

HOWARD COUNTY

Capital Project D-1141

River Hill Shallow Marsh BMP Water Quality Retrofit

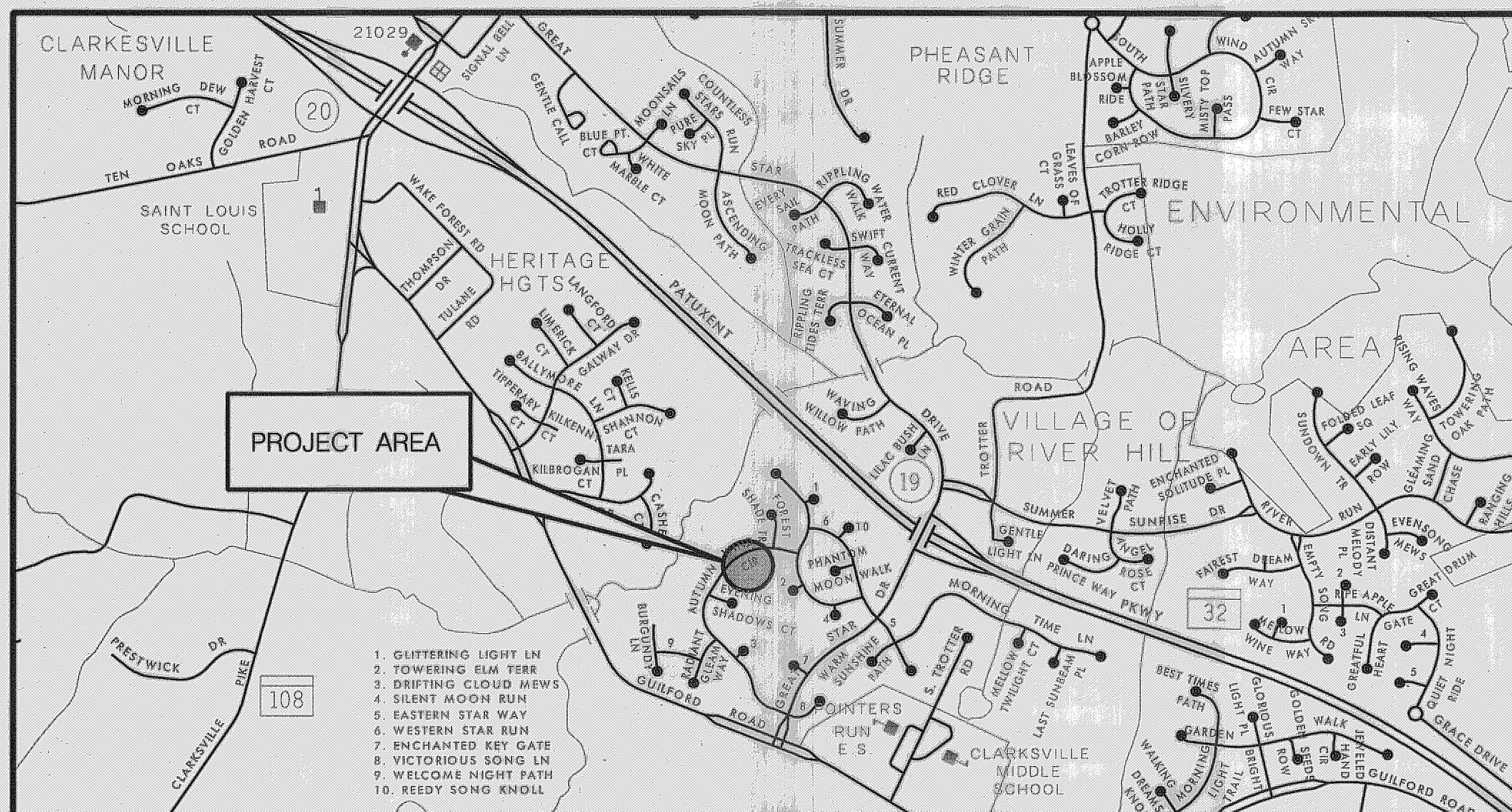
Storm Water Management Division
Bureau Of Environmental Services

INDEX OF SHEETS

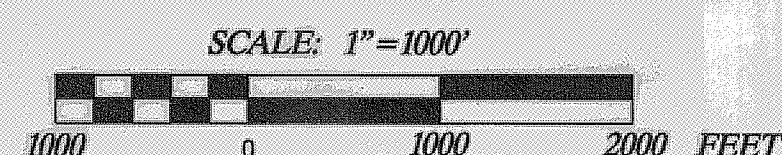
SHEET NO.	TITLE
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2	GEOMETRY PLAN
3	SITE PLAN
4	TYPICAL SECTIONS AND PROFILE
5	WEIR DETAILS
6	EROSION AND SEDIMENT CONTROL PLAN
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9	LANDSCAPE PLAN

LEGEND

PROPOSED MEDIAN BARRIER	
ELECTRICAL HAND BOX - SIGNALS	
STATE, COUNTY OR CITY LINES	
PROPOSED TRAFFIC BARRIER	
EXISTING TRAFFIC BARRIER	
PROPOSED FENCE LINE	
EXISTING FENCE LINE	
RIGHT OF WAY LINE	
EXISTING ROADWAY	
BASE OR SURVEY LINE	
TRAVERSE POINT	
APPROXIMATE LIMITS OF CUT AND/OR FILL	
PROPOSED MAJOR CONTOUR	
PROPOSED MINOR CONTOUR	
LIMIT OF DISTURBANCE	
EXISTING MAJOR CONTOURS	
EXISTING MINOR CONTOURS	
EXISTING PIPE/CULVERT	
EXISTING DROP INLET	
WETLAND	
HEDGE / TREE LINE	
BUSH / TREE	
CONIFEROUS TREE	
LIGHT POLE	



HORIZONTAL DATUM	NAD 83 / 91
VERTICAL DATUM	NAVD 88



GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MDSA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY WORK BEING DONE.
- THIS PLAN IS PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- 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.
- SURVEY OF THIS SITE WAS PERFORMED BY AB CONSULTANTS INC. JUNE 2009.
- WETLANDS WERE DELINEATED BY MCCORMICK TAYLOR JUNE 2009.
- THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY AB CONSULTANTS INC.
- OBSTRUCTIONS SHOWN ON THIS DRAWING ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND MCCORMICK TAYLOR DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
- A JOINT PERMIT APPLICATION WAS NOT REQUIRED FOR THIS PROJECT.
- THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
- THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY. ALL UTILITIES SHALL HAVE A CLEARANCE BY A MINIMUM OF 6 INCHES VERTICALLY AND A MINIMUM OF 5 FEET HORIZONTALLY.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY MCCORMICK TAYLOR IMMEDIATELY TO RESOLVE THE SITUATION.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- THE CONTRACTOR SHALL TAKE PRE-CONSTRUCTION PHOTOS TO DOCUMENT THE EXISTING CONDITIONS OF THE ROADWAY AND WORK AREA PRIOR TO ANY DISTURBANCE.

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. 32013, EXPIRATION DATE: 7/5/2011

DESIGN CERTIFICATION

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. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

OWNER'S/DEVELOPER'S CERTIFICATION

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND 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.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD
4/11/10
DATE

3-25-2010
DATE

DESIGNER'S SIGNATURE

MARYLAND
REGISTRATION
NUMBER 32013
AMY L. HRIBAR
PRINTED NAME

4/12/10
DATE

OWNER/DEVELOPER SIGNATURE

Howard E. Saltzman
Chief, SWM Division
PRINTED NAME AND TITLE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS
DATE 4/14/10

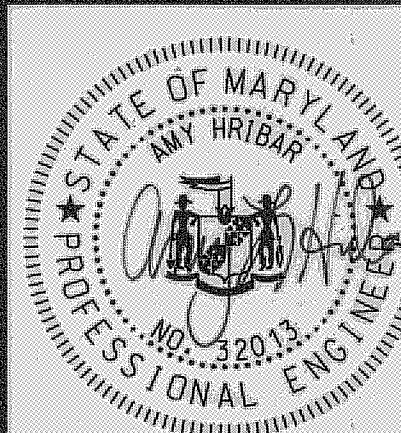
CHIEF, STORMWATER
MANAGEMENT DIVISION
DATE 4/12/10

McCormick Taylor

Engineers & Planners
Since 1946
509 South Exeter Street
4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143



DES: WC				
DRN: MR				
CHK: AH				
DATE: 3/23/10				
BY	NO.	REVISION	DATE	

HOWARD COUNTY
CAPITAL PROJECT D-1141
RIVER HILL SHALLOW MARSH BMP
WATER QUALITY RETROFIT

TITLE SHEET

SCALE
NOT TO
SCALE

SHEET
1 OF 9

POND GEOMETRY STAKEOUT				
POINT	STATION	OFFSET	NORTHING	EASTING
A1	1+73.64	-3.61	556832.1775	1332048.3747
A2	1+63.82	-6.92	556842.1122	1332045.4363
A3	1+58.35	-14.37	556850.8707	1332048.3839
A4	1+56.62	-61.51	556879.3847	1332085.9679
A5	1+64.15	-69.21	556877.6494	1332096.5932
A6	1+78.62	-65.98	556863.9566	1332102.2673
A7	1+79.33	-70.14	556865.7715	1332106.0854
A8	1+55.66	-85.85	556894.166	1332105.3287
A9	1+63.41	-83.06	556886.2243	1332107.4992
A10	1+82.59	-73.83	556865.2203	1332110.9741
A11	1+99.39	-72.63	556850.7860	1332119.6546
A12	2+15.76	-67.78	556834.6047	1332125.0959
A13	1+77.60	-59.71	556861.1889	1332096.5496
A14	1+75.29	-47.13	556855.8466	1332084.9354
A15	1+75.84	-43.02	556853.0304	1332081.8916
A16	1+86.00	-34.2	556839.6455	1332080.5147
A17	1+89.18	-32.85	556836.2667	1332081.2402
A18	2+18.10	-34.38	556813.4867	1332099.1152
A19	2+25.34	-33.53	556807.0703	1332102.5799
A20	2+41.79	-28.05	556790.4598	1332107.5574
A21	2+55.67	-28.06	556779.1115	1332115.5478
A22	2+55.79	-23.97	556776.6628	1332112.2711
A23	2+43.70	-23.15	556786.0877	1332104.6432
A24	2+26.75	-28.78	556803.1907	1332099.5002
A25	2+19.04	-30.36	556810.4057	1332096.3640
A26	1+92.31	-28.21	556831.0355	1332079.2360
A27	1+80.51	-33.1	556843.5091	1332076.4563
A28	1+70.50	-42.66	556857.1933	1332078.5227
A29	1+61.82	-38.12	556861.6822	1332069.8149
A30	1+62.24	-13.93	556847.4353	1332050.2615
A31	1+67.46	-8.71	556840.1669	1332048.9975
A32	1+82.23	-3.12	556824.8620	1332052.9176
A33	2+01.06	2.11	556806.4473	1332059.4615
A34	2+19.85	3.92	556790.0366	1332068.7787
A35	2+58.16	-0.17	556761.0460	1332094.1562
A36	2+47.63	-2.73	556771.1267	1332090.1983
A37	11+88.74	-11.23	556742.3802	1332120.7855
A38	12+09.30	-7.40	556723.3558	1332129.4687
A39	12+57.00	7.99	556675.4747	1332144.3000
A40	12+66.36	-6.08	556675.9068	1332161.1940
A41	12+39.77	-20.36	556705.8761	1332157.5917
A42	12+11.93	-19.75	556728.3047	1332141.0910
A43	2+59.71	-54.72	556791.1352	1332139.6825
A44	2+46.80	-56.46	556802.6974	1332133.6763
A45	2+24.22	-55.22	556820.4594	1332119.6851
A46	1+98.34	-62.06	556845.5713	1332110.4003
A47	3+02.29	-48.88	556752.9394	1332159.3837
A48	2+57.73	-63.93	556798.0474	1332146.0731
A49	2+01.15	-67.68	556846.4977	1332116.6155
A50	2+00.05	-63.69	556845.1089	1332112.7197
A51	11+93.33	-30.79	556749.8635	1332139.4294
A52	1+89.64	-58.65	556850.7193	1332102.6074
A53	1+81.24	-52.03	556853.7975	1332092.3620
A54	1+83.64	-41.46	556845.7510	1332085.0914
A55	1+91.39	-38.00	556837.4191	1332086.7219
A56	2+17.24	-39.29	556817.0173	1332102.6354
A57	2+18.10	-52.69	556824.0117	1332114.0986
A58	2+17.89	-46.03	556820.3573	1332108.5228
A59	1+87.82	-52.31	556848.5678	1332096.3759
A60	1+88.68	-45.03	556843.6781	1332090.9127
A61	2+34.61	-49.78	556808.8325	1332121.2097
A62	2+53.31	-51.04	556794.2544	1332132.9904
A63	2+67.64	-44.12	556778.5535	1332135.5654

