STORWATER MANAGEMENT RETROFIT

INDEX OF DRAWINGS

- TITLE SHEET
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- STORMWATER MANAGEMENT POND AND DETAILS
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- POND SPECIFICATIONS
- LANDSCAPING PLAN
- LANDSCAPING DETAILS

	PERMI'	TINF	ORMATION	BLOC	K
SUBDIVISION NAME RO	CKBURN TOW	INSHIP	SECTION/AREA	1/2	LOT / PARCEL* 0.S. LOT 200
PLAT* OR L/F 8633, 8635 8638	BLOCK* 21/3	ZONE R-20	TAX/ZONE MAP 31/37	ELEC. DIST	CENSUS TRACT 6011.01

ADDRESS CHART LOT NUMBER STREET ADDRESS 7782 ROCKBURN DRIVE 0.S. LOT 200

	AS	-BUIL	T CE	RTIFIC	ATI	ON
EREBY	CERTIFY	THAT	THE	FACILI	TY	SHOWN

WAS CONSTRUCTED AS SHOWN ON THE FACILITY SHOWN ON THIS PLAN MEETS THE APPROVED PLANS AND SPECIFICATIONS.

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. 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 WI 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 ENVIRONMEN 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 ON THE POND WITHIN 30 DAY
OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS
BY THE HOWARD SOIL CONSERVATION DISTRICT."

	SITE ANALYSIS DATA CHART
J.	TOTAL PROJECT AREA: = 0.95 ACRES
٠.	AREA OF PLAN SUBMISSION: = 0.95 ACRES
۶.	LIMIT OF DISTURBED AREA: = 0.95 ACRES
1.	PRESENT ZONING DESIGNATION: = "R-20"
•	DPZ FILE REFERENCE: = S-87-26, P-87-58, F-88-273

ВМР	DATA SUMMARY
ADDRESS	ROCKBURN TOWNSHIP, HOWARD COUNTY, MD
MD COORDINATES (NADS83)	NORTH 564,705 EAST 1,375,317
ADC MAP/GRID	16/J6
STRUCTURE TYPE	EXTENDED DETENTION
MOP LAND USE	OPEN SPACE
STRUCTURE DRAINAGE AREA	21.14 ACRES
TOTAL SITE DRAINAGE AREA	21.14 ACRES
RCN - POST DEVELOPMENT	76
ON/OFF SITE SWM	ON SITE STORMWATER MANAGEMENT
OWNER	HOWARD COUNTY, MD

STOF	RMWATE	R MAN	AGEMEN	IT SUM	MARY	CHART
STORM	(AS-BUILT) EXISTING POND INFLOW	(AS-BUILT) EXISTING PEAK DISCHARGE	(AS-BUILT) EXISTING POND ELEVATION	PROPOSED PEAK DISCHARGES	PROPOSED POND ELEVATIONS	PROPOSED STORAGE VOLUMES
	CFS	CFS	FT.	CFS	FT.	ACFT.
I YR.	23.29	12.98	373.75	3.21	374.60	0.58
2 YR.	34.71	20.47	374.57	11.94	374.89	0.68
IO YR.	75.30	56.88	376.01	45.63	375.66	1.00
100 YR.	122.77	115.38	376.69	85.33	376.47	1.34

DEPARTMENT OF PLANNING AND ZONING

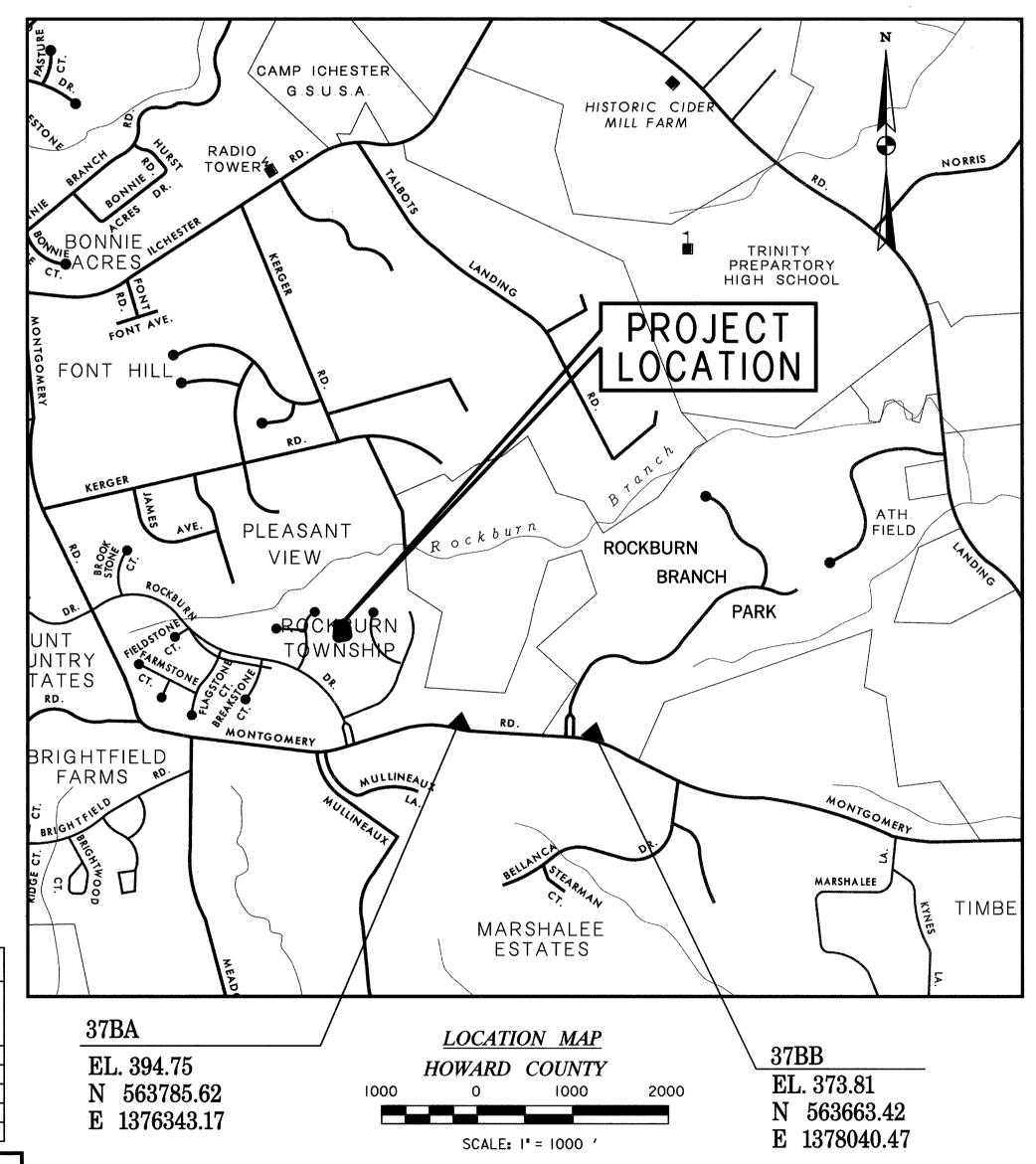
DEPARTMENT OF PUBLIC WORKS

OWARD COUNTY, MARYLAND

12/01/00

APPROVED: DEPARTMENT OF RECREATION AND PARKS

ELECTION DISTRICT HOWARD COUNTY, MARYLAND CAPITAL PROJECT NO. D-1106



Howard County Department of Recreation and Parks

DES: WLM

DRN: SYC/EGB

7120 Oakland Mills Rd. Columbia, MD 21046-1677 Phone No. 410-313-4640

BY NO.

