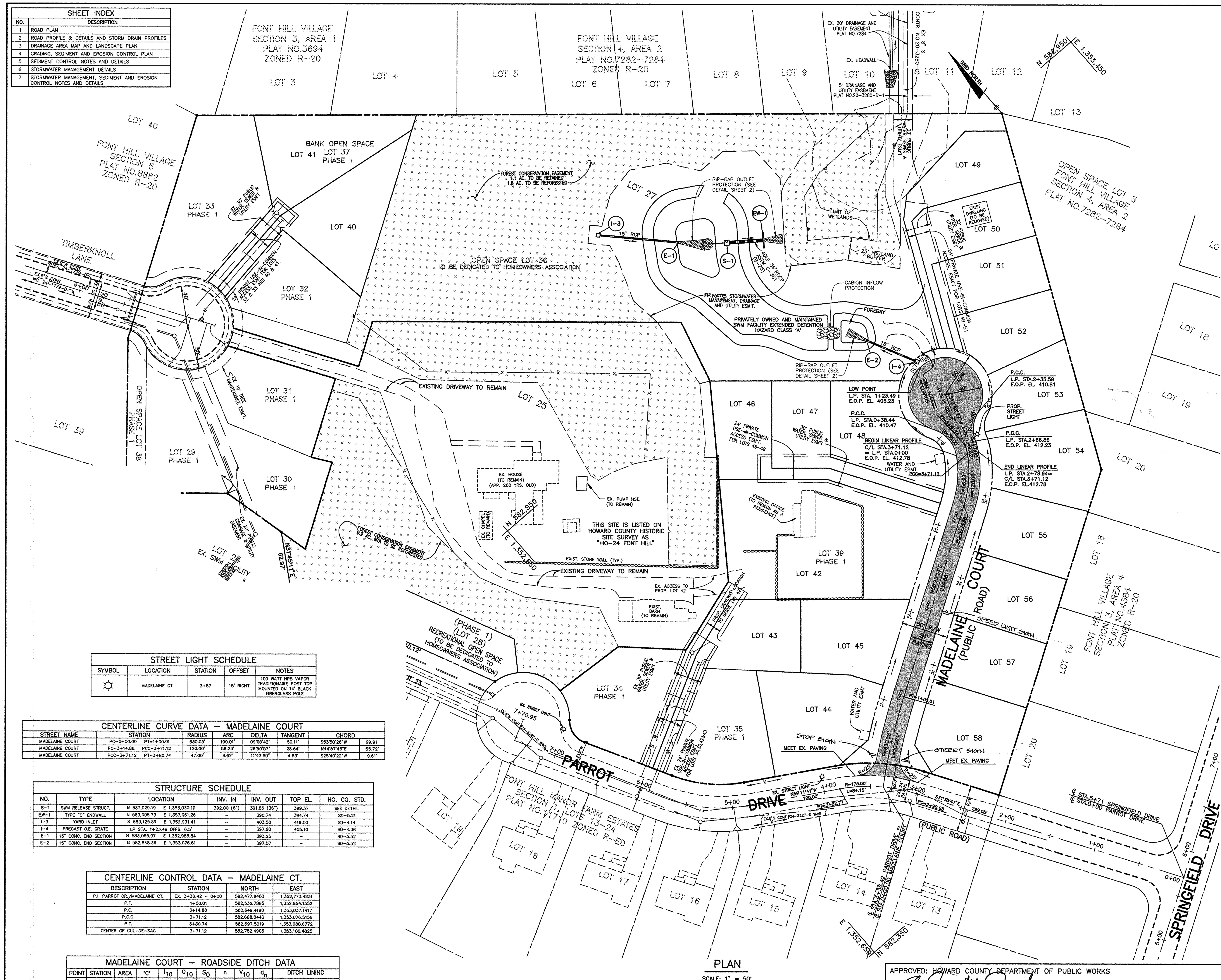
SHEET INDEX

NO.	DESCRIPTION
1	ROAD PLAN
2	ROAD PROFILE & DETAILS AND STORM DRAIN PROFILES
3	DRAINAGE AREA MAP AND LANDSCAPE PLAN
4	GRADING, SEDIMENT AND EROSION CONTROL PLAN
5	SEDIMENT CONTROL NOTES AND DETAILS
6	STORMWATER MANAGEMENT DETAILS
7	STORMWATER MANAGEMENT, SEDIMENT AND EROSION CONTROL NOTES AND DETAILS



STREET LIGHT SCHEDULE

SYMBOL	LOCATION	STATION	OFFSET	NOTES
☼	MADELAINE CT.	3+87	15' RIGHT	100 WATT HPS VAPOR TRADITIONAIRE POST TOP MOUNTED ON 14' BLACK FIBERGLASS POLE

CENTERLINE CURVE DATA – MADELAINE COURT

STREET NAME	STATION	RADIUS	ARC	DELTA	TANGENT	CHORD	
MADELAINE COURT	PC=0+00.00 PT=1+00.01	630.05'	100.01'	09°05'42"	50.11'	S53°50'26"W	99.91'
MADELAINE COURT	PC=3+14.88 PCC=3+71.12	120.00'	56.23'	26°50'57"	28.64'	N44°57'45"E	55.72'
MADELAINE COURT	PCC=3+71.12 PT=3+80.74	47.00'	9.62'	11°43'50"	4.83'	S25°40'22"W	9.61'

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP EL.	HO. CO. STD.
S-1	SWM RELEASE STRUCT.	N 583,029.19 E 1,353,030.10	392.00 (6")	391.86 (36")	399.37	SEE DETAIL
EW-1	TYPE "C" ENDWALL	N 583,005.73 E 1,353,061.26	–	390.74	394.74	SD-5.21
I-3	YARD INLET	N 583,125.89 E 1,352,931.41	–	403.50	419.00	SD-4.14
I-4	PRECAST O.E. GRATE	LP STA. 1+23.49 OFFS. 6.5'	–	397.60	405.10	SD-4.36
E-1	15" CONC. END SECTION	N 583,065.97 E 1,352,988.84	–	393.25	–	SD-5.52
E-2	15" CONC. END SECTION	N 582,848.36 E 1,353,076.61	–	397.07	–	SD-5.52

CENTERLINE CONTROL DATA – MADELAINE CT.

DESCRIPTION	STATION	NORTH	EAST
P.I. PARROT DR./MADELAINE CT.	EX. 3+36.42 = 0+00	582,477.8403	1,352,773.4931
P.T.	1+00.01	582,536.7885	1,352,854.1552
P.C.	3+14.88	582,649.4190	1,353,037.1417
P.C.C.	3+71.12	582,688.8443	1,353,076.5156
P.T.	3+80.74	582,697.5019	1,353,080.6772
CENTER OF CUL-DE-SAC	3+71.12	582,752.4905	1,353,100.4825

MADELAINE COURT – ROADSIDE DITCH DATA

POINT	STATION	AREA	'C'	I_{10}	Q_{10}	S_0	n	V_{10}	d_n	DITCH LINING
1R	1+42	0.11	.36	6.6	0.3	8%	0.04	2.1	0.2'	SOIL STABILIZATION MATTING
1L	0+91	0.17	.36	6.6	0.4	8%	0.04	2.3	0.2'	SOIL STABILIZATION MATTING
2R	2+40	0.26	.36	6.6	0.6	8%	0.04	2.5	0.2'	SOIL STABILIZATION MATTING
2L	1+89	0.45	.36	6.6	1.1	8%	0.04	2.9	0.3'	SOIL STABILIZATION MATTING
3R	3+30	1.17	.30	6.6	2.3	6%	0.04	3.2	0.4'	SOIL STABILIZATION MATTING
3L	2+87	0.87	.36	6.6	2.1	6%	0.04	3.1	0.4'	SOIL STABILIZATION MATTING
4R	LP 2+21	2.26	.30	6.6	4.5	4.5%	0.04	3.4	0.6'	SOIL STABILIZATION MATTING
4L	LP 0+28	1.20	.36	6.6	2.9	6%	0.04	3.4	0.5'	SOIL STABILIZATION MATTING
5R	LP	2.51	.30	6.6	5.0	0.7%	0.04	1.7	0.9'	SOIL STABILIZATION MATTING
5L	LP	1.58	.36	6.6	3.8	0.7%	0.04	1.6	0.8'	SOIL STABILIZATION MATTING

BENCH MARKS

VERTICAL CONTROLS

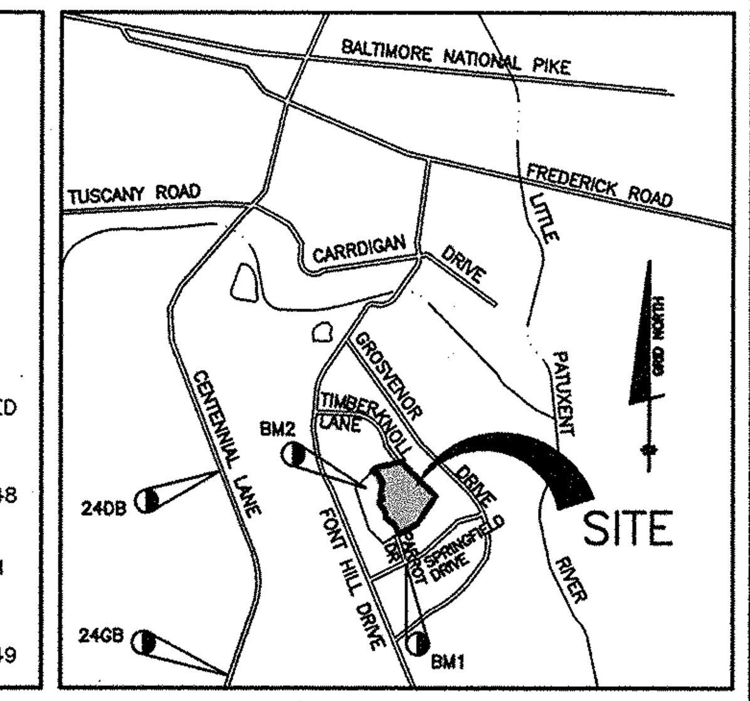
BM 1 — ELEV. 421.62
X CUT IN TOP OF FH ON SOUTHWEST CORNER OF PARROTT DRIVE & SPRING FIELD DRIVE.

BM 2 — ELEV. 405.23
TOP OF MH NEAR THE NORTHERNMOST CORNER OF LOT 10 FONT HILL MANOR FARM ESTATES.

HORIZONTAL CONTROLS

HO. CO. NO.24DB — NAD '83
SURVEY DISC SET ON CONC. MONUMENT LOCATED AT THE SOUTHWEST CORNER OF THE ENTRANCE TO CENTENNIAL ELEMENTARY SCHOOL AT THE INTERSECTION WITH CENTENNIAL LANE.
N-582,098.3273 E-1,351,468.5648

HO. CO. NO.24GB — NAD '83
ALUMINUM CAP SET ON 3/4" REBAR SET FLUSH WITH GROUND LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION BETWEEN CENTENNIAL LANE & OLD ANNAPOLIS ROAD.
N-579,069.4623 E-1,350,441.8549



VICINITY MAP
SCALE : 1"=2000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY, PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST 24 HOURS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. PROJECT BACKGROUND :
   LOCATION : TAX MAP 24 – PARCEL 725
   ZONING : R-ED
   TOTAL TRACT AREA : 13.79 AC.
   TOTAL NUMBER OF PROPOSED LOTS : 27 BUILDABLE, 3 OPEN SPACE
   (PHASE 1 – 7 BUILDABLE, 3 OPEN SPACE)
   (PHASE 2 – 20 BUILDABLE)
   DATE PRELIMINARY PLAN APPROVED : 12/97
   DPZ REFERENCE # : S-97-02, P-93-07, P-92-12, F-93-16, F-95-147, S-96-21, F-97-150, PB-310, P-98-07, WP-97-109
5. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
6. TOPOGRAPHY TAKEN FROM FIELD RUN SURVEY BY JOHN MELLEMA, INC., AT A 2' INTERVAL ON/OR ABOUT MAY, 1992.
7. HORIZONTAL DATUM FOR THIS PROJECT IS NAD 83 AS PROJECTED FROM HOWARD COUNTY GEODETIC CONTROL STATIONS NO.24GB AND NO.24DB; VERTICAL CONTROL PROVIDED BY BM1 & BM2.
8. ALL ROAD FILLS SHALL BE COMPACTED TO 95% AS DETERMINED BY AASHTO T-180.
9. WATER AND SEWER FOR THIS SUBDIVISION IS PUBLIC. DRAINAGE AREA IS PATAPSCO, CONTRACT NUMBER 24-3689-D.
10. TRAFFIC STUDY PREPARED BY LEE CUNNINGHAM & ASSOC., INC., DATED JULY 1995.
11. NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
12. EXISTING UTILITIES WERE LOCATED BY RECORD DRAWINGS AND/OR FIELD RUN SURVEY BY TSA GROUP, INC. CONTRACTOR IS RESPONSIBLE FOR VARIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.
13. UNLESS NOTED AS "PRIVATE" ALL EASEMENTS ARE PUBLIC.
14. STORMWATER MANAGEMENT SHALL BE PROVIDED BY THE FACILITY LOCATED ON LOT 36. QUALITY & QUANTITY CONTROL PROVIDED BY EXTENDED DETENTION. QUALITY CONTROL FOR LOTS 49 THRU 52 TO BE PROVIDED BY DRYWELLS.
15. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN WETLANDS, WETLANDS BUFFERS OR FOREST CONSERVATION AREAS, EXCEPT FOR THE WORK APPROVED AS PART OF THESE PLANS.
16. FLOODPLAIN STUDY IS NOT REQUIRED FOR THIS PROJECT.
17. PLANNING BOARD CASE NO.PB-310 WAS APPROVED IN ACCORDANCE WITH THE DECISION AND ORDER DATED MARCH 13, 1997 TO APPROVE A SKETCH PLAN IN AN R-ED ZONING DISTRICT.
18. WP-97-109 WAS APPROVED APRIL 25, 1997 TO WAIVE SECTION 16.144(a) REQUIRING A SKETCH PLAN; SECTION 16.144(f) REQUIRING A PRELIMINARY PLAN: AND SECTION 16.121(a)(e) REQUIRING 25% OPEN SPACE FOR THE RECORDING OF THE SUBDIVISION PLAT SUBMITTED AS F-97-150.
19. STREET LIGHTS PLACEMENT AND TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY THE "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE, 1993)", WHICH DETERMINED HORIZONTAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20 FEET SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410)465-6105