POND GEOMETRY STAKEOUT				
POINT	STATION	OFFSET	NORTHING	EASTING
A64	11+66.29	-34.98	556774.3987	1332127.3122
A65	11+45.22	-32.92	556790.4598	1332113.5092
A66	11+33.28	-37.21	556802.6916	1332110.1532
A67	11+71.47	-44.82	556775.8185	1332138.3402
A68	11+69.01	-15.51	556760.9856	1332112.9472
A69	11+19.42	-12.31	556799.7186	1332081.8198
A70	11+19.34	-15.94	556801.8698	1332084.7446
A71	11+65.58	-19.22	556765.9231	1332114.0035
A72	11+66.28	-31.61	556772.4688	1332124.5438
A73	11+01.86	-8.06	556811.6390	1332068.2449
A74	10+82.38	-13.86	556830.9134	1332061.7839
A75	10+83.09	-19.93	556833.8244	1332067.1583
A76	10+93.37	-18.1	556824.3634	1332071.5765
A77	11+05.89	-19.21	556814.7561	1332079.6759
A78	11+11.41	-14.07	556807.2866	1332078.6516

CONSTRUCTION BASELINE CONTROL COORDINATES				
POINT	STATION	NORTHING	EASTING	REMARKS
POT	10+00.00	556890.3501	1332003.0849	CONSTRUCTION BASELINE
POT	12+42.83	556691.6660	1332142.6937	CONSTRUCTION BASELINE
POI	12+80.00	556661.2760	1332164.0537	CONSTRUCTION BASELINE



OPEN SPACE
LIBER 0512 FOLIO 0469
MAP 35
LOTS 160
VILL RIVERHILL S2 AR4
TO BE
DEDICATED TO
COLUMBIA ASSOCIATION

LEGEND

- PROPOSED CONTOUR
- - - EXISTING MAJOR CONTOUR
- - - EXISTING MINOR CONTOUR
- EXISTING TREE

NOTE:
IT IS NOT REQUIRED TO STAKE OUT ALL POINTS
AS SHOWN FOR CONSTRUCTION. THE CONTRACTOR
MAY CHOOSE AT HIS DISCRETION WHICH POINTS
ARE NECESSARY TO PROPERLY GRADE THE FACILITY.

REVIEWED FOR HOWARD SCD
AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD _____ DATE _____

McCormick Taylor
Engineers & Planners
Since 1946

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

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143

DES: WC				
DRN: MR				
CHK: AH				
DATE: 3/23/10	BY	NO.	REVISION	DATE

HOWARD COUNTY
CAPITAL PROJECT D-1141
RIVER HILL SHALLOW MARSH BMP
WATER QUALITY RETROFIT

GEOMETRY PLAN

SCALE: 1" = 20'

SHEET 2 OF 9



BLOCK THE LOWER 18" OF THE ENTRANCE TO THE 30" RCP (HIGHER FLOW PIPE) WITH THREE COURSES OF BRICK AND MORTAR TO CREATE WEIR AT ELEVATION 368.7 +/- PARGE OUTER SURFACE TO BE FLUSH WITH INSIDE WALL OF MANHOLE/END OF PIPE.

N 556960
E 1331910

N 556960
E 1332240

BARKER STEPHEN J
BARKER LAUREN D
LIBER 10574 FOLIO 0658
MAP 35
LOTS 95
VILL RIVERHILL S2 AR 4'

OPEN SPACE
LIBER 05112 FOLIO 0469
MAP 35
LOTS 160
VILL RIVERHILL S2 AR 4'
CO BE
DEDICATED TO
COLUMBIA ASSOCIATION

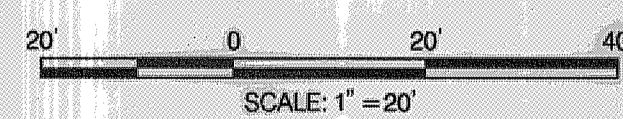
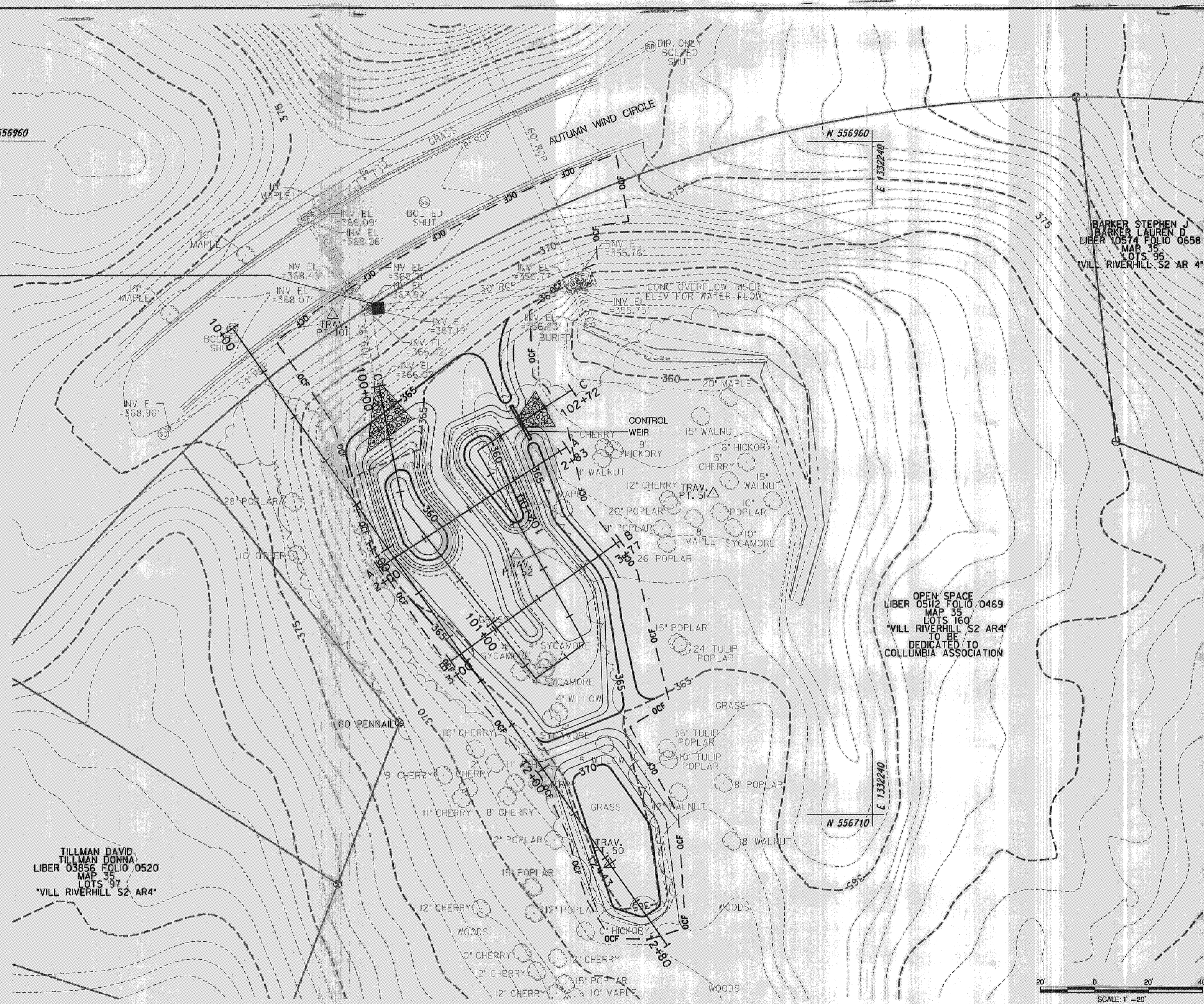
TILLMAN DAVID
TILLMAN DONNA
LIBER 03856 FOLIO 0520
MAP 35
LOTS 97
VILL RIVERHILL S2 AR 4'

CLASS 1 RIPRAP OUTFALL PROTECTION					
STATION	WIDTH (FT)	LENGTH (FT)	DEPTH (IN)	QUANTITY (SY)	REMARKS
10+50	21'	19'	19	23	
10+92	15'	10'	19	12	

ORANGE CONSTRUCTION FENCE (OCF)			
FROM	TO	QTY (LF)	REMARKS
10+12	12+70	762	

SURVEY CONTROL			
TRAVERSE PT.	NORTHING	EASTING	ELEVATION
50	556691.6660	1332142.6937	365.00'
51	556829.1027	1332181.1717	363.24'
52	556806.4667	1332108.3217	364.98'
101	556895.3134	1332040.1864	428.85'

LEGEND	
	PROPOSED CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	ORANGE CONSTRUCTION FENCE
	PROPERTY LINE
	EXISTING TREE
	CLASS 1 RIP RAP



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

John A. [Signature]
HOWARD SCD

4/6/10
DATE

McCormick Taylor
Engineers & Planners
Since 1946

Howard County
MARYLAND

Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143

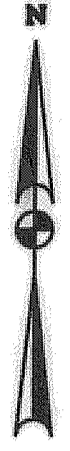
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CHK: AH					
DATE: 3/23/10	BY	NO.	REVISION	DATE	

HOWARD COUNTY
CAPITAL PROJECT D-1141
RIVER HILL SHALLOW MARSH BMP
WATER QUALITY RETROFIT

SITE PLAN

SCALE: 1" = 20'

SHEET
3 OF 9



BLOCK THE LOWER 18" OF THE ENTRANCE TO THE 30" RCP (HIGHER FLOW PIPE) WITH THREE COURSES OF BRICK AND MORTAR TO CREATE WEIR AT ELEVATION 368.7 +/- PARGE OUTER SURFACE TO BE FLUSH WITH INSIDE WALL OF MANHOLE/END OF PIPE.

