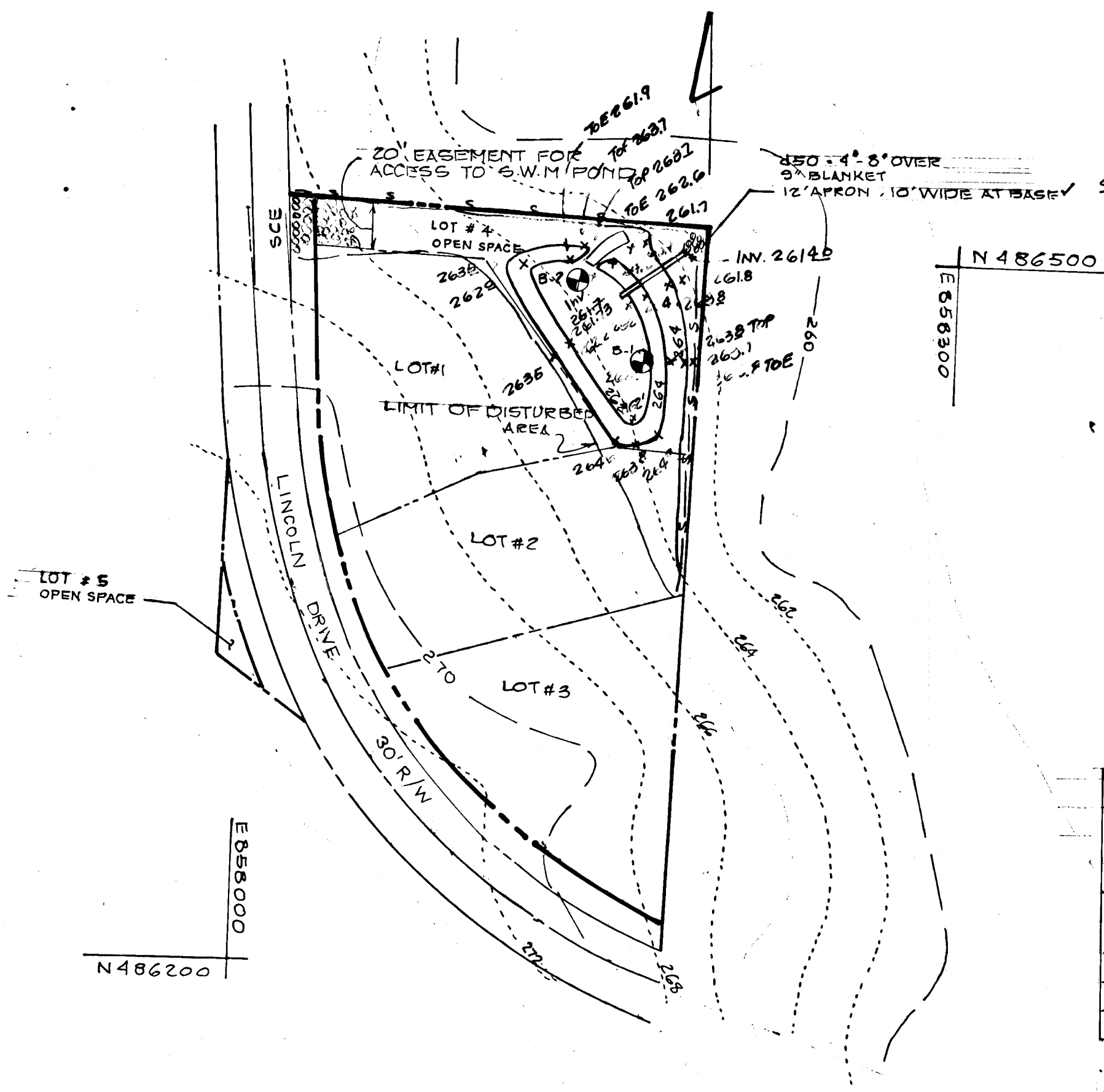
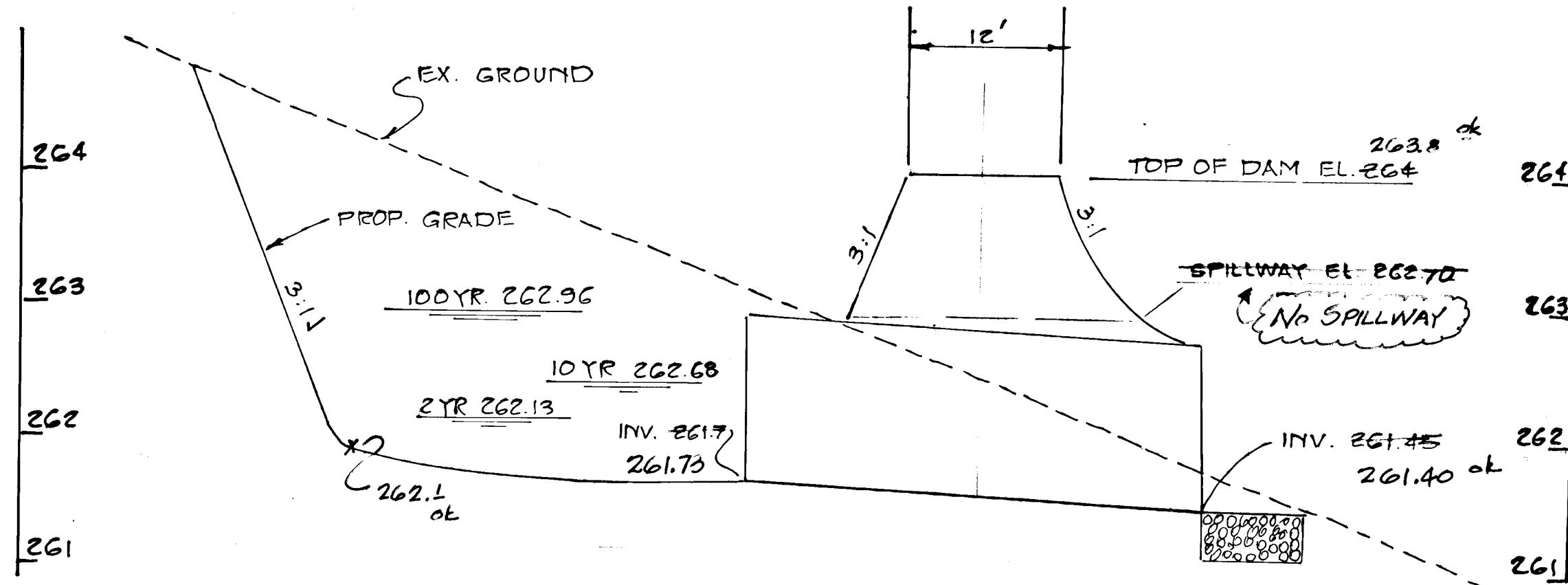