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 9/2/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/4/98
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/9/98

OWNER:
TIMOTHY E. WELSH
P.O. BOX 1447
ELLICOTT CITY, MARYLAND
21041-1447

DEVELOPER:
TIMOTHY E. WELSH
P.O. BOX 1447
ELLICOTT CITY, MARYLAND
21041-1447

PROJECT: FONT HILL MANOR FARM ESTATES
SECTION 2, PHASE 2

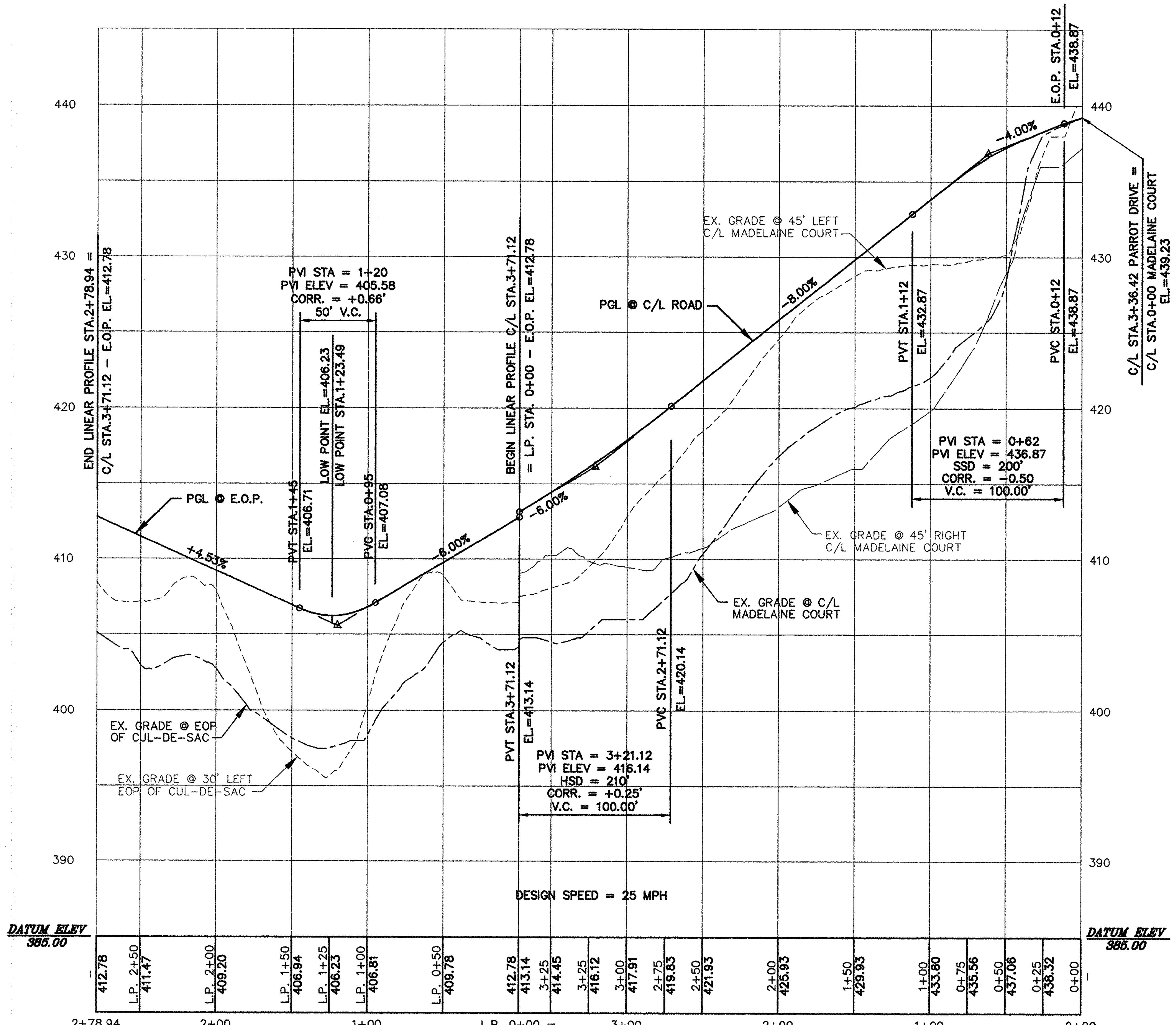
LOCATION: BLOCKS 8 & 14
TAX MAP 24 – PARCEL 725
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PLAN
S-92-07, P-93-07, P-92-12, F-93-16, F-95-147
S-96-21, F-97-150, PB-310, P-98-07, WP-97-109