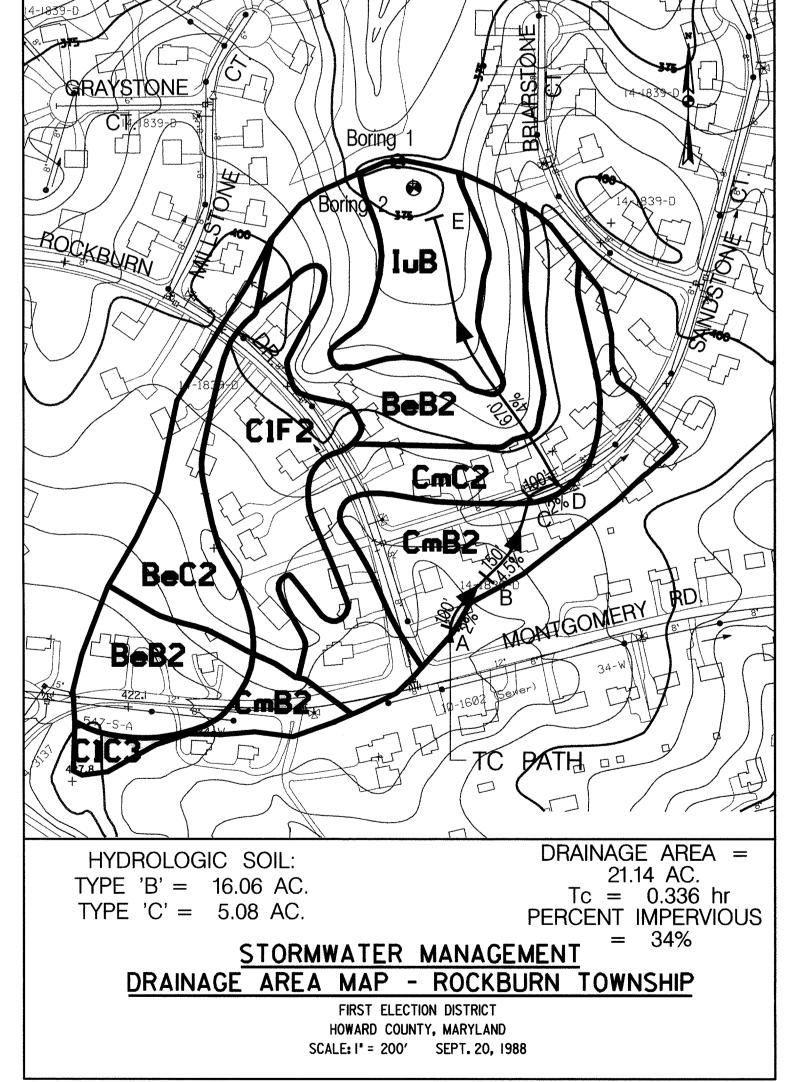
REVISION

Howard County Department of Public Works 6751 Columbia Gateway Drive, Fifth Floor Columbia, MD 21046 Phone No. 410-313-2330

GENERAL NOTES

- I. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AND MISS UTILITY AT 1-800-257-7777 AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK.
- 2. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- 3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD
- 4. ALL WORK SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, ISSUED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE NATURAL RESOURCES CONSERVATION SERVICE.
- 5. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY URS CORPORATION DATE NOV. 2000.
- 6. THE PROPERTY LINES AND EASEMENT LINES ARE APPROXIMATELY INDICATED AS SHOWN ON PLAT NO. 7394
- 7. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND THE FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. SHOULD THE
- 8. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHOD, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- 9. APPROXIMATE UTILITIES ARE SHOWN FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S

- 10. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- II. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16,124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE
- 12. POND STRUCTURE HAZARD CLASSIFICATION = A. DUE TO NATURE OF PROXIMITY OF ROCKBURN BRANCH PARK.
- 13. THIS PROJECT IS SUBJECT TO THE FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT
- 14. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 17EB AND 17EA WERE USED FOR THIS PROJECT.
- 15. THERE IS NO FLOODPLAIN ON THIS SITE.
- 16. THERE ARE NO WETLANDS ON THIS SITE.
- 17. NO TRAFFIC STUDY IS REQUIRED FOR THIS
- 18. THIS PROJECT IS EXEMPT FROM THE FOREST CONSERVATION REQUIREMENTS IN ACCORDANCE WITH APPENDIX 'O' - HOWARD COUNTY CAPITAL IMPROVEMENT PROJECTS OF THE FOREST CONSERVATION MANUAL AS A SINGLE LOT CLEARING LESS THAN 40,000 SQUARE FEET



STORMWATER MANAGEMENT RETROFIT AT ROCKBURN TOWNSHIP - OPEN SPACE LOT 200

TAX MAP NO. 31/37, GRID NO. 21/3, PARCEL NO. 793

CAPITAL PROJECT NO. D-1106 1ST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

<u> 1</u> of <u>8</u>

SCALE MAP NO. N/A BLOCK NO.