VICINITY MAP
SCALE 1" = 600'



PLAN
SCALE: 1" = 50'



SECTION THROUGH DAM
SCALE: HORIZ: 1" = 10'
VERT: 1" = 1'

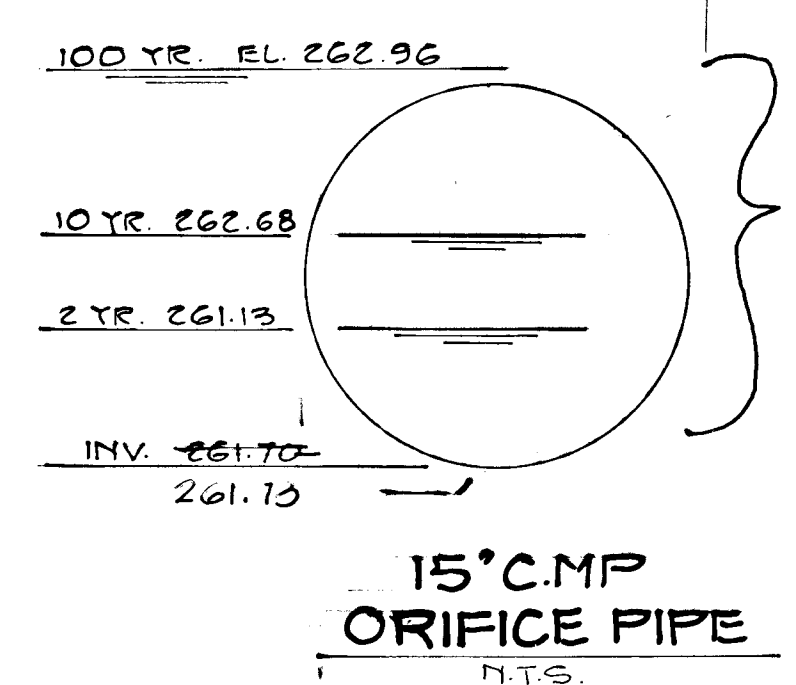
DESCRIPTION	ELEVATION
100 YR. STORM	262.96
10 YR. STORM	262.68
2 YR. STORM	262.13
INV. OF PIPE	261.70 IN
INV. OF PIPE	261.45 OUT
SPILLWAY	262.70
TOP OF DAM	264.0

TEST PIT #	STRATA	DEPTH, FT.	REMARKS
NO.	I	II	
1	0-1	1-12	HOLE DRY
2	0-1	1-12	HOLE DRY

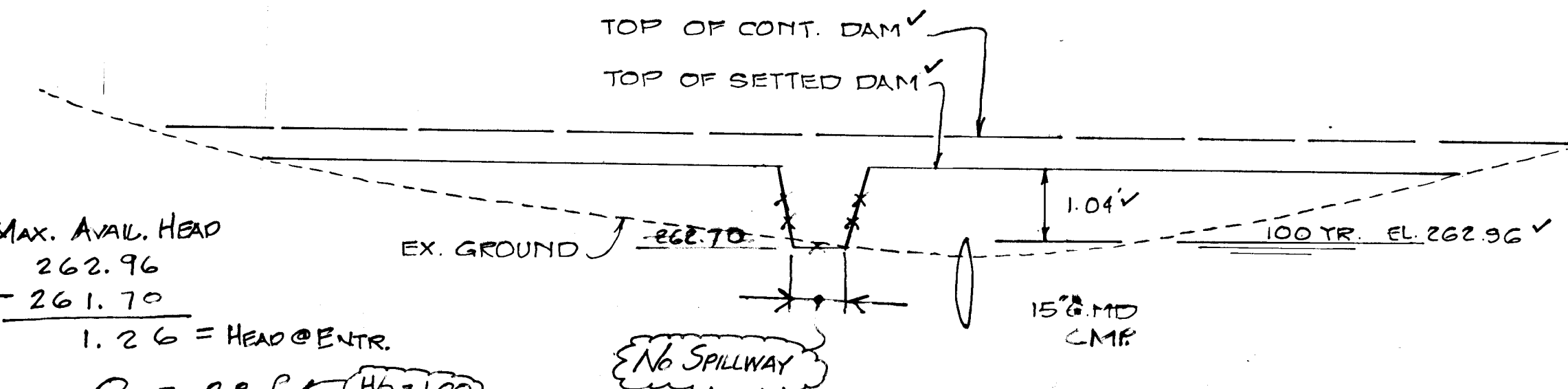
STRATA DESCRIPTION

I SILTY CLAY LOAM (CL)

