	---	461.54'	461.54'	HO CO DTL. D-5.11 ✓
M-4**	STD 4' PRECAST MANHOLE ✓	N 593,402.75 E 1,343,175.14'	477.95'	472.00(N&W) 469.10 (E)	469.00	HO CO DTL. G-5.12 ✓
S-4♦	TYPE 'A' HEADWALL 12" DIA. PIPE ✓	N 593,391.38 E 1,343,186.71 ✓	---	468.38 ✓	468.38 ✓	MODIFIED HO CO DTL. 5.11
M-5**	STD 4' PRECAST MANHOLE ✓	N 593,306.23' E 1,343,103.67'	478.54'	473.00 (N) 469.22 (W)	469.12 ✓	HO CO DTL. G-5.12 ✓
S-5♦	TYPE 'A' HEADWALL 12" DIA. PIPE ✓	N 593,300.81 E 1,343,139.14 ✓	---	468.58'	468.58'	MODIFIED HO CO DTL. 5.11

NOTES :
1. LOCATION FOR S-1 TO S-5 ARE TO THE CENTER AT THE END OF PIPE.
2. LOCATION AND TOP ELEVATION OF SWM-1, I-2, I-3, M-4 AND M-5 ARE TO CENTER OF STRUCTURE.
* PROVIDE 4' HIGH CHAIN LINK FENCE HO. CO. STD. DETAIL G-7.21 ALONG THE BACK OF STR. S-1
** PROVIDE 2' BETWEEN BOTTOM OF STRUCTURE AND INVERT OUT
♦ PROVIDE DIMENSIONS FOR 27" DIA PIPE AS SHOWN IN DETAIL. EXCEPT INCREASE J TO 2'-6".

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIORETENTION FACILITIES (F-6)

a. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
b. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
c. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
d. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

PIPE SCHEDULE

SIZE	TYPE	LENGTH
48"	RCP ASTM C-361 CL B 25 WITH RUBBER GASKET JOINTS	41 LF
18"	HDPE ✓	49 LF
15"	HDPE ✓	44 LF
12"	HDPE ✓	54 LF
6"	PVC, SOLID ✓	33 LF
6"	PVC, PERFORATED ✓	484 LF

NOTE: HDPE PIPING MAY BE REPLACED WITH ANOTHER TYPE WITH SIMILAR HYDRAULIC CHARACTERISTICS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 5/2/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[illegible] 5/02/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[illegible] 5/2/13
DIRECTOR — DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013
[illegible]

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Approved [illegible] 4/30/13
Howard S.C.D. — Date

AS-BUILT CERTIFICATION

I HEREBY CERTIFY , BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

[illegible] 6/1/2022
MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

STATE OF MARYLAND — CHRISTOPHER ALAN MALAGARI — No. 22301 — PROFESSIONAL ENGINEER
[illegible] 2/9/17
Revision #1 only

NO.	DESCRIPTION	DATE
1	REVISE LOCATION OF BIO #1 AND RAISE IN ELEVATION BY 1.0 FEET	2-9-2017 BEI

REVISIONS

BIORETENTION PLAN & DETAILS
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17
3RD ELECTION DISTRICT

PART OF PARCELS 8 & 394
HOWARD COUNTY, MARYLAND

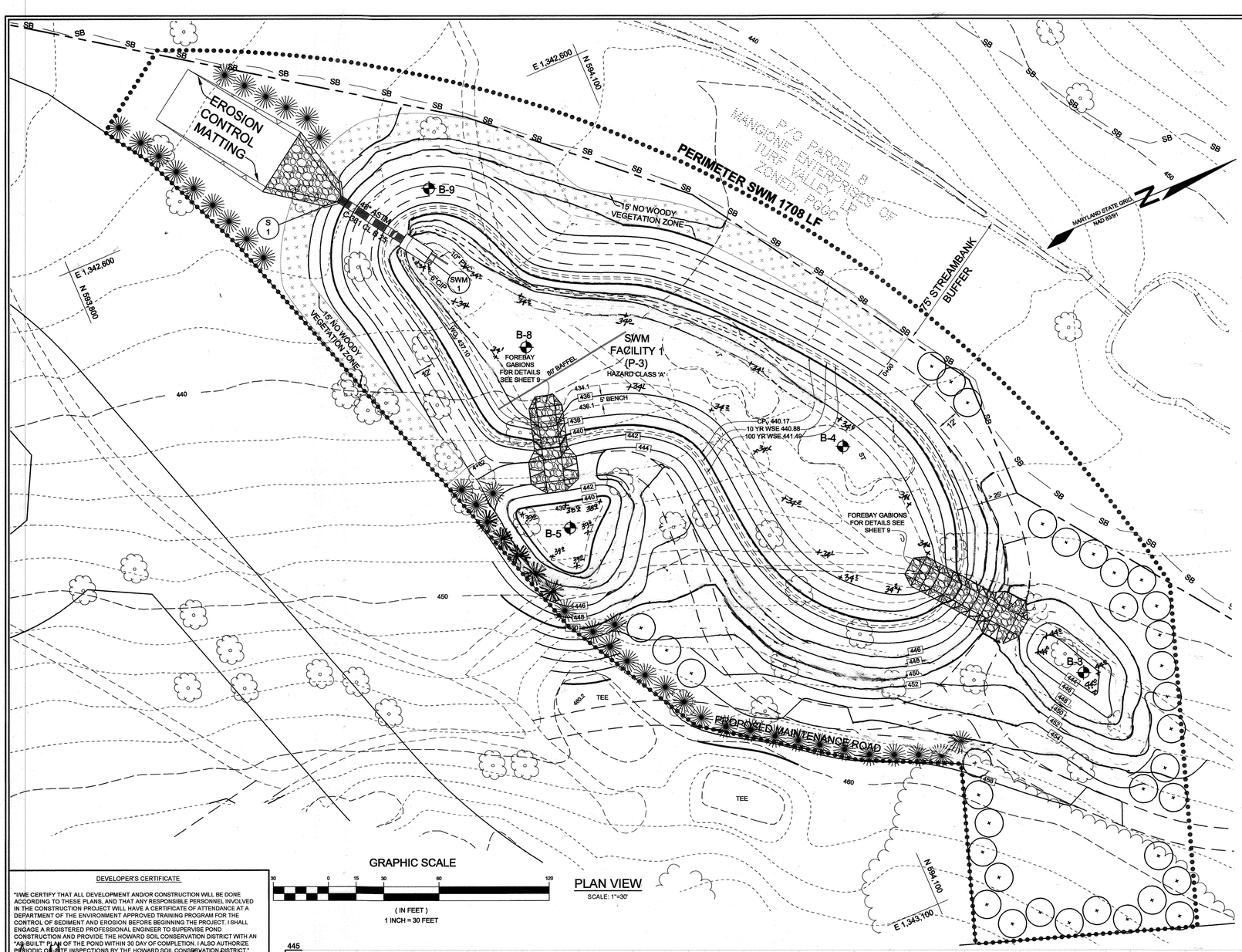
STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: DB
DRAWN BY: BK
CHECKED BY: PS
SCALE: AS SHOWN
DATE: APRIL 30, 2013
PROJECT #: 06-025
SHEET #: 6 of 12

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. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 INCH = 30 FEET

PLAN VIEW
SCALE: 1"=30'

STORMWATER MANAGEMENT SUMMARY TABLE

D.A.	WATER QUALITY		RECHARGE		CHANNEL PROTECTION	
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
A	2,526cf(1)	5,084cf(1)	558cf(1)	6,986cf(1)	0.0833acft(2)	0.00acft(2)
B	44,562cf(1)	48,064cf(1)	13,151cf(1)	0.0cf(1) *	1.4200acft(2)	1.73acft(2)
C	2,701cf(1)	2,702cf(1)	619cf(1)	3,848cf(1)	0.1276acft(2)	0.0acft(2)
D	3,049cf(1)	3,064cf(1)	797cf(1)	2,760cf(1)	0.0871acft(2)	0.0acft(2)

NOTES:
1. WATER QUALITY (WQV) AND RECHARGE (REV) HAVE BEEN CALCULATED FOR THE AREAS SUBJECT TO GRADING AND LAND COVER CHANGE. TREATMENT FOR WQV AND REV WILL BE PROVIDED AS FOLLOWS:
   - DRAINAGE AREA 'A': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 3].
   - DRAINAGE AREA 'B': AN EXTENDED DETENTION WET POND FOR (WQV). FOR (REV) SEE BELOW *
   - DRAINAGE AREA 'C': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 1]
   - DRAINAGE AREA 'D': A BIORETENTION FACILITY (F-6) [BIORETENTION FACILITY 2].
2. CHANNEL PROTECTION HAS BEEN CALCULATED FOR THE AREAS SUBJECT TO GRADING AND LAND COVER CHANGE. TREATMENT FOR CPv WILL BE PROVIDED FOR AS FOLLOWS:
   - DRAINAGE AREA 'A': AN EXTENDED DETENTION WET POND IN AREA-B.
   - DRAINAGE AREA 'B': AN EXTENDED DETENTION WET POND
   - DRAINAGE AREA 'C': AN EXTENDED DETENTION WET POND IN AREA-B
   - DRAINAGE AREA 'D': AN EXTENDED DETENTION WET POND IN AREA-B
3. OVERBANK FLOOD PROTECTION VOLUME, QP, IS NOT REQUIRED FOR THIS SITE.
4. EXTREME FLOOD VOLUME, QF, IS NOT REQUIRED FOR THIS SITE.

