

# STORMWATER MANAGEMENT RETROFIT AT ROCKBURN TOWNSHIP

## INDEX OF DRAWINGS

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- EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
- POND SPECIFICATIONS
- LANDSCAPING PLAN
- LANDSCAPING DETAILS

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

### GENERAL NOTES

- 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.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
- 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.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY URS CORPORATION DATE NOV. 2000.
- THE PROPERTY LINES AND EASEMENT LINES ARE APPROXIMATELY INDICATED AS SHOWN ON PLAT NO. 7394.
- 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
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHOD, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- 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 EXPENSE.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- POND STRUCTURE HAZARD CLASSIFICATION = A, DUE TO NATURE OF PROXIMITY OF ROCKBURN BRANCH PARK.
- THIS PROJECT IS SUBJECT TO THE FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- 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. 17E AND 17EA WERE USED FOR THIS PROJECT.
- THERE IS NO FLOODPLAIN ON THIS SITE.
- THERE ARE NO WETLANDS ON THIS SITE.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- THIS PROJECT IS EXEMPT FROM THE FOREST CONSERVATION REQUIREMENTS IN ACCORDANCE WITH APPENDIX 'D' - HOWARD COUNTY CAPITAL IMPROVEMENT PROJECTS OF THE FOREST CONSERVATION MANUAL AS SINGLE LOT CLEARING LESS THAN 40,000 SQUARE FEET OF FOREST.

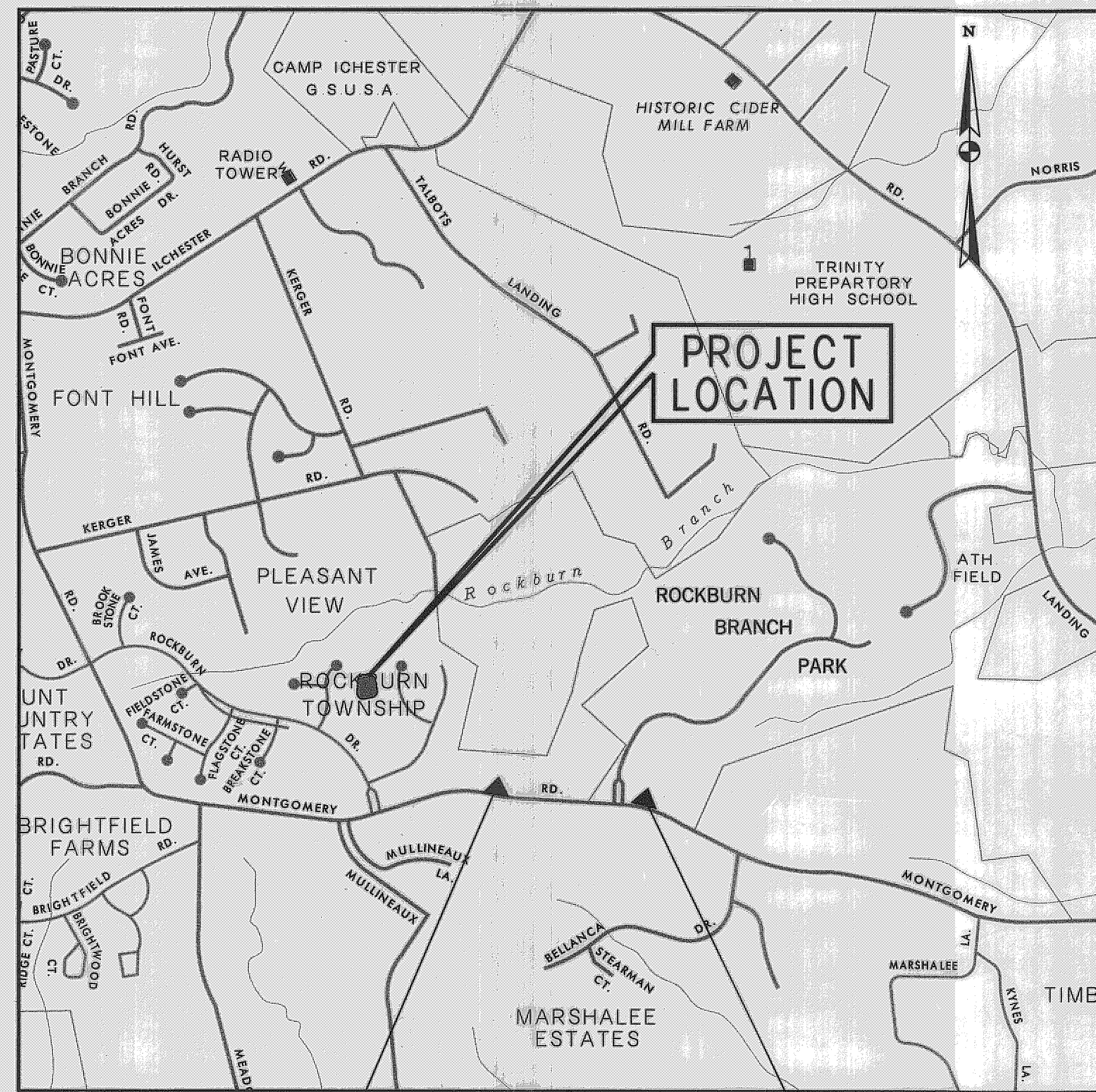
PERMIT INFORMATION BLOCK					
SUBDIVISION NAME		SECTION/AREA		LOT / PARCEL*	
ROCKBURN TOWNSHIP		1/2		O.S. LOT 200	
PLAT* OR L/F	BLOCK*	ZONE	TAX/ZONE MAP	ELEC. DIST	CENSUS TRACT
8633, 8635 8638	21/3	R-20	31/37	1	6011.01

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

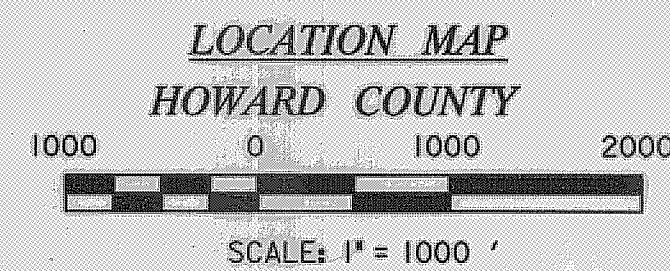
SITE ANALYSIS DATA CHART	
a. TOTAL PROJECT AREA:	= 0.95 ACRES
b. AREA OF PLAN SUBMISSION:	= 0.95 ACRES
c. LIMIT OF DISTURBED AREA:	= 0.95 ACRES
d. PRESENT ZONING DESIGNATION:	= "R-20"
e. DPZ FILE REFERENCE:	= S-87-26, P-87-58, F-88-273

BMP 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

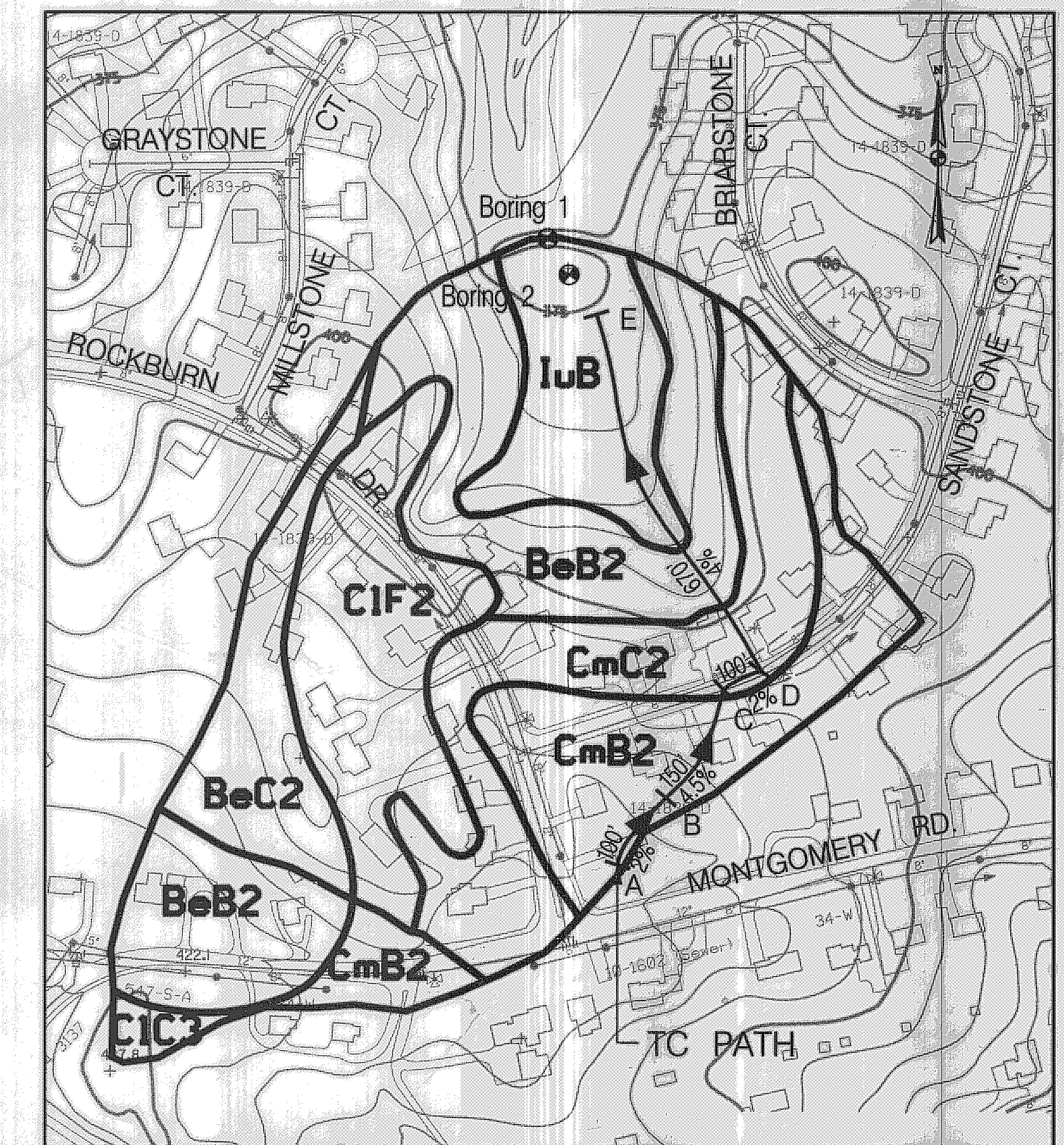
STORMWATER MANAGEMENT SUMMARY CHART						
STORM	(AS-BUILT) EXISTING POND INFLOW	(AS-BUILT) EXISTING POND PEAK DISCHARGE	(AS-BUILT) EXISTING POND ELEVATION	PROPOSED PEAK DISCHARGES	PROPOSED POND ELEVATIONS	PROPOSED STORAGE VOLUMES
	CFS	CFS	FT.	CFS	FT.	AC.-FT.
1 YR.	23.29	12.98	373.75	3-24.2-2	374-603-7-15-0-58-0-59	
2 YR.	34.71	20.47	374.57	14-34-2-2	374-885-1-02-0-68	
10 YR.	75.30	56.88	376.01	45-63-48	375-663-5-01-00-0-99	
100 YR.	122.77	115.38	376.69	85-38-90-9	376-473-2-1-34-1-72	



37BA  
EL. 394.75  
N 563785.62  
E 1376343.17



37BB  
EL. 373.81  
N 563663.42  
E 1378040.47



HYDROLOGIC SOIL: TYPE 'B' = 16.06 AC.  
TYPE 'C' = 5.08 AC.  
DRAINAGE AREA = 21.14 AC.  
Tc = 0.336 hr  
PERCENT IMPERVIOUS = 34%

### STORMWATER MANAGEMENT DRAINAGE AREA MAP - ROCKBURN TOWNSHIP

FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE: 1" = 200' SEPT. 20, 1988

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

PE NO. 31201  
DATE 8/3/07

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE 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 WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN ON THE POND WITHIN 30 DAY OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

Howard E. Saltzman 12/8/03  
DEVELOPER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division  
Chief, Division of Land Development  
Director

12/24/03  
12/30/03  
12/01/03  
Date

APPROVED: DEPARTMENT OF RECREATION AND PARKS

Director  
Date 12-9-03

Howard County  
Owners: Department of Recreation and Parks  
7120 Oakland Mills Rd.  
Columbia, MD 21046-1677  
Phone No. 410-313-4640

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Director of Public Works  
Chief, Stormwater Management Division

