

**AUTHORIZATION NOTE**

"The Howard Research and Development Land Co" hereby authorizes "The Ryland Group, Inc" to utilize existing Trap No. 1 from F-88-234 for sediment and erosion control for this project. "The Ryland Group" will maintain existing Trap No. 1 and remove it upon permanent stabilization of its contributory drainage area.

Signature *Joseph A. ...* Date 9-7-88

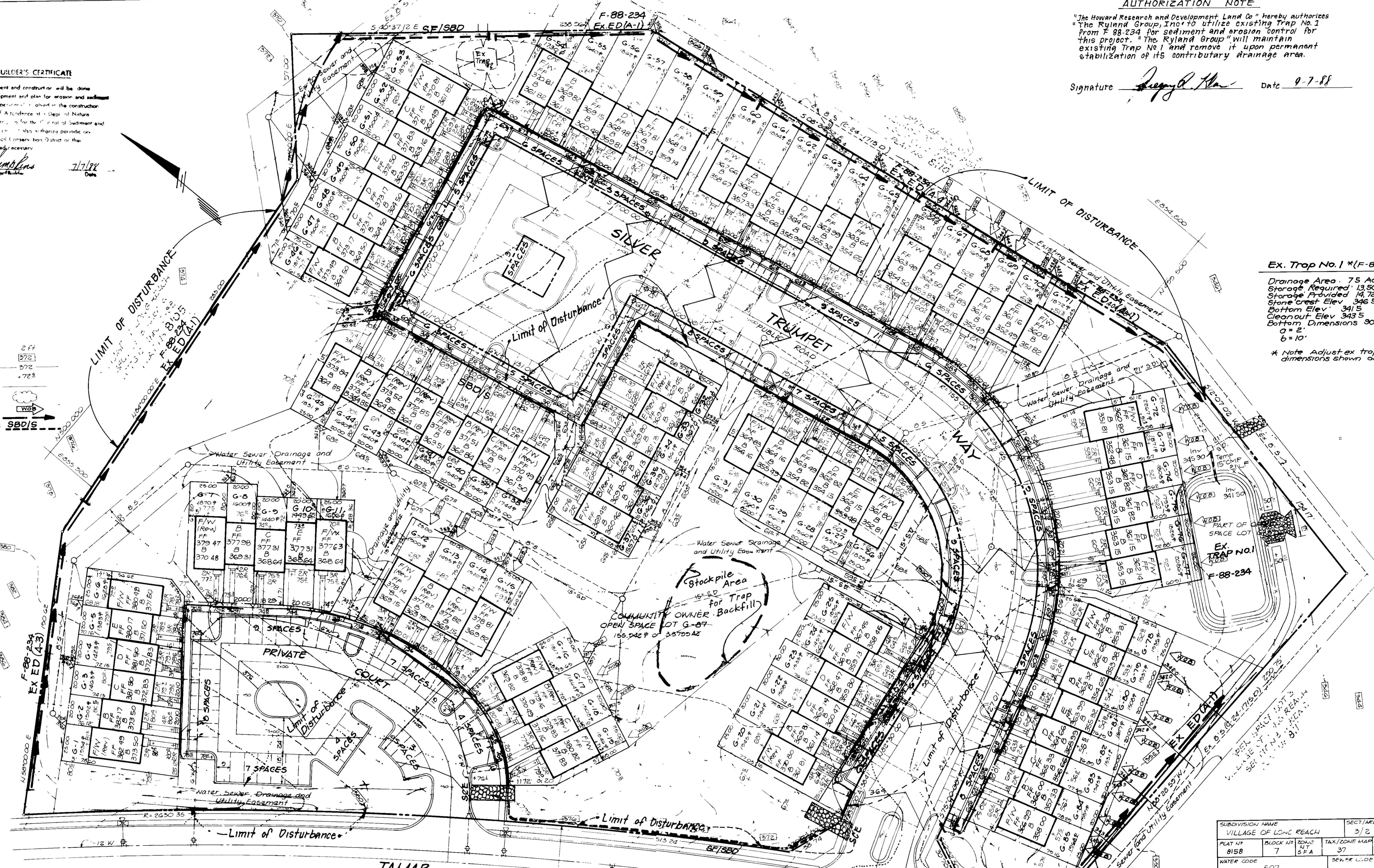
**DEVELOPER'S/BUILDER'S CERTIFICATE**

"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 a means shall be provided to govern the construction project will have a minimum of 10 days prior to the start of construction. This certificate is given in full faith and belief of the Board of Public Works and the Board of Health of the County of Howard, Maryland, and shall be subject to the inspection by the Howard County Department of Public Works and the Howard County Department of Health, or their authorized agents, as so deemed necessary.

*Thomas W. ...* 11/1/88  
Signature of Developer/Builder Date

**LEGEND:**

- 1 Contour Interval 2 ft
- 2 Existing Contour 272
- 3 Proposed Contour 272
- 4 Spot Elevation 272
- 5 Direction of Drainage
- 6 Existing trees to remain
- 7 Walk-out basement
- 8 Earth Dike
- 9 Straw Bale Dike/Silt fence



**Ex. Trap No. 1 \*(F-88-244)**

Drainage Area - 75 Ac  
Storage Required - 13,500 cf  
Storage Provided - 14,720 cf  
Stone crest Elev. 346.5  
Bottom Elev. 341.5  
Cleanout Elev. 343.5  
Bottom Dimensions 90x38  
a = 2'  
b = 10'

\* Note Adjust ex trap to dimensions shown above

SUBDIVISION NAME	VILLAGE OF LONG REACH	SECTION/AREA	3/2	LOTS	G-1 thru G-85
PLAT NO.	8158	BLOCK NO.	7	TAX/ZONE MAP/ELEC DIST	6TH 6065.01
WATER CODE	E07	SEWER CODE	3550000		

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
HOWARD COUNTY HEALTH DEPARTMENT

*Joseph A. ...* 11-14-88  
DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING & ZONING  
*...* 12-5-88  
DATE

PLANNING DIRECTOR  
*...* 11-21-88  
DATE

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
LKS

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE  
STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*...* 11-4-88  
DATE

DIRECTOR  
*...* 11/3/88  
DATE

CHIEF BUREAU OF ENGINEERING

8-17-88  
LKS

Reviewed for HOWARD S.C.D.  
Name  
Signature  
Date 11/1/88  
U.S. Soil Conservation Service