* SINCE WE ARE PROVIDING AN EXTENDED DETENTION WET POND AT AREA - B THE RECHARGE VOLUME WILL BE PROPORTIONALLY DISTRIBUTED IN AREAS A, C, AND D

LEGEND

EXISTING CONTOUR 382
EXISTING SPOT ELEVATION 382.5
PROPOSED CONTOUR 468
PROPOSED SPOT ELEVATION +82.53
DIRECTION OF FLOW
EXISTING TREES
EXISTING TREELINE
PROPOSED TREELINE
APPROX. CL STREAM
EXISTING STREAM BUFFER SB
EXISTING SOIL BORING B-1
PROPOSED SHADE TREE*
PROPOSED EVERGREEN TREE*

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-3)

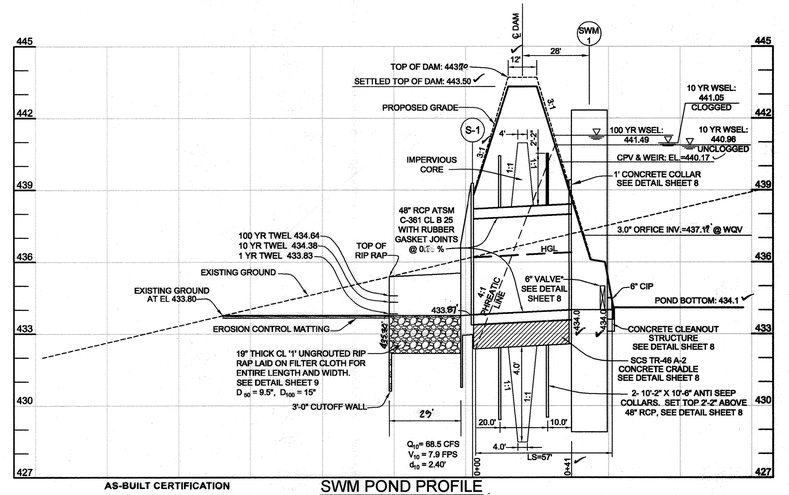
ROUTINE MAINTENANCE:
A. THE OWNER SHALL INSPECT THE FACILITY ANNUALLY AND AFTER EVERY HEAVY STORM. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
B. THE OWNER SHALL MOW THE TOP AND SIDE SLOPES OF THE EMBANKMENT A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
C. THE OWNER SHALL REMOVE ANY DEBRIS AND LITTER FROM THE FACILITY.
D. THE OWNER SHALL REPAIR ANY EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA AS SOON AS IT IS NOTICED.
E. 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 SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
F. THE OWNER SHALL REMOVE SEDIMENT FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS

NOTE: FOR SWM BORING LOGS, EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION SPECIFICATIONS SEE SHEET 10.

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	1,708
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	 1:50 = 35 1:40 = 43
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 1:50 = 35 1:40 = 43

*NOTE: STORMWATER MANAGEMENT AREA LANDSCAPING AS REQUIRED BY SCHDEULE D SHALL BE PROVIDED AS PART OF THE INITIAL SITE DEVELOPMENT PLAN SUBMITTED FOR THE TURF VALLEY CLUBHOUSE SUBDIVISION.



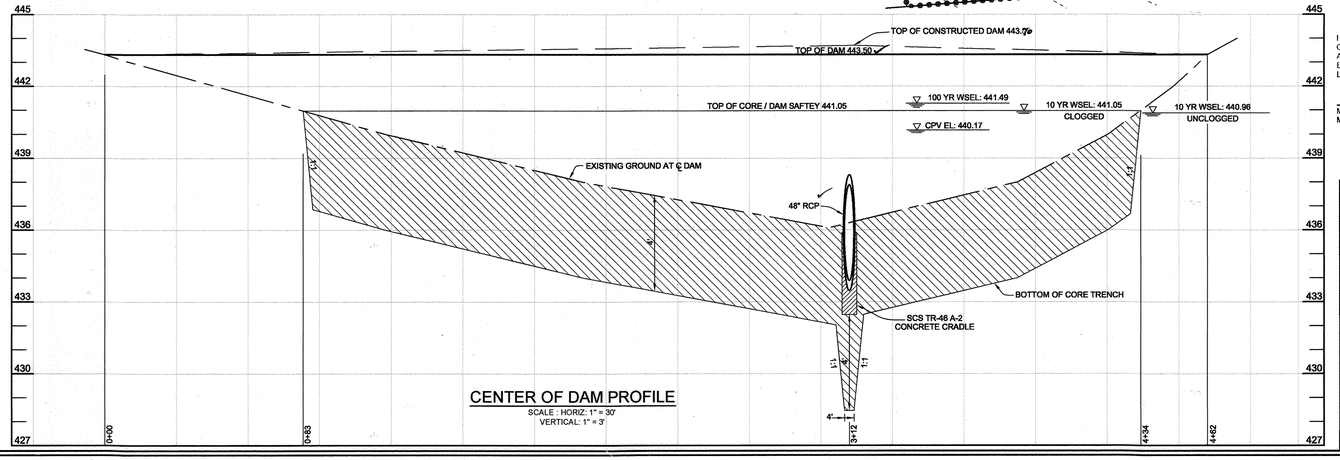
AS-BUILT CERTIFICATION

I HEREBY CERTIFY , BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

6/1/22
DATE

SWM POND PROFILE
SCALE : HORIZ: 1" = 30'
VERTICAL: 1" = 3'



CENTER OF DAM PROFILE
SCALE : HORIZ: 1" = 30'
VERTICAL: 1" = 3'

DEVELOPER'S CERTIFICATE

"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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 4/30/13

ENGINEERS CERTIFICATE

"I 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."

SIGNATURE OF ENGINEER
PAUL M. SILL, P.E. — DATE 4/30/13

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

HOWARD SCD — DATE 4/30/13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13
DIRECTOR — DATE 5/4/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013

NO.	DESCRIPTION	DATE
	REVISIONS	

AS-BUILT

OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

EXTENDED DETENTION FACILITY PLAN & DETAILS
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17
3RD ELECTION DISTRICT

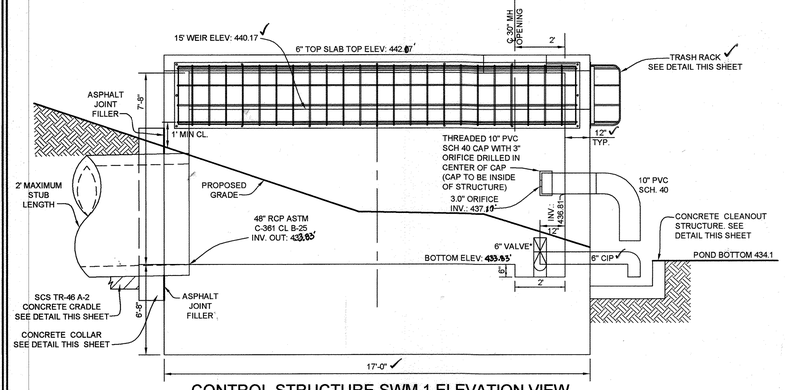
PART OF PARCELS 8 & 394
HOWARD COUNTY, MARYLAND

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: DB
DRAWN BY: BK
CHECKED BY: PS
SCALE: AS SHOWN
DATE: APRIL 30, 2013
PROJECT #: 06-025
SHEET #: 7 of 12

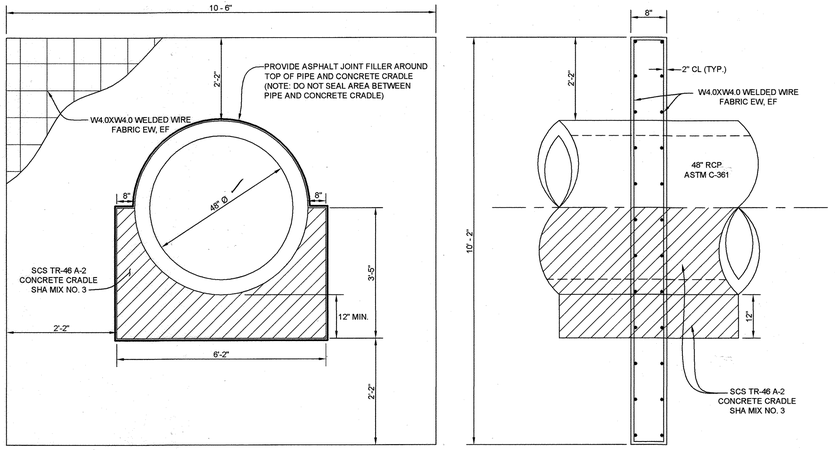
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038