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



DES:	WLM
DRN:	SYC/EGB
CHK:	DTM
DATE:	8-01-03
BY:	NO.
REVISION:	DATE

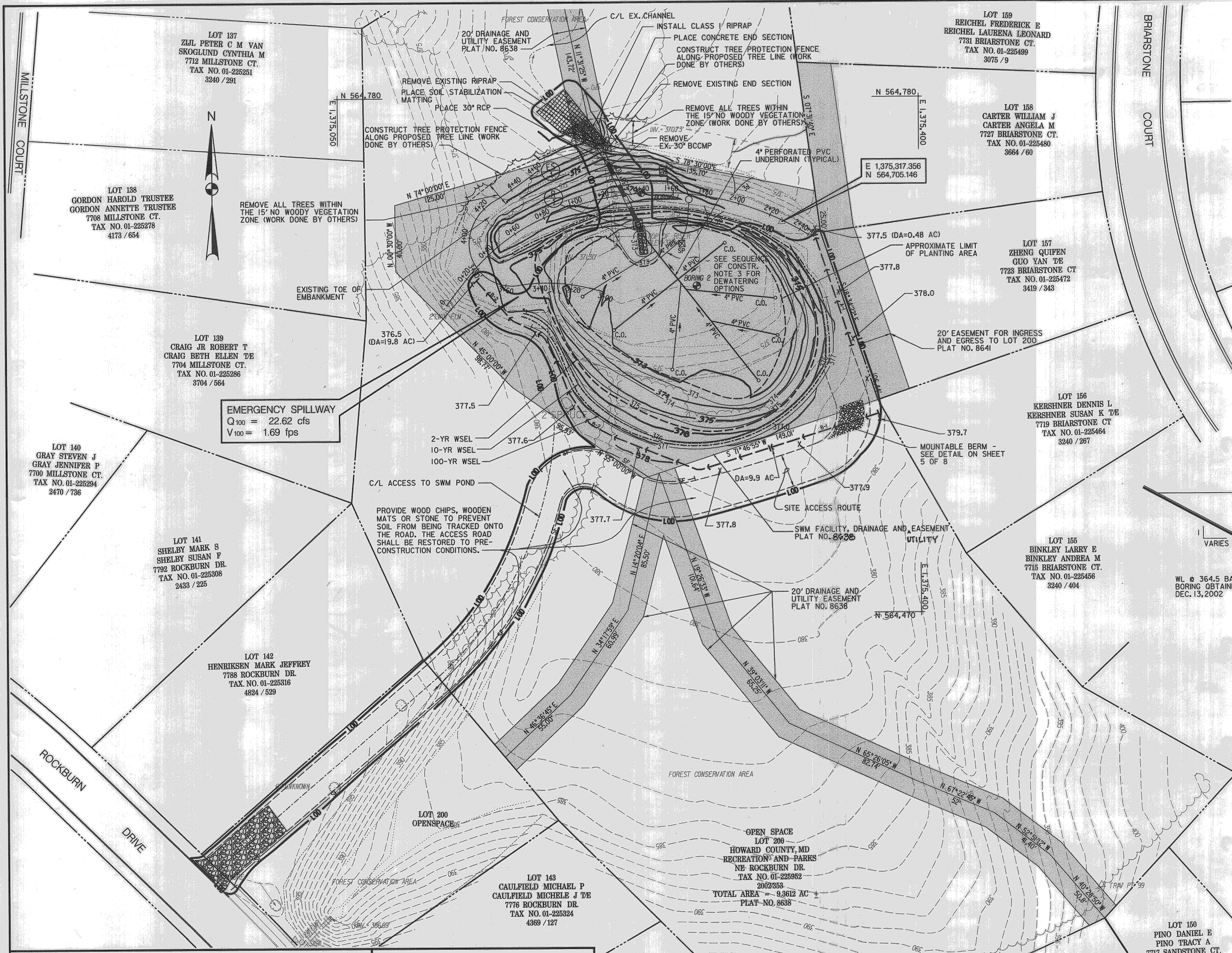
TITLE SHEET

SCALE MAP NO. N/A BLOCK NO.

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

SCALE  
AS SHOWN  
SHEET  
1 OF 8



OWNERSHIP AND MAINTENANCE RESPONSIBILITY OF THIS STORMWATER MANAGEMENT FACILITY (P-1) BELONGS TO HOWARD COUNTY

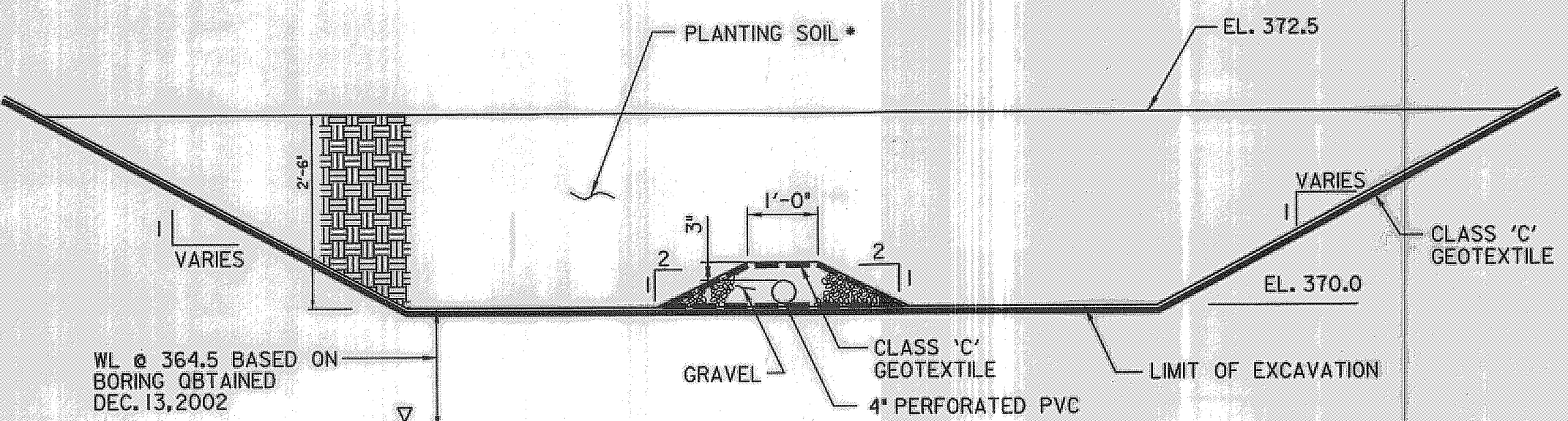
**MATERIAL SPECIFICATIONS FOR PLANTING AREA**

- PLANTING SOIL: SAND 35% - 60%, SILT 30% - 55%, CLAY 10% - 25%
- PROVIDE FOR TESTING OF EXISTING SOILS FOR COMPLIANCE WITH BIORETENTION SPECIFICATIONS.
- GEOTEXTILE: CLASS 'C'
- OPENING SIZE PER ASTM-D-4751  
GRAB TENSILE STRENGTH PER ASTM-D-4632  
PUNCTURE RESISTANCE PER ASTM-D-4833
- GRAVEL: AASHTO M-43 (0.25" TO 0.75")
- UNDERDRAIN PIPING: 4" RIGID SCHEDULE 40 PVC OR SDR 35 3/4" PERFORATIONS @ 6" O.C., 4 HOLES PER ROW, MIN. OF 3" OF GRAVEL OVER PIPE

NO STOCKPILES ARE PERMITTED ON SITE

**OPERATION, MAINTENANCE AND INSPECTION**

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, NRCS "Standards and Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.



**TYPICAL SECTION - PLANTING AREA**

SCALE: 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.

Signature: *[Signature]* PE NO. 31201  
DATE: 8/3/07

**DEVELOPER'S CERTIFICATE**

"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 days of completion. I also authorize periodic on-site inspection by the Howard Soil Conservation District"

Signature: *Howard E. Salyer* DATE: 12/8/03  
DEVELOPER

**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 is 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-built" plan of the pond within 30 days of completion."

Signature: *David T. Moriani* DATE: NOV. 25, 2003  
Signature of Engineer (Print name below signature)

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.

Signature: *[Signature]* DATE: 12/23/03  
USDA - Natural Resources Conservation Service

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Signature: *[Signature]* DATE: 12/23/03  
Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Signature: *[Signature]* DATE: 12/24/03  
Chief, Development Engineering Division

Signature: *[Signature]* DATE: 12/30/03  
Chief, Division of Land Development

Signature: *[Signature]* DATE: 12/24/03  
Director

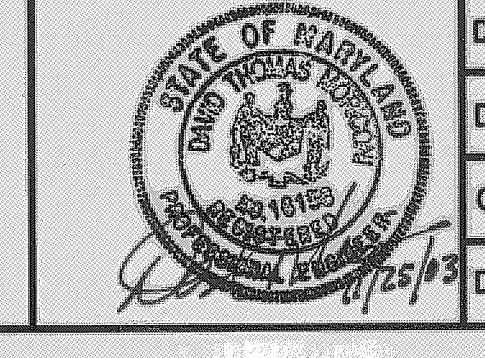
APPROVED: DEPARTMENT OF RECREATION AND PARKS  
Signature: *[Signature]* DATE: 12-9-03  
Director

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
Signature: *[Signature]* DATE: 12/23/03  
DIRECTOR OF PUBLIC WORKS

Signature: *[Signature]* DATE: 12-9-03  
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

Signature: *[Signature]* DATE: 12-9-03  
CHIEF, BUREAU OF HIGHWAYS

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



DES: WLM			
DRN: SYC/EGB			
CHK: DTM			
DATE: 8-01-03	BY NO.	REVISION	DATE

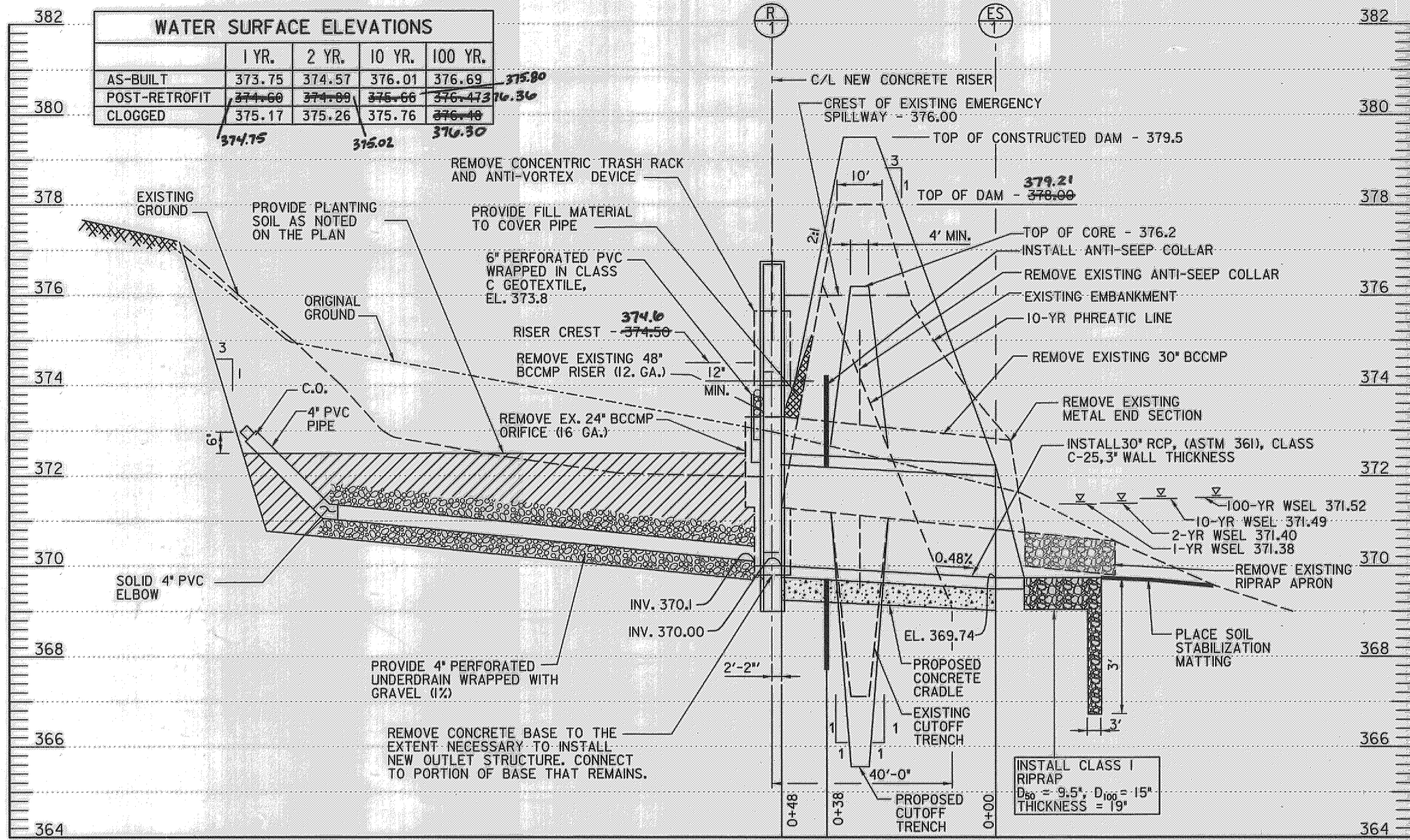
**GRADING AND EROSION AND SEDIMENT CONTROL PLAN**

SCALE MAP NO. N/A BLOCK NO.

