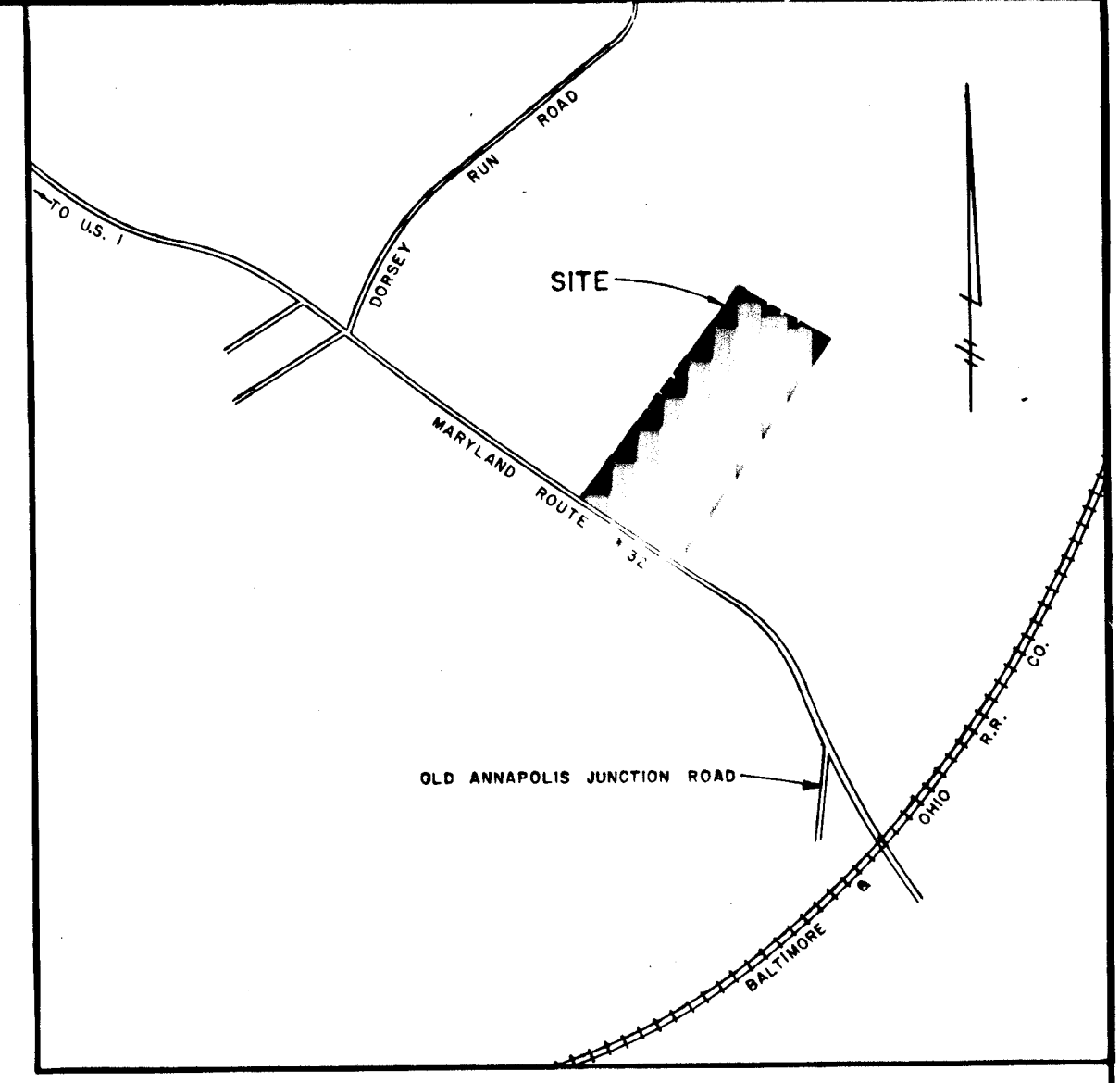




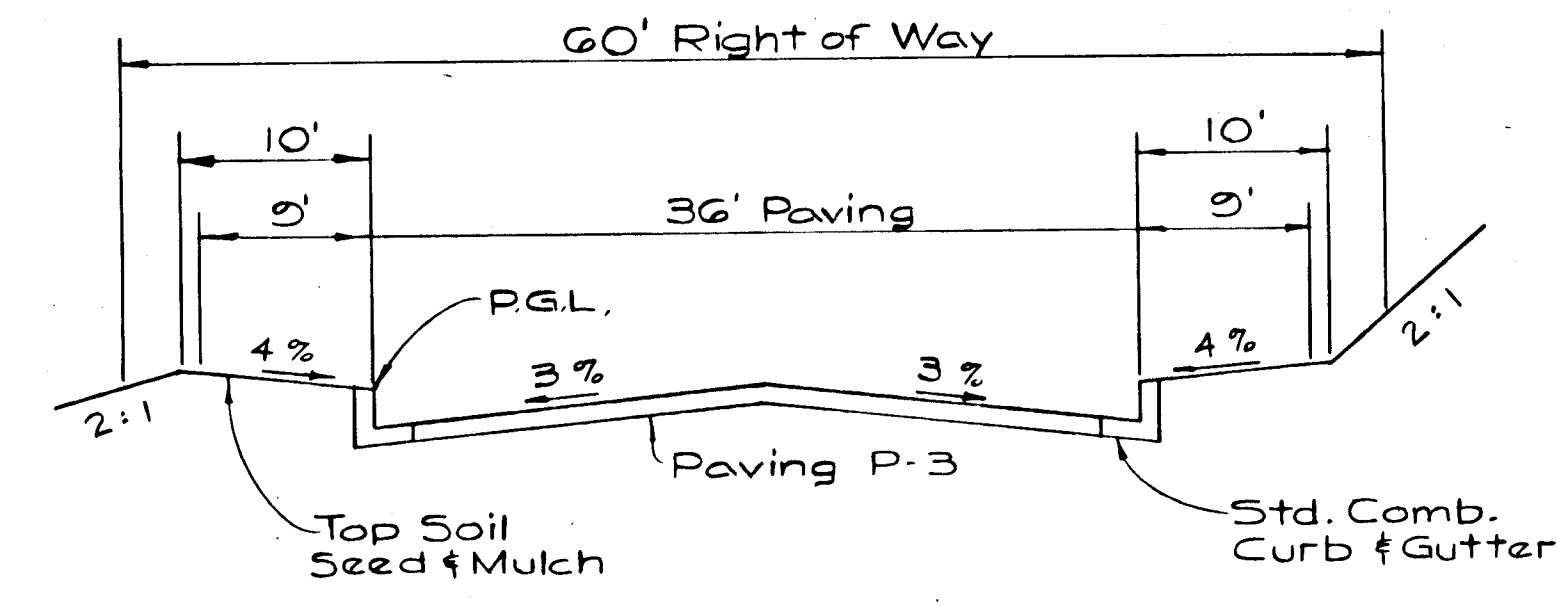
**GENERAL NOTES**

- 1) Construction shown hereon shall be in accordance with the Howard County Standard Specifications and Details.
- 2) Page and drawing No's referenced hereon are taken from the Standard Specification and Detail of Howard County.
- 3) Elevation shown hereon are based on the Howard County Vertical Control Datum.
- 4) The location of existing utilities shown on the drawing are based on the latest available information. The Contractor shall, however, determine the exact locations and shall notify "Miss Utility" at least three (3) days prior to beginning work.
- 5) The developer shall notify the Howard County Office of Inspection and permits at least 24 hours prior to beginning any construction hereon. (992-2435 or (992-2436)
- 6) Provide street trees at 40' intervals. Trees shall have a min. trunk of 2 1/2", and shall be hardwood variety and indigenous to the area.



**VICINITY MAP**  
SCALE = 1" = 800'  
**CONSTRUCTION SEQUENCE**

1. Obtain grading permit.
2. Clearing and grubbing for the installation of perimeter control.
3. Install sediment control devices.
4. Clearing and grubbing of site.
5. Start grading of roadway to subgrade and construct temporary storm water management facility. This facility to be used also as sediment trap.
6. Install culvert and storm drain and water main.
7. Construct curb and gutter and start paving.
8. Stabilize disturbed areas not to be paved.
9. Clean-up inlets and pipes of sediment and convert temp SWMF to infiltration device and stabilize disturbed areas.
10. Remove sediment control devices as approved by inspector.