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

*Stephen L. ...* 11/1/88  
DATE

**ENGINEER'S CERTIFICATE**

I hereby certify that this plan for Erosion and Sediment Control meets the requirements of the applicable laws and regulations and that it is prepared in accordance with the requirements of the Howard County Conservation District.

*Neilson Clark* 6/21/88  
Neilson Clark

**CLARK • FINEFROCK & SACKETT, INC**  
ENGINEERS • PLANNERS • ARCHITECTS

7115 MINISTREL WAY • COLUMBIA, MD 21045 • (301) 720-1200 • BALTO • (410) 326-1111

DESIGNED	DGT	<b>SEDIMENT &amp; EROSION CONTROL PLAN</b> LOTS G-1 thru G-85 <b>COLUMBIA</b> VILLAGE OF LONG REACH SECTION 3 AREA 2 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE	1" = 30'
DRAWN	PER		DRAWING	2 OF 4
CHECKED	GS		JOB NO.	88-008
DGT			FILE NO.	88-008-2E
DATE	G 20 88			

Owner/Developer  
Howard Research Land Co  
10275 Little Patuxent Parkway  
Columbia Maryland 21045

For The Ryland Group, Inc.  
7110 Ministrel Way, Ste 215  
Columbia, Maryland 21045

S.D.P. 89 06

**SEDIMENT CONTROL NOTES**

- 1) 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 (992-2437)
- 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
- 3) Following initial soil disturbance or redistribution, 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, b) 14 days as to all other disturbed or graded areas on the project site.
- 4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage
- 5) All disturbed areas must be stabilized within the time period specified above in accordance with the 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.
- 6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector
- 7) Site Analysis
 

Total Area of Site	7.8 Acres
Area Disturbed	6.4 Acres
Area to be roofed or paved	1.4 Acres
Area to be vegetatively stabilized	5.0 Acres
Total Cut	Cu yds
Total Fill	Cu yds
Offsite waste/borrow area location	
- 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9) Additional sediment control must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
- 10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- 11) If houses are to be constructed on an "As-Sold" basis, at random, Single Lot Sediment Control as shown below shall be implemented.
- 12) All pipes to be blocked at the end of each day (see detail below).
- 13) The total amount of straw bale dikes/silt fence equals 2190 LF.