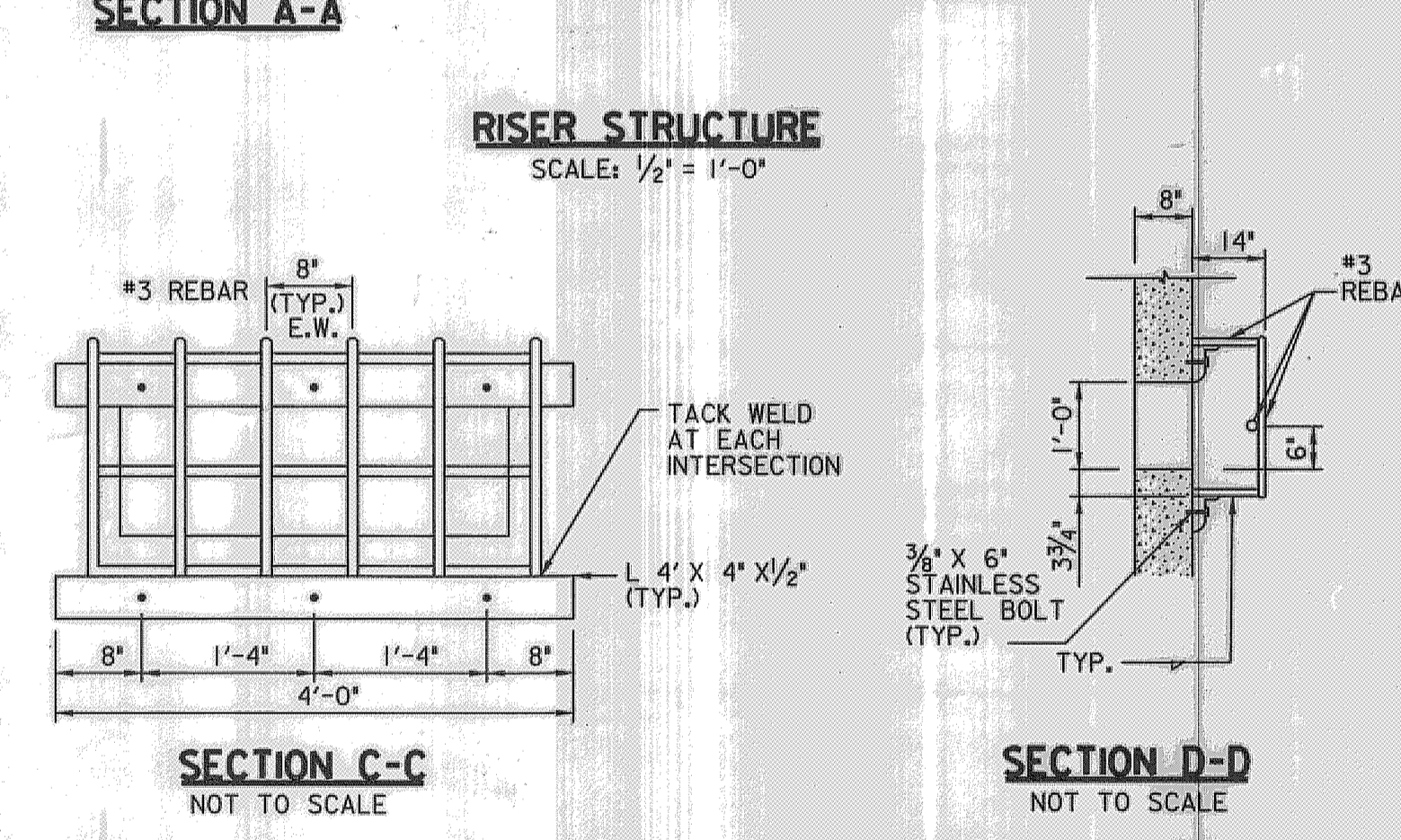
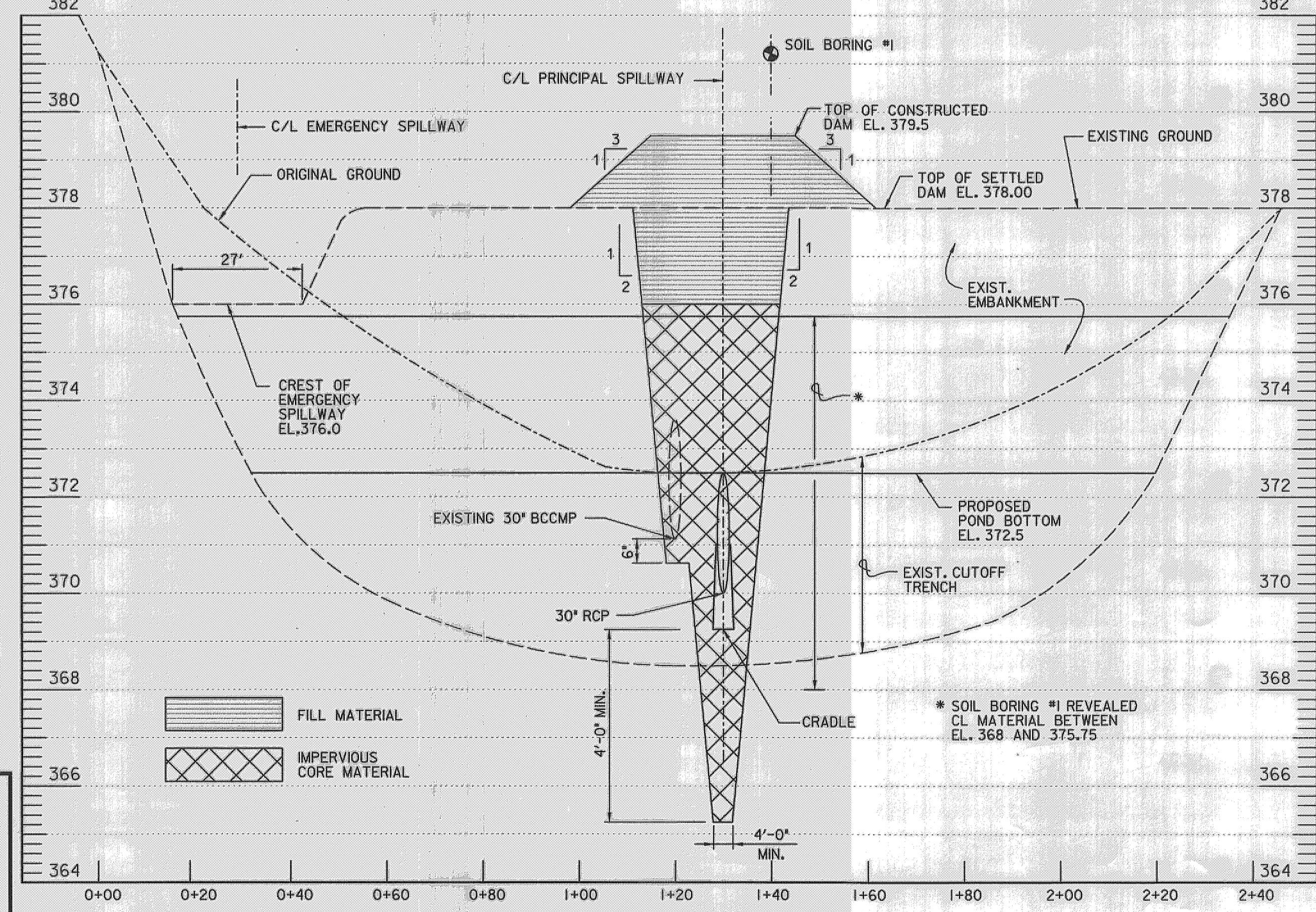
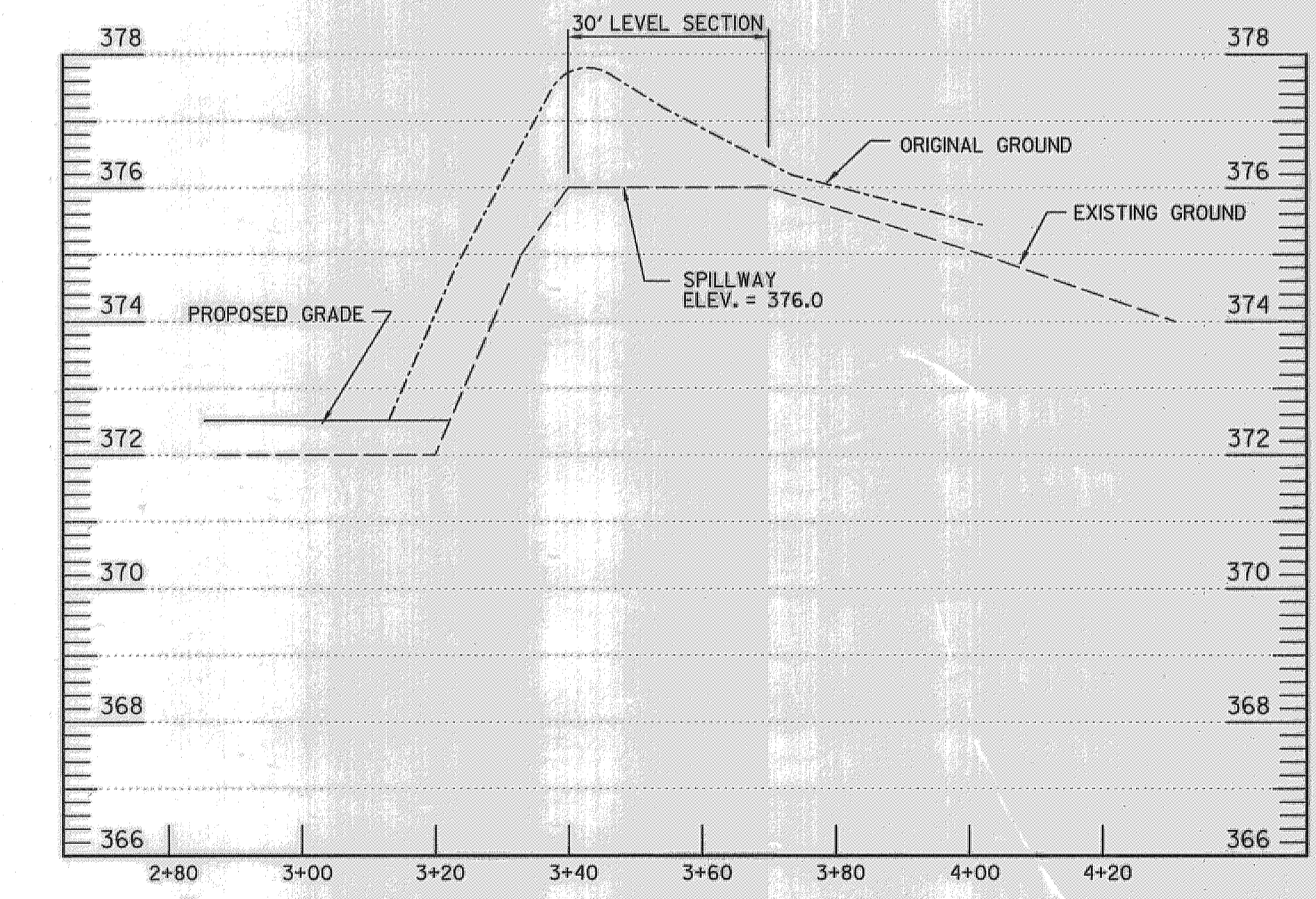
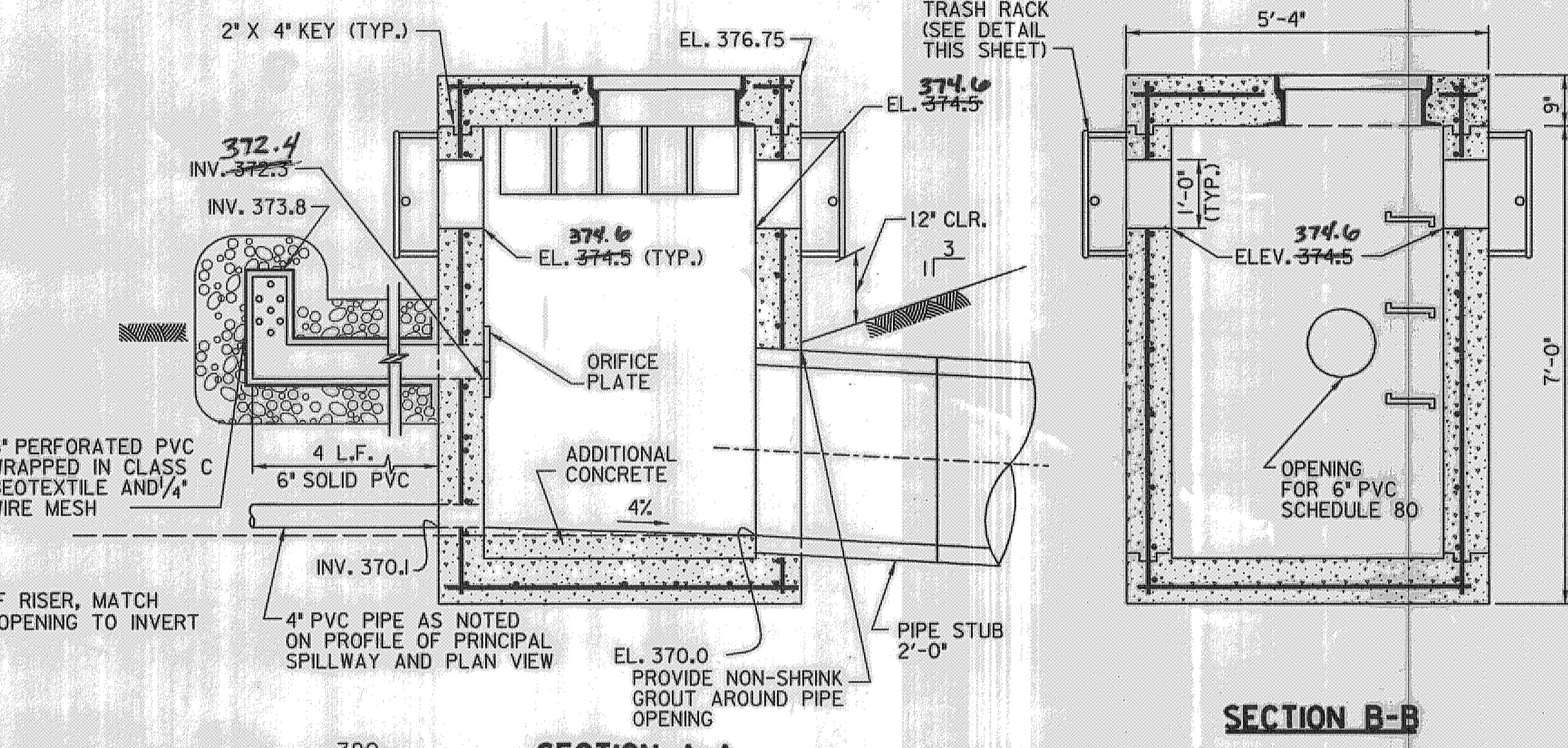
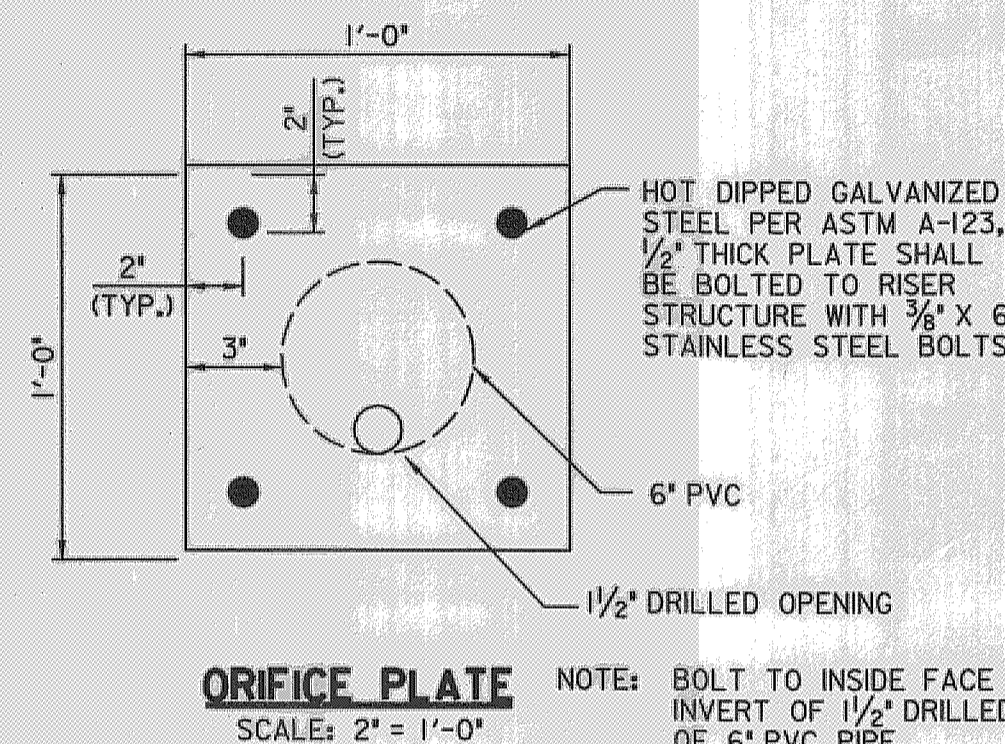
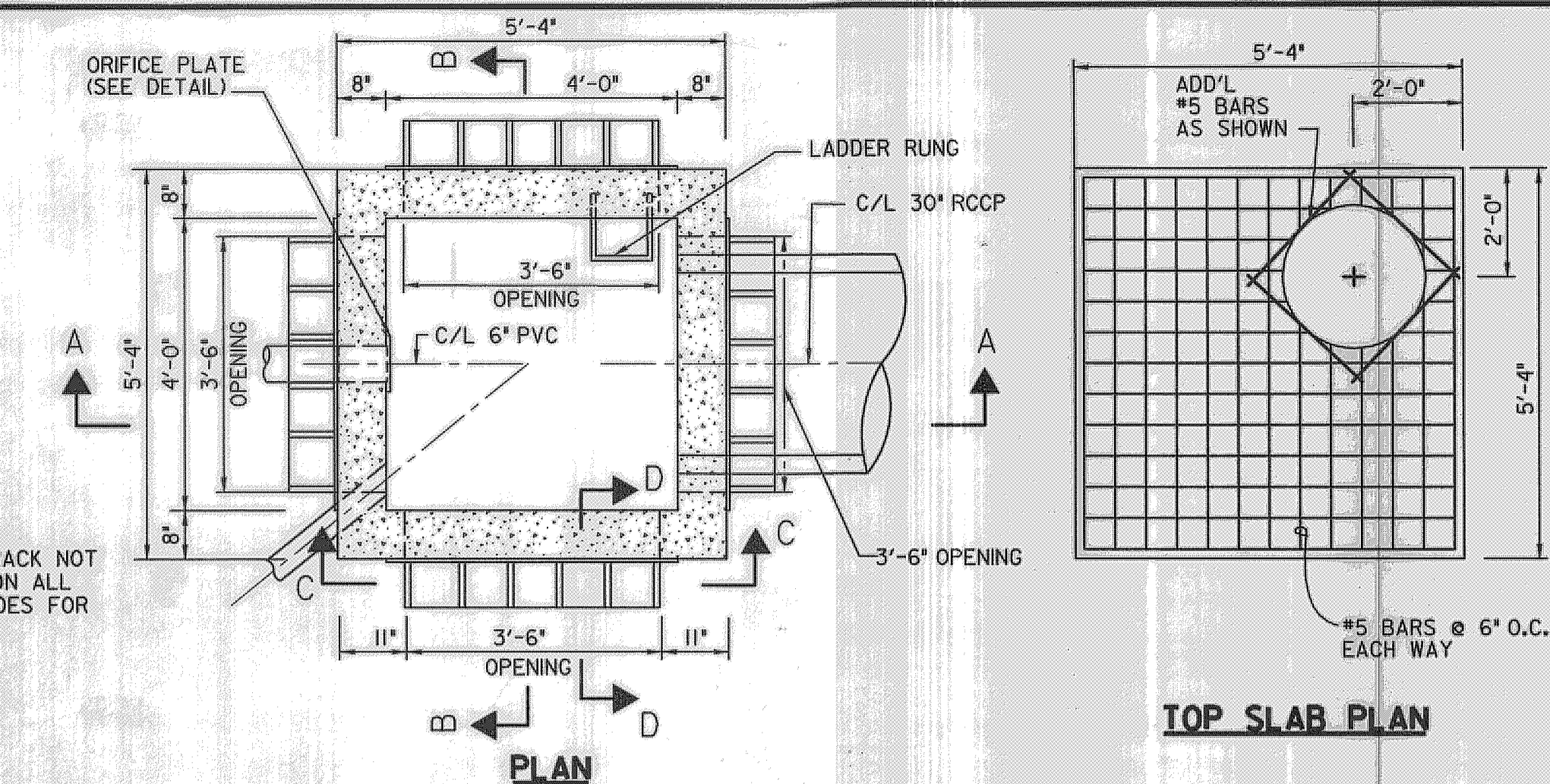
**STORMWATER MANAGEMENT RETROFIT AT ROCKBURN TOWNSHIP - OPEN SPACE LOT 200 CAPITAL PROJECT NO. D-1106**