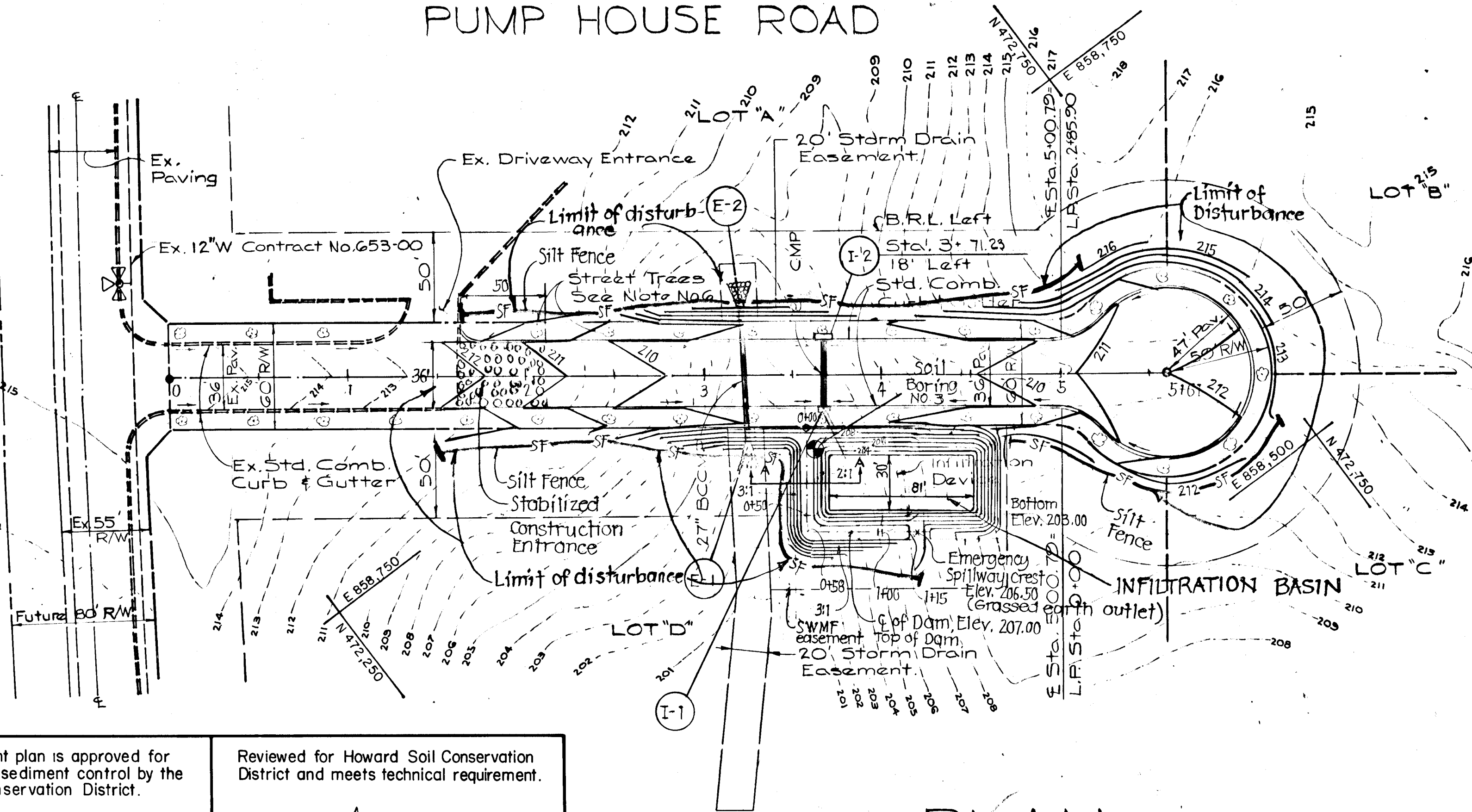


**ROADWAY TYPICAL SECTION**

Not to Scale  
Local Road  
Zoned M-2

**PUMP HOUSE ROAD**

MARYLAND ROUTE # 32



**PLAN**

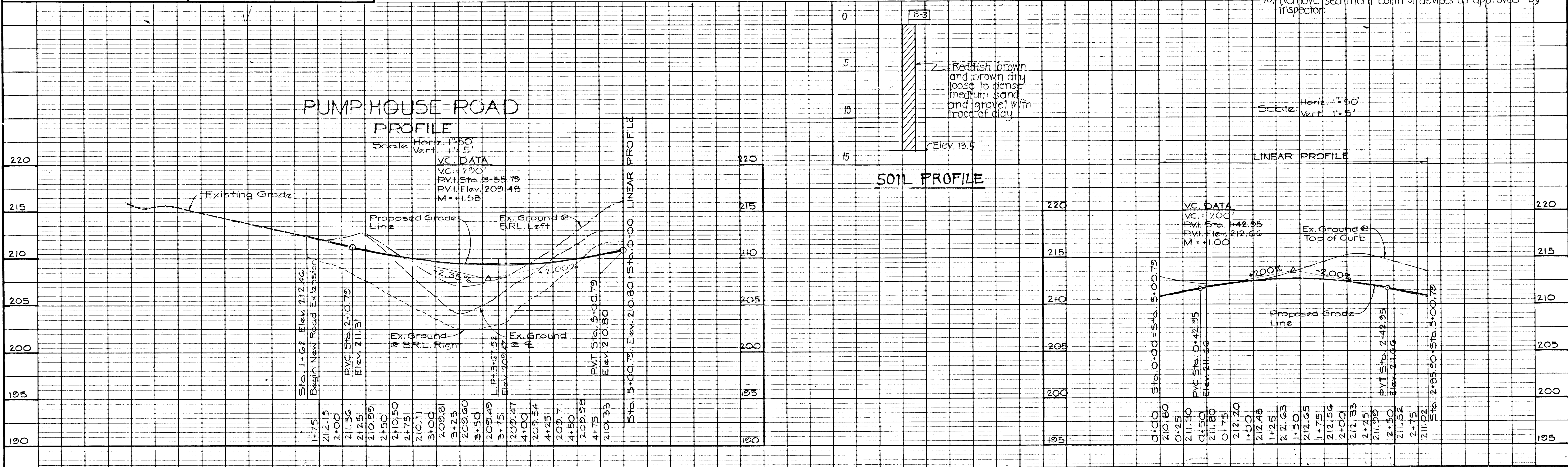
Scale: 1" = 50'

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Reviewed for Howard Soil Conservation District and meets technical requirement.

Approved: *Stephen P. Huler* 12/30/85  
Signature Date

Approved: *James H. Steln* 12/30/85  
Signature Date



**PURDUM & JESCHKE**  
CONSULTING ENGINEERS  
LAND SURVEYORS  
1823 North Calvert Street  
Baltimore, Maryland 21202 301/837-0184

Approved: Howard County Office of Planning and Zoning

*Richard M. Harshe* 12/31/85  
Chief Div. of Land Development and Zoning Admin. Date

Approved: Howard County Department of Public Works

*James E. Ryan* 2/20/86  
Chief, Bureau of Engineering Date

**DEVELOPER'S CERTIFICATION**  
I certify that all development and construction will be done according to this plan any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources approved training program for the control of any sediment erosion before beginning the project.