**PERMANENT SEEDING NOTES**

Apply to graded or cleared areas not subject to immediate further disturbance and a permanent long-lived vegetative cover is needed

**Seeded Preparation** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened

**Soil Amendments** In lieu of soil test recommendations, use one of the following schedules:

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

**Seeding** - For the periods March 1 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 gal per acre (8 gal/1000 sq ft) for anchoring.

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

**Seeded Preparation** Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

**Soil Amendments** Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft)

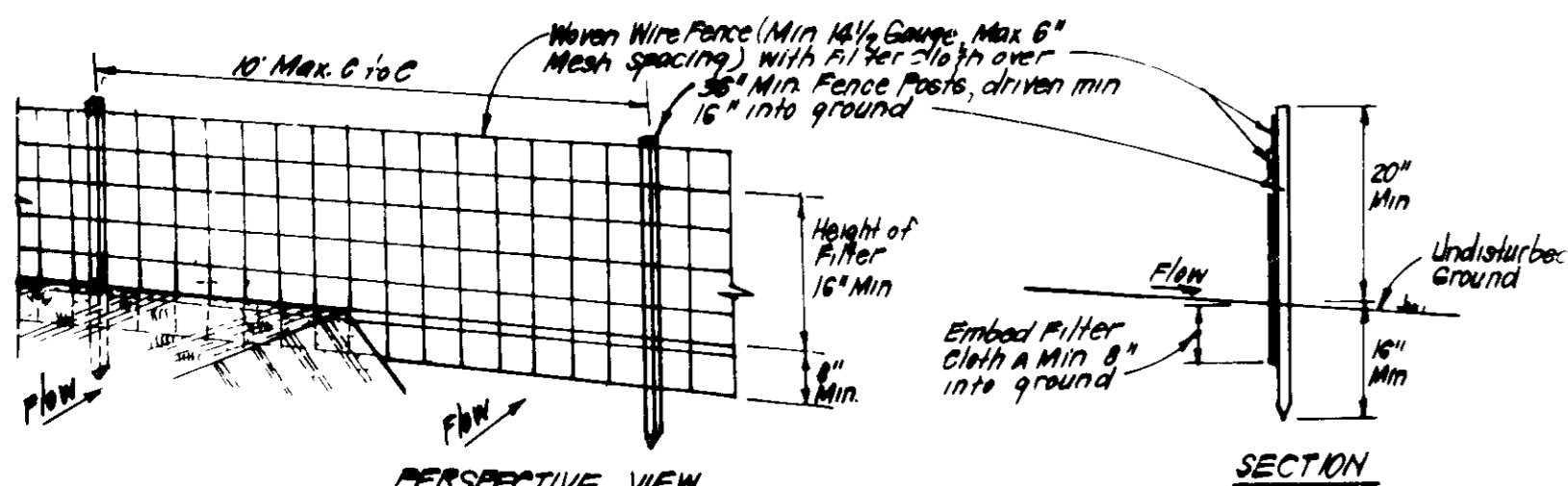
**Seeding** - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 25 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered

**CONSTRUCTION SEQUENCE**

- 1 Obtain grading permit 7 days
- 2 Install sediment and erosion control measures. Refurbish and maintain all existing sediment controls from E-88, E-89 as shown on plan sheet. ex Trap no 1 Adjust ex trap no 1 to the dimensions shown and install 2) LF of temp 15' CMP from M1-A to ex trap no 1 Block outlet of storm drain str no M1-A to str no S-1 14 days
- 3 Rough grade where necessary and excavate for foundations Temporary Stabilize 100 days
- 4 Construct structures, driveways and 100 days
- 5 Fine grade and permanently stabilize according to standards and specifications 40 days
- 6 Upon approval of sediment control inspector, remove sediment and erosion controls and stabilize those areas Remove Temp 15' CMP from Str M1-A to ex Trap No 1 Unblock pipe outlet to str no S-1 14 days