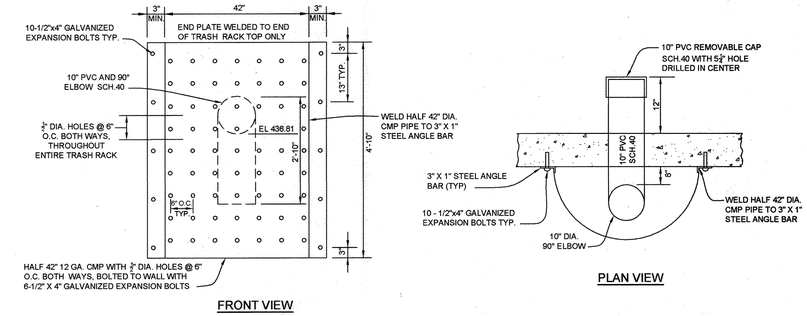
CONTROL STRUCTURE SWM 1 ELEVATION VIEW

NOT TO SCALE



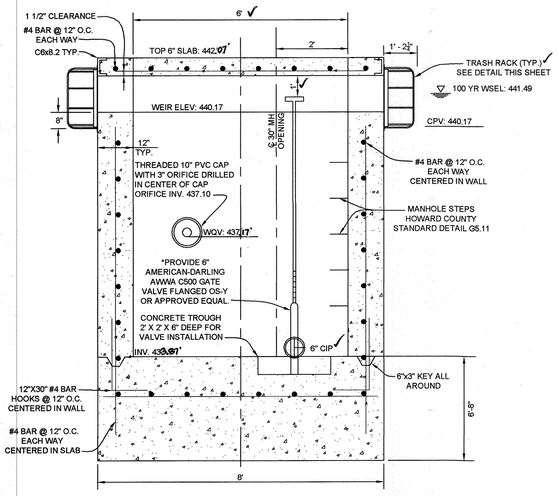
ANTI SEEP COLLAR AND SCS TR-46 A-2 CONCRETE CRADLE DETAILS

NOT TO SCALE



CMP TRASH RACK FOR LOW FLOW ORFICE PROTECTION SWM-1

NOT TO SCALE



SECTION 'A-A'

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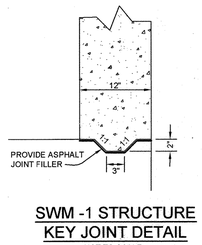
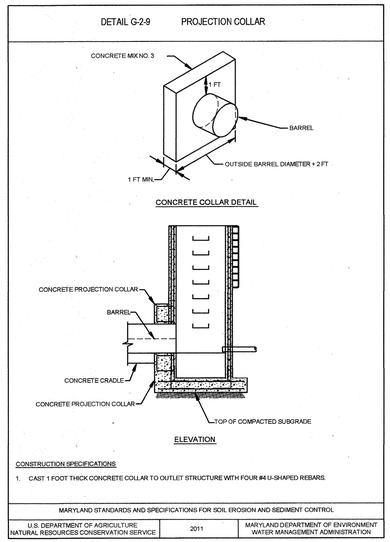
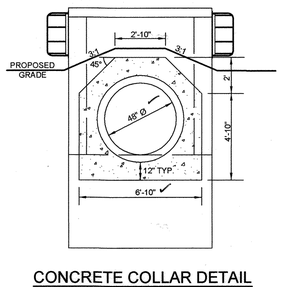


SWM -1 STRUCTURE KEY JOINT DETAIL

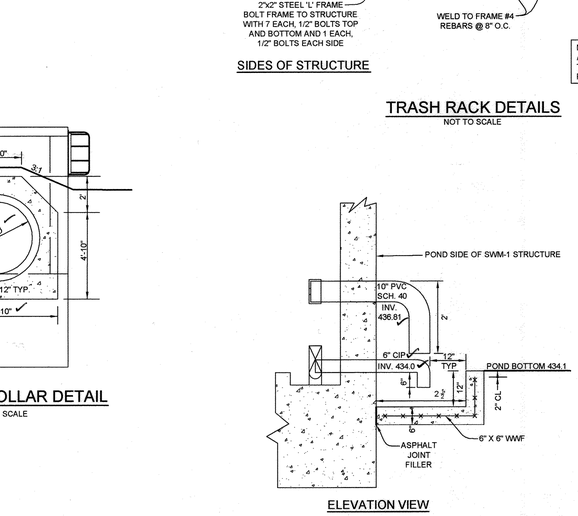
NOT TO SCALE





CONCRETE COLLAR DETAIL

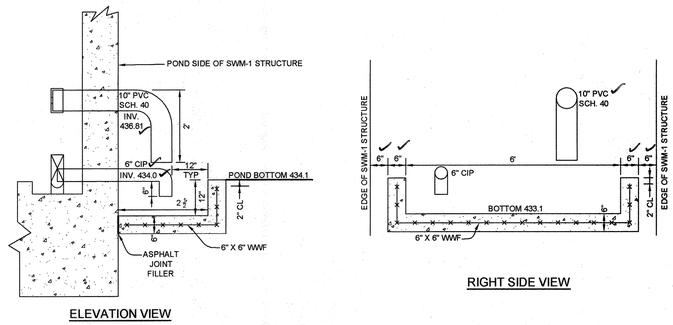
NOT TO SCALE



NOTE: GALVANIZE RACK AFTER FABRICATION. RACK TO BE EPOXY COATED AND PAINTED BATTLESHIP GRAY.

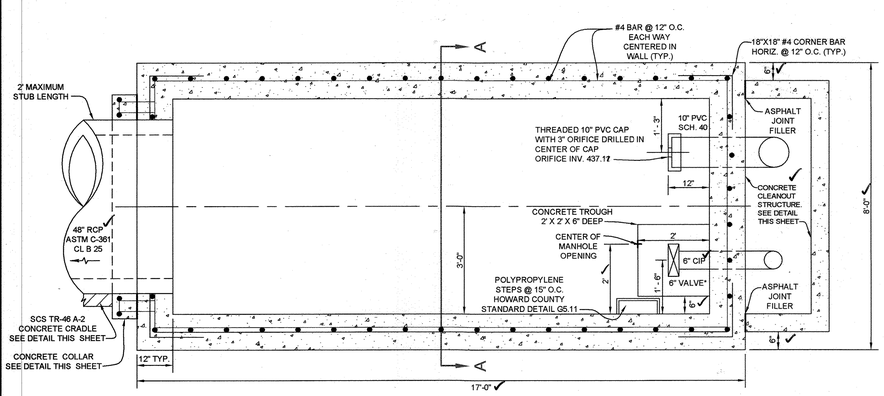
TRASH RACK DETAILS

NOT TO SCALE



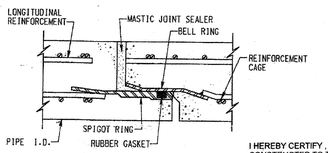
ELEVATION VIEW

RIGHT SIDE VIEW



PLAN VIEW- TOP REMOVED

NOT TO SCALE



BARREL JOINT SEAL DETAIL

(N.T.S.)

CONCRETE CLEANOUT STRUCTURE

NOT TO SCALE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY , BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
MD REG. NO. 21257, EXPIRATION DATE: 6/14/23

6/17/13
DATE

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

POND DETAILS
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17
3RD ELECTION DISTRICT

PART OF PARCELS 8 & 394
HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13

DIRECTOR — DATE 5/2/13

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

HOWARD SCD — DATE 4/30/13

ENGINEERS CERTIFICATE

"I 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."

SIGNATURE OF ENGINEER
PAUL M. SILL, P.E. — DATE 4/30/13

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT AMY 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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 4/30/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/05/2013

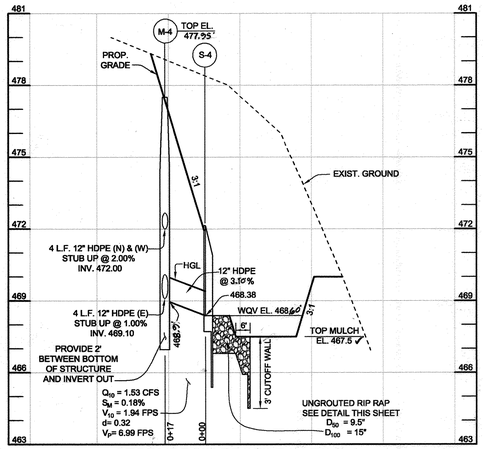
NO.	DESCRIPTION	DATE
	REVISIONS	

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: DB
DRAWN BY: BK
CHECKED BY: PS
SCALE: AS SHOWN
DATE: APRIL 30, 2013
PROJECT #: 06-025
SHEET #: 8 of 12

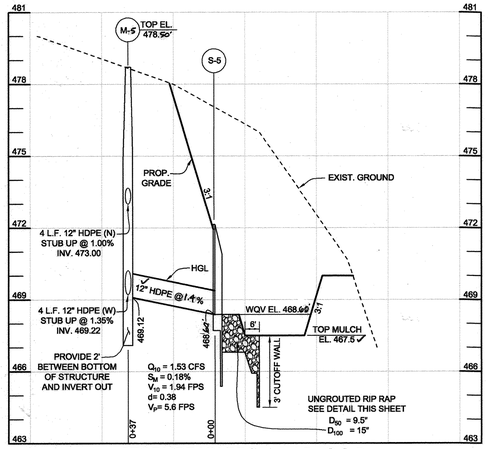
PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038