DATE: FEBRUARY, 1998 / JULY 24, 1998 — PROJECT NO. 1070

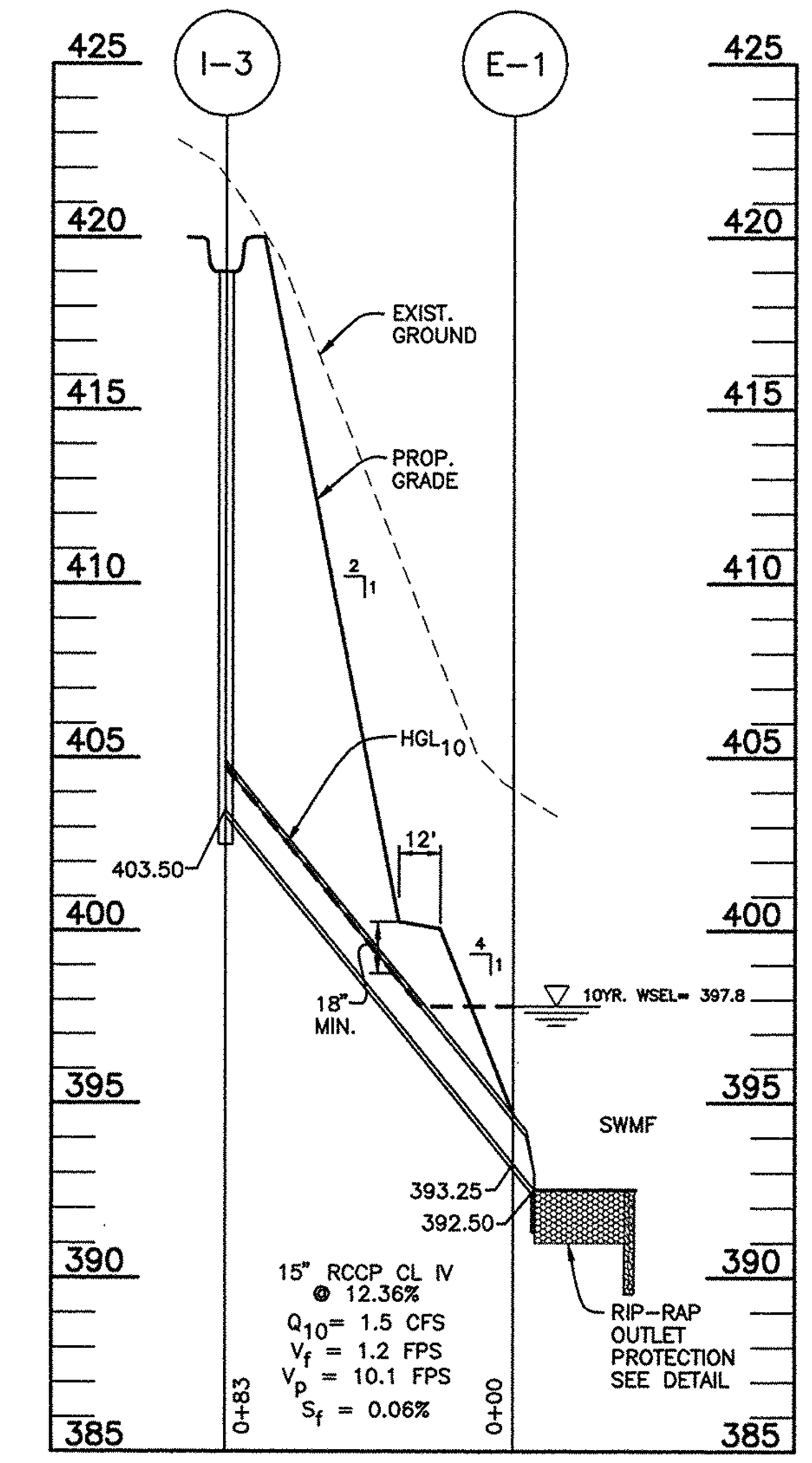
DES: GWF/DAM — DRN: MCR/DBT — SCALE: AS SHOWN — DRAWING 1 OF 7

Plotted: July 23, 1998
Acad Dwg: 701702S1

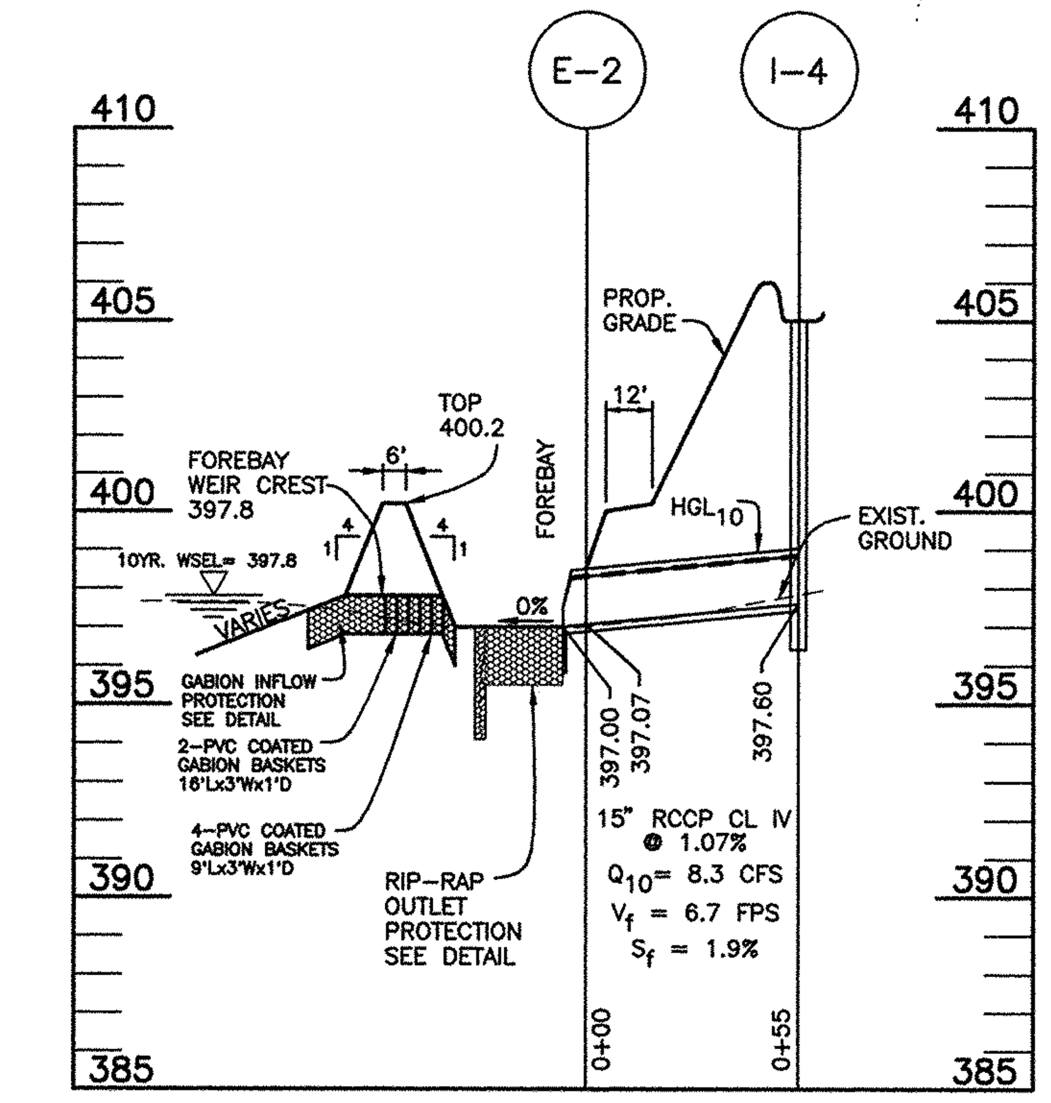


PROFILE:
MADELAINE COURT

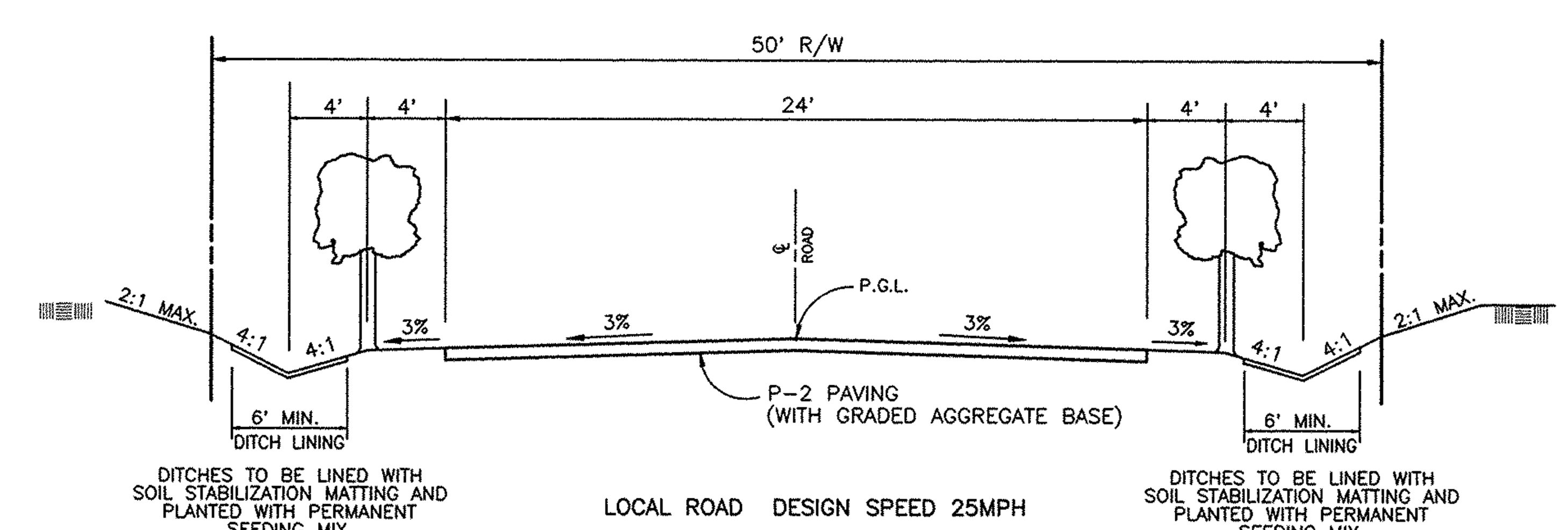
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.



STORM DRAIN PROFILE
SCALE: 1"=50' HORIZ., 1"=5' VERT.

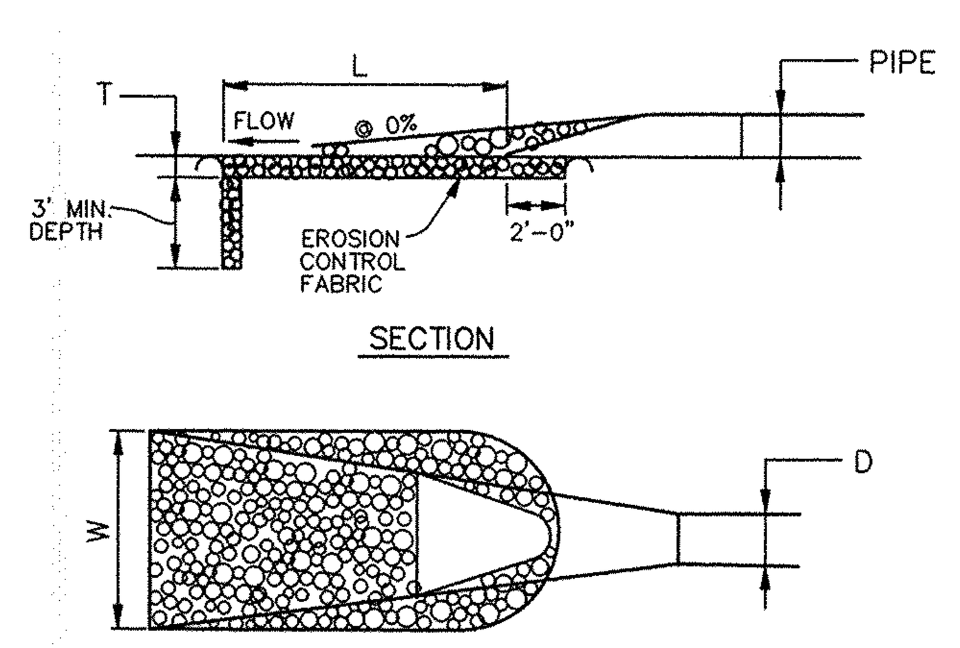


LOCAL ROAD DESIGN SPEED 25MPH

MADELAINE COURT

STA.0+29.00 TO 3+71.12 (BEGIN. CUL-DE-SAC)

NOT TO SCALE



STRUCTURE	d-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
HW-1	0.75'	20.0'	11.0'	1.50'	I
E-1	0.75'	26.0'	12.0'	1.50'	I
E-2	0.75'	20.0'	9.5'	1.50'	I

ROCK OUTLET PROTECTION DETAIL

NOT TO SCALE

ROCK OUTLET PROTECTION I

CONSTRUCTION SPECIFICATIONS

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

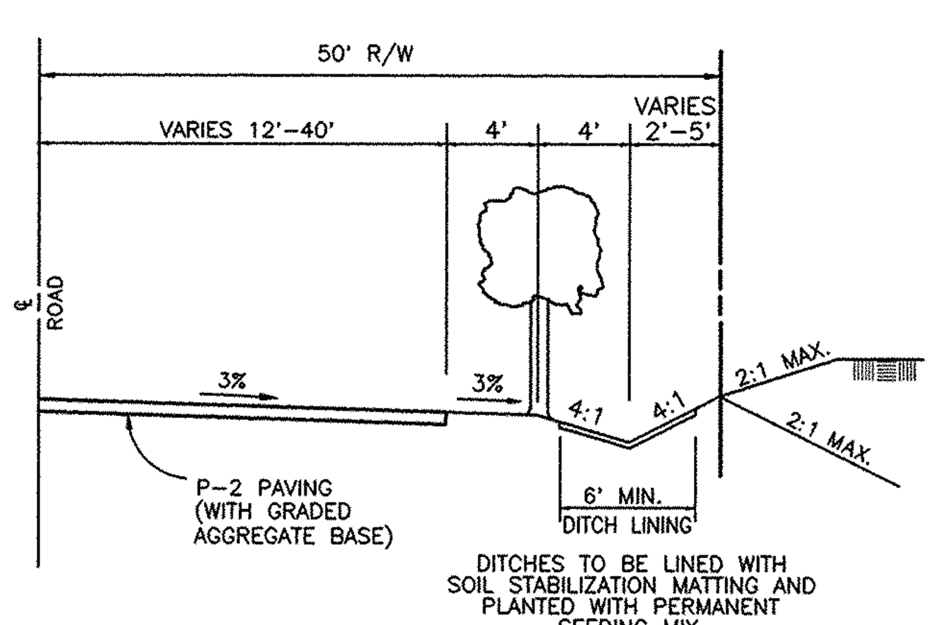
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.

3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spoils filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scouring adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 16 - 8A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



LOCAL ROAD DESIGN SPEED 25MPH

MADELAINE COURT
CUL-DE-SAC BULB

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 9/2/98 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 9/4/98 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 9/9/98 DATE

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410)465-6105

OWNER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041-1447	PROJECT: FONT HILL MANOR FARM ESTATES, SECTION 2, PHASE 2
	LOCATION: BLOCKS 8 & 14, TAX MAP 24 - PARCEL 725, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DEVELOPER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041-1447	TITLE: ROAD PROFILE AND DETAILS AND STORM DRAIN PROFILES; S-92-07, P-93-07, P-92-12, F-93-16, F-95-147, S-96-21, F-97-150, PB-310, P-98-07, WP-97-109
DES: GWF/DAM — DRN: MCR/DBT	DATE: FEBRUARY, 1998 / JULY 24, 1998 — PROJECT NO. 1070
	SCALE: AS SHOWN — DRAWING 2 OF 7

Plotted: July 23, 1998
Acad Dwg: 70170252

F-98-118

SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
G1b2	B	GLENELG LOAM – 3 TO 8 PERCENT SLOPES – MODERATELY ERODED
GnB2	C	GLENVILLE SILT LOAM – 3 TO 8 PERCENT SLOPES – MODERATELY ERODED
GlC2	B	GLENELG LOAM – 8 TO 15 PERCENT SLOPES – MODERATELY ERODED
MlC3	B	MANOR LOAM – 8 TO 15 PERCENT SLOPES – SEVERLY ERODED
MlD3	B	MANOR LOAM – 15 TO 25 PERCENT SLOPES – SEVERELY ERODED

* INDICATES HYDRIC SOILS
HO. CO. SOILS MAP No.15

SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY		NO	NO	YES
	ADJACENT TO ROADWAY			
	ADJACENT TO PERIMETER PROPERTIES	YES	YES	NO
PERIMETER NO. / LANDSCAPE TYPE		(1) A	(2) A	(3) B
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER		883	764	75
CREDIT FOR EXISTING VEGETATION: (NO OR YES W/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		YES 480	NO	NO
CREDIT FOR WALL, FENCE OR BERM: (NO OR YES W/LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NO	NO	NO
NUMBER OF PLANTS REQUIRED:	SHADE TREES	7	13	1
	EVERGREEN TREES	–	–	2
	OTHER TREES (2:1 SUBSTITUTE)	–	–	–
	SHRUBS	–	–	–
NUMBER OF PLANTS PROVIDED:	SHADE TREES	3	–	–
	EVERGREEN TREES	8	7! (1)	6 (1)
	OTHER TREES (2:1 SUBSTITUTE)	–	–	–
	SHRUBS (10:1 SUBSTITUTE)	–	–	–
	(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)			

(1) AS PART OF AN ACCORD BETWEEN THE PROPERTY OWNER AND THE SURROUNDING COMMUNITY, IT WAS AGREED THAT THE OWNER PROVIDE AN INCREASED BUFFER AREA BETWEEN THE RESIDENCES ALONG FONT HILL VILLAGE SECTION 3, AREA 4 & SECTION 4 AREA 2 AND THE FONT HILL MANOR DEVELOPMENT.

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING TYPE 'B' BUFFER

	PROPOSED
SWM FACILITY NO.	
LINEAR FEET OF PERIMETER	988
NUMBER OF TREES REQUIRED: SHADE TREES	8
EVERGREEN TREES	10
CREDIT FOR EXISTING VEGETATION: (NO OR YES W/LINEAR FEET)	YES 588 (1)
CREDIT FOR OTHER LANDSCAPING: (NO OR YES W/LINEAR FEET)	NO
NUMBER OF TREES PROVIDED: SHADE TREES	5
EVERGREEN TREES	–
OTHER TREES (2:1 SUBSTITUTE)	10

(1) 525' CREDIT FOR EX. VEGETATION TO BE PROVIDED BY TREES WITHIN FOREST CONSERVATION RETENTION/REFORESTATION AREA SURROUNDING THE SWMF.

LEGEND

- EXISTING CONTOURS — 999 —
- PROPOSED CONTOURS — 999 —
- LIMIT OF WETLANDS
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- PROPOSED STRUCTURE
- PROP. DRAINAGE AREAS
- SOILS DELINEATION
- SOIL GROUP — GlC2 (B SOIL)

STREET TREE PLANTING LIST

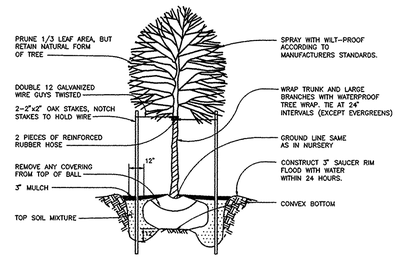
SYMBOL	QUANTITY	NAME	REMARKS
⊙	23	ACER SACCHARUM (sugar maple)	2 1/2" MIN. CAL. B & B FULL HEAD

LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
✳	103	PINUS STROBUS (EASTERN WHITE PINE)	5'– 6' HT. UNSHEARED
⊙	8	QUERCUS PALUSTRIS (pin oak)	2 1/2" MIN. CAL. B & B FULL HEAD

LANDSCAPE LEGEND

SYMBOL	REMARKS
⊙	STREET TREES TO BE PROVIDED BY DEVELOPER AND TO BE INCORPORATED ON FINAL PLANS
✳	LANDSCAPE TREES TO BE PROVIDED BY DEVELOPER AND TO BE INCORPORATED ON FINAL PLANS



TREE PLANTING DETAIL
NOT TO SCALE

NOTES:
1. TREES SHOULD BE PLANTED A MINIMUM OF SIX(6) FEET FROM THE EDGE OF PAVING AND MUST BE A MINIMUM OF FIVE(5) FEET FROM ANY STORM DRAIN.
2. TREES MUST BE PLANTED A MINIMUM OF FIVE(5) FEET FROM ANY OPEN SPACE ACCESS STRIP AND TEN(10) FEET FROM A DRIVEWAY.
3. A MINIMUM OF TWENTY(20) FEET SHOULD BE MAINTAINED BETWEEN TREES AND STREET LIGHTS.