**CONSTRUCTION SPECIFICATIONS:**

- 1 Woven wire fence to be fastened securely to fence posts with wire ties or staples
- 2 Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section
- 3 When 2 sections of filter cloth adjoin each other they shall be overlapped by 6" and stapled
- 4 Maintenance shall be performed as needed and material removed when "bulges" develop in Silt Fence

**SILT FENCE DETAIL (S)**

NO SCALE

POSTS: Steel either 2" x 4" Type or 4" x 4" Hardwood  
 FENCE: Woven Wire, 1/4" Gauge  
 6" Max. Mesh Opening  
 FILTER CLOTH: Filter Cloth, 1/2" Mesh, 1/4" Thick, 1/2" Wide  
 PREFABRICATED UNIT: Geotex Envirofence, or Approv. equiv.

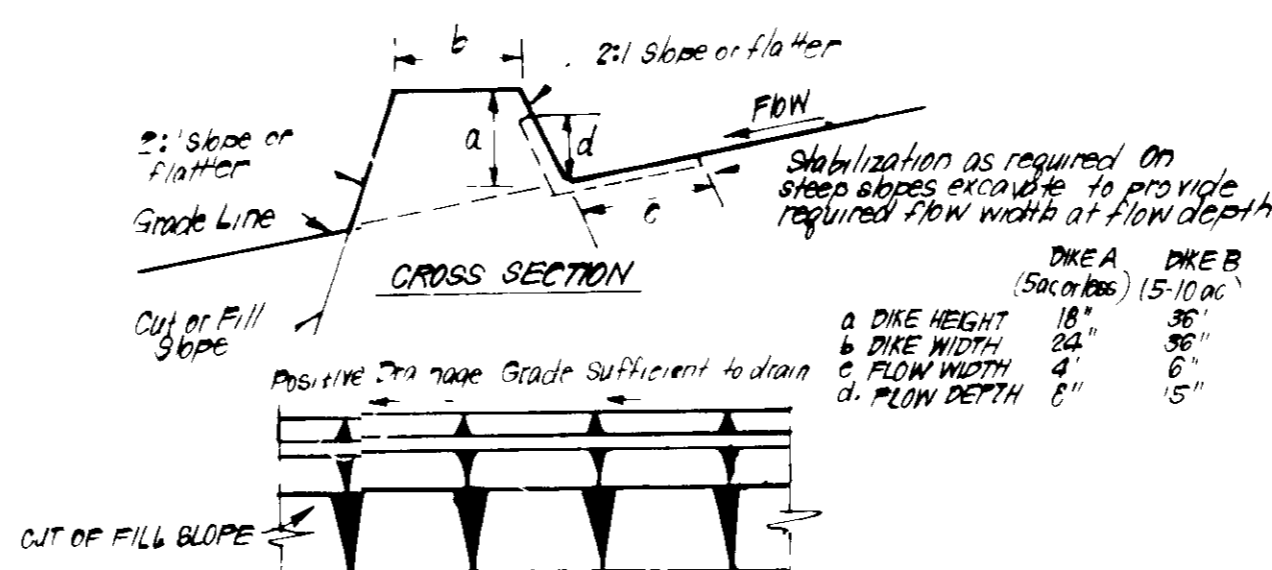
8-17-88 LKS

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC UTILITIES  
 [Signature] 11-14-88  
 DATE

APPROVED FOR PLANNING AND ZONING  
 [Signature] 12-28-88  
 DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC UTILITIES  
 [Signature] 11-11-88  
 DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC UTILITIES  
 [Signature] 11-13-88  
 DATE



- CONSTRUCTION SPECIFICATIONS:**
- 1 All dikes shall be constructed by earth-moving equipment
  - 2 All dikes shall have positive drainage to an outlet
  - 3 Top width may be wider and side slopes may be flatter if desired, to facilitate crossing by construction traffic
  - 4 Field location should be adjusted as needed to utilize a stabilized safe outlet
  - 5 Earth dikes shall have an outlet that functions with a minimum of erosion. Runoff shall be conveyed to a permanent trapping device such as a sediment trap or detention basin where either the dike channel or the drainage area above the dike are not adequately stabilized
  - 6 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 chart below.