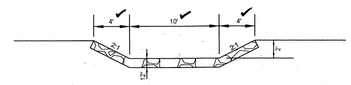
STORMDRAIN PROFILE I-4 TO S-4

HORIZONTAL SCALE : 1" = 30'
VERTICAL SCALE : 1" = 3'

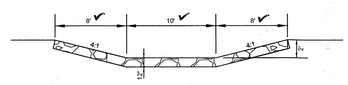


STORMDRAIN PROFILE I-5 TO S-5

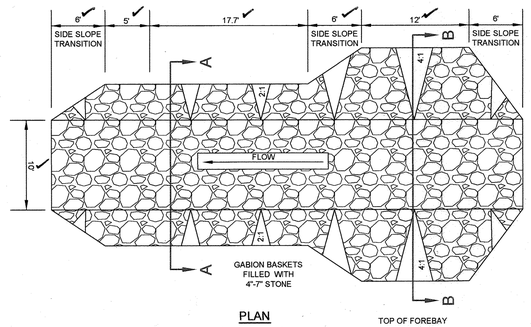
HORIZONTAL SCALE : 1" = 30'
VERTICAL SCALE : 1" = 3'



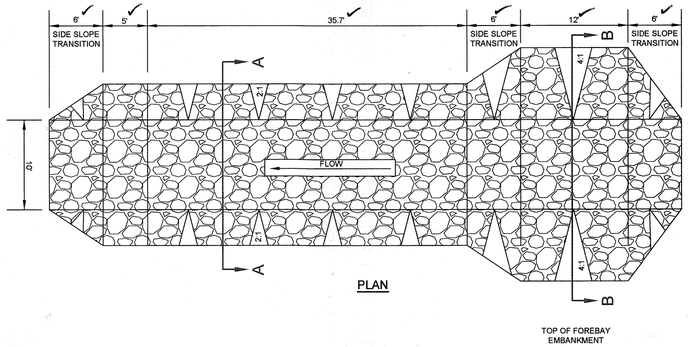
TYPICAL SECTION 'A'-'A'



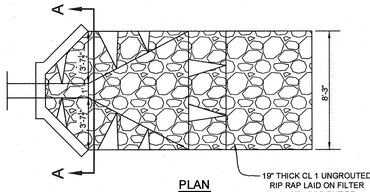
TYPICAL SECTION 'B'-'B'



PLAN



PLAN



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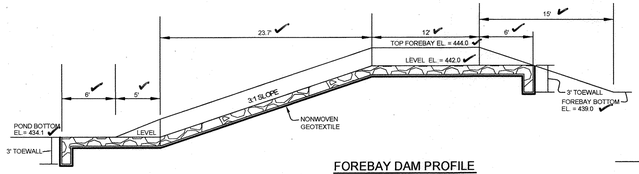
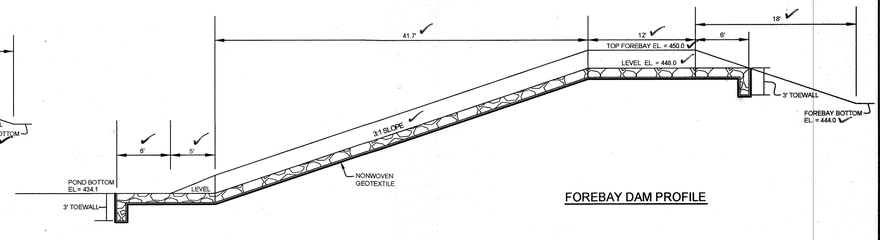
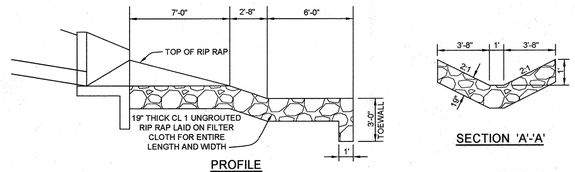


FOREBAY DAM PROFILE



FOREBAY DAM PROFILE

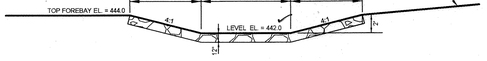


PROFILE

SECTION 'A'-'A'

STRUCTURE S-4 AND S-5 UNGROUTED RIP RAP OUTFALL DETAIL

NOT TO SCALE



FOREBAY DAM CROSS SECTION

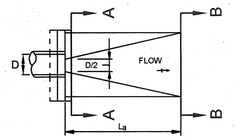
GABION INFLOW PROTECTION NO. 1 DETAIL

NOT TO SCALE

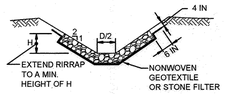
FOREBAY DAM CROSS SECTION

GABION INFLOW PROTECTION NO. 2 DETAIL

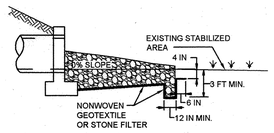
NOT TO SCALE



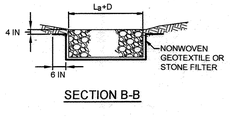
PLAN



SECTION A-A



PROFILE



SECTION B-B

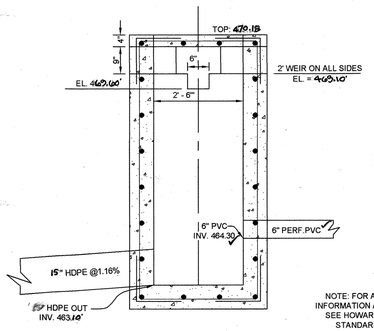
RIP RAP OUTFALL SCHEDULE

STR.No.	La	D	LA+D	H	RIP RAP CL.
SWM-1	28'	48"	32'	2'8"	CL-1
S-2	10'	12"	11'	15"	CL-1
S-3	11'	18"	12'-6"	18"	CL-1

19" THICK CL 1 UNGROUTED RIP RAP LAID ON FILTER CLOTH FOR ENTIRE LENGTH AND WIDTH
D_{50}= 9.5", D_{100}= 15".
SEE PLAN VIEW SHEETS 2-4

SWM-1, S-2 & S-3 UNGROUTED RIP RAP OUTFALL DETAIL

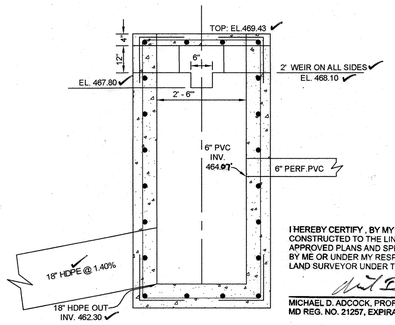
NOT TO SCALE



NOTE: FOR ALL OTHER INFORMATION AND DETAILS SEE HOWARD COUNTY STANDARD D-4.10

STRUCTURE I-2 BIORETENTION 2 DETAIL

NOT TO SCALE



STRUCTURE I-3 BIORETENTION 3 DETAIL

NOT TO SCALE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE
MD REG. NO. 21257, EXPIRATION DATE: 6/14/15

AS-BUILT

CONSTRUCTION SPECIFICATIONS:

1. PROVIDE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND ALONG SIDES OF ALL GABION BASKETS.
2. USE BASKETS MADE OF MINIMUM 11 GAGE WIRE.
3. CONSTRUCT GABION INFLOW PROTECTION BY ARRANGING 12" THICK GABION BASKETS PER MANUFACTURE TO FORM A TRAPEZOIDAL SECTION WITH A 10 FOOT BOTTOM WIDTH 2 FOOT MINIMUM DEPTH. SIDE WALLS AT 2:1 AND 4:1 SLOPES. SEE GABION INFLOW PROTECTION DETAIL ON THE PLANS. FILL GABION BASKETS WITH 4 TO 7 INCH STONE.
4. INSTALL ENTRANCE AND EXIT SECTIONS AS SHOWN ON THE PLANS.
5. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
6. BLEND GABIONS INTO EXISTING GROUND.

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

DETAILS & STORMDRAIN PROFILES
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17
3RD ELECTION DISTRICT

PART OF PARCELS 8 & 394
HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13
DIRECTOR — DATE 5/2/13

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

HOWARD SCD — DATE 4/30/13

ENGINEERS CERTIFICATE

"I 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."