NOTE:
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPING MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPE TREES IN THE AMOUNT OF $9,450.00 MUST BE POSTED AS PART OF THE DEVELOPERS AGREEMENT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 9/2/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/8/98

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410)465–8105

STATE OF MARYLAND — DONALD MASON — PROFESSIONAL ENGINEER

OWNER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041–1447	PROJECT: FONT HILL MANOR FARM ESTATES, SECTION 2, PHASE 2
	LOCATION: BLOCKS 8 & 14, TAX MAP 24 – PARCEL 725, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DEVELOPER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041–1447	TITLE: DRAINAGE AREA MAP AND LANDSCAPE PLAN, S–92–07, P–93–07, P–92–12, F–93–16, F–95–147, S–96–21, F–97–150, PB–310, P–98–07, WP–97–109
	DATE: FEBRUARY, 1998 / JULY 24, 1998 — PROJECT NO. 1070
DES: DAM/MLV — DRN: MCR/DBT	SCALE: AS SHOWN — DRAWING 3 OF 7

PLAN
SCALE: 1" = 50'

Plotted: July 23, 1998
Acad Dwg: 70250253

F–98–118

SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
G1b2	B	GLENELG LOAM – 3 TO 8 PERCENT SLOPES – MODERATELY ERODED
GnB2	C	GLENVILLE SILT LOAM – 3 TO 8 PERCENT SLOPES – MODERATELY ERODED
GtC2	B	GLENELG LOAM – 8 TO 15 PERCENT SLOPES – MODERATELY ERODED
MtC3	B	MANOR LOAM – 8 TO 15 PERCENT SLOPES – SEVERLY ERODED
MtD3	B	MANOR LOAM – 15 TO 25 PERCENT SLOPES – SEVERELY ERODED

* INDICATES HYDRIC SOILS
HO. CO. SOILS MAP No.15

NOTE:
SUBSOILS IN THE SWM AREA CONSIST OF SILTY SAND AND SANDY SILT WITH WEATHERED ROCK FRAGMENTS. BORINGS B-B AND B-D ENCOUNTERED AUGER REFUSAL AT DEPTHS OF 10 FT AND 8.6' RESPECTIVELY. NO OTHER BORING IN THE AREA ENCOUNTERED AUGER REFUSAL. IT SHOULD BE NOTED THAT LARGE OUTCROPPINGS OF ROCK WERE VISUALLY OBSERVED IN THE SWM AREA. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REMOVE ANY ROCK NOT SUITABLE FOR FILLS.

SEDIMENT BASIN DATA

DRAINAGE AREA	5.14 AC.
WET STORAGE REQUIRED	9252 CF
WET STORAGE PROVIDED	9252 CF (@ EL. 395.9)
DRY STORAGE REQUIRED	9252 CF
DRY STORAGE PROVIDED	9252 CF (@ EL. 397.5)*
BOTTOM ELEVATION	392.0
EMBANKMENT ELEVATION	400.2
RISER WEIR CREST ELEV. (TEMP.)	397.5
CLEANOUT ELEVATION	394.8
EMER. SPILLWAY CREST ELEV.	398.25
DRAIN DOWN ORIFICE INVERT	392.0
DIST. FROM TOP OF RISER TO CLEANOUT ELEVATION	4.57'

NOTE: REFER TO SWM/SEDIMENT CONTROL NOTES AND DETAILS FOR ADDITIONAL INFORMATION
* ELEV. CORR. TO MIN. REQ. VOLUME

SWM FACILITY SUMMARY TABLE

YEAR STORM	2 YR.	10 YR.	100 YR.
EXISTING RUNOFF (CFS)	3.9	16.9	N/A
COMBINED RUNOFF INTO SWMF (CFS)	8.0	21.8	38.7
DISCHARGE FROM SWMF	1.1	13.0	36.8
WSEL IN FACILITY	396.8	397.8	398.2
COMBINED DISCHARGE FROM SITE	2.5	15.0	43.4

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION

DAY 1 1.) OBTAIN GRADING PERMIT.

DAY 2–24 2.) INSTALL STABILIZED CONSTRUCTION ENTRANCES AND TREE PROTECTION FENCES. CLEAR AND GRUB AS REQUIRED TO INSTALL PERIMETER SEDIMENT CONTROL DEVICES AND INSTALL DEVICES, WITH APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, BEGIN CONSTRUCTION OF SEDIMENT BASIN. NOTE THAT EARTH DIKES AND TEMPORARY SWALE MUST BE ADJUSTED TO PROVIDE POSITIVE DRAINAGE DURING GRADING OPERATIONS.

DAY 25–32 3.) MASS GRADE SITE AND PROVIDE TEMPORARY STABILIZATION TO ALL DISTURBED AREAS, PROVIDE VELOCITY CHECKS (STONE CHECK DAMS) IN SIDE DITCHES.

DAY 33–64 4.) CONSTRUCT UTILITIES AND 1–4 TO E–2 STORM DRAIN SYSTEM. CONSTRUCT MADELAINE COURT PAVEMENT SECTION. STABILIZE ALL DISTURBED AREAS WITH PERMANENT STABILIZATIONS.

DAY 65–72 5.) WITH THE APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONSTRUCT 1–3 TO E–1 STORM DRAIN SYSTEM, CONVERT SEDIMENT BASIN TO FINAL STORMWATER MANAGEMENT FACILITY DESIGN. REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND PERMANENTLY STABILIZE ALL DISTURBED AREAS.

NOTE: SEDIMENT CONTROL LOCATION AND IMPLEMENTATION SHOWN ON THESE PLANS IS SUBJECT TO REVISION IN THE FIELD AT THE DISCRETION OF THE SEDIMENT CONTROL INSPECTOR.

LEGEND

EXISTING CONTOURS ——— 999 ———
PROPOSED CONTOURS ——— 999 ———
LIMIT OF WETLANDS
EXISTING WOODS LINE
PROPOSED WOODS LINE
EXISTING STRUCTURE
PROPOSED EARTH DIKE
LIMIT OF DISTURBANCE
PROPOSED SILT FENCE — SF —
PROP. SUPER SILT FENCE — SSF —
STABILIZED CONSTRUCTION ENTRANCE
PROP. TEMPORARY SWALE
TREE PROTECTION FENCE — TPF —
STONE CHECK DAM

OPERATION, MAINTENANCE AND INSPECTION NOTE

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

AS–BUILT CERTIFICATION

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

DONALD A. MASON — PE NO. 21443 — DATE

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

BY THE DEVELOPER:

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

DEVELOPER — DATE 8/19/98

BY THE ENGINEER:

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

ENGINEER – DONALD A. MASON, P.E. # 21443 — DATE 8/10/98

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

NATURAL RESOURCES CONSERVATION SERVICE — DATE 8/25/98

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/25/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 9/2/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/9/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/4/98

NO	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410)465–6105

STATE OF MARYLAND — DONALD A. MASON — No. 21443 — PROFESSIONAL ENGINEER

OWNER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041–1447	PROJECT: FONT HILL MANOR FARM ESTATES, SECTION 2, PHASE 2
DEVELOPER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041–1447	LOCATION: BLOCKS 8 & 14, TAX MAP 24 – PARCEL 725, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
	TITLE: GRADING, SEDIMENT AND EROSION CONTROL PLAN, S–92–07, P–93–07, P–92–12, F–93–16, F–95–147, S–96–21, F–97–150, PB–310, P–98–07, WP–97–109
	DATE: FEBRUARY, 1998; JULY 24, 1998 — PROJECT NO. 1070
DES: DAM/MLV — DRN: MCR/DBT	SCALE: AS SHOWN — DRAWING 4 OF 7

PLAN
SCALE: 1" = 50'

Plotted: July 23, 1998
Acad Dwg: 70260254

F–98–118

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1850).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	13.79	ACRES
TOTAL AREA DISTURBED	5.00	ACRES
AREA TO BE ROOFED OR PAVED	0.34	ACRES
AREA TO BE VEGETATIVELY STABILIZED	4.66	ACRES
TOTAL CUT	7,140	CU. YDS.
TOTAL FILL	20,200	CU. YDS.
OFFSITE BORROW AREA LOCATION	SITE W/ AN APPROVED SEDIMENT CONTROL PLAN	

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. 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.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES ARE LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATION

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

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

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

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

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

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

PERMANENT SEEDBED PREPARATION

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

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

1. PREFERRED – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0- UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
2. ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

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

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

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

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

To provide a suitable medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

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

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. II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 ½" in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

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

III. For sites having disturbed areas over 5 acres:

i. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.

b. Organic content of topsoil shall be not less than 1.5 percent by weight.

c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

V. Topsoil Application

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

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

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

iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation. G-21-2

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

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

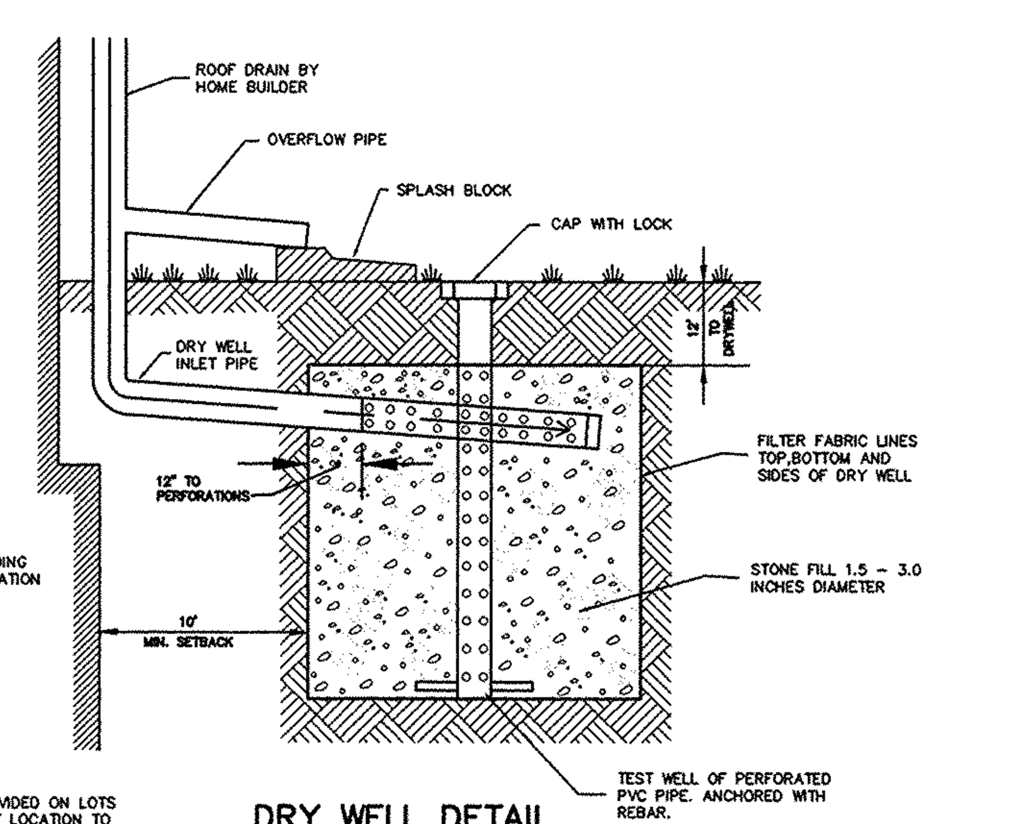
a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

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

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

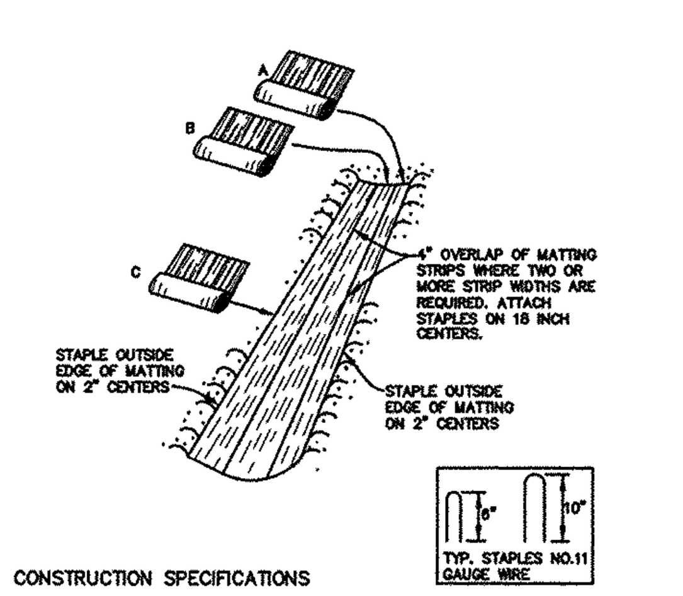
iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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



NOTES:
1.) DRYWELL TO BE PROVIDED ON LOTS 49 THRU 52. EXACT LOCATION TO BE DETERMINED AT THE SDP STAGE.
2.) ALL ROOF DOWNSPOUTS SHALL BE CONNECTED TO DRY WELL.