II SILTY CLAY (CL) VERY STIFF TO HARD



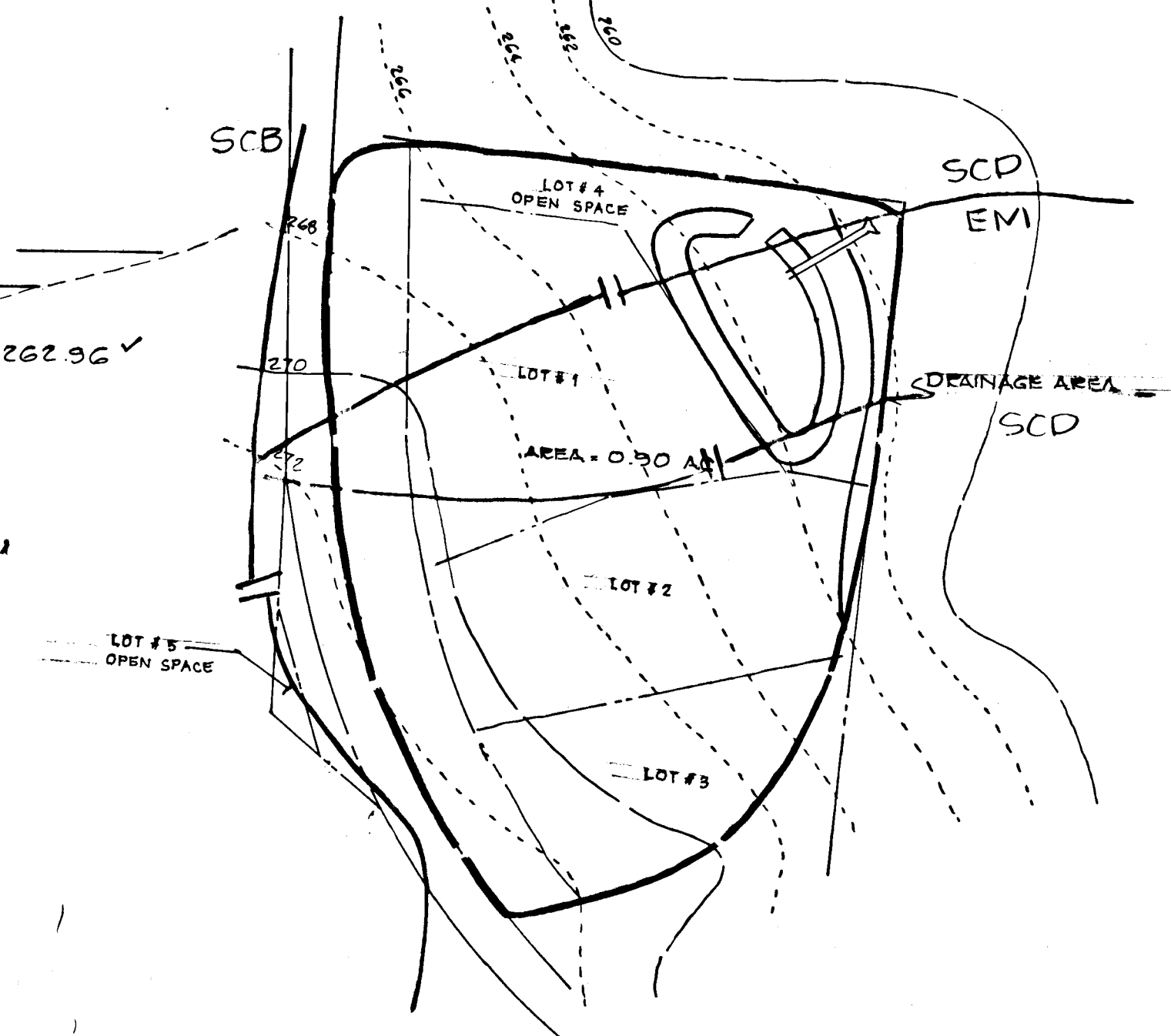
15" C.M.P. ORIFICE PIPE
R.T.S.



SECTION ALONG DAM, LOOKING UPSTREAM
SCALE: HORIZ: 1" = 20'
VERT: 1" = 2'

MAX. AVAIL. HEAD
262.96
- 261.70
1.26 = HEAD @ ENTR.
 $Q = 2.80 \text{ cfs}$ (15" C.M.P.)
 $VEL. 15" \text{ C.M.P.} = 2.2' / \text{sec.}$

RIP RAP NOT REQ'D
VERY LOW EXIT VELOCITY
EROSION NOT LIKELY



DRAINAGE AREA MAP
SCALE: 1" = 50'

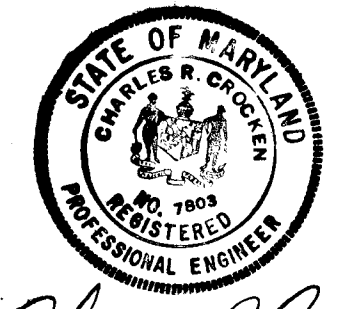
- LEGEND
- SILT FENCE
 - STABILIZE CONSTRUCTION ENTRANCE
 - SOIL BORING
 - LIMIT OF DISTURBANCE

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT
- INSTALL SEDIMENT AND EROSION CONTROL MEASURES.
- CLEAR AND GRADE THE LOCATION OF STORMWATER MANAGEMENT FACILITY
- PLACE THE OUTFALL PIPE AND CONSTRUCT THE EMBANKMENT.
- STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION
- WITH THE APPROVAL OF SEDIMENT CONTROL INSPECTORS REMOVE ALL SEDIMENT AND EROSION CONTROL ONCE ALL AREA DRAINING TO THEM ARE STABILIZED.