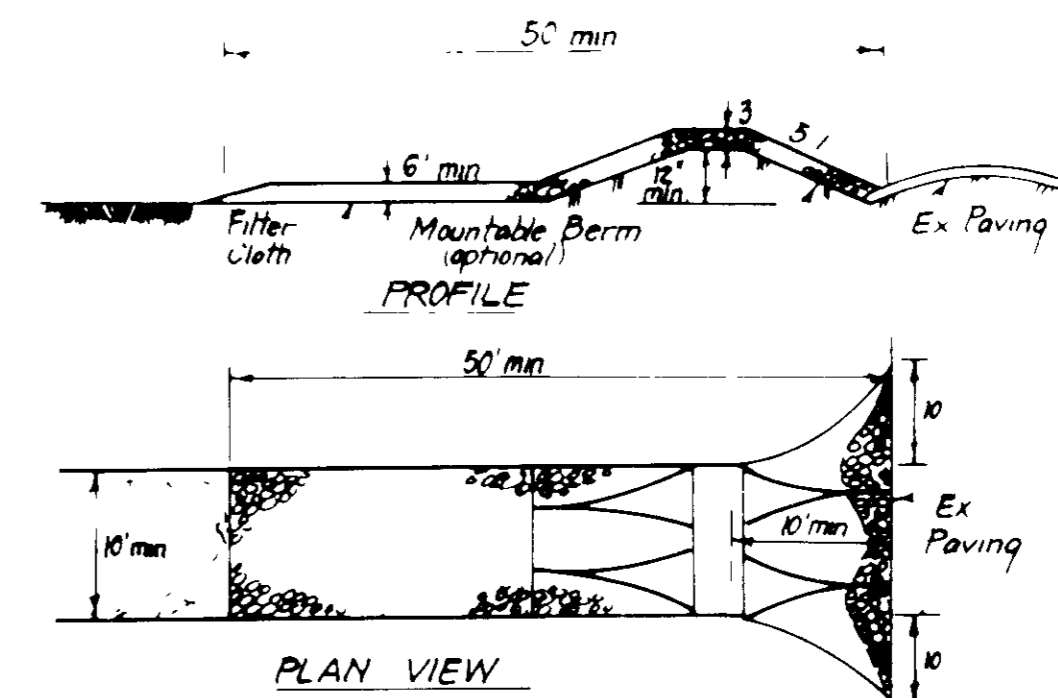
**FLOW CHANNEL STABILIZATION**

TYPE OF TREATMENT	CHANNEL	DIKE A	DIKE B
1	0.5 - 3.0%	Seed & Straw Mulch	Seed or Straw Mulch
2	3.1 - 5.0%	Seed & Straw Mulch	Seed, White or Excelsior, Sod, 2" Stone
3	5.1 - 8.0%	Seed, White or Sod, 2" Stone	Lined Rip Rap 4"-8" Stone
4	8.1 - 20.0%	Lined Rip Rap 4"-8" Stone	Engineering Design

A Stone to be 2" Stone, or recycled concrete equivalent, in a layer at least 3" thick and be pressed into soil with construction equipment  
 B Rip Rap to be 4"-8" in a layer at least 8" thick, pressed into soil.  
 C Approved equivalents can be substituted for any of the above materials