SIGNATURE OF ENGINEER — DATE 4/30/13
PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE

"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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 4/30/13

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013

NO.	DESCRIPTION	DATE
	REVISIONS	

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

DESIGN BY:	DB
DRAWN BY:	BK
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	APRIL 30, 2013
PROJECT #:	06-025
SHEET #:	9 of 12

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. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-1
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 470.3 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/09/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/09/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	D	Brown, dry, very loose silty sand (SM)		8		2-2-3	5
	D	Brown, moist, medium dense sandy silt, trace mica (ML)		14		3-5-6	11
	D	Brown and tan, moist, medium dense sandy silt with gravel (ML)		10		5-6-8	14
	D	Orange-brown, moist, medium dense silty fine sand, trace gravel (SM-ML)		12		3-8-10	18
	D	Brown, moist, loose sandy silt, trace gravel (ML)		8		4-4-6	10
	D	Orange-brown, moist, medium dense silty very fine sand (SM-ML)		14		2-3-8	11
		Bottom of Boring at 20 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	17.0 ft.	18.0 ft.
AFTER 24 HRS.	10.0 ft.	15.0 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-2
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 469.0 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/09/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/09/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	D	Brown, dry, very loose silty fine sand (SM)		9		2-1-2	3
	I	Brown, moist, very loose to medium dense sandy silt - silty sand (SM-ML)		11		2-2-3	5
	I			8		4-5-7	12
	D	Orange-brown, moist, medium dense silty fine sand (SM-ML)		14		5-7-12	19
	D			12		6-7-9	16
		Bottom of Boring at 15 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	13.0 ft.
AFTER 24 HRS.	Dry ft.	13.0 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-3
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 452.7 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	I	Brown, moist, very loose silt (ML)		13		2-3-2	5
	D	Brown, moist, medium dense silty very fine sand (SM-ML)		14		6-7-8	15
	D	Orange-brown to brown and tan, moist, loose sandy silt, trace mica (ML)		16		3-5-4	9
	D			15		4-3-5	8
	D			17		3-4-6	10
		Bottom of Boring at 12 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	8.5 ft.
AFTER 24 HRS.	___ ft.	___ ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-4
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 443.9 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	I	Orange-brown, moist, very loose silt, trace fine sand (ML)		13		3-2-3	5
	D	Orange-brown to brown and tan, moist, very loose to medium dense sandy silt, trace mica (ML)		16		4-6-7	13
	D			18		3-2-3	5
	D			16		3-4-11	15
	D	Brown, moist, loose silt, trace sand (ML)		18		3-4-6	10
		Bottom of Boring at 15 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	4.7 ft.	8.2 ft.
AFTER 24 HRS.	___ ft.	___ ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-5
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 445.8 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	D	Brown, moist, loose to medium dense silt, trace sand (ML)		8		2-2-4	6
	D			12		4-3-5	8
	D	Brown, moist, loose sandy silt, trace mica (ML)		12		3-3-5	8
	D			18		4-4-5	9
		Bottom of Boring at 10 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	7.4 ft.	8.0 ft.
AFTER 24 HRS.	___ ft.	___ ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-6
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 474.2 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/09/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/09/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	I	Orange-brown, moist, loose to medium dense fine sandy silt, trace gravel (SM-ML)		8		1-2-2	4
	D			10		4-5-7	12
	D			14		6-7-7	14
	D	White and tan, moist, medium dense silty sand, with gravel (SM)		13		6-7-9	16
	D			16		6-8-12	20
	D	Orange-brown, moist, medium dense sandy silt, trace mica (ML)		13		6-5-9	14
		Bottom of Boring at 20 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	18.0 ft.
AFTER 24 HRS.	Dry ft.	18.0 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-7
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 475.5 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	D	Brown, moist, very loose silt, trace organics (ML)		6		1-2-3	5
	D	Dark orange-brown to brown, moist, medium dense to dense silty very fine sand, trace mica (SM-ML)		9		3-5-7	12
	D			12		6-7-8	15
	D			10		2-6-7	13
	D			16		3-7-10	17
	D			14		9-17-16	33
		Bottom of Boring at 20 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	17.0 ft.
AFTER 24 HRS.	Dry ft.	16.5 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-8
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 438.3 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	I	Gray-brown, moist, soft clayey silt - silty clay (CL ML)-		10		2-2-3	5
	I	Orange-brown and gray, moist, medium dense sandy silt, trace clay (ML)		10		4-6-8	14
	D			10		2-3-8	11
	D	Gray, moist, medium dense silt, with sand, trace clay (ML)		14		5-5-6	11
		Bottom of Boring at 10 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	8.0 ft.
AFTER 24 HRS.	Dry ft.	8.0 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-9
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 436.3 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	D	Gray-brown, moist, loose silt, trace sand, trace clay (ML)		8		2-4-6	10
	I	Gray-brown and brown, moist, medium stiff silt, trace clay (ML)		10		4-6-9	15
	I			16		4-5-6	11
	I			18		3-5-7	12
		Bottom of Boring at 8 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	6.0 ft.	6.0 ft.
AFTER 24 HRS.	6.0 ft.	6.0 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-10
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 424.9 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	I	Brown, moist, loose silt, trace sand (ML)		10		3-4-6	10
	I	Orange-brown to brown, moist to very moist, medium dense to loose silty very fine sand (SM-ML)		10		5-5-6	11
	I			16		3-3-4	7
	D	Orange-brown, very moist, loose sandy silt (ML)		8		3-3-3	6
		Bottom of Boring at 8 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	5.3 ft.	6.0 ft.
AFTER 24 HRS.	5.3 ft.	6.0 ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Turf Valley Clubhouse SWM — Boring No. B-11
Location: Howard County, Maryland — Job # 12472A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter ___ Foreman J. Shippee
Surf. Elev. 425.0 ft Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 11/12/12 Pipe Size 2 in. Boring Method HSA Date Completed 11/12/12

Elevation/ Depth	Soil Symbols/ Sample Conditions	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	N
	I	Brown, moist, loose silt, trace sand (ML)		9		3-4-4	8
	D	Dark orange-brown, moist, medium dense sandy silt, with gravel fragments (SM-ML)		18		10-12-9	21
	D			18		6-7-7	14
	D	Brown, moist, medium dense silt, trace sand, trace clay (ML)		15		5-5-6	11
		Bottom of Boring at 10 ft					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST

	GROUND WATER	CAVE IN DEPTH
AT COMPLETION	Dry ft.	7.6 ft.
AFTER 24 HRS.	___ ft.	___ ft.
AFTER ___ HRS.	___ ft.	___ ft.

BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS.

EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION SPECIFICATIONS

All SWM areas should be stripped of topsoil 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 proofrolled with a loaded dump truck or similar equipment in the presence of a geotechnical engineer or his representative. For areas that are not accessible to a dump truck, the exposed materials should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials identified by proofrolling or penetrometer testing should be excavated to suitable firm soil, and then grades re-established by backfilling with suitable soil.
A representative of the Geotechnical Engineer should be present to monitor placement and compaction of fill for the embankment and cut-off trench. In accordance with NRCSMD Code No. 378 Pond Standards/Specifications, soils considered suitable for the center of 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.

It is our professional opinion that in addition to the soil materials described above a finegrained soil, including Silt (ML) 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 NRCS-MD Code No. 378 specifications.

(See pages 3-4 of Hillis-Carnes Geotechnical Report)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[illegible] 5/2/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

[illegible] 5/02/13
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[illegible] 5/2/13
DIRECTOR — DATE

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 04/15/2013
[illegible]

AS-BUILT CERTIFICATION
THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.
[illegible] 6/1/22
MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE:
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

NO.	DESCRIPTION	DATE
	REVISIONS	

OWNER/DEVELOPER
MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

BORING LOGS
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17 — PART OF PARCELS 8 & 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

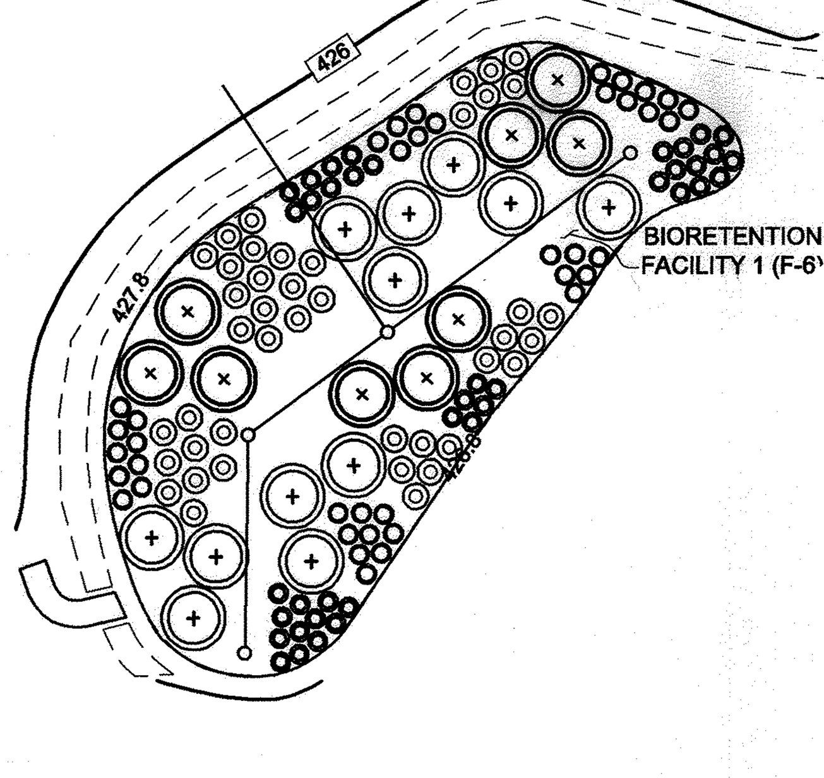
STATE OF MARYLAND · PAUL M. SILL · No. 32025 · PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: DB
DRAWN BY: BK
CHECKED BY: PS
SCALE: NONE
DATE: APRIL 30, 2013
PROJECT #: 06-025
SHEET #: 10 of 12