N 556960
E 1331910

N 556960
E 1332240

BARKER STEPHEN J
BARKER LAUREN D
LIBER 10574 FOLIO 0658
MAP 35
LOTS 95
"VILL RIVERHILL S2 AR 4"

OPEN SPACE
LIBER 05112 FOLIO 0469
MAP 35
LOTS 160
"VILL RIVERHILL S2 AR4"
TO BE
DEDICATED TO
COLUMBIA ASSOCIATION

TILLMAN DAVID
TILLMAN DONNA
LIBER 05356 FOLIO 0520
MAP 35
LOTS 97
"VILL RIVERHILL S2 AR4"

CLASS 1 RIPRAP OUTFALL PROTECTION					
STATION	WIDTH (FT)	LENGTH (FT)	DEPTH (IN)	QUANTITY (SY)	REMARKS
10+50	21'	19'	19	23	
10+92	15'	10'	19	12	

ORANGE CONSTRUCTION FENCE (OCF)			
FROM	TO	QTY (LF)	REMARKS
10+12	12+70	762	

SURVEY CONTROL			
TRAVERSE PT.	NORTHING	EASTING	ELEVATION
50	556691.6660	1332142.6937	365.00'
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LEGEND	
	PROPOSED CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	ORANGE CONSTRUCTION FENCE
	PROPERTY LINE
	EXISTING TREE
	CLASS 1 RIP RAP



SCALE: 1" = 20'

REVIEWED FOR HOWARD SCD
AND MEETS TECHNICAL REQUIREMENTS

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John R. Roberts
HOWARD SCD

4/6/10
DATE

McCormick Taylor
Engineers & Planners
Since 1946

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4th Floor
Baltimore, Maryland 21202
(410) 662-7400

Howard County
MARYLAND

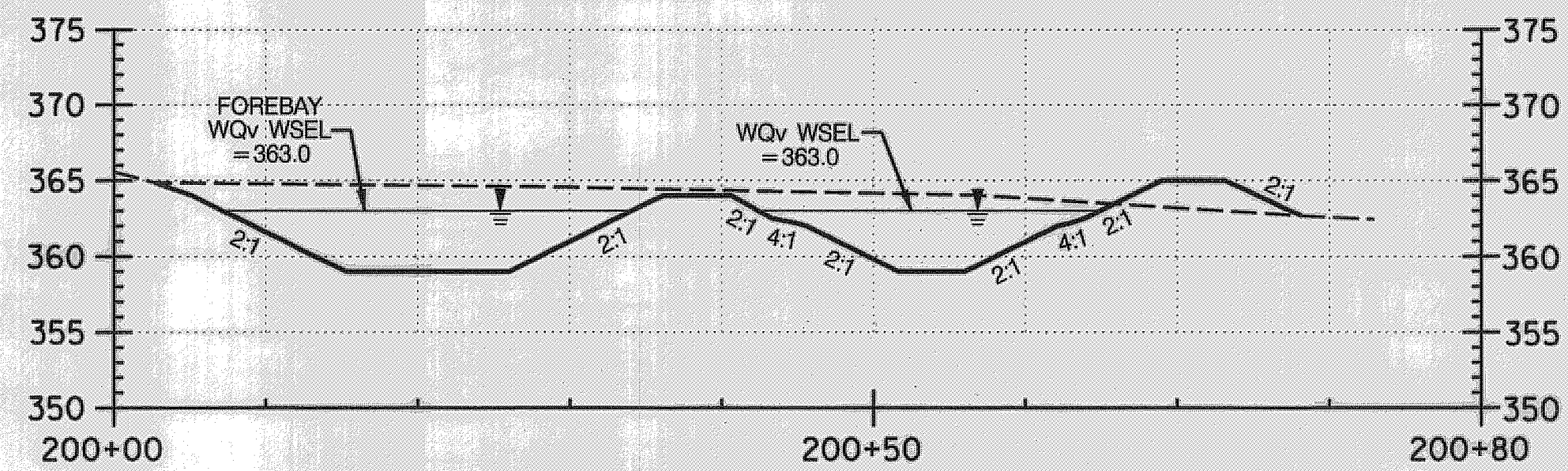
Storm Water Management Division
Bureau of Environmental Services
6751 Columbia Gateway Drive, Suite 514
Columbia, Maryland 21046-3143

DES:	ALH	AS-BUILT	8/16/10
WC			
DRN:	MR		
CHK:	AH		
DATE:	3/23/10		
BY	NO.	REVISION	DATE

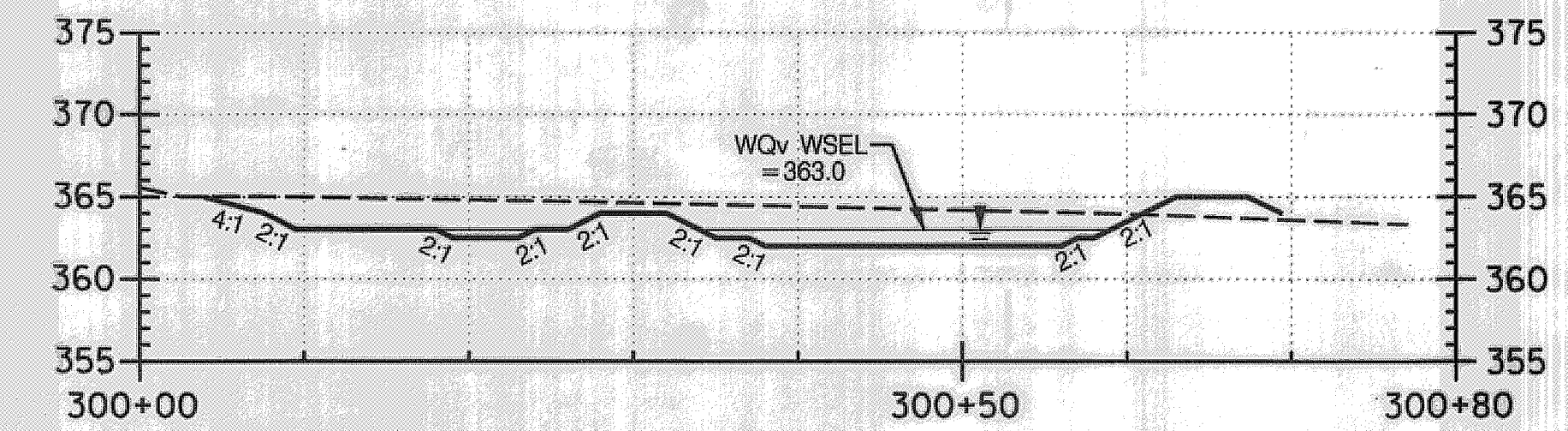
HOWARD COUNTY
CAPITAL PROJECT D-1141
RIVER HILL SHALLOW MARSH BMP
WATER QUALITY RETROFIT

SITE PLAN

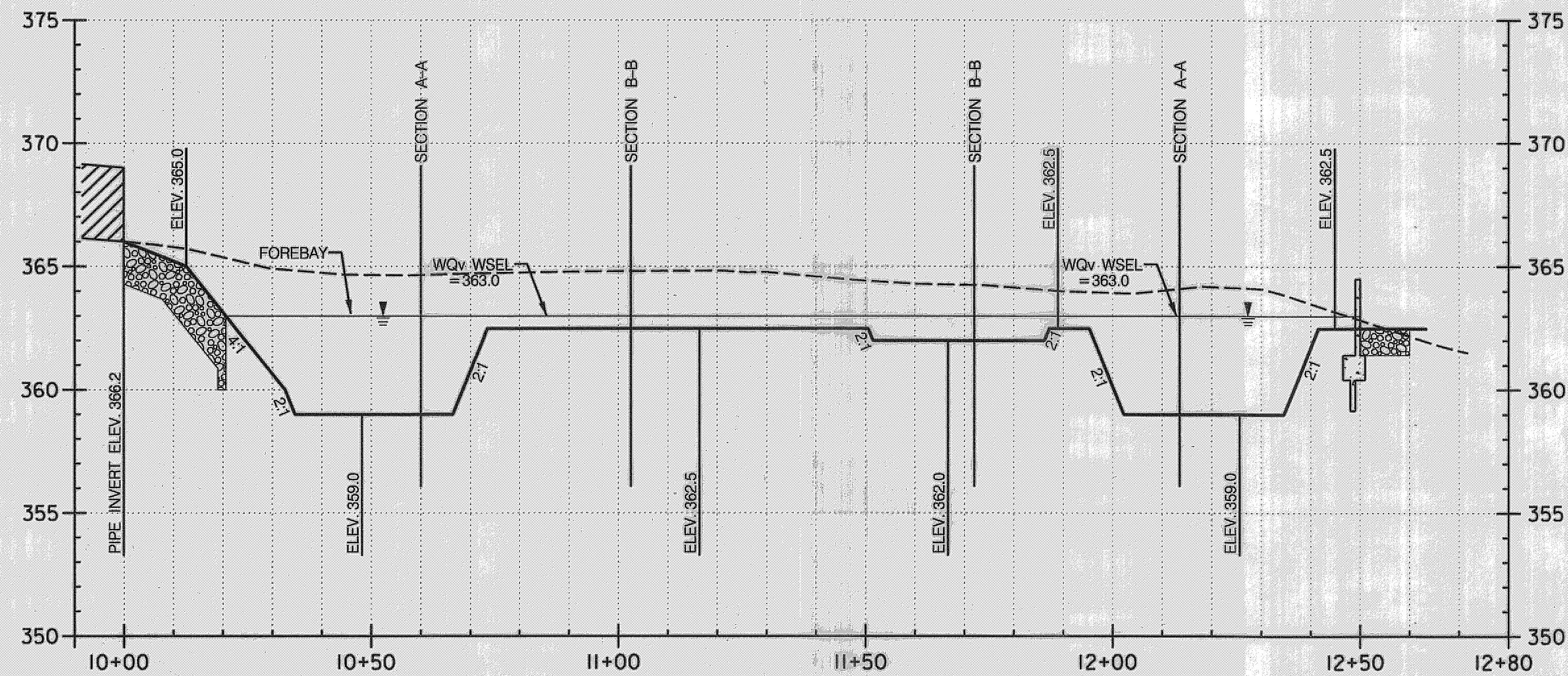
SCALE
1" = 20'
SHEET
3 OF 9



SECTION A-A
 VERTICAL SCALE: 1" = 10'
 HORIZONTAL SCALE: 1" = 10'



SECTION B-B
 VERTICAL SCALE: 1" = 10'
 HORIZONTAL SCALE: 1" = 10'



SECTION C-C BMP PROFILE
 VERTICAL SCALE: 1" = 5'
 HORIZONTAL SCALE: 1" = 20'