AS-BUILT BY: CHARLES R. CRACKEN #5550

P.O. Box 307
WESTMINSTER, MO. 64086
21157
(417)-549-2709



Charles R. Cracken
12-8-94

SEDGHI & ASSOCIATES, LTD.

ENGINEERS, PLANNERS, SURVEYORS
3217 CORPORATE COURT
ELLICOTT CITY, MARYLAND 21043
(301) 750-9003

CEDAR RIDGE
LOTS 1-5
STORMWATER MANAGEMENT PLAN

HOELECTION DISTRICT HOWARD COUNTY, MD.
TAX MAP 43 SCALE: 1" = 50'
SHEET 1 OF 2 DATE: 10-04-89
PARCEL 452

F-89-239
OWNER
CEDAR RIDGE CONSTRUCTION CO.
3701 COURT HOUSE DR.
ELLICOTT CITY, MD. 21043

AS BUILT 12-8-94 BY: CR CRACKEN
F-89-239

DEPT. OF PLANNING AND ZONING
Paul J. Taylor 12/14/94
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements
James M. Helm 10/19/89
U.S. Soil Conservation Service

These plans FOR SOIL EROSION and sediment control meet the requirements of the Howard Soil Conservation District.
John A. Robertson 10/19/89
Howard Soil Conservation District

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Draville W. Weiland 11/30/89
CHIEF, BUREAU OF HIGHWAY

James B. Pugh 12-1-89
CHIEF - BUREAU OF ENGINEERING
Camille Deane 11/3/89
CHIEF - LAND DEVELOPMENT DIVISION

NOTE:
FROM MIKE MITCHELL H.A.M. Co. D.R.W. 6/21/94
DESIGN FLANS DEVELOPED CONDITIONS:
 $Q_{100} = 1.7 \text{ cfs}$
 $Q_{10} = 3.82 \text{ cfs}$
 $Q_{2} = 6.63 \text{ cfs}$
COMPUTATIONS IN COUNTY FILE INDICATE EMERGENCY SPILLWAY NOT REQUIRED. SEE MEMO (IN FILE) FROM CRC.

NOTE! THERE ARE NO FLOOD PLAINS, WETLANDS AND STRAMS ON THIS SITE. NO OFFSITE EASEMENT IS REQUIRED

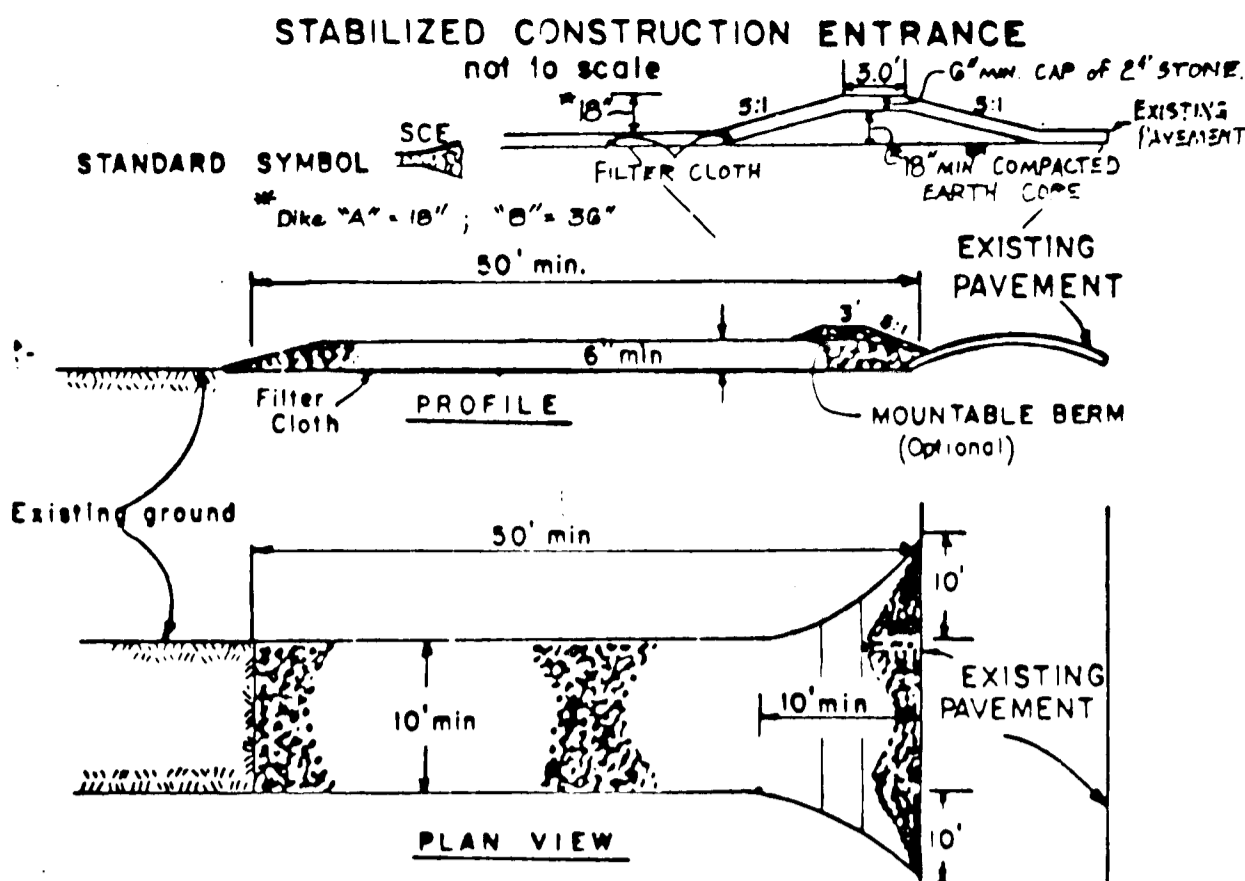
By the Developer:
"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."
Bang W. Casanova, Pres.