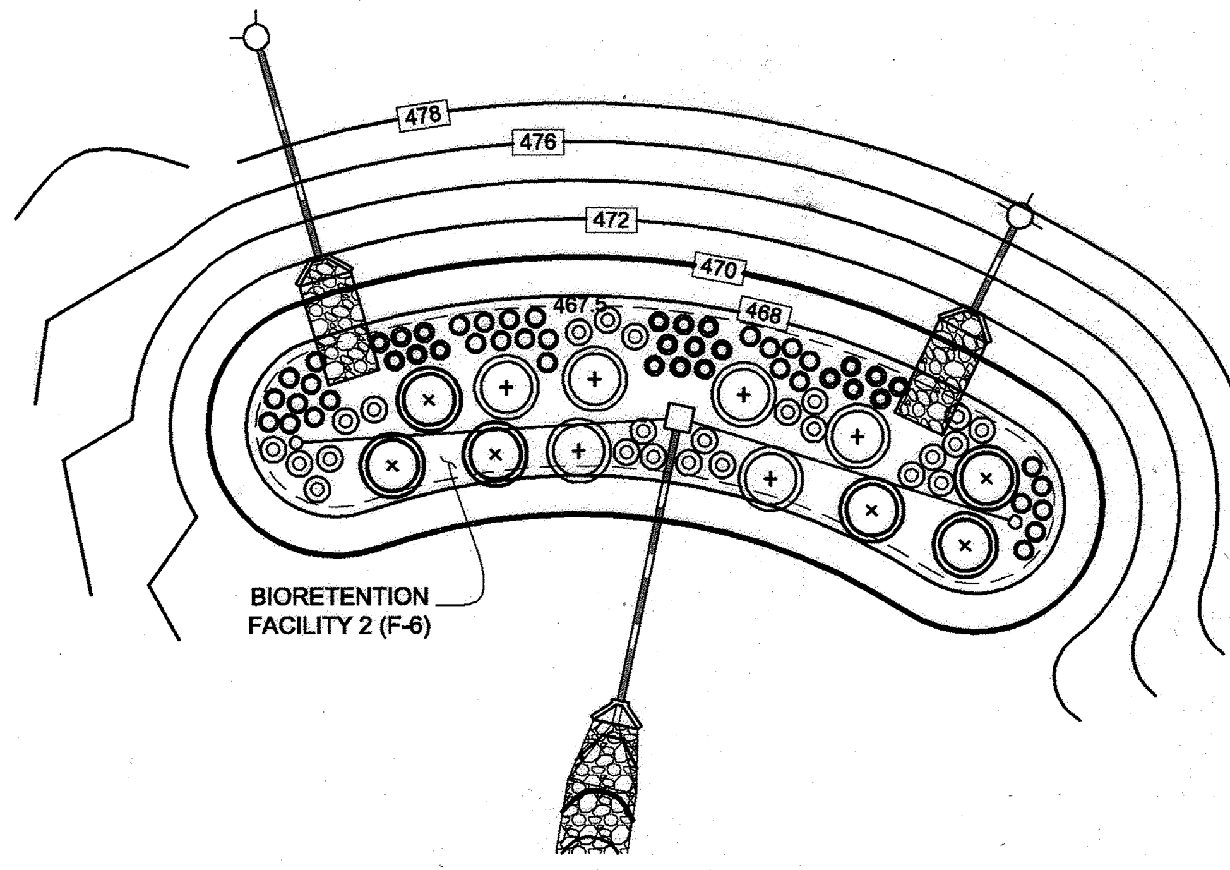
PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038



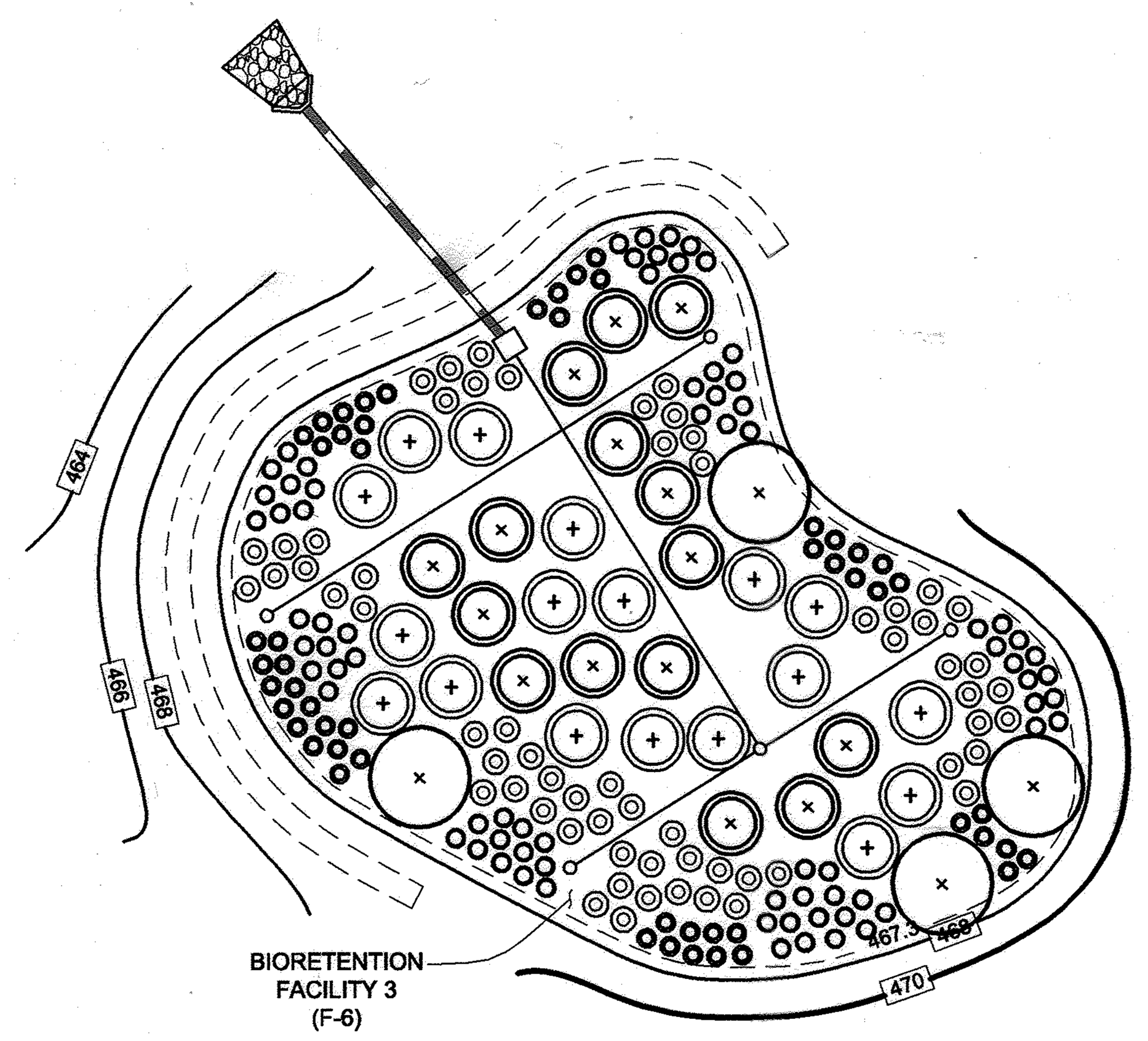
PLAN VIEW

SCALE: 1"=30'



PLAN VIEW

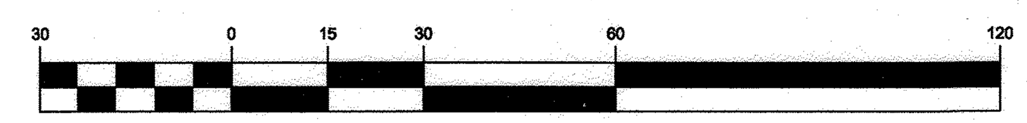
SCALE: 1"=30'



PLAN VIEW

SCALE: 1"=30'

GRAPHIC SCALE



(IN FEET)
1 INCH = 30 FEET

BIORETENTION PLANT LIST

LEGEND	KEY	BOTANICAL NAME	COMMON NAME	SPACING	SIZE	REMARKS	QUANTITY BIO 1	QUANTITY BIO 2	QUANTITY BIO 3
TREES									
⊗	ARU	ACER RUBRUM	RED MAPLE	AS SHOWN	1"-1 1/2" CAL.	BB	0	0	4
SHRUBS									
⊗	CAM	CORNUS AMOMUM	SILKY DOGWOOD	AS SHOWN (MIN. 10' O.C.)	18"-24" HT.	CONT.	9	6	15
⊕	VDE	VIBURNUM DENTATUM	ARROWWOOD	AS SHOWN (MIN. 10' O.C.)	18"-24" HT.	CONT.	12	6	18
HERBACEOUS SPECIES									
◎	EFM	EUPATORIUM FISTULOSUM	JOE-PYE WEED	AS SHOWN (MIN. 4' O.C.)	1 QT./12" HT.	CONT. (3' O.C.)	42	24	63
●	MDI	MONARDA DIDYMA	BEEBALM	AS SHOWN (MIN. 3' O.C.)	1 QT.	CONT.	39	21	54
○	RLA	RUDEBECKIA LACINIATA	TALL CONEFLOWER	AS SHOWN (MIN. 3' O.C.)	1 QT.	CONT.	39	30	75

NOTE: PLANT MATERIAL MUST COVER 50% OF THE MULCH AREA AT MATURE GROWTH.