DRY WELL DETAIL
(DIMENSION: 4.5'x 4.5'x 4.5'DEEP)
NOT TO SCALE

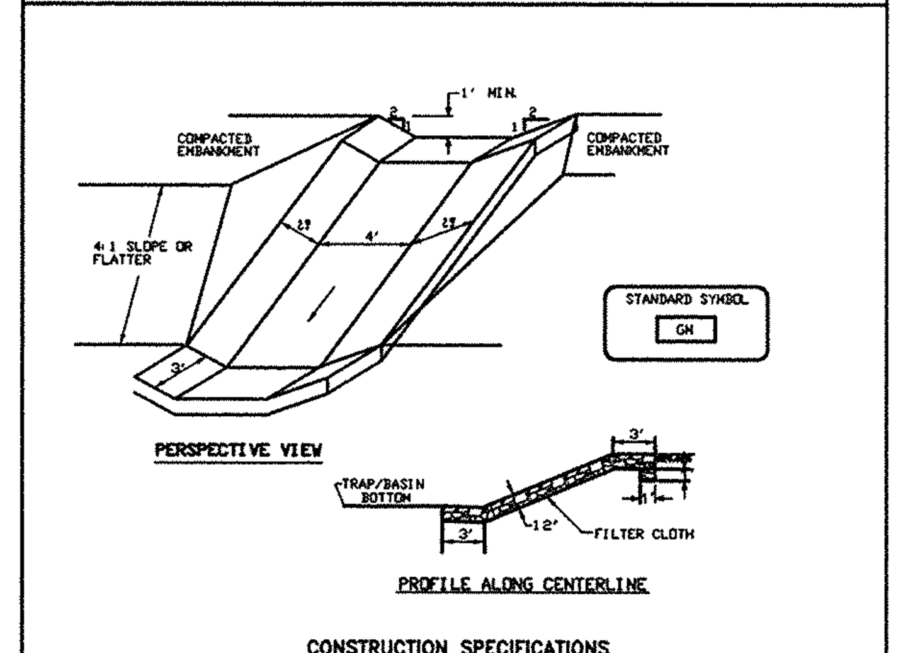


CONSTRUCTION SPECIFICATIONS
1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

SOIL STABILIZATION MATTING
NOT TO SCALE

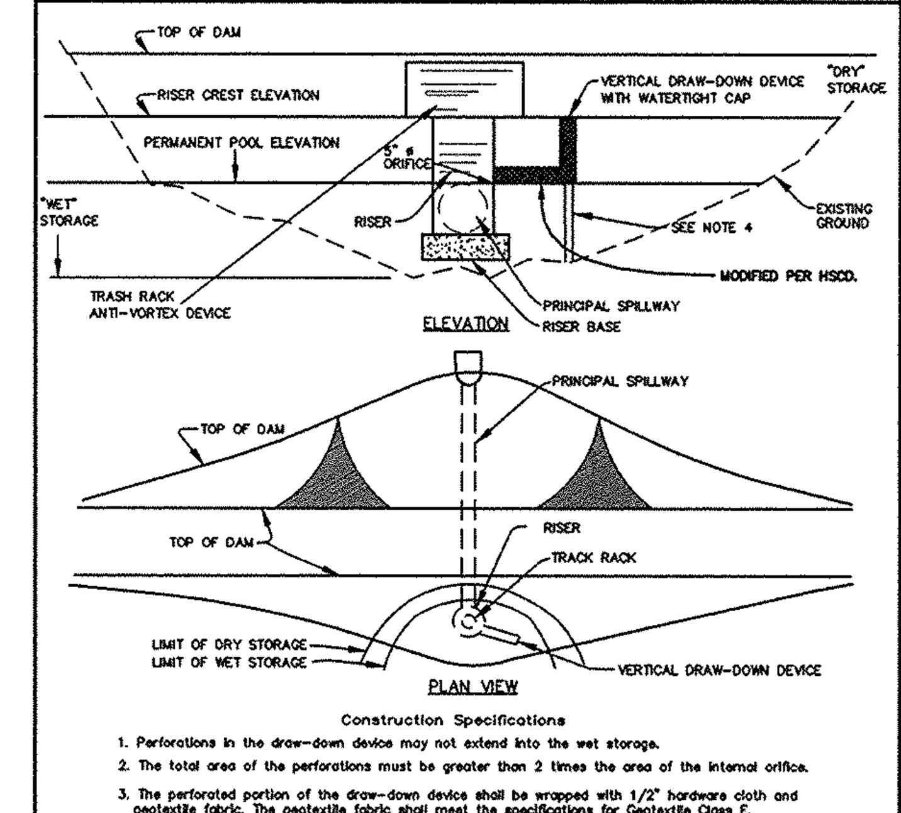
DETAIL 6 – GABION INFLOW PROTECTION



CONSTRUCTION SPECIFICATIONS
1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" – 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE B – 7 – 2 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BASIN DRAWDOWN SCHEMATIC VERTICAL DRAW-DOWN DEVICE



Construction Specifications
1. Perforations in the draw-down device may not extend into the wet storage.
2. The total area of the perforations must be greater than 2 times the area of the internal orifice.
3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
4. Provide support of draw-down device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of draw-down device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

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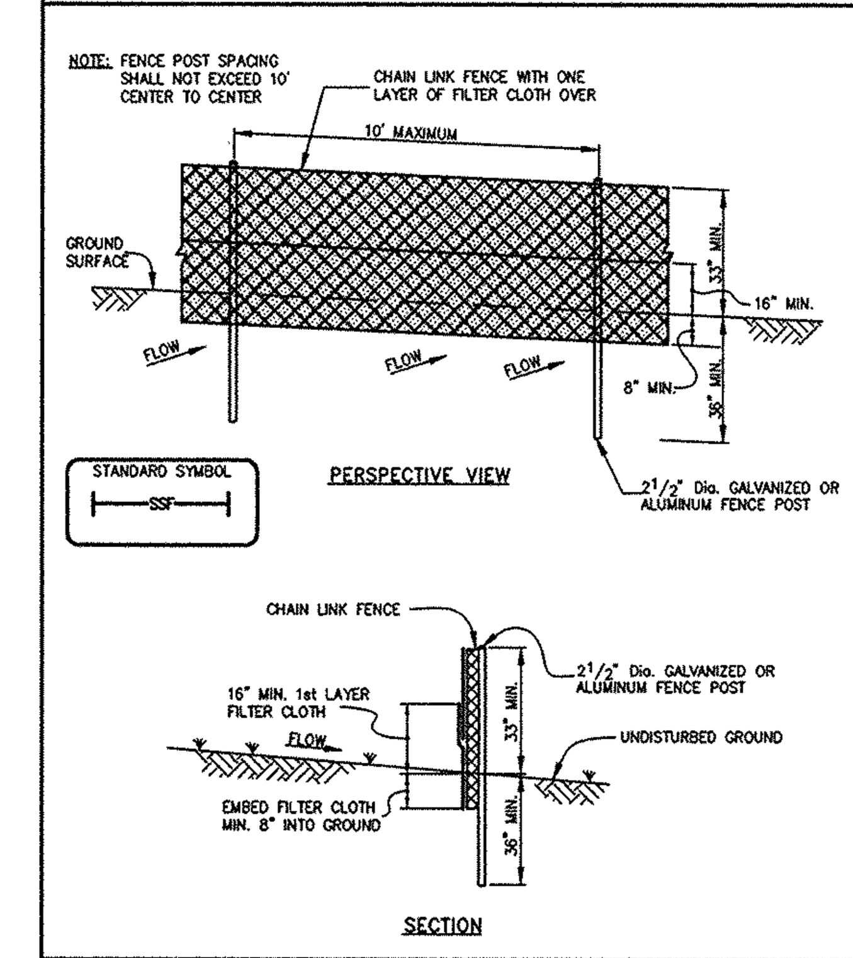
DETAIL 33 – SUPER SILT FENCE



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE H – 26 – 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS
1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

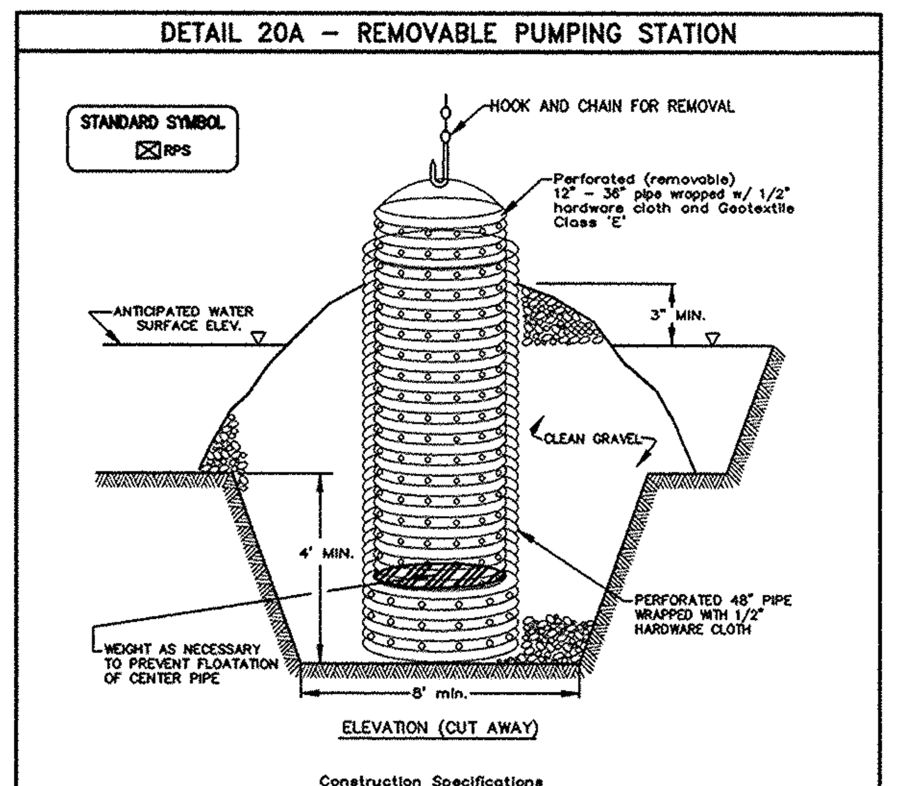
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft /minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

SUPER SILT FENCE DESIGN CRITERIA

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 – 10%	0 – 10:1	Unlimited	Unlimited
10 – 20%	10:1 – 5:1	200 feet	1,500 feet
20 – 33%	5:1 – 3:1	100 feet	1,000 feet
33 – 50%	3:1 – 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E – 26 – 3A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

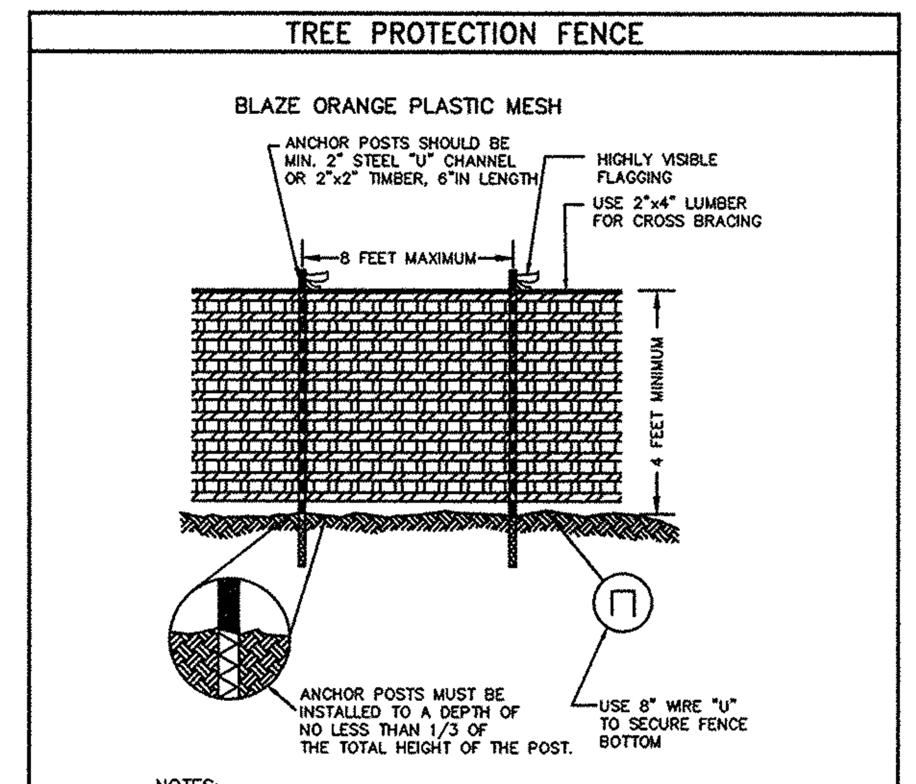
DETAIL 20A – REMOVABLE PUMPING STATION



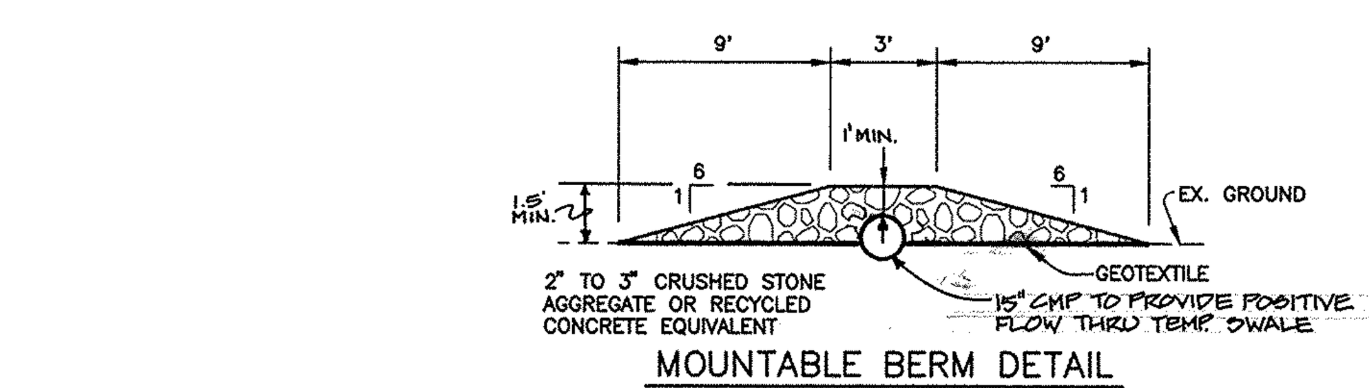
Construction Specifications
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE D – 12 – 5 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TREE PROTECTION FENCE