Signature of Developer: *Bang W. Casanova*
Date: 8/16/89

By the Engineer:
"I certify that this plan for SOIL EROSION and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District."
Charles R. Cracken

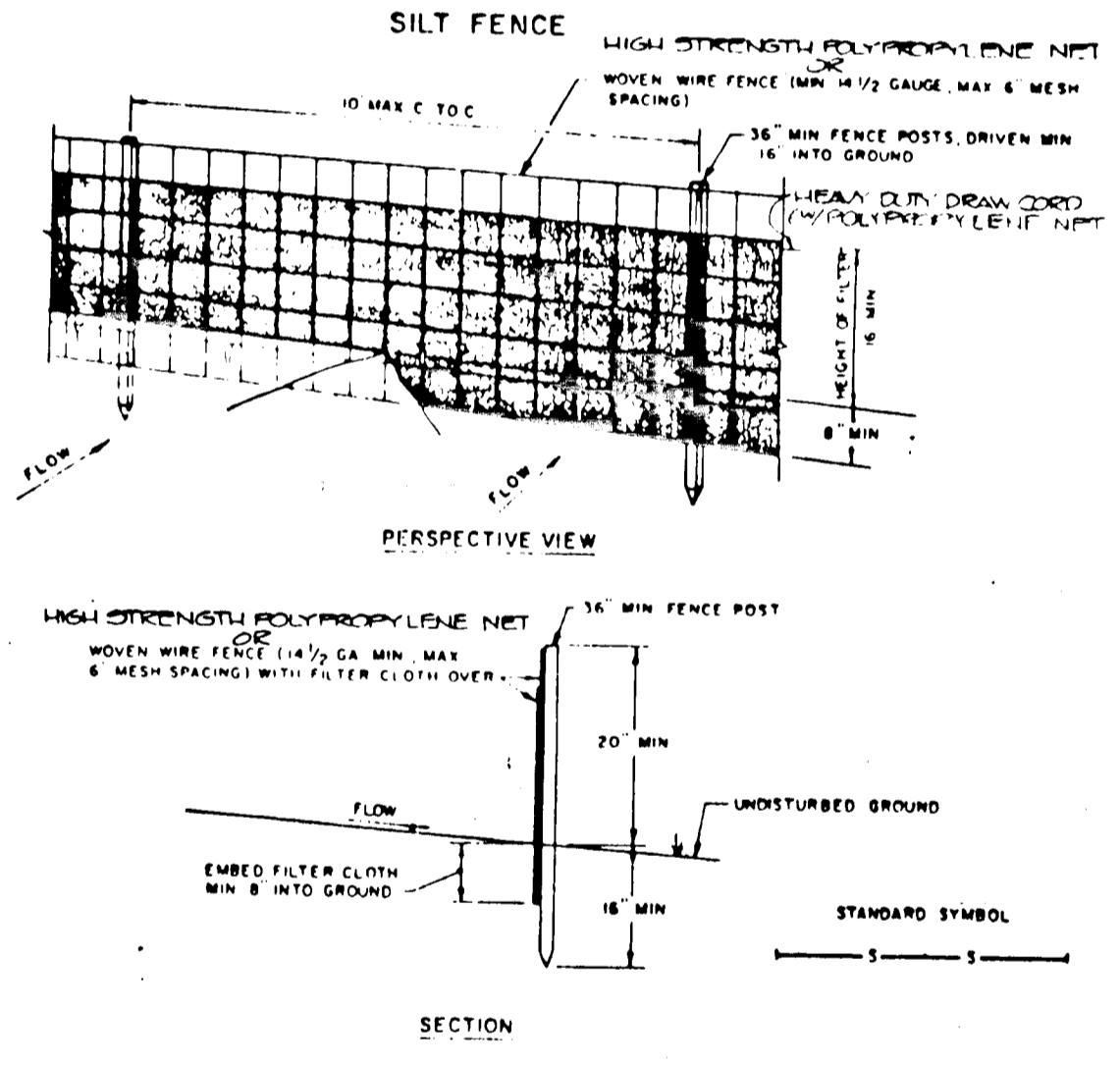
Signature of Engineer: *Charles R. Cracken*
Date: 4-29-88

NOTE: ✓ DEPARTS SATISFACTORY IN CASE PER AS-BUILT SURVEY.



CONSTRUCTION SPECIFICATIONS

- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable beam with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Periodic inspection and needed maintenance shall be provided after each rain.