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

SCALE AS SHOWN  
SHEET 2 OF 8



- GENERAL NOTES:**
- REFER TO STANDARD SD-3.91 FOR SIDEWALK FRAME AND COVER.
  - ALL REBAR TO HAVE 2" CONCRETE COVER MINIMUM.
  - CONCRETE SHALL BE MIX NO. 2 (3000 PSI) FOR CAST-IN-PLACE UNIT OR MIX NO. 6 (4500 PSI) FOR PRECAST UNIT.
  - REINFORCEMENT SHALL CONFORM TO ASTM A-615, GRADE 60, AND ALL EXPOSED REBAR SHALL BE GALVANIZED PER ASTM A 153 (AASHTO M 232).
  - ALL REINFORCING BARS ARE #5 @ 6" O.C. E. W. SHOWN UNLESS NOTED OTHERWISE.
  - LADDER RUNGS SHALL BE INSTALLED IN VERTICAL ALIGNMENT AT 1'-4" MAX. VERTICAL SPACING. RUNG TYPES SHALL BE IN ACCORDANCE WITH STANDARD MD 383.92 AND SHALL BE INCIDENTAL TO THE COST OF THE RISER STRUCTURE.
  - 6-INCH OF NO. 57 STONE UNDER THE OUTLET STRUCTURE SHALL BE PROVIDED.



- NOTES:**
- CONTRACTOR SHALL FIELD MEASURE THE STRUCTURE DIMENSIONS FOR EXACT FITTING OF TRASH RACK.
  - ENTIRE RACK SHALL BE GALVANIZED AFTER FABRICATION.
  - STEPS SHALL BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATION G-5-21.
  - PAINT TRASH RACK BATTLESHIP GREY.

**NOTE:**  
ORIGINAL GROUND FROM 1992 AS-BUILT DRAWINGS. EXISTING GROUND FROM NOV. 2000 SURVEY BY URS CORPORATION

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division: *[Signature]* Date: 12/24/03  
 Chief, Division of Land Development: *[Signature]* Date: 12/30/03  
 Director: *[Signature]* Date: 12/30/03

APPROVED: DEPARTMENT OF RECREATION AND PARKS  
 Director: *[Signature]* Date: 12-9-03

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *[Signature]* Date: 12/14/03  
 Chief, Stormwater Management Division: *[Signature]* Date: 12/18/03

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



DES:	WLM			
DRN:	SYC/EGB			
CHK:	DTM			
DATE:	8-01-03	BY:	NO.	
		REVISION:		
		DATE:		

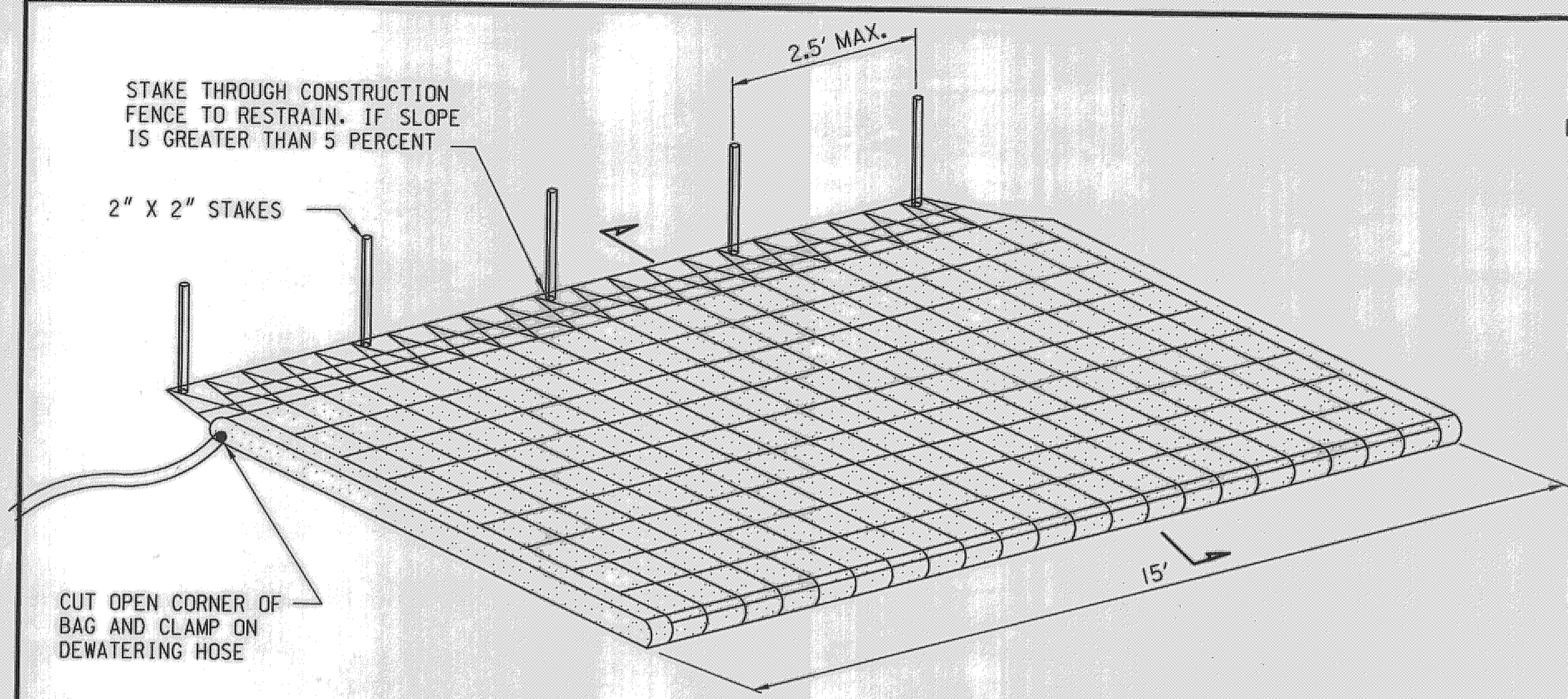
**STORMWATER MANAGEMENT POND AND DETAILS**

SCALE MAP NO. N/A BLOCK NO.