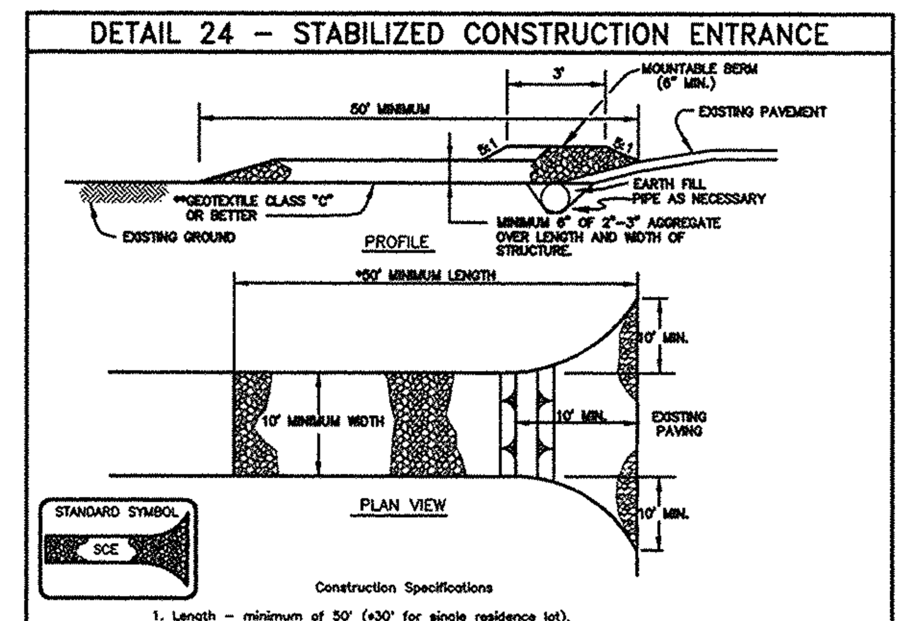


NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION
6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.



MOUNTABLE BERM DETAIL
NOT TO SCALE

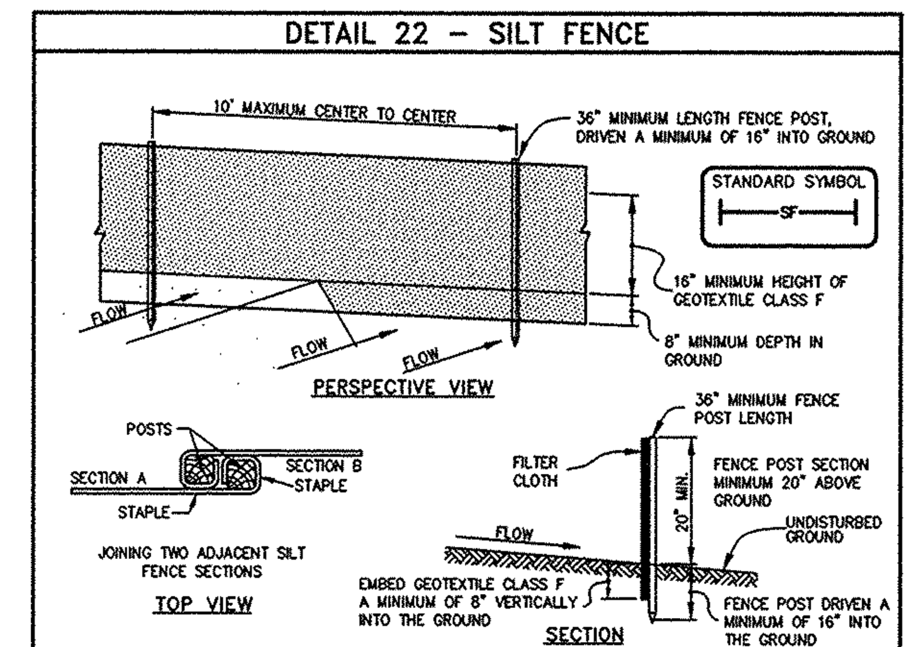
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specifications
1. Length – minimum of 50' (*30' for single residence lot).
2. Width– 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mounted berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE F – 17 – 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 – SILT FENCE



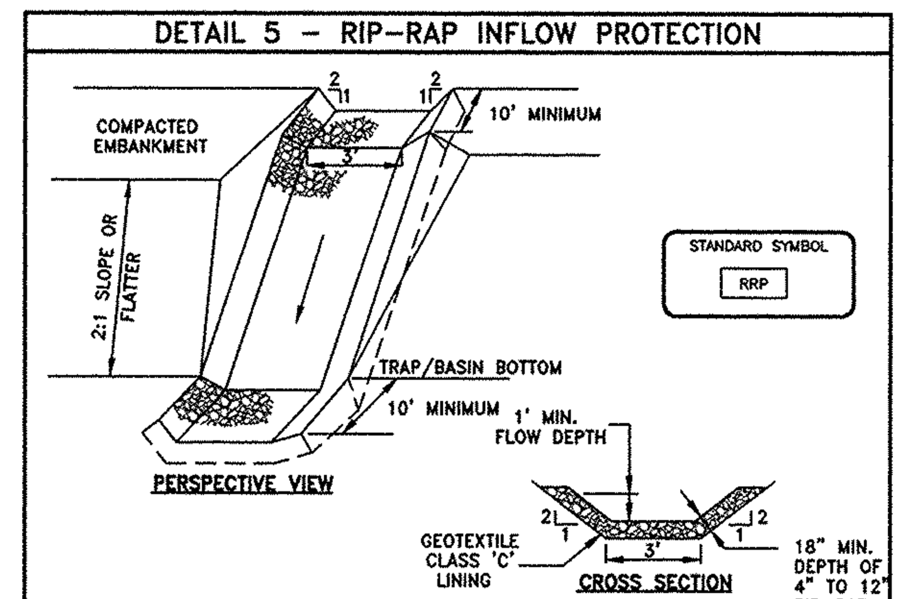
CONSTRUCTION NOTES FOR FABRICATED SILT FENCE
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pond per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E – 15 – 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

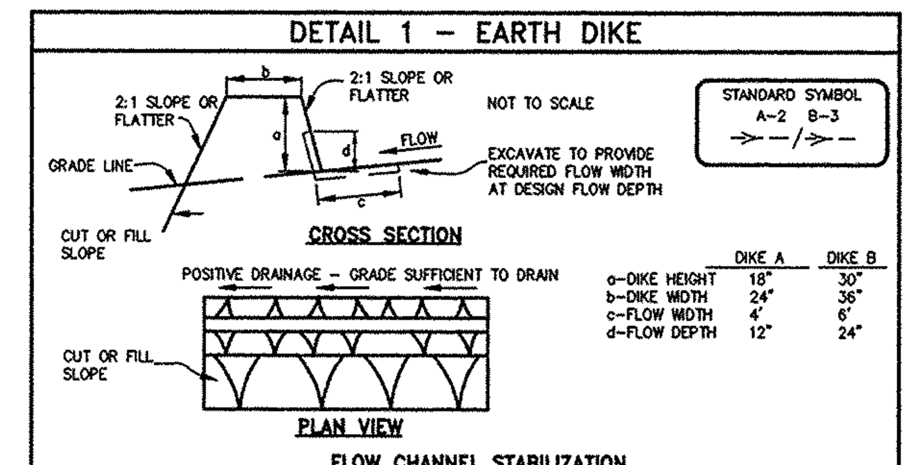
DETAIL 5 – RIP-RAP INFLOW PROTECTION



CONSTRUCTION SPECIFICATIONS
1. All lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-Rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-Rap Inflow Protection.
6. Rip-Rap should blend into existing ground.
7. Rip-Rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE B – 6 – 2 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum.

CONSTRUCTION SPECIFICATIONS
1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE A – 1 – 6 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."
DEVELOPER — 8/19/98 DATE

BY THE ENGINEER:
"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."
ENGINEER — 6/5/98 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
NATURAL RESOURCES CONSERVATION SERVICE — 8/25/98 DATE

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
HOWARD SOIL CONSERVATION DISTRICT — 8/25/98 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 9/2/98 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 9/4/98 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT — 9/9/98 DATE

NO	DATE	REVISION

TSA GROUP, INC.
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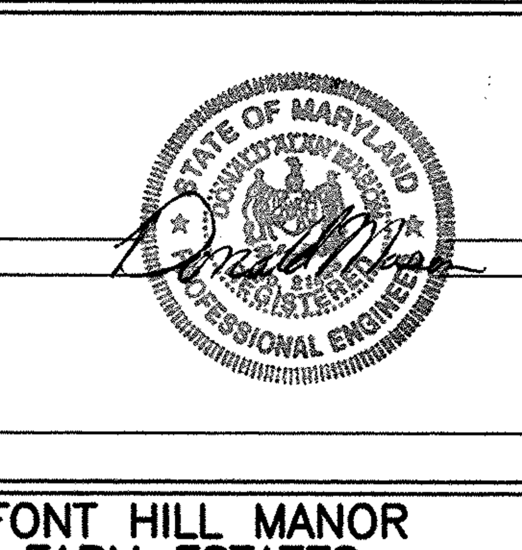
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • (410)465-6105



OWNER:
TIMOTHY E. WELSH
P.O. BOX 1447
ELLICOTT CITY, MARYLAND
21041-1447

DEVELOPER:
TIMOTHY E. WELSH
P.O. BOX 1447
ELLICOTT CITY, MARYLAND
21041-1447

PROJECT: FONT HILL MANOR FARM ESTATES
SECTION 2, PHASE 2

LOCATION: BLOCKS 8 & 14
TAX MAP 24 – PARCEL 725
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

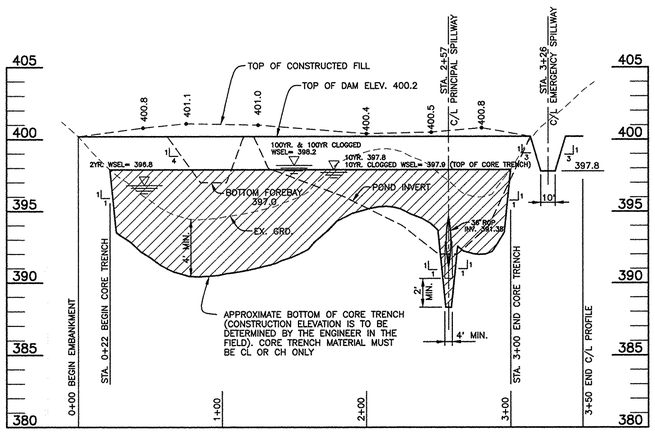
TITLE: SEDIMENT CONTROL NOTES AND DETAILS
S-92-07, P-93-07, P-92-12, F-93-16, F-95-147
S-96-21, F-97-150, PB-310, P-98-07, WP-97-109

DATE: FEBRUARY, 1998 / JUNE, 1998 | PROJECT NO. 1070

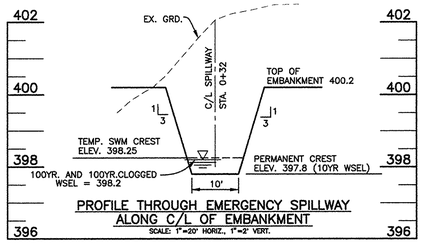
DES: DAM | DRN: MCR | SCALE: AS SHOWN | DRAWING 5 OF 7

Plotted: JUNE 5, 1998
Acod Dwg: 702302S5

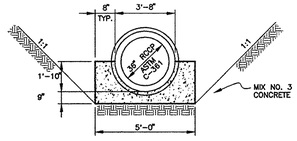
F-98-118



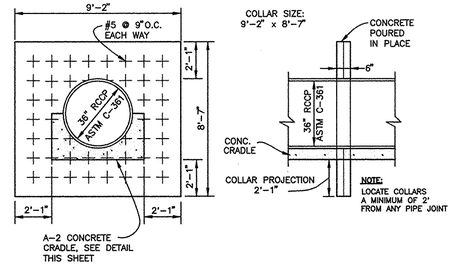
PROFILE ALONG C/L OF EMBANKMENT
SCALE: 1"=50' HORIZ., 1"=5' VERT.