CONSTRUCTION NOTES FOR CHANNELIZED SILT FENCE

- Woven wire fence to be fastened securely to fence posts with wire ties or staples.
- Filter cloth to be fastened securely to woven wire fence with 1/2" spaced every 24" at top and mid sections.
- When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed and material replaced when "bulges" develop in the silt fence.

PERMANENT SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREA, NOT SUBJECT TO IMMEDIATE FUTURE DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.
Seedbed Preparation: Loosen upper 3 inches of soil by raking, disking or other acceptable means before seeding, IF NOT PREVIOUSLY LOOSENEO.

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./1000 square ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9lbs./1000 sq. ft.).
 2.) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

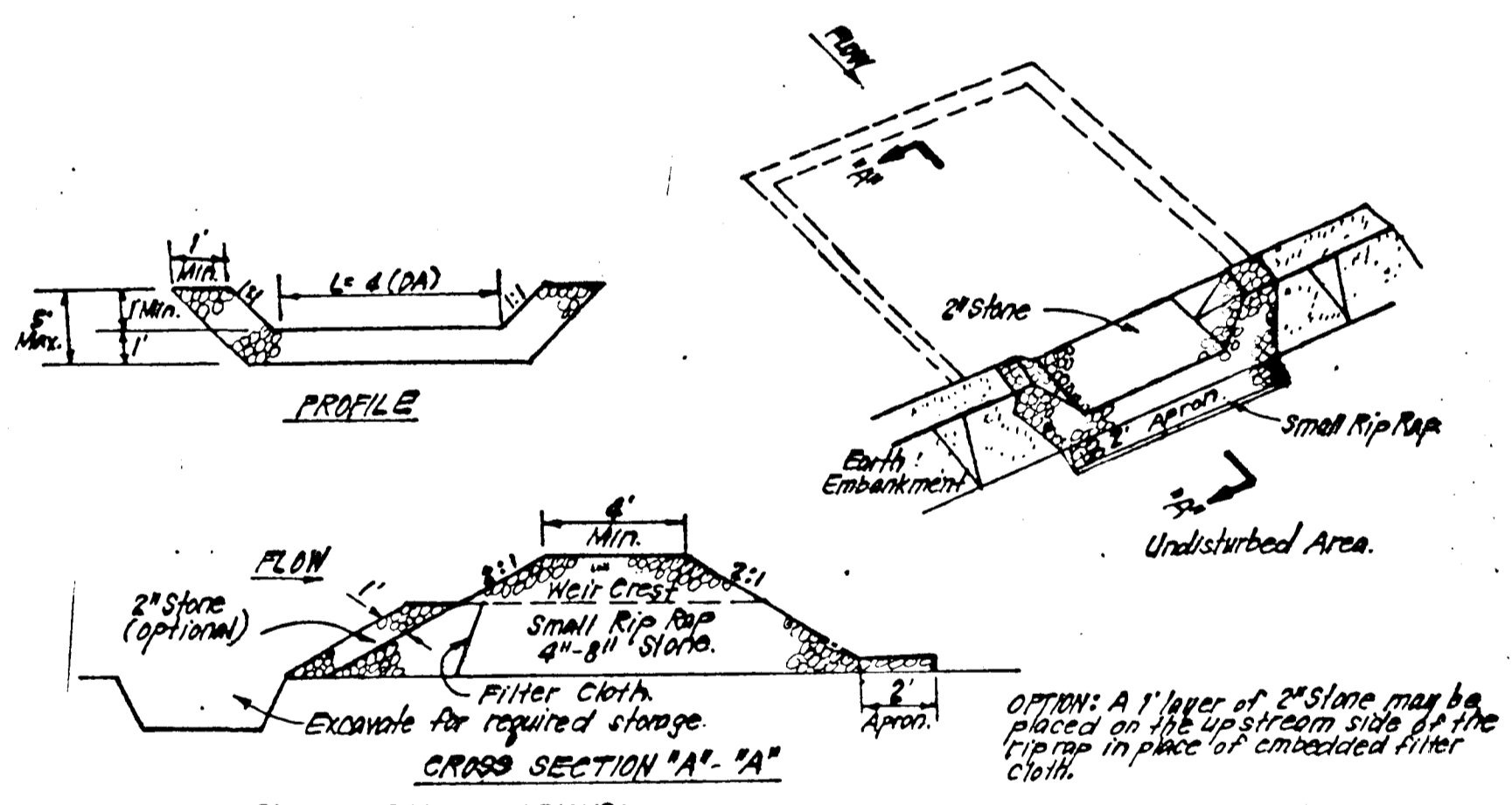
Mulching - Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal./1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal./1000 sq. ft.) for anchoring.

Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseeding.

TEMPORARY SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREA, LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.
Seedbed Preparation: Loosen upper 3 inches of soil by raking, disking or other acceptable means before seeding, IF NOT PREVIOUSLY LOOSENEO.

Soil Amendments: Apply 60 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.).
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 bu. per acre of annual rye (2.2 lbs./1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs./1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal./1000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 348 gal. per acre (8 gal./1000 sq. ft.) for anchoring.
 REFER TO THE 1983 MD STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.



CONSTRUCTION SPECIFICATIONS:
 1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The soil shall be free of rocks and other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 2. All cut and fill slopes shall be 2:1 or flatter.
 3. The stone used in the outlet shall be small rip rap 4" x 8" stone placed on the up-slope side of the small rip rap or embedded filter cloth in the rip rap.
 4. Sediment shall be removed and trap restored to its equal dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
 5. The structure shall be inspected after each rain and repairs made as needed.
 6. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 7. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

STONE OUTLET SEDIMENT TRAP (S.O.S.T.) ST.V.