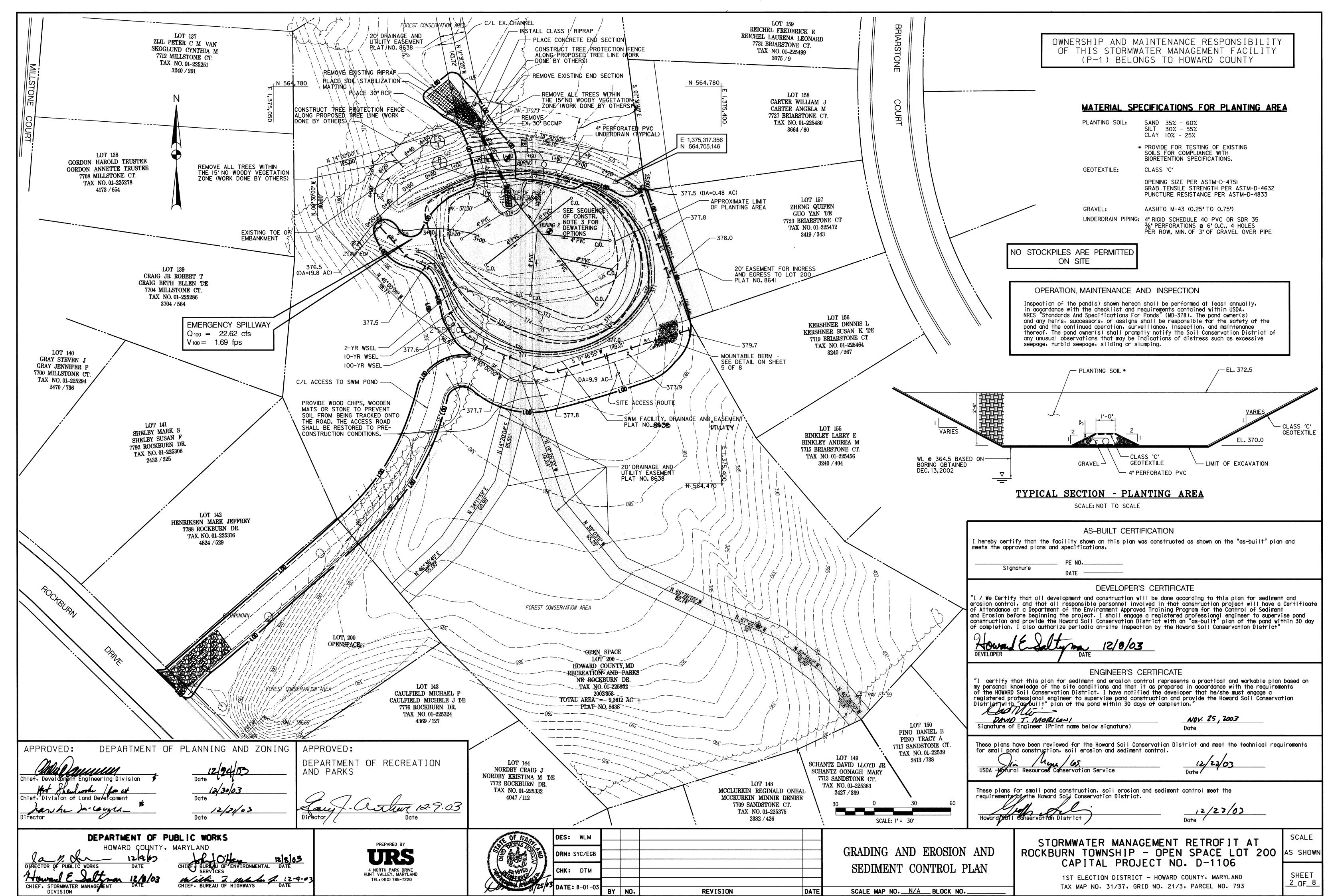
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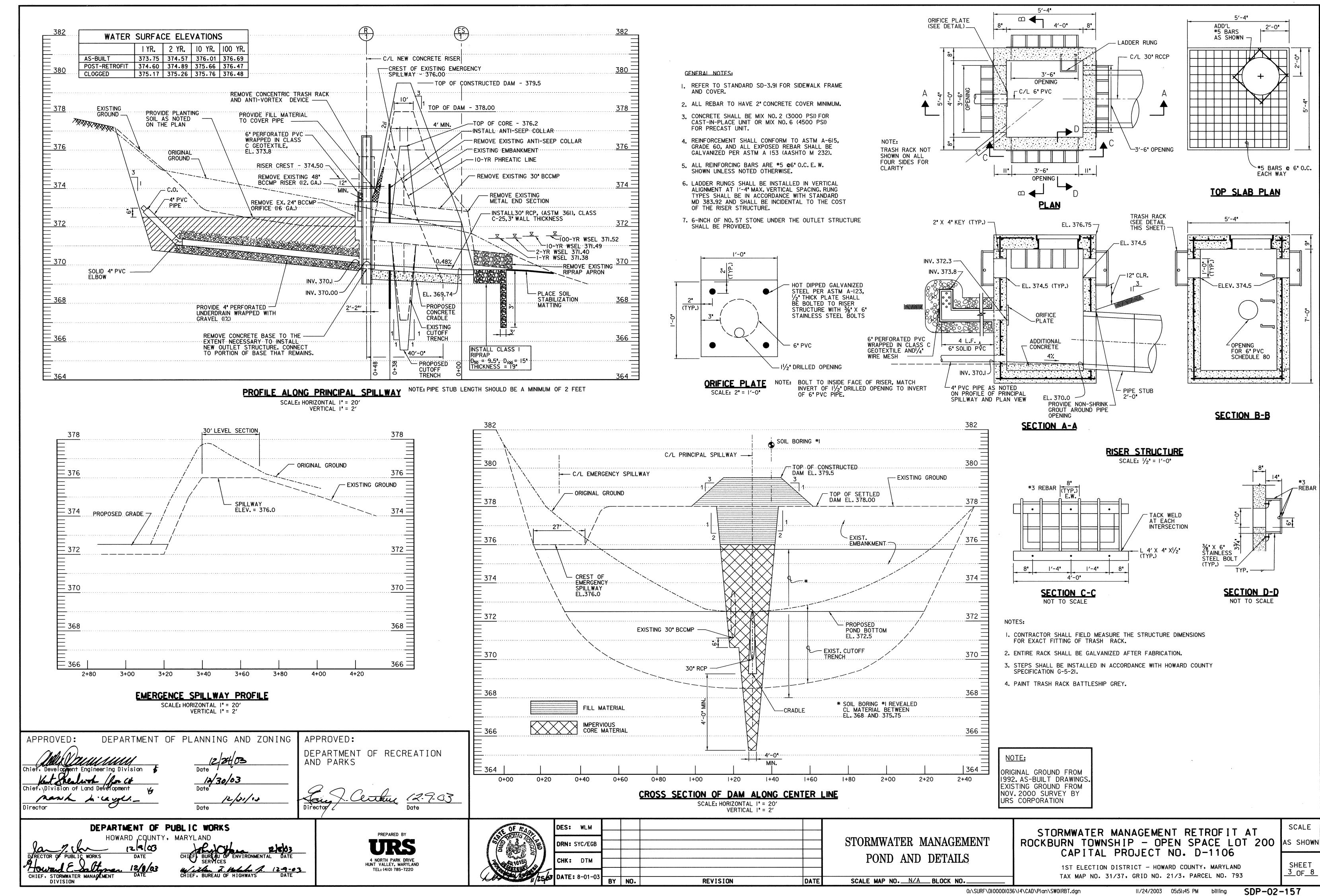
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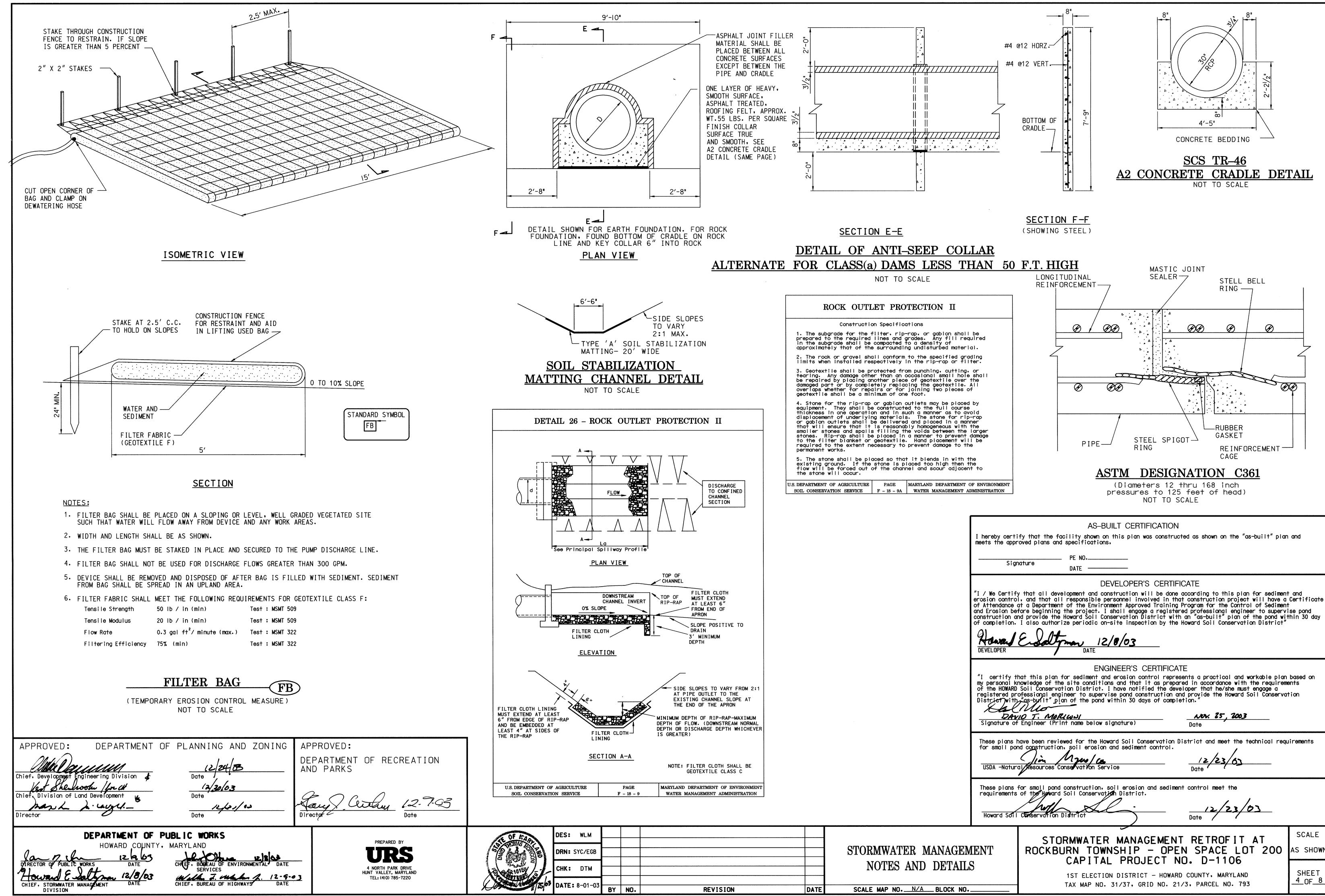
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4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220