*Charles H. Huler* 11/30/85

**ENGINEERS CERTIFICATION**  
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

*William G. Rosch II* 10/22/85  
Date



**STORM WATER MANAGEMENT PLAN, SEDIMENT CONTROL PLAN AND GRADING PLAN PUMP HOUSE ROAD**

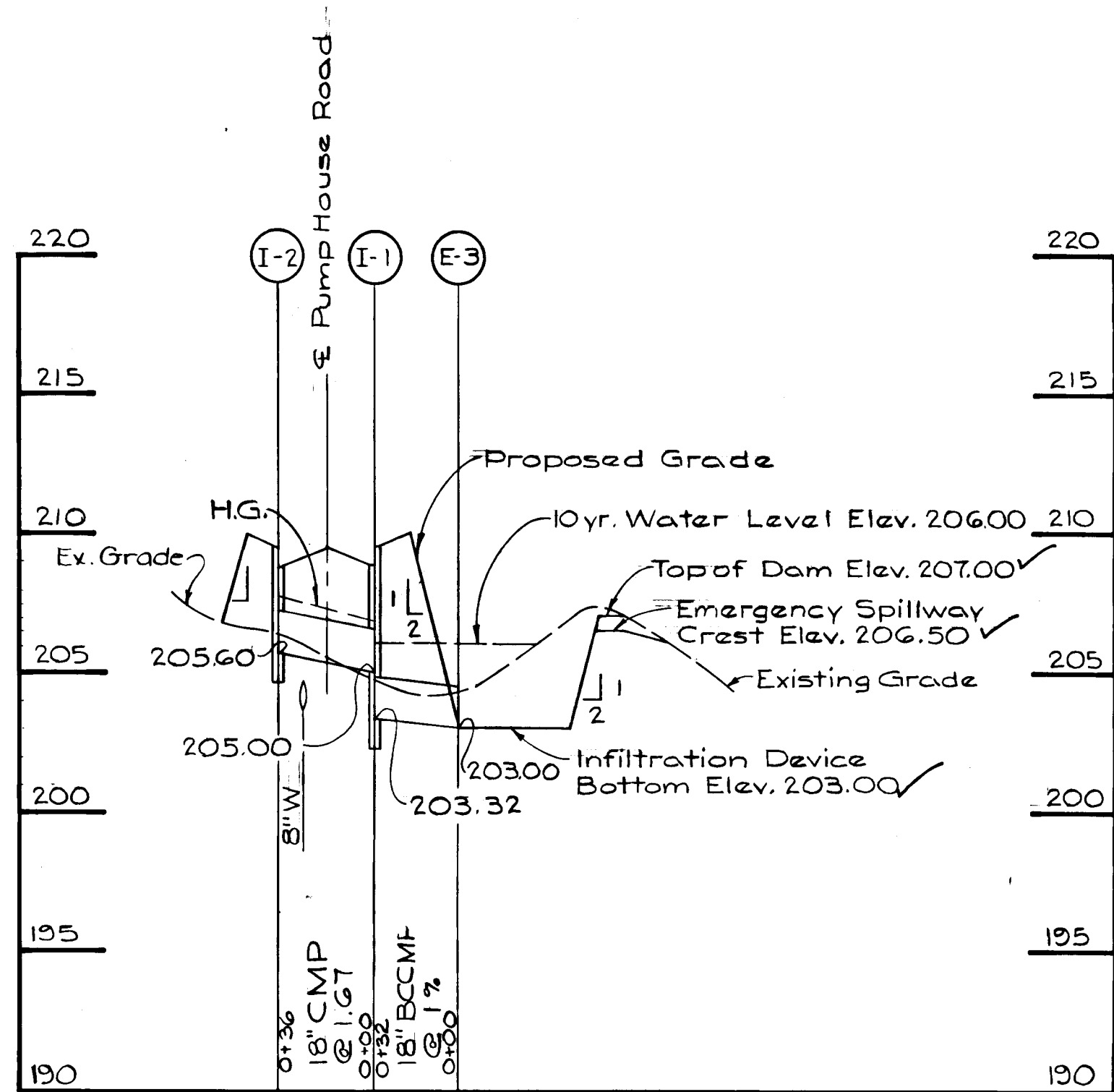
6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
PARCEL NO. 68 TAX MAP NO. 48  
ZONED M-2 DATE OCT. 7, 1985