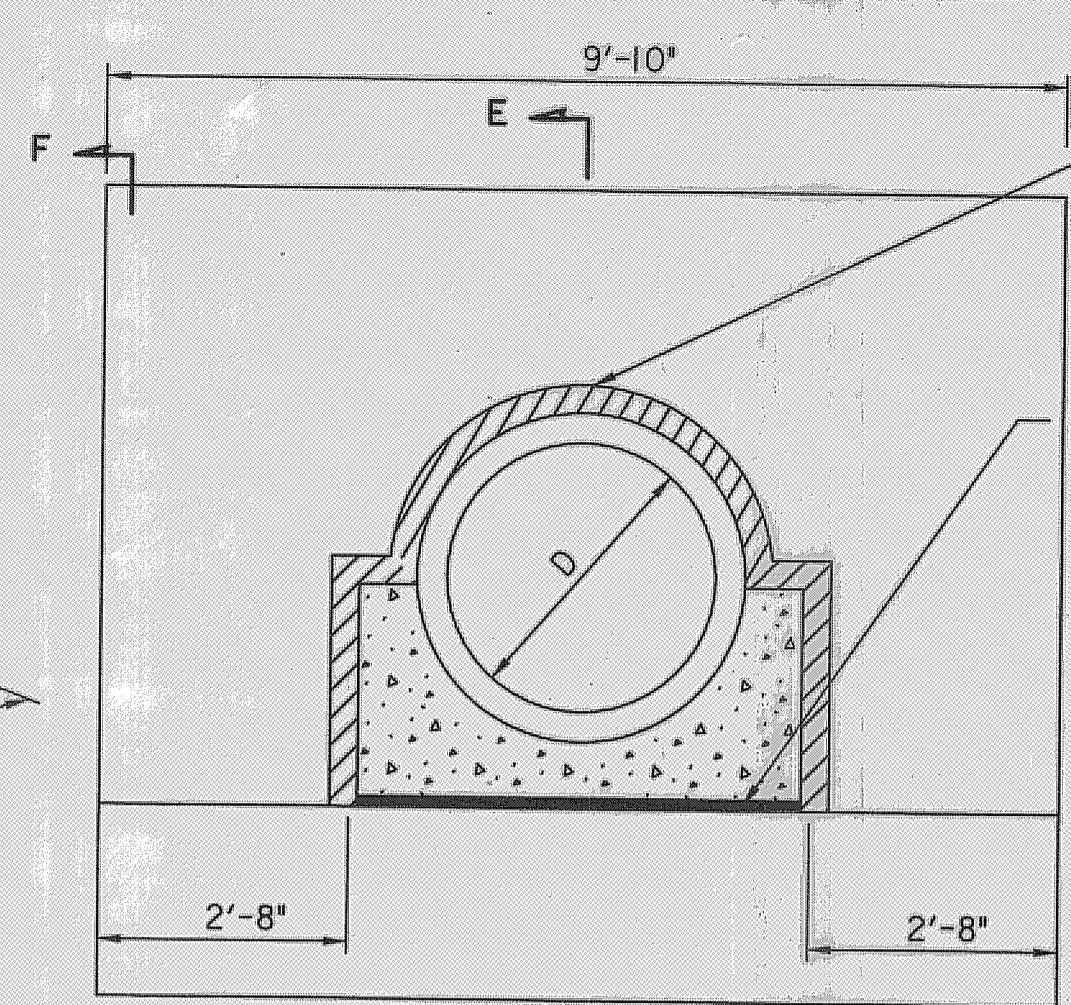
**STORMWATER MANAGEMENT RETROFIT AT ROCKBURN TOWNSHIP - OPEN SPACE LOT 200 CAPITAL PROJECT NO. D-1106**

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

SCALE AS SHOWN  
 SHEET 3 OF 8



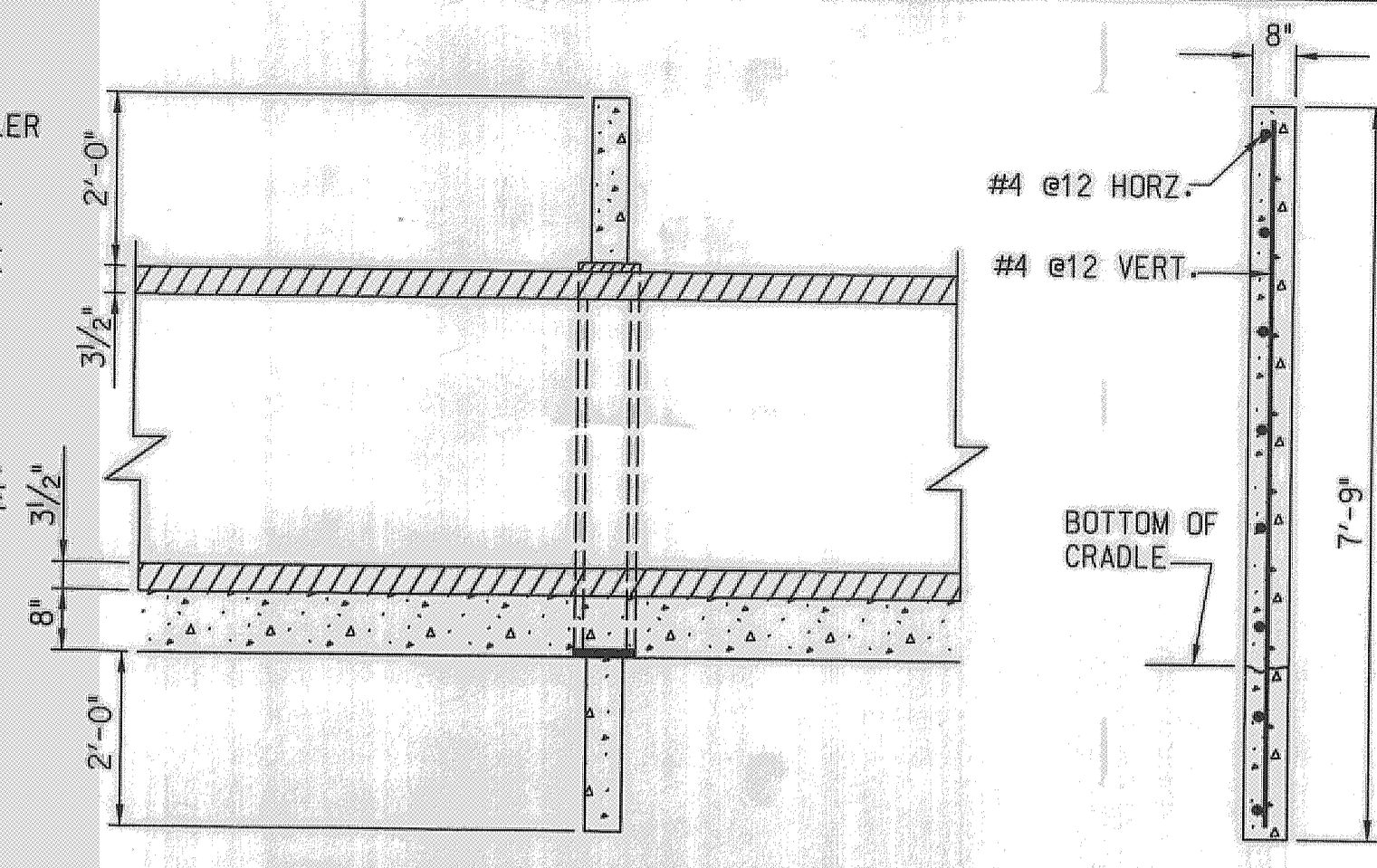
ISOMETRIC VIEW



PLAN VIEW

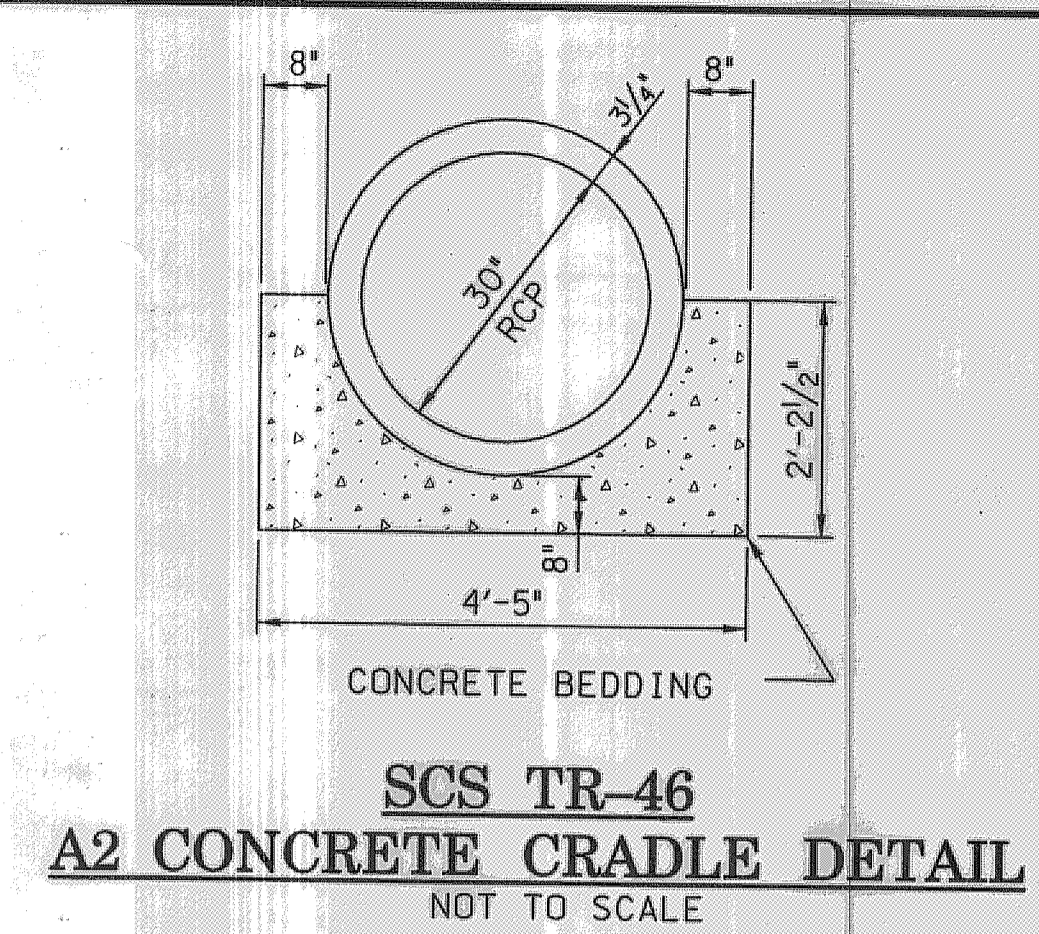
ASPHALT JOINT FILLER MATERIAL SHALL BE PLACED BETWEEN ALL CONCRETE SURFACES EXCEPT BETWEEN THE PIPE AND CRADLE

ONE LAYER OF HEAVY, SMOOTH SURFACE, ASPHALT TREATED, ROOFING FELT, APPROX. WT. 55 LBS. PER SQUARE FINISH COLLAR SURFACE TRUE AND SMOOTH, SEE A2 CONCRETE CRADLE DETAIL (SAME PAGE)

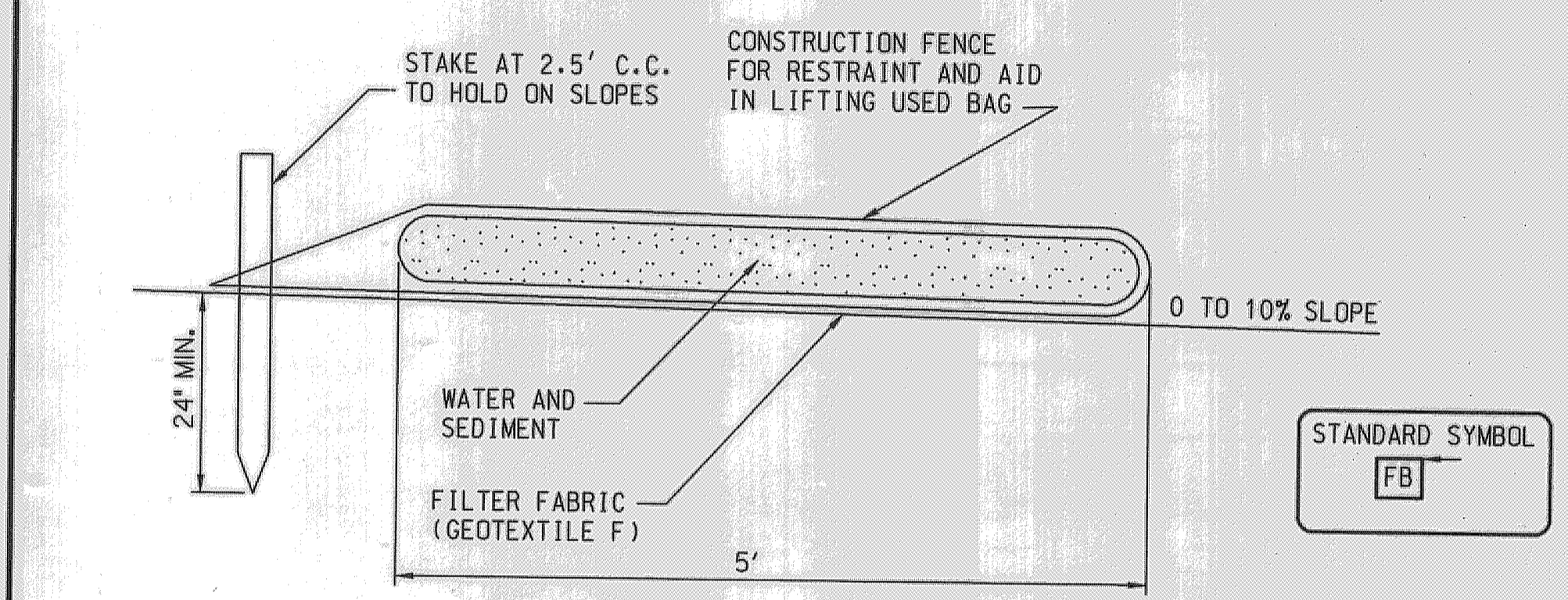


SECTION E-E

SECTION F-F (SHOWING STEEL)