BIO 1 - BIORETENTION AREA = 5,090 S.F. OR 0.12 AC.
PROVIDED: 21 SHRUBS AND 120 HERBACEOUS SPECIES

BIO 2 - BIORETENTION AREA = 3,094 S.F. OR 0.07 AC.
PROVIDED: 12 SHRUBS AND 75 HERBACEOUS SPECIES

BIO 3 - BIORETENTION AREA = 10,090 S.F. OR 0.23 AC.
PROVIDED: 4 TREES, 33 SHRUBS AND 192 HERBACEOUS SPECIES

STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS (MD. 378 - JANUARY, 2000)

I. 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. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

II. 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 6", 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 CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY 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 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 PORTIONS 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 HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEP SFOOT, RUBBER TIRED 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.

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 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).

CUTOFF 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 T□THE SIDE F□□□ERENCH SHALL BE 1:1 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 A 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 1:1 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 SHELL OF THE EMBANKMENT.

III. 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 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 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 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND ON THE 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 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 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 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.

IV. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.
A. 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 SPECIFICATIONS 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 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 AS TO BE COMPLETELY WATERTIGHT. DIMPLE 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 THE BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24" IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12 INCH WIDE STANDARD LAP BAND WITH 12 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET AND A 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 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 RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 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 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.

B. 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 DESIGNATION C-361.

2. BEDDING - ALL 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 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON ON THE DRAWINGS.

C. PLASTIC PIPE - ALL OF 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" PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-252 TYPE S AND 12" - 24" SHALL MEET THE REQUIREMENTS OF AASHTO M-294 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.

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

V. CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

VI. ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD 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 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

VII. CARE OF WATER DURING CONSTRUCTION

ALL WORK ON THE 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 PREVENT OBSTRUCTION IN ANY DEGREE WHAT- SO EVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAIN- TENANCE 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 FOUND- ATION 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 SATI SFACTORY 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 EX- CAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

VIII. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY 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-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

IX. 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.

X. STORMWATER MANAGEMENT INSPECTION AND MAINTENANCE SCHEDULE

1. INSPECT ANNUALLY AND AFTER A MAJOR STORM TO ENSURE PROPER OPERATION. WHEN POSSIBLE, INSPECTIONS SHOULD BE CONDUCTED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

2. GRASS ON TOP OF THE EMBANKMENT AND THE SIDE SLOPES ONLY SHALL (AT A MINIMUM) BE MOWED TWICE A YEAR, ONCE IN JUNE AND AGAIN IN SEPTEMBER.

3. CLEAN ALL TRASH AND DEBRIS FROM THE POND AND RISER PIPE AREAS.

4. REPAIR ANY VISIBLE SIGNS OF EROSION IN THE POND AREA AS WELL AS THE RIP RAP OUTFALL AREA.

5. THE DAM INSPECTION CHECKLIST SHALL BE INCLUDED AS PART OF THE OPERATION AND MAINTENANCE PLAN AND PERFORMED AT LEAST ANNUALLY. WRITTEN RECORDS OF MAINTENANCE AND MAJOR REPAIRS NEED TO BE RETAINED IN A FILE. THE ISSUANCE OF A MAINTENANCE AND REPAIR PERMIT FOR ANY REPAIRS OR MAINTENANCE THAT INVOLVES THE MODIFICATION OF THE DAM OR SPILLWAY FROM ITS ORIGINAL DESIGN AND SPECIFICATIONS IS REQUIRED. A PERMIT IS ALSO REQUIRED FOR ANY REPAIRS OR RECONSTRUCTION THAT INVOLVE A SUBSTANTIAL PORTION OF THE STRUCTURE. ALL INDICATED REPAIRS ARE TO BE MADE AS SOON AS PRACTICAL.

XI. CONSTRUCTION CHECK DATA/AS-BUILT

RECORD ON SURVEY NOTE PAPER, SCS-ENG-28. SURVEY DATA FOR PONDS WILL BE PLOTTED IN RED. ALL CONSTRUCTION INSPECTION VISITS SHALL BE RECORDED ON THE CPA-6 OR APPROPRIATE DOCUMENTATION PAPER. THE DOCUMENTATION SHALL INCLUDE THE DATE, WHO PERFORMED THE INSPECTION, SPECIFICS AS TO WHAT WAS INSPECTED, ALL ALTERNATIVES DISCUSSED AND DECISIONS MADE AND BY WHOM. THE FOLLOWING IS A LIST OF THE MINIMUM DATA NEEDED FOR AS-BUILTS:

1. A PROFILE OF THE TOP OF DAM

2. A CROSS SECTION OF THE EMERGENCY SPILLWAY AT THE CONTROL SECTION

3. A PROFILE ALONG THE CENTERLINE OF THE EMERGENCY SPILLWAY.

4. A PROFILE ALONG THE CENTERLINE OF THE PRINCIPAL SPILLWAY EXTENDING AT LEAST 100 FEET DOWNSTREAM OF FILL.

5. THE ELEVATION OF THE PRINCIPAL SPILLWAY CREST.

6. THE ELEVATION OF THE PRINCIPAL SPILLWAY CONDUIT INVERT. (INLET AND OUTLET)

7. THE DIAMETER, LENGTH, THICKNESS AND TYPE OF MATERIAL FOR THE RISER.

8. THE DIAMETER, LENGTH, AND TYPE OF MATERIAL FOR THE CONDUIT.

9. THE SIZE AND TYPE OF ANTI-VORTEX AND TRASH RACK DEVICE AND ITS ELEVATIONS IN RELATION OF THE PRINCIPAL SPILLWAY CREST.

10. THE NUMBER, SIZE, AND LOCATION OF THE ANTI-SEEP COLLARS.

11. THE DIAMETER AND SIZE OF ANY LOW STAGE ORIFICES OR DRAIN PIPES.

12. SHOW THE LENGTH, WIDTH, AND DEPTH OF CONTOURS OF THE POOL AREA SO THAT DESIGN VOLUME CAN BE VERIFIED.

13. NOTES AND MEASUREMENTS TO SHOW THAT ANY SPECIAL DESIGN FEATURES WERE MET.

14. STATEMENT ON SEEDING AND FENCING.

15. NOTES ON SITE CLEANUP AND DISPOSAL.

16. SIGN AND DATE CHECK NOTES TO INCLUDE STATEMENT THAT PRACTICE MEETS OR EXCEEDS PLANS AND SPECIFICATIONS.

17. COMPACTION TEST RESULTS ON ALL FILL PLACEMENT, CERTIFIED BY A PROFESSIONAL ENGINEER.

18. CONCRETE TEST RESULTS. FOR ALL CAST IN PLACE CONCRETE, CERTIFIED BY A PROFESSIONAL ENGINEER.

19. A STATEMENT REGARDING THE STABILITY OF ALL CUT/FILL SLOPES.

20. A STATEMENT REGARDING THE PRESENCE OF SOIL PERMEABILITY, GROUNDWATER AND/OR BEDROCK IN POOL AREA.

21. EVIDENCE THAT THE CUT-OFF/CORE TRENCH WAS INSTALLED PER PLANS AND SPECIFICATIONS.

22. EVIDENCE THAT THE EMERGENCY SPILLWAY AND/OR ACCESS ROAD WAS INSTALLED AS REQUIRED BY PLANS AND SPECIFICATIONS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/13

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/02/13

DIRECTOR — DATE 5/2/13

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

HOWARD SCD — DATE 4/30/13

ENGINEERS CERTIFICATE

"I 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."

SIGNATURE OF ENGINEER — DATE 4/30/13
PAUL M. SILL, P.E.