**EARTH DIKE DETAIL (ED)**

NO SCALE

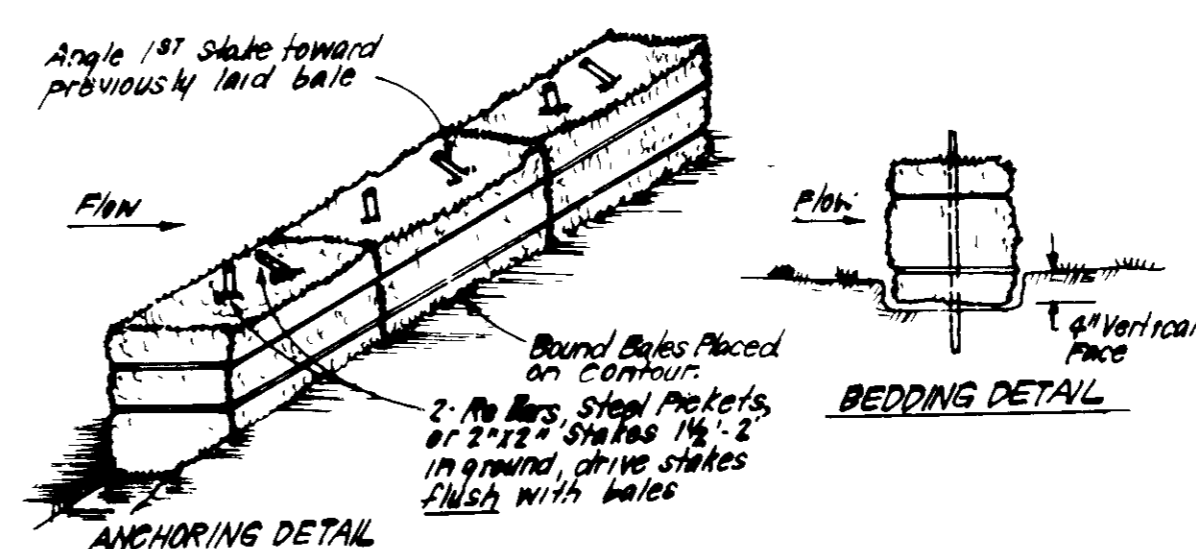


**CONSTRUCTION SPECIFICATIONS**

- 1 Stone size - Use 2" stone or reclaimed or recycled concrete equivalent
- 2 Length - As required, but not less than 50 feet, except on a single residence lot where a 30 foot minimum length would apply
- 3 Thickness - Not less than six (6) inches
- 4 Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs
- 5 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
- 6 Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted
- 7 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 applied, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- 8 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
- 9 Periodic inspection and needed maintenance shall be provided after each rain