LEGEND
 --- EXISTING
 ——— PROPOSED

REVIEWED FOR HOWARD SCD
 AND MEETS TECHNICAL REQUIREMENTS

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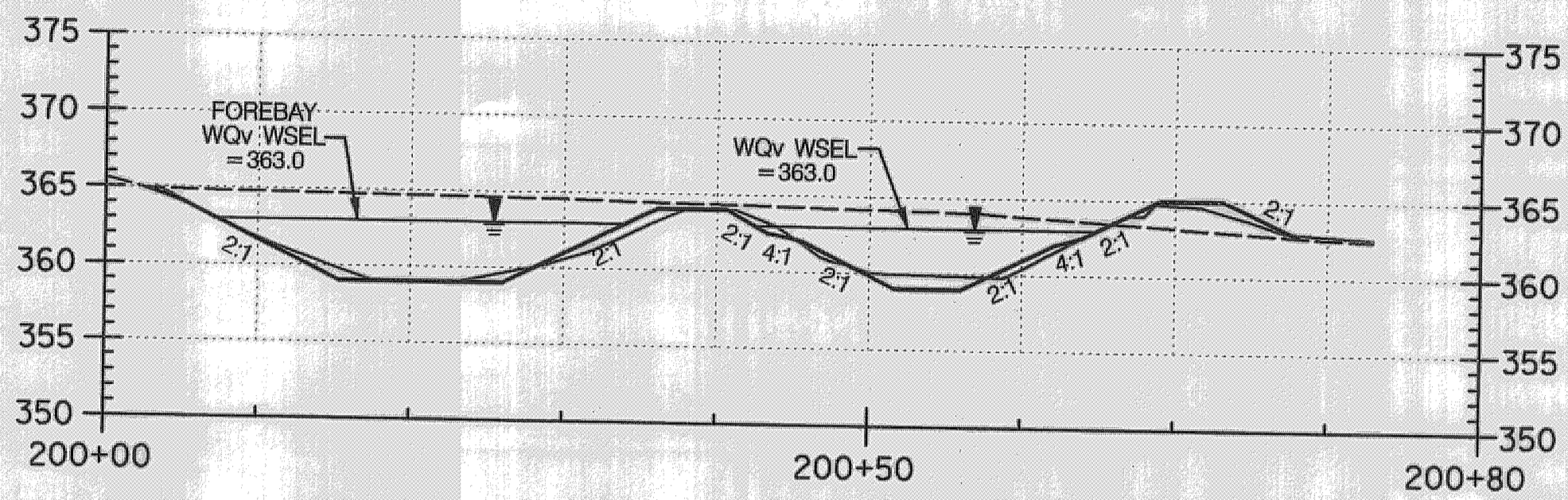
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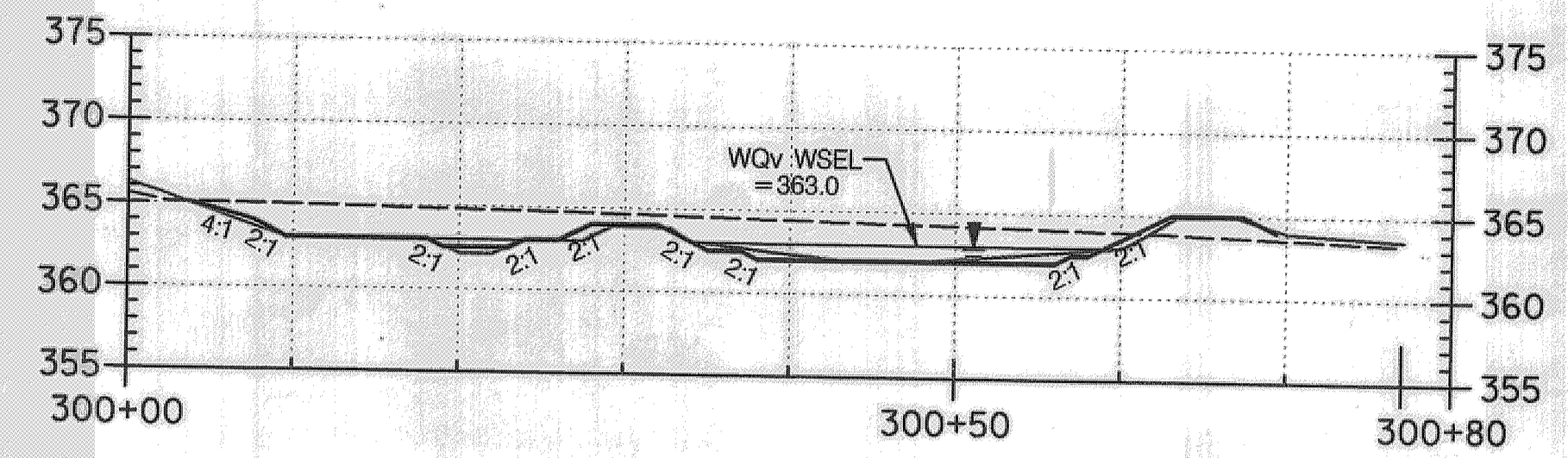
TYPICAL SECTIONS AND PROFILES

SCALE
 AS SHOWN

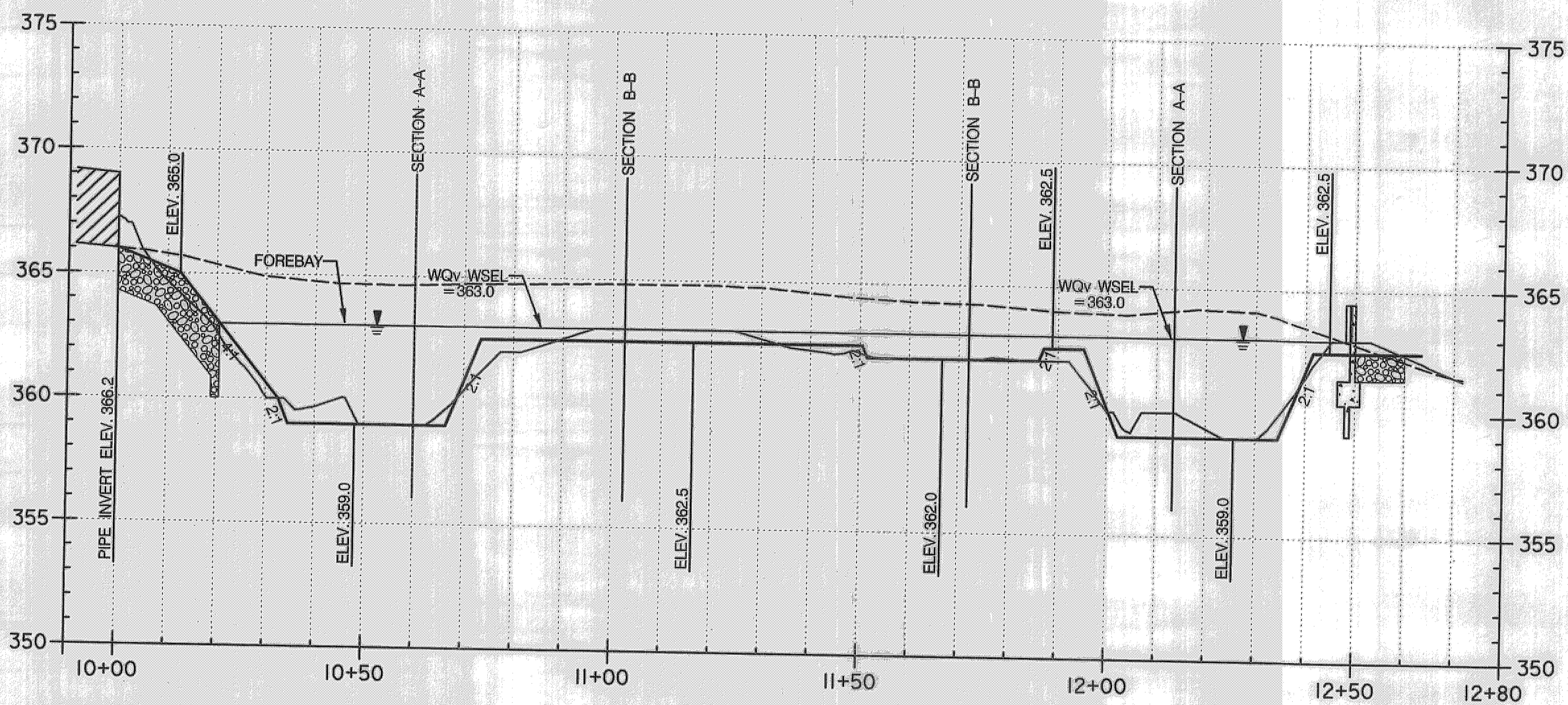
SHEET
 4 OF 9



SECTION A-A
 VERTICAL SCALE: 1" = 10'
 HORIZONTAL SCALE: 1" = 10'



SECTION B-B
 VERTICAL SCALE: 1" = 10'
 HORIZONTAL SCALE: 1" = 10'



SECTION C-C BMP PROFILE
 VERTICAL SCALE: 1" = 5'
 HORIZONTAL SCALE: 1" = 20'