DEVELOPER'S CERTIFICATE

"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 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 4/30/13

APPROVED
PLANNING BOARD
OF HOWARD COUNTY
DATE 04/15/2013

AS-BUILT CERTIFICATION

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — DATE: 6/1/22
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

NO.	DESCRIPTION	DATE

REVISIONS

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS-BUILT

BIORETENTION PLANTING PLAN & MD 378 POND NOTES

TURF VALLEY

REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17
3RD ELECTION DISTRICT

PART OF PARCELS 8 & 394
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

Sill · Adcock & Associates · LLC
Engineers · Surveyors · Planners
3300 North Ridge Road, Suite 160
Ellicott City, Maryland 21043
Phone: 443.325.7682 Fax: 443.325.7685
Email: info@saaland.com

DESIGN BY: DB
DRAWN BY: BK
CHECKED BY: PS
SCALE: AS SHOWN
DATE: APRIL 30, 2013
PROJECT #: 06-025
SHEET #: 11 of 12

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. 32025, EXPIRATION DATE: JUNE 20, 2013

SDP-13-038

MATERIALS SPECIFICATIONS FOR TEMPORARY BIORETENTION FACILITY

MATERIAL	SPECIFICATION	SIZE	NOTES
PLANTINGS	SEE PLANT LIST THIS SHEET	N/A	PLANTINGS ARE SITE-SPECIFIC, SEE PLANT LIST THIS SHEET
PLANTING SOIL [1.0' DEEP]	SAND 35% - 60% SILT 0% - 25% GROUND COMPOST 40%-50%	N/A	EXISTING SOIL SUITABLE TO MEET PLANTING SOIL SPECIFICATIONS TO BE STOCKPILED IN DESIGNATED AREA & SUPPLEMENTED WITH COMPOST AS NECESSARY
MULCH	SHREDDED HARDWOOD		AGED 6 MONTHS, MINIMUM
PEA GRAVEL DIAPHRAGM AND CURTAIN DRAIN, IF REQUIRED	PEA GRAVEL: ASTM-D-448 ORNAMENTAL STONE: WASHED COBBLES	PEA GRAVEL: NO. 6 STONE: 2"TO 5"	
HARDWARE CLOTH	0.035" THICK - 1/4" MESH OR SMALLER GALVANIZED WIRE HARDWARE CLOTH		FOR USE AS A WRAP AROUND PERFORATED UNDERDRAIN PIPING
UNDERDRAIN PEA GRAVEL	# 7 OR # 8 STONE	0.25" TO 0.50"	CLEAN WASHED STONE
UNDERDRAIN GRAVEL	AASHTO M-43	0.375" TO 0.75"	CLEAN WASHED STONE
UNDERDRAIN PIPING	F 758, TYPE PS 28 OR AASHTO M-278	4" TO 6" RIGID SCHEDULE 40 PVC OR SDR35	- 3/8" PERF. @ 6" ON CENTER, 4 HOLES PER ROW; - SLOTTED PIPE MAY BE USED IN-LIEU OF PERFORATED PIPE (HARDWARE CLOTH WRAP NOT REQUIRED) - MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES

TEMPORARY BIORETENTION PLANT LIST

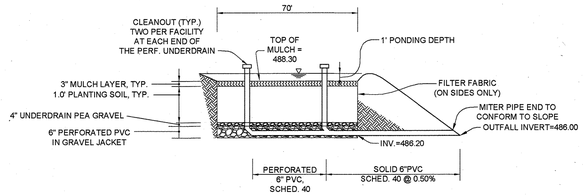
SHRUBS					
BOTANICAL NAME	COMMON NAME	SPACING	SIZE	REMARKS	QTY
CORNUS AMOMUM	SILKY DOGWOOD	MIN. 10' O.C.*	18"-24" HT.	CONT.	3
VIBURNUM DENTATUM	ARROWWOOD	MIN. 10' O.C.*	18"-24" HT.	CONT.	6
HERBACEOUS SPECIES					
EUPATORIUM FISTULOSUM	JOE-PYE WEED	MIN. 4' O.C.*	1 QT./12" HT.	CONT. (3' O.C.)	9
RUDEBECKIA LACINIATA	TALL CONEFLOWER	MIN. 3' O.C.*	1 QT.	CONT.	6

NOTE: PLANT MATERIAL MUST COVER 50% OF THE MULCH AREA AT MATURE GROWTH.
*INTERSPERSE PLANTINGS THROUGHOUT BIORETENTION FILTER/MULCH AREA

TEMPORARY STORMWATER MANAGEMENT SUMMARY TABLE

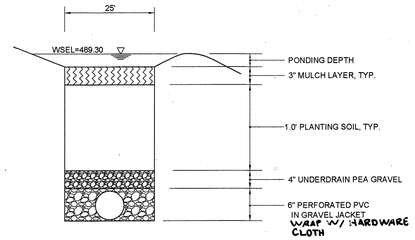
D.A.	Pe		ESDV		CHANNEL PROTECTION	
	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
B-1	2.0"	2.0"	1,957 CF (1)	1,980 CF (1)	N/A (3)	N/A (3)

NOTES:
1) TREATMENT FOR THE ENVIRONMENTAL SITE DESIGN VOLUMES (ESDv) WILL BE PROVIDED FOR AS FOLLOWS:
- DRAINAGE AREA B-1: TEMPORARY BIORETENTION FACILITY (F-6)
2) CHANNEL PROTECTION IS NOT REQUIRED SINCE ALL ESDV HAVE BEEN TREATED FULLY.
3) OVERBANK FLOOD PROTECTION VOLUME, QP, IS NOT REQUIRED FOR THIS SITE.
4) EXTREME FLOOD VOLUME, QF, IS NOT REQUIRED FOR THIS SITE.



TEMPORARY BIORETENTION FACILITY TYPICAL PROFILE

NOT TO SCALE



TEMPORARY BIORETENTION FACILITY TYPICAL SECTION

NOT TO SCALE

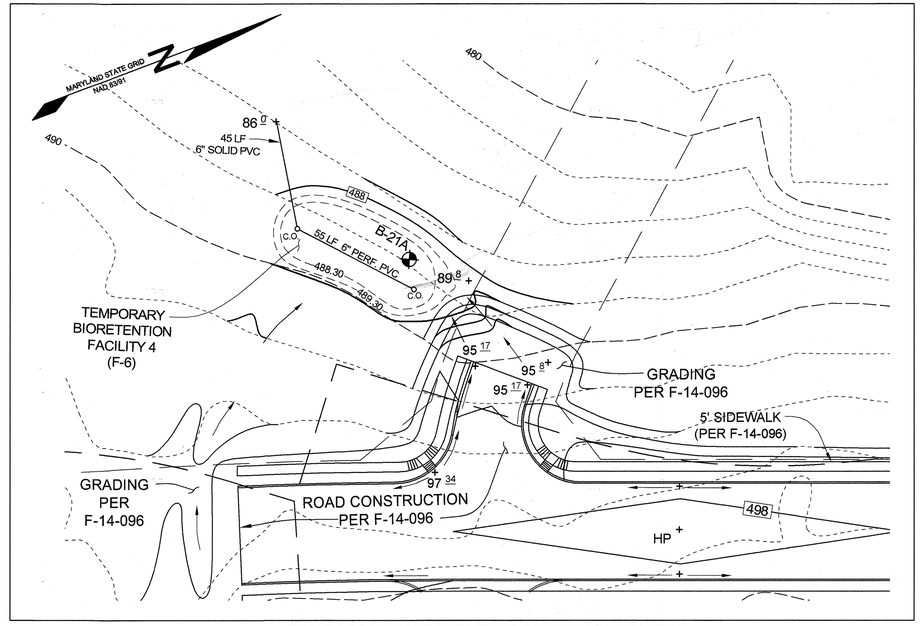
NOTES:
- FOR ADDITIONAL INFORMATION, SEE THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I AND II.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BIORETENTION FACILITIES (F-6)

a. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
b. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD OR DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
c. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
d. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

LEGEND

EXISTING CONTOUR 382
EXISTING SPOT ELEVATION 382.2
PROPOSED CONTOUR 486
PROPOSED WORK (BY OTHERS)
PROPOSED SPOT ELEVATION +82.53
DIRECTION OF FLOW
EXISTING SOIL BORING B-1



TEMPORARY BIORETENTION FACILITY PLAN VIEW BRVA COURT

1"=30'

THE PURPOSE OF THIS ADDITIONAL SHEET IS TO PROVIDE TEMPORARY STORMWATER MANAGEMENT FOR THE CONSTRUCTION OF MOUNT VILLA PARKWAY UNDER F-14-096.

OWNER/DEVELOPER

MANGIONE ENTERPRISES OF TURF VALLEY, LP
LOU MANGIONE
1205 YORK ROAD
LUTHERVILLE, MARYLAND 21093
410.825.8400

AS BUILT

AS-BUILT CERTIFICATION

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR DATE: 4/16/23
MD REG. NO. 21257, EXPIRATION DATE: 6/16/23

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6-26-14
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6-30-14
DIRECTOR — DATE 6/30/14

APPROVED
PLANNING BOARD OF HOWARD COUNTY
DATE 4/15/13

NO.	DESCRIPTION	DATE
	REVISIONS	

STORMWATER MANAGEMENT DETAILS
TURF VALLEY
REGIONAL STORMWATER MANAGEMENT FACILITIES
PGCC MULTI-USE SUBDISTRICT

TAX MAP 16 GRID 16 & 17 — PART OF PARCELS 8 & 394
3RD ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

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STATE OF MARYLAND — MICHAEL D. SILL — No. 32025 — PROFESSIONAL ENGINEER

DESIGN BY:	DB/BK
DRAWN BY:	BK
CHECKED BY:	PS
SCALE:	AS SHOWN
DATE:	JUNE 23, 2014
PROJECT #:	06-025
SHEET #:	12 of 12

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. 32025, EXPIRATION DATE: JUNE 20, 2015

SDP-13-038