PROFILE THROUGH EMERGENCY SPILLWAY ALONG C/L OF EMBANKMENT
SCALE: 1"=20' HORIZ., 1"=2' VERT.



TYPE A-2 CONCRETE CRADLE
NOT TO SCALE



ANTI-SEEP COLLAR
NOT TO SCALE

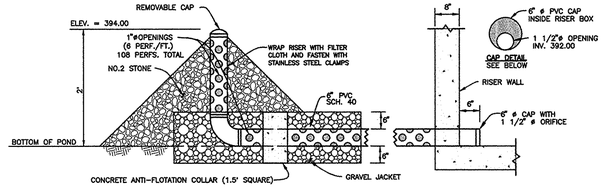
OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY

ROUTINE MAINTENANCE

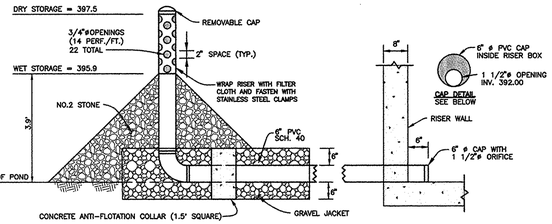
1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENT SHOULD BE REMOVED FROM THE POND NO LATER THAN WHEN THE CAPACITY OF THE POND IS HALF FULL OF SEDIMENT, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.



6" DEWATERING PIPE DETAIL AND EXTENDED DETENTION CONTROL ORIFICE
NOT TO SCALE



6" TEMPORARY SWM VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE

OPERATION, MAINTENANCE AND INSPECTION NOTE

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

AS-BUILT CERTIFICATION

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

DONALD A. MASON — PE NO. 21443 — DATE

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

BY THE DEVELOPER:

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

DEVELOPER — DATE 8/19/98

BY THE ENGINEER:

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

ENGINEER - DONALD A. MASON, P.E. # 21443 — DATE 7/27/98

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

NATURAL RESOURCES CONSERVATION SERVICE — DATE 8/25/98

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 8/25/98

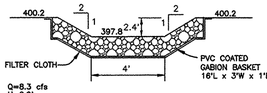
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 9/2/98

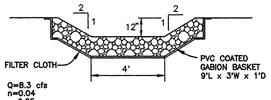
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9/9/98

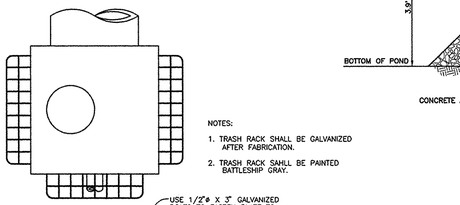
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 9/4/98



PROFILE THROUGH FOREBAY WEIR
NOT TO SCALE

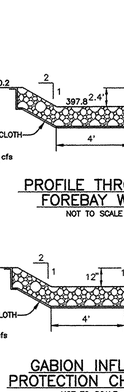


GABION INFLOW PROTECTION CHANNEL
NOT TO SCALE



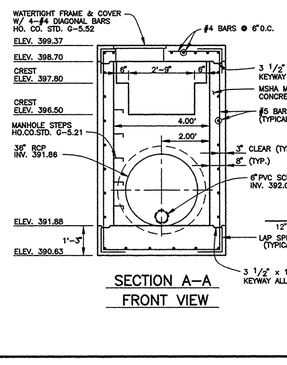
TRASH RACK
SCALE: 1" = 3'

NOTES:
1. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION.
2. TRASH RACK SAHLL BE PAINTED BATTLESHIP GRAY.

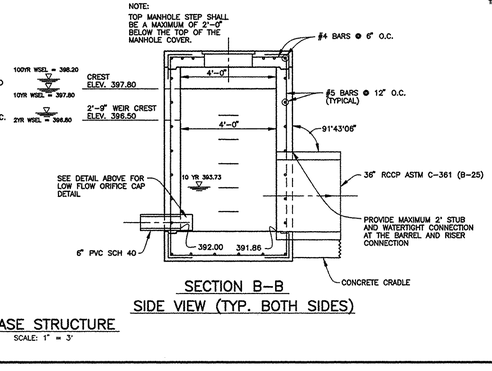


PLAN

BLOCKING DETAIL FOR TEMP. SWM DURING CONSTRUCTION
SCALE: 1" = 3'

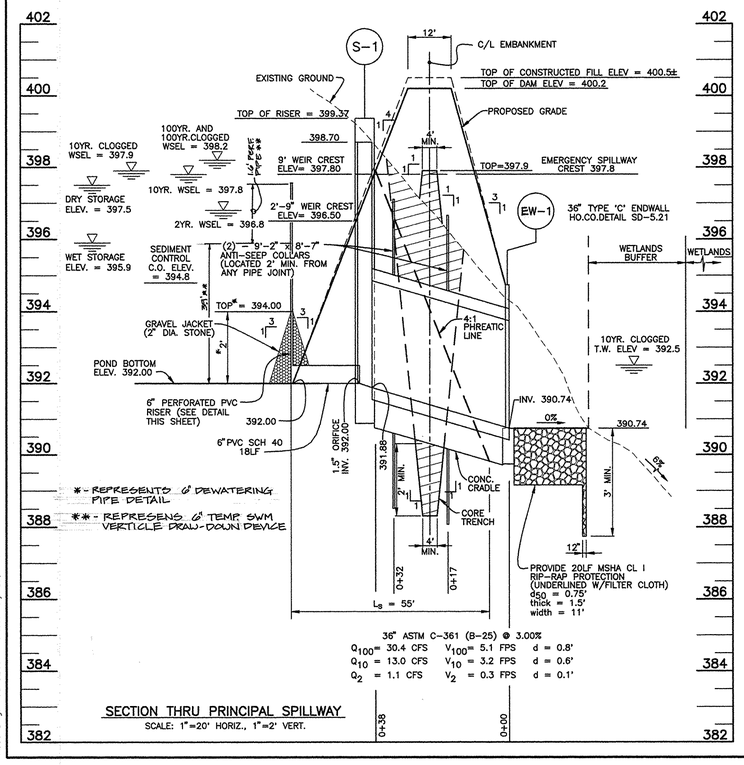


SECTION A-A FRONT VIEW

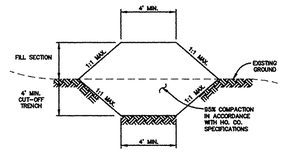


SECTION B-B SIDE VIEW (TYP. BOTH SIDES)

RELEASE STRUCTURE
SCALE: 1" = 3'



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



NOTES:
1. IF WATER IS ENCOUNTERED DURING THE CONSTRUCTION OF THE CORE TRENCH, IT IS TO BE REMOVED BY PUMPING.
2. CORE TRENCH SHALL CONSIST OF IMPERVIOUS MATERIAL (CL,CH) AS DIRECTED BY A GEOTECHNICAL ENGINEER ONSITE AND MAY REQUIRE TO BE HAULED FROM AN OFFSITE LOCATION.

CORE TRENCH SECTION
NOT TO SCALE

NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8480 Baltimore National Pike • Ellicott City, Maryland 21043 • 410-465-6105

STATE OF MARYLAND — DONALD ALLEN MASON — No. 21443 — REGISTERED PROFESSIONAL ENGINEER

OWNER/DEVELOPER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041-1447	PROJECT: FONT HILL MANOR FARM ESTATES, SECTION 2, PHASE 2
	LOCATION: BLOCKS 8 & 14, TAX MAP 24 - PARCEL 725, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
	TITLE: STORMWATER MANAGEMENT DETAILS, S-92-07,P-93-07, P-92-12, F-93-16, F-95-147, S-96-21, F-97-150, PB-310, P-98-07, WP-97-109
	DATE: FEBRUARY, 1998, JULY 24, 1998 — PROJECT NO. 1070
DESIGN: GWF/MLV — DRAFT: DBT/MCR	SCALE: AS SHOWN — SHEET 6 OF 7

F-98-118

Acad Dwg: 70240256 Plotted: July 23, 1998

POND CONSTRUCTION SPECIFICATIONS

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.

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 50 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.

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. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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 the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, 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.

Where a minimum required density is specified, it 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.

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

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.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe – All of the following criteria shall apply for corrugated metal pipe:

1. Materials – (Steel Pipe) – This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M–190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti–Cote, Blac–Klad, and Beth–Cu–Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M–245 and M–246.

   Materials – (Aluminum Coated Pipe) – This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M–274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   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 surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. 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 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O–ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24". Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. Bedding – The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

6. Other details (anti–seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe – All of the following criteria shall apply for reinforced concrete pipe:

1. Materials – Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C–361. An approved equivalent is AWWA Specification C–302.

2. Bedding – All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

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 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti–seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe – All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials – PVC pipe shall be PVC–1120 or PVC–1220 conforming to ASTM D–1785 or ASTM D–2241.

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.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

Rock Riprap

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface–dry basis) not less than 2.5.

2. Absorption not more than three percent.

3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth 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 919.12.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

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 Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD–342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

Embankment and Cut–off Trench Construction

The site should be stripped of topsoil and any other unsuitable materials from the embankment or structure area in accordance with Soil Conservation Guidelines. After stripping operations have been completed, the exposed subgrade materials should be proofrolled with a loaded dumptruck 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 Maryland Soil Conservation Specification 378, soils considered suitable for the center of embankment and cut–off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. A review of the site borings revealed a layer of SC material in the northern most stockpile (Boring AP–2, Phase 1 construction). This material may be suitable as core or cut–off trench materials depending on the amount of sand in the material once it has been cut from the pile. No other suitable core or cut–off trench materials were encountered on the site. All fill materials must be placed and compacted in accordance with MD SCS 378 specifications.

Record of Soil Exploration Boring No. 1 (B–1)

SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH (FT.)	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE		0.0					
Brown moist stiff to very soft fine to medium sandy silt with some mica, trace rock fragments (ML)		0.0	D	4–8–6	1	10"	
		5	D	2–1–2	2	12"	
	8.0						
Brown, white moist medium dense fine to medium sand with some silt and mica, trace rock fragments (SM)		10	D	4–7–12	3	18"	
		15	D	5–7–8	4	16"	No water encountered while drilling
	21.5	20	D	6–7–9	5	16"	
Bottom of Boring at 21.5'		25					

Record of Soil Exploration Boring No. 1 (B–2)

SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH (FT.)	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE		0.0					
Brown moist, stiff to very stiff fine sandy silt with rock fragment and mica (ML)		0.0	I	9–11–16	1	16"	
		5	D	3–5–9	2	12"	
		10	D	5–7–8	3	16"	
		15	D	5–9–11	4	16"	No water encountered while drilling
	18.0						
White, brown moist dense silty fine to medium sand with trace rock fragment (SM)	21.5	20	D	11–15–35	5	16"	
Bottom of Boring at 21.5'		25					

Record of Soil Exploration Boring No. 1 (B–3)

SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	DEPTH (FT.)	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE		0.0					
Brown moist medium stiff fine sandy silt, with mica and rock fragment (ML)		0.0	I	3–5–13	1	16"	
		5	I	3–4–6	2	16"	
	10.0						
Brown, yellowish brown green moist dense to very dense, fine to coarse sand with some silt and mica, trace of rock fragments (SM)		10	D	11–14–28	3	16"	
		15	D	13–26–25	4	16"	No water encountered while drilling
	21.5	20	D	11–27–40	5	16"	
Bottom of Boring at 21.5'		25					

Record of Soil Exploration Boring No. A (B–A)

SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE						
Brown, moist, loose to medium dense, micaceous sandy silt, with quartz rock fragments (ML) (Loam)		D	1–2–3	1	15"	7" topsoil
	4.0	D	2–4–9	2	16"	groundwater encountered at 14' while drilling
Brown to greenish brown, dry to wet, medium dense to very dense micaceous silty sand (SM) (Sandy Loam)		D	6–7–7	3	15"	caved in at 8.5' at completion
		D	4–6–8	4	16"	
		D	5–10–13	5	16"	
	16.0	D	40–17–48	6	12"	
Bottom of Test Hole at 16.0'						

Record of Soil Exploration Boring No. B (B–B)