SHEET 2 OF 4  
DES. A.T.R.  
DRWN. J.E.F.  
CHK. A.T.R.  
AS BUILT

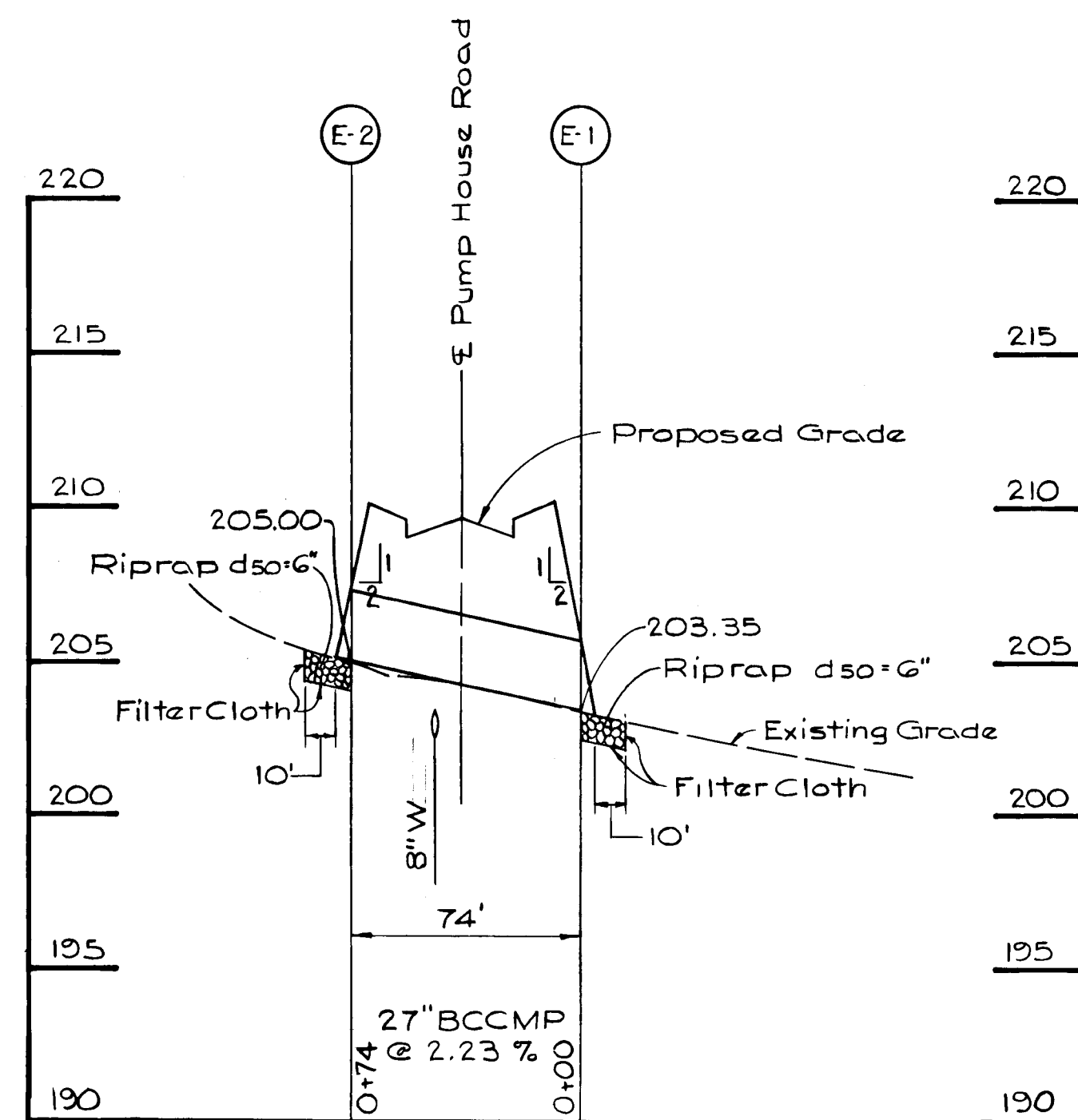
#1189

10/29/87

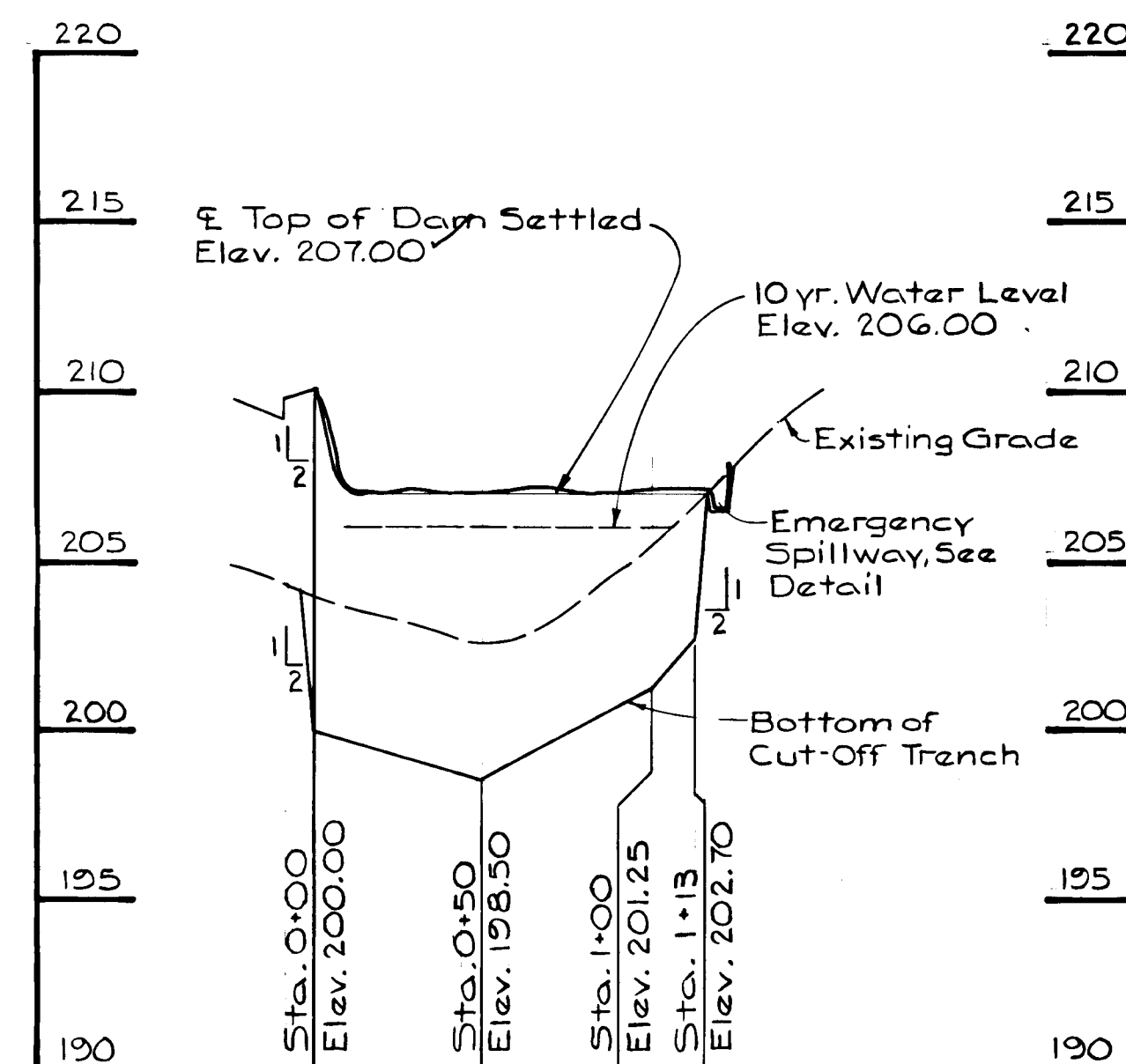
F-86-65



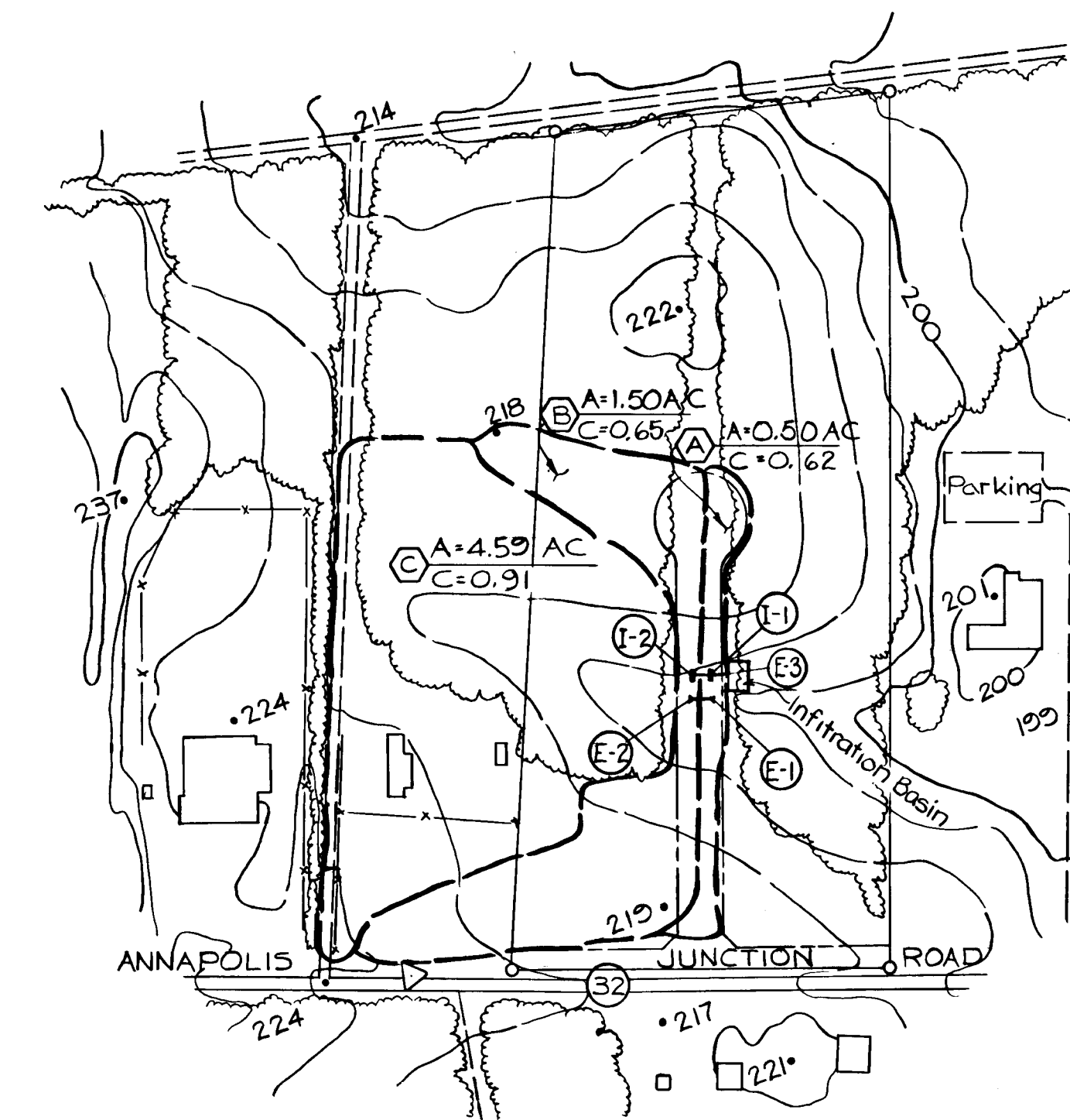
**EMERGENCY SPILLWAY PROFILE**  
 Scale: Horiz. 1"=50', Vert. 1"=5'



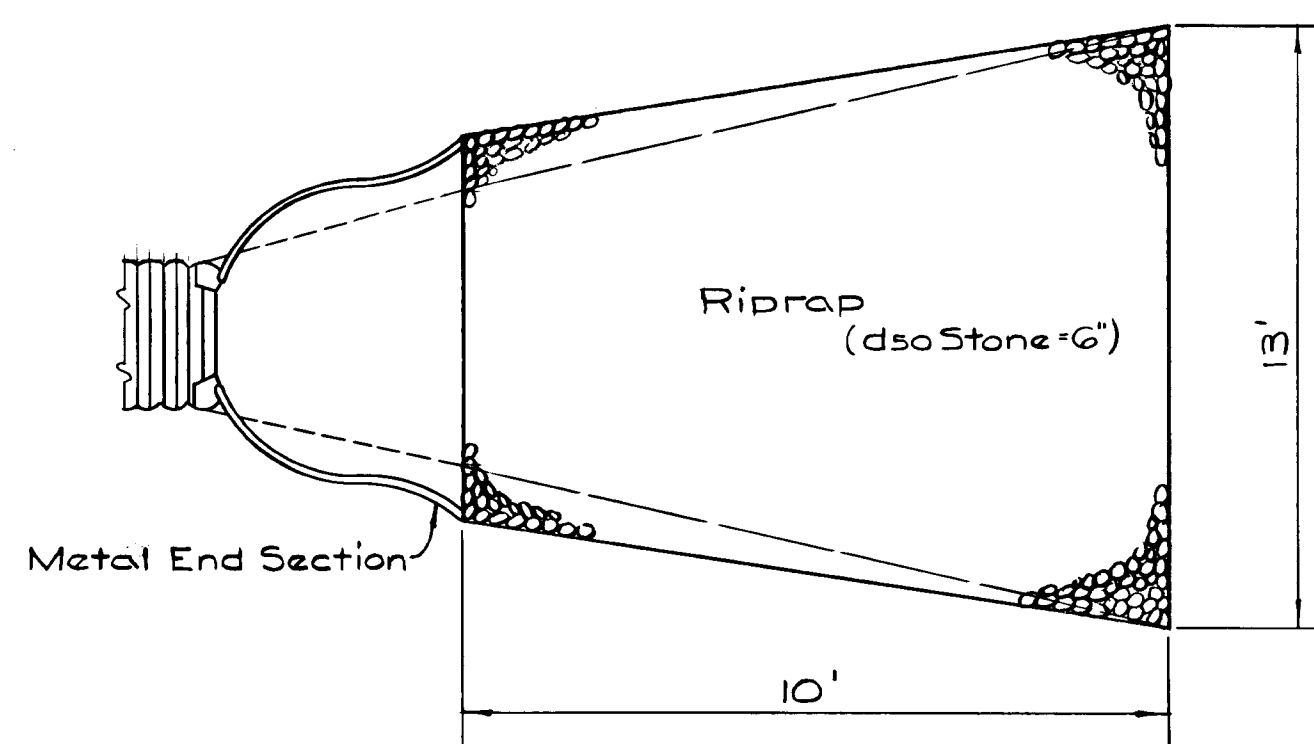
**PROFILE**  
 Scale: Horiz. 1"=50', Vert. 1"=5'