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PERMANENT SEEDING NOTES

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

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY

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

- 1) PREFERRED APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1.000 SQUARE FEET) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1,000 SQUARE FEET) BEFORE SEEDING. HARROW OR DISC INTO UPPER 3 INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PÉR 1,000 SQUARE FEET).
- 2) ACCEPTABLE APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1,000 SQUARE FEET) AND 1,000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS. PER 1,000 SQUARE FEET) BEFORE SEEDING. HARROW OR DISC INTO UPPER 3 INCHES OF SOIL.

SEEDING: FOR THE PERIOD MARCH I THROUGH APRIL 30 AND FROM AUGUST I THROUGH OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS. PER 1,000 SQUARE FEET) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY I THROUGH JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.05 LBS. PER 1.000 SQUARE FEET) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY ONE OF THE

- 1) 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING. 2) USE SOD.
- 3) SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE WELL ANCHORED STRAW.

MULCHING: APPLY $1\frac{1}{2}$ TO 2 TONS PER ACRE (70 TO 90 LBS, PER 1,000 SQUARE FEET) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GALLONS PER 1,000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FEET OR HIGHER, USE 347 GALLONS PER ACRE (8 GALLONS PER 1,000 SQUARE FEET) FOR ANCHORING.

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

TEMPORARY SEEDING NOTES

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

SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1.000 SQUARE FEET).

SEEDING: FOR PERIODS MARCH I THROUGH APRIL 30 AND FROM AUGUST 15

THROUGH NOVEMBER 15, SEED WITH $2\frac{1}{2}$ BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1,000 SQUARE FEET). FOR THE PERIOD MAY I THROUGH AUGUST 14. SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.07 LBS. PER 1.000 SQUARE FEET). 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 11/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1,000 SQUARE FEET) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING.

ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GALLONS PER 1.000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FEET OR HIGHER, USE 347 GALLONS PER ACRE (8 GALLONS PER 1,000 SQUARE FEET) FOR ANCHORING. REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN THE NECESSARY PERMITS PRIOR TO CONSTRUCTION. (I DAY)
- 2. INSTALL TREE PROTECTION FENCE (I DAY)
- 3. INSTALL THE PERIMETER SEDIMENT CONTROL MEASURES INCLUDING SILT FENCE, SUPER SILT FENCE, EARTH DIKE, SUMP PIT, FILTER BAG AND STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON GRADING PLAN. INSTALL TEMP 4" PIPE FROM THE SUMP PIT TO THE NEW UNDERDRAIN SYSTEM TO ALLOW FOR A GRAVITY DEWATERING OF THE BASIN AREA DURING NON-WORKING HOURS. (5 DAYS)
- 4. UPON THE HOWARD COUNTY INSPECTOR'S APPROVAL, CLEAR AND GRUB THE SITE AS NEEDED. ANY WATER ENCOUNTERED DURING CONSTRUCTION WITHIN THE POND SHALL BE PUMPED THROUGH THE FILTER BAG. (2 DAYS)
- 5. UPON VERIFICATION OF A 5-DAY CLEAR (NO PRECIPITATION) WEATHER FORECAST FROM THE NATIONAL WEATHER SERVICE, BEGIN ROUGH GRADING AND REMOVAL OF THE EXISTING OUTLET STRUCTURE. INSTALL SUMP PIT STABILIZE AREAS OUTSIDE OF ANY SPECIFIC EROSION CONTROL DEVICE IMMEDIATELY. (5 DAYS)
- 6. INSTALL NEW OUTLET STRUCTURE, LOW FLOW DEVICE AND UNDERDRAIN SYSTEM. PLACE GRAVEL AS REQUIRED PER PLAN OR AS DIRECTED BY THE ENGINEER. (I WEEK)
- 7. PLACE PLANTING SOIL WITHIN THE DESIGNATED BIORETENTION AREA. PLACE CONTAINER AND B & B LANDSCAPING, MULCH ENTIRE POND AREA, EXCEPT FOR ACCESS ROAD AND AREA OF EARTH DIKE. (3 DAYS)
- 8. REMOVE THE EARTH DIKE AND IMMEDIATELY STABILIZE WITH 4° TOPSOIL, SEED AND MULCH. (2 DAYS)
- STABILIZE THE DISTURBED AREAS WITH TOPSOIL, PERMANENT SEEDING AND MULCHING AS NEEDED. (I WEEK)
- 10. UPON THE HOWARD CO. INSPECTOR'S APPROVAL. REMOVE ALL SEDIMENT EROSION CONTROL DEVICES AND STABILIZE THE REMAINING AREAS WITH PERMANENT SEEDING. (I WEEK)

NOTE: THE TIME LINE EXCLUDES WEATHER RELATED DELAYS.