STANDARD AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION WITH SOD

SPECIFICATIONS

- Class of turfgrass sod shall be Maryland or Virginia State Certified, or Maryland or Virginia State approved sod.
- Sod shall be machine cut at a uniform soil thickness of 3/4 inch, plus or minus 1/4 inch, at the time of cutting. Measurement for thickness shall exclude top growth and chaff.
- Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
- Individual pieces of sod shall be cut to the suppliers width and length. Maximum allowable deviation from standard widths and lengths shall be 5 percent. Broken pads and torn or uneven ends will not be acceptable.
- Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
- Sod shall be harvested, delivered and installed within a period of 36 hours. Sod not transplanted within this period shall be inspected and approved prior to its installation.

Site Preparation
 Fertilizer and lime application rates shall be determined by soil tests. Under unusual circumstances where there is insufficient time for a complete soil test, fertilizer and lime materials may be applied in amounts shown under B, below.

- Prior to sodding, the surface shall be cleared of all trash, debris, and of all roots, brush, wire, grade stakes and other objects that would interfere with planting, fertilizing or maintenance operations.
- Where the soil is acid or composed of heavy clays, ground limestone shall be spread at the rate of 2 tons/acre or 100 pounds per 1,000 square feet. In all soils, 1,000 pounds per acre or 25 pounds per 1,000 square feet of 10-10-10 fertilizer or equivalent shall be uniformly applied and mixed into the top 3 inches of soil with the required lime.
- All areas receiving sod shall be uniformly fine graded. Hard-packed earth shall be scarified prior to placement of sod.

SEDIMENT CONTROL NOTES:

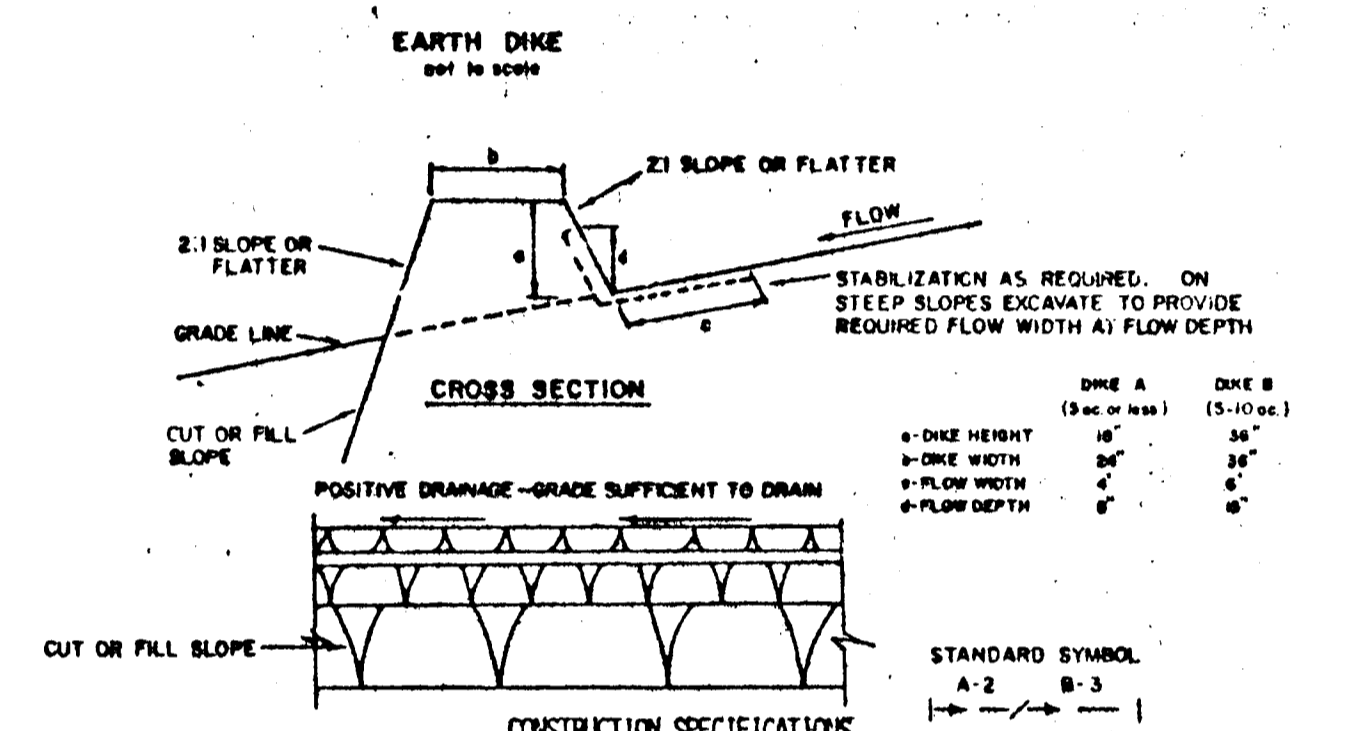
- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (99-2137)
- All protective and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 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 greater 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 their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permits for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 Total Area of Site: 0.92 Acres
 Area Disturbed: 0.22 Acres
 Area to be roofed or paved: 0 Acres
 Area to be vegetatively stabilized: 0.22 Acres
 Total Cut: 100 Cu. yds
 Total Fill: 100 Cu. yds
 Offsite waste/borrow area location: N/A

- 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 control must be provided, if deemed necessary by the Howard County DWM 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.
- If houses are to be constructed on an "As-Built" basis, at random, Single Lot Sediment Control as shown below shall be implemented.
- All pipes to be blocked at the end of each day (see detail below).
- The total amount of straw bale dikes/silt fence equals 310 L.F.