LEGEND
 --- EXISTING --- PROPOSED

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Howard County
 MARYLAND

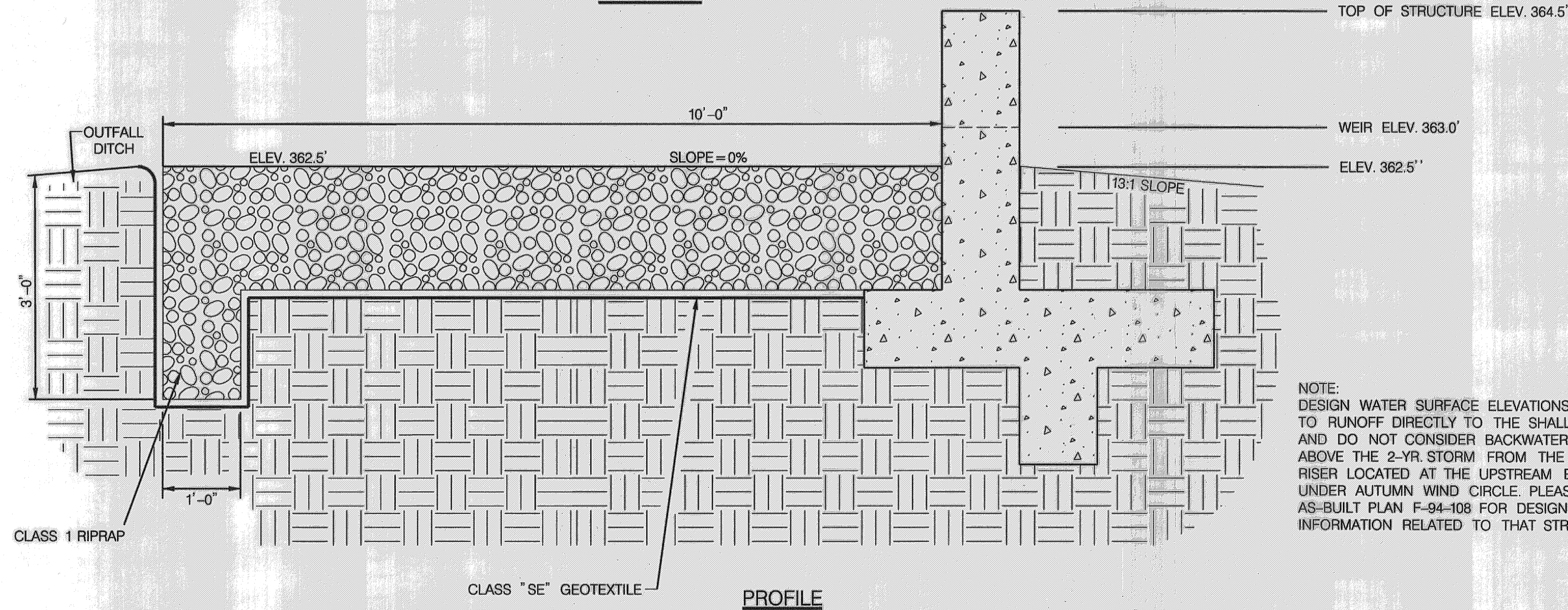
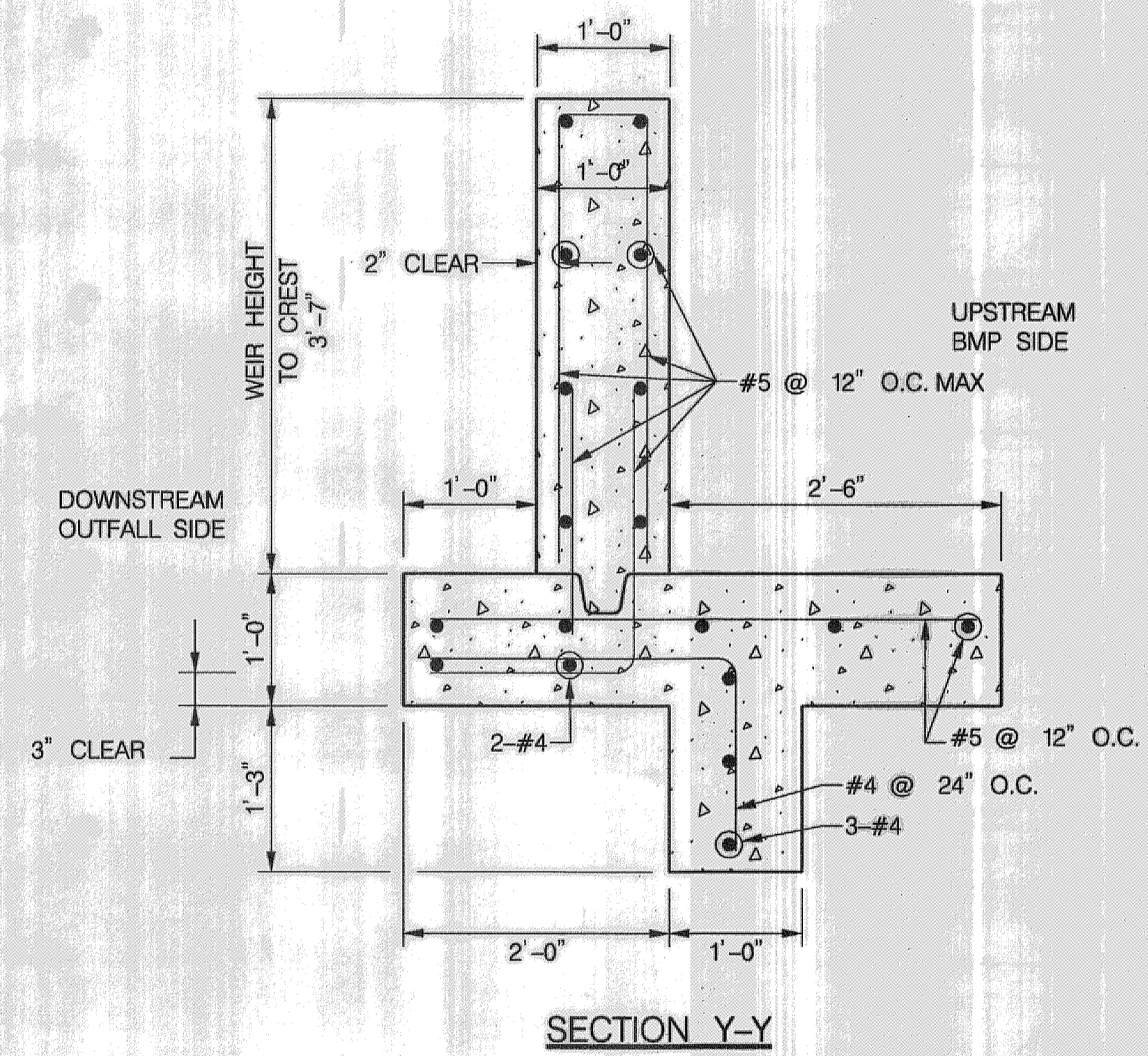
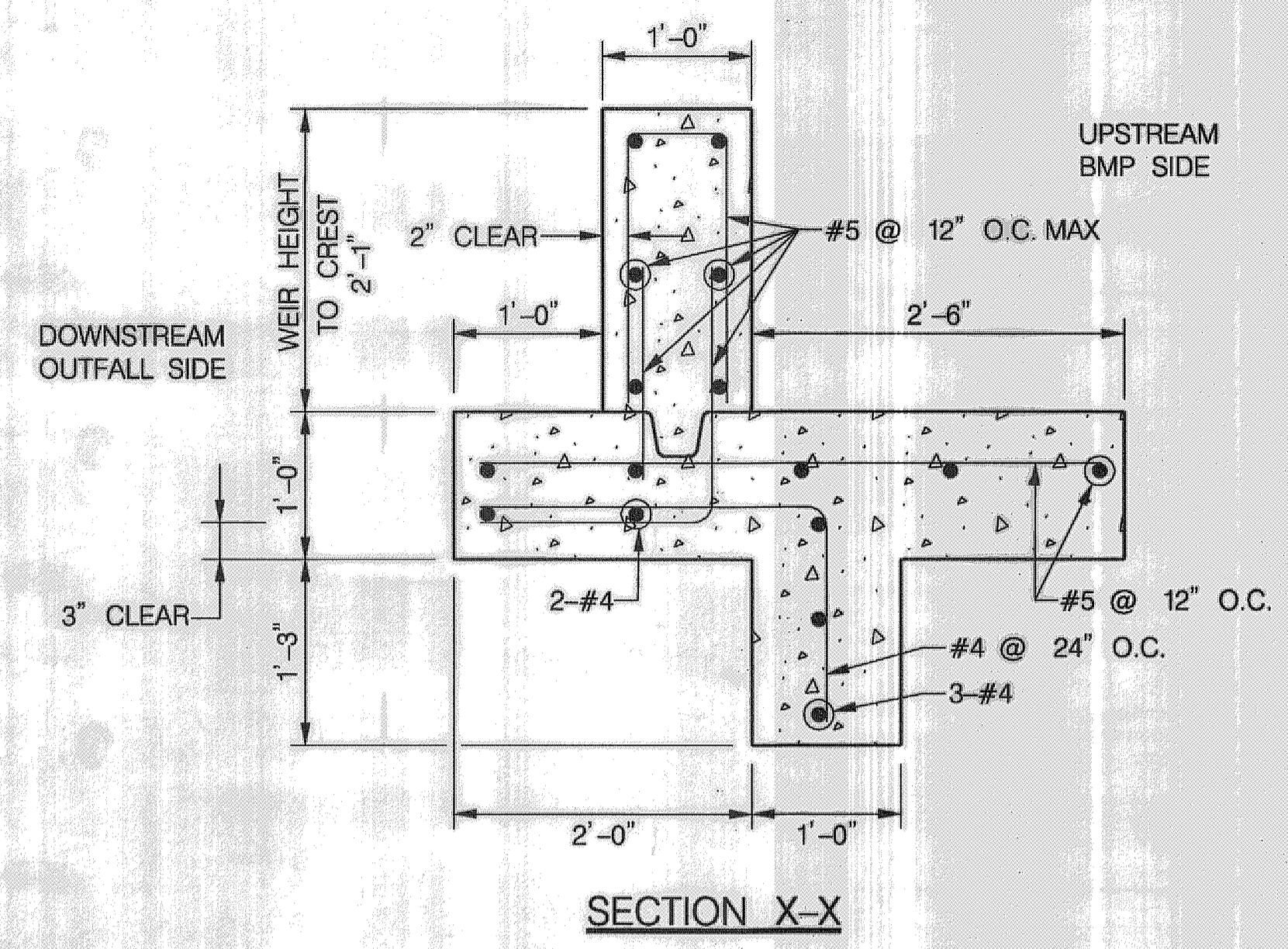
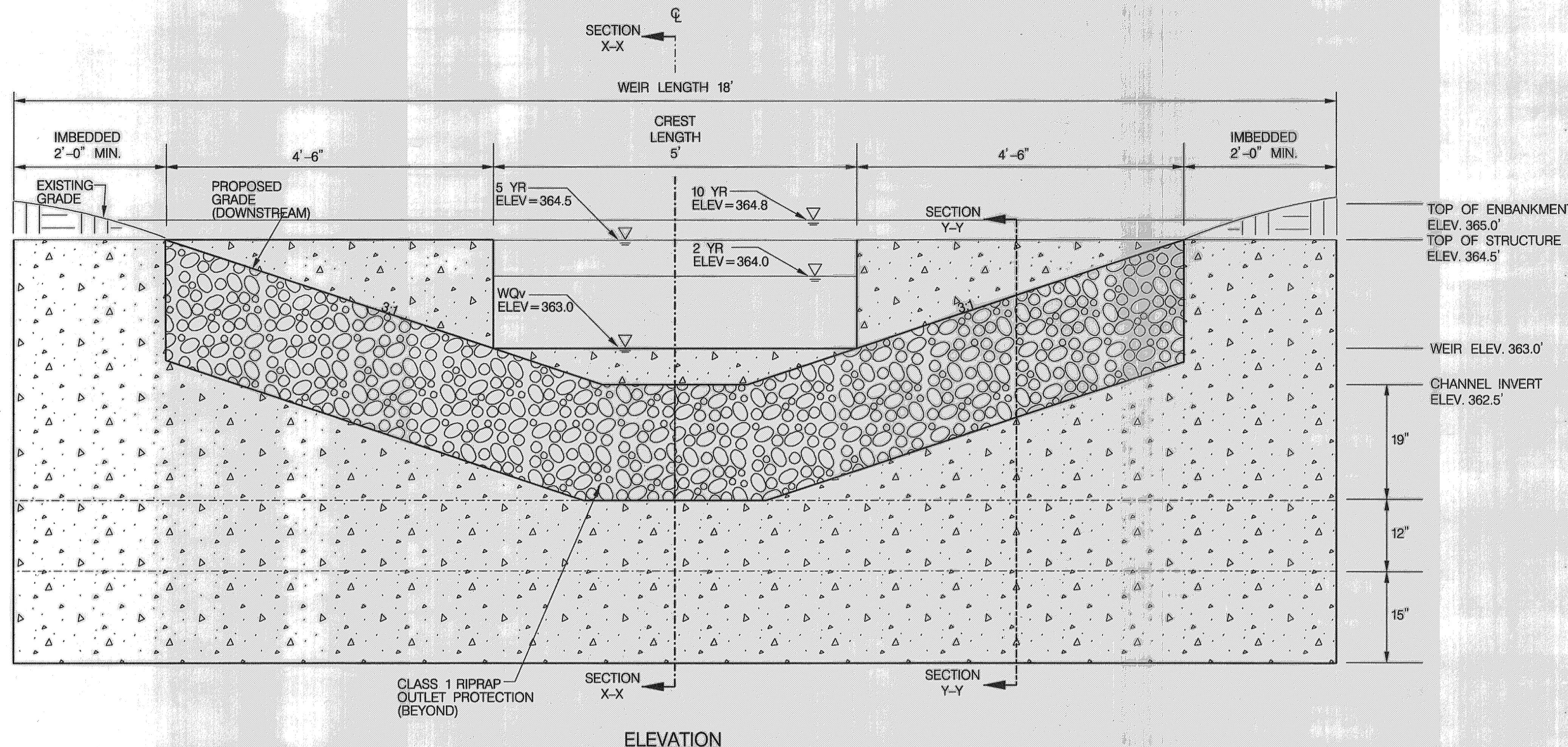
Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143

DES: WC	ALH	AS-BUILT	8/16/10
DRN: MR			
CHK: AH			
DATE: 3/23/10			
BY	NO.	REVISION	DATE

HOWARD COUNTY
 CAPITAL PROJECT D-1141
 RIVER HILL SHALLOW MARSH BMP
 WATER QUALITY RETROFIT

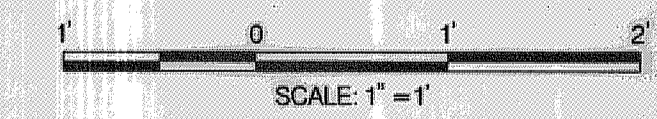
TYPICAL SECTIONS AND PROFILES

SCALE
 AS SHOWN
 SHEET
 4 OF 9



NOTE:
 DESIGN WATER SURFACE ELEVATIONS SHOWN RELATE TO RUNOFF DIRECTLY TO THE SHALLOW MARSH BMP AND DO NOT CONSIDER BACKWATER INUNDATION ABOVE THE 2-YR. STORM FROM THE QUANTITY CONTROL RISER LOCATED AT THE UPSTREAM END OF THE 60" PIPE UNDER AUTUMN WIND CIRCLE. PLEASE REFER TO AS-BUILT PLAN F-94-108 FOR DESIGN WATER SURFACE INFORMATION RELATED TO THAT STRUCTURE.

- WEIR WALL NOTES:
- 28 DAY SPECIFIED COMPRESSIVE STRENGTH SHALL BE $f'_c = 3500$ PSI
 - REINFORCING TO CONFORM TO ASTM A615 GRADE 60.
 - STATION AND OFFSET FOR WEIR WALL STRUCTURE IS MEASURED TO GEOMETRIC CENTER OF STRUCTURE.