APPROVED:

CHIEF STORMWATER MANAGEMEN

DIVISION

DEPARTMENT OF PLANNING AND ZONING APPROVED:

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

12/30/03 12/21/02

AND PARKS

DEPARTMENT OF RECREATION

MARYLAND DEPARTMENT OF ENVIRONMENT

G - 22 - 2A WATER MANAGEMENT ADMINISTRATION

HUNT VALLEY, MARYLAND

TEL: (410) 785-7220

STANDARD SEDIMENT CONTROL NOTES

- I. 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 (410-313-1855).
- 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 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 STEEPER 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 THE PERIMETER IN ACCORDANCE WITH VOLUME I, CHAPTER 7. 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 SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SECTION G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- L SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THERE REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT

7. SITE ANALYSIS:

- TOTAL SITE AREA 0.97 ACRES AREA DISTURBED - 0.97 ACRES
- AREAS TO BE ROOFED OR PAVED O ACRES AREA TO BE VEGETATIVELY STABILIZED - 0.97 ACRES TOTAL CUT - 1.200 C.Y.
- TOTAL FILL N/A OFF-SITE WASTE SITE - HOWARD COUNTY LANDFILL
- OFF-SITE BORROW SITE APPROVED SITE WITH ACTIVE GRADING PERMIT
- 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.
- II. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY. WHICHEVER IS SHORTER.
- 12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- 13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
- 14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL. STRUCTURAL FILL OR EMBANKMENT MATERIAL. NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
- 15. CONSTRUCTION WITHIN. ALONG OR ACROSS STREAM CHANNELS SHALL. AS A MINIMUM. CONFORM TO CRITERIA DESCRIBED UNDER "MARYLAND'S GUIDELINES TO WATERWAY

SOIL STABILIZATION MATTING

Construction Specifications

. 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

3. Before stapling the outer edges of the matting, make sure the

4. Staples shall be placed 2' apart with 4 rows for each strip, 2

5. Where one roll of matting ends and another begins, the end of

6. The discharge end of the matting liner should be similarly

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

Note: If flow will enter from the edge of the matting then the area

PAGE

matting is smooth and in firm contact with the soil.

outer rows, and 2 alternating rows down the center.

spaced 6" apart in a staggered pattern on either side.

secured with 2 double rows of staples.

effected by the flow must be keyed-in.

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

between staples.

- MOUNTABLE BERM (6" MIN.) EXISTING PAVEMENT — EARTH FILL ** GEOTEXTILE CLASS 'C'-- PIPE AS NECESSARY OR BETTER MINIMUM 6" OF 2"-3" AGGREGATE OVER LENGTH AND WIDTH OF -EXISTING GROUND STRUCTURE **PROFILE** * 50' MINIMUM LENGTH 10' MIN EXISTING 10' MIN PAVEMENT 10' MINIMUM WIDTH PLAN VIEW STANDARD SYMBOL Construction Specification Length - minimum of 50' (*30' for single residence lot) 2. Width — 10' minimum, should be flared at the existing road to provide a turning

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

- . Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family
- 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

residences to use geotextile.

SOIL CONSERVATION SERVICE

DETAIL 30 - SOIL STABILIZATION MATTING

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 mountable 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 MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

36" MINIMUM LENGTH FENCE POST, 10' MAXIMUM CENTER TO DRIVEN A MINIMUM OF 16" INTO THE TOP OF THE - CENTER GROUND -16" MINIMUM HEIGHT OF GEOTEXTILE CLASS F → 8" MINIMUM DEPTH IN GROUND 36" MINIMUM FENCE-PERSPECTIVE VIEW POST LENGTH FILTER CLOTH-FENCE POST SECTION MINIMUM 20" ABOVE FLOW GROUND 1181181181181181181181181 GROUND TINING IN TINING IN EMBED GEOTEXTILE CLASS F TOP VIEW FENCE POST DRIVEN A A MINIMUM OF 8" VERTICALLY INTO THE GROUND MINIMUM OF 16" INTO THE GROUND POSTS~ CROSS SECTION SECTION A STANDARD SYMBOL STAPLE Construction Specifications JOINING TWO ADJACENT SILT

DETAIL 22 - SILT FENCE

1. Fence po**st<u>s</u>Netwoldstrer գորմց**imum of 36" long driven 16" minimum into the ground. Wo<u>od posts shall be</u> 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting 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 0.3 gal ft²/ minute (max.) Test: MSMT 322 Flow Rate 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 MARYLAND DEPARTMENT OF ENVIRONMENT E - 15 - 3SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

--- /-- -

STANDPIPE SHOULD EXTEND CLEAN WATER AT LEAST SUCTION LINE TO PUMP -----DISCHARGE 12" TO 18" ABOVE THE TOP OF THE PIT OR ABOVE STANDING WATER. CLOSE VALVE DURING WORKING HOURS -__EXISTING STANDPIPE WRAPPED IN 1/2" HARDWARE 4-INCH UNDERDRAIN CLOTH AND GEOTEXTIL TO DEWATER DURING CLASS F NON-WORK ING PERIODS - SIDE SLOPE (VARIES) WRAP END OF PIPE WITH " HARDWARE CLOTH & CLASS E GEOTEXTILE 12" - 36" DIAMETER PERFORATED CORREGATED METAL OR PVC PIPE - WATERTIGHT CAP OR PLATE PLACE 12" BASE CLEAN GRAVEL OR OF M-43 # 57 AASHTO M-43 # 57 STONE BEFORE INSTALLING AGGREGATE FILL CROSS SECTION STANDARD SYMBOL ⊠ SP Construction Specifications 1. Pit dimensions are variable, with the minimum diameter being 2 times the standpipe diameter. 2. The standpipe should be constructed by perforating a 12" to 24" diameter corrugated or PVC pipe. Then wrapping with 1/2" hardware cloth and Geotextile Class E. The perforations shall be 1/2" x 6" slits or 1" diameter holes. 3. A base of filter material consisting of clean gravel or #57 stone should be placed in the pit to a depth of 12". After installing the standpipe, the pit surrounding the standpipe should then be backfilled with

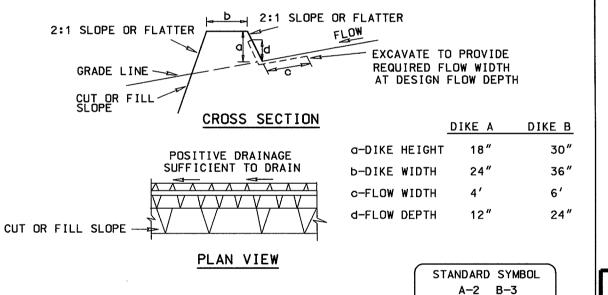
DETAIL 20B - SUMP PIT

the same filter material.