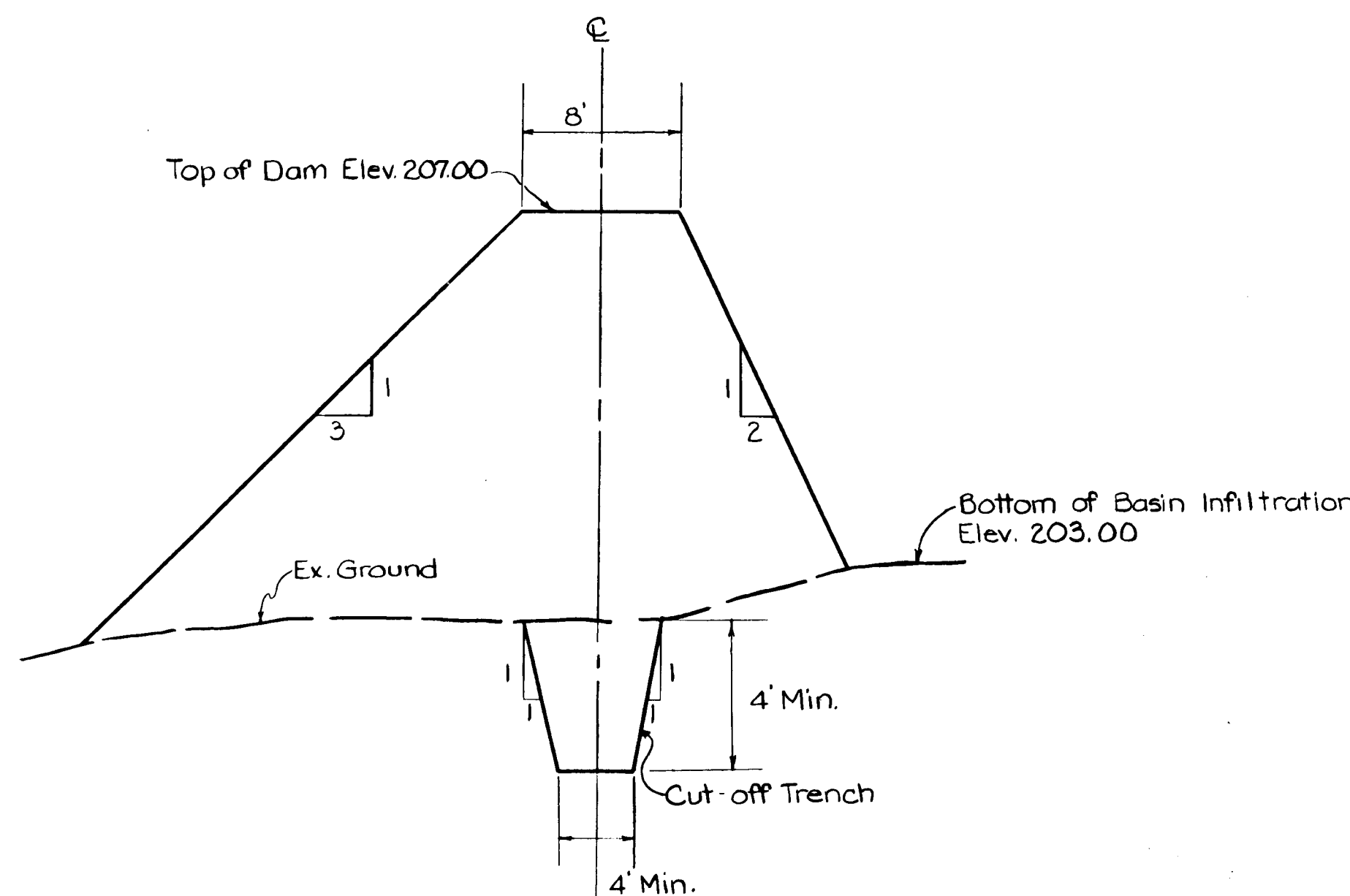
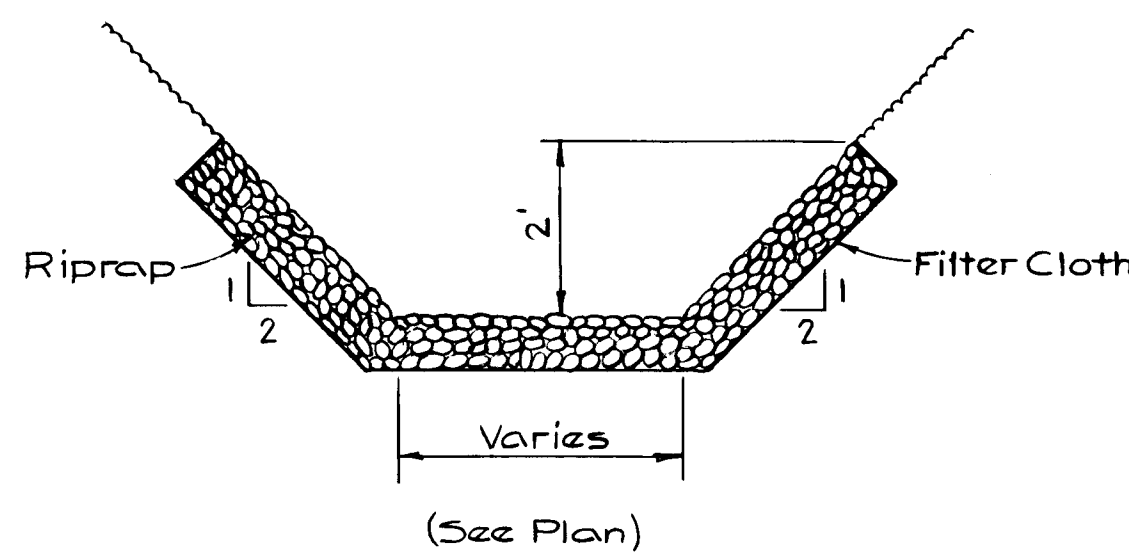
**(INFILTRATION DEVICE) CUT-OFF TRENCH PROFILE**  
 Scale: Horiz. 1"=50', Vert. 1"=5'



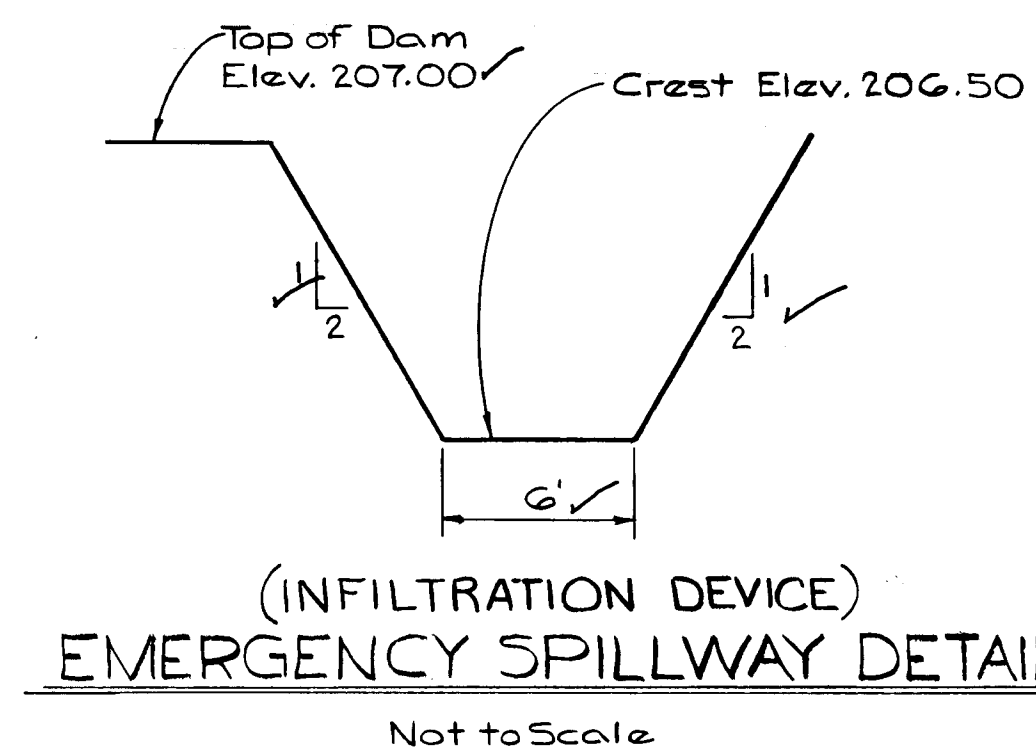
**STORM DRAINAGE AREA MAP**  
 Scale: 1"=200'