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD

DATE

McCormick Taylor
 Engineers & Planners
 Since 1946

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

Howard County
 MARYLAND

Storm Water Management Division
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HOWARD COUNTY
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 RIVER HILL SHALLOW MARSH BMP
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WEIR DETAILS

SCALE 1" = 1'

SHEET 5 OF 9

SILT FENCE (SF)			
FROM	TO	QTY (LF)	REMARKS
10+43	10+49	17	
10+51	10+55	20	

DIVERSION FENCE (DF)			
FROM	TO	QTY (LF)	REMARKS
10+30	10+82	46	
11+03	12+10	110	

EARTH DIKE (ED)			
FROM	TO	QTY (LF)	REMARKS
10+82	10+87	6	A-2
10+98	11+03	6	A-2

SANDBAG DIVERSION (SBD)		
STATION	QTY (FT)	REMARKS
10+25	6'	

DEWATERING PUMP (DWP)		
STATION	QTY (EA)	REMARKS
10+96	1	

FILTER BAG (FB)		
STATION	QTY (EA)	REMARKS
11+75	1	

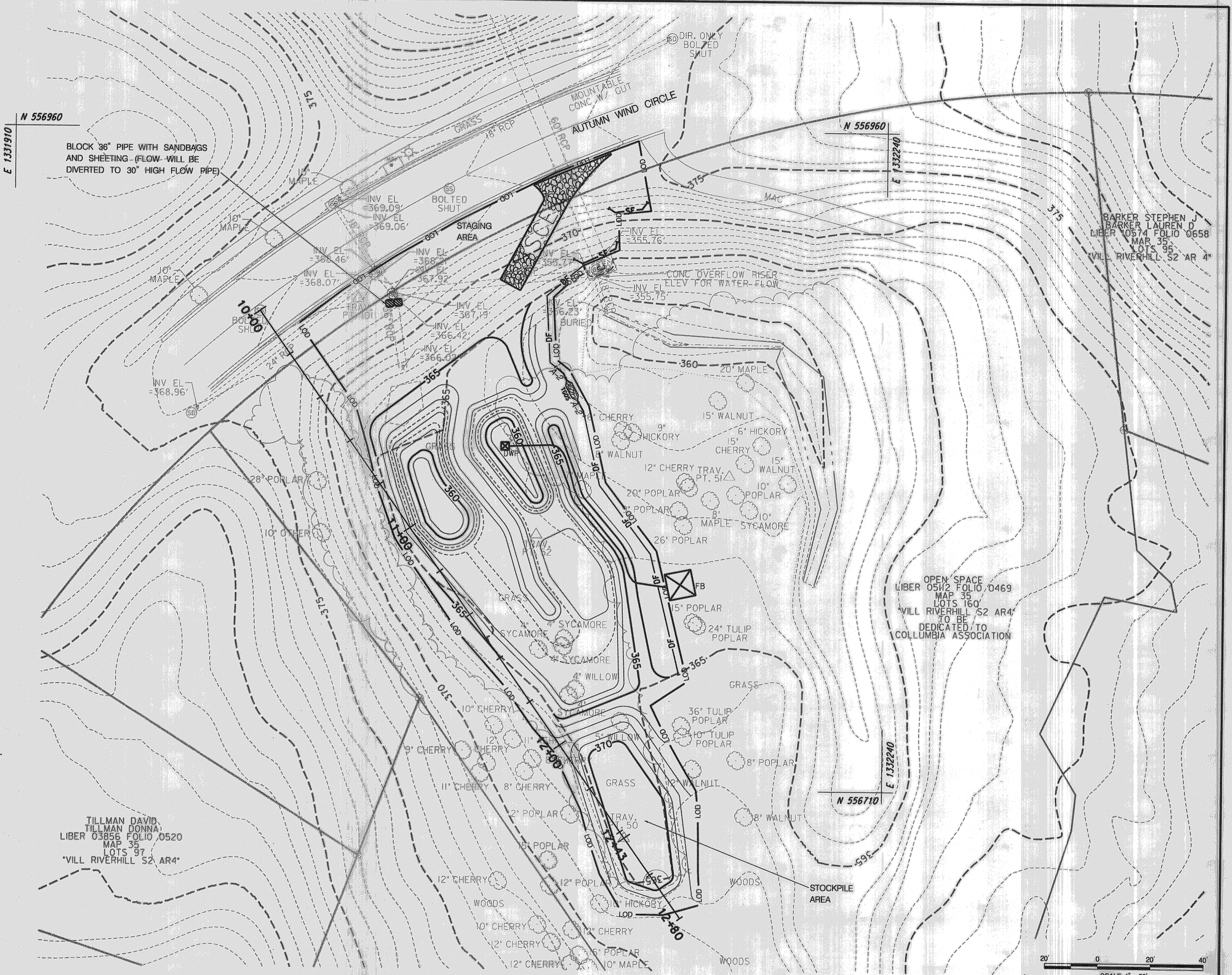
TEMPORARY GABION OUTLET STRUCTURE (TGOS)		
STATION	QTY (EA)	REMARKS
10+90	1	

STABILIZED CONSTRUCTION ENTRANCE (SCE)		
STATION	QTY (EA)	REMARKS
10+13	1	

LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- WETLAND BOUNDARY
- PROPERTY LINE
- LIMIT OF DISTURBANCE
- SILT FENCE
- DIVERSION FENCE
- EARTH DIKE
- DEWATERING PUMP
- TEMPORARY STONE OUTLET STRUCTURE
- EXISTING TREE
- STABILIZED CONSTRUCTION ENTRANCE
- FILTER BAG

- NOTES:**
1. CONTRACTOR MAY BENCH AND FILL SLOPE FOR SCE AS NEEDED WITHIN LOD FOR ACCESS. SLOPE SHALL BE FULLY RESTORED TO PRECONSTRUCTION CONDITIONS OF WORK, INCLUDING ANY NECESSARY REPAIRS TO BROKEN SIDEWALK OR CURB.
 2. DIVERSION FENCE SHALL TIE INTO DOWNSTREAM EARTH DIKE AT FLOWLINE/TOE OF DIKE AND BE EMBEDDED BACK TO CENTERLINE OF DIKE.



SCALE: 1" = 20'

<p>REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS</p> <p>THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT</p> <p><i>John B. Rector</i> HOWARD SCD</p>	<p>McCormick Taylor Engineers & Planners Since 1946</p> <p>509 South Exeter Street 4th Floor Baltimore, Maryland 21202 (410) 662-7400</p>	<p>Howard County MARYLAND</p> <p>Storm Water Management Division Bureau of Environmental Services 6751 Columbia Gateway Drive, Suite 514 Columbia, Maryland 21046-3143</p>	<table border="1"> <tr> <td>DES: WC</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DRN: MR</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHK: AH</td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE: 3/23/10</td> <td>BY</td> <td>NO.</td> <td>REVISION</td> </tr> <tr> <td></td> <td></td> <td></td> <td>DATE</td> </tr> </table>	DES: WC				DRN: MR				CHK: AH				DATE: 3/23/10	BY	NO.	REVISION				DATE
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<p>HOWARD COUNTY CAPITAL PROJECT D-1141 RIVER HILL SHALLOW MARSH BMP WATER QUALITY RETROFIT</p> <p>EROSION AND SEDIMENT CONTROL PLAN</p>			<p>SCALE: 1" = 20'</p> <p>SHEET 6 OF 9</p>																				

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

HOWARD SOIL CONSERVATION DISTRICT TEMPORARY SEEDING NOTES

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

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

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

SEEDING: – FOR PERIODS MARCH 1 – APRIL 30 AND FROM AUGUST 15 – OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 – AUGUST 14, SEED WITH 3 LBS / ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 FT.). FOR THE PERIOD NOVEMBER 16 – FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/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/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL. NO ASPHALT EMULSION SHALL BE USED FOR ANCHORING. ONLY A NON-TOXIC, LATEX BACKING MATERIAL IS ALLOWED.

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

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410) 313-1880 A MINIMUM OF 24 HOURS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE MARYLAND DEPARTMENT OF ENVIRONMENT INSPECTOR AT (301) 665-2850, FIVE (5) DAYS BEFORE ANY LAND DISTURBING ACTIVITY.
3. THE CONTRACTOR SHALL COORDINATE AN ON-SITE PRE-CONSTRUCTION MEETING WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE COUNTY PROJECT MANAGER, THE ENGINEER, AND A HOWARD COUNTY INSPECTOR.
4. ORANGE HIGH VISIBILITY FENCE SHALL BE MANUALLY INSTALLED WHERE INDICATED ON THE PLANS. THIS SHALL BE COMPLETED BY AND INSPECTED FOLLOWING THE PRECONSTRUCTION MEETING.
5. PLACE A W11-10(1), TRUCKS ENTERING HIGHWAY (SYMBOL) (30" X 30"), SIGN IN EACH DIRECTION ON AUTUMN WIND CIRCLE SIGNS ARE TO BE PLACED 450 FEET IN ADVANCE OF THE CONSTRUCTION ENTRANCE, AS PER THE MD MUTCD.
6. BLOCK THE 36" PIPE AT THE UPSTREAM END AS NOTED. CONSTRUCT TIGOS, DIKES AND DIVERSION FENCE. INSTALL SCE. GRADING AS NEEDED WITHIN THE LOD FOR TRAVERSABLE SLOPE.
7. GRADE BMP AND INSTALL RIPRAP AND WEIR. DEWATER AREA TO FILTER BAG AS NECESSARY. REMOVE SCE AND RESTORE SLOPE AS NOTED.
8. ONCE ALL AREAS ARE FULLY STABILIZED, REMOVE THE DOWNSTREAM SEDIMENT CONTROLS AND STABILIZE ANY REMAINING DISTURBED AREAS. UNBLOCK THE 36" PIPE. CONSTRUCT BRICK WEIR IN 30" PIPE AS NOTED DURING FORECAST OF DRY WEATHER.

HOWARD SOIL CONSERVATION DISTRICT PERMANANT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

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

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

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

SEEDING – FOR THE PERIODS MARCH 1 – APRIL 30, AND AUGUST 1 – OCTOBER 15, SEED WITH 60 LBS / ACRE (11.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 – JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (0.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 – FEBRUARY 28, PROTECT SITE BY: **OPTION 1** – TWO 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/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE 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. NO ASPHALT EMULSION SHALL BE USED FOR ANCHORING. ONLY A NON-TOXIC, LATEX TACKING MATERIAL IS ALLOWED.

MAINTENANCE – INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

HOWARD COUNTY CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, 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 SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (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	0.46 ACRES
AREA DISTURBED	0.46 ACRES
AREA TO BE ROOFED OR PAVED	0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.46 ACRES
TOTAL CUT	594 CU. YDS.
TOTAL FILL	410 CU YDS.
OFF SITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED
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 CONTROL 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 IS LIMITED TO THREE PIPE LENGTH OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.
12. OFFSITE WASTE / BORROW SITE SHALL HAVE AN APPROVED SEDIMENT CONTROL PLAN.

STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

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

PURPOSE

TO PROVIDE A SUITABLE, SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

- 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:

- A. 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 1-1/2" IN DIAMETER.
- B. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
- C. 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 DISTURBED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

- A. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION* – VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

- A. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 1. 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.
 2. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 3. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 4. 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 AS 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.

- B. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION – SECTION* VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION

- A. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
- B. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" – 8" HIGHER IN ELEVATION.
- C. 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 SOIL 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.
- D. 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 MY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

REVIEWED FOR HOWARD SCD
AND MEETS TECHNICAL REQUIREMENTS

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Engineers & Planners
Since 1946**
Taylor

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NO.