GENERAL NOTES

- Refer to "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control" for standard details and detailed specifications of each practice specified herein.
- With the approval of the sediment control inspector, minor field adjustments can and will be made to insure the control of any sediment. Changes in sediment control practices require prior approval of the sediment control inspector and the County Soil Conservation District.
- At the end of each working day, all sediment control practices will be inspected and left in operational condition.
- Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a.) seven calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes greater than 3 horizontal to 1 vertical (3:1) and b.) fourteen days as to all other disturbed or graded areas on the project site.
- Any change to the grading proposed on this plan requires re-submission to County Soil Conservation District for approval.
- Dust control will be provided for all disturbed areas. Refer to 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control, pp 680 and 67.02 for acceptable methods and specifications for dust control.
- Any variation from the sequence of operations stated on this plan requires the approval of the sediment control inspector and the County Soil Conservation District prior to the initiation of the change.
- Excess cut or borrow material shall go to or come from, respectively, a site with an approved sediment control plan.

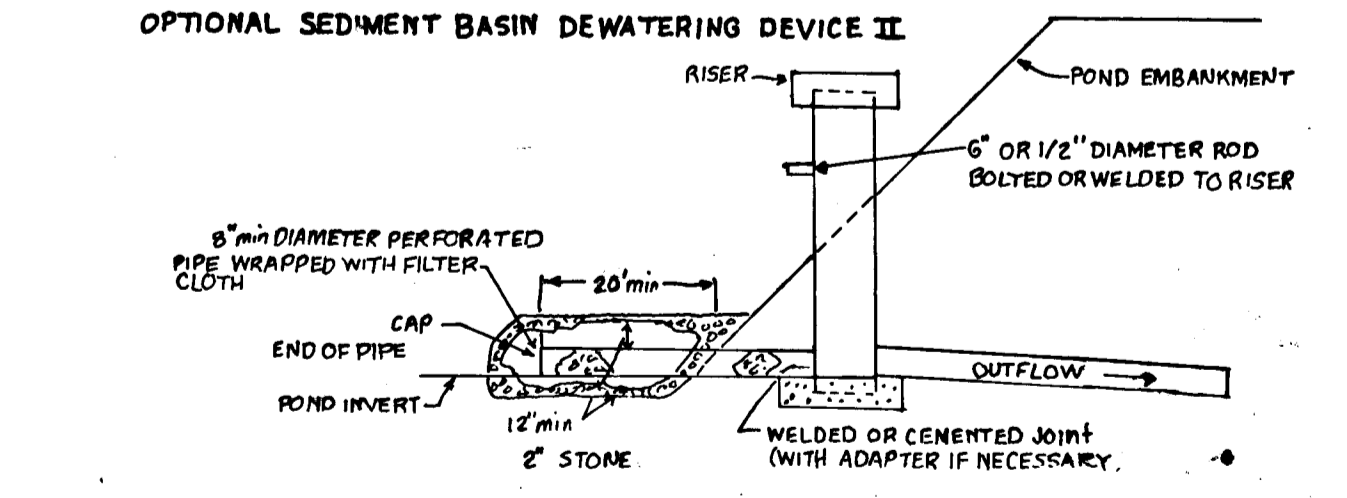
The following items may be used as applicable:



- All dikes shall be compacted by earth-moving equipment.
- All dikes shall have positive drainage to an outlet.
- Top width may be wider and side slopes may be flatter if desired to facilitate crossing by construction traffic.
- Field location shall be selected as needed to utilize a stabilized safe outlet.
- Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where either the dike channel or the drainage area above the dike are not adequately stabilized.
- Stabilization shall be: (A) in accordance with standard specifications for seed and straw mulch or straw mulch if not in seeding season, (B) flow channel as per the chart below,

TYPE OF TREATMENT	FLOW CHANNEL STABILIZATION		
	CHANNEL WIDTH	DIKE A	DIKE B
1	5-3.0X	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0X	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSTOR; SOD; 2" STONE
3	5.1-8.0X	SEED WITH JUTE, OR SOD	LINED RIP-RAP 4-8"
4	8.1-20X	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

EARTH DIKE



APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 10/14/89
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 11/3/89
 CHIEF, LAND DEVELOPMENT DIVISION
 11/30/89
 CHIEF, BUREAU OF HIGHWAY
 12-1-89
 CHIEF, BUREAU OF ENGINEERING

Reviewed for Name: HOWARD SCD and meets technical requirements
 Signature: James M. Hahn 10/14/89
 U.S. SOIL CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY HOWARD COUNTY SOIL CONSERVATION DISTRICT.
 Signature: John R. Robertson 10/19/89
 Approved Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPT. OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
 Signature: Barry W. Calanone, Pres 8/16/89
 DEVELOPER/BUILDER DATE

ENGINEER'S CERTIFICATE
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
 Signature: Sedghi 10-4-89
 DATE

SEDGHI & ASSOCIATES, LTD.
 Engineers • Site Planners • Surveyors
 3217 Corporate Court
 Ellicott City, MD 21043
 (301) 760-0003

DESIGNED	SCALE
DRAWN	AS SHOWN
CHECKED	DRAWING
DATE	JOB NO.
DEVELOPER	FILE NO.

CEDAR RIDGE
 LOTS 1 TO 5
 TAX MAP 43 PARCEL 452
 GTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 DATE: 10-4-89 SHEET 2 OF 2