**RIPRAP OUTLET PROTECTION DETAIL**  
 Not to Scale



**SECTION A-A (Infiltration Device)**  
 Not To Scale



**(INFILTRATION DEVICE) EMERGENCY SPILLWAY DETAIL**  
 Not to Scale

STRUCTURE SCHEDULE					
No.	Type	Inv. In	Inv. Out	Top Elev.	STD No.
I-1	A-5 Inlet	205.00	203.32	209.47	Ho. Co. SD-401
I-2	A-10 Inlet	-	205.60	209.47	Ho. Co. SD-402
E-1	Metal End Section	-	203.35	205.35	Ho. Co. SD. 5.61
E-2	Metal End Section	205.00	-	207.25	Ho. Co. SD. 5.61
E-3	-	-	203.00	206.50	-

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Reviewed for Howard Soil Conservation District and meets technical requirements.

Approved: *William G. Rasch II* 12/20/85  
 Signature Date

Approved: *James M. Fisher* 10/30/85  
 U.S. Soil Conservation Dist. Date

AS-BUILD SURVEY CERTIFIED BY WILLIAM G. RASCH II REG-PE. NO 4575 ON OCT. 22, 1985

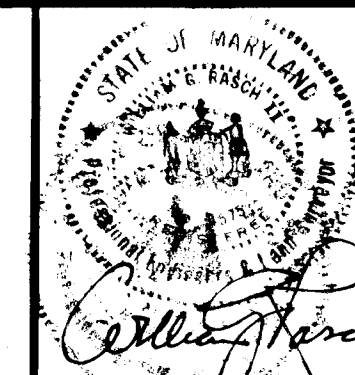
**PURDUM & JESCHKE CONSULTING ENGINEERS LAND SURVEYORS**  
 1029 North Calvert Street  
 Baltimore, Maryland 21202 301/837-0194

Approved: Howard County Office of Planning and Zoning  
*William G. Rasch II* 12/20/85  
 Chief Div. of Land Development and Zoning Admin. Date

Approved: Howard County Department of Public Works  
*William G. Rasch II* 12/20/85  
 Chief, Bureau of Engineering Date

**DEVELOPER'S CERTIFICATION**  
 I certify that all development and construction will be done according to this plan any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources approved training program for the control of any sediment erosion before beginning the project.  
*William G. Rasch II* 10/30/85

**ENGINEERS CERTIFICATION**  
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
*William G. Rasch II* 10/22/85  
 William G. Rasch II Date

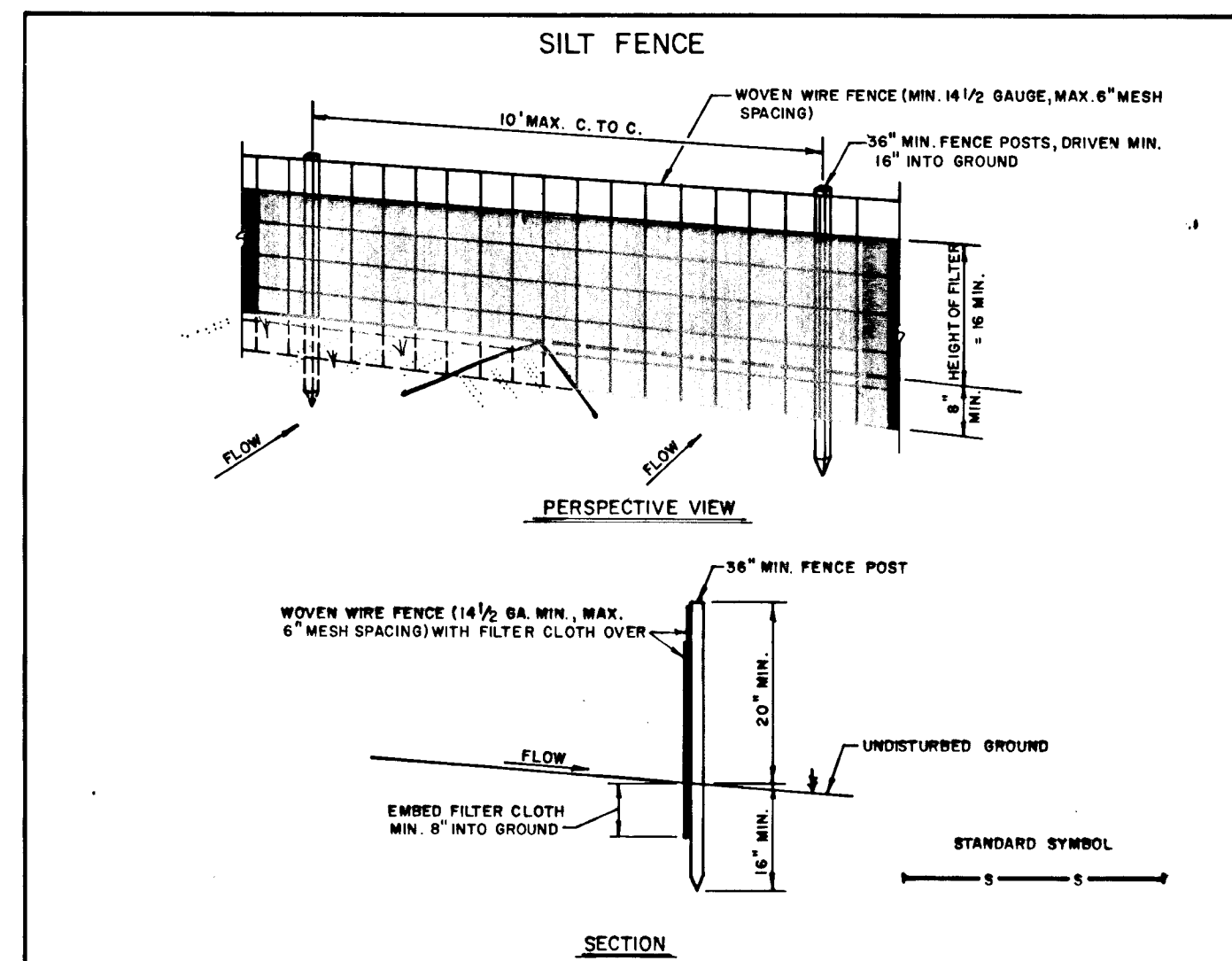


**STORM DRAINAGE AREA MAP, PROFILES & DETAILS**  
 C-W COMPANY  
 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 PARCEL NO. 68 TAX MAP NO. 48  
 ZONED M-2 DATE OCT. 7, 1985