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CAPITAL PROJECT D-1141

RIVER HILL SHALLOW MARSH BMP
WATER QUALITY RETROFIT

**EROSION AND SEDIMENT
CONTROL NOTES**

SCALE

NOT TO
SCALE

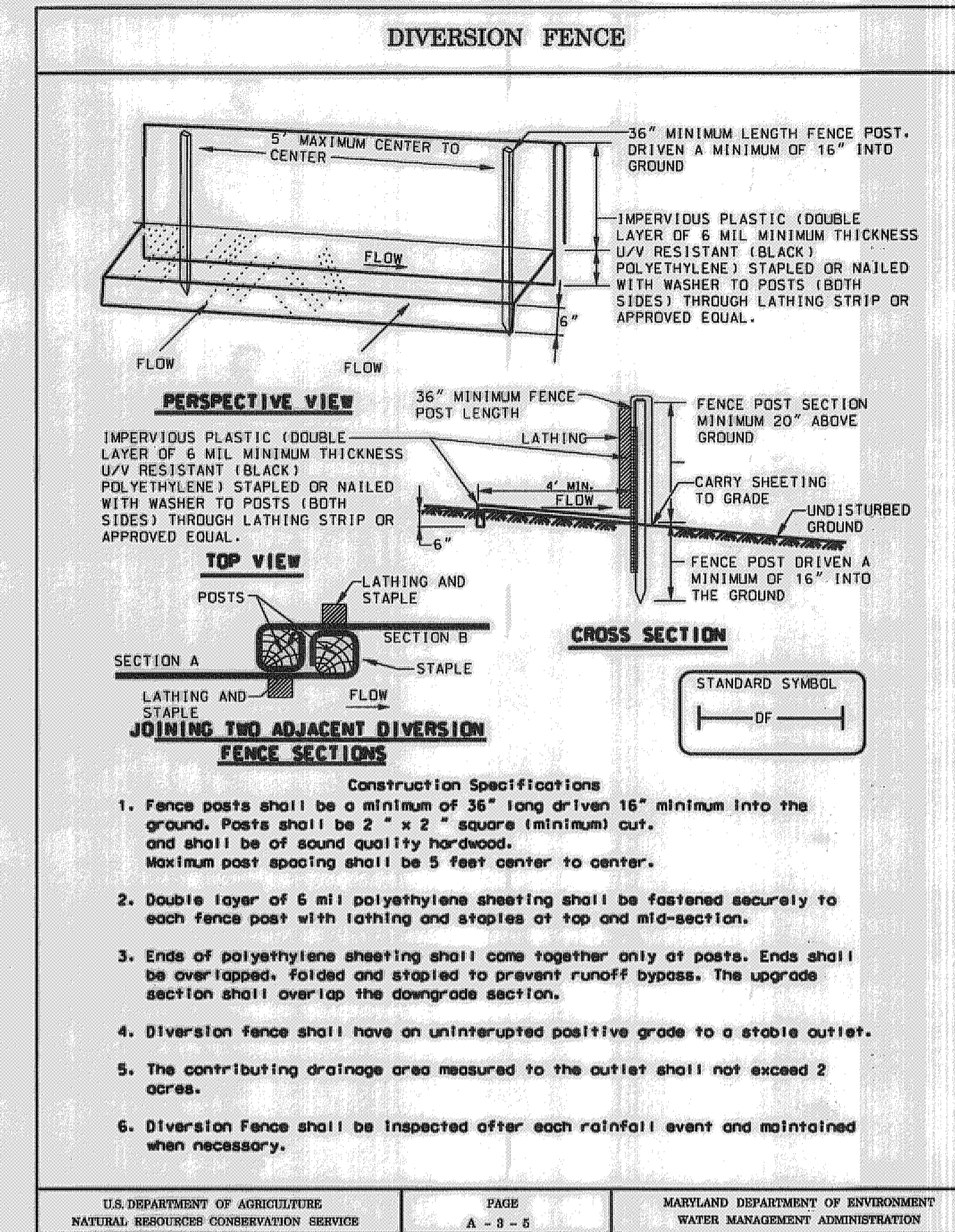
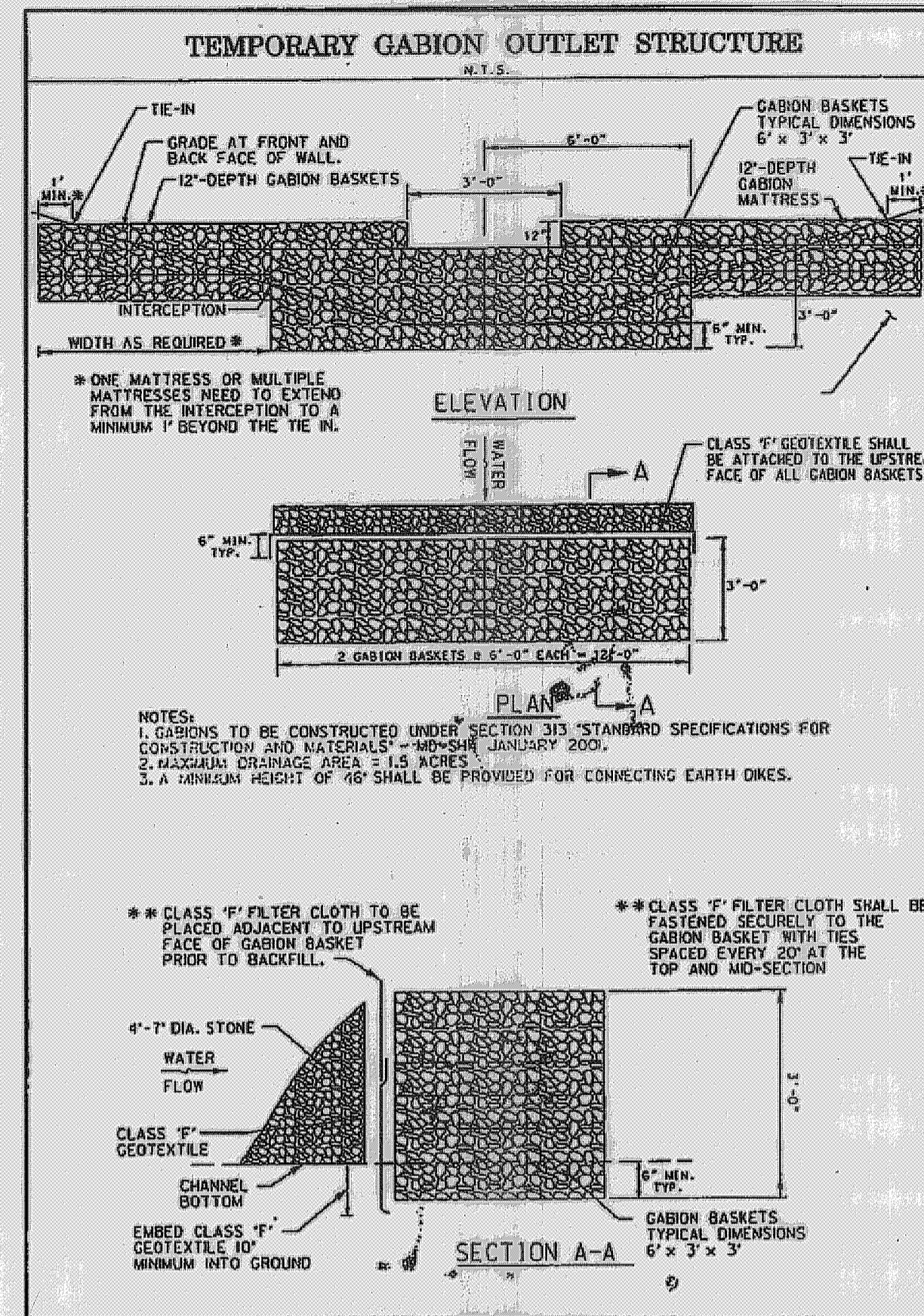
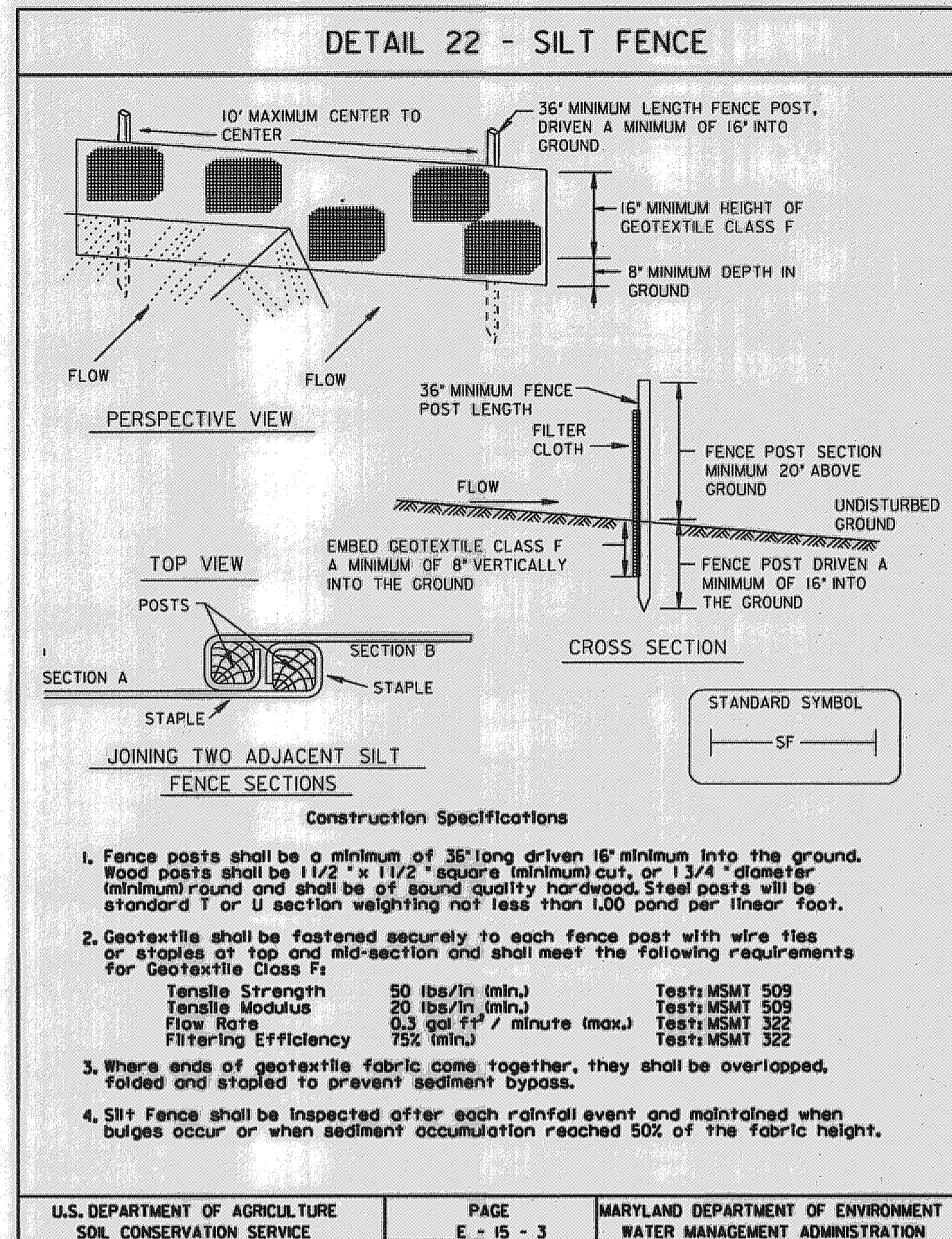
SHEET