SCS TR-46  
A2 CONCRETE CRADLE DETAIL  
NOT TO SCALE



SECTION

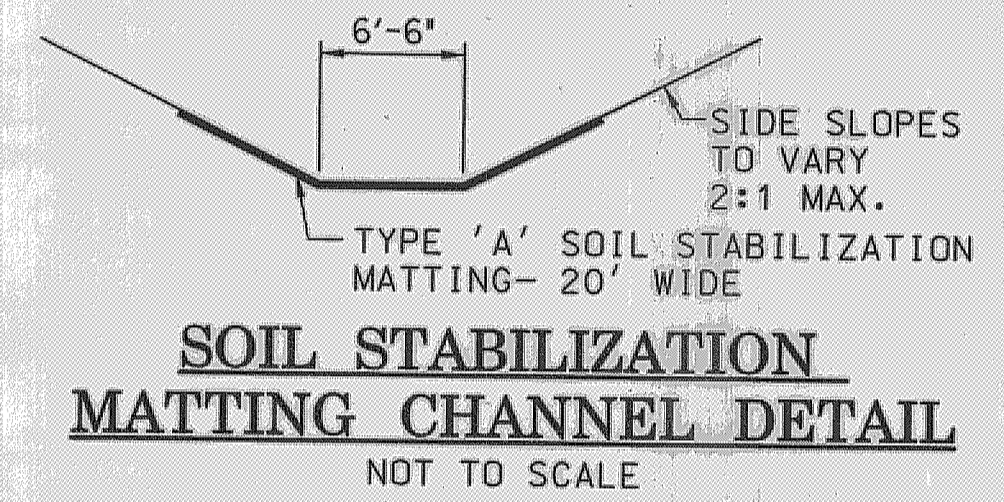
NOTES:

- FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
- WIDTH AND LENGTH SHALL BE AS SHOWN.
- THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
- FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
- DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.
- FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:
 

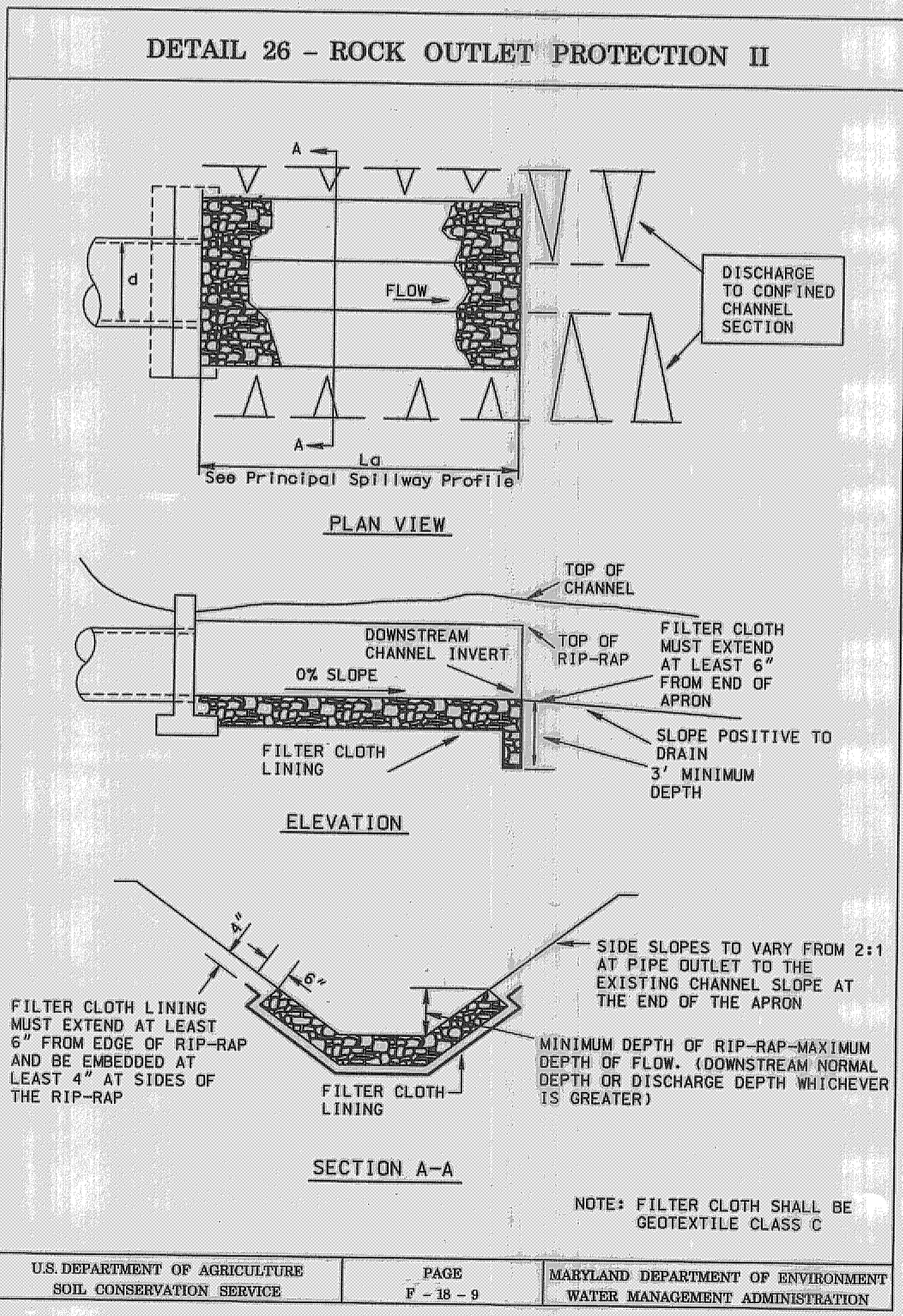
Tensile Strength	50 lb / in (min)	Test : MSMT 509
Tensile Modulus	20 lb / in (min)	Test : MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> / minute (max.)	Test : MSMT 322
Filtering Efficiency	75% (min)	Test : MSMT 322

FILTER BAG

(TEMPORARY EROSION CONTROL MEASURE)  
NOT TO SCALE



SOIL STABILIZATION  
MATTING CHANNEL DETAIL  
NOT TO SCALE



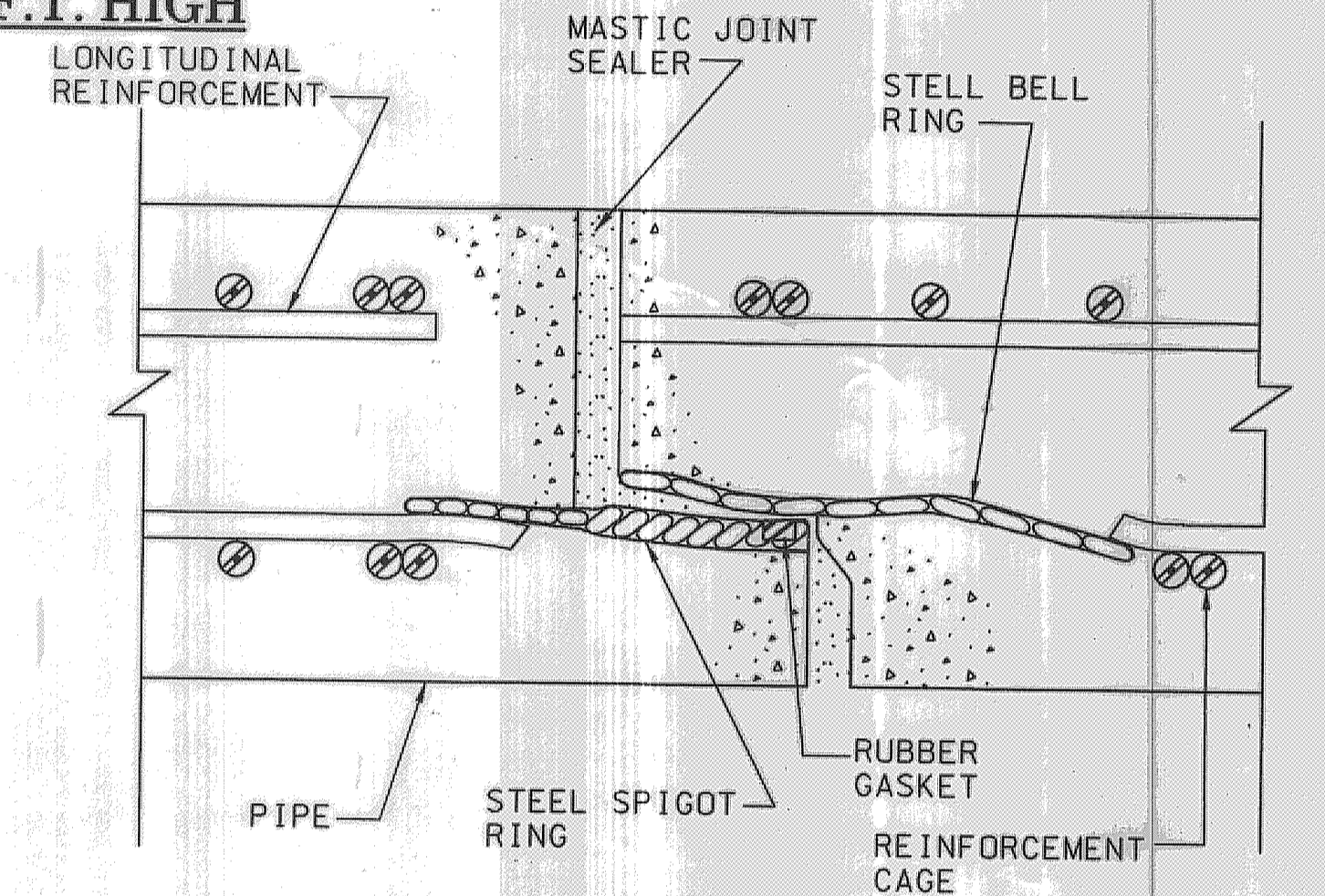
DETAIL 26 - ROCK OUTLET PROTECTION II

**ROCK OUTLET PROTECTION II**

Construction Specifications

- The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
- Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE 7-18-9A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



ASTM DESIGNATION C361  
(Diameters 12 thru 168 inch pressures to 125 feet of head)  
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.

Signature: *[Signature]* PE NO. 31201 DATE 8/3/07

---

**DEVELOPER'S CERTIFICATE**

"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"

Signature: *Howard E. Saltzman* DATE 12/8/03 DEVELOPER

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**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-built" plan of the pond within 30 days of completion."

Signature of Engineer (Print name below signature): *David T. Mariani* DATE 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.

Signature: *[Signature]* DATE 12/23/03  
USDA - Natural Resources Conservation Service

---

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Signature: *[Signature]* DATE 12/23/03  
Howard Soil Conservation District

APPROVED: DEPARTMENT OF PLANNING AND ZONING <i>[Signature]</i> Chief, Development Engineering Division Date: 12/24/03	APPROVED: DEPARTMENT OF RECREATION AND PARKS <i>[Signature]</i> Date: 12/30/03
APPROVED: DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> Chief, Stormwater Management Division Date: 12/24/03	APPROVED: DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> Date: 12-9-03

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE 12/6/03  
Chief, Stormwater Management Division: *Howard E. Saltzman* DATE 12/8/03

Chief, Bureau of Environmental Services: *[Signature]* DATE 12-9-03  
Chief, Bureau of Highways: *[Signature]* DATE 12-9-03

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 788-7220

DES: WLM			
DRN: SYC/EGB			
CHK: DTM			
DATE: 8-01-03	BY NO.	REVISION	DATE

**STORMWATER MANAGEMENT NOTES AND DETAILS**

SCALE MAP NO. N/A BLOCK NO.

**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

SCALE AS SHOWN  
SHEET 4 OF 8

**PERMANENT 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 3 INCHES OF SOIL BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE 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 (4 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. PER 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 1 THROUGH APRIL 30 AND FROM AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS. PER ACRE (4 LBS. PER 1,000 SQUARE FEET) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS. PER ACRE (4 LBS. PER 1,000 SQUARE FEET) OF PERKY PER ACRE (10.05 LBS. PER 1,000 SQUARE FEET) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY ONE OF THE FOLLOWING OPTIONS:

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

MULCHING: APPLY 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 2/8 GALLONS PER ACRE (5 GALLONS PER 1,000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FEET OR HIGHER, USE 3/4 GALLONS PER ACRE (8 GALLONS PER 1,000 SQUARE FEET) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDING 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 (4 LBS. PER 1,000 SQUARE FEET).