4. The standpipe should extend 12" to 18" above the lip of the pit or the riser crest elevation (basin dewatering only) and the filter material should extend 3" minimum above the anticipated standing water elevation.

U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMEN SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

DETAIL 1 - EARTH DIKE



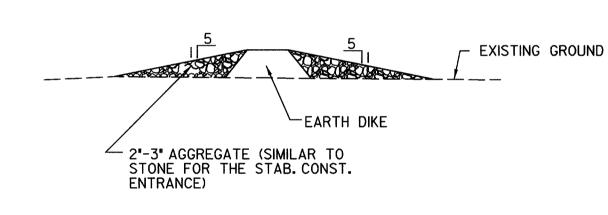
FLOW CHANNEL STABILIZATION GRADE 0.5% MIN. 10% MAX.

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 PAGE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION



MOUNTABLE BERM NOT TO SCALE

AS-BUILT CERTIFICATION

I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plan and meets the approved plans and specifications,

DEVELOPER'S CERTIFICATE

 $^\prime\mathrm{I}$ / We Certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in that construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 day of completion. I also authorize periodic on-site inspection by the Howard Soil Conservation District"



ENGINEER'S CERTIFICATE

I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it as 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 "as-bailt" plan of the pond within 30 days of completion."

DAVID T. MORICONI ianature of Engineer (Print name below signature) NOV. 25, 2003

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

USDA -Natural Resources Conservation Service These plans for small pond construction, soil erosion and sediment control meet

requirements of the Howard Soil Conserwation District.

STORMWATER MANAGEMENT RETROFIT AT ROCKBURN TOWNSHIP - OPEN SPACE LOT 200 CAPITAL PROJECT NO. D-1106

1ST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND TAX MAP NO. 31/37, GRID NO. 21/3, PARCEL NO. 793

<u>5</u>0F<u>8</u> SDP-02-157

U.S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

CROSS-SECTION

STAPLE OUTSIDE -EDGE OF MATTING ON 2' CENTERS

DRN: SYC/EGB CHK: DTM **DATE:** 8-01-0

BY NO. REVISION DATE

4" OVERLAP OF MATTING STRIPS WHERE TWO OR MORE STRIP WIDTHS ARE

TYPICAL STAPLES NO. 11 GAUGE WIRE

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

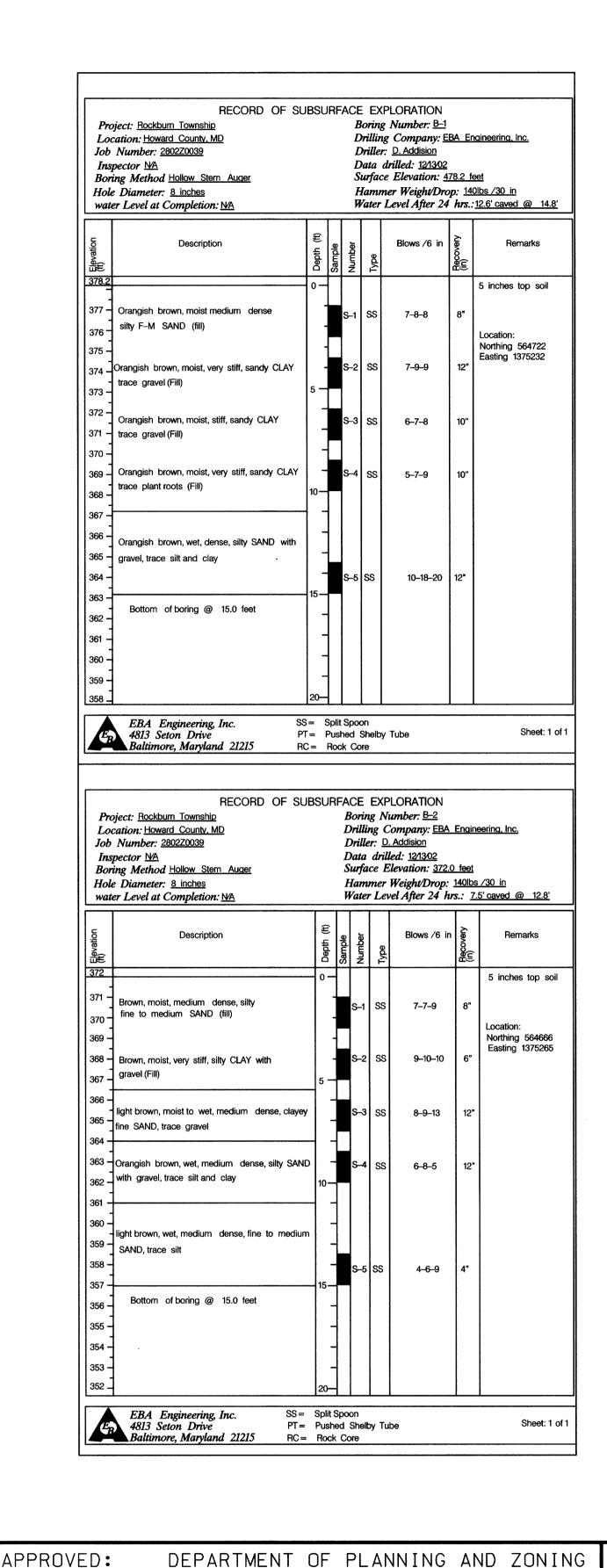
CONTROL NOTES AND DETAILS SCALE MAP NO. N/A BLOCK NO.

EROSION AND SEDIMENT

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SHEET

SCALE



CONSTRUCTION SPECIFICATIONS

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

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED. GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES. BRUSH. AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

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

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 INCHES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT, AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER.

MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT - AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER, FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED, THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH - THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE - THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE, UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE.

UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UN-CONFINED MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UN-CONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING). OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7" TO ASSURE FLOWABILITY OF THE MATERIAL. ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.) TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY. TO ANY PART OF A STRUCTURE. LINDER NO CIRCUMSTANCES SHALL FOILIPMENT MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE -

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

1. MATERIALS - (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

POND MD-378-14 SPECIFICATIONS

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN

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 BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12 INCH WIDE STANDARD LAP TYPE BAND WITH 12 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2 INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24 INCH WIDE BY 3/8 INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS. REINFORCED CONCRETE PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING - REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING / CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING / CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES, WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD, GRAVEL BEDDING IS NOT PERMITTED.