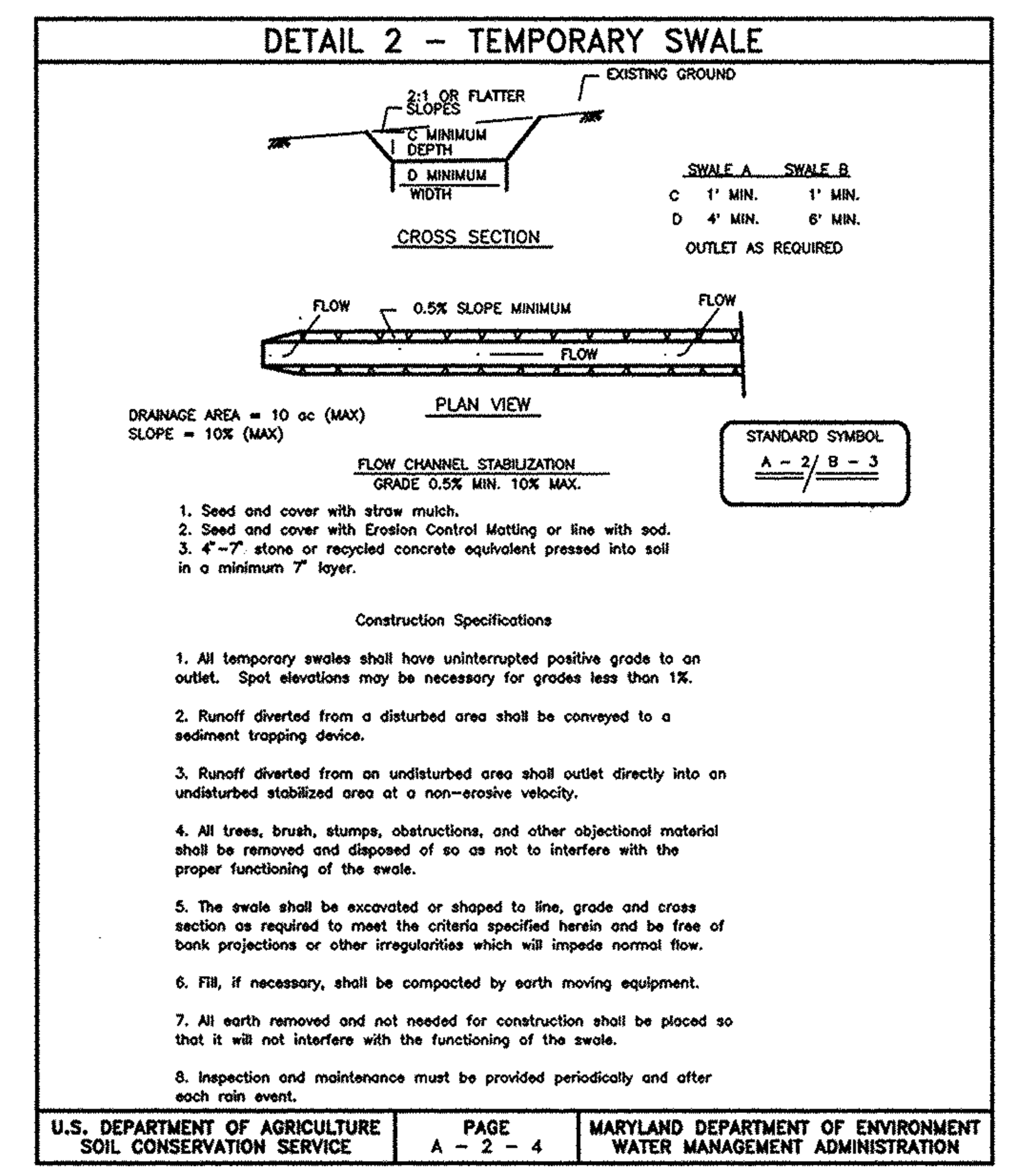
SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE						
Brown, moist, very loose silt, little sand and mica (ML) (Loam)	2.0	D	1–1–1	1	14"	7" topsoil
Brown to greenish brown, dry, medium dense to very dense micaceous silty sand (SM) (Sandy Loam)		D	4–5–7	2	15"	No groundwater encountered while drilling
		D	7–7–9	3	16"	caved in at 6.0' at completion
		D	3–3–5	4	18"	Spoon refusal at 9'–7"
	10.0	L	51/1"	5	No Rec	Auger refusal at 10'
Bottom of Test Hole at 10.0'						

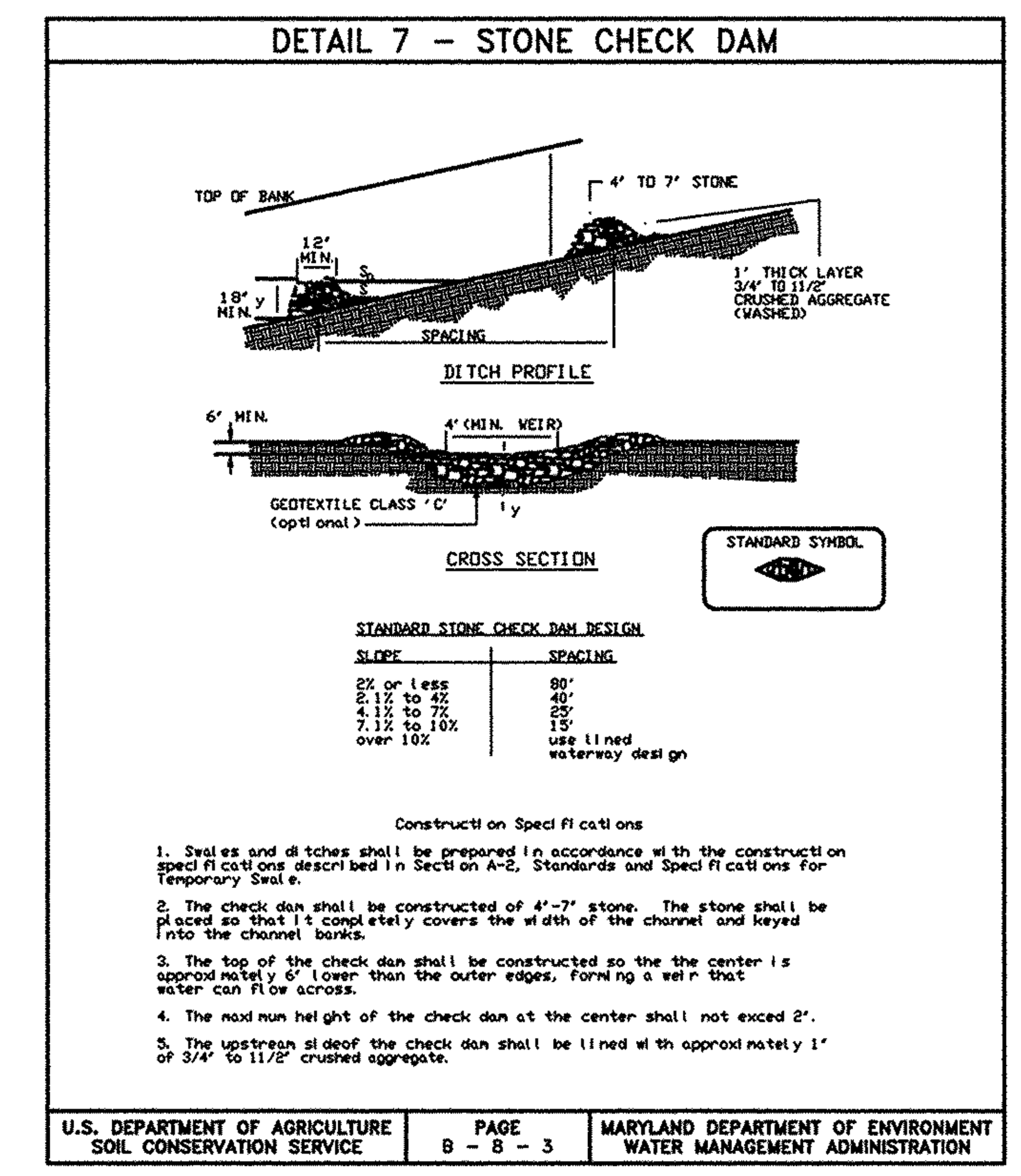
Record of Soil Exploration Boring No. C (B–C)

SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE						
Brown, moist, very loose silt, little sand (ML) (Loam)	2.0	D	2–1–2	1	10"	6" topsoil
Brown to greenish brown dry to wet, loose to medium dense, micaceous silty sand (SM) (Sandy Loam)		D	3–2–4	2	14"	groundwater encountered at 14' while drilling
		D	4–5–8	3	15"	caved in at 8.5' at completion
		D	3–5–6	4	14"	
		D	4–5–9	5	18"	
	16.0	D	3–7–13	6	14"	
Bottom of Test Hole at 16.0'						

Record of Soil Exploration Boring No. D (B–D)

SOIL DESCRIPTION (Color, Moisture, Density, Size, Proportion)	STRA. DEPTH	CON	BLOWS 6"	NO	REC	BORING & SAMPLING NOTES
SURFACE						
Brown moist, loose micaceous silt, little sand (ML) (Loam)	1.0	D	1–4–4	1	14"	7" topsoil
Greenish brown, dry to moist medium dense to very dense micaceous silty sand, little decomposed rock fragments (SM) (Loam) S–3 is loose		D	10–15–12	2	8"	No groundwater encountered while drilling
		D	3–3–6	3	18"	caved in at 3.5' at completion
	6'–7"		51/1"	4	No Rec	
Bottom of Test Hole at 6'–7"						





BY THE DEVELOPER:

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

DEVELOPER — 8/19/98 DATE

BY THE ENGINEER:

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

Donald Mason — 8/17/98

ENGINEER – DONALD A. MASON, P.E. # 21443 — DATE

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

NATURAL RESOURCES CONSERVATION SERVICE — 8/25/98 DATE

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

HOWARD SOIL CONSERVATION DISTRICT — 8/25/98 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 9/2/98 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 9/9/98 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 9/4/98 DATE

RISER STRUCTURE

IT IS UNDERSTOOD THAT THE RISER STRUCTURE WILL BE LOCATED IN THE AREA OF BORING B–B THE BASE OF THE STRUCTURE WILL BE LOCATED AT APPROXIMATE ELEVATION 395 ft, IN NATURAL SOILS. BASED ON THE RESULTS OF OUR FIELD EXPLORATION, IT APPEARS THAT A NET ALLOWABLE BEARING CAPACITY OF 2500 PSF WILL BE AVAILABLE FOR THE DESIGN OF THE SPREAD FOUNDATION FOR THE STRUCTURE. THE FOUNDATION SHOULD BE PLACED AT LEAST 30 INCHES BELOW PROPOSED SITE GRADES FOR FROST PROTECTION.

FILL SELECTION, PLACEMENT AND COMPACTION

ALL MATERIAL TO BE USED AS FILL OR BACKFILL SHOULD BE INSPECTED, TESTED AND APPROVED BY THE GEOTECHNICAL ENGINEER. IN GENERAL, THE ON–SITE SOILS WHICH ARE FREE FROM ORGANIC AND OTHER DELETERIOUS COMPONENTS CAN BE REUSED AS GENERAL SITE FILL. MATERIALS SUITABLE FOR VARIOUS CONSTRUCTION PURPOSES CAN BE IDENTIFIED BY AN EXPERIENCED SOILS INSPECTOR DURING GRADING OPERATIONS.

MOISTURE CONDITIONING (THAT IS, WETTING AND DRYING) OF THE SOILS SHOULD BE ANTICIPATED TO ACHIEVE PROPER COMPACTION. THE MOISTURE CONTENTS OF THE SOILS SHOULD BE CONTROLLED PROPERLY TO AVOID EXTENSIVE CONSTRUCTION DELAYS. IF IMPORTED FILL MATERIAL IS REQUIRED, THOSE MATERIALS SHOULD HAVE UNIFIED SOIL CLASSIFICATIONS OF SM OR BETTER.

FILL MATERIALS PLACED IN THE SWM AREA SHOULD BE PLACED IN ACCORDANCE WITH MD 378 SPECIFICATIONS (STANDARD PROCTOR). FIELD MOISTURE CONTENT SHOULD BE MAINTAINED WITHIN 2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ORDER TO PROVIDE ADEQUATE COMPACTION.

A SUFFICIENT NUMBER OF IN–PLACE DENSITY TESTS SHOULD BE PERFORMED BY AN EXPERIENCED ENGINEERING TECHNICIAN ON A FULL–TIME BASIS TO VERIFY THAT THE PROPER DEGREE OF COMPACTION IS BEING OBTAINED.

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING APPROPRIATE CORE TRENCH MATERIAL FROM OFF–SITE IF ON–SITE MATERIAL CANNOT BE FOUND. THIS MATERIAL SHALL BE TESTED BY A GEOTECHNICAL ENGINEER AND SHALL CONFORM TO UNIFIED SOIL CLASSIFICATIONS CL OR CH.

NO.	DATE	REVISION

TSA GROUP, INC.
planning • architecture • engineering • surveying
8460 Baltimore National Pike • Ellicott City, Maryland 21043 • 410–465–6105

OWNER/DEVELOPER: TIMOTHY E. WELSH, P.O. BOX 1447, ELLICOTT CITY, MARYLAND 21041–1447

PROJECT: **FONT HILL MANOR FARM ESTATES** SECTION 2, PHASE 2

LOCATION: BLOCKS 8 & 14, TAX MAP 24 – PARCEL 725, 2nd ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

TITLE: **STORMWATER MANAGEMENT/ SEDIMENT CONTROL NOTES AND DETAILS**
S–92–07,P–93–07, P–92–12, F–93–16, F–95–147
S–96–21, F–97–150, PB–310, P–98–07, WP–97–109

DATE: FEBRUARY, 1998 / JULY 24, 1998 — PROJECT NO. 1070

DESIGN: GWF | DRAFT: DBT | CHECK: GWF | SCALE: NONE | SHEET 7 OF 7