SHEET 3 OF 4  
 DES. A.T.R.  
 DRWN. J.E.F.  
 CHK. A.T.R.  
 AS-BUILT

AS-BUILT 10/20/87

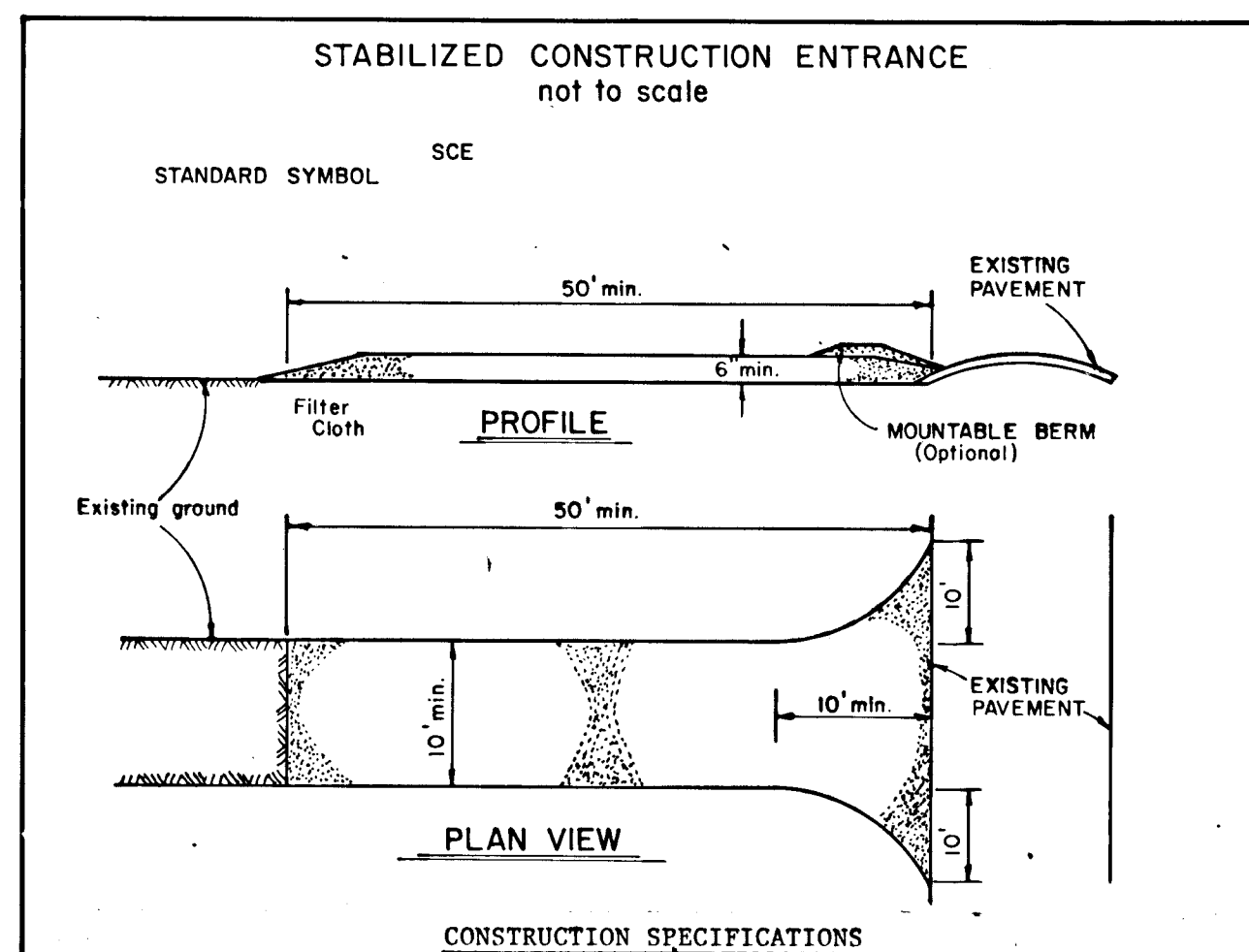
F-86-65



**CONSTRUCTION NOTES FOR FABRICATED 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 ties spaced every 24" at top and mid-section.
- 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 removed when "bulges" develop in the silt fence.

POSTS: Steel either T or U Type or 2" Hardwood  
 FENCE: Woven wire, 14 Ga. 6" Max. Mesh Opening  
 FILTER: Filter X, Mirafi 100X, Stabilinka T140N, or approved equal  
 PREFABRICATED UNIT: Geofab, Envirofence, or approved equal

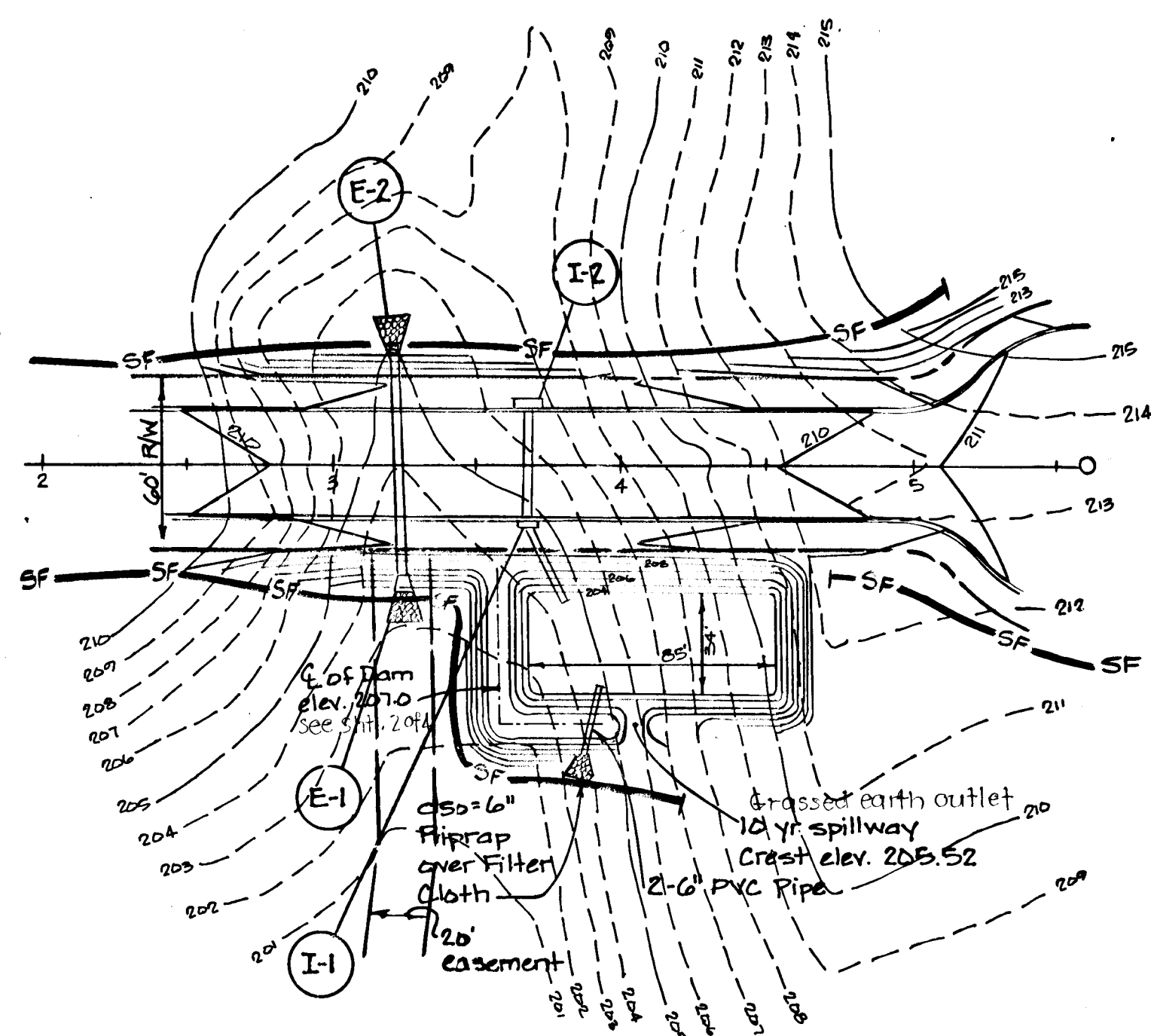


**CONSTRUCTION SPECIFICATIONS**

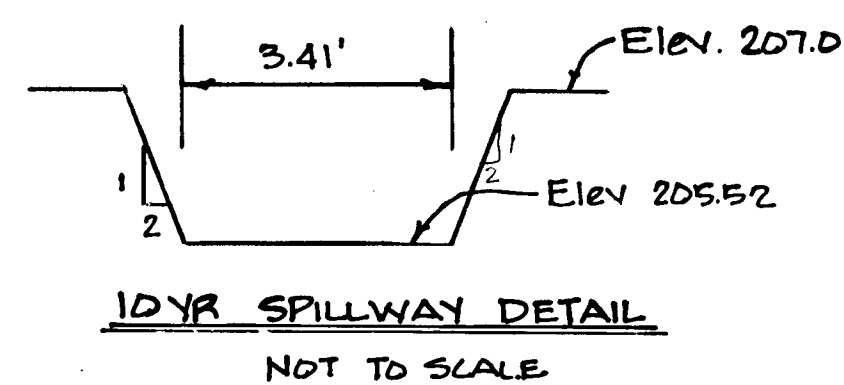
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30-foot minimum length would apply).
- Thickness - Not less than six (6) inches.
- Width - Ten (10) foot minimum, but not less than the 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 berm 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 inspections and needed maintenance shall be provided after each rain.