- 3. LAYING PIPE BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM, JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.
- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".
- 5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE - THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

- 1. MATERIALS PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D-1785 OR ASTM D-2241. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S. AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.
- 2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT
- 3. BEDDING -THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE
- 4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS. DRAINAGE DIAPHRAGMS - WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL

CONCRETE

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

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311. GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

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 OCCUPIE 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 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 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 SUMPS FROM WHICH THE WATER SHALL BE

SCALE MAP NO. N/A BLOCK NO.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

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.

OPERATION AND MAINTENANCE SCHEDULE FOR STORMWATER PONDS (P-1 THROUGH P-5)

ROUTINE MAINTENANCE:

- 1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL 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 PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER, OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL 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 THE RIPRAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE:

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

TOPSOIL SPECIFICATIONS

SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:

- 1. TOPSOIL SHALL BE 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 NTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, CDARS FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1-1/2 INCHES IN DIAMETER.
- 2. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
- 3. 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
- 4. FOR SITES HAVE DISTURBED AREAS UNDER 5 ACRES, PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION -SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS OF THE "1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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" 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 MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, STORMWATER MANAGEMENT

DIVISION

BUREAU OF ENVIRONMENTAL HUNT VALLEY, MARYLAND

APPROVED:

AND PARKS

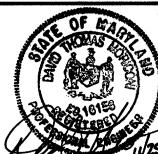
Director

DEPARTMENT OF RECREATION

PREPARED BY

4 NORTH PARK DRIVE

TEL: (410) 785-7220



700	DATE: 8-01-03	BY	NO.	REVISION	DATE
12	2475 2 24 27				
	CHK: DTM				
	DRN: SYC/EGB				
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•	DES: WLM				

STORMWATER MANAGEMENT RETROFIT AT ROCKBURN TOWNSHIP - OPEN SPACE LOT 200 POND SPECIFICATIONS CAPITAL PROJECT NO. D-1106

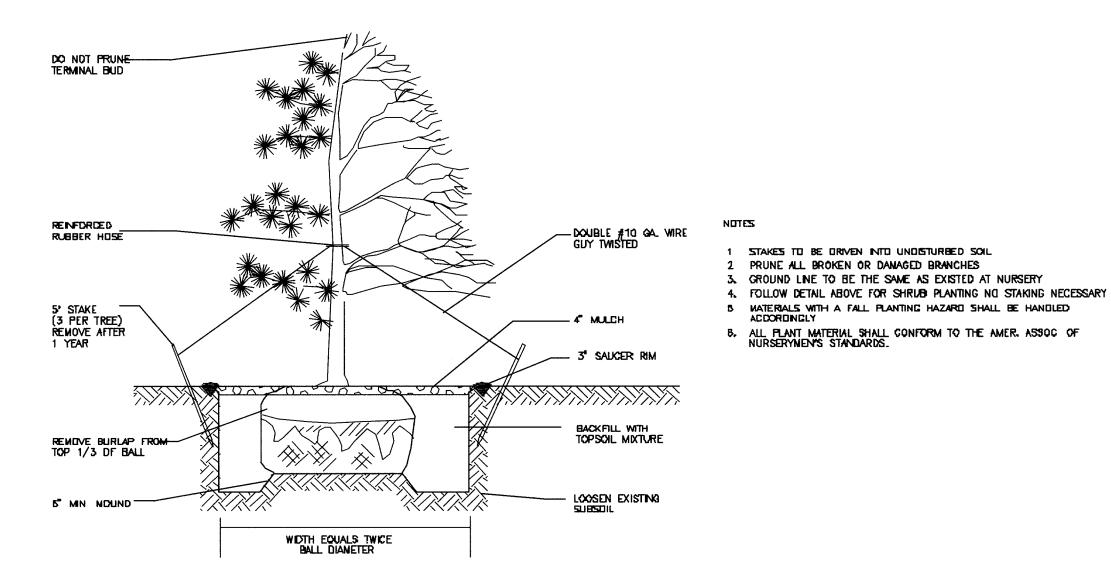
> 1ST ELECTION DISTRICT - HOWARD COUNTY. MARYLAND TAX MAP NO. 31/37, GRID NO. 21/3, PARCEL NO. 793