7 OF 9

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

John R. Roberts
HOWARD SCD

4/1/10
DATE



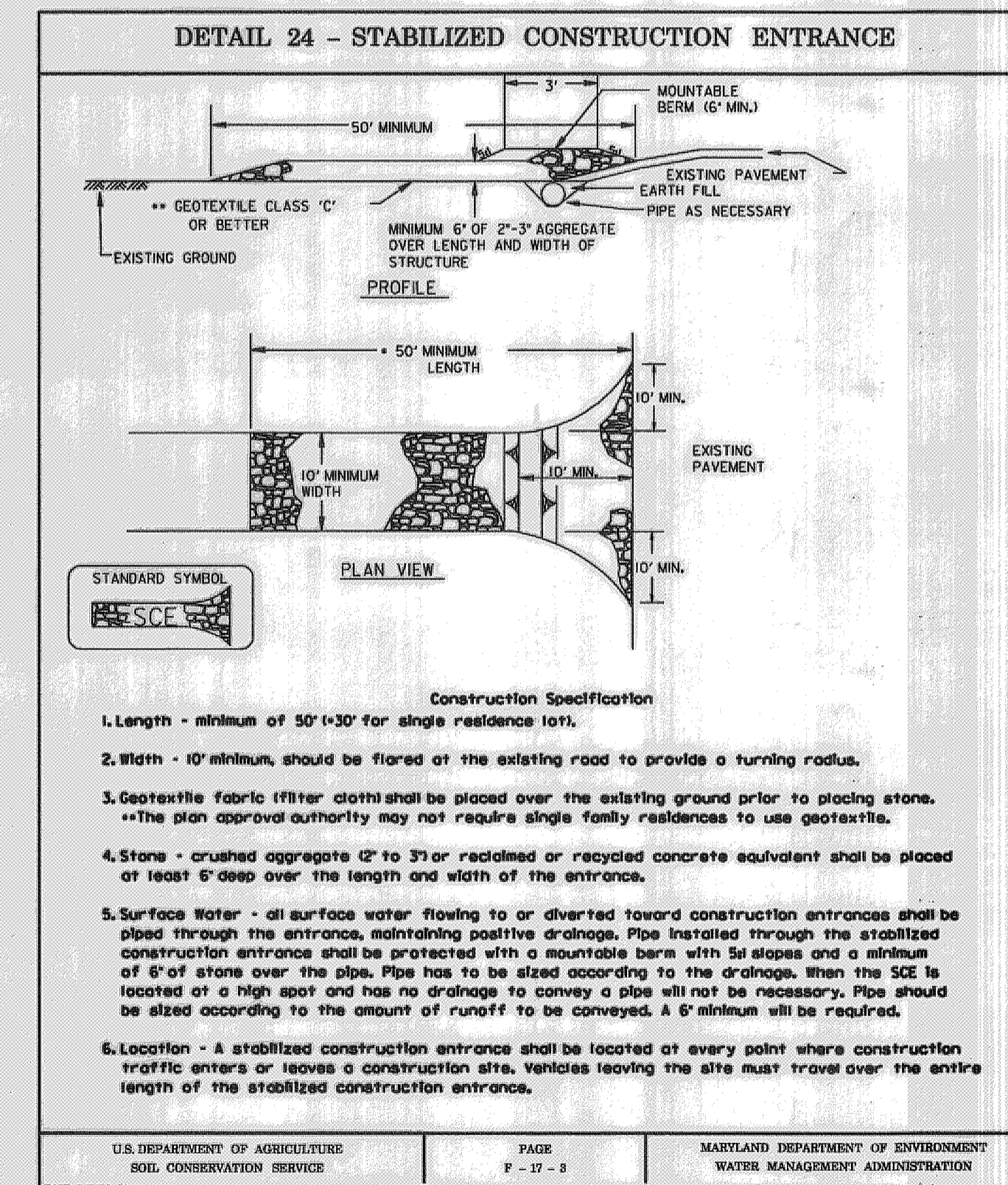
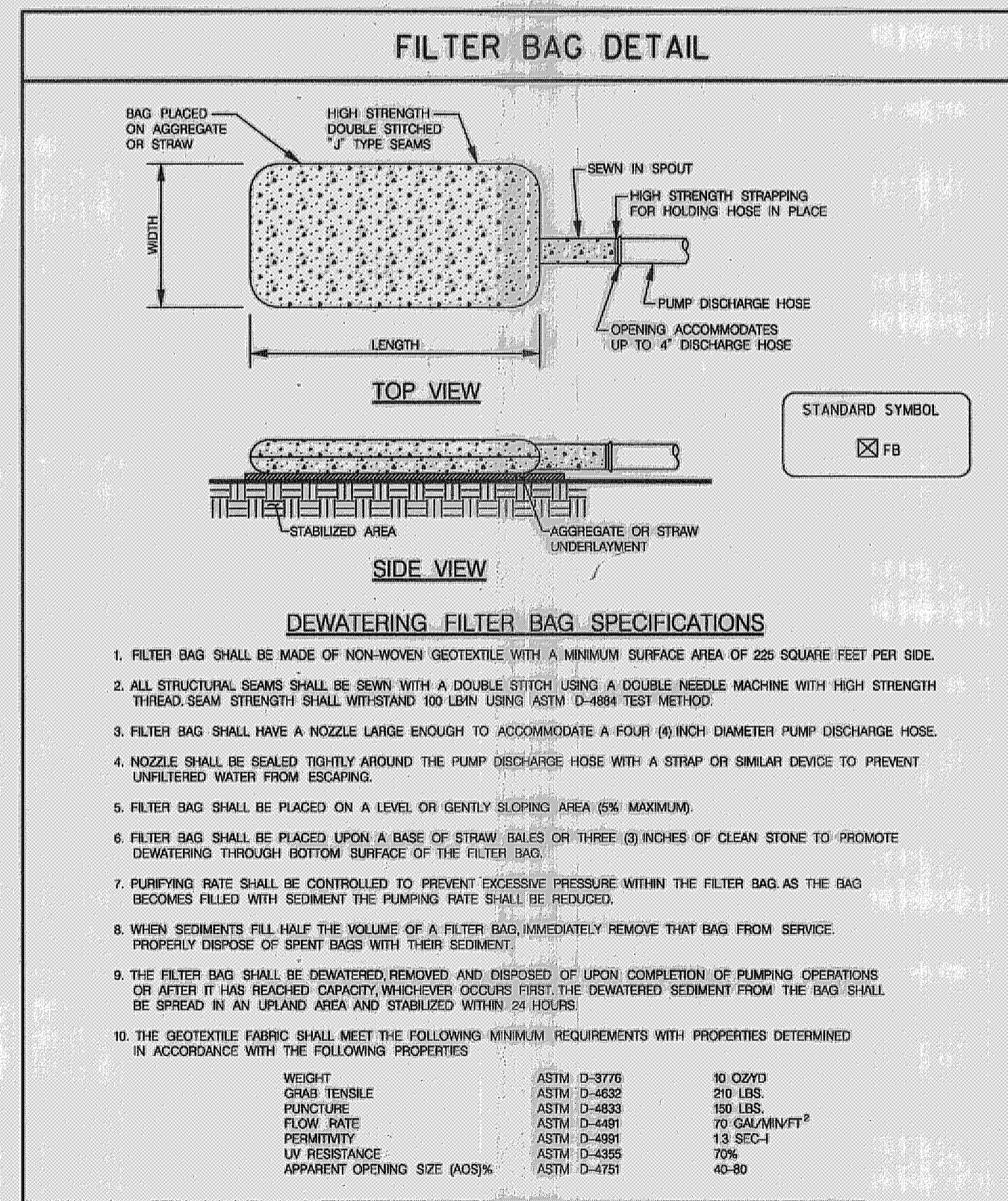
SILT FENCE

Silt Fence Design Criteria

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

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

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



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John R. [Signature] 4/11/10
HOWARD SCD DATE

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HOWARD COUNTY
CAPITAL PROJECT D-1141
RIVER HILL SHALLOW MARSH BMP
WATER QUALITY RETROFIT

EROSION AND SEDIMENT CONTROL DETAIL SHEET

SCALE NOT TO SCALE
SHEET 8 OF 9

PLANTING SCHEDULE				
WOODY PLANTINGS				
SYMBOL	QUANTITY	SPECIES	SIZE	COMMENTS
LS	9	LIQUIDAMBAR STYRACIFLUA / SWEET GUM	5' H. CONTAINER	AS SHOWN ON PLANS
VD	10	VIBURNUM DENTATUM/ SOUTHERN ARROWWOOD	2' H. CONTAINER	AS SHOWN ON PLANS
CS	10	CORNUS SERICEA / REDTWIG DOGWOOD	2' H. CONTAINER	AS SHOWN ON PLANS

EMERGENT AQUATIC PLANTING ZONE - 328 SQUARE YARDS (0" TO 12" DEPTH)				
% FREQUENCY	QUANTITY	SPECIES	SIZE	SPACING
30%	222	PONTEDERIA CORDATA/ PICKEREL WEED	QUART	24" ON CENTER
30%	222	JUNCUS EFFUSUS / SOFT RUSH	QUART	24" ON CENTER
20%	148	CAREX STRICTA / TUSSOCK SEDGE	QUART	24" ON CENTER
20%	148	ACORUS CALAMUS / SWEET FLAG	QUART	24" ON CENTER

NOTE: RANDOMLY MIX PLANTINGS IN GROUPINGS 5 TO 15 SIMILAR SPECIES TOGETHER

SUBMERGED AQUATIC PLANTING ZONE - 59 SQUARE YARDS (12" + DEPTH)				
% FREQUENCY	QUANTITY	SPECIES	SIZE	SPACING
100%	132	PELTANDRA VIRGINICA / ARROW ARRUM	QUART	24" ON CENTER

NOTE: RANDOMLY MIX PLANTINGS IN GROUPINGS

UPLAND SEED MIX - 879 SQUARE YARDS AT 60 LB. PER ACRE		
% FREQUENCY	LBS	SPECIES
50%	5.46	LOLIUM MULTIFLORUM / ANNUAL RYE
15%	1.64	FESTUCA RUBRA / RED FESCUE
15%	1.64	FESTUCA BREVIPILOSA / HARD FESCUE
5%	0.54	POA PRATENSIS / KENTUCKY BLUEGRASS
15%	1.64	LOLIUM PERENNE / PERENNIAL RYE
100%	10.92 LB	TOTAL

NOTE: USE STRAW MULCH WITH UPLAND SEED MIX AREAS.

LOWLAND SEED MIX - 750 SQUARE YARDS AT 60 LB. PER ACRE		
% FREQUENCY	LBS	SPECIES
50%	4.65	LOLIUM MULTIFLORUM / ANNUAL RYE
5%	0.47	FESTUCA RUBRA / RED FESCUE
10%	0.93	PANICUM VIRGATUM / SWITCHGRASS
10%	0.93	CAREX VULPINOIDEA / FOX SEDGE
15%	1.40	AGROSTIS ALBA / REDTOP
5%	0.47	ANDROPOGON GERARDII / BIG BLUESTEM
5%	0.47	ANDROPOGON VIRGINICUS / BLUESEDEGE BLUESTEM
100%	9.32 LB	TOTAL

NOTE: USE BIODEGRADABLE COIR SOIL STABILIZATION MATTING ROLLED OUT DIRECTLY OVER PREPARED AND SEEDED SOIL, EXCEPT IN DESIGNATED AREAS AS SHOWN ON THE PLAN.



LEGEND

- 360 — PROPOSED MAJOR CONTOUR
- 365 — PROPOSED MINOR CONTOUR
- - - - EXISTING MAJOR CONTOUR
- - - - EXISTING MINOR CONTOUR
- — — — PROPERTY LINE
- WATER OF THE US
- EXISTING TREE
- LIMIT OF DISTURBANCE
- ORANGE CONSTRUCTION FENCE
- TREE PROTECTION FENCE
- MINOR SHRUB
- MAJOR TREE
- UPLAND SEED MIX PLANTING ZONE / USE STRAW MULCH
- LOWLAND SEED MIX PLANTING ZONE / USE DEGRADABLE SOIL STABILIZATION MATTING UNLESS OTHERWISE NOTED
- EMERGENT AQUATIC PLANTING ZONE
- SUBMERGED AQUATIC PLANTING ZONE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

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

HOWARD SCD DATE

McCormick Taylor
 Engineers & Planners Since 1946
 509 South Exeter Street
 4th Floor
 Baltimore, Maryland 21202
 (410) 662-7400

Howard County
 MARYLAND
 Storm Water Management Division
 Bureau of Environmental Services
 6751 Columbia Gateway Drive, Suite 514
 Columbia, Maryland 21046-3143

DES: WC					
DRN: MR					
CHK: AH					
DATE: 3/23/10	BY	NO.	REVISION	DATE	

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LANDSCAPING PLAN

SCALE: 1" = 20'

SHEET 9 OF 9