SEEDING: FOR PERIODS MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2/3 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1,000 SQUARE FEET). FOR THE PERIOD MAY 1 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 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 2/8 GALLONS PER ACRE (5 GALLONS PER 1,000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FEET OR HIGHER, USE 3/4 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**

- OBTAIN THE NECESSARY PERMITS PRIOR TO CONSTRUCTION. (1 DAY)
- INSTALL TREE PROTECTION FENCE (1 DAY)
- 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)
- 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)
- 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)
- INSTALL NEW OUTLET STRUCTURE, LOW FLOW DEVICE AND UNDERDRAIN SYSTEM. PLACE GRAVEL AS REQUIRED PER PLAN OR AS DIRECTED BY THE ENGINEER. (2 WEEK)
- 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)
- 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. (1 WEEK)
- UPON THE HOWARD CO. INSPECTOR'S APPROVAL, REMOVE ALL SEDIMENT EROSION CONTROL DEVICES AND STABILIZE THE REMAINING AREAS WITH PERMANENT SEEDING. (1 WEEK)

NOTE: THE TIME LINE EXCLUDES WEATHER RELATED DELAYS.

**STANDARD SEDIMENT CONTROL NOTES**

- 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).
- 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.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1.
  - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOLUME 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 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 6), TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 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.
- SITE ANALYSIS:
  - TOTAL SITE AREA - 0.97 ACRES
  - AREA DISTURBED - 0.97 ACRES
  - AREAS TO BE ROOFED OR PAVED - 0 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
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 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.
- 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.
- SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
- 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.
- CONSTRUCTION WITHIN, ALONG OR ACROSS STREAM CHANNELS SHALL, AS A MINIMUM, CONFORM TO CRITERIA DESCRIBED UNDER 'MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION'.

**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".
- Staple the 4" overlap in the channel center using an 18" spacing between staples.
- Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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**DETAIL 30 - SOIL STABILIZATION MATTING**

CROSS-SECTION

STAPLE OUTSIDE EDGE OF MATTING ON 2' CENTERS

STAPLE OUTSIDE EDGE OF MATTING ON 2' CENTERS

6" 10" TYPICAL STAPLES NO. 11 GAUGE WIRE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G - 22 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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**DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE**

PROFILE

PLAN VIEW

Construction Specifications

- Length - minimum of 50' (30' for single residence lot).
- Width - 10' minimum, should be flared at the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
- Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
- 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 slope and a minimum of 6" of stone over the pipe. Pipe 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.
- 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.

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**DETAIL 22 - SILT FENCE**

PERSPECTIVE VIEW

TOP VIEW

CROSS SECTION

JOINING TWO ADJACENT SILT

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" 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 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal #1/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 19 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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**DETAIL 20B - SUMP PIT**

CROSS SECTION

Construction Specifications

- Pit dimensions are variable, with the minimum diameter being 2 times the standpipe diameter.
- 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.
- 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 the same filter material.
- The standpipe should extend 12" to 18" above the lip of the pit or the floor crest elevation (basin dewatering only) and the filter material should extend 3" minimum above the anticipated standing water elevation.

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**DETAIL 1 - EARTH DIKE**

CROSS SECTION

PLAN VIEW

Flow Channel Stabilization  
GRADE 0.5% MIN. 10% MAX.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE A - 1 - 6	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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Construction Specifications

- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
- 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.
- 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.
- Fill shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

**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.

Signature: *Howard E. Sattym* PE NO. 31201  
DATE: 8/3/03

**DEVELOPER'S CERTIFICATE**

"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 days of completion. I also authorize periodic on-site inspection by the Howard Soil Conservation District"

Signature of Engineer: *David T. Moricani* DATE: 12/10/03

**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-built" plan of the pond within 30 days of completion."

Signature of Engineer: *David T. Moricani* DATE: NOV. 25, 2003

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division: *Mark Deane* DATE: 12/24/03

Chief, Division of Land Development: *David L. Wright* DATE: 12/20/03

Director: *David L. Wright* DATE: 12/21/03

APPROVED: DEPARTMENT OF RECREATION AND PARKS

Director: *Samuel A. Cerkus* DATE: 12-9-03

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

Director of Public Works: *Samuel A. Cerkus* DATE: 12/16/03

Chief, Stormwater Management Division: *Howard E. Sattym* DATE: 12/10/03

Chief, Bureau of Environmental Services: *David L. Wright* DATE: 12/10/03

Chief, Bureau of Highways: *David L. Wright* DATE: 12-9-03

PREPARED BY  
**URS**  
4 NORTH PARK DRIVE  
HUNT VALLEY, MARYLAND  
TEL: (410) 785-1220

DATE: 12/15/03

DES: WLM	DRN: SYC/EGG	CHK: DTM	DATE: 8-01-03
BY NO.	REVISION	DATE	SCALE MAP NO. N/A BLOCK NO.

**EROSION AND SEDIMENT CONTROL NOTES AND DETAILS**

SCALE: N.T.S.

SHEET 5 OF 8

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



WET AREA SEED MIX (WAM)

SEED VARIETY	PERCENTAGE OF SEED	MINIMUM PURITY	GERMINATION RATE	MAXIMUM % WEED	RATE LBS./1,000 SF
AGROSTIS ALBA - RED TOP	20%	98%	90%	.15%	2.0
AGROSTIS STOLONIFERA - CREEPING BENT GRASS	20%	98%	90%	.15%	2.0
POA PALUSTRIS - FOWL BLUEGRASS	20%	98%	90%	.15%	2.0
ELYMUS RIPARIUS - RIVERBANK WILD RYE	20%	98%	90%	.15%	2.0
PUCCINELLIA DISTANS - ALKALIGRASS	20%	98%	90%	.15%	2.0
TOTAL					10.0 LBS

NATIVE GRASS SEED MIX (NGM)

SEED VARIETY	PERCENTAGE OF SEED	MINIMUM PURITY	GERMINATION RATE	MAXIMUM % WEED	RATE LBS./1,000 SF
TRIPSACUM DACTYLOIDES - EASTERN GAMMAGRASS	20%	98%	90%	.15%	2.2
ELYMUS CANDENSIS - CANADA WILD RYE	12%	98%	90%	.15%	1.1
ANDROPOGON GERARDII - BIG BLUESTEM	10%	98%	90%	.15%	1.1
ANDROPOGON SCOPARIUS - LITTLE BLUESTEM	10%	98%	90%	.15%	1.1
CHAMAECRISTA FASCICULATA - PARTRIDGE PEA	10%	98%	90%	.15%	1.1
PANICUM VIRGATUM - SWITCHGRASS	10%	98%	90%	.15%	1.1
POA PALUSTRIS - FOWL BLUEGRASS	10%	98%	90%	.15%	1.1
SORGHASTRUM NUTANS - INDIANGRASS	10%	98%	90%	.15%	1.1
COREOPSIS TINCTORIA - COREOPSIS	8%	98%	90%	.15%	0.9
TOTAL					10.8 LBS

MASTER PLANT SCHEDULE

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	REMARKS
AR	9	ALNUS RUGOSA	SPECKLED ALDER	6' HT.	B&B	10' O.C.	
BN	6	BETULA NIGRA	RIVER BIRCH	8' HT.	B&B	14' O.C.	
BB	29	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	36" HT.	CONT.	9' O.C.	
CA	16	CLETHRA ALNIFOLIA	CLETHRA	24" HT.	CONT.	9' O.C.	
MV	3	MAGNOLIA VIRGINIANA	SWEETBAY	6' HT.	B&B		
PS	12	PINUS STROBUS	WHITE PINE	6' HT.	B&B	RANDOM	20' TO 35' O.C.
QP	5	QUERCUS PHELLOS	WILLOW OAK	2-1/2" CAL.	B&B	40' O.C.	
WAM	10,242SF	WET AREA SEED MIX					
NGM	19,870SF	NATIVE GRASS SEED MIX					

CAL. INDICATES CALIPER IN INCHES FOR SHADE TREES.  
HT. INDICATES HEIGHT IN FEET.  
B&B INDICATES PLANT MATERIAL SUPPLIED BALLED AND BURLAPPED.  
O.C. INDICATES ON CENTER SPACING

SCHEDULE D  
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter (LF)	776
Linear Feet of Existing Vegetation (LF)	302
Net Linear Feet of Perimeter (LF)	474
Number of Trees Required	
Shade Trees (1 per 50 LF)	10
Evergreen Trees (1 per 40 LF)	12
Credit for Existing Vegetation (No, Yes and %)	Yes 39%
Credit for Existing Landscaping (No, Yes and %)	No
Number of Trees Provided	
Shade Trees (1 per 50 LF)	5
Evergreen Trees (1 per 40 LF)	12
Other Trees (2:1 substitution)	18 (= 9 Shade Trees)
Shrubs (10:1 substitution)	45 (= 4.5 Shade Trees)

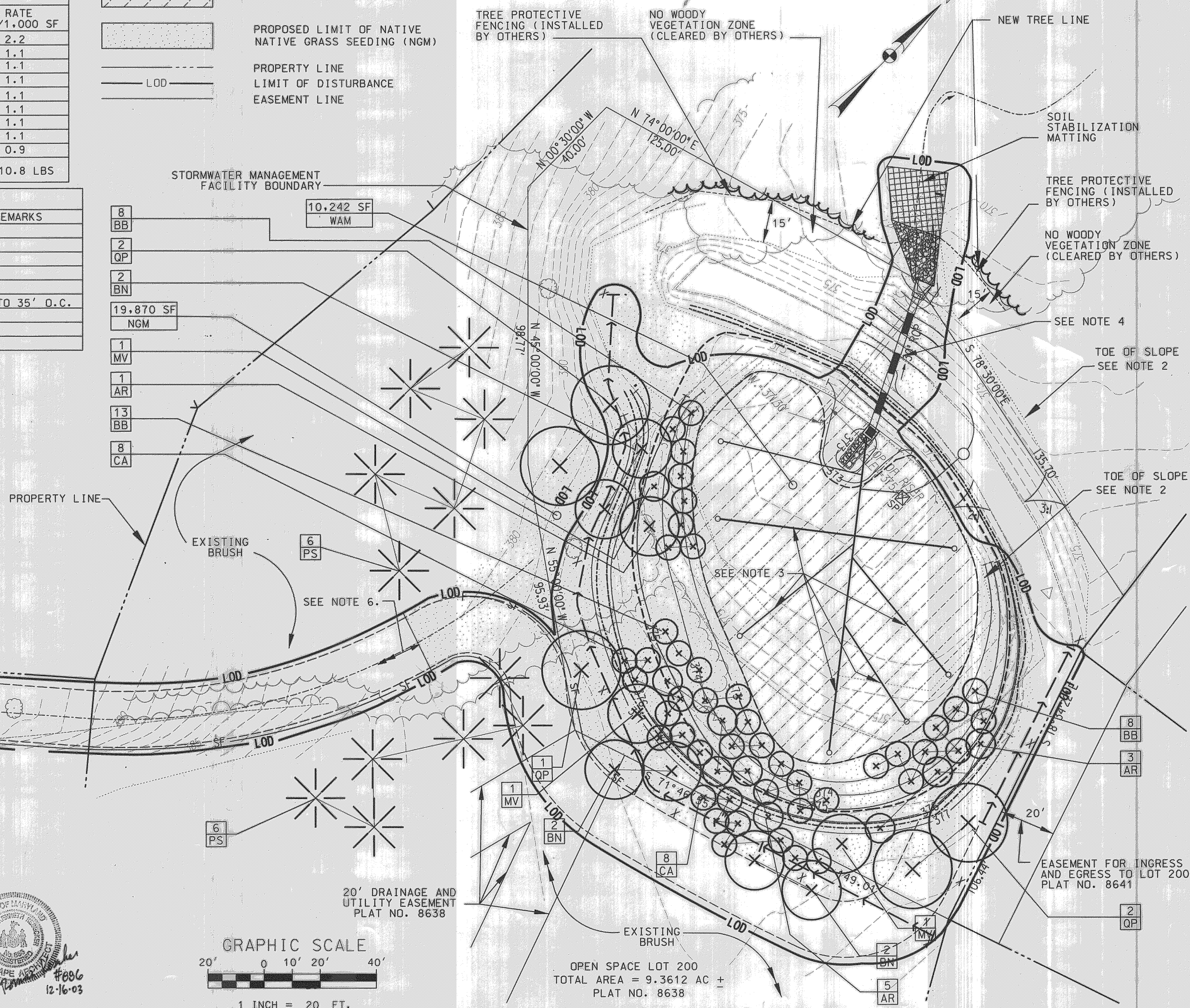
FINAL PLANTINGS OUTSIDE THE LIMIT OF DISTURBANCE SHALL BE PERFORMED AT THE COUNTY'S DISCRETION. PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT OF RECREATION AND PARKS

LEGEND

- 377 --- EXIST. CONTOUR
- 370 --- EXIST. TREE LINE/ BRUSH LINE
- (X) PROPOSED SHRUB/TREE
- 370 --- PROPOSED CONTOUR
- [Hatched Box] PROPOSED WET AREA SEEDING (WAM)
- [Dotted Box] PROPOSED LIMIT OF NATIVE NATIVE GRASS SEEDING (NGM)
- LOD --- PROPERTY LINE
- LIMIT OF DISTURBANCE --- LIMIT OF DISTURBANCE
- EASEMENT LINE --- EASEMENT LINE

PLANTING NOTES

1. PLAN FOR LANDSCAPING PURPOSES ONLY.
2. PLANT TREES AND SHRUBS 15 FEET AWAY FROM THE TOE OF SLOPE OF A DAM.
3. PLANT TREES AND SHRUBS 25 FEET AWAY FROM 4" PERFORATED PVC PIPES.
4. PLANT TREES AND SHRUBS 25 FEET AWAY FROM PRINCIPAL SPILLWAY STRUCTURES.
5. NO FERTILIZER SHALL BE ADDED TO SEEDING AND SHRUB PLANTING AREAS.
6. AREAS DISTURBED BEYOND LIMITS OF DISTURBANCE OR SEEDING AREAS SHOWN SHALL BE SEEDING WITH KENTUCKY 31 TALL FESCUE - SEE EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
7. PLANT MATERIAL SHALL BE WARRANTED FOR ONE YEAR AFTER DATE OF ACCEPTANCE.