**STABILIZED CONSTRUCTION ENTRANCE (SCE)**

NO SCALE

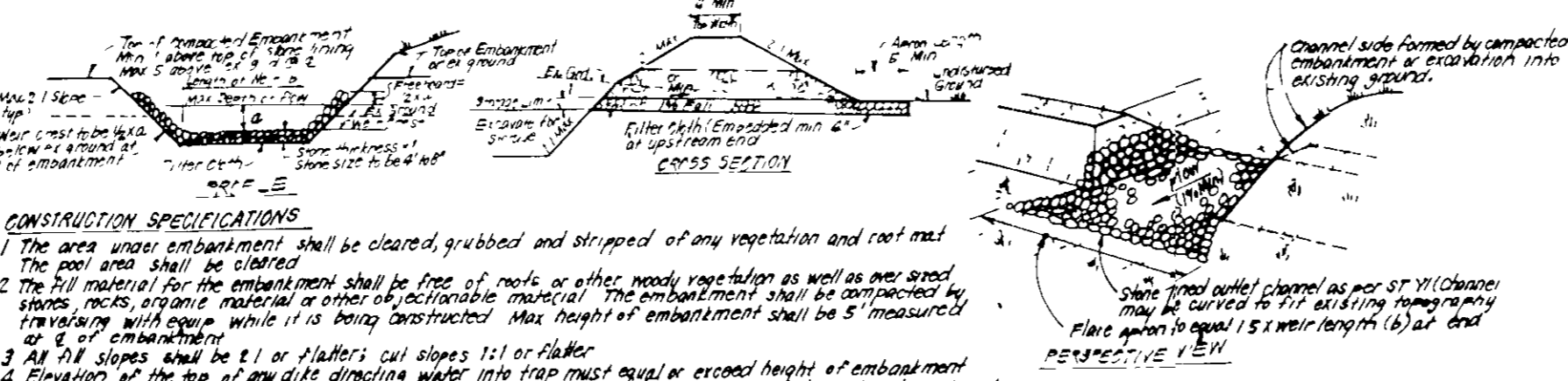


**CONSTRUCTION SPECIFICATIONS:**

- 1 Bales shall be placed at the top of a slope or on the contour and in a row with ends tightly abutting the adjacent bales
- 2 Each bale shall be embedded in the soil a min of 4" and placed so the bindings are horizontal
- 3 Bales shall be securely anchored in place by either 2 stakes or re bars driven thru the bale. The 1st stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the bale
- 4 Inspection shall be frequent and repair/replacement shall be made promptly as needed
- 5 Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage

**STRAW BALE DIKE DETAIL (SBD)**

NO SCALE



**CONSTRUCTION SPECIFICATIONS:**

- 1 The area where embankment shall be cleared, grubbed and stripped of any vegetation and not used for any other purpose
- 2 The fill material for the embankment shall be free of rocks or other hard materials as well as any other debris, sticks, stumps, or other materials. The embankment shall be constructed by spreading with equipment while it is being constructed. Max height of embankment shall be 5' measured at 6' of embankment
- 3 All slopes shall be 1:1 or flatter, call slopes 1:1 or flatter
- 4 Elevation of the top of any dike directing water into trap must equal or exceed height of embankment
- 5 Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of 1' below the lowest water table
- 6 Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric mesh (at least 1" with section nearest the entrance placed on top) fabric shall be embedded at least 1" into bedding material at entrance of outlet channel
- 7 Stone used in the outlet channel shall be 4" to 8" rip rap. To provide a filtering effect, a layer of filter cloth shall be embedded 1" back into the bedding material on the outlet side and 1" thick layer of 2" rip rap material shall be placed on the upstream side of the outlet
- 8 Sediment shall be removed and the material in its original drainage when the sediment has accumulated to the design depth of the trap. Sediment shall be deposited in a suitable area and in such a manner that it will not erode
- 9 The structure shall be inspected after each rain and repaired as needed
- 10 Construction operations shall be carried out in such a manner that erosion and water pollution are minimized
- 11 The structure shall be maintained and the area shall be kept clear when the drainage area has been properly stabilized
- 12 Drainage area for this practice is limited to 15 acres or less

**RIPRAP OUTLET SEDIMENT TRAP - ST-2**

NO SCALE

Required for HOWARD COUNTY S.C.D.  
 Name: [Signature]  
 and meets Technical Requirements  
 Signature: [Signature] Date: 11-1-88  
 U.S. Soil Conservation Service

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

[Signature] 11/1/88  
 Approved Date

**DEVELOPER'S/BUILDER'S CERTIFICATE**

"We certify that all development and construction will be done according to the 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 Soil Conservation District or their authorized agents, as are deemed necessary."

[Signature] 8/17/88  
 Signature of 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 Soil Conservation District.

[Signature] G Nelson Clark  
 G Nelson Clark



8-24-88  
 Date

**CLARK • FINEFROCK & SACKETT, INC**  
 ENGINEERS • PLANNERS • SURVEYORS  
 7136 MINSTREL WAY • COLUMBIA, MD 21045 • (301) 381-7800 - BALTO • (301) 621-8100 - WASH

**SEDIMENT & EROSION CONTROL PLAN**  
 LOTS G-1 thru G-85  
**COLUMBIA**  
 VILLAGE OF LONGREACH  
 SECTION 3 AREA 2  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

DESIGNED: DGT  
 DRAWN: GES  
 CHECKED: DGT  
 DATE: 6/28/88

SCALE: As Shown  
 DRAWING: 3 of 4  
 JOB NO: 88-098  
 FILE NO: 88-098-5E

FOR The Ryland Group, Inc  
 7130 Minstrel Way, Suite 215  
 Columbia, Maryland 21045

S D F 89-06