SHEE <u>6 OF 8</u>

SCALE

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WET AREA SEED MIX (WAM)	DATE	LEGEND	PLANTING NOTES	
	RATE LBS/1,000 SF	BXIST. CONTOUR	1. PLAN FOR LANDSCAPING PURPOS	
AGROSTIS ALBA - RED TOP 20% 98% 90% .15% AGROSTIS STOLONIFERA - CREEPING BENT GRASS 20% 98% 90% .15%	2.0	EXIST. TREE LINE/ BRUSH LINE	3. PLANT TREES AND SHRUBS 25 FE	EET AWAY FROM THE TOE OF SLOPE OF A DAM. EET AWAY FROM 4" PERFORATED PVC PIPES.
POA PALUSTRIS - FOWL BLUEGRASS20%98%90%.15%ELYMUS RIPARIUS - RIVERBANK WILD RYE20%98%90%.15%	2.0	PROPOSED SHRUB/TREE	5. NO FERTILIZER SHALL BE ADDED	EET AWAY FROM PRINCIPAL SPILLWAY STRUCTURES.) TO SEEDING AND SHRUB PLANTING AREAS. TS OF DISTURBANCE OR SEEDING AREAS SHOWN SHALL
PUCCINELLIA DISTANS — ALKALIGRASS 20% 98% 90% .15% TOTAL	2.0 10.0 LBS	7 370 PROPOSED CONTOUR		TALL FESCUE - SEE EROSION AND SEDIMENT CONTROL
NATIVE GRASS SEED MIX (NGM)	10.0 233		7. PLANT MATERIAL SHALL BE WARF	RANTED FOR ONE YEAR AFTER DATE OF ACCEPTANCE.
SEED VARIETY PERCENTAGE MINIMUM GERMINATION MAXIMUM %	RATE	PROPOSED WET AREA SEEDING (W.	TREE PROTECTIVE NO WOODY	NEW TREE LINE
TRIPSACUM DACTYLOIDES - EASTERN GAMMAGRASS 20% 98% 90% .15%	LBS/1,000 SF 2.2	PROPOSED LIMIT OF NATIVE NATIVE GRASS SEEDING (NGM)	FENCING (INSTALLED VEGETATION ZON BY OTHERS) — (CLEARED BY OT	HERS)
ELYMUS CANDENSIS - CANADA WILD RYE12%98%90%.15%ANDROPOGON GERARDII - BIG BLUESTEM10%98%90%.15%	1.1			
ANDROPOGON SCOPARIUS - LITTLE BLUESTEM 10% 98% 90% .15% CHAMAECRISTA FASCICULATA - PARTRIDGE PEA 10% 98% 90% .15%	1.1	LIMIT OF DISTURBANCE EASEMENT LINE		
PANICUM VIRGATUM - SWITCHGRASS 10% 98% 90% .15% POA PALUSTRIS - FOWL BLUEGRASS 10% 98% 90% .15%	1.1	EASEMENT ETTE	N 74.00 (// / 5	SOIL STABILIZATION MATTING
SORGHASTRUM NUTANS - INDIANGRASS 10% 98% 90% .15% COREOPSIS 10% 98% 90% .15%	1.1		25.00 / EX	MATTING
TOTAL	10.8 LBS	STORMWATER MANAGEMENT		TREE PROTECTIVE
MASTER PLANT SCHEDULE		FACILITY BOUNDARY 10,242 SF		TREE PROTECTIVE FENCING (INSTALLED BY OTHERS)
KEY QUANTITY BOTANICAL NAME COMMON NAME SIZE ROOT SPACING AR 9 ALNUS RUGOSA SPECKLED ALDER 6' HT. B&B 10' O.C.	REMARKS	BB WAM		NO WOODY
BN 6 BETULA NIGRA RIVER BIRCH 8' HT. B&B 14' O.C. BB 29 CEPHALANTHUS OCCIDENTALIS BUTTONBUSH 36" HT. CONT. 9' O.C.		2 QP	the second second	VEGETATION ZONE — (CLEARED BY OTHERS)
CA 16 CLETHRA ALNIFOLIA CLETHRA 24" HT. CONT. 9' O.C. MV 3 MAGNOLIA VIRGINIANA SWEETBAY 6' HT. B&B		2 RNI		8
	0' TO 35' O.C.	19,870 SF	T	
WAM 10,242SF WET AREA SEED MIX NGM 19,870SF NATIVE GRASS SEED MIX		NGM		SEE NOTE 4
CAL. INDICATES CALIPER IN INCHES FOR SHADE TREES.				TOE OF SLOPE — SEE NOTE 2
HT. INDICATES HEIGHT IN FEET. B&B INDICATES PLANT MATERIAL SUPPLIED BALLED AND BURLAPPED. O.C. INDICATES ON CENTER SPACING		1 AR		
SCHEDULE D STORMW ATER MANAGEMENT AREA LANDSCAPING		13 BB		
LinearFeetofPerimeter(LF) 776 ·		8		
Linear Feet of Existing Vegetation (LF)302NetLinear Feet of Perimeter (LF)474		CA		TOE OF SLOPE
Number of Trees Required Shade Trees (I per 50 LF)	PROPERTY LI	INE-		SEE NOTE 2
Evergreen Trees (I per 40 LF) 12 Credit for Existing Vegetation				
(No, Yes and %) Credit for Existing Landscaping		EXISTING 6 BRUSH PS		
(No, Yes and %) Number of Trees Provided			SÉE (IDTE /3
FINAL PLANTINGS OUTSIDE THE LIMIT OF DISTURBANCE SHALL BE PERFORMED AT THE COUNTY'S DISCRETION PLANTINGS Shade Trees(1 per 50 LF) E vergreen Trees(1 per 40 LF) 0 ther Trees(2:1 substitution) 18 (= 9 Shade Trees)		SEE NOTE 6.	3 6 7	
AT THE COUNTY'S DISCRETION. PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT OF RECREATION AND PARKS O THEY Trees (2:1 Substitution) Shrubs (10:1 substitution) 18 (= 9 Shade Trees) Shrubs (10:1 substitution) 45 (= 4.5 Shade Trees)				
SCE		SE TON		
				8
LOD		100		BB BB
			OP OP	AR AR
I/We certify that the landscaping shown on this plan will be done according to the approved plan, Section 16.124 of the Howard County Code and the Landscape Manual. I/We further	1		MV 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
certify that upon completion a letter of installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.		6	2 2 DNI	20 X
Howard E Saltymen 12/8/03	; !	PS		LEASEMENT FOR INCRESS
Developer's Name Date		00/ 00/ 00/	CA	EASEMENT FOR INGRESS AND EGRESS TO LOT 200 PLAT NO. 8641
APPROVED: DEPARTMENT OF PLANNING AND ZONING APPROVED:	OF MANY	20' DRAINAGE AN UTILITY EASEMEN PLAT NO. 8638	Ť V	2
Chief, Development Engineering Division 4 Date DEPARTMENT OF RECREATION AND PARKS		GRAPHIC SCALE	EXISTING BRUSH	QP QP
Chief. Division of Land Development Date 12/30/03	Constitution of the second	20' 0 10' 20' 40'	OPEN SPACE LOT 200	BN
DIRECTOR DEVISION OF Edited Development Date Director Edited Development 12-7-03	12-16-03		TOTAL AREA = 9.3612 AC + PLAT NO. 8638	TS AR !
DEPARTMENT OF PUBLIC WORKS	of the	1 INCH = 20 FT. DES: WHS		STOPAWATER MANAGEMENT RETROETT AT SCALE
HOWARD COUNTY, MARYLAND	AS TROME SET	DRN: WHS		ROCKBURN TOWNSHIP - OPEN SPACE LOT 200 1"=20"
DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENVIRONMENTAL DATE SERVICES 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220		CHK: RKK	LANDSCAPE PLAN	CAPITAL PROJECT NO. D-1106
CHIEF, STORMWATER MANAGEMENT DATE CHIEF, BUREAU OF HIGHWAYS CHIEF, BUREAU	D/25/63 D/	DATE: 8-01-03 BY NO. REVISION DATE: 8-01-03	ATE SCALE MAP NO. N/A BLOCK NO.	1ST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND TAX MAP NO. 31/37, GRID NO. 21/3, PARCEL NO. 793 7 OF 8
				01036\14\CAD\Ps0Irbt.dgn



EVERGREEN/DECIDUOUS TREE PLANTING DETAIL

3" MULCH DIG PLANTING PIT WITH ROUGH SIDES AND BOTTOM BACKFILL PLANTING HOLE WITH SOIL MIX SPECIFIED MIN. DIAMETER FOR PLANTING HOLE MUST BE AT LEAST 6" GREATER ON ALL SIDES THAN THAT OF THE ROOT BALL. CONTAINER - GROWN STOCK:

REMOVE ROOT BALL FROM
CONTAINER. LOOSEN POT—
BOUND, SPIRALLY —
GROWING AND GIRDLING
ROOTS IN ACCORDANCE
WITH GOOD NURSERY
PRACTICES.

SHRUB PLANTING DETAIL NOT TO SCALE

LANDSCAPE DETAILS

SCALE MAP NO. N/A BLOCK NO.

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I/We certify that the landscaping shown on this plan will be done according to the approved certify that upon completion a letter of installation, accompanied by an executed one year

APPROVED:

CHIEF, STORMWATER MANAGEMENT DIVISION

DEPARTMENT OF PLANNING AND ZONING

APPROVED:

DEPARTMENT OF RECREATION AND PARKS

DEPARTMENT OF PUBLIC WORKS

4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220



DATE: 8-01-03 BY NO. REVISION	
DRN: WHS	
DES: WHS	

STORMWATER MANAGEMENT RETROFIT AT
ROCKBURN TOWNSHIP - OPEN SPACE LOT 200
CAPITAL PROJECT NO. D-1106

SCALE
AS SHOWN

1ST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

TAX MAP NO. 31/37, GRID NO. 21/3, PARCEL NO. 793

II/24/2003 05:56:00 PM billing SDP-02-157

SCALE

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