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 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.

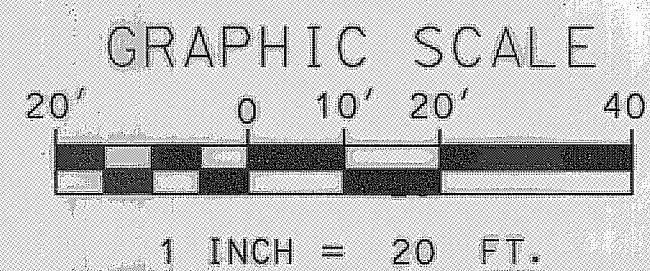
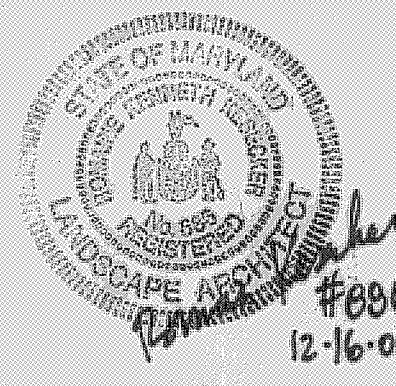
Howard E. Saltzman 12/10/03  
Developer's Name Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division 12/24/03  
Chief, Division of Land Development 12/30/03  
Director 12/31/03

APPROVED: DEPARTMENT OF RECREATION AND PARKS

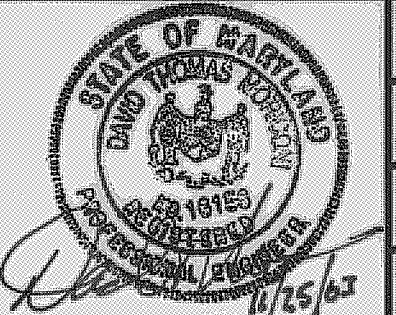
Director 12-7-03



DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND  
Director of Public Works 12/10/03  
Chief, Stormwater Management Division 12/9/03

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



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

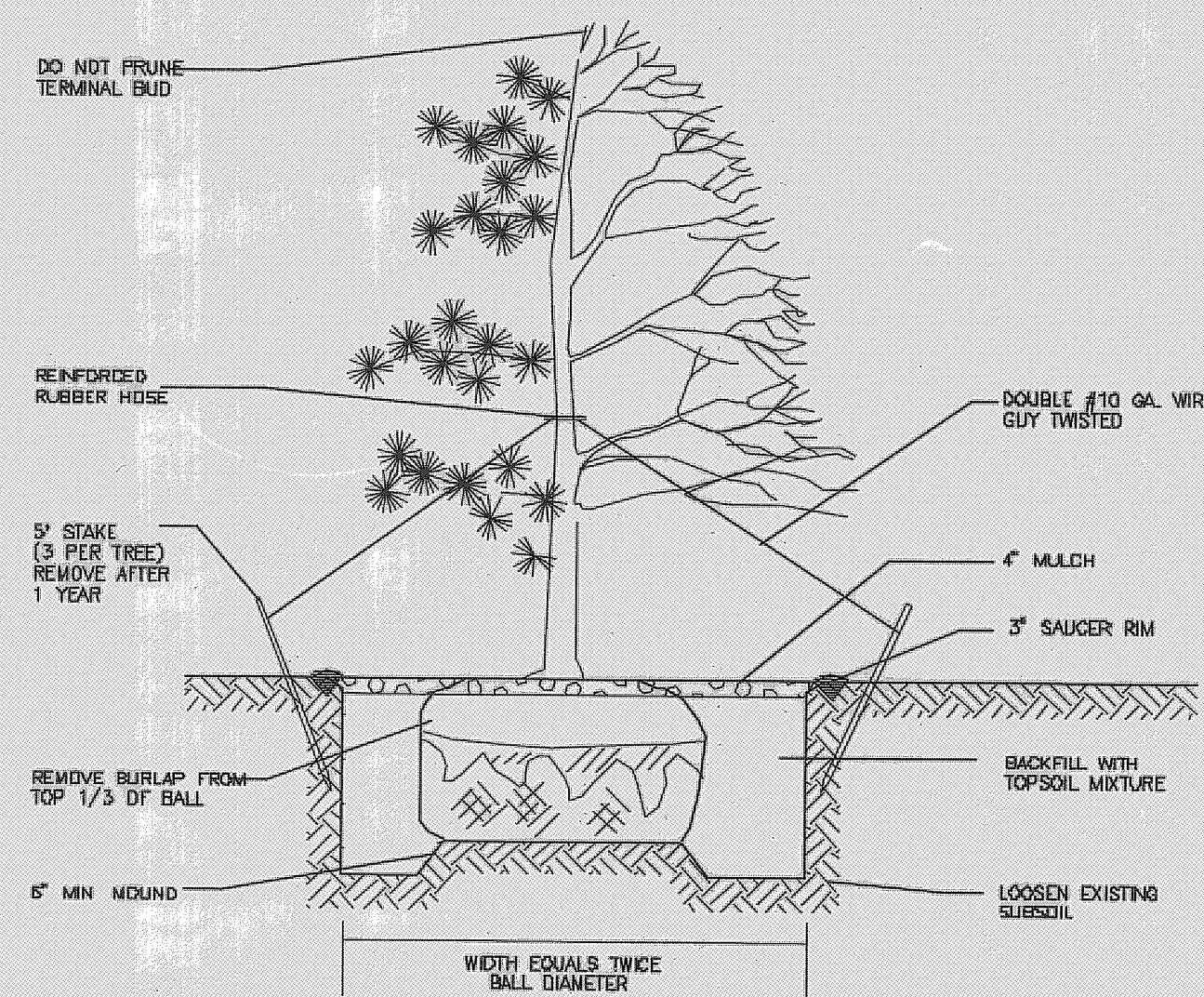
LANDSCAPE PLAN

SCALE MAP NO. N/A BLOCK NO.

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

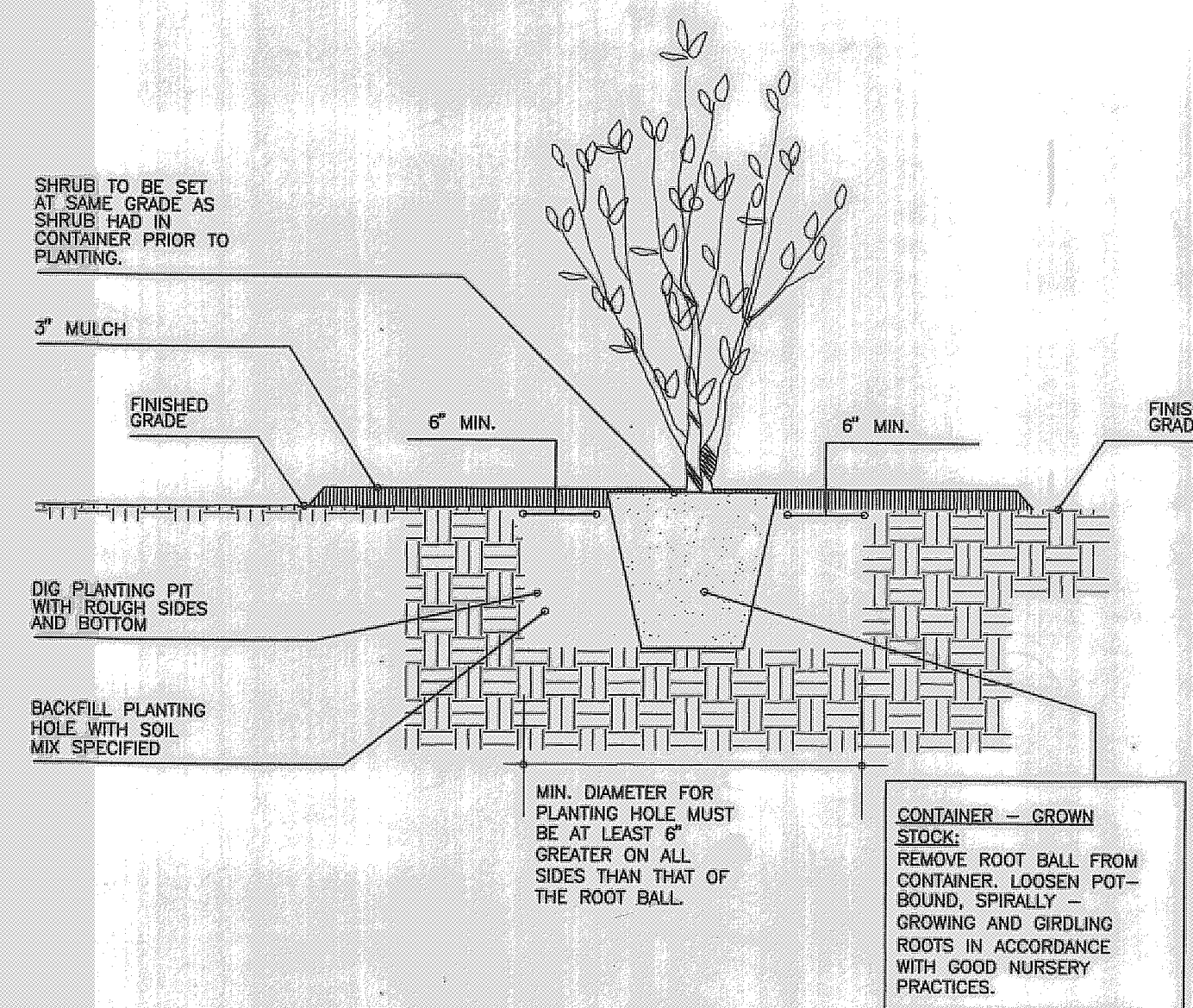
SCALE  
1"=20'  
SHEET  
7 OF 8



- NOTES
1. STAKES TO BE DRIVEN INTO UNDISTURBED SOIL.
  2. PRUNE ALL BROKEN OR DAMAGED BRANCHES.
  3. GROUND LINE TO BE THE SAME AS EXISTED AT NURSERY.
  4. FOLLOW DETAIL ABOVE FOR SHRUB PLANTING NO STAKING NECESSARY.
  5. MATERIALS WITH A FALL PLANTING HAZARD SHALL BE HANDLED ACCORDINGLY.
  6. ALL PLANT MATERIAL SHALL CONFORM TO THE AMER. ASSOC. OF NURSERYMEN'S STANDARDS.

**EVERGREEN/DECIDUOUS TREE PLANTING DETAIL**

NOT TO SCALE



**SHRUB PLANTING DETAIL**

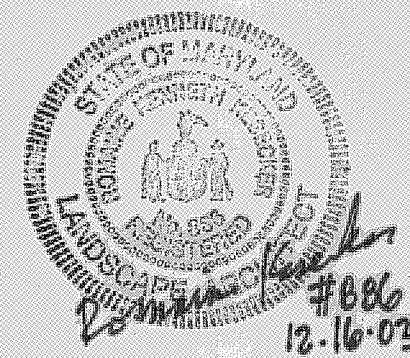
NOT TO SCALE

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Developer's Name: Howard E. Saltzman Date: 12/8/03

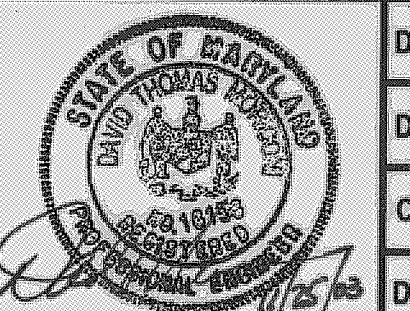
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Development Engineering Division: [Signature] Date: 12/24/03  
 Chief, Division of Land Development: [Signature] Date: 12/20/03  
 Director: [Signature] Date: 12/10/03

APPROVED: DEPARTMENT OF RECREATION AND PARKS  
 Director: [Signature] Date: 12-9-03



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: [Signature] Date: 12/8/03  
 Chief, Bureau of Environmental Services: [Signature] Date: 12/16/03  
 Chief, Bureau of Highways: [Signature] Date: 12-9-03

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



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

**LANDSCAPE DETAILS**

SCALE MAP NO. N/A BLOCK NO.

**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

SCALE AS SHOWN  
 SHEET 8 OF 8