**SEDIMENT TRAP**

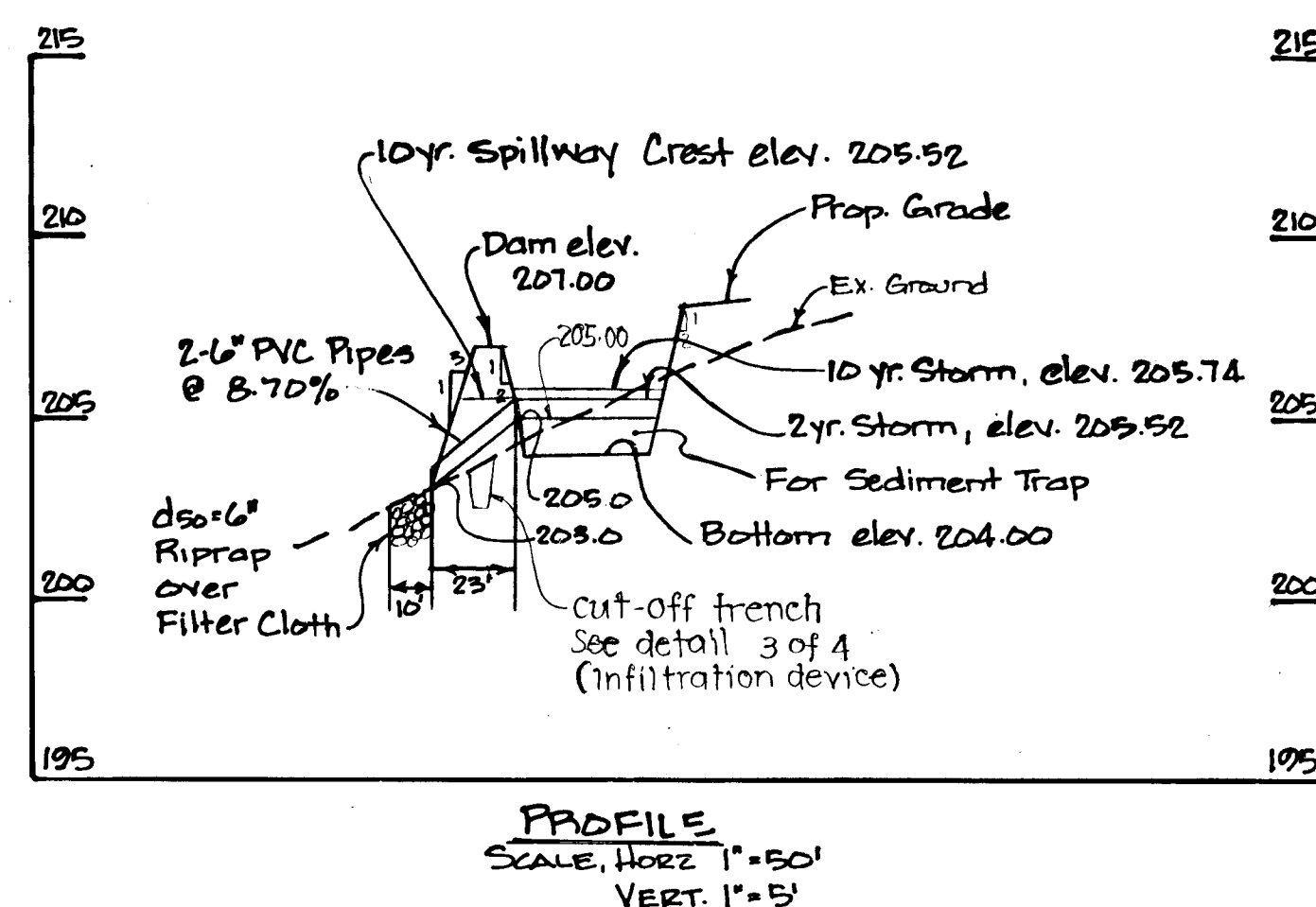
D.A. = 0.82 AC  
 Volume Required = 1800 x 0.82 = 1476 CF  
 Volume Provided = 5136 CF  
 Clean out Elevation = 204.50  
 Bottom Elevation = 204.00



**TEMPORARY STORM WATER MANAGEMENT FACILITY AND SEDIMENT TRAP PLAN**  
 SCALE: 1" = 50'



**10YR SPILLWAY DETAIL**  
 NOT TO SCALE



**PROFILE**  
 SCALE: HORIZ 1" = 50'  
 VERT. 1" = 5'

**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.

**Soil Amendments:** Use on the the following schedules:

- 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.)
- 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. of 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. per acre Kentucky 31 Tall Fescue, and mulch with 2 tons per 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 reseeds.

**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 three inches of soil by raking, discing, or other acceptable means before seeding.

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

**Seeding:** For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 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 feet 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 SPECIFICATIONS FOR INFILTRATION DEVICE**

**SCHEDULE:**

The partially excavated basin shall serve as a sedimentation basin in order to assist in erosion and sediment control during construction. However, basin should never be used prematurely for runoff disposal near final stages of excavation. Drainage from untreated, freshly constructed slopes within the watershed area would load the newly formed basin with a heavy concentration of fine sediment. This could seriously impair the natural infiltration characteristics of the basin floor. Final grade of an infiltration basin shall not be attained after its use as a sediment control basin is completed.

**SITE PREPARATION:**

Areas under the borrow areas and embankment shall be cleared, grubbed, and the topsoil stripped to remove all trees, vegetation, roots, or other objectionable material.

Areas covered by the infiltration basin shall be cleared of all trees, brush, logs, fences, rubbish, and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be removed approximately 1' minimum below the final bottom elevation.

All cleared and grubbed material shall be disposed of outside the limits of the dam and basin as directed by the Owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

**EARTH FILL:**

**Material**

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, and frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

**Placement**

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill.

**Compaction**

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment, or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber-tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

**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 (992-2437).
- 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.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: (a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1; (b) 14 days as to all other disturbed or graded areas on the project site.
- 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 seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50), and mulching (Sec. 52). Temporary stabilization with mulch along can only be done when recommended seeding dates do not allow 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 area of site	0.95 acres
Area disturbed	0.92 acres
Area to be roofed or paved	0.36 acres
Area to be vegetatively stabilized	0.56 acres
Total cut	2133 cu.yds.
Total fill	2000 cu.yds.
Office waste/borrow area location	NOT KNOWN
- 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 DPM 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.
- On all site 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.

**Cut-off Trench**

Where specified, a cut-off trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cut-off trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

**EXCAVATION OF BASIN:**

Initial basin excavation should be carried to within one foot of the final elevation of the basin floor. Final excavation to the finished grade should be deferred until all disturbed areas on the watershed have been stabilized or protected. The final phase excavation should remove all accumulated sediment. Relatively light tracked equipment is recommended for this operation to avoid compaction of the basin floor. After the final grading is completed, the basin floor should be deeply tilled by means of rotary tillers or disc harrows to provide a well-aerated, highly porous surface texture.

**STABILIZATION:**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, and side slopes shall be stabilized by seeding, fertilizing, and mulching in accordance with the permanent seeding notes.

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

Reviewed for Howard Soil Conservation District and meets technical requirements.

Approved: *Stephen L. Hahn* 12/20/85  
 Signature Date

Approved: *James M. Helm* 12/21/85  
 U.S. Soil Conservation Dist. Date

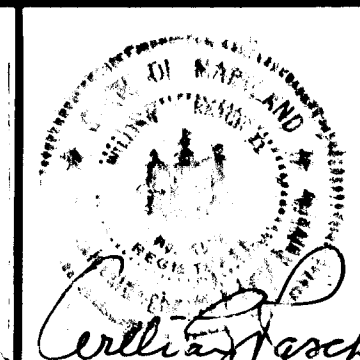
**PURDUM & JESCHKE**  
**CONSULTING ENGINEERS**  
**LAND SURVEYORS**  
 1029 North Calvert Street  
 Baltimore, Maryland 21202 301/837-0194

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*William G. Jeschke* 12/21/85  
 Chief, Div. of Land Development and Zoning Administration Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*William G. Jeschke* 12/21/85  
 Chief, Bureau of Engineering Date

DEVELOPER'S CERTIFICATION  
 I certify that all development and construction will be done according to this plan and that any responsible personnel involved in the construction project will have a certificate of attendance at the Dept. of Natural Resources approved training program for the control of any sediment and erosion before beginning the project.  
*William G. Jeschke* 12/21/85  
 Date

ENGINEER'S CERTIFICATION  
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
*William G. Jeschke* 10/22/85  
 WILLIAM G. JESCHKE Date



**SEDIMENT CONTROL DETAILS**  
**INFILTRATION DEVICE CONSTRUCTION**  
**SPECIFICATIONS**  
 TEMPORARY STORM WATER MANAGEMENT FACILITY  
 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 PARCEL NO. 68 TAX MAP NO. 48  
 ZONED M-2 DATE OCT. 7, 1985

SHEET 4 OF 4  
 DES. A.T.R.  
 DRWN. J.E.F.  
 CHK. A.T.R.